



GOVERNMENT OF SIERRA LEONE
MINISTRY OF HEALTH AND SANITATION

FINAL
Sierra Leone National Malaria
Elimination Strategic Plan
2021-2025

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Foreword

Sierra Leone is grappling with the burden of infectious diseases and natural disasters such as flooding and mudslides. The country's disease burden include malaria, which is considered one of the major public health problem in Sierra Leone. Amidst these challenges, Sierra Leone was never spared by the 2014 Ebola outbreak and the current COVID-19 pandemic. All of these pose serious threats to the lives of the citizenry and the development agenda of the country.

Sierra Leone has always endorsed and adopted global and regional health initiatives to promote the health and well-being of her citizenry. With the substantial and sustained support provided by our development partners and notably Global Fund to combat the malaria scourge, Sierra Leone has made significant strides in expanding coverage of key malaria interventions throughout the country. Unfortunately, the outbreaks of diseases that are beyond our control in recent years eroded our gains in the fight against malaria. The 2014 EVD and the on-going COVID-19 pandemic are recent case studies. In both outbreaks, a significant decline in the uptake of malaria services is noted ; and also limiting the extent of NMCP operations at all levels.

In every successive malaria strategic plan since 2004, the country introduces and adopts emerging evidence-based interventions to address local malaria needs. The 2021-2025 strategic plan is determined to increase coverage on LLIN using a school-based approach as part of the new interventions added in the current strategic plan to reduce malaria case incidence among children. The strategic plan also prioritizes efforts towards building a robust and active malaria surveillance system to ensure that the programme is able to quickly and effectively address the epidemiological changes of malaria in the country; and potentially will lead to a reduction in the incidence of cases and malaria-related deaths in the population.

As a ministry, we are not oblivious to the inherent challenges of the health system. Our staff are short in number and many require upskilling and re-skilling. The funding support to the health sector is also inadequate, and all of these undermine access and quality of health service delivery and population health outcomes. The current MSP takes all these into considerations and has the provision of staff training for effective malaria prevention, treatment and control. The plan has an objective to improve the mobilization of resources and maximize the efficient use of available resources for greater public health impact. This objective focuses on increasing the share of government expenditures for Malaria over the total health expenditures, meaning a gradual shift from donor funding towards a more sustainable national health budget.

Our gains in the stride to control and eliminate malaria are majorly influenced by the sustained support of our partners and for whom I want to appreciate and thank very much. The country's leadership is

well aware of your contributions toward the health and well-being of Sierra Leoneans. The strategic plan deserves the support of our donors, NGOs, and CSOs among other stakeholders as it lays-out a solid foundation for the pre-elimination of malaria in Sierra Leone. By extension, some of the interventions will help in strengthening the broader health system. The Government and the leadership of MoHS will support this ambitious strategic plan in ways that will enhance its successful implementation with a view to contributing to the New Direction Agenda as articulated in Sierra Leone's Medium-term National Development Plan 2019-2023. It is my firm conviction that the implementation of this strategic plan will position Sierra Leone towards achieving global malaria indicators and other health-related SDGs and eliminating malaria in the list of infectious disease burden in Sierra Leone.

I want to express gratitude and thanks to all who worked on this document. It is our national responsibility as a ministry to provide universal access to malaria prevention services, treatment, and care to all people, especially the most vulnerable populations of women and children in Sierra Leone.



Prof. Alpha Tejan Wurie
Hon. Minister of Health and Sanitation
Ministry of Health and Sanitation

Chief Medical Officer's Remark

Sierra Leone has come a long way in the fight against malaria, a disease that seriously affects the well-being and socio-economic aspects of the people and the development of the country. Throughout the history of an independent Sierra Leone, the successive governments have demonstrated determination to control the malaria disease burden to reduce its impact and sequelae in the population, especially among the poor and most vulnerable populations of women and children. This has led to a significant progress in the management and control of malaria in Sierra Leone.

The National Malaria Elimination Strategic Plan 2021-2025 is our renewed and collective commitment to work towards pre-elimination of malaria in Sierra Leone. The plan was prepared with a broader involvement of relevant stakeholders, including development partners, CSOs, NGOs, and sub-national structures of the health sector, and was guided by our commitment to reduce malaria morbidity and mortality by at least 75% by the end of 2025. Achieving this feat will be challenging but doable. In doing so, the current strategy has highlighted specific interventions that are critical to drive this ambitious plan. Among them include strengthening the malaria surveillance system to effectively reflect the actual burden of the disease in all localities of the country with the aid of geographic information system (GIS); reliable and timely diagnosis and treatment; distribution of long lasting insecticidal nets (LLINs) with plans to include school-based distributions, and robust and judicious use of other vector control methods; catalyze appropriate behaviour changes; strengthening relevant health system functions such as health management information systems (HMIS), supply chain management, and outbreak response. Also, the strategy seeks to strengthen programme and financial management procedures for improved accountability, transparency and efficient use of funds. It is no gainsaying that, the operationalization of these changes will enable us to effectively serve the population and facilitate the subsequent elimination of the malaria burden in our country.

As a ministry, we are confident that our ambitious aspirations as articulated in the current strategy can be achieved given the unprecedented political commitment and opportunities of Universal Health Coverage (UHC), coupled with a determined global agenda on malaria elimination. I entreat the DHMTs and health service providers to collaborate with community

The MoHS recommends this Malaria Strategic Plan as it presents our country's roadmap to achieve our goals and objectives of pre-elimination of malaria in Sierra Leone. I am urging all to work with commitment and dedication to ensure *access to malaria control interventions for all*.



.....
Rev. Canon Dr. Thomas T. Samba
Chief Medical Officer
Ministry of Health & Sanitation

Acknowledgements

The Sierra Leone National Malaria Elimination Strategic Plan (SLNMESP) 2021-2025 is developed on a greater determination to accelerate and scale up the actualization of malaria control in the country.

The process of developing this strategic plan has been a long and painstaking exercise but very rewarding.

The National Malaria Control Programme of the Ministry of Health and Sanitation wishes to express our gratitude to the Honourable Minister of Health and Sanitation, Prof. Alpha Tejan Wurie, who approved, encouraged and guided the process. Similarly, our thanks and appreciation go to the Chief Medical Officer, Rev. Canon Dr. Thomas T. Samba for his leadership and commitment to the development of this Strategic Plan. The support provided by the MOHS Directorates, Programmes, Units, DHMTs and Hospitals in the process of the development of the plan is also acknowledged.

I wish to thank the World Health Organization and the Roll Back Malaria Partnership for providing financial, strategic direction and technical assistance at all stages of the development of the SLNMESP 2021-2025.

I must acknowledge the invaluable contribution and commitment demonstrated by WHO International Consultants, Dr. Petr Olumese, Dr. Jackson-Sillah and Dr. Abderrahmane Kharchi TFEIL at all stages of the development of this plan.

Sincere gratitude goes to the international consultant – Prof. Martin Meremikwu and national consultants, Prof. Foday Sahr, Dr. Micheal Amara, Dr. Alhassan F. Kanu and Mr. Mohamed Sannoh whose managerial and technical abilities have been brought to bear in the development of this important document.

I also want to thank the members of the Roll Back Malaria partners in Sierra Leone, Line Ministries, Department and Agencies, Local Councils, International and National NGOs, as well as representatives of Civil Society Organizations.

As a national programme which is charged with the responsibility of malaria prevention and control, the commitment and contribution of its staff could not be overemphasized.

Finally, it is my fervent hope that this document will become the single most important point of reference on issues pertaining to control of malaria in Sierra Leone for the next five years.



Dr. Samuel Juana Smith
Director, Disease Prevention and Control
Ministry of Health and Sanitation

Acronyms

ACTs	Artemisinin-based combination therapy
ACSM	Advocacy, Communication and Social Mobilization
ANC	Antenatal care
BPEHS	Basic Package of Essential Health Services
CHA	Community Health Assistant
CHO	Community Health Officer
CHW	Community Health Worker
CQ	Chloroquine
DHMT	District Health Management Team
DHS	Distict Health Sister
DHI	Demographic Health Survey
DMS	District Medical Store
DPS	Directorate of Phamaceutical Services
EHD	Environmental Health Division
EIR	Entomological Inoculation Rate
EPI	Expanded Programme on Immunization
GF	Global fund
HSC	Health Service Commission
IHSIP	Integrated Health Sector Investment Project
IHPAU	Integrated Health Project Administration Unit
IMNCI	Integrated Management of Newborn and Childhood Illness
IPT	Intermittent Preventive Treatment
IRS	Indoor Residual Spraying
ITNs	Insecticide Treated Nets

IVM	Integrated Vector Management
LLINs	Long Lasting Insecticidal Treated Nets
LMIS	Logistics Management Information System
LFA	Local Funding Agent
MCHA	Maternal and Child Health Aide
MCU	Malaria Control Unit
MDG	Millennium Development Goals
MiP	Malaria in Pregnancy
MOHS	Ministry of Health and Sanitation
MPR	Malaria Programme Review
MTEF	Medium Term Expenditure Framework
NEML	National Essential Medicines List
NGO	Non- governmental Organization
NMCP	National Malaria Control Programme
NMSA	National Medical Supplies Agency
NPPU	National Public Procurement Unit
MIS	Malaria Indicator Survey
PBF	Performance Based Financing
PHU	Peripheral Health Unit
PRSP	Poverty Reduction Strategy Paper
PBSL	Pharmacy Board of Sierra Leone
QA/QC	Quality Assurance and Quality Control
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
SDGs	Sustainable Development Goals

SECHN	State Enrolled Community Health Nurse
SLNMESP	Sierra Leone National Malaria Elimination Strategic Plan
STG	Standard Treatment Guidelines
SWOT	Strength, Weakness, Opportunities, Threats
TOR	Terms of References

Executive Summary

Introduction

Malaria remains a serious public health challenge causing immense morbidity and mortality in Sierra Leone and other low- and middle-income countries. Malaria is, therefore, one of the topmost priorities for every successive government as the disease is known to affect longevity, socio-economic development, and by extension, the general welfare of the entire citizenry.

In the contexts of the national malaria strategic plans 2004-2008, 2011-2015, 2016-2020, and 2021-2025, substantial control investments have been made in Sierra Leone to combat the malaria scourge. These investments have consequently witnessed much progress over the years in the control of malaria following a significant decline in malaria cases and deaths. The 2021-2025 Sierra Leone National Malaria Elimination Strategic Plan (SLNMESP) presents a substantial scale-up of critical interventions, drawing from evidence-based and the experience in previous years. The plan gives direction towards the improvement of the health status of the Sierra Leone population and the fight against poverty by reducing malaria disease burden. The strategic plan, which spans over 5 years, seeks to lay-out the foundation for eliminating local transmission of malaria and the reduction of malaria-related deaths.

The sections below summarize the background, goal, objectives, the performance framework to implement the Sierra Leone National Malaria Elimination Strategic Plan (2021-2025), and resources.

Background

In Sierra Leone, malaria is endemic with stable and perennial transmission in every part of the country. Among the variants of malaria parasites, the plasmodium *falciparum* is the most common and accounts for over 90% of all malaria cases in the country. Mosquitoes (i.e. female *Anopheles gambiae* and *Anopheles funestus*) are the dominant vector, responsible for the transmission of the parasites among individuals. Malaria affects every age bracket but it's most lethal among vulnerable sub-populations of women and under-five children. It is currently the leading cause of morbidity and mortality amongst under-five children. Every person within Sierra Leone is susceptible to malaria and the disease accounts for 40.3% of outpatient morbidity

for all ages; and 47% of outpatient for under-five children. Malaria also is responsible for 37.6% for hospitalized cases with a case fatality rate (CFR) of 17.6%.

Since attaining independence in 1961, Sierra Leone has been involved in many of the global initiatives aimed at eradicating the threat of malaria and its associated debilitating consequences. The country's Ministry of Health bears sole responsibility for organizing and delivering all government-sponsored malaria prevention efforts, as well as collaborating with non-governmental organizations also involved in this effort. Significant progress has been made over the years as the national approach to combating malaria has been supported and guided by global strategies, initiatives such as the Roll Back Malaria, MDGs and lately, the SDGs.

The 2020 Malaria Programme performance review found that All-cause under-5 mortality rates decreased from 156 per 1000 population in 2014 to 122 per 1000 population in 2019 within Sierra Leone (DHS 2019). Malaria accounts for 52.2% of outpatient morbidity (HMIS 2019) and transmission occurs throughout the year with peaks at the beginning and the end of the rainy season (April and October respectively) through the years 2016 – 2019. The annual parasite incidence for confirmed malaria cases increased from 270 per 1,000 populations in 2014 to 297 per 1,000 populations in 2019. There was no reduction in the general malaria positivity rate between 2016 (63%) and 2019 (62.5%). However, a decrease was noticed in the malaria positivity rate, from 56 percent in 2014 to 38 percent in 2019 (MPR 2020).

Efforts must be made to safeguard the gains and mitigate against loss in momentum in the fight against eliminating malaria in Sierra Leone. The trends identified indicate the need for further research to understand the drivers of change of local malaria needs; the need to carefully target interventions to address local needs in addition to strengthen surveillance in anticipation of changes in the epidemiology of malaria throughout the 2021-2025 malaria strategic plan.

The development process of the 2021-2025 National Malaria Elimination Strategic Plan

The development of the 2021-2025 National Malaria Elimination Strategic Plan (NMESP) was highly participatory in line with the WHO recommendations for the development of strategic plans. Prior to the development of the plan, a malaria programme review (MPR) was conducted in 2020 and the current plan 2021-2025 is premised on the recommendations of the 2020 MPR.

The 2021-2025 NMESP is aligned to the guiding principles of the broader National Health Sector Strategic Plan (NHSSP 2017-2021), Sierra Leone's Medium-term National Development Plan 2019-2023; Basic Package of Essential Health Services (2015-2020); Findings of the 2019 Demographic Health Survey; and new and emerging malaria elimination interventions at the global level.

The following principles will guide the operationalization of the NMESP: universal coverage with proven malaria interventions, equity and equality and non-discrimination, participation and accountability and the right to the health elements of: availability, accessibility, acceptability, adequacy, quality and contiguous expansion of interventions.

Vision, mission, Goals and Objectives

Vision : Accelerate the implementation of Malaria Control Interventions towards a Malaria-free Sierra Leone.

Mission : To direct and coordinate efforts towards a malaria-free Sierra Leone through effective partnerships.

Goal: By the end of 2025, contribute significantly to the improvement of the well-being of the population by reducing the malaria burden

Objective 1: By the end of 2025, reduce malaria mortality rates by at least 75% compared to 2015

This objective focuses on reducing malaria mortality rates by 75% during this strategic plan. National efforts to manage malaria disease burden had endorsed the parasitological confirmation of malaria before treatment as the best clinical practice to improve the quality of patients' care. The NMCP will scale-up diagnostic capacity and the availability of quality malaria drugs and other essential commodities at all service delivery points including private facilities nationwide. To sustain the improved clinical practice in the management of malaria and line with emerging evidence-based practices, capacity building of all health workers in both private and public health facilities, including CHWs, will be conducted throughout the current strategic plan. This will enable staff to confidently implement the new tests, treat and track (T3) strategy.

The NMCP will work very closely with the National Medical Supplies Agency (NMSA) and the private sector to ensure the continued supply of malaria commodities in all facilities.

Objective 2: By the end of 2025, reduce malaria case incidence by at least 75% compared to 2015

The NMCP, in line with the global interventions, to reduce malaria case management proposes the use of the following vector control strategies : Long Lasting Insecticide Treated Nets (LLINs), Indoor Residual Spraying (IRS) and Larval Source Management (LSM). The various strategies will be deployed according to the current risk stratification context. For LLINs, universal coverage for LLINs mass campaign is planned during the current strategic plan. Mass distribution campaigns will be conducted periodically and continuous LLIN distribution through ANC and EPI will be done nationwide to maintain high levels of coverage during the entire period of the strategic plan. School-based distribution for targeted classes in primary schools nationwide is also planned to increase coverage of LLIN among children. Intermittent preventive treatment in pregnancy (IPTp) and in infants (IPTi) will also be carried out. For IPTp, to ensure increase coverage among eligible pregnant women, Sulphadoxine+Pyrimethamine (SP) will be made available at all service delivery points for DOT at ANC visitations. For IPTi, SP will be delivered through routine EPI activities at health facilities. NMCP will work closely with the Directorate of Reproductive & Child Health and its composite programmes notably the Child/EPI Programme to develop and/or update guidelines and staff training on administering SP during the course of this strategic plan.

Objective 3: By 2025, 90% of the population practice at least 3 recommended malaria prevention and control behaviours

The 2021-2025 MSP will endeavor to strengthen behavioural change for malaria control using various platforms and approaches. Recognizing the fact that behaviour change is influenced by the level of understanding and acceptability of a particular phenomenon by individuals and communities, this strategy will focus on conducting community dialogues, promoting interpersonal communication, film shows, and community theatres; containing integrated malaria message in each episode and engaging community-based and religious organizations. Strategic engagements of school pupils to champion malaria intervention messages and act as change agents at home and among peers will also be conducted. Social mobilization and peer mentoring

techniques will also be used to facilitate the integration of malaria talking points into the activities of the clergy, community leaders, policy makers and the heads of primary and secondary schools. More emphasis will be put on the benefits arising from the existing social campaign such as “*Zero Malaria Starts with Me*” couple with the political opportunities of Universal Health Coverage (UHC) to identify and overcome the socio-political barriers impeding access to preventive and treatment services for malaria. These activities will seek to reduce malaria morbidity and related mortality by motivating every Sierra Leonean to take recommended actions to, prevent, diagnose and treat the disease and to bring about sustainable social and individual behaviour change.

Objective 4: To strengthen malaria surveillance and use of malaria information to improve decision-making for programme performance

Surveillance helps to assess the impact of all the interventions being implemented across all levels. This objective focuses on strengthening malaria surveillance and on achieving at least 95% of health facilities reporting routinely on malaria programme performance. The district structures will be strengthened to ensure that all HMIS data and activity reports are collected, collated, and analysed at all levels. This strategic plan will support the training of health workers in data use for decision-making and support capacity building for geographical information systems (GIS) for use in malaria mapping and programming.

All malaria policies will be guided by coordinated operational research on malaria. To monitor the progress attained and aid planning, regular monitoring through program reviews and surveys will be given a high priority. During the lifespan of this strategic plan, the NMCP, in collaboration with Directorate of Research and Non-Communicable and Post Graduate Studies, national and international academic institutions and other partners, will define a malaria operational research agenda, maintain collaboration with research institutions, and provide a forum for research results dissemination.

Objective 5: Ensure timely and adequate supply of quality-assured malaria commodities to public and private health facilities at all levels by 2025.

Consistent and timely supply of essential medicines and pharmaceutical commodities is essential for effective malaria case management and control measures. In the current MSP, the NMCP, in collaboration with the Directorate of Pharmaceutical Supplies and NMSA will ensure an increase in commodity availability and improvement in national forecasting of supplies. Specifically, the programme will play a key role in the quantification of RDTs, ACTs, rectal Artesunate, injectable Artesunate, Quinine, and other malaria commodities.

This objective also seeks to strengthen the capacity of health care workers involved in commodity management at national, district, health facility, and community levels. The NMCP and the District Health Management Teams will conduct integrated supportive supervision and verification of the supply and distribution process in the public, private, private-not-for-profit sectors, and community levels. The NMCP will train health workers on proper quantification, forecasting and ordering for malaria commodities, general supply chain management. During the current strategic plan, the NMCP will undertake the development of an integrated LMIS SOPs, guidelines and relevant tools and extensive training of staff throughout the supply chain on their use.

Objective 6: By 2025, strengthen and maintain capacity for programme management, coordination, and partnership to achieve malaria programme performance at all levels

In order to effectively implement this strategic plan, the overall national health system needs to be strengthened. This strategic plan aims at strengthening the national and district capacity to deliver malaria control services at all levels. A capacity needs assessment will be conducted, and the identified gaps used to advocate for the recruitment of staff to fill the vacant and new positions at all levels and also to address infrastructure (office space and equipment) gaps.

During the implementation of this strategic plan, advocacy will continue for the elevation of the position of the NMCP through advocacy meetings with line Ministries, Rollback Malaria Partnership, and other key stakeholders. To mobilize additional resources that will be required to

implement the strategic plan, the NMCP will hold advocacy meetings and engage all potential funders (public and private) to mobilize resources for malaria prevention and control.

This objective also aims at strengthening the coordination role of the NMCP by conducting malaria partner mapping to identify and define their activities and geographical scope. The NMCP will streamline malaria control efforts to ensure the delivery of a comprehensive package of interventions to targeted populations and avoid duplication. This plan has embraced a multi-sectoral approach to ensure implementation and lobby for support from the private sector.

Objective 7: Improved mobilization of resources and maximize the efficient use of available resource for greater public health impact by 2025.

The National Malaria Elimination Strategic Plan is a comprehensive multi-year plan (2021-2025) that addresses all the components of the malaria programme. For the period year 2021- 2025, the NMCP financing strategy in Sierra Leone will be based on a mixed model: combining funding from GoSL, Public-Private Partnership (PPP) and sustained development Partners funding. It will rely on integration and co-implementation and will plan for the sustainability of future financing. Financing mechanisms in place and to be designed within the period under consideration to support Malaria implementation are classified as Government Malaria Expenditures; External Funding to support the Strategic Plan; and Public-Private-Partnership. There is going to be a focus on increasing the share of government expenditures for Malaria over the total health expenditures, meaning a gradual shift from donor funding towards a more sustainable national health budget.

The core values for this SLNMESP are accountability for outputs, excellence, technical empowerment, efficiency, value for money and multi-stakeholder involvement. The MSP will support reforms to facilitate better monitoring of efficiency and value for money in delivering a comprehensive package of integrated services for malaria control to a “value for money framework” of three Es plus C. The four major questions that the government and all implementing partners of the SLMESP will need to ask and provide for are:

1. Economy – Are the input for our programme of the right quantity, quality, and the right price?
2. Efficiency – How well do we convert inputs into outputs?
3. Effectiveness – How well the outputs achieving the desired outcomes?
4. Cost-effectiveness – How much impact is achieved relative to the inputs?

Implementation Plan

The implementation of this strategic plan will be in compliance with the established policy, regulatory, institutional, planning, financing and M&E framework. The implementation will be guided by the stated implementation principles and supported with the identified coordination mechanism. In addition, to specifically prevent, control and eliminate malaria, the strategic plan looks towards strengthening the health system and community system. Thus implementation will be based on adherence to the 3 ones ; health sector leadership-responsiveness to broader health system context and tailoring priority investments on high impact interventions responsive to the epidemiological context.

Malaria control in Sierra Leone requires a fully inclusive multi-sectoral partnership control. The MoHS have statutory responsibility for malaria prevention and control and will lead the multi-sector response to malaria. The NMCP under the MoHS will coordinate following : development of norms, standards, policies, guidelines, and tools ; planning ; resource mobilisation and management ; capacity building including technical support ; monitoring and evaluation and operational research

This strategic plan will be implemented through a broad collaborative nationwide coalition by all stakeholders will participate within the framework of the malaria strategic plan 2016-2020. Working arrangements will be used to strengthen “bottom-top” approaches to foster decentralisation of service delivery at district and chiefdom levels to increase efficiency, effectiveness and equity. Coordination and supervision of the implementation will be through the national established partnership framework.

Success in the implementation of this strategic plan is predicated on the transparency and involvement of a broad range of stakeholders at household, community, district and national levels. The traditional institutions, civil society groups, village health committee, religious groups, women's support groups, youth groups among others shall also be involved in the drive towards controlling malaria.

Core components of the implementation framework will include resource mobilisation, financing programme coordination and management, service delivery for effective malaria control, and evidence-based decision making. The overarching philosophy will be that of additionality of resources and complementarity of partnership activities to deliver on common goals.

Monitoring of the SLNMESP

The performance framework for measuring progress in the implementation of the SLNMESP has been articulated in detail as presented in the revised Malaria Monitoring and Evaluation (M&E) Plan. The following will be the main functions of the M&E :

1). Tracking progress for the programme in implementing the specific components of the full package of malaria control interventions ; and 2). Tracking in meeting targets and milestone. The methods for tracking of programme actions are fully detailed for impact, outcome, output, process and inputs. This data will use a variety of data platforms, including : routine HMIS, population- based household surveys (DHS and MIS), health facility surveys, the IDSR system, special studies, drugs and resistance studies among others. Information will be compiled and synthesised and feedback provided to all stakeholders. Expanded RBM partnership forum reviews to be conducted monthly ; A mid-Term review to be conducted in 2023 and an End-Term Review/Evaluation in 2025.

Budget

The cost of the NMESP 2021-2025 is US\$ 194, 810, 639.00

CHAPTER 1.0 INTRODUCTION

Sierra Leone, like many other low- and middle-income countries is grappling with the serious burden of infectious diseases including malaria. Malaria remains one of the top most priority for every successive government as the disease is recognized as affecting the citizenry but also the socio-economic aspects of the citizenry and ultimately the development of the country. This recognition is well articulated in the national health sector strategies and policies notably the NHSSP (2015-2020), Sierra Leone Health Recovery Plan 2015–2020, the Basic Package of Essential Health Services (2015-2020), Sierra Leone’s Medium Term National Development Plan 2019-2023.

In Sierra Leone, malaria is endemic with stable and perennial transmission in every parts of the country. Among the variants of malaria parasites, the plasmodium *falciparum* is the most common in Sierra Leone accounting for over 90% of all malaria cases in the country. Mosquitoes (i.e. female *Anopheles gambiae* and *Anopheles funestus*) are the dominant vector responsible for the transmission of the parasites between individuals. All ages groups are at risk of malaria however children under the age of five years and pregnant women are the most vulnerable population both in terms of morbidity and mortality.

Malaria is currently the leading cause of morbidity and mortality amongst under five children. As every person within Sierra Leone is at risk of contracting malaria, it accounts for 40.3% of outpatient attendance for all ages ; and 47% of outpatient for under five children. Malaria also is responsible for 37.6% for hospitalized cases with a CFR of 17.6% (Situation Analysis of Malaria (MOHS)).

Malaria is widely described as a disease of poverty as its prevalence is severe among low- and middle-income countries (LMICs) where the majority of those severely affected are largely the poorest and most marginalized communities. Poor communities in LMICs face both geographical and financial access challenges to healthcare predisposing such communities to higher risk of malaria. Delay in seeking care for malaria results to poor health outcomes, especially among under-five children and pregnant women.

The adverse consequences of malaria affect both the health and economic status of affected persons, families and nations. An episode of malaria could lead to loss of an estimated 7-12 days annually from work. The reduction in individual earning capacity during the period of illness with malaria leads to loss of income not only to affected individuals, but also their families and the nation. The household food security of families who rely on day's earning for food could thereby be compromised by malaria. The consequent malnutrition and compromised immunity would in turn lead to other repeated infections, especially amongst children and pregnant women. Repeated malaria infections may affect children's cognitive abilities and resultantly, their educational attainment, and this contributes to the intergenerational cycle of poverty. Sierra Leone and other countries where the cost of healthcare is majorly out-of-pocket, an episode of malaria illness means individuals and families have to shoulder the financial cost of treatment. This accounts for the delay in seeking healthcare and consequently poorer health outcomes. Households' annual income in malaria endemic countries are significantly compromised, affecting other essential social needs. It is estimated that, households in Africa spend between \$2 and \$25 (USD) on malaria treatment and between \$15 and \$20 on prevention each month with consequent loss of resources or 3% of annual income

Sierra Leone as a member of the global community has never been left behind in the adoption of global initiatives to control and eliminate malaria since the country's independence in 1961. The national health system structure has a special programme to oversee the control of malaria in the country. In the execution of its mandate, the National Malaria Control Programme (NMCP) has always leveraged on global interventions and guidelines to control and eliminate malaria in Sierra Leone.

A huge progress has been observed over the years as the national approach to combating malaria was supported and guided by global strategies and interventions such as the principles of Roll Back Malaria and MDGs and, lately the Global Technical Strategy for Malaria 2016-2030 and the SDGs.

The 2020 Malaria Programme performance review found that, All-cause under-5 mortality rate decreased from 156 per 1000 population in 2014 to 122 per 1000 population in 2019 (DHS 2019). Malaria accounts for 52.2% of outpatient morbidity (HMIS 2019) and transmission occurs throughout the year with peaks at the beginning and the end of the rainy season (April and

October respectively). The annual parasite incidence for confirmed malaria cases increased from 270 per 1,000 populations in 2014 to 297 per 1,000 population in 2019 due largely to increase routine reporting and the scale of integrated community case management (iCCM) which increased access to diagnosis and treatment in rural and hard-to-reach communities. There was no reduction in the general malaria positivity rate between 2016 (63%) and 2019 (62.5%). However, a decrease was noticed in the malaria slide positivity rate, from 56 percent in 2014 to 38 percent in 2019 (MPR 2020).

The MPR 2020 report concluded that the available malaria mortality data was not reliable enough to gauge the impact (e.g. malaria prevalence) made in malaria control during this period because of challenges with classifying and determining the cause of death within the broader Sierra Leone health system. The last Malaria Indicator Survey (MIS) was conducted in 2016 and there is plan to conduct the next MIS in May to June 2021. It's no gainsaying that, the sustained support from GoSL, Global Fund and other development partners to the NMCP in executing its mandate of leading the implementation of effective affordable and accessible interventions significantly contributed to the highlighted achievements.

These achievements are attributed to the increase in funding support from Government, Global Fund, PMI and other Health Partners including WHO and UNICEF, leading to implementation of effective, affordable, accessible and quality interventions.

The National Malaria Elimination Strategic Plan 2021-2025 is intended to optimize and build upon the gains and draw from lessons learned from previous periods and recent years of program implementation, to address emerging context, and advance the country towards achieving national targets and the UN SDG. Furthermore, the strategic plan seeks to lay-out the foundation for eliminating local transmission of malaria in subsequent years following the Global and Regional Strategies for Malaria.

The National Malaria Elimination Strategic Plan 2021-2025 takes into account the current context and realities of the country and strongly considers among others the following documents and experiences:

- National Health Strategic Plan (2017-2021);
- Recommendations from the 2019 Malaria Performance Review;

- Sierra Leone's Medium-term National Development Plan 2019-2023;
- Basic Package of Essential Health Services (2015-2020);
- Findings of the 2019 Demographic Health Survey;
- Global Technical Strategy for Malaria 2016-2030
- New and emerging interventions at the global level.

The successful implementation or operationalization of the National Malaria Elimination Programme Strategic Plan will also be guided by these resources as well as the national operations manual, technical guidelines for diagnosis, treatment and surveillance from the MOHS, a performance framework (M&E plan), advocacy and resource mobilization plan and regional health/malaria program operational plans designed within the context of multi-sector collaboration

1.1. The Process of Developing the National Malaria Elimination Strategic Plan

The development of the 2021-2025 National Malaria Elimination Strategic plan was highly participatory in line with the WHO recommendations for the development of strategic plan. Prior to the development of the plan, a malaria programme review (MPR) was conducted in 2020 and the current plan 2021-2025 is premised on the findings and recommendations of the 2020 MPR.

Series of multi-stakeholders' consultations were conducted among national and international health sector partners both in the private and public sectors. Notably among those consulted are Ministries, Department and Agencies within the Government of Sierra Leone (GoSL), NGOs, development partners, Civil Society Organisations (CSO), and Community Based Organisations (CBO).

With the technical and financial support of the WHO, PMI and CRS, resource-persons drawn from the NMCP and the broader health sector worked on various thematic areas. Whilst support was provided by local and external consultants remotely and physically, a residential workgroup was also held between the 6th to 15th July 2020. The costing and the programmatic oversight of the plan were led by two national consultants who were supported by an external consultant.

A stakeholder meeting (physical and virtual) were subsequently conducted to enable stakeholders provide their further inputs and comments and validate the final draft of the SLNMESP 2021-2025. The relevant inputs from the stakeholder meeting were incorporated into the final document, and presented to the top management of the MoHS for final review and approval the plan.

Costing of the strategic plan was done using the customised Global Fund Budget template following orientation processes that was conducted for the SLNMESP team.

CHAPTER

2.0 COUNTRY PROFILE

2.1 Geographical Situation

Sierra Leone is located on the West Coast of Africa, between latitude 8 30° north and longitude 11 – 30° west. It is bounded by Guinea on the North and East, and Liberia on the South –East. The Atlantic Ocean forms a beautiful coastline to the south and west of the country.

Sierra Leone covers a total area of 71,740 km² (27,699 sq. ml) with a coastline of 402 km. It has a maritime claim of territorial sea equivalent to 200 nautical miles (370.4 km; 230.2 miles).

Sierra Leone's continental shelf is 200 metres in depth.

Figure

1: Map of West African Countries

The country has a varied terrain, ranging from coastline swamps, through inland swamps and rain forest to one of the highest mountains in West Africa, the Bintumani at 2200m. The secondary palm-bush is the main vegetation and it is interspersed with numerous swamps that are mostly cultivated for rice. These swamps provide ideal breeding places for the anopheline vectors of



malaria. The coastal line of the country has several mangrove swamps, which provide the breeding sites for *anopheles melas* mosquitoes, which is one of the major vectors of malaria besides *Anopheles gambiae* and *Anopheles funestus*.

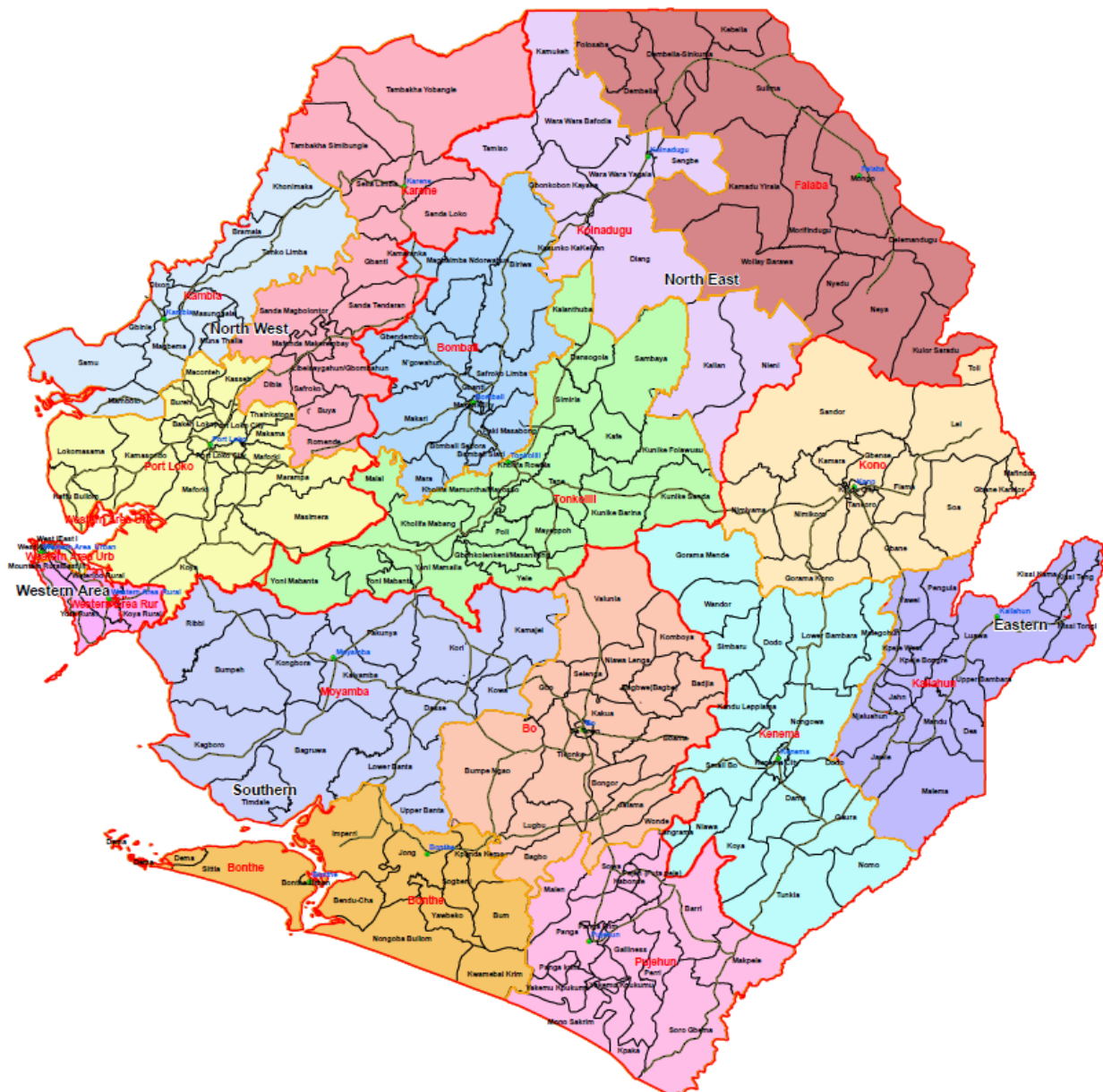
The country has a typical tropical climate with temperature ranging from 21°C to 32°C with a mean daily temperature of 25°C. It has two major seasons ; the wet season (May to October) and the dry season (November to April) with heavy rains in July and August. It has an average rainfall of about 320cm annually. Relative humidity is high ranging from 60 to 90%.

2.2 Sociopolitical system

Sierra Leone is a democratic state with a presidency, cabinet, parliament and an independent judiciary.

Administratively, the country is divided into five major areas, namely Northern, Northwest, Southern, Eastern regions and the Western Area where the capital Freetown is located. The regions are divided into 16 Districts and 190 chiefdoms. The chiefdoms have been

Figure 2 : Map of Sierra Leone



historically governed by locally elected paramount chiefs. Following the end of 11-year civil war in 2000, the country introduced decentralization as part of the post war reconstruction agenda in 2004 as guided by the Constitution of Sierra Leone (1991) and the Local Government Act (2004). Currently the country is divided into 21 local councils. The local councils were further subdivided into 392 wards. Elected district Mayors, chairmen and councilors politically head the district councils and wards respectively.

2.3 Demographic Situation

Sierra Leone currently has a projected population of 8,282,554 (SSL-Census, 2015) distributed across the four (4) regions of the country : North, North-west, South, East and West. It is estimated that, 59% (i.e. 4,187,016) of the country's population reside in rural areas and 41% (i.e. 2,905,097) live in urban areas.

Sierra Leone has faced both man-made and natural disasters in her recent history. The country witnessed a protracted civil war that lasted for a decade. The war eroded the country's infrastructural development leaving its social services grossly affected. Following gains during her post-war recovery and development phases and the introduction of two successive democratic governments, the country's gains on a range of social and economic indicators were further decimated following the 2014 Ebola outbreak in the mano river countries. The health sector was mostly affected as its gains in meeting key MDG indicators were reversed and the population of the few health workers was decimated. The scourge also impacted the country's economy and halted its trajectory as the fastest growing economy in the African region. The gross National Income (GNI per capita (current dollar, purchasing power parity (PPP)) is \$1,690 while the GDP growth rate was 6% in 2019. The country is also affected by the 2019 COVID-19 pandemic but its impact on the social and economic sectors is yet to be comprehensively estimated.

Table 1: Basic Demographic data of Sierra Leone

Indicator	Latest Estimated Value (See sources*)
Population : Total	8,115,829
Population : under five years	1,395,136
Population : pregnant women	279,327 (4.4%) ¹
Life expectancy at birth	45 years of age ⁷
Population growth rate	2.5 % ⁸
Population of children under 15 years	41.9% ¹
Crude birth rate	30 births per 1000 population
Crude death rate	11.03 deaths per 1000 population
Infant mortality rate	75 deaths per 1,000 live births ³
Under five mortality	122 deaths per 1,000 live births ³
Maternal mortality ratio	717 deaths per 100,000 live births ³
Anaemia among children under five	47.6% ³
Anaemia in women (15-49 years)	46.5% ³
Anaemia among pregnant women	55.7% ³
Children under five who slept under an Insecticide Treated Net (ITN) the night before the survey	59.1 % ³
Pregnant women age 15-49 who slept under an Insecticide Treated Net (ITN) the night before the survey	63.8 % ³
Last births in the five years preceding the survey for which the mother got Intermittent Preventive Treatment (IPTp1) during an antenatal visit	94 % ³
Last births in the five years preceding the survey for which the mother got Intermittent Preventive Treatment (IPTp2) during an antenatal visit	74 % ³
Last births in the five years preceding the survey for which the mother got Intermittent Preventive Treatment (IPTp3) during an antenatal visit	36 % ³
Children under five with fever (in two weeks preceding the survey) who took antimalarial drugs	16.5% ⁴

Indicator	Latest Estimated Value (See sources*)
Children under five years treated for malaria who received Artemisinin Based Combination therapy (ACTs)	97% ⁴
Children under one year who received first dose of IPTi1	79% ³
Children under one year who received third dose of IPTi3	69.3% ³
Children under five with symptoms of ARI who sought treatment from a health facility/provider (excludes pharmacy, shop, and traditional practitioner)	85.7% ³
Children under five with fever who sought treatment from a health facility/provider (excludes pharmacy, shop, and traditional practitioner)	75.4% ³
Urban dwellers	41% ⁸
Rural dwellers	59% ⁸
Total fertility rate	4.2% ³
Literacy rate (those aged 15 years and above)	43.3% ⁵
Health expenditure	12.3% ⁶
Physician density	0.016 ⁶ Physicians/1,000 population

¹Statistics Sierra Leone 2004

²UNDP2010

³DHS 2019

⁴MIS 2016

⁵UNDP 2011

⁶National Health Recovery Plan 2015-2020

⁷World Bank 2015

⁸SSL-Census, 2015

2.4. Ecosystem, environment and climate

The country has a varied terrain, ranging from coastline swamps, through inland swamps and rain forest to one of the highest mountains in West Africa, Bintumani at 2200m. The vegetation is mainly secondary palm-bush, interspersed with numerous swamps that are mostly cultivated for rice. These swamps provide ideal breeding places for the Anopheline vectors of malaria. Moreover, the coastal line has several mangrove swamps, which provide the breeding sites for *Anopheles melas* mosquitoes, which is one of the major vectors of malaria besides *gambiae* and *funestus*.

2.5. Socio-economic situation

Sierra Leone's economy is small and undiversified. GDP growth in Sierra Leone has been conspicuously inconsistent. This instability could be associated with the uneven economic growth across sectors, and largely driven by the export-led mining sector. The post-war economic recovery was first driven by agriculture, and from 2010 onwards propelled by the mining industry. Without steady growth, it is hard to attract investments that can strengthen the economic sectors to foster job creation. Gross capital formation, which reflects the prospect of future stability in Sierra Leone, rose from 1 percent of GDP in 2000, fluctuated between 9.8 and 11.8 percent throughout the rest of the decade, and attained its highest point at 42 percent in 2011. However, this investment bump was short-lived, as capital investment declined by 15 percent of aggregate output by 2012. The 2017 GDP growth rate (3.7 percent) was dismal in comparison with the 2016 rate (6.1 percent) after a recovery from an abysmal performance in 2015 (-20.6 percent), with agriculture contributing 55.1 percent of GDP, services 36.6 percent, and manufacturing 9.3 percent. Growth patterns within the service sector may be described as consistent with subregional economies such as Guinea and Liberia, which recorded 42.9 percent and 41.9 percent of GDP respectively.

A growth diagnostic confirms that the economy has remained broadly undiversified and susceptible to fluctuations. It has remained especially vulnerable to external shocks, as in the case of the twin crises of the Ebola disease outbreak and the iron ore price decline of 2014–2015 (during which gross domestic product growth contracted to negative 20.5 percent in 2015 from a growth rate of 4.6 percent in 2014).

Agriculture has continued to make up the largest share of gross domestic product (GDP), estimated at 55.1 percent in 2017, followed by services at 36.6 percent, and industry at 9.3 percent. Aggregate spending of the economy mainly comes from private consumption and remains larger than what the whole economy produces. Economic growth has generally been driven by export-led capital-intensive mining over the last eight years. Sustainable growth will require de-concentration of productivity growth in capital-intensive industries such as mining, with its limited capacity to generate jobs, and will emphasize raising productivity in sectors where most of the labour force is found (e.g. agriculture). Domestic revenue averaged around

12.5 percent in the last decade, well below the African average of 18 percent. Yet public expenditure has been increasing, driving up the fiscal deficit from 1.9 percent of GDP in 2013 to an average of 11.4 percent in 2016 and 2017 (including grants). Additionally, the external debt stock increased from US\$1.04 billion in 2013 to \$1.51 billion in 2017 and further to \$1.53 billion in June 2018 (Source SLMTNDP 2019-2023). Table 2 shows the macro-economic and population profile.

Table 2: Macro-economic and population profile

Macro-economic and population profile ¹	
GDP (USD) (billions) (2018)	4.09
GDP per capita (USD) (2018)	534
GDP growth (annual %) (2018)	3.4%
Inflation, GDP deflator (annual %) (2018)	13.4%
Agriculture, forestry and fishing value added (% of GDP) (2018)	59%
Industry (including construction) value added (% of GDP) (2018)	5%
Services value added (% of GDP) (2018)	32%
Foreign Direct Investment, net inflows (Balance of Payments, current USD) (millions) (2018)	218
Merchandise exports (USD) (millions) (2018)	826
Merchandise imports (USD) (millions) 2018)	1429
Country population (2018)	7.65
Poverty headcount ratio at national poverty lines (% of population) (2017)	52.9%
Labor force participation rate, total (percentage of total population ages 15+)	58%
Urban population growth (annual %) (2018)	3.1%
World Bank ease of doing business ranking (out of 190 countries) (2019)	163
Total External Debt Stocks	1,712.9
Total Public Debt (as % of GDP) (2018)	60.9%

¹World Bank Development Indicators: <https://databank.worldbank.org/embed-int/CountryProfile/id/b450fd57>

2.6. Health System Analysis

2.6.1 Organizational structure of the health system

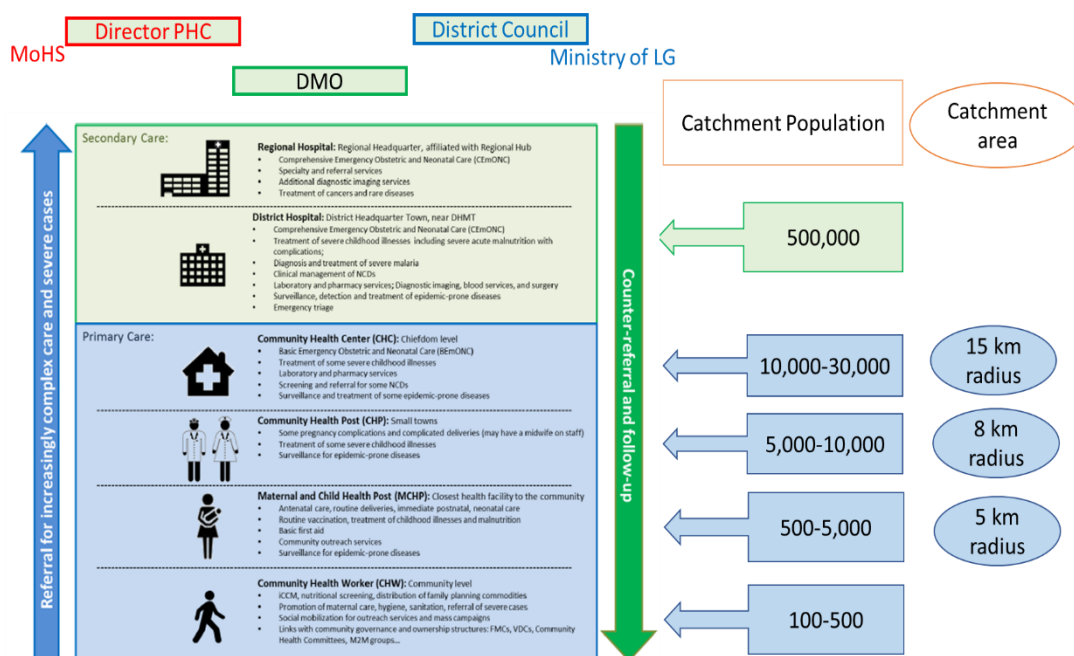
The health sector in Sierra Leone is public and private. The public sector comprises Sierra Leone health system including regulatory bodies, Health development and implementing partners and Teaching Hospitals. The private sector is made up of faith-based and private-for-profit health institutions.

The Sierra Leone health system is a three-tier health delivery system of primary, secondary and tertiary levels. The primary health care level is the sub district level involving Peripheral Health Units (PHUs) with the extended community health workers' (CHW) programme. The district health system encompasses both public and private hospitals, peripheral health units and community health programs. Each district has a hospital which provides secondary care services. It serves as referral hospital for the PHUs. It is headed by a Medical Superintendent who is a medical doctor and a Matron. The District Health Management Teams (DHMTs) headed by a District Medical Officer (DMO), are responsible for the implementation of the national health policies, planning, coordination and management of health service delivery in collaboration with stakeholders. The tertiary level comprises of referral and teaching hospitals situated at regional headquarter towns and they serve as the referral level facility for secondary care and run by general practitioners and specialists. There are three regional hospitals based in the provinces (Bo, Makeni and Kenema) receiving referrals from districts and providing outreach support to districts in Sierra Leone. In addition, there are five (5) tertiary facilities in the Western Area.

First line PHUs are further sub-classified into three levels : Maternal and Child Health Posts (MCHPs) are situated at village level for populations of less than 5,000. They are staffed by maternal and child health (MCH) aides who are trained to provide: antenatal care, supervised deliveries, postnatal care, family planning, growth monitoring and promotion for under-five children, immunisation, health education, management of minor ailments, and referral of cases to the next level. The MCH aides are supported by a network of volunteer Community Health Workers (CHWs). The updated Basic Package of Essential Health Services (2015) prioritizes improving the quality of health care delivery with special emphasis on high impact maternal and child health interventions and observance of universal precautions. Community Health Posts

(CHPs) are at small town level with populations of between 5,000 and 10,000 and are staffed by State Enrolled Community Health Nurses (SECHNs)/midwives and MCH aides. They provide the same types of services that are provided at the MCHPs but they also include prevention and control of communicable diseases and rehabilitation. They refer more complicated cases to the next level of health care, the Community Health Centres. Community Health Centres (CHCs) are located at Chiefdom level, usually covering a population ranging from 10,000 to 20,000 and staffed with a Midwife, Community Health Officer (CHO), SECHN, MCH aides, an Epidemiological Disease Control Assistant and an Environmental Health Assistant. They provide all the services provided at the CHP level in addition to environmental sanitation and supervise the CHPs and MCHPs within the Chiefdom.

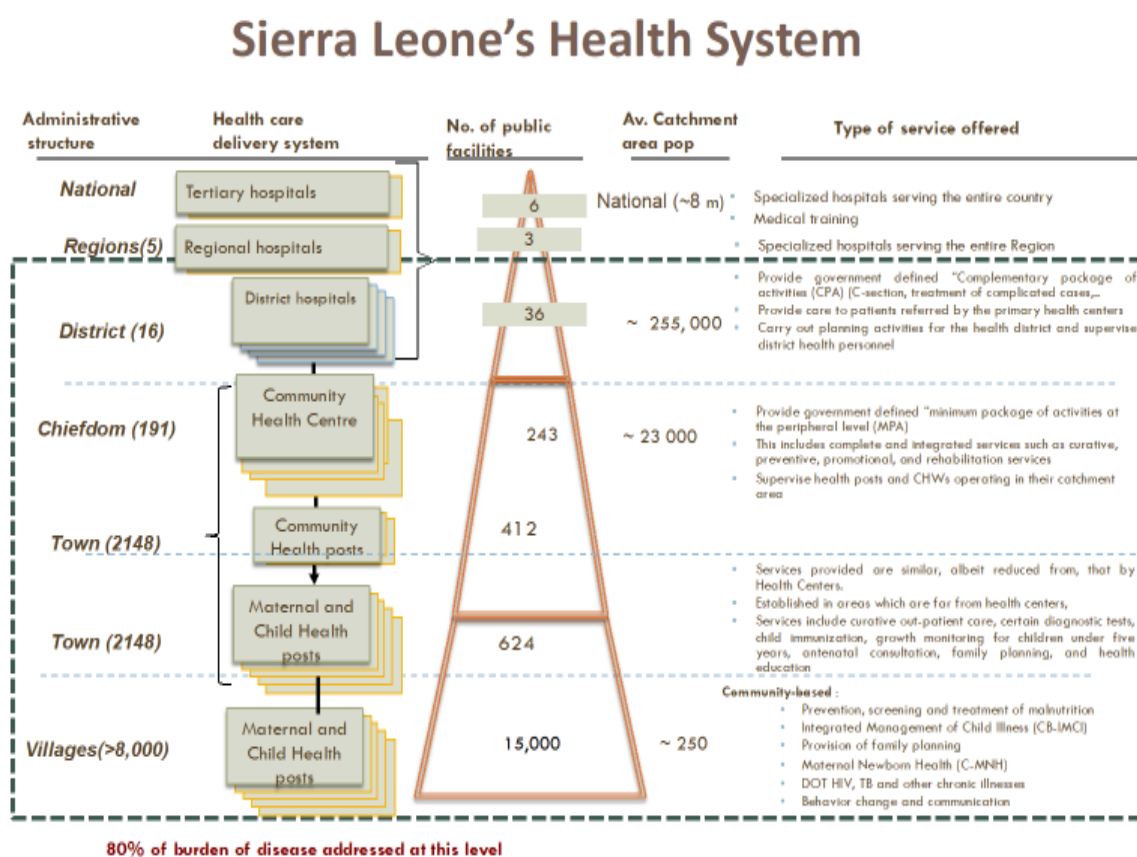
Figure 3: Level of Service Delivery in Sierra Leone (BPEHS 2015-2020)



The country is served by a network of 1,225 public and private health facilities, including 40 hospitals. There are a total of 40 hospitals in the country, of which 23 are government owned with the rest owned by private, non-governmental and faith based organizations. There are 1,185 peripheral health units across Sierra Leone : 577 MCHPs (49% of all PHUs), 343 CHPs (29% of all PHUs) and 265 CHCs (22% of all PHUs) (Reference. ⁸Health Sector Recovery and Resilient Plan).

The health sector had adopted an integrated approach to delivery of health interventions. Access, quality and coverage of health service, preventive care, clinical care and emergency services are all important aspects of health service delivery system. As part of the approach, public health interventions are packaged and delivered in communities as part of community health interventions and outreaches, in health centres and in district and national levels.

Figure 4: Sierra Leone's Health system

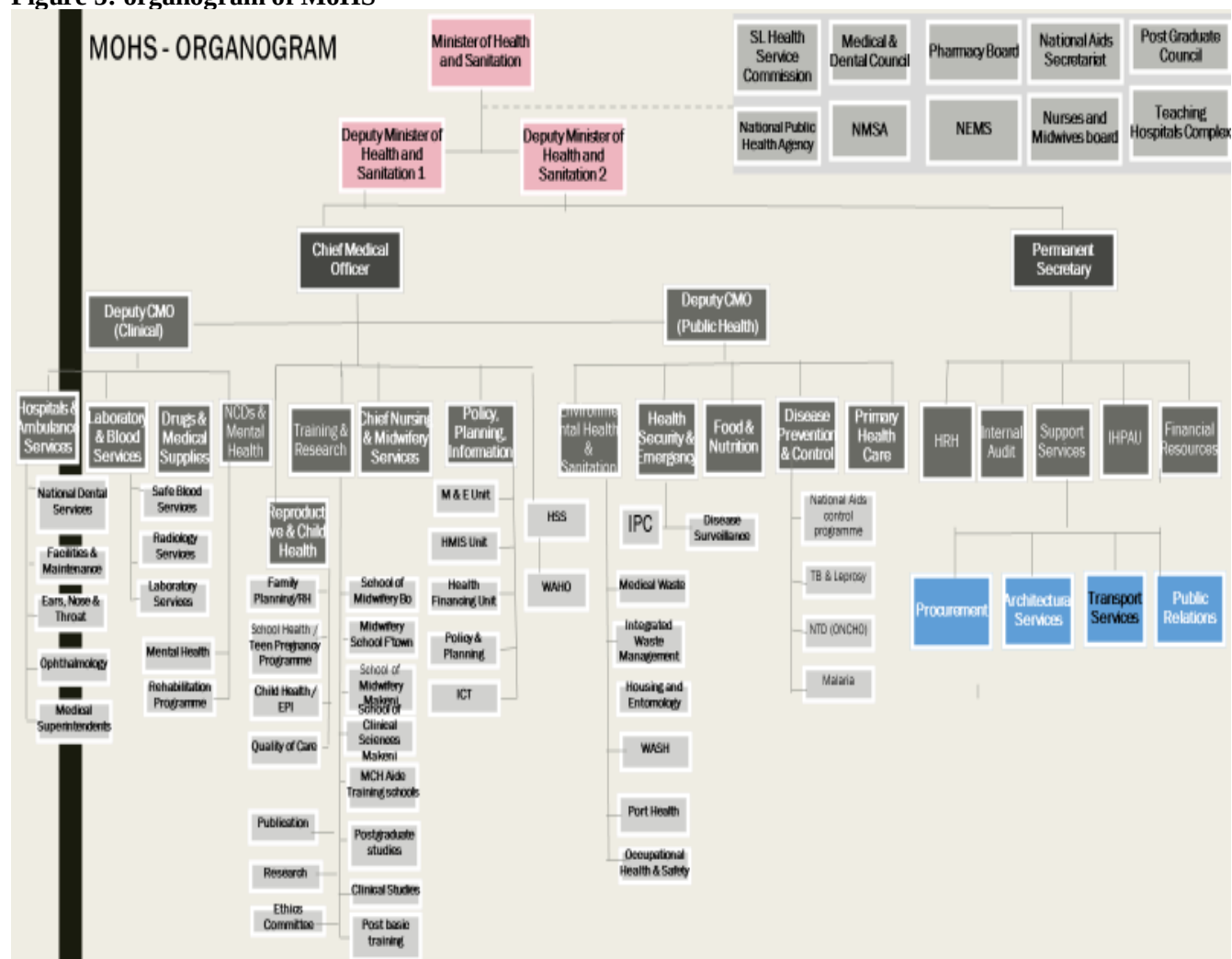


2.6.2 Organogram of the Ministry of Health and Sanitation

The leadership structure of the MoHS comprises of three levels: policy, technical guidance and operations. The policy level is helmed by a politically appointed Minister of Health & Sanitation and his/her deputies. The administrative head and vote controller of the MoHS is the permanent secretary, and the professional head is the Chief Medical Officer, both of whom also operate at the policy level. The trio : political, administrative and professional heads are responsible for the performance of the ministry through ensuring that appropriate policies, including international

health regulations and strategies are effectively executed through the other levels. The next level is the technical guidance where directors and programme managers are running the different directorates and programmes. The Directors and Programme Managers support the policies and strategies developed at the policy level. At the operation level, the DHMTs, Hospital management and community health activities deliver both primary and secondary care. The operations level implement the policies and strategies of MoHS.

Figure 5: organogram of MoHS



2.6.3 Health status

A healthy population is among the most crucial prerequisites for the advancement of a nation. Along with education, health is a leading dimension of the human capital formation required for sustained GDP growth and the structural transformation of an economy. There has been some

progress over the years to improve access to affordable health care, both at policy and operational levels. Building on the post-conflict policy reforms, the Free Health Care Initiative launched in 2010 was a major initiative undertaken to improve health outcomes in Sierra Leone, and the government remains committed to sustaining the implementation of this initiative. Table 3 below provides trend in health-care service outcomes between 2008 and 2019.

Table 3: Selection of Demographic and Health Survey and Multiple Indicator Cluster Survey indicators – changes over time

Indicators	DHS 2008	DHS 2013	MICS 2017	DHS 2019
IMPACT INDICATORS				
Neonatal mortality rate (per 1,000 live births)	36/1,000	39/1,000	20/1,000	31/1,000
Infant mortality rate (per 1,000 live births)	89 /1,000	92/1,000	56/1,000	75/1,000
Under-five mortality rate (per 1,000 live births)	140 /1,000	156 / 1,000	94/1,000	122/1,000
Maternal mortality ratio (per 100,000 live births)	857 /100.000	1,165 /100,000	-	717/100,000
Prevalence of HIV (percent of pop. aged 15–49)	1.5 percent	1.5 percent	-	1.5 percent
Adolescent birth rate	-	125/1,000	101/1000	102/1,000
Total fertility rate	5.1	4.9	4.1	4.2

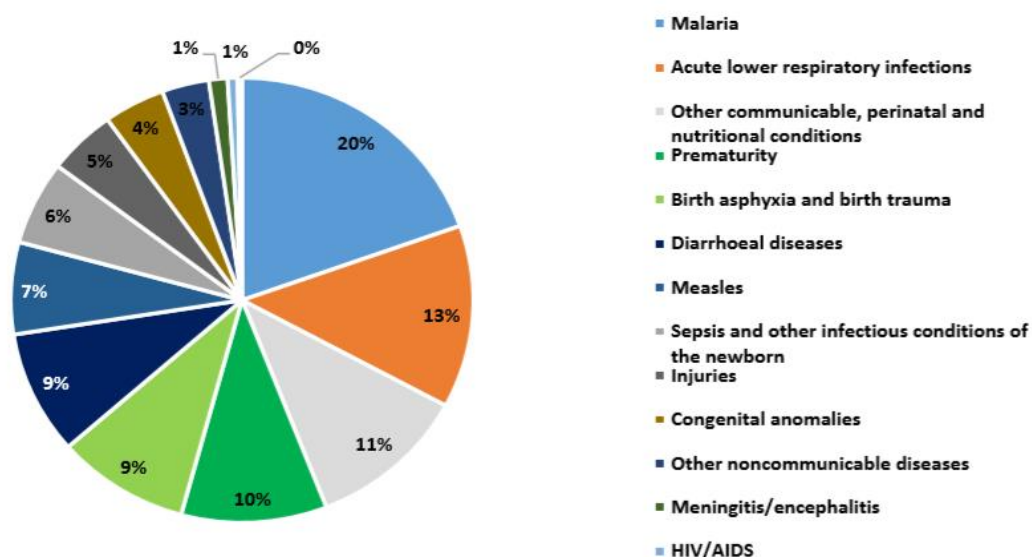
OUTCOME / OUTPUT INDICATORS : Reproductive, maternal, new-born, child, and adolescent health				
Percent births attended by skilled staff (public and private)	42 percent	54 percentmaternal and child health aide 14 percent, nurse 44 percent	81,6	86.9 percent
Percent pregnant women making 4 antenatal visits	> 50	76	77.5	79
Contraceptive prevalence rate (percent of women 15–49)	14 percent	16 percent	22.7 percent	24 percent
Unmet need among married women for family planning	28 percent	25 percent	26.3 percent	25 percent
Percent children < 1 year fully vaccinated	40	58	62.7	56
OUTCOME / OUTPUT INDICATORS: Nutrition				
Prevalence of stunting (underweight) (ht/age) among children 6–59 months (2SD)	21 percent	16 percent	11.7 percent	14 percent
Prevalence of stunting (ht/age) among children 6–59 months (2SD)	36 percent	38 percent	26.4 percent	30 percent
Prevalence of Wasting (ht/wt) among children 6–59 months (2SD)	10 percent	9 percent	5.1 percent	5 percent
OUTCOME / OUTPUT INDICATORS : Communicable diseases				
Percent children sleeping under long-lasting insecticide-treated net the night before	26 percent	49 percent	60 percent	59 percent

Source : Ministry of Health and Sanitation Directorate of Policy Planning and Information, National Health Sector Strategic Plan 2017–2021 and Multiple Indicator Cluster Survey 2017

The infant mortality rate dropped from 89 deaths per 1,000 live births in 2008 (DHS) to 56 deaths in 2017 (MICS), and to 75 deaths per 1000 live births (DHS 2019). The under-five mortality rate dropped from 140 per 1000 live births in 2008 (DHS) to 94 deaths per 1000 live births in 2017 (MICS) and to 122 deaths per 1000 live births in 2019 (DHS). Similarly, the maternal mortality ratio increased from 857/100,000 live births in 2008 (DHS) to 1,165/100,000 in 2013 (DHS) and declined to 717 / 100,000 live births in 2019 (DHS) thus giving Sierra Leone one of the highest maternal mortality ratios in the world.

In Sierra Leone, preventable non-communicable diseases, malnutrition, pregnancy, and newborn complications have been reported to account for nine in ten under-five deaths, with malaria taking the lead, followed by acute lower respiratory tract infections and other non-communicable, perinatal, and nutritional conditions (Figure 6).

Figure 6: Distribution of underfive deaths by disease



Source: Government of Sierra Leone Human Capital Development Project Report

For maternal mortality, the deaths are largely preventable, with the main cause being postpartum haemorrhage, which accounted for 33 percent of all deaths and 10 percent of unsafe abortions among adolescents. Teenagers account for almost half of all maternal deaths, which is not surprising, given the high adolescent birth rate of 125 per 1,000 live births.

The health sector is faced with myriad of challenges, including, but not limited to, poor infrastructure; poor conditions of service for health workers; poor governance and management of delivery systems; a weak human resource base; low per capita expenditure on health (the health allocation is below 15 percent of the national budget, which is the 2001 Abuja Declaration minimum); inadequate disease prevention; a poor control and surveillance programme; poor quality data; and limited access to sexual and reproductive health services.

The Government of Sierra Leone is determined to use its strong leadership and political will to increase health-care spending to 15 percent of the national budget, enhancing the implementation of the Free Health Care Initiative. Crucially, Sierra Leone is among the countries that may benefit from the World Bank's Human Capital Development Project, which is under formulation. This is expected to positively impact on health outcomes, as the health sector is one of the major sub-components for support, alongside education and social protection.

There is an opportunity for Sierra Leone to benefit from a demographic dividend in the coming years and reducing the fertility rate where increasing access to family planning will be key.

CHAPTER 3.0 MALARIA SITUATION ANALYSIS

3.1 Historical perspective of the malaria problem

The fight against malaria has been largely supported by international funders like the World Health Organization, Global Fund to name just two examples. The World Health Organization has provided leadership in establishing international agendas through the Millennium Development Goals and now succeeded by the Sustainable Development Goals. These development goals have included aspirations such as the reduction of malaria-related mortality, especially in sub-Saharan Africa.

Although the Abuja Declaration advocate for African countries to spend at least 15% of their national budgets on health, not many countries have honoured this ambitious but necessary milestone. In the absence of this commitment by African governments, the international partners have augmented the sometimes-limited efforts of individual governments in reducing the malaria menace.

The World Health Organization has provided the following facts about the magnitude threat of malaria in its 2019 report: (WHO World malaria report: 2019).

Since 2000 :

- More than 7 million deaths and 1 billion cases have been averted thanks to a committed global effort to increase access to basic protection and treatment.
- At least 11 endemic countries in Africa successfully cut malaria cases by 50% or more.
- Global malaria deaths have been reduced by 47% and by nearly 55% in Africa alone. The current situation.
- Thanks to global investment and action, 600,000 lives and 100 million cases were saved in 1 year.
- Globally, over 228 million cases causing 405,000 deaths in 2018, compared with 231 million cases and 416,000 deaths in 2017.
- Malaria kills a child every 2 minutes.
- Over 90% of the malaria burden is located in sub-Saharan Africa

Sierra Leone National Malaria Elimination Strategic Plan 2021-2025

- 70% of these deaths are of children under 5.
- In Africa, access to services is still low:
 - 1 in 5 pregnant women received 3 or more doses of preventive therapy.
 - Less than 50% of children with fever receive diagnosis and treatment from trained health worker.
 - Only 50% of at risk individuals sleep under mosquito net.
- Malaria continues to be a block to all forms of development
- Malaria costs the African continent an estimated \$US 12 billion in direct losses².
- Achieving the goal of malaria elimination by 2030 would result in an estimated \$2 trillions boost to the global economy³.

2 • www.malariafreefuture.org/malaria

3 • <https://www.malariabizalliance.org/about>

3.2 History of Malaria Programme in Sierra Leone

Summary of Post-Independence Malaria Interventions & Achievements

- ❖ In 1961, country gained Independence from Britain;
- ❖ In 1964, Malaria Control Unit (MCU) staff integrated into other sanitary departments WHO-19 pre-elimination project in Freetown and Western Region starting with detailed epidemiological surveys and capacity review; vector control not initiated, focus on increasing access to CQ for fevers and by 1967 limited Chlorquine (CQ) prophylaxis in school children;
- ❖ In 1979-1982, CQ chemoprophylaxis of communities in Bombali & Makeni northern districts;
- ❖ In 1991, Civil war resulted in large scale population displacement and lack of any coordinated malaria control;
- ❖ In 1993, Trials of ITN and malaoprim (dapson + pyrimethamine) in area near Bo;

- ❖ In 1994, The Ministry of Health and Sanitation with technical support from WHO established the National Malaria Control programme within the Directorate of Disease Prevention and Control.
- ❖ In 1998 the World Health Organization launched a Global Roll Back Malaria Initiative against malaria; Since 1998 - Sierra Leone committed itself to the Roll Back Malaria (RBM) Initiative;
- ❖ In April 25th, 2000 – Sierra Leone became a signatory to the Abuja Declaration by African Heads of State, as part of the Roll Back Malaria initiative and its plan of action. Sierra Leone also subscribes to the global MDGs and Abuja targets to reduce malaria morbidity and mortality and therefore reduce human suffering, socio-economic loss and promote economic development and consequently the country drew a National Health Policy (MoHS 2002), which considered malaria control as a key priority.
- ❖ In 2002/2003, the Ministry of Health and Sanitation and partners conducted a study on Chloroquine (CQ), Sulphadoxine+Pyrimethamine (SP), and Amodiaquine (AQ) in selected districts which was validated by WHO and MoHS. The results of the study were as follow: Chloroquine = 39.5%-78.8% failure rate, SP = 17.6%-46.1% and Amodiaquine = not available (Source: F. Checchi et al. Evidence basis for antimalarial policy changes in Sierra Leone, February 2005).
- ❖ In 2003, Insecticide treated tarpaulins piloted for refugee camps in Kenema province;
- ❖ In 2004, Sierra Leone developed a National Malaria Control Strategic Plan (2004-2008) based on RBM principles of multiple interventions, involvement of all stakeholders and evidence-based interventions with the goal to reduce malaria morbidity and mortality in Sierra Leone. Key interventions promoted in the new RBM Plan included promoting homebased care, use of Insecticide Treated Nets (ITN) and Long-Lasting Insecticide Nets (LLIN), improving case management in health facilities and use of appropriate chemoprophylaxis in pregnancy;
- ❖ In 2004, the Sierra Leone Ministry of Health Sanitation received support from the Global Fund Malaria Grant Round 4 which focused on strengthening malaria control interventions in 8 out of the 13 districts;
- ❖ In 2004, the National Malaria Control Programme changed its first line drug for the treatment of uncomplicated malaria from using Chloroquine (Monotherapy) to

combination therapy of ACTs as the drug of choice for the management of uncomplicated malaria. The revised policy made provision for the use of injectable quinine for the treatment of severe malaria and Sulphadoxine+Pyrimethamine for intermittent preventive treatment in pregnant women in their second and third trimesters;

- ❖ In 2004, IPTp policy was introduced, two SP doses following quickening;
- ❖ In 2005, 5% of children slept under an ITN;
- ❖ In 2006, ACT replaced CQ as first line treatment after policy decision in 2004;
- ❖ In 2006, Mass free ITN campaign mounted by MSF in Bo and Pujehun districts distributing 65,000 nets;
- ❖ In 2006, November, national free mass LLIN distribution for children under one year alongside measles vaccine campaigns distributed over 1.1 million nets;
- ❖ In 2008, 600,000 ITN distributed routinely through ante-natal and EPI clinics since 2002;
- ❖ In 2008, 26% of children slept under an ITN;
- ❖ In 2008, Global Fund approved Round 7 malaria financing;
- ❖ In 2010, National Malaria Strategy Plan (2011-2015) launched, to reduce by 50% and 75% by 2015, mortality and morbidity due to malaria by 2015;
- ❖ In 2010, IRS only in selected chiefdoms of Bo (5/8 chiefdoms), Bombali (4/7 chiefdoms), Kono (5/8 chiefdoms), and Western Area Rural districts (12/20 communities) With Lamda (Pyrethoid); 87% household coverage;
- ❖ In 2010, Susceptibility test conducted- Bendiocarb, Malathion, DDT, Permethrin, Deltamethrin and Lamdacyhalothrin susceptible at Bo, Kono, Makeni and Western Rural;
- ❖ In 2010, 30% of children slept under an ITN;
- ❖ In December 2010, mass free distribution of 3.2 million ITN;
- ❖ In 2010, Introduction of RDT test, treat and track policy;
- ❖ 2010, IRS piloted in four selected districts (Bo, Bombali, Kono and Western Area, Rural) achieving 97% household coverage;
- ❖ In 2011, Post-LLIN distribution campaign survey suggests 72% of children were sleeping under an ITN;
- ❖ In 2012, Global Fund approved Round 10 malaria financing;
- ❖ National policy to expand community health workers launched to support a Basic Package of Essential Health Services (BPEHS) including Community Case Management

of Malaria (CCMm); In 2012, ACT efficacy (AS+AQ and AL) above 94% in four sentinel sites (Bo, Kenema, Rokupa and Makeni);

- ❖ In 2013, 45% of children slept under an ITN;
- ❖ Large scale training of 6,515 CHWs in community-based malaria RDT use and treatment;
- ❖ In 2010, Laboratory test carried out to evaluate the susceptibility of the following insecticides for potential use in IRS pilot programme for four districts in Sierra Leone: Bendiocarb 1%, Malathion 5%, DDT 4%, Permethrine 0.25%, Deltamethrin 0.05% and Lambda-cyhalothrin 0.05%. The result concluded that all insecticides are still effective for use in the chosen districts.
- ❖ However, DDT seems to be taking longer than 24 hours to effect 100% mortality. The performance of Permethrine is also slow compared to the other Pyrethroids both at knock down and mortality. In the pilot IRS programme, it was recommended that first choice be Deltamethrin/Lambda-cyhalothrin, even though both Bendiocarbs and Malathion performed equally better, but their documented residual period would be negative especially for the pilot programme and with the transmission season for a year.
- ❖ In 2014, Ebola Virus Disease (EVD) outbreak struck Sierra Leone and had devastating effect on malaria control interventions;
- ❖ In June 2014, over 3.8 million LLIN distributed nationally despite Ebola epidemic;
- ❖ In 2014, IPTp 3 dose SP policy adopted but problems rolling out during Ebola epidemic;
- ❖ In 2014, December, Mass Drug Administration (MDA) for malaria with AS+AQ targeting population of 2,386,968 over 6 months of age in selected chiefdoms in the Bombali, Kambia, Koinadugu, Moyamba, Port Loko, Tonkolili and in all Wards in the Western Urban and Rural Areas;
- ❖ In 2015, January, Mass Drug Administration (MDA) for malaria with AS+AQ targeting population of 3.043 million over 6 months of age in selected chiefdoms in the Bombali, Kambia, Koinadugu, Moyamba, Port Loko, Tonkolili and in all Wards in the Western Urban and Rural Areas;
- ❖ In 2016, WHO makes final declaration that Sierra Leone is Ebola free on the 17th March.
- ❖ In 2016, National Malaria Strategic Plan 2016-2020 launched

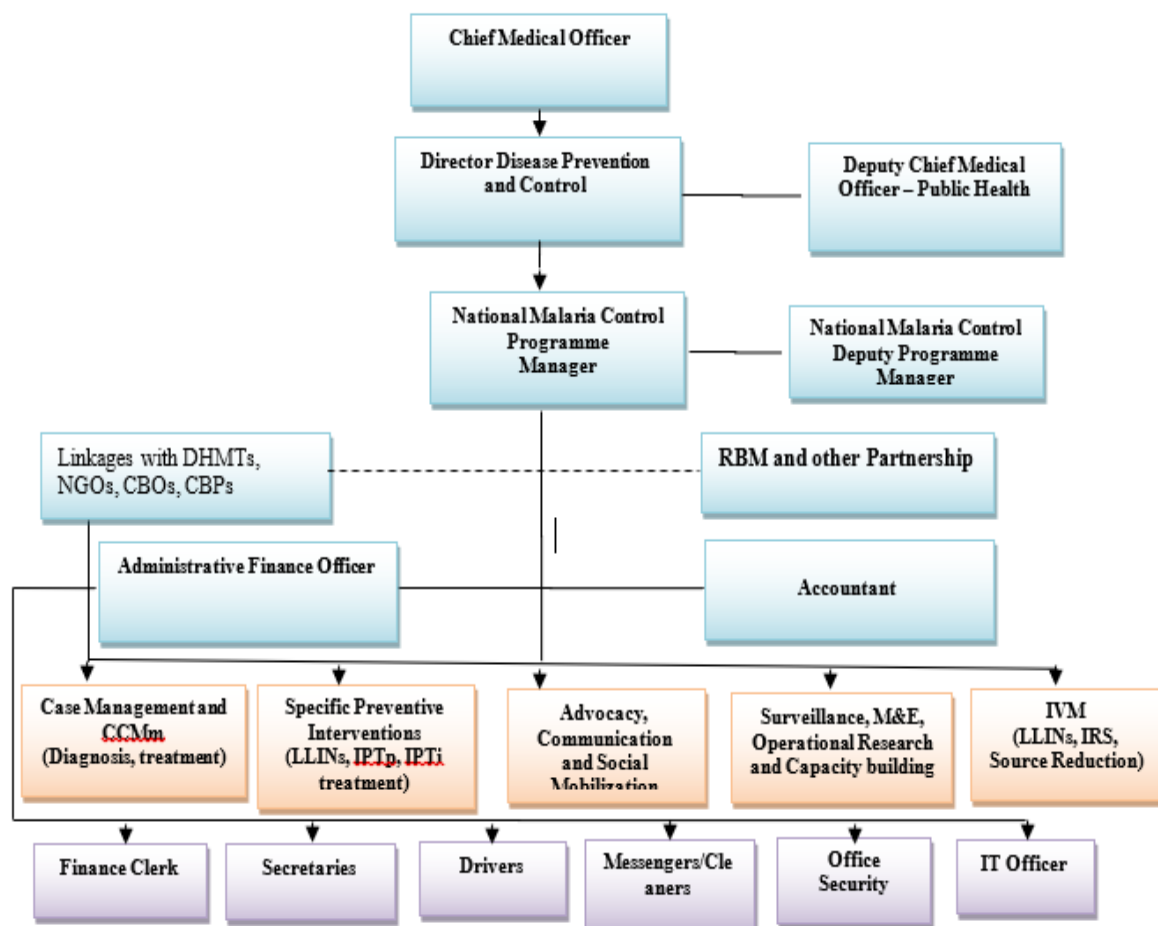
- ❖ In 2016, Third Malaria Indicator Survey conducted
- ❖ In 2017, Insecticide Resistance Monitoring and Management Plan (IRMMP) 2017-2020 developed
- ❖ In 2017, National Mass distribution campaign of 4.2 million free LLINs
- ❖ In 2017, Ministry of Health and Sanitation launches Emergency Triage Assessment and Treatment (ETAT+) programme in all districts to administer paediatric care, including treatment for malaria
- ❖ In 2017, Fifth Multi-indicator cluster survey conducted
- ❖ In 2018, Global Fund approved SLE-MOHS Z-grant including malaria financing
- ❖ In 2018, IPTi strategy launched and rolled out nationwide.
- ❖ In 2018, Insecticide Resistance Monitoring of four classes of insecticides conducted
- ❖ In 2018, LLIN Durability monitoring conducted
- ❖ In 2019, Sierra Leone announced the roll out of its Zero Malaria Starts with Me campaign in April on World Malaria Day
- ❖ In 2019, Official opening of Sierra Leone's first vector-borne disease insectary and laboratory in Makeni.
- ❖ In 2019, Procurement of pyrethroid-piperonyl butoxide (PBO) nets for 2020 LLINs mass distribution campaign to address the problems related to insecticide resistance in Sierra Leone (due to strong resistance to pyrethroids in all sentinel districts).

3.3 National Malaria Control Programme

The NMCP is within the Directorate of Disease Prevention and Control of the Ministry of Health and Sanitation. It is headed by a Manager supported by technical staff, one Accountant, Finance Officer, support staff and two secretaries.

The mandate has been to plan, facilitate the implementation, coordination, supervision, and monitoring of malaria control activities in an integrated disease control approach. MOHS had a specific budget line item for Malaria that supported the implementation and monitoring of various control interventions such as LLINs, prompt and appropriate management of cases. In order to fulfill its role, the NMCP is organized into seven (7) thematic areas as shown in Figure 7 below.

Figure 7: NMCP Organogram of the National Malaria Elimination Programme.



To promote partnership, there is a broad based RBM Task Force Committee at the national level while there are District Health Management Teams at the sub-national levels.

3.3.1 Management of the National Malaria Control Programme

The National Malaria Control Program (NMCP) in the Ministry of Health and Sanitation plays the leading role in coordinating all implementation activities related to malaria by both development partners and the Ministry of Health. The National Malaria Control Programme is partnering with a number of relevant Directorates, programmes and units within the Health sector soliciting their input into malaria control. There is also improved collaboration with other ministries such as Education, Agriculture, Finance and Local Government as well as the CSOs and private sector even though there is room for improvement.

At the central level, the NMCP which is the only unit specifically dedicated to malaria and its related issues is headed by a Programme Manager, who is a Medical Officer with a postgraduate degree in Public Health. Sierra Leone malaria control programme also operates focal points covering all the 16 districts. All the district focal persons also double as focal persons for specific intervention areas such as case management, malaria in pregnancy etc. These constitute the core technical staff of the NMCP. The Programme has a team of administrative staff consisting of Secretaries, Accountant, Finance Officers and drivers.

There is no dedicated staff for Malaria Control Programme at the regional and district levels. Beyond the national level, focal persons are appointed at district level to exercise an oversight responsibility for malaria related activities. The focal persons usually don't have specific training in malaria control but they join other health workers during refresher trainings on case management or malaria in pregnancy. The organizational structure does not place these focal persons directly under malaria control neither do they receive any additional remuneration for the activities they perform. The turnover of malaria focal persons is on the increase over the past three years at district level.

At the facility level, health workers provide an integrated package of health interventions and are therefore not necessarily "malaria staff". However, provision is made to improve their competencies in malaria control interventions through standalone and or integrated trainings and refresher trainings.

At the community level there are Community Health Workers (CHWs) who have been trained to offer some basic services to the community members. Those services may or may not include malaria control activity (Reference for details the National Community Health Workers Policy and Strategy).

A section of the NMCP staff are permanent employees of the Sierra Leone Health Service while a section was recruited under the Global Fund Grant to support programme implementation at the national level and are therefore not on the government pay roll.

There is a general shortage of trained manpower at all levels of the health system. In a bid to improve the situation, the Sierra Leone government has embarked on a programme of expanding

the current training institutions to produce more qualified trained health staff. The NMCP, like any other programme within MoHS, is also affected by staff shortage as seen in table 5. Every unit within the NMCP is short of the requisite staff and coupled with turnover of district focal persons including CHWs, the manpower shortage has implications on the overall programme performance.

Table 4: Malaria Control human resource plan

No.	Area of Work	Staffing Needs	Occupied	Gap
1	Programme Management			
1.1	Programme Manager	1	1	0
1.2	Deputy Programme Manager	1	1	0
1.3	Senior Accountant	1	1	0
1.4	Finance Officer	1	1	0
1.5	Procurement Officer	1	0	1
1.6	PSM Programme Officer	1	1	0
1.7	Deputy PSM Programme Officer	1	0	1
1.8	Store Officer	1	1	0
1.9	Store Assistant	1	1	0
1.10	Administrator	1	1	0
1.11	Administrative Assistant	1	1	0
1.12	Office Assistant	4	3	1
1.13	Drivers	10	8	2
1.14	Security Officers	6	5	1
1.15	IT Officer	1	0	1

2	Case Management			
2.1	Case Management Lead	1	1	0
2.2	Case Management Officers	4	2	2
2.3	Laboratory Technician (Microbiologist) Focal Person	1	0	1
3	Integrated Vector Management			
3.1	Medical Entomologist	2	0	2
3.2	Technical Officers (Entomology)	16	1	15
4	Surveillance, M&E			
4.1	Epidemiologist	2	0	2
4.2	M&E Specialist	1	1	0
4.3	M&E Officers	4	3	1
4.4	Assistant M&E Officers	4	3	1
4.5	Data Manager	2	0	2
4.6	Research Officer	1	0	1
5	Malaria in Pregnancy			
5.1	MiP Focal Person	1	1	0
5.2	Assistant MiP Focal Person	1	0	1
6	Intermittent Preventive Treatment for Infants (IPTi)			
6.1	IPTi Focal Person	1	0	1
6.2	Assistant IPTi Focal Person	1	0	1

7	SBCC			
7.1	SBCC Specialist	1	0	1
7.2	SBCC Focal Person	1	1	0
7.3	SBCC Assistant	1	0	1
8	Partnership			
8.1	Partnership Focal Person	1	1	0

Source: Source: Sierra Leone Malaria Programme Performance Review Report 2020

The NMCP has strategic and annual work plans being developed based on sound scientific and operations data. Annual malaria control programme planning cycle included comprehensive consultation and participation at the Central and District levels to ensure alignment of resources with programme goals and feasibility of overall programme objectives.

All levels of the health system have access to programme performance data and rationale for best practices from which to make sound programme implementation decisions.

3.4 Epidemiological Profile

3.4.1 Malaria parasites

The parasites that cause malaria belong to the genus Plasmodium which contains five species namely: *P. Falciparum*, *P. vivax*, *P. ovale*, *P. malariae*, and *P. Knowlesi*. These species are found in different regions of the world in varying concentrations. Plasmodium falciparum is the main cause of malaria in Sierra Leone although *P. ovale* also accounts for some of the cases (Skolnik, 2021). For many years, chloroquine and sulfadoxine-pyrimethamine were the traditional drugs used for treatment of patients with malaria. However, due to increasing resistance of *P. falciparum*, Sierra Leone has adopted new approaches. Nowadays, depending on the severity of the infection and who is affected (e.g. pregnant women and or infants) newer drug combinations

such as artemether plus lumefantrine, artesunate+amodiaquine may be used for less complicated cases, while more severe cases require other combinations.

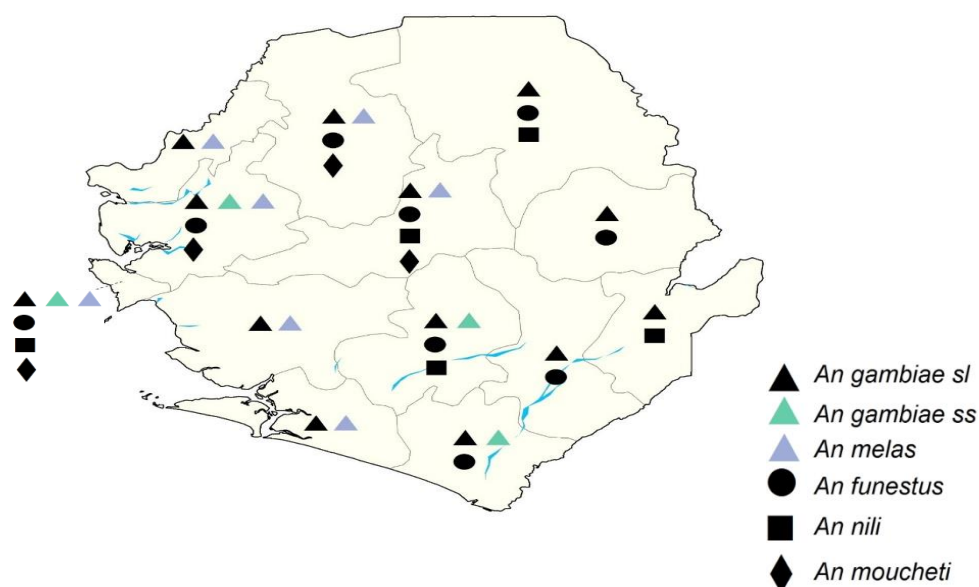
3.4.2 *Malaria vectors and their distribution*

The most dominant vector species for malaria in Sierra Leone is the *Anopheles gambiae*, although the *Anopheles funestus* and *Anopheles melas* are contributing culprits.

There is active malaria transmission occurs throughout the year. Mosquitoes are found everywhere in Sierra Leone and are known to be present in larger numbers in unsanitary locations where unattended ponds of water provide excellent breeding grounds for the vectors. Mosquitoes are largely nocturnal, and research shows their peak biting period to fall between the hours of 10:00 p.m. – 2:00 a.m. when most individuals are deeply asleep. Entomological studies are not routinely conducted but those available report Annual Entomological Inoculation Rates (EIR) of between 6.1 and 884.2. (Rogers & Snow, 2000).

The final entomological database contained 189 site/time specific reports of anopheline vectors in Sierra Leone, reported between 1898 and 2012 and for which the survey site was geo-located. The database includes site-specific records of some of the earliest malaria vector maps, developed by Christophers and Stevens (1900), and reported vectors from different sites during Sir Ronald Ross's visit in 1901 (Ross. *First progress report of the campaign against mosquitoes in Sierra Leone. Liverpool School of Tropical Medicine, 1901, Memoir 5, part 1, pp. 22*).

Figure 8: Recorded malaria vectors by district in Sierra Leone



Anopheles (An.) gambiae complex is ubiquitous across the country and members of the An. funestus group have been recorded across the country except for south-west and Port Loko district in the north.

Among the An. gambiae complex, only An. gambiae ss (both M (An. colluzzi) and S forms) and An. melas have been recorded in Sierra Leone. There are no reports of An. Arabiensis in Sierra Leone.

The furthest inland An. Melas has been reported is along the Rokel river².

An. nili group, An. moucheti group and An. hancocki have also been described in Sierra Leone, but only in small numbers.

Records since 1898 of other anopheline species, either non-vectors or considered incidental vectors of malaria in Sierra Leone identify the following species: An. barberellus, An. cinctus, An. coustani, An. domicolus, An. freetownensis, An. hargreavesi, An. marshalli, An. mauritanus, An. obscurus, An. paludis, An. quadriannulatus (of the An. gambiae complex), An. rhodesiensis, An. rufipes, An. smithii, An. squamosus, An. tenebrosus, An. theileri and An. Ziemanni.

Figure 9: Site locations of mosquito sampling sites for 189 surveys undertaken between 1898 and 2012

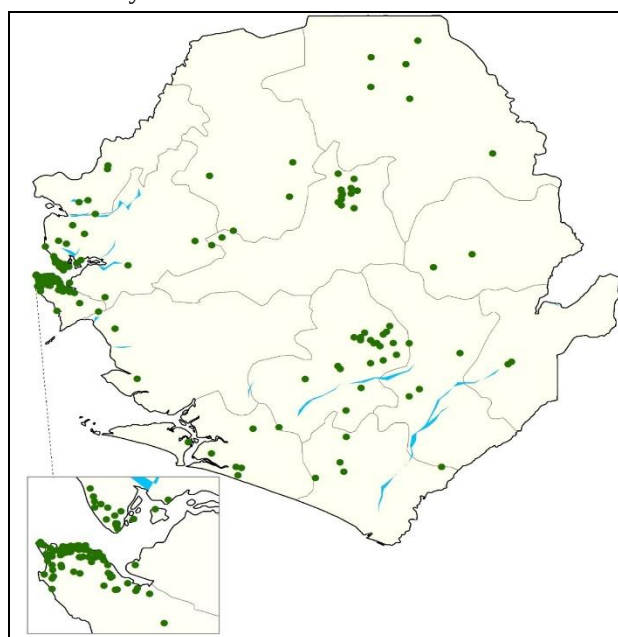
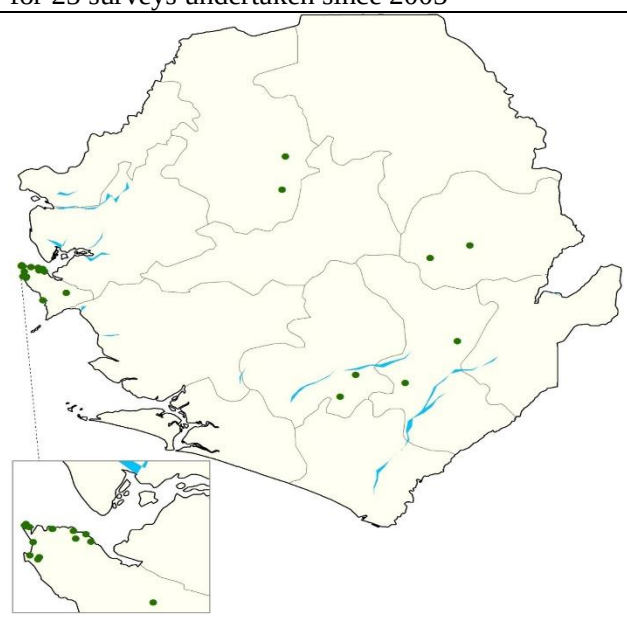


Figure 10: Site locations of mosquito sampling sites for 25 surveys undertaken since 2005



² RCM Thomson. Studies on the Breeding Places and Control of Anopheles gambiae and A. gambiae var. melas in Coastal Districts of Sierra Leone. Bulletin of Entomological Research, 1946 36: 185-252

An entomological data gap exists between 1993 and 2009, when no anopheline surveys were carried out. This period largely overlaps with the Civil War. Between 2005 and 2014 a total of 25 survey locations have been sampled.

Table 5: Current and historical species of malaria vector mosquitoes and their geographic distribution in Sierra Leone

Species	Presence confirmed ? (Y/N)	Method used to confirm species	Vector status (Main or Secondary)	Description of geographic distribution	Year Found
<i>Anopheles gambiae s.l.</i>	Y	Morphology	Main	Countrywide	1945, 1967, 2018
<i>An. gambiae s.s.</i>	Y	PCR/Chromosomal	Main	Countrywide	1946, 1993, 2013
<i>An. coluzzii</i>	Y	PCR/Chromosomal	Main	Countrywide	1946, 1993, 2013
<i>An. melas</i>	Y	PCR/Chromosomal	Secondary	Costal belt and along the Rokel river.	1946
<i>Anopheles funestus s.l.</i>	Y	Morphology	Main	Northern, Southern and Eastern Regions	1945, 1967, 2018
<i>An. moucheti</i>	Y	Morphology	Secondary	Mostly western and Northern regions	1945, 1967
<i>An. nili s.l.</i>	Y	Morphology	Secondary	Countrywide	1945, 1967
<i>An. coustani</i>	Y	Morphology	Secondary	Northern, Southern and Eastern Regions	1993, 2018
<i>An. ziemanni</i>	Y	Morphology	Secondary	Countrywide	1993, 2018

3.4.4 Susceptibility status of malaria vector to insecticides

Given the ubiquitous nature of malaria in Sierra Leone, vector control measures have included insecticide treated nets (ITNs), indoor residual spraying (IRS), larviciding, personal protection, and environmental sanitation.

The first susceptibility testing carried out in Sierra Leone in 2010 before the implementation of IRS indicated that malaria vectors were fully susceptible to pyrethroids (permethrin, lambdacyhalothrin and deltamethrin), carbamate (bendiocarb) and organophosphate (Malathion) with mortality rates of more than 98%. However malaria vectors showed reduced susceptibility to DDT. The follow-up survey carried out in 2016 and 2018 indicated malaria vectors were resistant to pyrethroids (permethrin, lambdacyhalothrin, alphacypermethrin, cyfluthrin, etofenprox and deltamethrin) and DDT (Figure 9&10). They were also resistant to Carbamate (bendiocarb) and to organophosphate (fenitrothion) in Kono and Western rural area. They however maintained their susceptibility to carbamate (bendiocarb) in Bombali and Bo and organophosphate (fenitrothion and pirimiphos-methyl) in Bo and Bombali and Malathion in Bo. The trend of susceptibility status of malaria vectors to insecticides in Sierra Leone in 2010, 2016, 2018 is shown in Figures 5 to 7. However, *An. gambiae* s.l was fully susceptible to chlorfenapyr and clothianidan countrywide in 2018 (Figure 8 & 9). High resistance intensity to alphacypermethrin and deltamethrin was observed countrywide with mortality of *An. gambiae* s.l. below 98% when exposed to 10 times the diagnostic dose (Figure 10).

The mortality rate observed with alphacypermethrin in the Northern Region (Gbanti Kamaranka), Southern Region (Jaima Bongor) and Eastern Region (Nimiyama) and with deltamethrin in Western Area Rural (Koya) after pre exposure to Piperonyl Butoxide (PBO) was higher than those not pre-exposed to PBO in 2018. However, the mortality rate with PBO pre-exposure was still below 98%. Therefore, the results indicate that monooxygenase-based resistance mechanism is partially involved but is not fully responsible for the resistance observed (Figures 11 to 20).

This rapid decrease in susceptibility status across sentinel sites in Sierra Leone has occurred after the scale-up of LLINs in the country and IRS with pyrethroid piloted in 2011. The current situation might be contributed by the cumulative effects created by the use of ITNs, which have been on-going since the 2002 and the use of insecticide in Agriculture. Similarly, the

introduction of IRS with lambdacyhalothrin in 2011 might have contributed to the current situation. Indoor residual spraying is commonly associated with the selection of pyrethroid resistance (Sharp et al., 2007; Protopopoff et al., 2013). Studies in Senegal and Liberia have also demonstrated increased frequencies of pyrethroid resistance after high LLIN usage (Ndiath et al., 2012, Temu et al., 2013). Use of insecticides in agriculture might have also contributed to the observed emergence of resistance (Diabate et al., 2002). The co-occurrence of pyrethroids and DDT resistance in *An. gambiae* mosquitoes may indicate the involvement of knockdown resistance mechanism (L1014F) that has already been documented in the country (De Souza et al., 2013).

Figure 11: The trend of pyrethroid resistance in malaria vectors from 4 sentinel districts of Sierra Leone for 2010, 2016 and 2018.

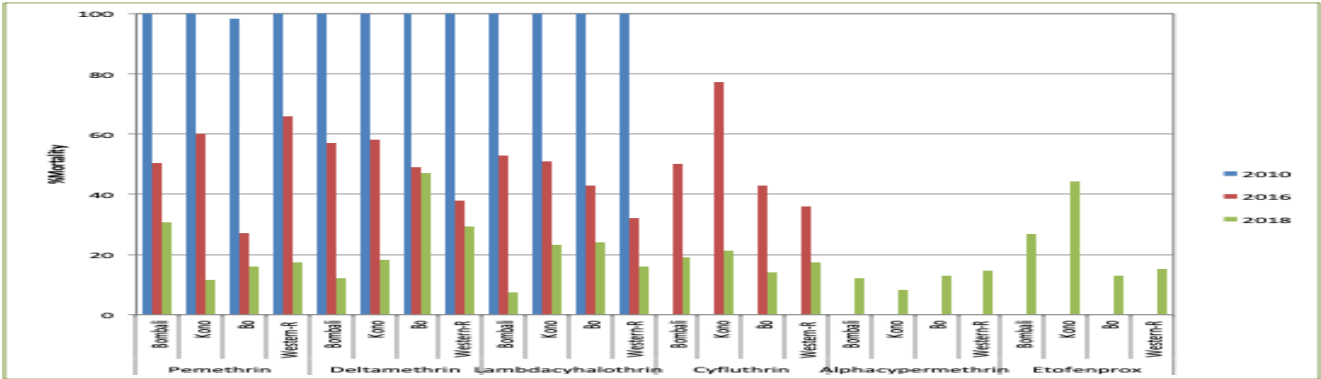


Figure 12: The trend of DDT, Bendiocarb and Fenitrothionresistance status in malaria vectors from 4 sentinel districts of Sierra Leone for 2010, 2016 and 2018.

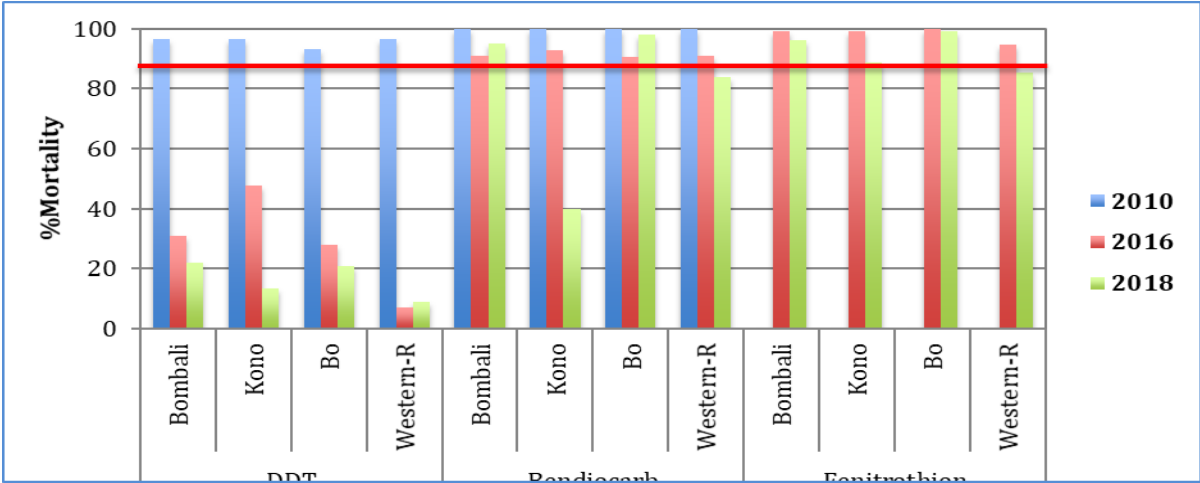


Figure 13: The susceptibility status of malaria vectors to Carbamates and Organophosphates in 2018.

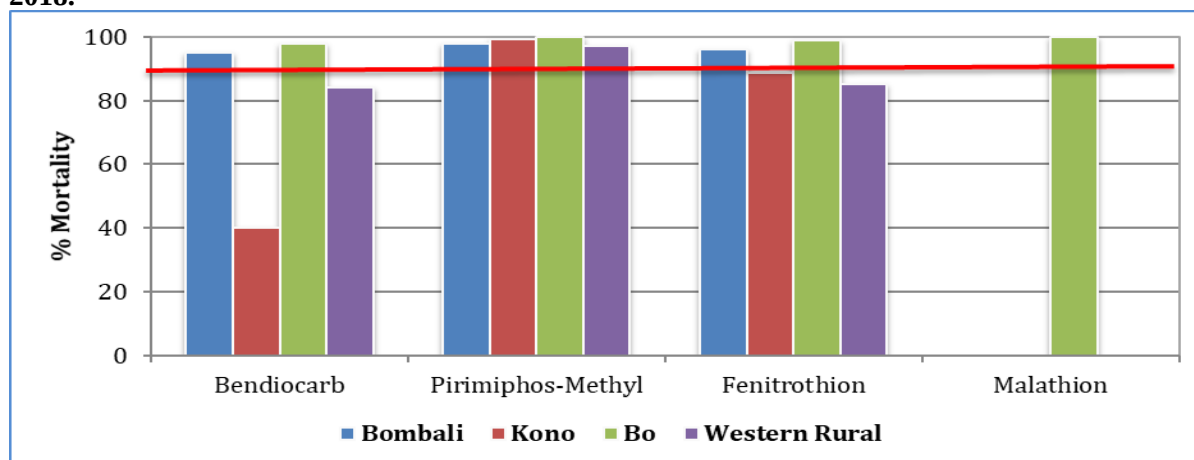


Figure 14: Susceptibility status of *An. gambiae* s.l. to Chlorfenapyr (100 µg/bottle) in October 2018

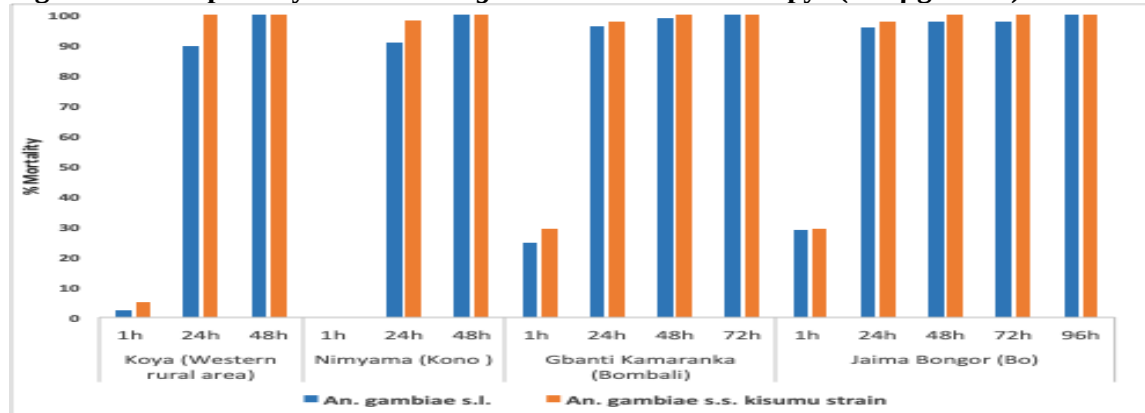


Figure 15: Susceptibility status of *An. gambiae* s.l. to Clothianidin (13.2 mg) in November 2018

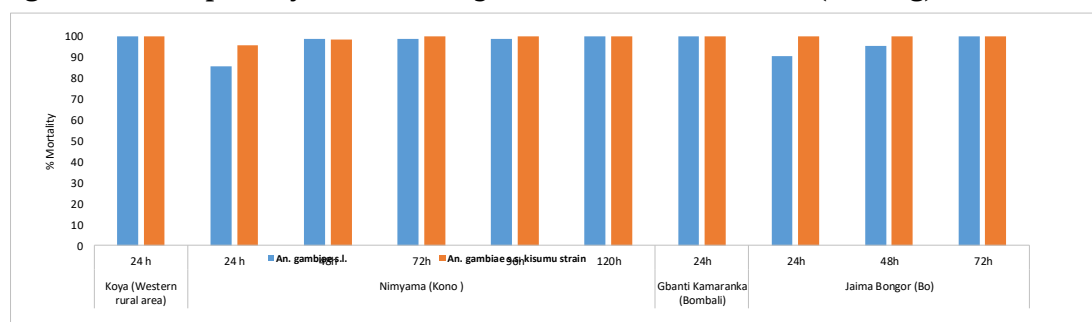


Figure 16: Susceptibility status of *Anopheles gambiae* mosquitoes exposed to 5x (62.5 µg/bottle) and 10X (125 µg/bottle) Alphacypermethrin

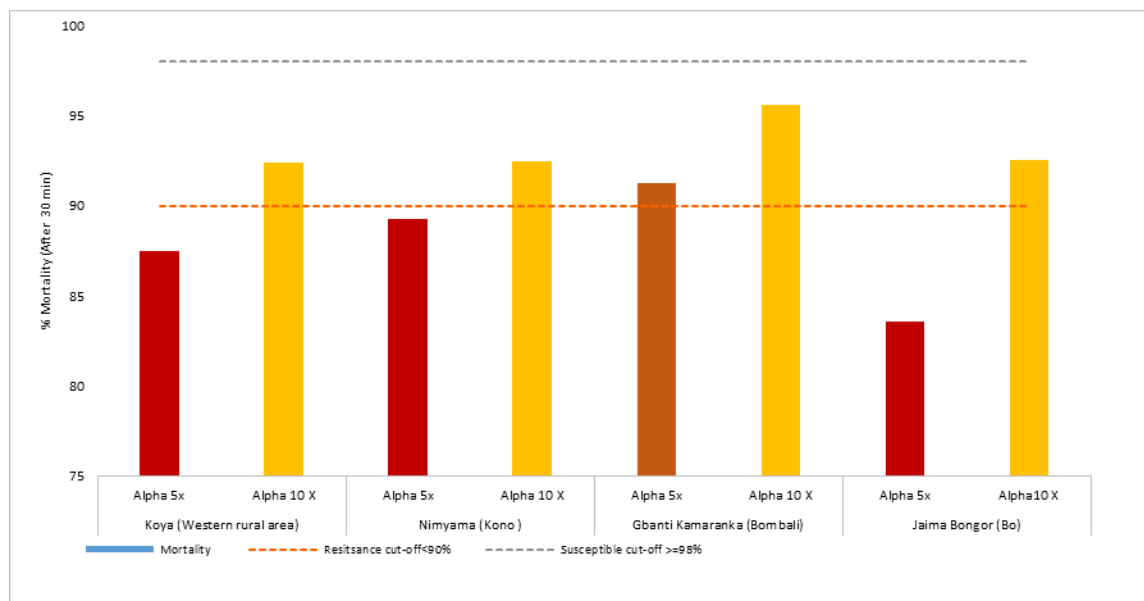


Figure 17: Susceptibility status of *Anopheles gambiae* mosquitoes exposed to Alphacypermethrin and PBO+Alphacypermethrin

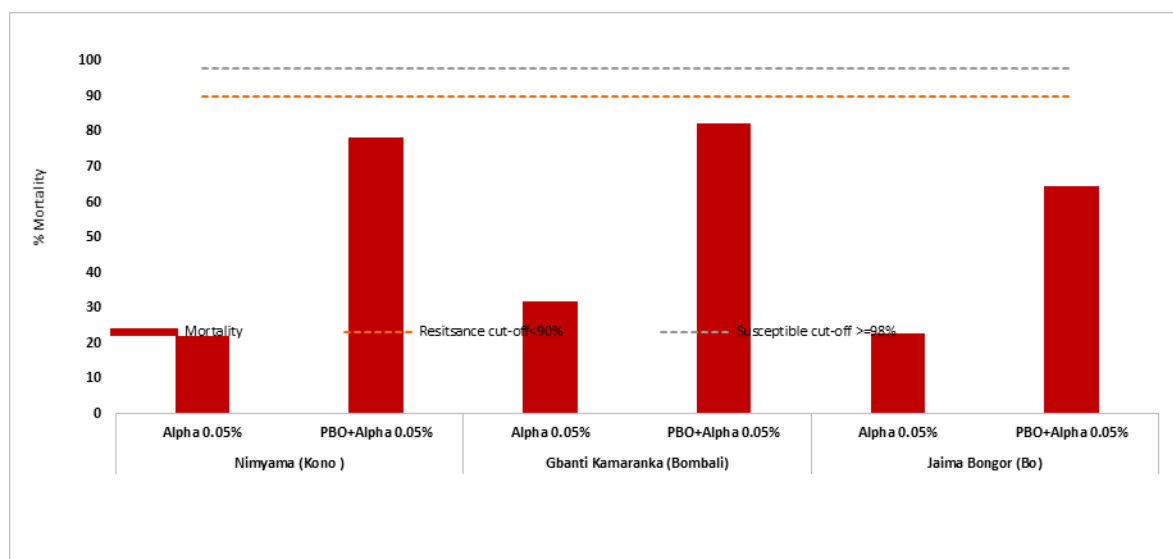


Figure 18: Susceptibility status of *Anopheles gambiae* mosquitoes exposed to Deltamethrin and PBO+ Deltamethrin

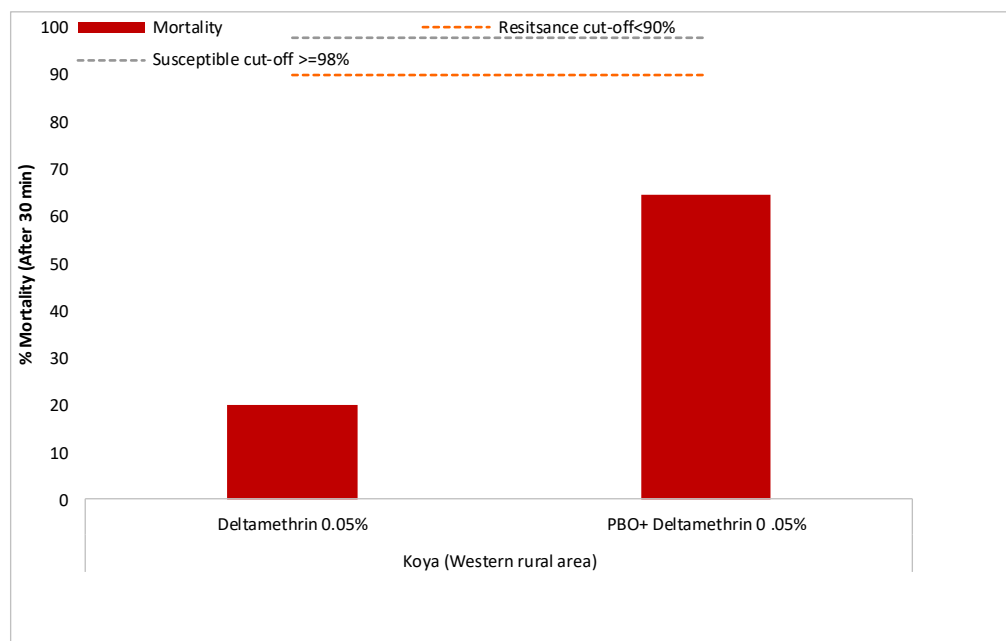


Figure 19: Susceptibility status of *Anopheles gambiae* mosquitoes exposed to Alphacypermethrin (x5) and PBO+Alphacypermethrin(x5)

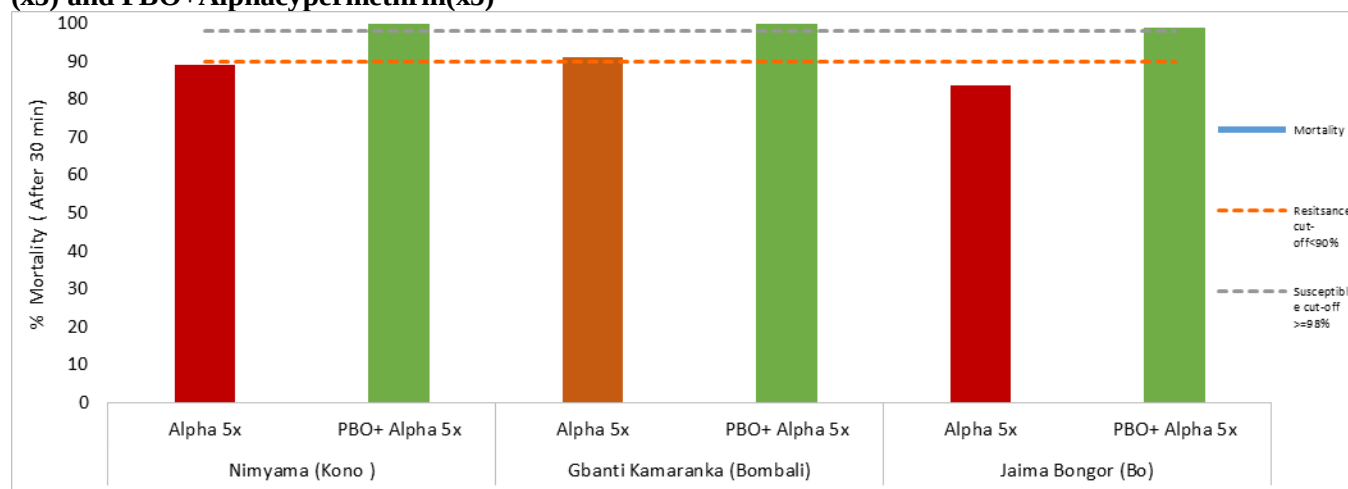
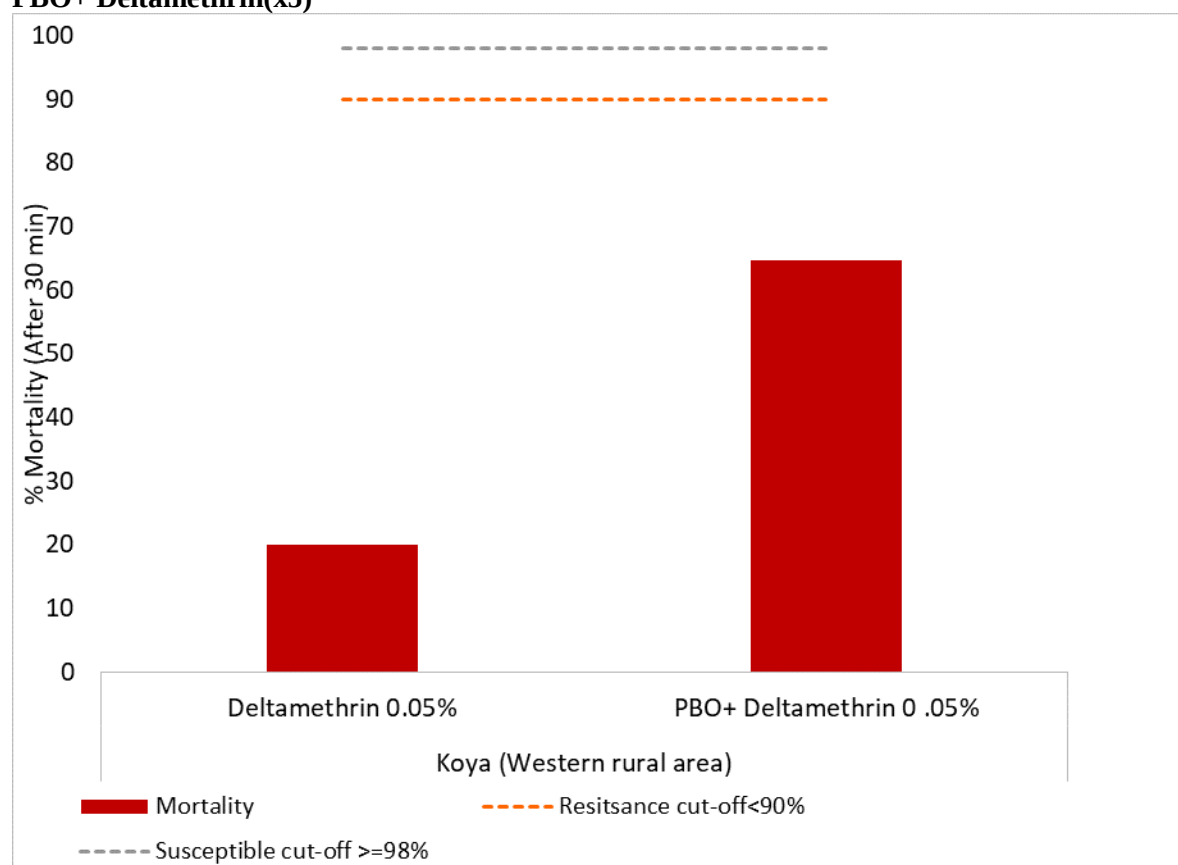


Figure 20: Susceptibility status of *Anopheles gambiae* mosquitoes exposed to Deltamethrin (x5) and PBO+ Deltamethrin(x5)



Mechanisms of insecticide resistance

The mortality rate observed with pyrethroid after pre-exposure to PBO was higher than those not pre-exposed to PBO as indicated in figures 11-14. However, the mortality rate with PBO pre-exposure was also still below 98%; which the WHO cut-off point for susceptibility. Therefore, the results indicate that monooxygenase-based resistance mechanism is partially involved but is not fully responsible for the resistance observed in all the provinces in Sierra-Leone. The knockdown resistance mechanism (L1014F) was previously documented in *An. gambiae* and *An. coluzzii* in Sierra Leone (De Souza et al., 2013). This year's samples are still being analysed for detection of resistance mechanisms

LLINs durability monitoring

In 2018 the LLINs durability monitoring was conducted so as to assess the attrition (net loss), physical integrity (number of holes and resulting physical condition of nets) and biological

efficacy against susceptible anopheles mosquitoes of nets distributed in 2017 mass campaign in four districts.

During this retrospective survey, 80.9% of LLINs distributed in 2017 were still present ; giving a mean net attrition of 19.1%. Their physical integrity was also assessed where, 43.3% (n=26) of the nets had no holes. Based on WHO pHI categories, 20 % (n = 12) were considered in “good” condition, 25 % (n = 15) were “damaged” while 11.7 % (n = 7) were “too torn”. Following WHO classification, 88.3% of the sampled nets were still in good serviceable condition (i.e. those without holes, good and damaged conditions). Factors that contributed to affect on net integrity was presence of rats in households and the type of the sleeping materials used. The biological efficacy of these LLINs will be done in the near future.

3. 2. 3. Population at risk and vulnerable groups

The entire population is exposed and living in stable malaria areas. As such, the entire populace is at risk of developing the disease and malaria accounts for about 40% of outpatient morbidity. It is therefore estimated that about 2,240,000 outpatient visits are due to malaria, of which about 1,000,000 patients are under five years. Pregnant women and under five children constituting 4.4% and 17.7% respectively of the current total population are the most vulnerable groups.

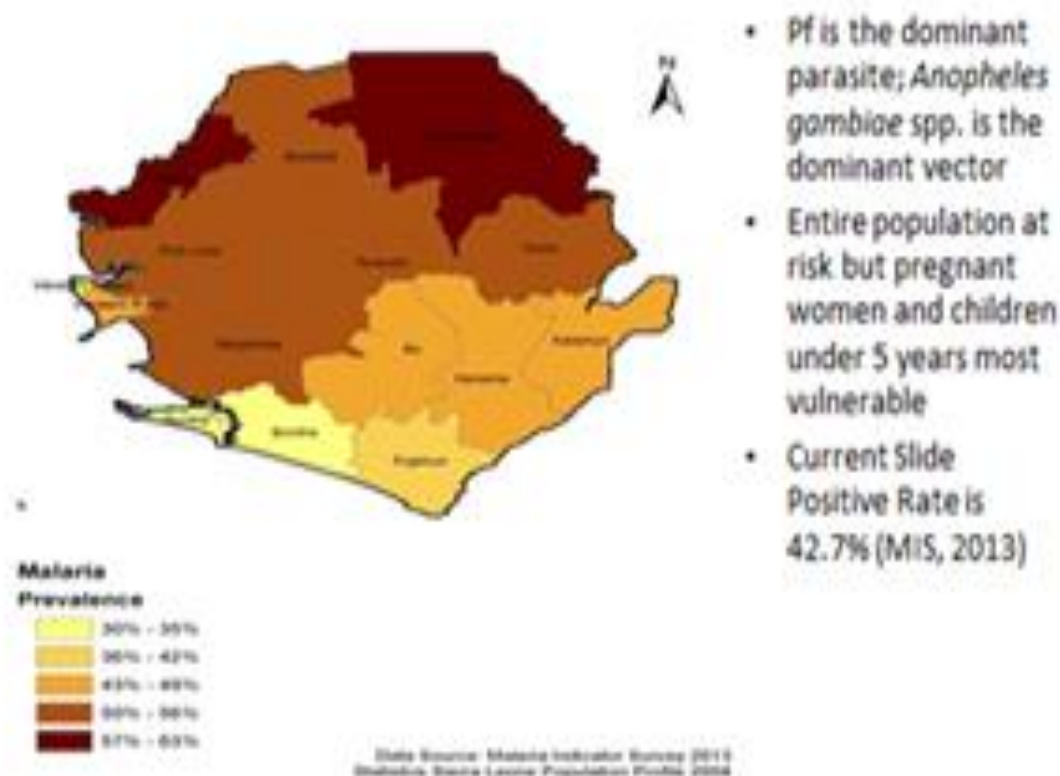
3.3.3. Dynamics of malaria transmission and level of endemicity

Malaria is endemic in Sierra Leone with stable and perennial transmission in all parts of the country. National prevalence data is limited to routine data collection and does not give the entire epidemiological picture as it only includes those cases seen at a health facility. Despite multiple national household surveys being carried out from 2005 to 2010 (MICS 2005, DHS 2008, MIS 2010), none of them collected information on parasitaemia.

The 2013 SLMIS is the first MIS that is inclusive of rapid diagnostic testing (RDT) and microscopy to determine the national malaria prevalence among children under five years of age. This survey revealed that, one-third (33%) of children under age 5 had fever during the two weeks preceding the survey, with a higher proportion of rural children (37%) than urban children (32%) having fever (MIS, 2013). When tested for malaria, 46% of the children age 6-59 months were positive based on Rapid Diagnostic Tests (RDTs). Analysis of the blood smears by

microscopy revealed a slightly lower prevalence of 43% of children tested positive for malaria as illustrated in figure 21 below.

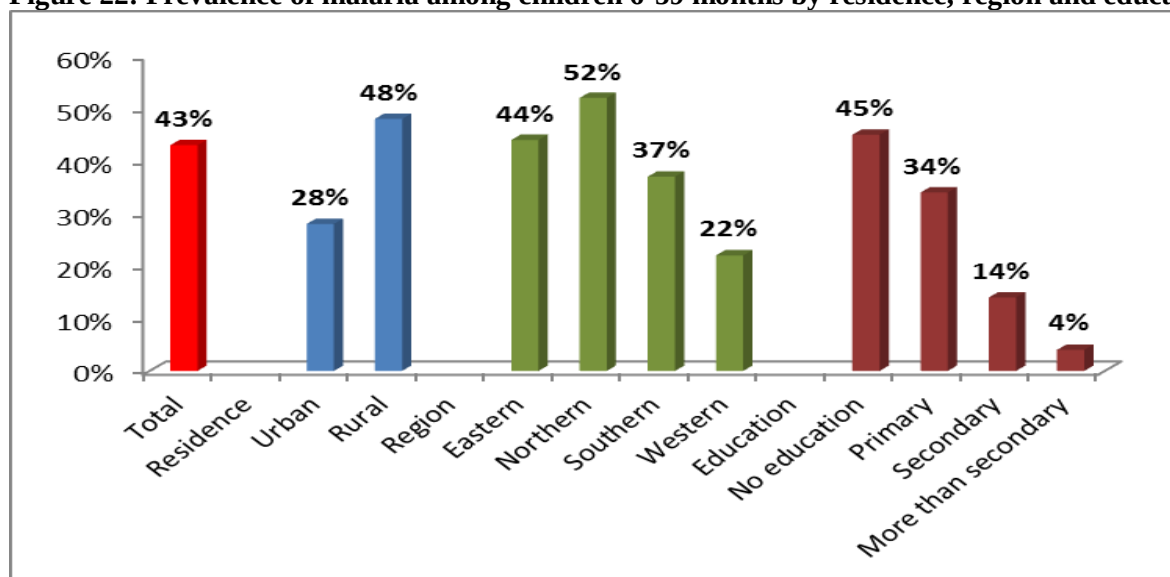
Figure 21: Malaria prevalence among children 6-59 months:



Regardless of which diagnostic test was used, malaria prevalence generally increases with age, does not vary greatly by gender, and decreases with mother's education level and with household wealth. Malaria prevalence measured by microscopy is almost two times higher in rural areas (48%) than in urban areas (28%). By region, malaria prevalence according to microscopy is highest in the Northern Region (52%) relative to the malaria prevalence in the Eastern Region (44%), Southern Region (37%), and Western Region (22%). Among the districts, the highest malaria prevalence is found in Kambia (61%) and the lowest is in Western Area Urban (19%).

Although, there is some improvement in malaria prevalence especially in the districts of south and western area, the rest of the country shows persistent high intensity of transmission in figures 20 and 21 below.

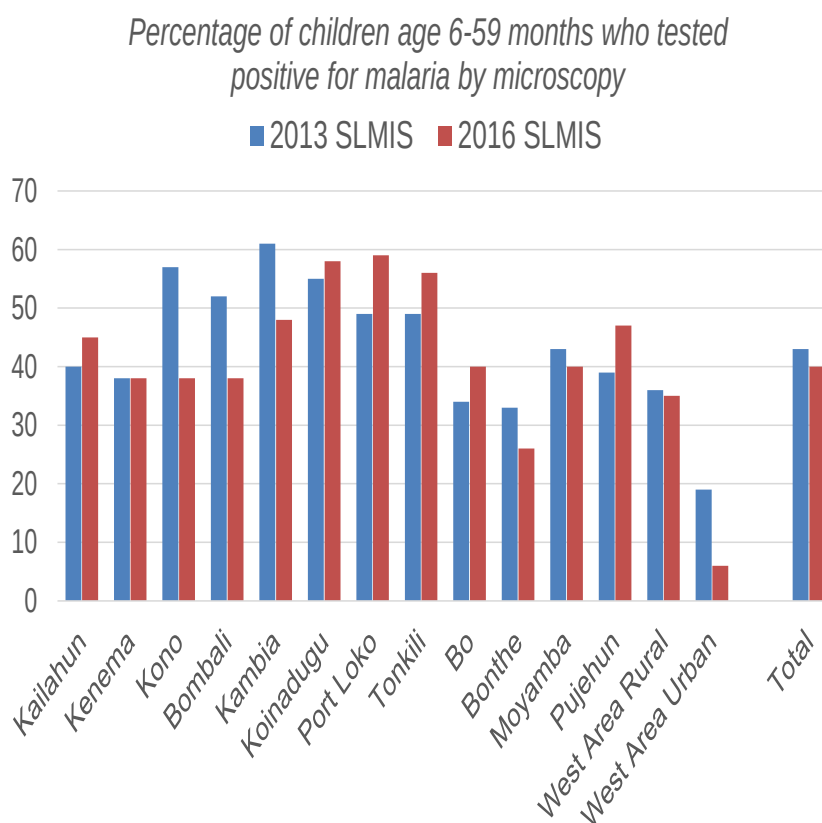
Figure 22: Prevalence of malaria among children 6-59 months by residence, region and education



Trends of malaria prevalence

National malaria prevalence has not changed significantly from the 2013 SLMIS to the 2016 SLMIS however, some district-level changes have occurred. Malaria prevalence declined from 57% to 38% in Kono, from 52% to 38% in Bombali, from 61% to 48% in Kambia and from 19% to 6% in West Area Urban. In Port Loko, malaria prevalence rose from 49% to 59% between the 2013 SLMIS and the 2016 SLMIS (Figure 21).

Figure 23: Trends in prevalence of malaria in children by district



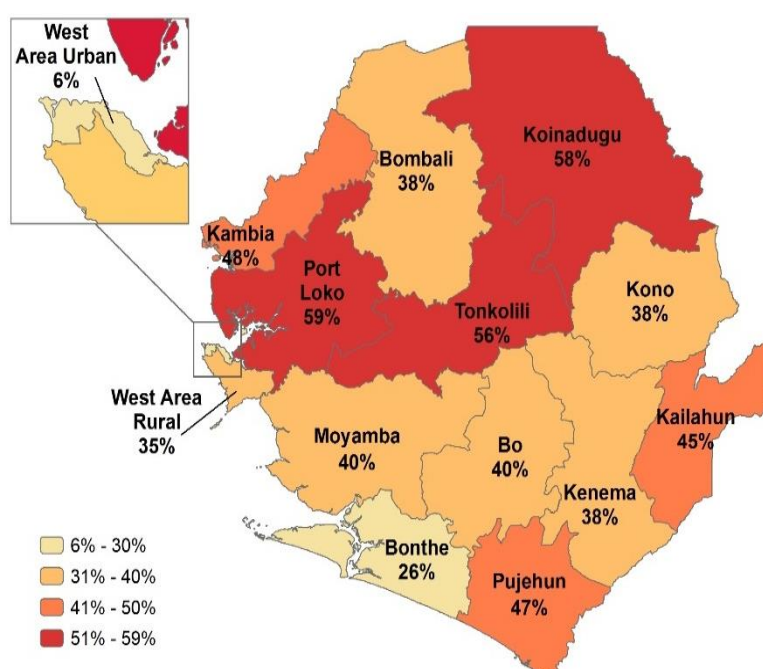
Malaria Prevalence Patterns by background characteristics

- Malaria prevalence increases with age from 23% in children age 6-8 months to 50% in children age 48-59 months.
- Malaria prevalence is higher among children in the lowest wealth quintiles (52%) compared to the highest wealth quintiles (15%).

Malaria prevalence is higher among children whose mothers have no formal education (41%) compared to those whose mothers had more than a secondary education (22%).

Figure 24: Prevalence of malaria in children by district

- Malaria prevalence is almost two times higher in rural areas (49%) than in urban areas (25%).
- By region, malaria prevalence according to microscopy is highest in the Northern Region (52%) relative to the Eastern and Southern Regions (40% in both), and Western Region (21%).
- Among the districts, the highest malaria prevalence is found in Port Loko (59%) and the lowest in Western Area Urban (6%) (Figure 22).



Morbidity and mortality

2.1.1 Disease trends

The goal of the SLMSP 2016-2020 is, by 2020, reduce malaria morbidity and mortality by at least 40% compared with 2015.

Table 6: Sierra Leone Malaria Burden 2010-2018 based on World Malaria Report 2019

Sierra Leone Malaria Burden 2010-2018 based on World Malaria Report 2019³	
Estimated number of malaria cases (2010)	2,943,081
Estimated number of malaria cases (2015)	2,895,435
Estimated number of malaria cases (2018)	2,451,110
% reduction in cases 2010-2018	17%
Estimated number of malaria deaths (2010)	14,100
Estimated number of malaria deaths (2015)	7329
Estimated number of malaria deaths (2018)	6564
% reduction in deaths 2010-2018	53.5%
Malaria incidence/1,000 population at risk (2010)	458,7
Malaria incidence/1,000 population at risk (2015)	403,7
Malaria incidence/1,000 population at risk (2018)	384,7
Key national malaria control targets compared to 2015 baseline.	- 40% reduction of malaria cases and deaths by 2020. - 75% reduction of malaria cases and deaths by 2025 - 90% reduction of malaria cases and deaths by 2030

Table 7 : Sierra Leone MSP 2016-2020 Impact indicators and targets

Indicator	Sierra Leone MSP 2016-2020 Impact indicators and targets					
	Data Source	Targets & Results	2016	2017	2018	2019
All-cause under-5 mortality rate	DHS/MICS 156/1000 (2014)	Target			119	
		Result		94		122
Inpatient malaria deaths	HMIS 45/1000 (2014)	Target	41	38	34	31
		Result	64	56	52	48
Malaria incidence-	HMIS	Target	318	291	263	235

³World Malaria Report, 2019

Confirmed & Probable Malaria Cases	346/1000 (2014)	Result	316	276	280	271
Annual Parasite Index	HMIS 270/1000 (2014)	Target	248	227	205	184
		Result	270	248	299	297
Slide Positivity Rate	HMIS 56% (2014)	Target	52%	48%	44%	40%
		Result	58%	44%	41%	38%
Parasite prevalence: Proportion (Percentage) of children aged 6-59 months (<5 years of age) with malaria infection	MIS 43% (2013)	Target	40%			33%
		Result	40%			

All-cause under-5 mortality rate decreased from 156 per 1000 population in 2014 to 122 per 1000 population in 2019 (DHS 2019). Malaria accounts for 52.2% of outpatient morbidity (HMIS 2019) and transmission occurs throughout the year with peaks at the beginning and the end of the rainy season (April and October respectively) 2016 – 2019.

The annual parasite incidence for confirmed malaria cases increased from 270 per 1,000 population in 2014 to 297 per 1,000 population in 2019. There was no reduction in the general malaria positivity rate between 2016 (63%) and 2019 (62.5%). However, a decrease was noticed in the malaria slide positivity rate, from 56 percent in 2014 to 38 percent in 2019.

The report concluded that the available malaria mortality data was not reliable enough to gauge the impact made in malaria control during this period because of challenges with classifying and determining the cause of death within the broader Sierra Leone health system.

Figure 25: Number of confirmed malaria cases incidence per 1000 population, Sierra Leone 2016-2019

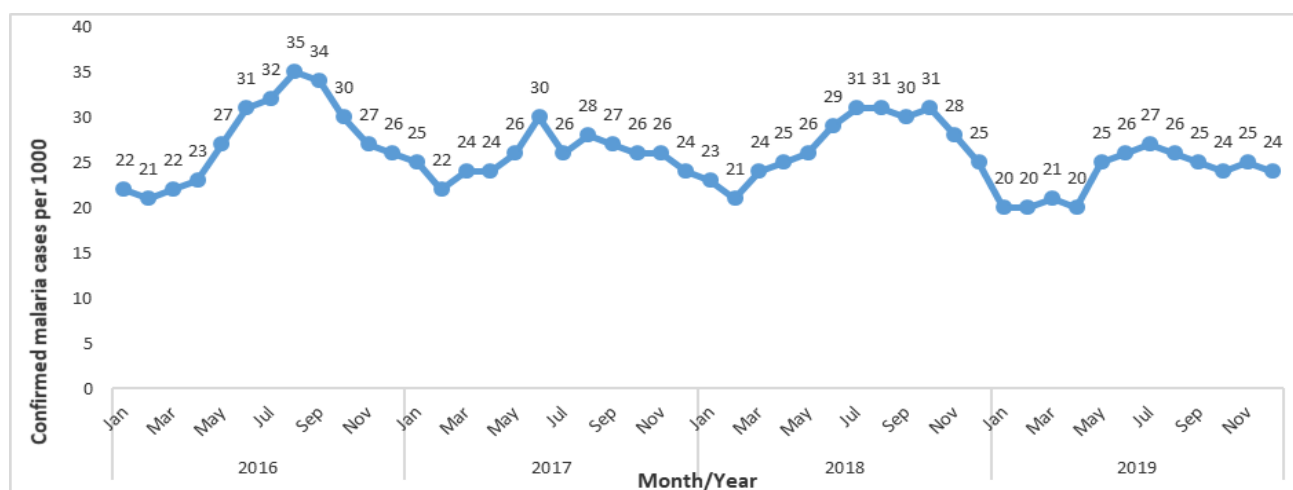


Figure 25 shows the number of suspected malaria cases that are confirmed to have malaria parasite by microscopy or RDT per 1000 people residence in Sierra Leone. The pattern of malaria incidence where similar over the reporting period with peak in the month of July. In 2019 the malaria incidence was low.

Figure 26: Number of suspected malaria cases vs tested malaria cases, Sierra Leone, 2016-2019

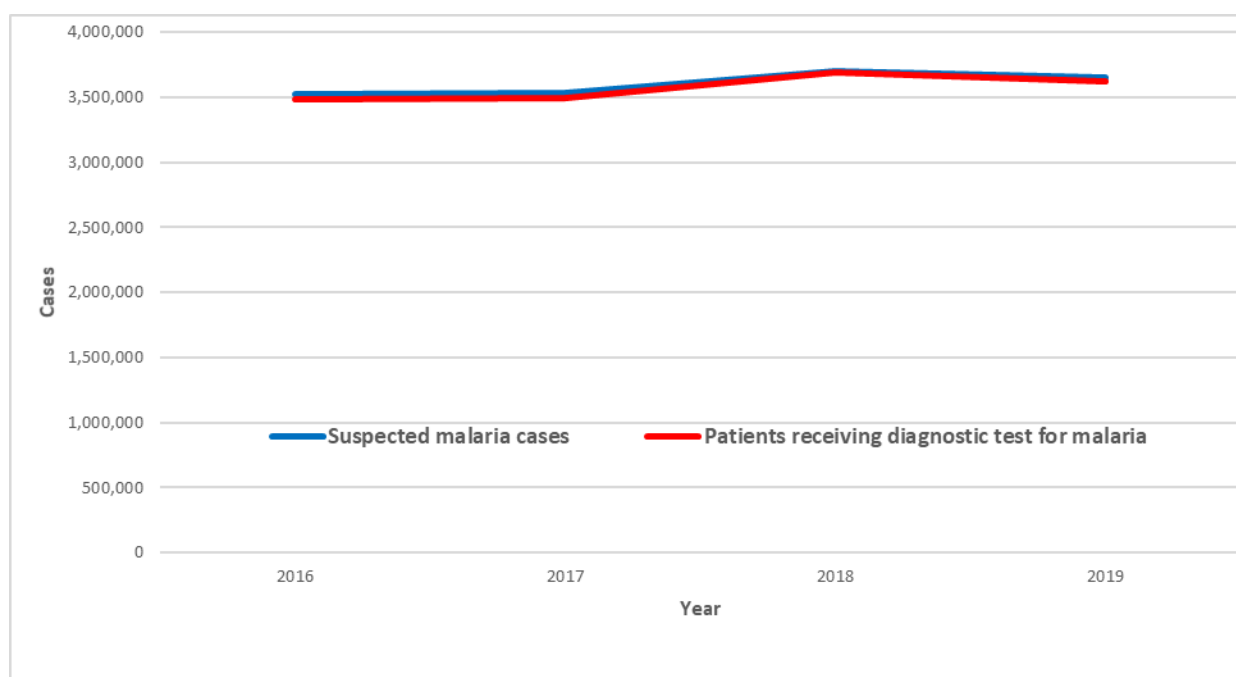


Figure 27 : Malaria test positivity rate, Sierra Leone, 2016-2019

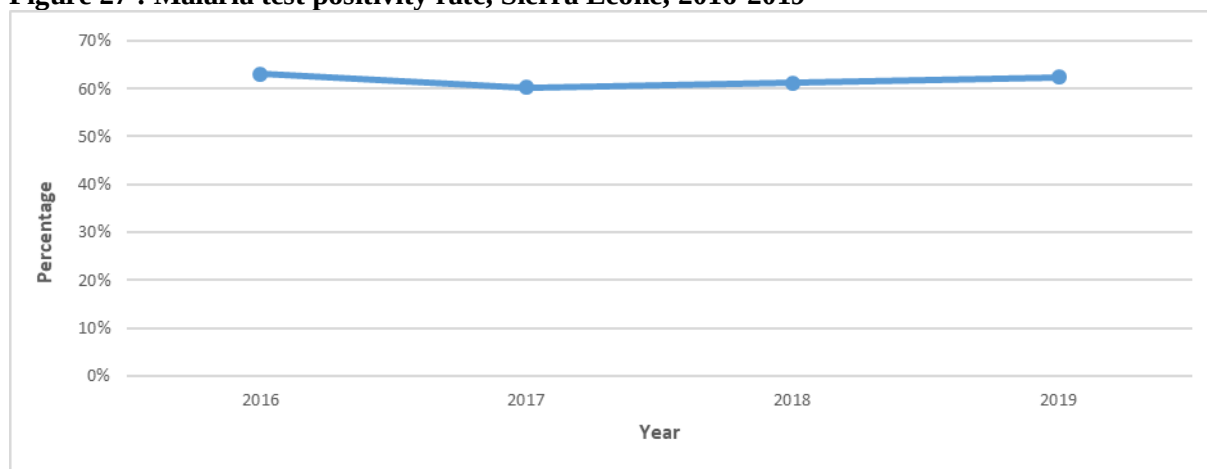


Figure 28: Proportion of presumed malaria cases to malaria cases treated (+/-ACT), Sierra Leone 2016-2019

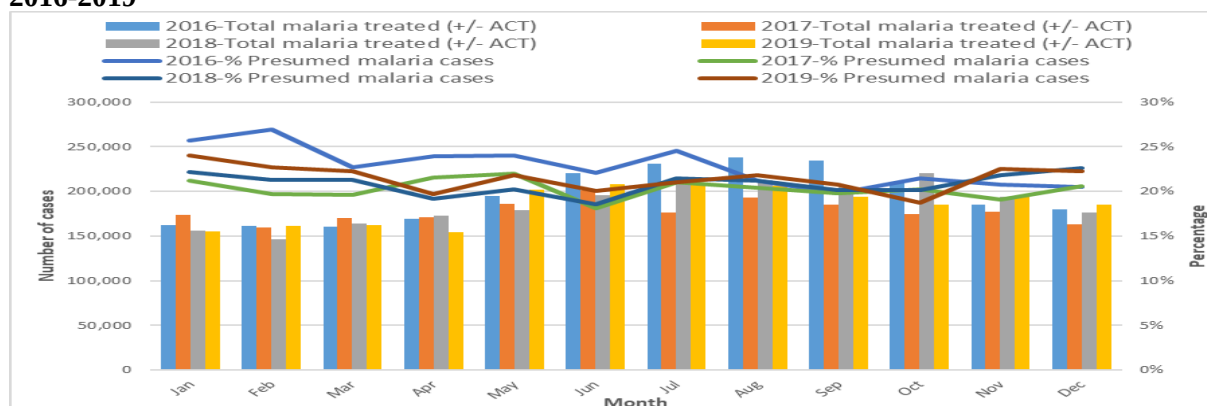


Figure 29: Malaria cases tested (RDT vs Microscopy), Sierra Leone 2016-2019

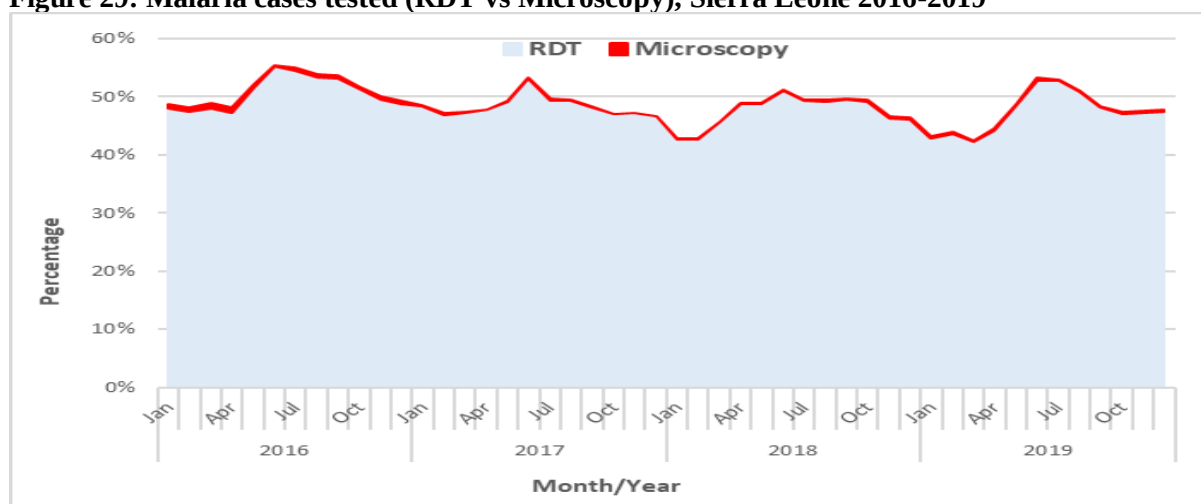
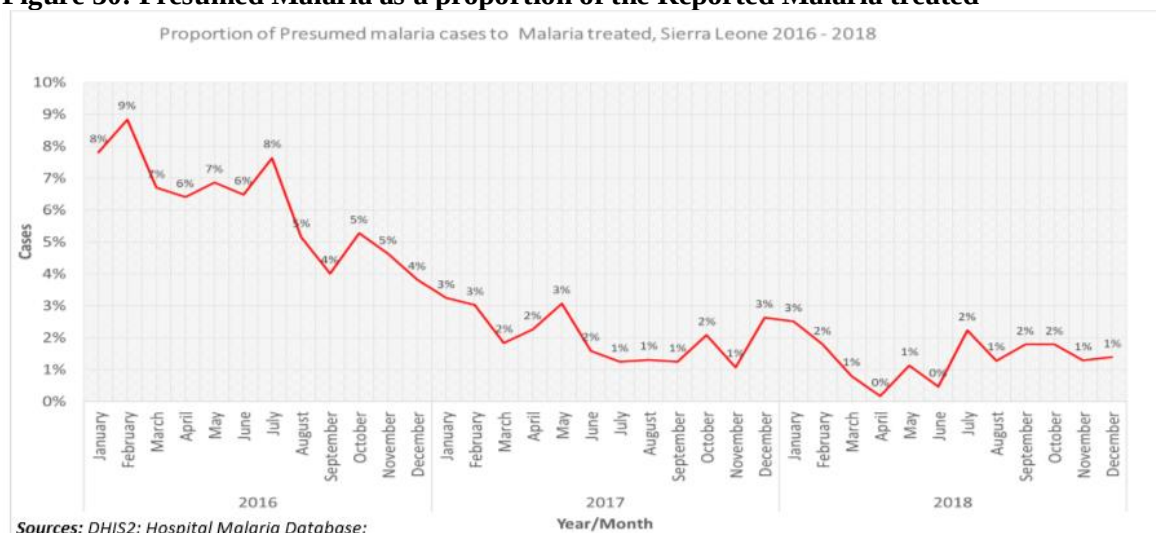


Figure 30: Presumed Malaria as a proportion of the Reported Malaria treated



3.5 Malaria programme review main findings and lessons learnt

3.4.1 Overview of the National Malaria Strategic Plan 2016-2020

The Sierra Leone National Malaria Strategic Plan (2016-2020) has been the operational document that guides the implementation of malaria control interventions in Sierra Leone. Guided by national and international strategies and guidelines, the MoHS and its partners developed the 2016-2020 strategic plan taking into consideration the lessons learnt and recommendations of previous strategic plan. The strategic goal of the 2016-2020 national malaria strategic plan was: by 2020, reduce malaria morbidity and mortality by at least 40% compared with 2015.

3.4.2 Main findings of the previous MSP implementation

This section summarises the main findings of the programme review and other national assessments undertaken to evaluate the implementation and effectiveness of the SLNMSP 2016-2020.

Implementation of the activities under each strategy was assessed using pre-programmed formulas to obtain the overall performance rates. The final score was modulated by assessing the quality of the implementation of these activities.

In terms of ratings, objective and strategy-level implementation performance was considered

- **high** if the performance rate analysis yielded a score of above 90 percent
- **moderate** if the achieved rate ranged from 75 percent to 90 percent
- **low** if the score was under 75 percent.

Overall, the performance for implementation of all the five objectives ranges from 41.5 percent for objective 2 to 69 percent for objective 3.

The findings for the SLMSP 2016-2020 performance rates and the implementation of MPR recommendations for each of the five objectives are presented below :

<i>Objective 1: All suspected malaria cases should have access to confirmatory diagnosis and all malaria cases to receive effective treatment</i> <i>The overall performance for this objective was 62 percent for quality implementation.</i> Performance of the four strategies under this objective are as follows: • Ensure provision of diagnostics at public, private and community levels- 64% • Strengthen capacity of monitoring the antimalarial treatment efficacy and safety studies- 40% • Ensure provision of effective treatment through the public and private sectors- 72% • Scale up and strengthen Community Case management of malaria- 87%
<i>Objective2: Provide access to 100% of the population at risk with preventive measures by 2017, and to protect at least 80 % of pregnant women and children under one year with IPT3 by 2020</i> <i>The overall performance for this objective was low, at 41.5 percent.</i> Performance of the five strategies under this objective are as follows: • Universal access of households to Indoor Residual Spraying - 0% • Delivery of Intermittent Preventive Treatment (IPTp and IPTi)- 51% • Universal Access to LLINs through mass distribution campaign- 60% • Universal Access through routine LLINs (ANC and EPI).- 79% • Strengthen capacity in entomology, epidemiological surveillance, insecticide resistance monitoring and vector behavior- 48%

Objective 3: To provide knowledge to the population such that at least 80% of the population practices malaria prevention and treatment measures by 2018

The overall performance for this objective was 69 percent.

Performance of the two strategies under this objective are

- Strengthen behavioural change for malaria at all levels- **63%**
- Advocacy, Communication and Social Mobilisation (ACSM) to scale-up demand for malaria prevention and treatment services- **76%**.

Objective 4: By 2020, at least 95% of health facilities report routinely on malaria programme performance.

The overall performance for this objective was 68 percent.

Performance of the five strategies under this objective are:

- Conduct regular malaria surveys/evaluations- **39%**
- Improve on data demand and use at all levels- **48%**
- Improve on malaria data collection and reporting through HMIS (public and community)- **75%**
- Strengthen routine epidemiological, parasitological and entomological capacity for malaria surveillance- **100%**.
- Develop and implement operational research agenda to generate evidence for decision making- **93%**

Objective 5: By 2020, maintain and strengthen capacity for program management, coordination and partnership to achieve malaria programme performance at all levels.

The overall performance of this objective was 55 percent.

The performance of the six strategic interventions are:

- rapid adaptation of programme preparedness and response in complex crises or unstable contexts- **0%**
- strengthen human resource development capacity and management to deliver malaria control interventions at all levels- **54%**
- strengthen national capacity for developing evidence-based malaria programming- **68%**
- strengthen central, district and community levels advocacy for resource mobilisation across all sector- **90%**.
- Strengthen procurement and supply chain management of malaria commodities- **83%**
- Strengthen coordination and partnership- **88%**

3.4.3 Malaria financing landscape and partnership

Funding Landscape for National Malaria Control Programme								
Donor/Partner	2016		2017		2018		2019	
	Allocation	Expenditure	Allocation	Expenditure	Allocation	Expenditure	Allocation	Expenditure
Government of Sierra Leone	\$1,125,577.49	\$16,229.18	\$1,097,741.90	\$20,040.37	\$827,768.14	\$9,363.24	\$861,216.60	\$128,620.98
Global Fund	\$1,431,593.14	\$1,432,417.43	\$16,282,851.57	\$14,301,105.00	\$13,445,275.10	\$11,042,301.24	\$7,522,930.96	\$8,549,282.67
United States Government PMI	-		\$15,000,000.00	\$15,000,000.00	\$15,000,000.00		\$15,000,000.00	
WHO		\$4,208,287.79		\$10,761.78				
UNICEF		\$54,288.31		\$500,459.68				
DFiD								

3.4.4 Funding from the Government of Sierra Leone

Both government and donor expenditure on health has declined during the last decade. The percentage of government expenditure on health – as a percentage of the total health expenditure – continued to be around 8%. Thus, the health sector has been grossly underfunded in the past and has never reached the Abuja Declaration target of 15% of total government allocation.

While allocation for health in the national budget is less than 15%, government allocation to the NMCP, as per the 2010-2015 guidelines, is only 0.3% of the total health budget. Government budgetary allocation to health increase from 7% in 2018, through 10.5% in 2019 to 11% in 2020. However, the government budgetary allocation to health could not be ascertain because of the indirect funding to the programme and the Ministry of Health and Sanitation : Indirect Funding – The GoSL through the Ministry of Health and Sanitation has provided indirect support to the Programme by the payment of salaries to Health Personnel assigned to the Programme, Provision of a building which hosts the Programme’s Administrative Office and some operational support.

The GoSL has been Financing the Programme also through direct means : Direct Funding – The Government of Sierra Leone on an annual basis makes provision for counterpart funding for the Ministry of Health as a whole. Programmes are able to tap from this envelop on a need’s basis.

3.4.5 Funding from Partners

The Global fund allocates resources to the Ministry of Health and Sanitation with the aim of Strengthening systems for health and scaling up of interventions against Tuberculosis and Malaria and HIV-Aids. The MOHS is the Principal Recipient of the Grants. The Envelop allocated to the country is distributed to the different diseases.

The GF has supported the NMCP through the Ministry with 2 grants between the period 2016 and 2020. The Simple Application Process (SAP) July 2016 to June 2018 with \$28,249,654.61. The Programme's expenditure was 87%. The Programme was allocated with \$27,815,706 for the current Programme Continuation Request (PCR) which will last till June 2021.

Allocations from the Global Fund is made to the Ministry of Health and Sanitation and these resources are reported to the Global Fund through Integrated Health Project Administration Unit (IHPAU) of the MOHS. Expenditure of all funds are controlled in accordance with letters of agreement signed with MoHS and the Global Fund.

The President Malaria Initiative (PMI) has support the Programme through the Ministry with an Annual support of \$15,000,000 from FY 2017-2019 and has also committed \$15,000,000 for FY 2020.

The WHO provided financial support to the programme to the tune of \$43,086 to conduct antimalarial treatment efficacy study in two sentinel sites in 2017. They have also provided Technical Assistance (International Consultants) to support the Programme in various activities.

UNICEF has been a key partner in Implementation of Malaria Activities nationwide. With support from DFiD through UNICEF, provided financial and technical support to the 2017 LLIN Mass distribution Campaign activities, implementation of the IPTi activities and World Malaria Day activities.

ICAP at Columbia University, with support from the United States Centre for Disease Control and Prevention (CDC) conducted an external evaluation of the IPTi pilot in two phases.

China CDC supported the programme for capacity building of health staff on malaria diagnosis techniques, Mosquito and mosquito-borne diseases surveillance and control, among others.

Other Partners including CRS, Child Fund, Plan International, World Vision International, Total (SL) Ltd and Bolorie Transport and Logistics among others provided support to the Programme for the World Malaria day Activities.

Donor contributions to health decline from 37.4 percent in 2017 to 36.1 percent in 2018. The total health expenditure decline from 5.2 percent in 2017 to 3.7 percent in 2018.

3.4.6 Malaria Expenditure Analysis in the context of need-based budget

GOSL Budget Allocation			
MOHS			
2016	2017	2018	2019
\$12,816,832.04	\$13,018,009.40	\$12,929,177.56	\$861,216.60
Trend	1.57%	-0.68%	-93.34%
NMCP			
\$1,125,577.49	\$1,143,247.55	\$827,768.14	\$861,216.60
Trend	1.57%	-27.60%	4.04%

Budgetary allocations for health in Sierra Leone have seen a steady increase, with 7 percent allocated to health in 2018, through 10.5 percent in 2019 to 11 percent in 2020 much lower than from the recommended 15 percent as stipulated in the 2001 Abuja Declaration. Household spending for malaria still plays an important role in malaria financing, which should be a cause for concern because it means that there is still a significant level of out-of-pocket expenditure despite malaria diagnosis and treatment is free in all public and some private (with MOU) health facilities. Out of pocket expenditure for health increased from 61 percent in 2016 to 64.6 percent in 2018, a pointer for the implementation of Sierra Leone social health insurance. Health expenditure is still a heavy burden on the people.

3.4.7 Malaria Program contribution to the Health System Strengthening

Since malaria is one of the greatest killer diseases in Sierra Leone especially for children under five years of age and pregnant women, it is hard to imagine that the country can maintain a strengthened health system that fails to include a robust malaria control program that spans the entire country. Because of this, the goals and aspirations of the National Malaria Control Programme are always aligned with the National Strategic Plan of the Ministry of Health and Sanitation. As a result, successes of all malaria control programs in the country are a success towards health systems strengthening.

3.5 Malaria program SWOT analysis

Table 8: Malaria programme SWOT analysis

STRENGTHS	WEAKNESS
Strong political will and government commitment to the programme	Inadequate compliance and weak enforcement
Availability of tax waiver on all antimalarial products.	Weak Public -Private partnership
Provision of FREE antimalarial commodities for all categories of the population.	Poor involvement of the private sector (health and non-health) in implementation of malaria control and prevention activities.
Availability of National Malaria Policy documents and guidelines to guide policy implementation.	Weak regulation of the private sector
Malaria Policy informed by a strong national and international research evidence.	Irregular supportive monitoring and supervision at all levels.
Well established, strong and effective RBM partnership especially at the National level.	Human resource gaps at all levels of health service delivery.
Well established and effective TWGs for IVM, MIP, IPTi, PSM, SBCC, SM&E and Malaria Research Committee.	Bureaucratic recruitment process for GoSL paid staff
A core group of well-trained staff at national level.	Gaps in total required resources for meeting scaling up targets.
Possibility of capacity development for staff.	Weak partners mapping at district and chiefdom levels
Possibility of technical support from partners.	Low quality of data from health facilities and communities
Multiple systems for accountability, performance contract, performance review targets	
Commitment by partners and other stakeholders that have committed funds for malaria programme.	

Knowledge on proven interventions for successfully rolling out on a countrywide basis.	
Decentralized health structure that is integrated into the health care delivery system and community level structures.	
Involvement of CHWs in the prevention and control of malaria activities	
OPPORTUNITIES	THREATS
Communities identifying themselves to be key partners in operations and planning for successful programme implementation.	Global financial instability and civil unrest.
Availability of MoHS Emergency Preparedness and Response Plan	Dependence on external funds to address key policy issues
Availability of a new framework guiding Action and Investment to Defeat Malaria (AIM) 2016-2030 which provide clear argument for investing in malaria control and elimination over the next 15 years a complement to the new WHO Global Technical Strategy for Malaria (GTS)	Absence of sustainability plan in the face of dwindling GF support and other donors
Availability of NGO Liaison unit within the MOHS for better coordination and resource mobilization	Emergence of complex emergencies including Ebola, Mudslide, flooding and COVID-19.
Partnership with other programmes and directorates	Inadequate support for integrated monitoring and supervision
Established Local Councils and DHMTs	Inadequate support at service delivery points at all levels.

3.6 Anticipated /Identified key challenges for 2021-2025

The Malaria Programme Review (MPR 2020) evaluated the implementation of the malaria control programme during the period covered by the previous NMSP (2016-2020) and provided

evidence that informed the strategic actions proposed in the new NMESP (2021-2025). Key challenges identified by the MPR with implication for new NMESP are summarized as follows :

Case Management

- Human resource gaps at all levels of the health service delivery
- Unavailability of a National Malaria Reference Laboratory (limited capacity to provide EQA/EQC).
- Limited capacity to undertake malaria microscopy (infrastructure, human, supplies of laboratory materials/equipment/reagents to hospitals and CHCs)
- Private health facilities participation in scaling up of access to malaria services is sub-optimal.
- Functionality of blood bank services at secondary and tertiary hospitals is sub-optimal for severe malaria management.
- Ineffective pharmacovigilance system. Health workers are not adequately aware of the importance of recording and reporting of Advers drug reaction (ADR).

Vector control

- Increasing spread and intensity of vector resistance to pyrethroids
- Lack of locally trained entomologists
- Lack of molecular laboratory and trained staff for sample analysis
- No funding support for larval source management
- Inadequate funds to scale-up IRS

MiP (IPTp) and IPTi

- Limited MIP service delivery at Private clinics and public hospitals (secondary) level.
- Limited supply of SP to TBAs by PHU staff for community level administration
- Limited Supportive supervision and monitoring of MIP activities from district to PHUs and Communities.
- Inadequate resources for DHMTs to monitor, supervise and conduct defaulter tracing on EPI and IPTi services
- Intermittent stock-out of SP tablets due to logistically challenges with last mile delivery

SBCC

- Uncoordinated SBCC interventions at district/community levels
- Limited media coverage in some districts.
- Weak implementation monitoring of IPs.

- Challenges in sustainability of SBCC interventions initiated by some partners.
- Short implementation period by some partners based on limited funding.
- Weak presence of SBCC partners at chiefdom and community levels.
- Lack of adherence to recommended malaria prevention and control practices by the general populace.
- Lack of a trained SBCC specialist.

Surveillance, Monitoring and Evaluation

- Lack of routine reporting by some private sector health facilities within the country
- Insufficient data analysis capacity at the district level; new staff members need basic training, and all require capacity to use basic statistical methods.
- Intermittent stockout of data collection and reporting tools which sometimes affect completeness and timeliness of reporting
- Low reporting and poor quality of inpatient data that hampers availability of malaria morbidity and mortality data from the health facilities
- Inadequate M&E capacity at the district level.
- Feedback mechanism of information analysed not extended to community level.

PSM

- Poor quality of LMIS reports. Erroneous data from some service delivery points affect the overall quality of data used in supply chain decision making
- Inconsistent and Low rate of reporting from PHUs and hospitals
- LMIS systems not fully own by DHMTs.
- Inadequate health commodities warehouse space and poor storage condition at all levels of the supply chain but especially at district and PHU stores.
- Uncertain funding options to support information officers and logistics officers at both central and district levels
- Lack of reverse logistics guideline and mechanisms
- Inadequate funding for the procurement of the quantified list of FHC health commodities to enhance effective service at delivery point in an integrated approach
- Irrational use of essential drugs for comprehensive care at the service delivery points which affects service quality, promotes drug resistance, and a waste of needed resources
- Data not used to inform decisions.

Programme Management

- Inadequate funding limits the efficiency and effectiveness of programme implementation

- COVID-19 pandemic may affect implementation of proposed interventions for the 2021 – 2025 cycle especially if it persists for a longer period than envisaged.
- Partner coordination mechanisms and multi-sectoral engagement structures have been sub-optimal. MOHS/NMCP needs to strengthen partner and stakeholder engagement and regularly review and monitor the engagements.
- Staffing- retention of district and community staff has been a concern. Some of the focal points at DHMT level are on contract or awaiting absorption into the civil service whilst the CHWs are largely volunteers.
- Capacity building of health workers in procurement and supply chain management, specifically in forecasting and quantification of malaria commodities is a critical need.

Lessons Learned

Experience in malaria program implementation has resulted in valuable lessons that are critical for future success. Below are a few critical ones:

- Without external funding, the scope of malaria prevention programs in Sierra Leone will be limited;
- Malaria prevention strategies in Sierra Leone have largely kept pace with international innovations and best practices – e.g. shift from malaria resistant drugs to use of potent drug combinations;
- There is need to conduct routine and comprehensive studies that will examine all components of malaria prevention in the country. For example, data from entomological studies conducted between 1990 and 1994 is still referenced for current programming (SLMC, 2015).
- Unexpected disruptions such as the civil war and disease emergency outbreaks such as the Ebola of 2014 and the current COVID-19 pandemic can inflict major setbacks on malaria prevention programming and routine contingency plans are necessary to reduce services disruption during such unforeseen circumstances.

CHAPTER 4.0 STRATEGIC FRAMEWORK OF THE SLNMESP

Overview

The 2021-2025 Sierra Leone National Malaria Elimination Strategic Plan (SLNMESP) was developed from assessment based on the malaria programme review of the achievements of the 2016 – 2020 malaria prevention efforts, with consideration of the national goals malaria intervention contained in, and the National Health Sector Strategic Plan.

This strategic plan is also aligned with the recommendations of the WHO's Global Technical strategy 2016-2030 and the Roll Back Malaria Partnership's Action and Investment to defeat malaria 2016-2030 (AIM) to ensure shared goals and complementarity. These documents position malaria in the wider health and development agenda. AIM and the WHO Global Technical Strategy for malaria share the timeframe of the Sustainable Development Goals. AIM shows how the Sustainable Development Goals are inextricably linked to the achievement of a malaria free world, and how the continued reduction and elimination of malaria will be central to the realisation of this new development agenda.

Regardless of place of birth or residence within the country, every Sierra Leonean has the right to access highly effective malaria preventive and curative services delivered as close to the households as possible through a highly responsive and non-discriminatory national health system that delivers safe, efficient and high-quality health care services that are accessible, affordable and equitable to all Sierra Leoneans.

4.1 Programme vision

Accelerate the implementation of Malaria Control Interventions towards a malaria-free Sierra Leone

4.2 Programme mission

To direct and coordinate efforts towards a malaria-free Sierra Leone through effective partnerships.

4.3 Programme guiding principles and social values

The development of the current NMESP is guided by a range of national and international strategies and policies with a view to ensure the broader society benefits from the malaria control and eradication interventions. The following principles will guide the implementation of the current strategy

a) Universal coverage for all populations at risk with proven malaria interventions

Every Sierra Leonean has the right to access highly effective malaria preventative and curative services delivered as close to the households as possible through a “functional resilient national health system that delivers safe, efficient and high-quality health care services that are accessible, affordable and equitable to all Sierra Leoneans leading to pre-elimination.

The whole population including key affected populations (children under the age of five years, pregnant women, people living with HIV/AIDs, internally displaced populations (IDPs), refugees) will all access malaria prevention and control interventions.

b) Equity, equality and non-discrimination

Malaria affects all people in Sierra Leone, in all locations, and during all times of the year. However, some groups of the population are more vulnerable to malaria than others. They include rural residents, low-income people, children under 5 years of age, and pregnant women. As such, the strategic plan will make provision to access hard-to-reach persons in rural communities through the decentralized process of working with District Councils, and other satellite malaria prevention establishments across the country like Peripheral Health Units (PHUs) and Community Health Workers (CHWs). Access to life-saving treatment and preventive services will be provided irrespective of ability to pay.

All individuals are equal as human beings and by virtue of the inherent dignity of each person. All are entitled to their human rights without discrimination of any kind, such as by: race, colour, sex, ethnicity, age, language, religion, political or other opinion, national or social origin, disability, property, birth or other status as enshrined in the international human rights treaties and charters to which Sierra Leone is a signatory. This principle requires the Government to address discrimination (intentional and non-intentional) in laws, policies and practices, including in the distribution and delivery of resources and health services.

c) Availability

The Ministry of Health and Sanitation will ensure that public health and health care facilities, goods, services and programmes exist in sufficient quantity and quality. This is a broader health system issue that directly affects malaria service delivery.

d) Accessibility

The Ministry of Health and Sanitation will ensure non-discrimination, physical accessibility, economic accessibility (affordability) and information accessibility with regard to public health and health care facilities, goods, services and programmes.

e) Acceptability

Ensure that public health and health care facilities, goods, services and programmes are respectful of medical ethics and culturally appropriate, sensitive to age and gender.

f) Adequacy and Quality

The Ministry of Health and Sanitation will ensure that public health and health care facilities, goods, services and programmes are user friendly, scientifically and medically appropriate and of high quality.

g) Contiguous expansion of interventions

Malaria control interventions will be guided by expansion of the gains made by past interventions.

The SLMESP Social values

The implementation of the SLMESP shall be guided by the following social values:

a) Evidence-led and forward looking

The implementation of the SLMESP shall be evidence-led, forward looking and take into account emerging trends, risks and health innovations.

b) Pro-poor and sustainability

The SLMSP shall be pro-poor and shall provide a framework to support sustainable development. In order to address the burden of disease in a cost effective way, the GoSL Private-for-profits and Private-for-non-profit shall provide services included in the SLMESP with special attention to the underserved parts of the country. The GoSL shall explore alternative, equitable and sustainable options for health financing and health service organization, targeting vulnerable groups.

c) Inclusive and coordinated Partnerships

The government of Sierra Leone considers partnership with other institutions, ministries, CSOs and the private sector as a cornerstone of all its undertakings. Implementation of all malaria control related activities will be guided by this National Malaria Control Plan in collaboration with stakeholders and partners at all levels of the health system (national, regional, district and community level). It is aligned to national and global goals and targets and in tandem with the NHSSP of the country. Also built in the plan are the critical and indispensable roles of key partners within the private and public sectors to service delivery. The private sector shall be seen as complimentary to the public sector with respect to increasing geographical access to health services (scope and scale). At best, this cooperation will eliminate unnecessary duplication and waste of already limited resources, or at least minimize such occurrence. It is highly observed that the malaria prevention activities must not co-exist in silos if the desired national goal of reducing malaria-related morbidity and mortality rates is to be achieved. Efforts shall be made towards joint planning, monitoring and evaluation between the GoSL and other institutions, ministries, CSOs and the private sector in an effort to strengthen accountability, participation and transparency.

d) Primary Health Care

PHC shall remain the major strategy for the delivery of health services in Sierra Leone, based on the district health system, and recognizing the role of hospitals as an essential part in a national health system. Greater attention and support shall be given to health promotion, education, enforcement and prevention interventions as defined in the Health Sector Recovery Plan 2015-2020 and empowerment of individuals and communities for a more active and meaningful participation in health development through District Health Strengthening Committees, Facility Management Committee, Community Health Workers.

e) The Sierra Leone Basic Package of Essential Health Services (Revised BPEHS, 2015)

In order to address the burden of disease in a cost-effective way, public and private providers shall offer services that are included in the BPEHS.

f) Integrated health care delivery

Curative, preventive, promotive and rehabilitative services shall be provided in an integrated manner.

g) Gender-sensitive and responsive health care, policy formulation and programming

A human rights and gender-sensitive and responsive national health delivery system shall be achieved and strengthened through mainstreaming human rights and gender analysis in planning and implementation of all health programs. To facilitate and strengthen the evidence base for human rights and gender mainstreaming, efforts shall always be made to disaggregate health data by age and sex and gender analysis carried out on the results in order to enhance the effectiveness and efficiency of interventions and programs. Every effort will be made, when involving CSOs, to specifically include women-centred CSOs.

h) Mainstreaming of health into other sectoral policies

Health shall be mainstreamed in all relevant policies and the MoHS, with its stewardship role on health issues, shall provide advice to other government ministries and departments and the private sector.

i) Decentralization

Health services shall be delivered within the framework of decentralization.

j) Country ownership and leadership

All proposed activities within the NSP will be owned and led by the Government of Sierra Leone through the Ministry of Health and Sanitation. This means that it is aligned with the current National Health Sector Strategic Plan (NHSSP) and consistent with financial cycles proposed by the Ministry of Finance.

k) Accountability

Performance-based funding mechanisms require robust evaluation to determine programs success. As such, the NMESP serve as a barometer to hold the malaria prevention functionaries to include but not limited to MoHS, partners and stakeholders accountable to their commitments

and responsibilities and to their beneficiaries. The following section provides the criteria to be used to establish accountability.

4.4 Strategic directions and policy priorities for an appropriate NMESP

Overall successes based on the previous National Malaria Strategic Plan (2016- 2020) have been laudable. The government's effort through the Ministry of Health and Sanitation is notable in supporting all activities aimed at reducing the malaria menace. Also critically important is the role of international donor agencies without whose technical and financial support little can be achieved toward malaria prevention.

In spite of the above contributions, the fight against malaria remains challenging, at least for the time being. Additional efforts are needed in areas of policy directives, programmatic activities within the local context, funding priorities, adherence to international best practices and many more. The following paragraphs highlight major accomplishments and some lingering challenges during the 2016- 2020 review period.

Significant progress has been made by the National Malaria Control Program towards adherence to international standards and targets. Successes have been recorded in the use of revised malaria diagnosis, prevention methods, as well as treatment regimens. A few specific areas of success include, but not limited to the proportion of population at risk who slept under an ITN the previous night, proportion of population at risk protected by IRS within the past 12 months, and proportion of pregnant women who received at least 3 or more doses of IPTp during antenatal care during their previous pregnancy (sub-Saharan Africa only). Data collection processes are also improving but more improvement can be made. While major successes were achieved, addition effort will be needed in the coming years to improve on some successes or achieve pre-specified goals in other areas.

Nationally, the priorities of National Malaria Strategic Plan remain firmly aligned with national health sector aspirations through the Ministry of Health and Sanitation. Funding, staffing, and program evaluation processes, among others have been fashioned and implemented according to MoHS priorities.

In line with national global targets and based on the conclusions and recommendations of the 2020 MPR, the 2021-2025 NMESP has been designed to incorporate emerging ideas, policies, strategies and issues in malaria control/elimination, as appropriate.

Identification of strategic directions and priorities will be guided by the following:

- National Health Sector Strategic Plan (2017-2021) and the subsequent NHSSP (2021-2026)
- Sierra Leone's Medium-term National Development Plan 2019-2023
- Findings of the 2019 Demographic Health Survey
- National health policy and international commitments notbaly the GTS and the SDGs
- Address the strategic issues identified in the MPR 2020 in order to achieve national and international targets
- Level of progress towards the national and international targets for malaria

4.5 Goal and objectives of the NMESP

4.5.1 Goal: By end of 2025, contribute significantly to the improvement of the well-being of the population by reducing the malaria burden

4.5.2 Strategic objectives of the NMESP (2021-2025)

Objective 1: By end of 2025, reduce malaria mortality rates by at least 75% compared to 2015

Objective 2: By end of 2025, reduce malaria case incidence by at least 75% compared to 2015

Objective 3: By 2025, 90% of the population practice at least 3 recommended malaria prevention and control behaviours

Objective 4: To strengthen malaria surveillance and use of malaria information to improve decision making for programme performance

Objective 5: Ensure timely and adequate supply of quality-assured malaria commodities to public and private health facilities at all levels by 2025

Objective 6: By 2025, strengthen and maintain capacity for program management, coordination and partnership to achieve malaria programme performance at all levels.

Objective 7 : Improve mobilization of resources and maximize the efficient use of available resource for greater public health impact by 2025

4.5.3 Proposed Strategies

Objectives 1	By end of 2025, reduce malaria mortality rates by at least 75% compared to 2015
Strategies	<i>1.1 Ensure provision of diagnostic services at public, private and community level</i> <i>1.2 Ensure provision of effective treatment through the public, private and communities.</i> <i>1.3 Build human and institutional capacity for QA/QC system for Malaria diagnosis.</i> <i>1.4 Strengthen capacity of monitoring the safety and efficacy of antimalarial medicines.</i> <i>1.5 Improve management of severe malaria in hospitals and CHCs</i>
Objective 2	By end of 2025, reduce malaria case incidence by at least 75% compared to 2015
Strategies	<i>2.1 Universal Access to LLINs through Integrated mass distribution campaign</i> <i>2.2 Universal Access through routine LLINs (ANC and EPI)</i> <i>2.3 Maintain high coverage of ITN through School based distribution</i> <i>2.4 Implement Indoor Residual Spraying (IRS) in addition to LLIN</i> <i>2.5 Larval source management</i> <i>2.6 Conduct entomological surveillance</i> <i>2.7 Intermittent Preventive Treatment in Pregnancy (IPTp)</i> <i>2.8 Intermittent Preventive Treatment in Infants (IPTi)</i>

Objective 3	By 2025, 90% of the population practice at least 3 recommended malaria prevention and control behaviours
Strategies	3.1 Create an enabling environment for malaria prevention and control services at all levels. 3.2 Create demand, access, and uptake of malaria prevention and control services at all levels. 3.3 Strengthen behavioural change for malaria control at all levels
Objective 4	To strengthen malaria surveillance and use of malaria information to improve decision making for programme performance
Strategies	4.1 Strengthen malaria surveillance 4.2 Increase use of malaria data for decision making 4.3 Conduct and facilitate health facility surveys 4.4 Conduct and support population-based survey 4.5 Facilitate operational research for policymaking 4.6 Conduct entomological surveillance and monitor the effectiveness of vector control tools and technologies. 4.7 Monitor efficacy and safety of antimalarial drugs
Objective 5	Ensure timely and adequate supply of quality-assured malaria commodities to public and private health facilities at all levels by 2025
Strategies	5.1 Ensure accurate and timely forecasting and supply planning of malaria commodities 5.2 Advocate for efficient warehousing, storage and sustainable distribution system across the supply chain 5.3 Strengthen the capacity of health care workers involved in commodity management at national, district, health facility and community levels
Objective 6	By 2025, strengthen and maintain capacity for program management, coordination and partnership to achieve malaria programme performance at all levels.
Strategies	6.1 Human resources support for malaria control 6.2 Strengthen management capacity and implementation at all levels 6.3 Strengthen coordination and Partnership

Objective 7	Improve mobilization of resources and maximize the efficient use of available resource for greater public health impact by 2025
Strategies	<i>7.1: Increase government spending and improve efficiency of government resource allocation for Malaria programming</i> <i>7.2: Strengthen accountability measures related to funding for malaria to ensure appropriate allocation of malaria funding at the district level</i> <i>7.3: Assess and adopt innovative financing mechanism (non-traditional) to addressing increasing donor funding</i> <i>7.4: Strengthen and increase private sector engagement and contribution for malaria control and pre-elimination by 2025</i>

4.6 Description of Strategy Interventions

Objective 1: By end of 2025, reduce malaria mortality rates by at least 75% compared to 2015

Strategy 1.1: Ensure provision of diagnostic services at public, private and community level

Quality-assured malaria diagnostic services will be ensured through procurement and provision of RDTs, microscopy reagents and related supplies for all health facilities through National Medical Supplies Agency (NMSA) that was established by an act of parliament in 2017 to take up the responsibility of procurement, warehousing/storage and distribution of drugs and medical supplies in a transparent and cost-effective manner for and on behalf of all public institutions throughout Sierra Leone. However, donor partners could use other platforms to procure and deliver antimalarial commodities.

To scale up diagnostic capacity in the private health sector, quality assured RDTs will be provided at a **FREE of COST** basis. Training and retraining of Health Workers (hospitals staff, Peripheral Health Unit staff and Laboratory technicians) on RDTs and microscopic diagnosis of malaria will be performed regularly as needed to ensure quality of parasitological diagnosis in all public and private facilities and at the community level.

Additionally, training of Community Health Workers on malaria case management and use of mRDTs shall continue as part of effort to ensure quality of care provided through the integrated community health workforce programme. Supportive supervision will be conducted at all levels including the districts, the private sector and at the community level to strengthen malaria diagnostic capacity.

Strategy 1.2: Ensure provision of effective treatment through the public, private and communities

Health workers from the public and private health sectors will be trained and re-trained on the revised national treatment guidelines, severe malaria management, with particular emphasis on adherence to test results for informing treatment and case management guidelines. The NMCP will ensure regular provision of antimalarials at all levels of the supply chain system.

Standard Operating Procedures, job aids and treatment algorithms will be produced and provided to health workers in the public and private health sectors and Community Health Workers (CHWs) during training and supportive supervision visits, using standard check lists.

In order to improve quality of care, central level teams will routinely provide the District Health Management Teams (DHMTs) with mentorship and supportive supervision to empower them with skills required to support the health workers and the CHWs.

Improving quality of care is key and as a result the DHMTs will be trained in supportive supervision skills. Trainings will be conducted nationwide.

Strategy 1.3: Build human and institutional capacity for QA/QC system for malaria

Establishing Malaria QA program is an important and needed step in the improvement of malaria diagnosis and increasing confidence in the community to access the service. Of all the quality indices the establishment of a comprehensive quality assessment program and setting up of monitoring to ensure sustainable quality is critical. To achieve this, a phased approach to be adopted includes:

- Establishment of national Proficiency Testing (PT) Scheme which involves periodic distribution of panels of samples with known reactivity to different testing sites/laboratories

- Subscribing to International accredited (PT) programs,
- Quality audits with supported improvement activities which involves visiting the laboratory and observing various activities including testing.
- Confirmatory testing program including production of quality control materials to ascertain quality result report
- Setting norm and standard such as national testing methods and minimum stocks level
- Test kit evaluation including post- market validation

A National QA Reference laboratory will house all activities to support the QA program. The laboratory will support with the minimum standards of adequate infrastructure, human resource, health and safety, equipment and supplies and coordination. The mandate of the laboratory will include developing:

- the training material,
 - guidelines;
 - reporting tools;
 - setting the national standards in terms of diagnostic tools and
 - test performers competency as well as be involved in the national external quality assessment for malaria microscopy
- The National Reference Laboratory for Malaria will subscribe to an international External Quality Assessment.

Strategy 1.4: Strengthen capacity of monitoring the safety and efficacy of antimalarial medicines

The MOHS will routinely monitor the antimalarial medicine of choice and alternative medicine to track trends of antimalarial drug resistance and safety by conducting regular efficacy and safety studies at established sentinel sites.

Antimalarial drug therapeutic efficacy studies will be conducted at established sentinel sites every two years using the standard WHO protocol for therapeutic efficacy studies. The MOHS will continue to implement interventions based established best practice guidelines to ensure an effective pharmacovigilance system for monitoring the safety of all medicines including antimalarial medicines.

Taking cognizant of the afore mentioned, there is need to set up baseline data for its efficacy and safety.

Strategy 1.5: Improve management of severe malaria in hospitals

With the update of the guidelines for the management of uncomplicated and severe malaria, all relevant staff will be trained and re-trained. The training will be conducted in accordance with the developed protocols, guidelines, job aides, etc.

Regarding severe malaria, monitoring and treatment algorithmn will be developed for the management of severe malaria. In addition, basic equipment for emergency care of severe malaria will be provided for health facilities with the highest need.

Targeted supportive supervision, coaching and mentoring viz Onsite Training and Supportive Supervision (OTSS) and integrated supportive supervision will be conducted for all facilities.

Underpinning these trainings will be quality improvement capacity building to address quality challenges across the levels of care.

In pursuance of Sierra Leone's effort to attain Quality Universal Health Coverage by 2030 and beyond, the Ministry of Health and Sanitation aims to coordinate the implementation evidence-base interventions to improve health care quality at all levels of the health system, across both the public and private sectors, and all areas of health.

Objective 2: By end of 2025, reduce malaria case incidence by at least 75% compared to 2015

Strategy 2.1: Universal Access to LLINs through integrated mass distribution campaign

WHO recommends ITNs as one of the core interventions for malaria vector control. All populations at risk of malaria in most epidemiological and ecological settings, require deployment of insecticide-treated nets (ITNs) that are prequalified by WHO. Use of WHOPES approved long lasting insecticidal nets (LLINs) will be the primary method for preventing malaria countrywide.

Since 2010, Sierra Leone has implemented mass ITN distribution campaigns as a major vector control strategy in achieving universal coverage (a net for every 2 persons in a household) of ITNs. Building on the achievement of high ITN ownership (60.3%(p36 SLMIS 2016),68%(p35 SLDHS 2019). ITNs will be distributed to households through mass campaigns in all districts every 3 years. Mass campaigns have been implemented in 2010, 2014, 2017 and 2020 and planned in 2023. Widespread and increasing vector resistance to insecticide (including pyrethroids which are used in regular ITN) poses a threat to malaria vector control. This necessitates the use of different types of ITNs to mitigate the effect insecticide resistance. The country's stratification and evidence from routine monitoring of insecticide resistance will be used to guide which type of net is given to which district. Thus, different types of nets available that have WHO prequalification will be distributed accordingly. Nets with PBO synergist were distributed in 2020. Nets with PBO synergist and other new net types will be distributed in all districts based on entomological evidence and insecticide resistance studies.

Urban area ITN distribution will be targeted at communities/populations at high risk within the urban areas. Quantification of ITNs will be based on projected population and the universal coverage policy.

Strategy 2.2 Universal access through routine LLINs (ANC and EPI)

Mass distribution campaigns will be repeated every three years and continuous LLIN distribution through ANC and EPI will be done nationwide to maintain high levels of coverage during the entire period of the strategic plan.

Use of WHOPES approved long lasting insecticidal nets (LLINs) will be the primary method for preventing malaria countrywide. This strategic plan proposes to procure LLINs, distribution of the LLINs through mass campaigns and routine distribution through ANC and EPI. BCC for LLINs use and maintenance at households will be conducted prior to mass campaigns and continuously for routine distribution.

Furthermore, the NMCP will update and implement the malaria communication plan, monitor coverage and use of LLINs at household level through post distribution and utilization surveys. Scheduled MIS and DHS will provide country level information on LLIN utilization.

Strategy 2.3: Maintain high coverage of ITN through school-based distribution

There will be annual (except years when mass campaigns are implemented) distribution of LLINs through primary schools for targeted classes. Following WHO normative guidance, school-based distribution shall be planned, managed and implemented in synergy with other continuous distribution programmes, and not designed or managed in isolation.

Strategy 2.4 Implement Indoor Residual Spraying (IRS) in addition to LLIN

As part of core intervention recommended by WHO for malaria prevention, Indoor residual Spraying (IRS) will be used as an intervention/strategy targeting the high burden areas as per the recent national malaria stratification. The frequency of spraying activities will depend on the residual life of the WHO-approved insecticides to be used. Recent introduction of third generation insecticides have created opportunities for insecticide rotation to mitigate further development of insecticide resistance (refer the National Insecticide Resistance Monitoring and Management plan).

As part of IRS intervention, entomological and insecticide resistance monitoring will guide decisions on the types of insecticide to apply and selection of appropriate target areas for IRS. Environmental compliance will continue to be an integral part of the IRS projects to ensure health and safety for implementers and beneficiaries and protection of the environment from contamination. Implementers will procure insecticides, personal protective equipment, and other IRS-related supplies and materials from approved suppliers.

To ensure successful implementation of IRS in Sierra Leone, IVM taskforce will provide guidance/oversight on overall IRS activities including insecticide resistance management. Annual reporting on IRS activities and coverage indicators will continue to be promoted as part of IVM taskforce monitoring of IRS implementation.

Strategy 2.5 Larval source management

Larval Source Management (LSM) has recently will be adopted in Sierra Leone as a strategy to augment core interventions in targeted areas with bio-larvicides. The plan is to use LSM in targeted areas; urban/peri- urban areas, some rural areas where breeding sites are few, fixed and findable.

In Sierra Leone, larval source management will focus on larviciding and environmental management (manipulation and modification) conducted in the context of Integrated Vector management (IVM). This will continue to be carried out in combination with the other interventions.

Activities proposed under Environmental Management will be in line with the current environmental sanitation policy (National Environmental Sanitation Policy 2015), which addresses some of the major components of environmental management and housing.

All larval control activities will be under the direction of NMCP in collaboration with the Directorate of Environmental Health. Effective partner collaboration, under the Integrated Vector Management taskforce (IVM), will ensure appropriate capacity building, technological transfer as well as an objective assessment of the impact of these interventions.

Strategy 2.6 : Conduct entomological surveillance

Data will be collated on insecticide resistance of *Anopheles* mosquitoes in seven (7) sentinel districts (sites) across the country.

This comprises at least one site per region. Monitoring of insecticide resistance began in 2010 after training of MOHS staff in the various sentinel sites. The trained personnel have worked with technical experts from WHO and PMI to collate data on resistance across the sentinel sites. There are also molecular evaluations of mosquitoes to understand the resistance mechanisms involved. Over the years, new methods (such as CDC bottle assays) and new insecticides have been introduced into the list tested.

The data has over the years shown that *Anopheles* mosquitoes across the country are highly resistant to pyrethroid insecticides. However, there is an observed enhanced susceptibility to pyrethroids when mosquitoes are pre-exposed to a synergist (piperonyl butoxide, PBO). This strategy will be used to collect more data to inform decisions as previously collected data have been useful in informing policy on the vector control using insecticides such as the procurement of ITNs with PBO and the choice of the insecticides for IRS in specific locations.

Entomological surveillance will be undertaken eventually in 7 sentinel district (sites) to measure key entomological indicators (species composition, abundance, seasonality of malaria vectors,

vector behaviour, distribution etc that will support the implementation, monitoring and evaluation of vector control interventions in the country

Strategy 2.7 Intermittent preventive treatment in pregnancy (IPTp)

IPTp has been provided as part of the focused antenatal care (FANC) package using the recommended medicine, Sulphadoxine+Pyrimethamine (SP). The NMCP seeks to implement the MOHS recommendation of full integration of the MiP program within the Directorate of Reproductive and Child Health of MoHS. National policy for IPTp has now been updated in alignment with global policy to ensure that pregnant women receive at least three or more doses of SP during the 2nd and 3rd trimester of pregnancy (IPTp3).

The MoHS/NMCP will be responsible for updating guidelines and job aids on IPTp, orienting health workers on updated IPTp guidelines, producing integrated data collection tools for MIP, procuring SP for the public and private sector and mobilizing communities on antenatal care attendance in collaboration with the Directorate of Reproductive and Child Health

One of the major strategies to ensure an increase in the IPTp coverage among eligible pregnant women is availability of quality Sulfadoxine-Pyrimethamine (SP) at all service delivery points for Directly Observed Treatment (DOT) at every ANC contact and in the communities. To provide continuous supply of SP-IPTp, staff will be trained on logistics management including quantification based on consumption data and improved stock management. This will be carried out for all facilities providing ANC services in the country. SP will be procured for distribution to all facilities and communities. Strategies to be strengthened include improved quantification of SP at all levels and ensuring all facilities providing ANC services are provided with SP-IPTp through the Last Mile Distribution. This will be done in collaboration with DHMTs, DDMS/DPS, NMSA and development partners. Periodic studies on SP resistance will be conducted to ascertain drug efficacy and effectiveness. Mentorship and coaching of health service providers to improve on their skills and quality performance.

Strategy 2.8 Intermittent preventive treatment in infants (IPTi)

The Intermittent Preventive Treatment for Infants (IPTi) will be delivered through routine EPI activities at health facilities.

SP-IPTi is the administration of Sulphadoxine+Pyrimethamine for infants at intervals corresponding to routine vaccination schedules for the second and third doses of Penta and measles/yellow fever vaccination usually at 10 weeks, 14 weeks and 9 months of age respectively.

Resistance study for Sulphadoxine-Pyrimethamine (SP) will be periodically conducted to determine its efficacy and safety for IPTp and IPTi. Conduct of regular quarterly supportive supervision and mentorship of health staff will be done at all levels. Establishment and functionality of IPTi TWG with membership from EPI/CH programme, ICAP, UNICEF, WHO, CRS, DDMS/DPS, DPPI, etc to enable both smooth operation and delivery of IPTi services.

Objective 3: By 2025, 90% of the population practice at least 3 recommended malaria prevention and control behaviours

Strategy 3.1 Create an enabling environment for malaria prevention and control services at all levels.

Implementation and coordination of this multi-sectoral malaria control strategy by the Ministry of Health and Sanitation (MoHS) will require a more vibrant BCC approach. Civil Society Organizations (CSOs) and Community Based Organizations (CBOs) will be empowered to encourage communities to demand for services, know their health rights, and demand for accountability from duty bearers therefore increasing utilization and value for money.

Advocacy, social mobilization and Information Education Communication (IEC) will be driven by the understanding of changing model that emphasize engagement with various participant groups and strengthen empowerment of households and communities to adopt appropriate behaviour. Activities will seek to reduce malaria morbidity and related mortality by motivating every Sierra Leonean to take recommended actions to, prevent, and promptly seek for diagnosis and treatment of the disease and to bring about sustainable social and individual behaviour change. It acknowledges challenges in the areas of prevention and vector control, malaria in pregnancy, in infants and case management and proposes strategies for effective communication with relevant stakeholders.

Although malaria is a priority public health problem in the country, high level advocacy has not been adequate to influence national and regional leadership to sustain and scale up malaria interventions towards pre-elimination. Advocacy needs to be sufficiently appreciated as an element of the pre-elimination strategy that will mobilize domestic (public and private) support, which is critical to the sustainability of malaria control and elimination.

Based on the behaviour change challenges identified in the evaluation of the malaria program review (2019), a multi-prolonged and integrated approach is required to address the identified challenges as well as contribute to achievement of the objectives of 2021-2025 national malaria strategy of NMCP.

Strategies that have been considered to yield results in changing positive behaviour in malaria at various levels including success stories from the international community will be adapted. This strategy will sustain advocacy with political leaders, policy makers, opinion leaders, corporate bodies, the media, CSOs/NGOs/CBOs and FBOs for support of malaria control interventions. Moreover, lobby groups will be established to target the presidency, members of parliament, local government and the private sector to increase domestic funding for malaria control interventions. More emphasis should be put on the benefits arising from existing social campaign such as **“Zero Malaria Starts with Me”** couple with the political opportunities of Universal Health Coverage (UHC) to identify and overcome the socio-political barriers impeding access to preventive and treatment services for malaria. There should be a policy context which emphasizes that malaria control interventions must take into account health care utilization patterns of people.

Strategy 3.2 Create demand, access, and uptake of malaria prevention and control services at all levels.

The Malaria communication strategy will be revised, updated and disseminated to address and track the control of policy and resource commitments to effective service delivery in communities using appropriate strategies. The national communication framework will build on current high levels of knowledge about malaria prevention to create awareness about appropriate case management and health care seeking behaviour, while addressing barriers to change in attitudes and practices

identified in the Knowledge Attitude and Practices Survey (KAP 2012). 2017 Barrier Analysis (BA) supported by Global Fund and 2019 Malaria Behaviour Survey (MBS) supported by PMI. Once the communication framework is developed, all partners will be able to buy in such that the communication is structured. This will also define the approaches that will be used to reach the targeted audience for maximum benefit and participation in malaria prevention, treatment and control.

In order to increase awareness, knowledge and to stimulate demand for malaria prevention and treatment through Information, Education and Communication, IEC materials will be developed, deployed and disseminated to various groups throughout the country with the aim of creating demand, social and behaviour change. HED in collaboration with subject matter expert will develop, pre-test, print and disseminate approved IEC materials.

Sierra Leone's approach will target social, individual and environmental and health systems levels through promotion of a supportive society at family, community and policy makers. Communication materials on malaria will be developed or updated and translated in to local languages for behaviour change, namely : (i) At the community levels to mobilize and strengthen community capacity and change social norms ; (ii) At the level of engaging the individual and households for behaviour change (iii) At the policy level.

The Sierra Leone's approach will also implement a multi-pronged, integrated approach to address identified challenges for behavior change in collaboration with partners working together to address cross-cutting SBCC issues.

Strategy 3.3 Strengthen behavioural change for malaria control at all levels

This strategy will focus on conducting community dialogues, promoting interpersonal communication, film shows, Community Theatres – containing integrated malaria message in each episode and engaging community institutions; and religious organizations Community Health Workers (CHWs) will be trained on malaria interventions and will conduct focused household visits- Interpersonal Communication (IPC). The MOHS and CSOs / CBOs will conduct community dialogue forums, dramas and other social mobilization interventions to boost malaria control and

treatment behaviour among the community. These will include strategic engagement of school pupils to champion malaria intervention messages and act as change agents at home and among peers. Social mobilization and peer mentoring techniques will also be used to facilitate integration of malaria talking points into the activities of the clergy, community leaders, policy makers and the heads of primary and secondary schools.

Objective 4: To strengthen malaria surveillance and use of malaria information to improve decision-making for programme performance

This objective focuses on achieving at least 95% of health facilities reporting routinely on malaria programme performance. All districts will be expected to report routinely on malaria programme performance. All the districts have DHIS2, and District Monitoring and Evaluation Officers. At this level all data from the lower level health centres including the community are compiled and inputted into computer using DHIS2 software which is electronically transmitted to the National level. Secondly, most of the implementation of routine interventions takes place at the district level where activity reports are collected. Thirdly, partners implementing at district level should generate reports and submit them to the district. The district structures will be strengthened to ensure that all HMIS data and activity reports are collected, collated and analysed at all levels. All malaria policies will be guided by coordinated operational research on malaria. To monitor the progress attained and aide planning, regular monitoring through program reviews and surveys will be given a high priority

Strategy 4.1 Strengthen malaria surveillance

In keeping with the Global technical strategy for malaria 2016–2030 (GTS) this strategic plan recommends malaria surveillance as a core intervention in the Sierra Leone National Malaria Control Programme informed by the current WHO technical guidance on malaria surveillance.⁴A malaria surveillance system comprises the people, procedures, tools and structures necessary to generate information on malaria cases and deaths. Surveillance helps to assess the impact of all the

⁴Malaria surveillance, monitoring & evaluation: a reference manual. Geneva: World Health Organization; 2018
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interventions being implemented across all levels. Building the human resource capacity to implement this effectively is very vital. Effective implementation of the malaria surveillance system that will enable the NCMP to achieve the following,

- identify and target areas and population groups most severely affected by malaria, to deliver the necessary interventions effectively and to advocate for resources;
- regularly assess the impact of intervention measures and progress in reducing the disease burden and help countries to decide whether adjustments or combinations of interventions are required to further reduce transmission; and
- detect and respond to epidemics in a timely way.

Surveillance helps to assess the impact of all the interventions being implemented across all levels. The human resource capacity to implement this effectively is very vital.

The NMCP programme in collaboration with DPPI and DHSE will put in measures to strengthen the technical capacity of health workers at all levels as well as logistic infrastructure for an effective functioning of DHIS2 to attain the highest-level completeness, accuracy and timeliness of routine data collection and reporting. In addition, the surveillance capacity of staff in areas confirmed as pre-elimination areas will be strengthened.

Strategy 4.2 Increase use of malaria data for decision making

Generation of data for use in program planning is the core responsibility of the NMCP. This strategic plan will support training of health workers in data use for decision-making and support capacity building for geographical information systems - GIS for use in malaria mapping and programming. Procurement of GIS equipment and software and training of relevant staff will be supported. The plan will support the development and provision of routine updates of malaria stratification maps using routine and survey data to enhance evidence-based decision making at district level. The program will develop, disseminate and regularly update a grid of core indicators for regular monitoring of the malaria status in the country. The programme and the districts will also produce and widely disseminate quarterly and annual reports to all stakeholders, including the communities and the media.

A wealth of information has been made available through the conduct of surveys, production of surveillance bulletins, evaluation of malaria control interventions, and routine HMIS and facility-based quality of care assessments. More efforts will be needed to ensure that high-quality data are available from routine HMIS, including monitoring of trends in inpatient malaria morbidity and mortality, which is hampered by the lack of accurate data.

Strategy 4.3 Conduct and facilitate health facility surveys

In order to assess the program performance in line with the set outcomes and impact target, in addition to the routine data, the program together with the RBM partners will conduct periodic surveys and studies. This strategic plan will support the implementation of annual representative health facility (public and private) assessments for the quality of malaria care (uncomplicated and severe) and other surveys including : service availability and readiness assessments (SARA), Malaria Indicator Surveys, DHS and impact evaluations.

Strategy 4.4 Conduct and support population-based survey

The conduct of population – based surveys are used to assess programme indicators including malaria parasitaemia, entomological surveillance and monitoring of drug efficacy and safety. This is vital in guiding program planning, updating and notifying governments and donors on progress made towards malaria control and pre-elimination.

The NMCP intends to maintain the gains made through the conduct of the following activities: Malaria Indicator Surveys; support conduct of Sierra Leone Demographic and Health Survey; Conduct Antimalarial drug therapeutic efficacy studies; Conduct surveys on uptake of malaria interventions (Barrier Analysis); Entomological monitoring (Insecticide resistance monitoring, Entomological Inoculation Rate Monitoring); etc.

Strategy 4.5 Facilitate operational research for policymaking

It is through operations research that the country will adopt informed decisions in the control of malaria. In pursuit of this plan, strengthening research capacity to generate the evidence required for evidence-led policies, inform interventions and programmatic decisions will be a priority. The

NMCP in collaboration with Directorate of Research and Non-Communicable and Post Graduate Studies, national and international academic institutions and other partners will define a malaria operational research agenda, maintain collaboration with local and international research institutions and provide a forum for research results dissemination. To support the national IVM strategy, the country will seek to conduct operational research evaluations to generate context specific evidence on the effectiveness and operational feasibility of alternative vector control interventions that may provide additional impact to LLINs.

Strategy 4.6 Conduct entomological surveillance and monitor effectiveness of vector control tools and technologies

Epidemiological surveillance is fundamental in understanding the temporal and spatial distribution of malaria in Sierra Leone, while entomological surveillance enables the country to know the distribution of vectors so as to implement appropriate malaria control interventions. This strategic plan will support the National Malaria Control Program and partners to conduct sentinel surveillance and train medical entomologists to boost the country's capacity in entomological surveillance. The plan will also support conduct of vector behaviour and bionomics studies and insecticide susceptibility studies at selected sentinel sites.

Strategy 4.7 Monitor efficacy and safety of antimalarial drugs

The plan will support conduct of Therapeutic Efficacy Studies (TES) at selected sentinel sites every two years. TES are prospective evaluations of patients' clinical and parasitological responses to treatment for uncomplicated malaria. The objective of TES is to monitor the efficacy of first- and second-line treatments and, if required, that of any newly registered treatment for which information is necessary for a possible policy change. The NMCP will ensure that TES is conducted according to the WHO protocol.

In addition, the NMCP in collaboration with the Pharmacy Board of Sierra Leone (PBSL) will support districts to establish/strengthen functional systems for Pharmacovigilance of antimalarial drugs.

Objective 5: Ensure timely and adequate supply of quality-assured malaria commodities to public and private health facilities at all levels by 2025

Strategy 5.1 Ensure accurate and timely forecasting and supply planning of malaria commodities

Quantification of malaria pharmaceuticals and non-pharmaceuticals is a primary role of the Directorate of Pharmaceutical Services (DPS)/Directorate of Drugs and Medical Supplies (DDMS), National Medical Supplies Agency (NMSA) working in collaboration with the NMCP. While still problematic ; the supply of ACTs to health facilities has improved over time with the increase in commodity availability and improvement in national forecasting of supplies. Supply of antimalarials from health facilities to Community Health Workers still remain a challenge. To boost health worker and community confidence in health care interventions, consistent and timely supply of essential medicines and pharmaceutical commodities is essential. Specifically, the programme will play a key role in the quantification of RDTs, ACTs, rectal Artesunate, injectable Artesunate, Quinine, LLINs and other malaria commodities. Currently, procurement of antimalarials with support from the Global Fund is done through the WAMBO platform and Voluntary Pooled Procurement (VPP) system. The PMI supported antimalarials is done through the PMI IP Chemonics and delivered to the country.

The Directorate of Pharmaceutical Services(DPS)/DDMS will procure and distribute these commodities to all levels of care through both the ‘pull’ the ‘push’ basic kit system.

Strategy 5.2 Advocate for efficient warehousing, storage and sustainable distribution system across the supply chain

Health commodities are stored in NMSA-manned warehouses in Freetown and the districts. With support from the Global Fund, the MOHS constructed 3000m² purpose-built central Warehouse at Kerry town for the Free Health Care (FHC) and Reproductive Health products are distributed regularly to the districts from national to districts and from district to health facilities. With the integrated approach, other commodities like antimalarials are also distributed through the FHC supply pipeline. A standalone and integrated distribution of GF procured commodities for malaria,

TB and HIV/AIDS occur on a quarterly basis in collaboration with UNICEF. Distribution and reverse logistics of commodities are under the purview of NMSA.

Strategy 5.3 Strengthen the capacity of health care workers involved in commodity management at national, district, health facility and community levels

The NMCP and the District Health Management Teams will conduct integrated supportive supervision and verification of the supply and distribution process in the public, private, private-not-for-profit sectors and community levels. During supportive supervision, appropriate HMIS tools for each level of care will be supplied by the supervising teams (where applicable). The NMCP will train health workers on proper quantification, forecasting and ordering for malaria commodities and through the general supply chain management system. The NMCP will also hold quarterly supply chain review meetings to assess and resolve the PSM challenges and bottlenecks. The development of an integrated LMIS SOPs, guidelines and relevant tools and extensive training of staff are done throughout the supply chain system on their correct use to ensure quality.

Key cadres such as DLOs, DIOs and logisticians have been supported by various organizations to strengthen operations through DPS/DDMS and NMSA. The rolled out of Report, Request and Inventory (RR&IV) District Health Information Software 2 (DHIS2) platform training nationwide to enable the capture of RR&IV forms in the DHIS2 is ongoing. NMSA will continue to work with partner organizations and programmes towards increased LMIS data visibility and use. Rolled out mSupply web-based inventory management software to eight (8) District Medical Stores (DMS) and Hospital Medical Stores (HMS)

Monitoring and supportive supervision activities will be conducted by DDMS with support from GF, UNFPA and GOSL to assess stock status at facility level on a quarterly basis. The highlighted issues in the supply chain system at health facility level are discussed in meetings to help come up with solutions to effect change.

Objective 6: By 2025, strengthen and maintain capacity for programme management, coordination and partnership to achieve malaria programme performance at all levels

The National Malaria Control Programme is expected to encounter challenges that will necessitate enhancement of its operational capacity during the period 2021-2025. Some of these include new innovative tools such as malaria vaccine that is expected to be introduced after recommendations are passed for implementation in the country. This will require a level of readiness for its adoption, if it is to be implemented. There are also other innovative tools in diagnosis, treatment and vector control that may be introduced during this period

Strategy 6.1 Human resources support for malaria control

In order to effectively implement this strategic plan, the overall national health system needs to be strengthened. This will entail strengthening the national and districts capacity to deliver malaria control services at all levels. A capacity needs assessment will be conducted, and the identified gaps used to advocate for the recruitment of staff to fill the vacant and new positions at all levels and also to address infrastructure (office space and equipment) gaps. The NMCP will support and facilitate districts to hold monthly coordination meetings with partners implementing malaria control activities. The programme will also support DHMT/PHU In-Charges meetings where feedback is provided and key issues relating to malaria control discussed. The NMCP will support annual district integrated health sector planning to include key malaria interventions in their work plans, and conduct regular integrated supportive supervision. Malaria policies, guidelines and job aids will be reviewed, updated and disseminated to the districts.

Strategy 6.2 Strengthen management capacity and implementation at all levels

During the implementation of this strategic plan, advocacy will continue for the elevation of the position of the NMCP through advocacy meetings with line Ministries, Rollback Malaria Partnership and other key stakeholders. This strategic plan aims to rapidly scale up cost effective interventions in a synchronized manner to national scale to achieve impact. In order to mobilize additional resources

that will be required to implement the strategic plan, the programme will hold advocacy meetings and engage all potential funders (public and private) to mobilize resources for malaria prevention and control. The NMCP will develop concept notes, proposals, and work plans for resource mobilization from the government, development partners and the corporate private sector.

Strategy 6.3 Strengthen coordination and Partnership

The NMCP is mandated to coordinate all malaria prevention and control activities by all stakeholders in the spirit of the ‘three ones’. This strategic plan aims at strengthening the coordination role of the NMCP by conducting malaria partner mapping to identify and define their activities and geographical scope. The NMCP will streamline malaria control efforts to ensure the delivery of a comprehensive package of interventions to targeted populations and avoid duplication.

In addition, the programme will ensure that regular programme meetings, thematic group meetings, RBM in-country partnership coordination meetings, quarterly and annual review and planning meetings are held. Beyond national coordination, the NMCP will organize and participate in cross border malaria activities and meetings with neighbouring countries in the region.

In line with the targets of the Ministry of Health and Sanitation stipulated in the Public-Private partnership Strategy frame work drive, the NMCP commits to spearhead a strong partnership through coordination meetings with the private sector specifically to address effective malaria treatment and prevention strategies. This plan has embraced a multi-sectoral approach to ensure implementation and lobby for support from the private sector. The national malaria control programme will conduct monthly/quarterly coordination meetings and joint supervisions with other ministries and government departments including implementing partners. The NMCP will form and operationalise a private sector co-payment taskforce to facilitate the private sector to access subsidized ACTs. The NMCP will develop/adapt appropriate supportive supervision and monitoring tools for private health providers. In order to fully capture data from the private sector where a sizable population first seeks care, the NMCP will create a platform at district level for private drug shops, pharmacies and clinics to report on malaria HMIS indicators.

Objective 7: Improved mobilization of resources and maximize the efficient use of available resource for greater public health impact by 2025

The SLNME Strategic Plan is a comprehensive multi-year plan (2021-2025) that addresses all the components of the malaria programme. It includes prevention, control and case management and is based on national strategic priorities and not disease specific. For the year 2021– 2025, the NMCP financing strategy in Sierra Leone will be based on a mixed model: combining funding from GoSL, Public-Private Partnership (PPP) and sustained development Partners funding. It will rely on integration and co-implementation and will plan for sustainability of future financing. Financing mechanisms in place and to be designed within the period under consideration to support Malaria implementation are classified as: Government Malaria Expenditures; External Funding to support the Strategic Plan; and Public-Private-Partnership

7.1: Increase government spending and improve efficiency of government resource allocation for Malaria programming

This area will focus on increasing the share of government expenditures for Malaria over the total health expenditures, meaning a gradual shift from donor funding towards a more sustainable national health budget. Effective yearly and medium-term planning tools exist in the health sector: The Strategic Framework recommends their efficient implementation at the sub-sector and decentralized level and their use in strategic budgeting at all levels. At the same time, improved financial management tools can help strengthen the efficient use and monitoring of government expenditures if implemented at all levels.

Develop issue briefs on malaria progress update, challenges and way forward and disseminate to MPs and Parliamentary Health Committee, Ministry of Finance and Ministry of Economic and Development Planning and Local Councils. Develop/Update Sierra Leone Business Plan on malaria financing issues and co-financing needs and disseminate to MPs, Parliamentary Health Committee, Ministry of Finance, Ministry of Development and Economic Planning, Local Councils, partners and other stakeholders. Conduct annual briefing sessions with Parliamentary

Health Committee and other relevant stakeholders on progress, challenges and proposed interventions including policy and task measures to ensure sustained financing

7.2: Strengthen accountability measures related to funding for malaria to ensure appropriate allocation of malaria funding at the district level

Engage appropriate government bodies (Ministry of Local Government and Rural Development, Ministry of Finance, Local Government, Ministry of Development and Economic Planning, Donor Partners, RBM Partners, CSOs and other stakeholders to review and monitor budget line items and expenditures to date to assess applicability of funds for malaria project

7.3: Assess and adopt innovative financing mechanism (non-traditional) to addressing increasing donor funding

Assess potential innovative financial mechanisms that are applicable for health more broadly with impact on malaria specifically. Develop a roadmap for adopting financing mechanism. Conduct briefing with high level leaders including Parliamentary Health Committee on Health, for adoption of these innovative financing mechanism

7.4: Strengthen and increase private sector engagement and contribution for malaria control and pre-elimination by 2025

Sustained and consistent funding is necessary for successful prevention and control of malaria in the country. There is a need to leverage other government agencies' and corporate bodies' interest in preventing and controlling malaria. Private sector investment can help ensure that resource gaps identified in the Strategic Plan/Funding Gap Analysis are addressed to cover the following priorities:

1. Strengthen malaria surveillance and M&E system to ensure timely availability of high quality, consistent and relevant malaria data at all levels in order to track the progress of the malaria control and prevention interventions towards the 2025 malaria control targets.
2. Strengthen and maintain capacity for Governance and programme management to achieve programmatic objectives at all levels of the health care system towards malaria control and pre-elimination by 2025.

3. Increase awareness and knowledge of the entire population on malaria prevention and control so as to improve uptake and correct use of all interventions by 2025.
4. Ensure timely and adequate supply of quality-assured malaria commodities to all service delivery points by 2025.
5. Provide appropriate diagnosis to all suspected malaria cases and prompt and effective treatment to 100% of confirmed malaria cases in accordance to treatment guidelines by 2025.
6. Protect at least 80% of the population at risk with effective malaria prevention interventions by 2025.

These will be done by organizing TWG/partnership meeting to develop and monitor the roadmap.

CHAPTER 5.0 IMPLEMENTATION FRAMEWORK OF THE NMESP

5.1 Workplan

Table 9: Workplan

Objective 1: By end of 2025, reduce malaria mortality rates by at least 75% compared to 2015							
Strategy	Main activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 1.1 Ensure provision of diagnostic services at public, private and community levels	Activity 1.1.1 Provision of quality assured mRDTs to all PHUs.	x	x	x	x	x	MOHS/NMCP/PARTNERS
	Activity 1.1.2 Provision of quality assured malaria RDTs to CHWs.	x	x	x	x	x	MOHS/NMCP/PARTNERS
	Activity 1.1.3. Provision of quality assured mRDTs for public and private hospitals	x	x	x	x	x	MOHS/NMCP/PARTNERS
	Activity 1.1.4. Provision of diagnostic equipment for public hospitals and CHC.	x	x	x	x	x	MOHS/NMCP/NLS/PARTNERS
	Activity 1.1.5. Provide sets of reagent to all public hospitals and CHCs	x	x	x	x	x	MOHS/NMCP/NLS/PARTNERS
	Activity 1.1.6 Refresher training of private pharmacies on malaria case management and use of mRDTs.	x	x	x	x	x	MOHS/NMCP/PBSL/PSSL/PBA
	Activity 1.1.7 Malaria Onsite Coaching and Mentorship (MOCM) with private pharmacies and Pharmacy technicians on malaria case management and use of mRDTs every quarter.	x	x	x	x	x	MOHS/NMCP/PBSL/PSSL/PBA
	Activity 1.1.8 Review meeting with private pharmacies and Pharmacy technicians on malaria case management and use of mRDTs.	x	x	x	x	x	MOHS/NMCP/PBSL/PSSL/PBA
	Activity 1.1.9. Malaria Onsite Coaching and Mentorship (MOCM) of health staff from national to district on quarterly basis.	x	x	x	x	x	MOHS/NMCP

Objective 1: By end of 2025, reduce malaria mortality rates by at least 75% compared to 2015							
Strategy	Main activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 1.2 Ensure provisions of effective treatment through the public, private and communities.	Activity 1.2.1. Provision of quality assured ACTs to all PHUs.						MOHS/NMCP/PARTNERS
	Activity 1.2.2. Provision of quality assured ACTs to CHWs	x	x	x	x	x	MOHS/NMCP/PARTNERS
	Activity 1.2.3. Provision of quality assured ACTs to public and private hospitals	x	x	x	x	x	MOHS/NMCP/PARTNERS
	Activity 1.2.4. Revise/update treatment algorithm for health care workers- hospitals, PHUs and Community	x		x			MOHS/NMCP/PMI/ PARTNERS
	Activity 1.2.5. Print and disseminate revised treatment algorithm for health care workers- hospitals, PHUs and Community	x		x			MOHS/NMCP/PMI
	Activity 1.2. 6. Revise/update treatment guidelines, Policy document and training manual on malaria case management for health workers- hospitals and PHUs.	x					MOHS/NMCP/DPS/DDMS/PM I/PARTNERS
	Activity 1.2.7. Printing of the revised treatment guidelines and training manual	x					MOHS/NMCP/PMI
	Activity 1.2. 8.. Orientation of NMCP and relevant MOHs technical staff and validation of mentoring and coaching tools.	x					MOHS/NMCP/PMI
	Activity 1.2.9. Training of Trainers of DHMT members on integrated malaria onsite coaching and mentorship of malaria cost effective interventions - case management (uncomplicated and severe malaria), MiP, IPTi, data quality reporting and use, LLINs distribution and use and SBCC.		x				MOHS/NMCP
	Activity 1.2.10. Malaria Onsite Coaching and Mentorship (MOCM) of hospital staff (Nurses) on malaria case management at service delivery point in the public and private hospitals.	x	x	x	x	x	MOHS/NMCP/ PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 1.2.11. Training of Trainers of Medical Officers and Hospital Superintendent on the revised malaria treatment guidelines and use of mRDTs (Public and Private Hospitals)	x					MOHS/NMCP
	Activity 1.2.12. Malaria Onsite Coaching and Mentorship (MOCM) of Medical Officers and Hospital Superintendent on the revised malaria treatment guidelines and use of mRDTs (Public and Private Hospitals)	x	x	x	x	x	MOHS/NMCP
	Activity 1.2.13. Integrated Malaria Onsite Coaching and Mentorship (MOCM) of PHU staff on implementation of malaria activities	x	x	x	x	x	MOHS/NMCP
	Activity 1.2.14. Training of trainers of tutors in pre-service training in health institutions on malaria policies and guidelines	x					MOHS/NMCP
	Activity 1.2.15. Orientation of a core team of traditional healers on malaria policies and guidelines	x					MOHS/NMCP/ PARTNERS
	Activity 1.2.16. Bi-annual Review meeting with traditional healers on the implementation of malaria activities.	x	x	x	x	x	MOHS/NMCP/ PARTNERS
Strategy 1.3 Build human and institutional capacity for QA/QC system for Malaria diagnosis.	Activity 1.3.1 Integrated Malaria Onsite Coaching and Mentorship for hospital staff - public and private hospitals.	x		x		x	MOHS/NMCP/ PARTNERS
	Activity 1.3.2. Conduct quality control testing on mRDTs upon arrival and while in distribution chain	x	x	x	x	x	MOHS/NMCP/PBSL
	Activity 1.3.3 Revised /update mRDT job aides and SOPs for health workers.	x				x	MOHS/NMCP/ PARTNERS
	Activity 1.3.4 Print revised mRDT job aides and SOPs for health workers	x				x	MOHS/NMCP/ PARTNERS
	Activity 1.3.5. Set up and equip malaria reference laboratory.	x	x	x	x	x	MOHS/NMCP/ PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 1.3.6. Training and certification of national experts on malaria microscopy	x		x		x	MOHS/NMCP/NLS
	Activity 1.3.7 Integrated training of Master trainers in malaria diagnosis.	x		x		x	MOHS/NMCP/NLS
	Activity 1.3.8. Conduct malaria diagnosis refresher training of laboratory staffs	x		x		x	MOHS/NMCP/NLS
	Activity 1.3.9. Malaria Onsite Coaching and Mentorship a (MOCM) of laboratory personnel on basic malaria microscopic and quality assurance and quality control (QA/AC)	x	x	x	x	x	MOHS/NMCP/NLS
	Activity 1.3.10. Provide required equipment and materials for quality and safe malaria diagnosis.	x	x	x	x	x	MOHS/NMCP/NLS/ PARTNERS
	Activity 1.3.11. Revise/update the following laboratory document : laboratory guidelines, QA/QC manual, Training curriculum and SOPs.	x		x			MOHS/NMCP/NLS/ PARTNERS
	Activity 1.3.12. Print revised laboratory document : laboratory guidelines, QA/QC manual, Training curriculum and SOPs.	x		x			MOHS/NMCP/NLS/ PARTNERS
	Activity 1.3.13 Procure spare parts for laboratory microscopes and equipment.	x		x			MOHS/NMCP/NLS/ PARTNERS
Strategy 1.4. Strengthen capacity of monitoring the safety and efficacy of antimalarial medicines.	Activity 1.4.1 Conduct therapeutic efficacy and safety studies for antimalarial treatment (TET).	x		x		x	MOHS/NMCP/PARTNERS
	Activity 1.4.2. Establish sentinel site to monitor the quality, coverage, and progress of malaria intervention.	x					MOHS/NMCP/ PARTNERS
	Activity 1.4.3. Conduct monitoring visit to sentinel site to assess the quality, coverage, and progress of malaria interventions.	x	x	x	x	x	MOHS/NMCP/ PARTNERS
	Activity 1.4.4. Conduct compliance/adherence to anti-malaria medicines.	x		x		x	MOHS/NMCP/ PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 1.4.5. Strategic Plan Review					x	MOHS/NMCP/ PARTNERS
	Activity 1.4.6. Validation of the draft strategic plan document					x	MOHS/NMCP/ PARTNERS
	Activity 1.4.7. Printing of Revised Strategic Plan 2026-2030					x	MOHS/NMCP/ PARTNERS
	Activity 1.4.8. Review and update Research Agenda		x				MOHS/NMCP/ PARTNERS
	Activity 1.4.9. Print revised Research agenda		x				MOHS/NMCP/ PARTNERS
	Activity 1.4.10. Quarterly meetings of Research Committee		x				MOHS/NMCP/ PARTNERS
	Activity 1.4.11. Mid-term programme review			x			MOHS/NMCP/ PARTNERS
	Activity 1.4.12. Validation of the draft Mid-term review document			x			MOHS/NMCP/ PARTNERS
	Activity 1.4.13. Malaria Programme Performance Review					x	MOHS/NMCP/ PARTNERS
	Activity 1.4.14. Validation of the draft Malaria Programme Performance Review document					x	MOHS/NMCP/ PARTNERS
	Activity 1.4.15. Print Malaria Programme Performance Review report					x	MOHS/NMCP/ PARTNERS
Strategy 1.5. Improve management of severe malaria in hospitals and CHCs	Activity 1.4.16. Build capacity of malaria molecular laboratory epidemiology network in Sierra Leone	x	x	x			MOHS/NMCP/ PARTNERS
	Activity 1.5.1 Training of trainers of national and DHMT staff on severe malaria management including rectal artesunate malaria suppository (RAMs) as a pre-referral for severe malaria.	x		x		x	MOHS/NMCP/ PARTNERS
	Activity 1.5.2 Malaria Onsite Mentorship and coaching (MOCM) of health staff in hospitals and CHCs on severe malaria management.	x	x	x	x	x	MOHS/NMCP/ PARTNERS
	Activity 1.5.3. Strengthen the effectiveness and functionality of blood bank service at secondary and tertiary hospital levels	x	x				MOHS/HSS/PARTNERS
	Activity 1.5.4. Revise/update existing treatment algorithm and job aides on severe malaria for hospitals and CHCs.	x		x			MOHS/NMCP/ PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 1.5.5. Print revised Treatment algorithm and job aides on severe malaria for hospitals and CHCs.	x		x			MOHS/NMCP/ PARTNERS
	Activity 1.5.6 Scale up the use of Rectal artesunate malaria suppository (RAMs) nationwide.				x		MOHS/NMCP/ PARTNERS
	Activity 1.5.7. Malaria Onsite Coaching and Mentorship (MOCM) of hospital and PHU staff at all levels on rectal artesunate malaria suppository (RAMs) as a pre-referral for severe malaria on monthly basis from DHMT to PHUs		x	x	x	x	MOHS/NMCP/ PARTNERS
	Activity 1.5.8. Malaria Onsite Mentorship and coaching (MOCM) of hospital and PHU staff at all levels on rectal artesunate malaria suppository (RAMs) as a pre-referral for severe malaria on a quarterly basis from national level to district level.		x	x	x	x	MOHS/NMCP/ PARTNERS
	Activity 1.5.9. Introduce the use of rectal artesunate malaria suppository (RAMs) by female CHWs			x			MOHS/NMCP/ PARTNERS
	Activity 1.5.10. Conduct integrated Malaria Onsite Coaching and Mentorship (MOCM) on the use of rectal artesunate malaria suppository (RAMs) by female CHWs at the community level.				x	x	MOHS/NMCP/ PARTNERS
	Activity 1.5.11. Evaluate the use of rectal artesunate malaria suppository (RAMs) by female CHWs	x			x		MOHS/NMCP/ PARTNERS
	Activity 1.5.12. Scale-up CHWs RAMS nationwide				x	x	MOHS/NMCP/ PARTNERS
	Activity 1.5.13. Establishment of a Malaria Case Management TWG.	x					MOHS/NMCP/ PARTNERS
	Activity 1.5.14. Conduct quarterly meetings of Malaria Case Management TWG.	x	x	x	x	x	MOHS/NMCP/ PARTNERS

Objective 2 : By end of 2025, reduce malaria incidence by at least 75% compared to 2015

Strategy	Main activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 2.1. Universal Access to LLINs through Integrated mass distribution campaign	Integrated Mass distribution campaign of LLINs to households in all districts			X			MOHS/NMCP/PARTNERS
	2. I: COORDINATION						
	Activity 2.1.1a. National level coordination for the campaign (Task Force)		X	X			MOHS/NMCP
	Activity 2.1.1b. Sub-committee meetings - 4 sub-committees (communication, logistics, finance, M&E/training) that will meet						MOHS/NMCP
	Activity 2.1.1c. Coordination meetings at district level (District Taskforce meetings) - Meetings starting in 2022 at district level in preparation for microplanning						MOHS/NMCP
	Activity 2.1.1d. Command centre operations			X			MOHS/NMCP
	2.2 PROCUREMENT						MOHS
	Activity 2.2.1a. Procurement & Shipment of WHO approved LLINs						MOHS/NMCP/PARTNERS
	2.3 LOGISTICS AND PRINTING		x	x			MOHS/NMCP
	Activity 2.3.1a: Reception of LLINs at district and regional stores		x	x			MOHS/NMCP
	Activity 2.3.1b. Conveyors for transportation of containers from port to districts stores (delivery to district through procurement agencies/freight forwarders).			x			MOHS/NMCP
	Activity 2.3.1c: Transport of LLINs from regional stores to district warehouses including conveyors			x			MOHS/NMCP

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 2.3.1d: Transport of LLINs from district stores to PHU warehouses including conveyors			x			MOHS/DHMT
	Activity 2.3.1e: Transportation of LLINs from PHUs to distribution points (DPs) - outreach / mobile sites			x			MOHS/DHMT
	Activity 2.3.1f: Boat rental for LLIN prepositioning			x			MOHS/NMCP
	Activity 2.3.1g: Reconciliation and physical inventory in preparation for reverse logistics from PHUs to district medical stores. Remaining nets to be reversed by DHMT or national monitors to DMS using vehicles used for supervision activities			x			MOHS/NMCP/DHMTS
	Activity 2.3.1h: Warehouse assessment and identification of transport options mission (regional / district warehouses)			x			MOHS/NMCP
	Activity 2.3.1i: Rental of regional warehouses and security			x			MOHS/NMCP
	Activity 2.3.1j: Rental of district warehouses and security			x			MOHS/NMCP
	Activity 2.3.1k: Printing of campaign supplies and procurement of materials for implementation			x			MOHS/NMCP
	Activity 2.3.1l: Allowance to national drivers for the distribution of campaign materials to district			x			MOHS/NMCP
	Activity 2.3.1m: Vehicle maintenance Regional Supervisors (senior MOHS staff) for the entire campaign period			x			MOHS/NMCP
	Activity 2.3.1k: Vehicle maintenance for DHMT vehicles for the entire campaign period						MOHA/NMCP
	Activity 2.3.1n: Publications for procurement of goods and services						MOHS/NMCP

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	2.4 MICRO-PLANNING						MOHS
	2.4.1 a.Training of national monitors on microplanning (5 days in Freetown)			x			MOHS/NMCP
	2.4.1b.Microplanning - Step down training for DHMT in Western Area Rural and Urban (4 days)			x			MOHS/NMCP
	2.4.1 c.Microplanning workshops in 16 districts			x			MOHS/NMCP
	2.4.1d. Microplanning validation workshop at national level - 3 days of preparation (cleaning and reviewing microplans) by national supervisors/command centre, 1 day validation meeting with 12 districts (total 4 days)			x			MOHS/NMCP
	2.5 TRAININGS			x			MOHS
	2.5.1a. Training of trainers national monitors (56), Regional supervisors (14), finance team (14) and partners (10) for 5 days (3 days on campaign + 1 day log + 1 day finance)			x			MOHS/NMCP
	2.5.1b.Training of data managers - 2 days in Freetown			x			MOHS/NMCP
	2.5.1c.Training of district and chiefdom supervisors for the household registration/voucher distribution and LLIN distribution activities (4 days) - 14 districts			x			MOHS/NMCP
	2.5.1d.Training of district, ward and zonal supervisors for the household registration/voucher distribution and LLIN distribution activities (4 days) - WESTERN AREA RURAL AND URBAN			x			MOHS/NMCP
	2.5.1e..Training of door-to-door registration and distribution of vouchers teams and team supervisors (2 days for teams and team supervisors + 1 day for team supervisors) at chiefdom - 14 districts			x			MOHS/NMCP/DHMT

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	2.4.1f.Training of door-to-door registration and distribution of vouchers teams (2 days) at ward level (2 days for teams and team supervisors + 1 day for team supervisors) - WAR / WAU			x			MOHS/NMCP/DHMT
	2.4.1g.Training of PHU supervisors on LLIN distribution, social mobilization and logistics at chiefdom level (2 days) - DISTRICTS			x			MOHS/NMCP/DHMT
	2.4.1h.Training of PHU and DP supervisors on LLIN distribution, social mobilization and logistics at ward/zone level (2 days) - WAU / WAR			x			MOHS/NMCP/DHMT
	2.4.1i.Training of LLIN distribution point team members (1 day) (Community Level)			x			MOHS/NMCP/DHMT
	2.4.1j.Training of district logistics and warehouse staff in logistics activities (district pharmacist, district logistics officer, store keeper, district information officer and malaria FP for 2 days)			x			MOHS/NMCP
	2.4.1j.Training of conveyors at central level (0.5 day)			x			MOHS/NMCP
	2.4.1j.Training of conveyors at district level (0.5 day)			x			MOHS/NMCP/DHMT
	2.5 IMPLEMENTATION			x			MOHS
	2.5.1a.Regional Supervisors (16) and national monitors (106)			x			MOHS/NMCP
	2.5.1b.Supervision by DHMT/Chiefdom/Ward teams (door-to-door activities and LLIN distribution)			x			MOHS/NMCP/DHMT
	2.5.1c.Independent Monitoring: In process and end process monitoring			x			MPHS/NMCP/WHO
	2.5.1d.Procurement and Installation of software on the tablets			x			MOHS/NMCP/PARTNERS
	2.5.1b. Data management costs			x			MOHS/NMCP/PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	2.5.1e.Commodity Management Assessment - lump sum pending finalization of protocol			x			MOHS/NMCP
	2.5.1f.National review meeting after campaign (2 day working session with national monitors + CC to finalize data + 1 day presentation to DHMT of campaign results)			x			MOHS/NMCP
	2.6 FINANCE AND PROCUREMENT SUPPORT			x			MOHS
	2.6.1a Finance support staff in each district + Procurement support for IHPAU			x			MOHS/NMCP/PARTNERS
	2.6.1b.Training of finance support staff at national level - 2 days (1 DHMT finance support officer + 1 finance/admin + DMO and DHS as part of Financial Management team per district)			x			MOHS/NMCP
	2.7. Ipads for data collection and reporting			x			MOHS/NMCP/PARTNERS
	2.7.1a. TA and procurement of Ipads			x			MOHS/NMCP/PARTNERS
	2.7.1b. Training on management of Ipads			x			MOHS/NMCP/PARTNERS
Strategy 2.2: Universal Access through routine LLINs (ANC and EPI)	2.2 Routine distribution of LLINs (ANC and EPI)	x	x	x	x	x	MOHS
	2.2.1a: Procurement of LLINs (ANC)	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1b: Procurement of LLINs (EPI)	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1c: Procurement of LLINs (School-based)	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1d. Printing of ITN register	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1e. Printing of ANC register	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1f. Printing of Health Facility (HF) 2	x	x	x	x	x	MOHS/NMCP/PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	2.2.1 g. Printing of Health Facility (HF) 3	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1h. Printing of UF cards	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.2.1i. Printing of Under-two Register	x	x	x	x	x	MOHS/NMCP/PARTNERS
Strategy 2.3: Maintain high coverage of ITN through School based distribution	2.3.1 Distribution of ITNs to school children(Class 1, Class 3 and Class 5)	x	x	x	x	x	MOHS
	2.3.1a: Organize national taskforce	x					MOHS/NMCP
	2.3.1b: Quantification of ITN	x					MOHS/NMCP
	2.3.1c: Stakeholders meetings	x					MOHS/NMCP/PARTNERS
	2.3.1d: Development of tools (M&E, IEC/BCC)	x					MOHS/NMCP/PARTNERS
	2.3.1e: Training of school teachers	x					MOHS/NMCP
	2.3.1g: Orientation of school pupils	x					MOHS/NMCP/
	2.3.1h: Conduct supportive supervision	x	x	x	x	x	MOHS/NMCP
	2.3.1i: Conduct social mobilisation activities	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.3.1j: Data collection and analysis	x	x	x	x	x	MOHS/NMCP
Strategy 2.4: Implement Indoor Residual Spraying (IRS) in addition to LLIN	2.4. Indoor Residual Spraying (IRS)						MOHS
	2.4.1a: Selection of districts and insecticide	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.4.1b: Quantification of insecticides and equipment including PPEs	x	x	x	x	x	MOHS/NMCP/PARTNERS
	2.4.1c: Procurement of insecticides	x	x	x	x	x	PMI
	2.4.1d: Procurement of equipment	x	x	x	x	x	PMI
	2.4.1e: Shipment	x	x	x	x	x	PMI

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	2.4.1g: Identification of Storage facilities at national and district level	x	x	x	x	x	MOHS/PMI
	2.4.1h: Transportation from national warehouse to districts stores	x	x	x	x	x	MOHS/PMI
	2.4.1i: Conduct national microplanning	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1j: Conduct district microplanning	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1k: Review/drafting of IRS tools (M&E, IEC/BCC,logistic)	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1l: Geographical reconnaissance and logistic need assessment	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1m: Pre IRS Environment assessment	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1n: IRS operational sites establishment (including soak pit and rinsing area)	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1o: Community mobilization prior to IRS	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1p: Recruitment of personnel	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1q: Training of trainers	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1r: Training of SOP, TL	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1s: Identification and training of staff (pump technicians, storekeeper, drivers etc...)	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1t: Conduct house enumeration	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1u: Conduct door to door mobilization	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1v: Conduct IRS in selected districts	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1w: Conduct mid spray environment assessment	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1x. Conduct environment post spray assessment	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1x: Training of health staff	x	x	x	x	x	MOHS/NMCP/PMI

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	2.4.1y: Conduct PSDQA	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1z: Disposal of insecticide empty bottle or sachet	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1aa: Monitoring and supervision	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1ab: Reporting	x	x	x	x	x	MOHS/NMCP/PMI
	2.4.1ac: Resource mobilization to scale up IRS in more districts	x	x	x	x	x	MOHS/NMCP/PMI
Strategy 2.5 Larval source management	2.5 Bio-larviciding and community-led environmental management	x					MOHS
	2.5.1a. Conduct feasibility study	x					MOHS/NMCP/PARTNER
	2.5.1b. Hire TA-Air ticket	x	x	x	x	x	MOHS/NMCP/PARTNER
	2.5.1c. Develop and print LSM Tools, IEC/BCC materials	x	x				MOHS/NMCP/PARTNER
	2.5.1d. Training of trainers (TOT) for implementation	x					MOHS/NMCP/PARTNER
	2.5.1e. Cascade training	x					MOHS/NMCP
	2.5.1f. Storage facility	x					MOHS/NMCP
	2.5.1g. Transportation						MOHS/NMCP
	2.5.1h. Social mobilization-IEC/BCC	x					MOHS/NMCP
	2.5.1i. Implementation of 12 months pilot project (Strategy 1 (Community-led Environmental Management) and Strategy 2 (Larviciding))	x					MOHS/NMCP/PARTNERS
	2.5.1j. Monitoring and supervision	x					MOHS/NMCP/PARTNERS
	2.5.1k. Evaluation	x	x				MOHS/NMCP/PARTNERS

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
Strategy 2.6 Conduct entomological surveillance	2.6 Entomological Surveillance						MOHS
	Activity: 2.6.1a: Integrate entomological indicators in DHIS-2 software	x					MOHS/NMCP
	Activity 2.6.1b: Establish molecular laboratory for PCR and ELISA analysis	x	x				MOHS/NMCP/PARTNER
	Activity: 2.6.1c: Establish entomological monitoring sentinel site in all the eco-epidemiological facets	x	X	X			MOHS/NMCP/PARTNER
	Activity: 2.6.1d: Conduct durability monitoring after mass campaign including the different type of LLINs distributed	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1e: Conduct quality control and residual life monitoring after IRS campaign	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1f: Conduct vector bionomic monitoring to assess the impact of vector control interventions	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1g: Scale up vector bionomics in additional districts	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1h. Assess the susceptibility of the local vectors to the insecticides used in Public Health	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1i. Conduct a mapping of Insecticide Resistance in Sierra Leone	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1j. Conduct a review of the IRMMP and IVM policy and strategic plan	x		x		x	MOHS/NMCP/PARTNER
	Activity: 2.6.1k: Print and disseminate IVM Policy documents (IRMMP, IVM Policy and Strategy)	x		x		x	MOHS/NMCP
	Activity: 2.6.1l: Training of graduate entomologists	x	x				MOHS/NMCP/PARTNER
	Activity: 2.6.1m: Training of malaria entomology technicians	x	x				MOHS/NMCP/PARTNER
	Activity: 2.6.1n: Bi-annual IVM National Steering Committee Meetings	x	x	x	X	x	MOHS/NMCP

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity: 2.6.1o: Quarterly IVM TWG Meetings	x	x	x	X	x	MOHS/NMCP
	Activity: 2.6.1p. Develop entomological profile maps at district and national levels	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity: 2.6.1q. Establish an insectary in Freetown	x					MOHS/NMCP/PARTNER
Strategy 2.7 Intermittent Preventive Treatment in Pregnancy (IPTp)	2.7. Malaria In Pregnancy						
	Activity 2.7.1a: Procurement of IPTp (SP)	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity 2.7.1b: Transportation from port of entry to CMS	x	x	x	X	x	MOHS/NMCP
	Activity 2.7.1c. Distribution of SP from CMS to DMS	x					MOHS/NMCP
	Activity 2.7.1d: Conduct rapid assessment on MiP situation/gap in public and private facilities	x					MOHS/NMCP
	Activity 2.7.1e. Conduct advocacy meetings with private health practioners on MiP	x					MOHS/NMCP
	Activity:2.7.1f: Print & distribute MIP National Guidelines & Strategies and MiP job Aides to hospitals (public & private)	X		X			MOHS/NMCP
	Activity 2.7.2g: Review TBA job aides, data collection & reporting tools	X		X			MOHS/NMCP
	Activity 2.7.1h: Print and distribute TBA job aides, data collection & reporting tools.	X		X			MOHS/NMCP
	Activity 2.7.1i. Conduct a refresher training of TBAs on MiP (community IPTp delivery) in the 16 districts	x					MOHS/NMCP
	Activity 2.7.1j: Printing of MiP training manual	x					MOHS/NMCP
	Activity 2.7.1k: Distribute reviewed MIP policy guidelines and training manuals to 16 districts	x					MOHS/NMCP

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 2.7.1l .Trainings						
	Activity 2.7.1m: Integrated Training (NMCP & RH/FP) health service providers on MiP (public & private).	X					MOHS/NMCP
	Activity 2.7.m: Conduct mentoring and coaching of PHU staff in all 16 districts on MiP	x	x	x	X	x	MOHS/NMCP
	Activity 2.7.1n: PHU staff to conduct supportive supervision of TBAs on IPTp at community level	x	x	x	X	x	MOHS/NMCP/DHMT
	Activity 2.7.1o: Conduct TES for SP	x					MOHS/NMCP
	Activity 2.7.1p: Conduct quarterly MiP TWG Meetings	x	x	x	X	x	MOHS/NMCP
Strategy 2.8 Intermittent Preventive Treatment in Infants (IPTi)	2.8. Intermittent Preventive Treatment in Infants						
	Activity 2.8.1a. Conduct partnership and coordination meetings (TWG)	x	x	x	X	x	MOHS/NMCP
	Activity 2.8.1b: Quantification meeting	x	x	x	X	x	MOHS/NMCP
	Activity 2.8.1c: Procurement of SP for IPTi	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity 2.8.4d: Shipment	x	x	x	X	x	MOHS/NMCP/PARTNER
	Activity 2.8.1e: Transportation from port of entry to CMS	x	x	x	X	x	MOHS/NMCP
	Activity 2.8.1f. Distribution of SP from CMS to DMS	x	x	x	X	x	MOHS/NMCP
	Activity 2.8.1g: Distribute SP from DMS to health facilities	x	x	x	X	x	MOHS/NMCP/DHMT
	Activity 2.8.1h: Routine administration of SP to children under -one year	x	x	x	X	x	MOHS/NMCP/DHMT
	Activity 2.8.1i: Printing of IPTi training manual	x					MOHS/NMCP/PARTNER

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 2.8.1j: Printing of Under 5 cards (coordination with CH/EPI)	x		x		x	MOHS/NMCP
	Activity 2.8.1k: Printing of Under 2/EPI registers	x		x		x	MOHS/NMCP
	Activity 2.8.1l: Training of PHU staff on IPTi in all 16 districts	x					MOHS/NMCP
	Activity 2.8.1m: Conduct mentoring and coaching of PHU staff on IPTi in all 16 districts(to be inclusive with the MiP trip)	x	x	x	X	x	MOHS/NMCP/DHMT

Objective 3: By 2025, 90% of the population practice at least 3 recommended malaria prevention and control behaviours							
	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 3.1.1. Conduct advocacy at national and district level with policy makers.	x		X		x	MOHS(NMCP/HED)
	Activity 3.1.2. Engage opinion leaders (PCs, Religious leaders, District council chairmen/Mayors & others) at chiefdom and community levels	x		X		x	MOHS/NMCP
	Activity 3.1.3. Engage the private sector (celebrities etc.), banks, GSM; Petroleum/Mining company's media coalition to support malaria prevention and control interventions at all levels.	x		X		x	MOHS/NMCP
	Activity 3.1.4. Engage Civil Society Organizations and CBOs to support malaria prevention and control interventions at all levels	x	x	X	x	x	MOHS/NMCP/Partners
	Activity 3.1.5 Conduct Quarterly SBCC technical working group meetings at national level	x	x	X	x	x	MOHS/NMCP/Partners
	Activity 3.2.1: Strengthen community structures to promote malaria prevention and control interventions	x	x	X	x	x	MOHS/NMCP/Partners
	Activity 3.2.2: Enhance coordination among malaria stakeholders and RBM partners	x		X		x	MOHS/NMCP
	Activity 3.2.3: Intensify community engagement activities to create demand, access and uptake of malaria prevention and control services.	x	x	X	x	x	MOHS/NMCP/Partners
	Activity 3.2.4: Support CHWs/TBAs & other behaviour change volunteers to scale up malaria prevention and control activities	x	x	x	x	x	MOHS/NMCP/Partners
	Activity 3.2.5: Create demand to increase ITN uptake during routine and mass ITN distribution campaigns	x	x	x	x	x	MOHS/NMCP/Partners

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 3.2.6: To review and update SBC materials to enhance malaria prevention & control activities	x					MOHS/NMCP/Partners
	Activity 3.2.7: Promote the use of social media & digital technology to enhance Malaria SBC prevention and control	x		x		x	MOHS/NMCP
	Activity 3.2.8: Intensify school health programmes for malaria prevention and control	x	x	x	x	x	MOHS/NMCP/Partners
	Activity 3.2.9: Annual Commemoration of World Malaria Day	x	x	x	x	x	MOHS/NMCP/Partners
	Activity 3.2.10: Conduct audience segmentation/community profiling for targeted SBC interventions based on the outcome of the Malaria Behaviour Survey	x					MOHS/NMCP/Partners
	Activity 3.2.11 Commemoration of World Mosquito Day (20 th August)	x	x	x	x	x	MOHS/Partners
Strategy 3.3. Strengthen behavioural change for malaria control at all levels.	Activity 3.3.1. Review, update & rollout the 2018-2020 Malaria SBCC strategy	x					MOHS/NMCP
	Activity 3.3.2. Provide on-going trainings & orientations/exposures of partners & MOHS/NMCP on behaviour change techniques and approaches	x	x	x	x	x	MOHS/Partners
		x	x	x	x	x	MOHS/Partners
	Activity 3.3.3: Conduct regular behaviour change research activities (BA, MBS, KAPB, and Service Provider-based Assessment.		x			x	MOHS/Partners
	Activity 3.3.4. Supportive supervision, monitoring & evaluation of SBCC activities	x	x	x	x	x	MOHS/NMCP/Partners
	Activity 3.3.5. Develop guidelines and train health service providers on effective communication skills for malaria SBC prevention & treatment.	x					MOHS/NMCP/Partners
	Activity 3.3.6: Engage traditional healers to facilitate prompt referrals of fever cases to health facilities	x		x			MOHS/NMCP

Objective 4: To strengthen malaria surveillance and use of malaria information to improve decision making for programme performance							
Strategy	Main activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 4.1 Strengthen malaria surveillance	Activity 4.1.1. Develop malaria surveillance guidelines and SOPs	x					Malaria SM&E/IDSR
	Activity 4.1.2. Train health workers on malaria surveillance TOT		x		x		Malaria SM&E/IDSR
	Activity 4.1.2. Train health workers on malaria surveillance (TOT) Cascade training - district level (3-day workshop)		x		x		Malaria SM&E/IDSR
	Activity 4.1.3. Review Sierra Leone National Malaria Control Program Data Quality Standard Operating Procedure	x		x			Malaria SM&E/DPPI
	Activity 4.1.4. Conduct malaria data quality audits from National to Districts and Districts to Health Facilities	x	x	x	x	x	Malaria SM&E/DPPI
	Activity 4.1.5. Develop and update the data quality improvement plans	x	x	x	x	x	Malaria SM&E/DPPI
	Activity 4.1.6. Review the malaria supportive supervision checklists	x		x			Malaria SM&E
	Activity 4.1.7. Conduct supportive supervision from national to DHMT, Hospitals and PHUs	x	x	x	x	x	Malaria SM&E
	Activity 4.1.8. Conduct supportive supervision from DHMT to Hospitals, PHUs and Community	x	x	x	x	x	DHMT
	Activity 4.1.9. Coordination meetings with hospital management to discuss malaria inpatient morbidity and mortality reporting	x	x	x	x	x	Malaria SM&E

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 4.1.10. Conduct Malaria Data Review Meetings	x	x	x	x	x	Malaria SM&E
	Activity 4.1.11. Review and update HIS tools (malaria component).			x			Malaria SM&E/DPPI
Strategy 4.2. Increase use of malaria data for decision making	Activity 4.2.1. Produce malaria surveillance bulletins, national and district malaria profiles	x	x	x	x	x	Malaria SM&E/DHMT
	Activity 4.2.2. Develop policy briefs on malaria interventions	x	x	x	x	x	Malaria SM&E/DPPI
	Activity 4.2.3. Conduct regular malaria stratification for targeting of interventions	x	x	x	x	x	Malaria SM&E
	Activity 4.2.4. Strengthen engagement with district-level decision makers to enhance evidence-based decision making	x	x	x	x	x	Malaria SM&E/SBCC
	Activity 4.2.5. Establish a Malaria SME Technical Working group	x					Malaria SM&E
	Activity 4.2.6. Conduct Malaria SME Technical Working Group meetings	x	x	x	x	x	Malaria SM&E
	Activity 4.2.7. Establish and maintain a system to ensure sharing of findings and progress updates of malaria research and non-research data	x	x	x	x	x	Malaria SM&E
Strategy 4.3. Conduct and facilitate health facility surveys	Activity 4.3.1. Conduct quality of care surveys	x		x		x	Malaria SM&E
	Activity 4.3.2. Conduct health provider and laboratory assessment for malaria diagnosis	x	x	x	x	x	Malaria SM&E/MCM
	Activity 4.3.2. Conduct rapid assessment for uptake of malaria in pregnancy						

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 4.3.3. Conduct cohort event monitoring						Malaria SM&E/PSM
	Activity 4.3.4. Conduct therapeutic efficacy testing every three years	x			x		Malaria SM&E/MCM
	Activity 4.3.5. Conduct compliance/adherence studies for antimalaria medicines		x			x	Malaria SM&E/MCM
	Activity 4.3.6. Monitor sentinel sites for quality, coverage and progress on malaria case management and parasitological diagnosis	x	x	x	x	x	Malaria SM&E
Strategy 4.4. Conduct and support population-based surveys	Activity 4.4.1. Conduct Malaria Indicator Surveys	x			x		NMCP/MOHS/CRS
	Activity 4.4.2. Conduct Post LLIN campaign survey	x		x			NMCP/MOHS/UNICEFL
	Activity 4.4.3. Support conduct of Sierra Leone Demographic and Health Survey				x		UNICEF/MOHS
	Activity 4.4.4. Conduct surveys on uptake of malaria interventions (Barrier Analysis) CRS		x			x	NMCP/MOHS/CRSL
Strategy 4.5. Facilitate operational research for policymaking	Activity 4.5.1. Update research agenda every year	x	x	x	x	x	Malaria Research Committee/Ethics
	Activity 4.5.2. Establish and regularly update a database of malaria research studies to inform interventions and policy	x	x	x	x	x	Malaria Research Committee
	Activity 4.5.3. Hold biennial national malaria research conference with policy makers	x	x	x	x	x	Malaria Research Committee
Strategy 4.6. Conduct entomological surveillance	Activity 4.6.1. Review and consolidate entomological SOPs		x		x		IVMTWG/Malaria SME
	Activity 4.6.2. Develop Entomological Surveillance and Insecticide Resistance Monitoring (IRM) Tools		x				Malaria SME/IVMTWG

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 4.6.3. Conduct entomological surveys twice a year (wet and dry season).	x	x	x	x	x	Malaria SME/IVMTWG
	Activity 4.6.4. Develop entomological profile maps at district and national levels	x	x	x	x	x	Malaria SME/IVMTWG
	Activity 4.6.5. Conduct routine monitoring of vector susceptibility to insecticides (twice per year)	x	x	x	x	x	Malaria SME/IVMTWG
	Activity 4.6.7. Conduct bio-efficacy and monitoring after LLIN mass campaigns	x					Malaria SME/IVMTWG
	Activity 4.6.8. Conduct Integrated Resistance Monitoring (IRM)	x	x	x	x	x	Malaria SME/IVMTWG
Strategy 4.7. Monitor efficacy and effectiveness of vector control tools and technologies	Activity 4.7.1. Conduct baseline assessment of malaria morbidity and mortality in selected districts for IRS	x					Malaria SME/IVMTWG
	Activity 4.7.2. Develop monitoring and supervision tools for IRS implementation	x					Malaria SME/IVMTWG
	Activity 4.7.3. Monitor and supervise Integrated larva source management	x	x	x	x	x	Malaria SME/IVMTWG
	Activity 4.7.4. Monitor and supervise community-led environmental management	x	x	x	x	x	Malaria SME/IVMTWG
	Activity 4.7.5. Conduct impact evaluation of IRS in the selected districts			x			Malaria SME/IVMTWG

Objective 5: Ensure timely and adequate supply of quality-assured malaria commodities to public and private health facilities at all levels by 2025							
Strategy	Main activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 5.1 Ensure accurate and timely forecasting and supply planning of malaria commodities	Activity 5.1.1. Conduct annual forecasting, selection and quantification of malaria commodities	x	x	x	x	x	NMCP PSM/DPS/DDMS
	Activity 5.1.2. Develop annual procurement plan for both health and non-health malaria commodities	x	x	x	x	x	NMCP PSM/DPS/DDMS
	Activity 5.1.3. Strengthen procurement and supply chain management of malaria commodities at national, district and community levels	x	x	x	x	x	DDMS/NMSA/ NPPA
	Activity 5.1.4. Strengthen coordination and partnership with all malaria supply chain partners	x	x	x	x	x	NMCP PSM
Strategy 5.2 Advocate for efficient warehousing, storage and sustainable distribution system across the supply chain	Activity 5.2.1. Ensure appropriate storage facilities at all levels	x	x	x	x	x	NMCP PSM/ DPS/DDMS/NMSA
	Activity 5.2.2 Distribution of antimalarial commodities from national to districts (DMS) and the last mile (hospitals, PHUs and community)	x	x	x	x	x	NMCP PSM/ DPS/DDMS/NMSA
	Activity 5.2.3. Conduct post shipment quality control of antimalarial medicines and supplies	x	x	x	x	x	NMCP PSM/ DDMS/PBSL
	Activity 5.2.4. Conduct quarterly supply chain review meetings at national level	x	x	x	x	x	NMCP PSM
	Activity 5.2.5. Revision/adaptation of appropriate integrated supportive supervision checklist for health facilities and communities at PHU, district and national levels where applicable	x		x		x	NMCP PSM/ DDMS
Strategy 5.3 Strengthen the capacity of health care workers involved in commodity management at national, district, health facility and community levels	Activity 5.3.1. Build capacity of health workers on PSM at all levels (national, district, health facility and community levels) in collaboration with DDMS, NMSA and other partners	x	x	x	x	x	Case Mgt/ Lab. Tech Working Group
	Activity 3.3.2. Scale up national malaria quality assurance processes	x	x	x	x	x	Case Mgt/ Lab. Tech Working Group

Objective 6: By 2025, strengthen and maintain capacity for program management, coordination and partnership to achieve malaria programme performance at all levels							
Strategy	Main Activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 6.1. Human resources support for malaria control	Activity 6.1.1. Recruit/deploy staff based on revised organogram	x				x	HRMO/MoHS
	Activity 6.1.2 Training of National and District Malaria Programme staff on national and international courses on malaria	x	x	x	x	x	Programme Manager
	Activity 6.1.3 International/national training of central level staff on malaria	x	x	x	x	x	Programme Manager
	Activity 6.1.4. Conduct monthly NMCP staff meetings	x	x	x	x	x	NMCP/ Partnership
	Activity 6.1.5. Strengthen human resource development capacity and management to deliver malaria control interventions at all levels	x	x	x	x	x	Programme Manager
Strategy 6.2 Strengthen management capacity and implementation at all levels	Activity 6.2.1. Conduct institutional capacity review of the programme	x				x	Programme Manager
	Activity 6.2.2. Conduct regular supportive supervision and mentoring with partners at all levels of malaria programme implementation	x	x	x	x	x	Programme Manager
	Activity 6.2.3. Facilitate the attendance of NMCP staff to relevant training meetings at international levels	x	x	x	x	x	Programme Manager
	Activity 6.2.4. Print and disseminate updated malaria policies, guidelines, training manuals, job aides, etc.	x	x	x	x	x	Programme Manager
	Activity 6.2.5. Print revised supportive supervision checklist from national to district and Health Facilities	x		x		x	Programme Manager
	Activity 6.2.6. Print revised integrated supportive supervision checklist from national to district and Health Facilities	x		x		x	Programme Manager

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 6.2.7. Strengthen national and district capacity for developing evidence-based malaria programming	x	x	x	x	x	Programme Manager
	Activity 6.2.8. Conduct malaria mid-term review			x			Programme Manager
	Activity 6.2.9. Conduct Malaria Programme Review						Programme Manager
Strategy 6.3. Strengthen coordination and Partnership	Activity 6.3.1. Conduct quarterly MiP Technical Working Group meetings	x	x	x	x	x	MiP Focal Point/Programme Manager
	Activity 6.3.2. Conduct quarterly IPTi Technical Working Group meetings	x	x	x	x	x	IPTi Focal Point/Programme Manager
	Activity 6.3.3. Conduct quarterly PSM Technical Working Group meetings	x		x		x	PSM Focal Point/Programme Manager
	Activity 6.3.4. Conduct quarterly Operational Research Technical Working Group meetings	x	x	x	x	x	SME Focal Point/Programme Manager
	Activity 6.3.5. Conduct quarterly Operational IVM Technical Working Group meetings	x	x	x	x	x	IVM Focal Point/Programme Manager
	Activity 6.3.6. Conduct quarterly Operational IVM Steering Committee meetings	x	x	x	x	x	IVM Focal Point/Programme Manager
	Activity 6.3.7. Conduct quarterly malaria SME Technical Working Groups Committee meetings	x	x	x	x	x	SME Focal Point/Programme Manager
	Activity 6.3.8. Conduct monthly RBM partnership meetings	x	x	x	x	x	Partnership Focal Point/Programme Manager

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 6.3.9. Update partnership mapping	x		x		x	Partnership Focal Point/Programme Manager
	Activity 6.3.10. Conduct Bi-annual meetings with Parliamentary Committee on Health (Malaria)	x	x	x	x	x	Programme Manager
	Activity 6.3.11. Conduct malaria annual review and planning meetings with Line Ministries, Local Councils, Inter-religious councils, Civil Society Organisations, media, private sector (chamber of commerce) , Traditional Leaders, Youth Organisations, Women's Organisations, etc.)	x	x	x	x	x	Programme Manager
	Activity 6.3.12. Participate in monthly supply chain partnership forum	x	x	x	x	x	PSM Focal Point/Programme Manager
	Activity 6.3.13. Conduct malaria annual review and planning meetings with MoHS, DHMTs and partners	x	x	x	x	x	PSM Focal Point/Programme Manager
	Activity 6.3.14. Conduct bi- annual review and planning meetings with MoHS, DHMTs and partners	x	x	x	x	x	Programme Manager
	Activity 6.3.15 Collaborate with the Ministry of Basic and Secondary Education through the school programme of MoHS to review and update malaria control component in school extra curricula activities	x	x	x	x	x	Programme Manager
	Activity 6.3.16 Collaborate with the Ministry of Local Government and Rural Development, Ministry of Environment, Ministry of Agriculture and Forestry, other relevant line ministries including Local Councils for environmental larval source management	x	x	x	x	x	Programme Manager

Objective 7: Improve mobilisation of resources and maximise the efficient use of available resource for greater public health impact by 2025

Strategy	Activities	Timeline					Responsible
		2021	2022	2023	2024	2025	
Strategy 7.1 Increase government spending and improve efficiency of government resource allocation for Malaria programming	Activity 7.1.1. Develop issue briefs on malaria progress update, challenges and way forward and disseminate to MPs and Parliamentary Health Committee, Ministry of Finance and Ministry of Economic and Development Planning and Local Councils	x	x	x	x	x	NMCP
	Activity 7.1.2. Develop/Update Sierra Leone Business Plan on malaria financing issues and co-financing needs and disseminate to MPs, Parliamentary Health Committee, Ministry of Finance, Ministry of Development and Economic Planning, Local Councils, partners and other stakeholders	x	x	x	x	x	NMCP
	Activity 7.1.3. Conduct annual briefing sessions with Parliamentary Health Committee and other relevant stakeholders on progress, challenges and proposed interventions including policy and task measures to ensure sustained financing	x	x	x	x	x	NMCP
Strategy 7.2 Strengthen accountability measures related to funding for malaria to ensure appropriate allocation of malaria funding at the district level	Activity 7.2.1. Engage appropriate government bodies (Ministry of Local Government and Rural Development, Ministry of Finance, Local Government, Ministry of Development and Economic Planning, Donor Partners, RBM Partners, CSOs and other stakeholders to review and monitor budget line items and expenditures to date to assess applicability of funds for malaria project.	x	x	x	x	x	NMCP
	Activity 7.2.2 Engage Parliamentary Health Committee to advocate for accountability mechanism to ensure effective use of allocated resources	x	x	x	x	x	NMCP

	Activities	Timelines					Responsible
		2021	2022	2023	2024	2025	
	Activity 7.2.3. Engage CSOs to do a nationwide district level monitoring of national funding to assess the amount of domestic funds and donors funds for malaria reaching the community level, enabling evidence building for high level advocacy	x	x	x	x	x	NMCP
Strategy 7.3 Assess and adopt innovative financing mechanism (non-traditional) to addressing increasing donor funding	Activity 7.3.1. Assess potential innovative financial mechanisms that are applicable for health more broadly with impact on malaria specifically	x	x	x	x	x	NMCP
	Activity 7.3.2. Develop a roadmap for adopting financing mechanism		x				NMCP
	Activity 7.3.3. Conduct briefing with high level leaders including Parliamentary Health Committee on Health, for adoption of these innovative financing mechanism	x	x	x	x	x	NMCP
Strategy 7.4 Strengthen and increase private sector engagement and contribution for malaria control and pre-elimination by 2025	Activity 7.4.1. Organise TWG/partnership meeting to develop plan		x				NMCP
	Activity 7.4.2. Develop Malaria Emergency Response Plan for an outbreak		x				NMCP

5.2 Implementation arrangements

5.2.1 Planning and implementation mechanisms

The NMCP has the overall mandate of ensuring that all malaria control activities are effectively implemented at all levels of the health system, with a wider coverage of the country's population in an inclusive approach. In the current strategic plan, the NMCP will continue to provide the programmatic and technical leadership of all planned malaria interventions covering the period 2021-2025 at the national, district and community levels, including both the public and private sectors of the health systems. The current malaria organogram (see figure 5) will be used to ensure a coordinated implementation of all interventions. This involves working with central-level staff, district appointed focal points, and PHU in-charges CHW supervisors at national, districts and community respectively. The implementation of malaria interventions is dependent on a range of stakeholders and for the current plan, efforts would be made to ensure the stakeholders and partners align their priorities to the NMCP as this is critical for the overall performance of the programme. Performance monitoring of the programme remains a priority for the NMCP, and for the current plan, both mid- and end-term performance reviews will be conducted during the period of the current plan. On moving forward, the NMCP will ensure the findings and recommendations generated from such reviews are considered very strongly in programme implementation with a view to continually improve performance.

Capacity building : The NMCP is helmed by a Medical/public health specialist. To enable him to effectively manage the programme, a cocktail of other staff including entomologists, programmers, epidemiologists, health promoters, data analysts and administrative staff among others are needed in the team for the effective management of key components of the programme at both national and district levels. At the community level are community-oriented workers and these include the PHU in-charges at the MCP, CHP, and CHCs who are supported by a network of CHWs. The NMCP will maximally perform when there is a complete set of the right mix of staff. In the current plan, the programme is committed in the upskilling and re-skilling of its staff at all levels : national, district and community through workshops, supportive supervisions, short courses, including online course, and coaching and mentoring. The capacity building of the NMCP staff will be extended to our valuable stakeholders and partners including the recipient communities of malaria interventions. This is considered very important to drive the acceptance

and adoption of malaria control interventions. Efforts will be done to also address the staff gaps in every component of the NMCP during the current strategic plan period 2021-2025 including but not limited to the following : Vector control team, M&E and programme teams, administrative team. Staff retention measures, using both financial and non-financial incentives, especially for the district and community level staff will be instituted to prevent programme disruption.

5.2.2 *Partnership coordination system*

The successful implementation of the current strategy period is dependent on strong partnership with the health sector stakeholder. This includes other programmes and directorates within the MoHS, development partners, and implementing NGOs. The NMCP has in the previous years, fully encourage the participation of key MoHS programmes in the development of policies and strategies of the NMCP as well as in their implementation and this has given NMCP the fullest support of its counterpart programmes and the leadership of the ministry. For the current plan, this partnership will be further strengthened by ensuring relevant MoHS programmes and directorates are made members of the NMCP TWGs, and their participation in all malaria workshops and reviews are encouraged.

Efforts will also be made to further strengthen the partnership with our donor partners, NGOs and civil society. The NMCP, through the Donor Liaison office of MoHS, the NMCP will reach out to the current and emerging health sector partners to foster good relationship with the programme and by extension avoid duplication of activities, enhance synergy and complementarity. Critical to NMCP planning, implementation and monitoring of malaria activities are PMI/USAID, WHO, UNICEF and CRS. In the period for the current plan, the NMCP will strengthen the partnership through their continued involvement in all malaria programme activities in efforts to eliminate malaria in Sierra Leone.

The civil society organizations serve as the voices of the NMCP recipient communities. During the period of the current strategic plan, more CSOs will be made part of NMCP TWGs and encourage their involvement in national malaria control activities such as campaigns and advocacy.

Partnership with district councils is also very important as these are the custodian of the funds of the health sector at the sub-national level. Working very closely with them will help in influencing the allocation of substantial district budget to fund malaria interventions in the districts. In the current plan, efforts will be made to develop the capacity of key local council staff on malaria interventions as this supposedly will strengthen their commitment and their contribution to advocacy for malaria control and elimination in Sierra Leone.

The NMCP has a public-private partnership agenda in its programme implementation. This will be further strengthened during the period of the current plan 2021-2025; collaborating with private sector facilities for malaria case management. Staff of these private facilities will continue to benefit from the NMCP trainings on national guidelines and protocols, data collection and reporting as well as harmonizing their tools with the national HMIS tools. In addition, the RBM partnership, to which the private sector participates will be strongly leveraged on during the life span of the current plan, as it provides a platform to discuss policies and strategies and mainstream activities such as social mobilization, distribution of LLINs or ACTs.

5.2.3 Procurement of Malaria commodities

NMSA was established by an act of parliament in 2017 to take up the responsibility of procurement, warehousing/storage and distribution of drugs and medical supplies in a transparent and cost-effective manner for and on behalf of all public institutions throughout Sierra Leone. The current strategic plan is guided by the already existent operational procurement system. All malaria commodities are expected to be procured by NMSA of the Sierra Leone MoHS. Over the years, the NMCP and its partners maintain a strong system for malaria commodities planning, quantification, forecasting, procurement, stock management and monitoring of rational use of drugs. The distribution of malaria commodities includes a push and pull strategies. For the period of the current strategic plan, the NMCP will strengthen its collaboration and partnership with its numerous partners to ensure a procurement and supply management plan for malaria commodities is developed; conduct reviews of the distribution systems for diagnostics, medicines and other commodities in order to inform measures for the strengthening of the procurement supply management systems. This is critical to ensure the frequent stock out of the commodities is minimized.

In the current plan, staff capacity building through training workshop and supportive supervision at both hospital and PHU levels will be strengthened to improve the quality of LMIS reporting in collaboration with DPS/DDMS.

Table 10: Implementation plan

Level of implementation	Actor	Role
National	Parliamentarians	- Advocate for adequate resource allocation to malaria control efforts; - Encourage cooperate private sectors to invest in malaria based on an investment case; - Engage in community mobilisation and sensitisation; - Oversight role for the implementation.
	Ministry of Finance	- Resource mobilization, budget allocation and financing the MSP; - Timely disbursement of allocated fund
	Ministry of Health and Sanitation, NMCP	Policy formulation, supervision, capacity building, quality assurance, setting standards, guidelines, partner coordination, planning, reviews, surveys, monitoring and evaluation, advocacy and resource mobilization, surveillance, operational research.
	Other Government line ministries (education, agriculture, Trade and Industry, Mineral Resources, Tourism, SLP, RSLAF, Youth, etc.)	Foster a multi-sectoral partnership with MoHS in malaria control leveraging on their respective mandates
	WHO	- Technical guidance in the implementation of malaria control interventions; - Resource mobilisation; Evidence-based norms/standards to guide the implementation of interventions; - Assistance in conducting monitoring and evaluation activities such as surveys and operational research.

Level of implementation	Actor	Role
	UNICEF Bilateral & Multilateral Partners	• Technical guidance in the implementation of malaria reduction interventions ; • Resource mobilisation; • Assistance in conducting monitoring and evaluation activities such as surveys
National	Bilateral & Multilateral Partners	• Technical assistance in sourcing, procurement and distribution of commodities ; Financial/commodity support to implement malaria reduction interventions; • Assistance in conducting monitoring and evaluation activities such as surveys and operational research
	NGOs/INGOs	• Support implementation of malaria prevention, treatment and control activities
	Corporate entities.	• Provide financial support
	Universities, academia and research institutions	• Conduct research to provide technical evidence for policy formulation and capacity building
	CSOs	• Assist in advocacy, community mobilisation and sensitisation; • Monitor implementation activities
	Religious Leaders	• Assist in advocacy and sensitisation
	Entertainers	• Assist in advocacy and sensitisation
District level	Local government District/City Council	• Support the decentralized districts, advocacy, resource and community mobilization, supervision of implementation, community engagement; • Formation and enforcement of bye-laws; • Coordination at local level; • In cooperate malaria programme activities in the district/city development and health comprehensive plans.

Level of implementation	Actor	Role
	DHMTs	• Coordination, planning, implementation and management, supervision and monitoring of health facilities, private sector/NGO, community activities including CHWs; data management, community engagement; • Capacity building among others.
	NGOs/IPs	• Support implementation of malaria prevention, treatment and control activities.
	Peripheral Health Units	• Implementation and supervision of CHWs; • Capacity building; • Support facility management committee; • Data collection and transmission to district; • Community mobilisation and sensitization; • Conduct outreach activities.
	Facility Management Committee	• Strengthen link between community and health facility; • Dissemination of health policies to communities; Make visits to health facilities to supervise as per the checklist prepared by MoHS;
District Level	Facility Management Committee	• Provide feedback to health workers on client satisfaction with services delivered
Community	Community Health Workers	• Malaria case management, Health promotion, Data collection and reporting
	Traditional Birth Attendants	• Malaria in pregnancy- distribution of SP to pregnant women and referral, health promotion, data collection and reporting.

5.2.5 Risk Management Plan

The following risks cut across the NMCP. The mitigation strategies have reduced some of the risks to an acceptable level. The NMCP will review these risks at mid-year and end-year reviews during the cycle of the 2021-2025 strategic plan to identify any new or changing risk which require revision. Update this risk management plan on a quarterly basis to identify any new or changing risks.

Table 11: Risk management plan

Risk Category	Risk Description	Mitigating Action(s)
Threats to programme funding	The over-reliance on donor support to manage the NMCP is a risk to the country's effort to eliminate malaria. The rolling out of malaria diagnosis to the community level using RDTs may be disrupted with human capacity challenges due to attrition or non-funding of CHW activities	The government has continuously increased the annual budget for the health sector. The NMCP and its partners will continue to lobby the GoSL (especially the legislative) and the private sector for a sustained investment on efforts to eliminate malaria in Sierra Leone. The agenda for Malaria Business Investment Plan will continue with a view to mobilize resources domestically and internationally among interested agencies and governments for a malaria-free world. MOHS in collaboration with Partners to provide both financial and non-financial incentives to CHWs.
Occurrence and/or re-occurrence of disease outbreaks in the country	The current COVID 19 Pandemic severely impact the ability to deliver the core malaria interventions across the country due to safety concerns for both the clients and service providers. Sierra Leone having once been hit by Ebola outbreak might likely witness another outbreak in the future. These outbreaks bring additional burden on the health system, limit human interactions and coupled with the movement restrictions will limit programme coverage and impact.	The GoSL through the MoHS will strengthen disease surveillance to forestall and/or effectively manage disease outbreaks.

Risk Category	Risk Description	Mitigating Action(s)
Procurement and supplies chain issues	The erratic supply of drugs to health facilities through the “push” approach account for the frequent stock-outs of anti-malarial drugs and related commodities.	The new NMSA is now established and systems are being put in place to address some of the supply chain management and distribution of drugs to health facilities. The NMCP and its partners will support the NMSA in the development of tools to ensure proper quantification and estimation of health facility and district needs.
Poor quality, incompleteness and late reporting	Health facilities often face a shortage of data collection tools. Also, generating the right data through the DHIS2 and the timely reporting of such data is a challenge at the district level. These issues undermine the quality of data as well as the timeliness of the reporting. Supervision and monitoring of activities are uncoordinated and irregular mainly at district level.	• The MOHS and partners to ensure regular and adequate supplies of data collection and reporting tools at service delivery points. MOHS to facilitate timely distribution to all health facilities. • MOHS and Partners to ensure maintenance and regular upgrade of DHIS2 software. • MOHS and Partners to ensure proper M&E systems including trainings of PHU and hospital staff (public and Private) on quality data collection and reporting. • The data management infrastructure within the DHMT will be strengthened by providing back-ups, fast-internet services to facilitate data transfers from the districts to national. • MOHS to strengthen coordination and support supportive supervision of activities at all levels.
Procurement and supplies chain issues	The erratic supply of drugs to health facilities through the “push” approach account for the frequent stock-outs of anti-malarial drugs and related commodities.	NMSA is now established and systems are being put in place to address some of the supply chain management and distribution of drugs to health facilities. The NMCP and its partners will support the NMSA in the development of tools to ensure proper quantification and estimation of health facility and district needs.

Risk Category	Risk Description	Mitigating Action(s)
Financial Mismanagement	The lack of the appropriate internal system controls is a risk to financial mismanagement. The financial accounting software and asset management systems are weak. Coupled with poor oversight and weak capacity of finance officers at district levels make it incredibly challenging in meeting donor accountability measures for the use of their funds.	The current financial accounting systems and control will be strengthened through the installation of robust accounting software. National and district Finance officers will be continually trained in financing software and provide robust oversight in their performance. Asset register will be properly updated and maintained in all districts and central level.

5.3. Budget summary of the five-year SLNMESP

Table 12: Budget summary by objective

#	OBJECTIVE	INTERVENTION	2021	2022	2023	2024	2025	Total	%
1	Objective 1: By end of 2025, reduce malaria mortality rates by at least 75% compared to 2015	Case Management	3,805,840	5,257,185	7,265,936	6,783,866	7,381,890	30,494,717	16%
2	Objective 2: By end of 2025, reduce malaria case incidence by at least 75% compared to 2015	Prevention: Vector Control, MiP, IPTi	8,798,247	36,046,561	11,327,040	13,139,730	42,839,552	112,151,130	58%
3	Objective 3: By 2025, 90% of the population practice at least 3 recommended malaria prevention and control behaviours	IEC BCC	4,726,902	3,286,128	5,030,462	3,286,128	4,682,962	21,012,581	11%
4	Objective 4: To strengthen malaria surveillance and use of malaria information to improve decision making for programme performance	Surveillance and M&E	2,394,264	1,241,788	937,090	2,996,927	958,085	8,528,153	4%
5	Objective 5: Ensure timely and adequate supply of quality-assured malaria commodities to public and private health facilities at all levels by 2025	Programme Management	1,030,885	1,041,194	1,051,605	1,062,122	1,072,743	5,258,548	3%
6	Objective 6: By 2025, strengthen and maintain capacity for program management, coordination and partnership to achieve malaria programme performance at all levels	Programme Management	4,121,507	3,177,022	3,439,725	3,124,806	3,373,549	17,236,608	9%
7	Objective 7: Improve mobilisation of resources and maximise the efficient use of available resource for greater public health impact by 2025	Programme Management	25,270	25,523	25,778	26,036	26,296	128,903	0%
TOTAL*			24,902,915	50,075,399	29,077,635	30,419,613	60,335,077	194,810,639	100%

Table 13: Budget summary by programme Activity

#	Module-Intervention	Module	Intervention	2021	2022	2023	2024	2025	Total	%
1.1	Case Management-Facility Based Treatment	Case Management	Facility Based Treatment	3,441,998	5,287,973	6,958,271	6,598,829	7,074,746	29,361,818	15%
1.2	Case Management-Integrated Community Case Management (ICCM)	Case Management	Integrated Community Case Management (ICCM)	132,022	32,549	64,012	52,777	53,234	334,593	0%
1.3	Case Management-Active Case Detection and Investigation (malaria elimination phase)	Case Management	Active Case Detection and Investigation (malaria elimination phase)	0	0	0	0	0	0	0%
1.4	Case Management-Severe Malaria	Case Management	Severe Malaria	456,121	5,785,180	652,275	647,593	6,304,456	13,845,624	7%
1.5	Case Management-Epidemic preparedness and response	Case Management	Epidemic preparedness and response	0	0	0	0	0	0	0%
1.6	Case Management-Ensuring Drug Quality	Case Management	Ensuring Drug Quality	0	0	0	0	0	0	0%
1.7	Case Management-Therapeutic Efficacy Surveillance	Case Management	Therapeutic Efficacy Surveillance	0	0	0	0	0	0	0%
1.8	Case Management-IEC/BCC	Case Management	IEC/BCC	1,170,555	995,115	1,284,503	995,115	1,128,242	5,573,529	3%
2.1	Vector Control-Long-lasting Insecticide-treated Nets (LLIN) - Mass Campaign	Vector Control	Long-lasting Insecticide-treated Nets (LLIN) - Mass Campaign	0	20,893,807	0	0	22,360,630	43,254,437	22%
2.2	Vector Control-Long-lasting Insecticide-treated Nets (LLIN) - Continuous Distribution	Vector Control	Long-lasting Insecticide-treated Nets (LLIN) - Continuous Distribution	2,354,402	2,728,979	2,736,636	2,898,863	3,318,910	14,037,790	7%
2.3	Vector Control-Indoor Residual Spraying (IRS)	Vector Control	Indoor Residual Spraying (IRS)	3,101,675	4,382,789	5,807,889	7,241,822	8,682,665	29,216,841	15%
2.4	Vector Control-Other Vector Control Measures	Vector Control	Other Vector Control Measures	282,802	546,884	559,842	573,124	586,738	2,549,391	1%
2.5	Vector Control-Entomological Monitoring	Vector Control	Entomological Monitoring	868,908	51,952	75,413	357,121	75,413	1,428,806	1%
2.6	Vector Control-IEC/BCC	Vector Control	IEC/BCC	2,073	0	0	0	0	2,073	0%
3.1	Health Information Systems and M&E-Routine Reporting	Health Information Systems and M&E	Routine Reporting	787,671	705,247	789,981	705,247	777,400	3,765,547	2%
3.2	Health Information Systems and M&E-Analysis, Review and Transparency	Health Information Systems and M&E	Analysis, Review and Transparency	1,248,344	177,161	1,131,185	110,730	1,077,973	3,745,393	2%
3.3	Health Information Systems and M&E-Surveys	Health Information Systems and M&E	Surveys	1,723,092	854,304	416,147	2,607,525	442,397	6,043,466	3%
4.1	Program Management (PM)-Policy, Planning, coordination and management	Program Management (PM)	Policy, Planning, coordination and management	5,086,668	4,269,028	4,974,566	4,314,885	4,946,739	23,591,887	12%
4.2	Program Management (PM)-Grant Management	Program Management (PM)	Grant Management	3,215,699	2,323,237	2,575,308	2,253,860	2,432,792	12,800,896	7%
4.3	Program Management (PM)-Supporting Procurement and Supply management	Program Management (PM)	Supporting Procurement and Supply management	1,030,885	1,041,194	1,051,605	1,062,122	1,072,743	5,258,548	3%
TOTAL*				24,902,915	50,075,399	29,077,635	30,419,613	60,335,077	194,810,639	100%

Table 14: Budget summary by cost category

#	Category		2021	2022	2023	2024	2025	Total	%
1	Human Resources (HR)	HR	302,092	209,518	211,613	213,729	263,011	1,199,963	1%
2	Technical Assistance (TA)	TA	77,794	32,807	34,202	33,466	34,868	213,138	0%
3	Training (T)	T	4,005,016	1,686,303	3,182,631	1,844,144	3,100,446	13,818,540	7%
4	Health Products and Health Equipment (HP)	HP	3,201,104	19,925,298	4,596,598	4,795,353	21,613,921	54,132,273	28%
5	Medicines and Pharmaceutical Products (D)	D	476,817	2,052,395	2,890,190	2,958,194	3,027,461	11,405,057	6%
6	Procurement and Supply Management Costs (PSM)	PSM	2,734,744	9,780,673	5,633,696	6,790,936	13,761,340	38,701,390	20%
7	Infrastructure and Other Equipment (IE)	IE	30,445	30,445	30,445	30,445	30,445	152,225	0%
8	Communication Materials (CM)	CM	1,255,858	1,088,364	1,377,753	1,088,364	1,221,491	6,031,829	3%
9	Monitoring and Evaluation (ME)	ME	2,784,301	1,329,700	1,385,750	3,066,490	1,374,211	9,940,452	5%
10	Planning and Administration (PA)	PA	9,062,514	7,762,290	8,742,985	8,596,803	9,440,741	43,605,333	22%
11	Overheads (OH)	OH	972,230	6,177,606	991,771	1,001,689	6,467,143	15,610,439	8%
TOTAL *			24,902,915	50,075,399	29,077,635	30,419,613	60,335,077	194,810,639	100%

Table 15: Budget summary for combined commodity cost

	Unit Cost	2021	2022	2023	2024	2025	
RDTs Health Facility	\$0.29	\$615,077.87	\$1,355,600.84	\$1,743,533.37	\$1,747,850.65	\$1,750,001.64	\$7,212,064.37
RDTs Community	\$0.29	\$37,178.62	\$81,939.82	\$105,388.55	\$105,649.51	\$105,779.53	\$435,936.02
ACTs Health Facility	\$0.47	\$437,570.47	\$1,415,033.13	\$1,882,822.84	\$1,930,875.48	\$1,978,739.99	\$7,645,041.91
ACTs Community	\$0.47	\$26,449.12	\$85,532.23	\$113,807.96	\$116,712.52	\$119,605.70	\$462,107.52
LLINs Routine	\$2.88	\$1,855,151.29	\$1,951,652.78	\$2,051,819.87	\$2,103,115.37	\$2,155,693.25	\$10,117,432.56
LLINs Campaign	\$2.88	\$0.00	\$15,698,152.37	\$0.00	\$0.00	\$16,905,193.11	\$32,603,345.48
IPTp	\$0.10	\$77,902.16	\$469,900.35	\$481,647.86	\$493,689.05	\$506,031.28	\$2,029,170.70
IPTi	\$0.08	\$4,645.53	\$41,768.92	\$42,813.14	\$43,883.47	\$44,980.56	\$178,091.62
Severe Malaria - Artesunate suppositories	\$0.32	\$1,916.82	\$2,449.23	\$2,511.58	\$2,561.25	\$2,610.81	\$12,049.69
Severe Malaria - Artesunate	\$1.45	\$336,821.78	\$470,724.14	\$811,314.65	\$827,359.11	\$843,370.06	\$3,289,589.74
		\$3,392,713.66	\$21,572,753.80	\$7,235,659.81	\$7,371,696.40	\$24,412,005.93	\$63,984,829.60
Procurement costs (\$)	RDTs	ACTs	SP	Reagents	LLINs Campaign	LLINs Routine	Artesunate injection
Procurement agent fee	2.0%	1.3%	1.3%	5.5%	1.3%	1.3%	1.3%
Freight and Insurance Cost	18.2%	17.2%	17.2%	23.0%	15.4%	15.4%	17.2%
Customs clearance	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Distribution	3.0%	3.0%	3.0%	3.0%	17.0%	10.0%	3.0%
Quality Assurance (QA)	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	0.0%
Total	23.2%	21.5%	21.5%	31.5%	34.7%	27.7%	21.5%

CHAPTER 6.0 MONITROING AND EVALUATION FRAMEWORK OF THE NMCP

The M&E framework consists of the following: performance framework; data management system; and M&E coordination mechanisms.

6.1 Performance framework

Table 16: Performance framework

Performance Framework for the National Malaria Strategic Plan 2021-2025									
Monitoring and Evaluation Indicator Matrix									
Indicators (Impact)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Parasite prevalence: Proportion of children aged 6-59 months (<5 years of age) with malaria infection	MIS	Gender (Male, Female)	Every 3–5 years (linked to transmission season)	40% (2016)	33%			28%	
Malaria case incidence: number and rate per 1000 people per year	HMIS	Age (<5 yrs, >5 yrs)	Yearly	303 (2019)	298	293	288	283	278
Malaria admissions: number and rate per 10,000 persons per year	HMIS	Age (<5 yrs, >5 yrs)	Yearly	51 (2019)	50	49.1	47.9	46.5	44.9
Malaria test positivity rate	HMIS	Testing type (Microscopy, RDT), Species	Yearly	61.24% (2019)	59.3%	58.2%	56.7%	55.0%	53.1%
Proportion of admissions for malaria	HMIS	Age (<5 yrs, >5 yrs)	Yearly	38.3% (2019)	37.7%	37.0%	36%	35%	33.70%

Indicators (Impact)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Confirmed malaria cases (microscopy or RDT): rate per 1000 persons per year	HMIS	Age (<5 yrs, >5 yrs), Species	Yearly	296.6 (2019)	293	289	285	281	277
Reported malaria cases (presumed and confirmed)	HMIS	Age (<5 yrs, >5 yrs)	Yearly	2,432,609 (2019)	2,396,120	2,383,957	2,371,794	2,359,631	2,347,468
Inpatient malaria deaths per year: rate per 100,000 persons per year	HMIS	Age (<5 yrs, >5 yrs)	Yearly	17.8 (2019)	17.6	17.2	16.8	16.3	15.7
Malaria mortality: number and rate per 100,000 persons per year	HMIS	Age (<5 yrs, >5 yrs)	Yearly	35 (2019)	34.5	33.8	32.9	31.9	30.7
Proportion of inpatient deaths due to malaria	HMIS	Age (<5 yrs, >5 yrs)	Yearly	38.3% (2019)	0.377	0.37	0.36	0.35	0.337

Indicators (Outcome)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of households with at least one insecticide-treated net for every two people and/or sprayed by IRS within the last 12 months	Household survey (DHS, MIS, MICS)		Every 3–5 years	25% (DHS 2019)	50%			80%	
Percentage of households with at least 1 ITN	Household survey (DHS, MIS, MICS)		Every 3–5 years	69% (DHS 2019)	80%			80%	
Proportion of population that slept under an insecticide-treated net the previous night	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	51% (DHS 2019)	70%			80%	
Proportion of children under five years old who slept under an insecticide-treated net the previous night	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	59% (DHS 2019)	80%			80%	
Proportion of pregnant women who slept under an insecticide-treated net the previous night	Household survey (DHS, MIS, MICS)		Every 3–5 years	64% (DHS 2019)	80%			80%	
Proportion of population using an insecticide-treated net among those with access to an insecticide-treated net	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	47% (DHS 2019)	80%			80%	
Social Behavior Change (B1): Proportion of Households who practice at least 3 recommended behavior	MIS		Every 2-3 years	TBD	50%			70%	

Indicators (Outcome)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of women who attended at least three or more ANC visits during last pregnancy	Household survey (DHS, MIS, MICS)		Every 3–5 years	79% (DHS 2019)	90%			90%	
Proportion of pregnant women who received three or more doses of IPTp	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	36% (DHS 2019)	60%			80%	
Proportion of pregnant women who received two doses of IPTp	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	74% (DHS 2019)	90%			100%	
Proportion of pregnant women who received one dose of IPTp	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	94% (DHS 2019)	100%			100%	
Proportion of pregnant women who attended an antenatal clinic at least once	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	98% (DHS 2019)	100%			100%	
Proportion of children < 5 years with fever in the previous 2 weeks for whom advice or treatment was sought	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	75% (DHS 2019)	90%			100%	
Proportion of children < 5 years with fever in the previous 2 weeks who had a finger or heel stick	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	61% (DHS 2019)	90%			100%	

Indicators (Outcome)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of detected cases that contacted health services within 48 hours of symptoms	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	50% (DHS 2019)	80%			80%	
Proportion of treatments with ACT (or other appropriate treatment according to national policy) among febrile children < 5 years	Household survey (DHS, MIS, MICS)	Gender (Male, Female)	Every 3–5 years	97% (MIS 2016)	100%			100%	
Proportion of women of child bearing age (15-49 years) that report mosquito bite as the cause of malaria	MIS		Every 2 years	94% (2016)	100%			100%	
Proportion of women of child bearing age (15-49 years) that report fever as a symptom of malaria	Household survey (DHS, MIS, MICS)		Every 2 years	69% (2016)	80%			100%	
Proportion of population at risk protected by IRS in the previous 12 months	MIS		Every 3–5 years (linked to transmission season)	N/A	85%			85%	
Proportion of children under five years protected by IRS	MIS		Every 3–5 years (linked to transmission season)	N/A	85%			85%	
Proportion of pregnant women protected by IRS	MIS		Every 3–5 years (linked to transmission season)	N/A	85%			85%	

Indicators (Output)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of patients with suspected malaria who received a parasitological test	HMIS		Monthly	98.9% (HMIS 2019)	100%	100%	100%	100%	100%
Proportion of health facility months with no stock-outs of key commodities for diagnostic testing	Health facility surveys, HMIS		Monthly	97% (SARA 2017)	100%	100%	100%	100%	100%
Proportion of patients with confirmed malaria who received first-line antimalarial treatment	HMIS		Monthly	96.9% (HMIS 2019)	100%	100%	100%	100%	100%
Proportion of health facility months without stock-outs of first-line treatment	LMIS		Monthly	TBD	100%	100%	100%	100%	100%
Proportion of expected health facility reports received	HMIS		Monthly	TBD	100%	100%	100%	100%	100%
Proportion of suspected malaria cases that receive a parasitological test at public sector health facilities	HMIS	Age (<5 yrs, > 5 yrs)	Monthly	99.64%, (2019)	100%	100%	100%	100%	100%
Proportion of suspected malaria cases that receive a parasitological test in the community	HMIS	Age (<5 yrs, > 5 yrs)	Monthly	86.19% (2019)	100%	100%	100%	100%	100%
Proportion of suspected malaria cases that receive a parasitological test in the private sector	HMIS	Age (<5 yrs, > 5 yrs)	Monthly		100%	100%	100%	100%	100%
Proportion of malaria cases (presumed and confirmed) that received first line antimalarial treatment at public sector health facilities	HMIS	Age (<5 yrs, >5 yrs)	Monthly	98.89% (2019)	100%	100%	100%	100%	100%

Indicators (Output)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of confirmed malaria cases that received first-line antimalarial treatment at public sector health facilities	HMIS	Age (<5 yrs, >5 yrs)	Monthly	98.87% (2019)	100%	100%	100%	100%	100%
Proportion of confirmed malaria cases that received first-line antimalarial treatment in the community	HMIS	Age (<5 yrs, >5 yrs)	Monthly	89.19% (2019)	100%	100%	100%	100%	100%
Proportion of confirmed malaria cases that received first-line antimalarial treatment at private sector sites	HMIS	Age (<5 yrs, >5 yrs)	Monthly	90.09% (2019)	100%	100%	100%	100%	100%
Proportion of children under 5 years with fever for whom the caretakers sought prompt care within 24 hours at the community	HMIS	Age (<5 yrs, >5 yrs)	Monthly	75.6% (2019)	81%	83%	85%	87%	90%
Proportion of pregnant women attending antenatal clinics who received three or more doses of intermittent preventive treatment for malaria	HMIS		Monthly	55.12% (2019)	60%	70%	80%	80%	80%
Proportion of pregnant women who received three or more doses of IPTp for malaria in the community	HMIS		Monthly	10.6% (2019)	12%	13%	14%	15%	15%
Number of LLINs distributed to the population through mass campaigns	Integrated LLIN Mass Campaign Administrative Report (2017)		Every 3 years	98.1% (2017)			100%		

Indicators (Output)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Number of LLINs distributed to pregnant women through ANC and children under one year through EPI services (Routine distribution)	HMIS	Pregnant women, children under 1 year	Monthly	489,200	631,354	664,244	698,647	716,477	734,238
Percentage of children under one year who receive at least three doses of IPTi3 through EPI services	HMIS		Monthly	218,744	332,839	341,185	349,870	358,799	367,693
Proportion of sentinel sites reporting Entomological Inoculation Rate (EIR) (Number of sentinel site with data available on the number of infective bites per person per night. It is interpreted as the number of P. falciparum infective bites received by an individual during a period of time /season or annually-aPfEIR)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of sentinel sites reporting Sporozoite rate (SR) (SR is the proportion of female An. gambiae s.l. or An. funestus s.l. (with sporozoites).tested positive for Plasmodium detection (ELISA or PCR)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of of sentinel sites reporting Parity rate (PR) (Proportion of parous females out of total females examined. Parity is used to determine whether malaria transmission has been reduced)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15

Indicators (Output)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of sentinel sites reporting Human Biting Rate (HBR)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of sentinel sites reporting Indoor Resting density (IRD)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of sentinel sites reporting Human Blood Index (HBI)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Number of sentinel sites reporting Endophagic Index	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of sentinel sites reporting Exophagic Index	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of sentinel sites reporting Parity rate (PR) (Proportion of parous females out of total females examined. Parity is used to determine whether malaria transmission has been reduced)	Entomological monitoring annual report		Annually	2018	15	15	15	15	15
Proportion of sentinel sites reporting Insecticide resistance data for at least one insecticide per insecticide class	Entomological monitoring annual report		Annually	2018	10	12	16	20	22
Proportion of sentinel sites reporting on the residual life of insecticide.	Entomological monitoring annual report		Annually	2020	2	4	5	6	8

Indicators (Output)	Data Source	Disaggregation	Data collection frequency	Baseline (Year)	Target				
					2021	2022	2023	2024	2025
Proportion of ITN durability monitoring conducted	ITN durability monitoring report		Annually		1	1	1	1	1
Proportion of sites with genotypic resistance data available	Entomological monitoring annual report		Annually		10	12	16	20	22
Number of functional Insectary	Entomological monitoring annual report		Annually		2	2	2	2	2
Number of functional laboratory available to conduct molecular analysis of mosquitoes samples	Entomological monitoring annual report		Annually			1	1	1	1

A well-integrated system has been used by the NMCP alongside other health system indicators to collect data at service delivery points and report on metrics using a standard methodology. For the current NMSP, the same system will be used to using the existing indicators to monitor the progress and performance of the programme towards the goals of NMCP. An M&E Plan is created to define indicators, baselines, targets, frequency of collection and data collection methodology.

6.2 Data management system and flow

In Sierra Leone, standard registers are being used to record health information generated at service delivery points (i.e. peripheral health units and hospitals). At the PHU level, health facility in-charges compile and verify the summary of all data collected at the end of the month. The data is then submitted to the district M&E officers for entry into the DHIS2. At the hospital-level, data clerks are responsible for the compilation and verification of the collected data from the different registers. For private sector, through NMCP partnership with the private health facilities, health data generated from these facilities are submitted to the DHMT offices and these information is also entered into the DHIS. The M&E officers enters the data into DHIS2. District M&E Officers are to collate monthly PHU and hospital activity reports of the respective districts and electronically submit via the DHIS2 software to national (the Directorate of Policy Planning & Information).

6.3 Data quality assurance

The essence of having quality data need not to be stressed. The MoHS and its partners have over the years harmonized data collection to enhance quality and timely reporting. The NMCP will work with the existing structures at both national and DHMTs to strengthen the quality and timely data reporting. This will include the trainings on using data collection tools for staff of health facilities. This same will be done to enhance the capacity of M&E and HMIS officers at DHMT and national in the use of DHIS2 for data collection, collation, analysis and reporting. Routine monthly data quality monitoring and surveillance will be conducted regularly through supportive supervision.

As part of operation research, the NMCP and its partners will continue to support institutions such as DPPI/MOHS and Statistics-Sierra Leone in the conduct of periodic surveys notably the DHS, MIS, MICS, and the SARA. These surveys, using validated surveillance methodologies form part of the quality assurance of malaria-related data and indicator measurements

6.4 Data warehousing and processing

The DHIS2 system is the sole software that is being used to process national health data collected from all health facilities in the country. It has the capacity to manage the entire national data in terms of capturing data, storage and generating reports. As stated earlier, the both national DHMTs have trained M&E Officers who are skilled in managing the DHIS2 software. The NMCP M&E team has access permission to the national DHIS2 and periodically, the team retrieve the data on key malaria indicators to update the malaria dashboard. These analyses are used to generate reports on district performances.

6.5 Dissemination and use of information products

The NMCP traditionally conducts mid- and end-of-year review meetings to examine the extent of performance of the DHMTs as well as progress on set national and international targets on malaria indicators. These reviews provide a perfect platform for the NMCP partners, MoHS leadership and other relevant stakeholder to appreciate and critique the work of NMCP and provide valuable advice or recommendations.

Periodic bulletins will also be published through the Research and Publication Unit at the DPPI/MOHS showing performance on key malaria indicators. For operational survey reports, these will be made available on the websites of MoHS and Statistic-Sierra Leone. In addition, special dissemination meetings will be organized to share operational research findings. The World Malaria Day also serve as a useful platform to disseminate the performance of the programme.

6.6 Malaria M&E coordination mechanisms

Efforts will be made to facilitate data exchange, information flow, and promote the sharing and discussion of critical performance indicators. This is viewed as critical to help NMCP agenda for a free-malaria Sierra Leone. A key approach to achieve this will be through joint planning, supervision, monitoring and evaluation processes as part of NMCP partnership arrangement with its wider stakeholders.

The malaria M&E TWG will be strengthened to serve as the platform that will bring all the malaria implementers, including the funders, private sector and civil society organization to deliberate and chart better ways in moving the programme implementation in the period of the current strategic plan.

Annexes

Annex 1: Participants in the development of the National Malaria Elimination Strategic Plan 2021-2025

Participants in the National Malaria Elimination Strategic Plan 2021-2025 development process		
MINISTRY OF HEALTH AND SANITATION PERSONNEL		
N O	DESIGNATION	DIRECTORATE/PROGRAMME/ ORGANISATION
1	Chief Medical Officer	Ministry of Health and Sanitation
2	Deputy Chief Medical Officer 1	Ministry of Health and Sanitation
3	Deputy Chief Medical Officer 2	Ministry of Health and Sanitation
4	Chief Nursing and Midwifery Officer	Directorate of Nursing Services
5	Dep. Chief Nursing and Midwifery Officer 1	Directorate of Nursing Services
6	Dep. Chief Nursing and Midwifery Officer 11	Directorate of Nursing Services
7	Registrar	Nursing and Midwifery Services
8	Representative	Western Area City Council
9	Director	Disease Prevention and Control
10	Director	Reproductive Health Services
11	Director	Policy Planning and Information
12	Director	Primary Health Care
13	Director	Environmental Health Division
14	Director	Drugs and Medical Supplies
15	Director	Food and Nutrition Services
16	Director	Financial Resources
17	Director	Internal Audit

NO	DESIGNATION	DIRECTORATE/PROGRAMME/ ORGANISATION
MINISTRY OF HEALTH AND SANITATION PERSONNEL CONTD.		
18	Programme Manager	Reproductive Health and Family Planning
19	Programme Manager	EPI/CH
20	Programme Manager	Health Education Division
21	Programme Manager	HIV/AIDS
22	Programme Manager	NTDs
23	Programme Manager	Health Safety and Emergency
24	Programme Manager	TB/Leprosy Control Programme
25	Programme Manager	School and Adolescent Health
26	Programme Manager	Laboratory Services- Public Health Laboratories
27	Programme Manager	Laboratory Services- Clinical
28	Programme Manager	Health System Strengthening
29	Programme Manager	Quality Care
30	Registrar	Pharmacy Board of Sierra Leone
31	Chief CHO	Office of Community Health Officer (CHO)
32	Managing Director	National Medicines and Supply Agency (NMSA)
33	Team Lead	Integrated Health Project Administrative Unit (IHPAU)
34	National Coordinator	National Community Health Workers Programme
35	Representative	CHAI

NO	DESIGNATION	DIRECTORATE/PROGRAMME/ ORGANISATION
MULTILATERAL/BILATERAL PARTNERS		
1	Country Representative	World Health Organisation
2	Health Manager	United Nations Childrens Fund
3	Resident Advisor	USAID/PMI
4	Resident Advisor	PMI/CDC
5	Director	China CDC
6	Country Representative	WHO Country Office
7	Country Representative	UNICEF Country Office

NO	DESIGNATION	DIRECTORATE/PROGRAMME/ ORGANISATION
RBM PARTNERS		
1	Health Coordinator	World Vision International
2	Manager, Child Survival Project	Concern Worldwide
3	Medical Coordinator	MSF-Belgium
4	Medical Coordinator	Emergency Hospital
5	Country Manager	Logistics Solution Services
6	Health Manager	BBC Media Action
7	Health Coordinator	UMC
8	Representative	National Consortium for Eradication of Malaria
9	National Coordinator	Interreligious Council

NO	DESIGNATION	DIRECTORATE/PROGRAMME/ ORGANISATION
RBM PARTNERS CONTD		
10	President	Pharmaceutical Business Men Association (PBA)
11	President	Pharmaceutical Society of Sierra Leone (PSSL)
12	Health Coordinator	Sierra Leone Correctional Centre
13	Health Committee Chair	Freetown City Council
14	Health Committee Chair	Western Area Rural District Council
15	Chief of Party	IMPACT/PMI
16	Chief of Party	Breakthrough Action/PMI
17	Chief of Party	Measure Malaria/PMI
18	Chief of Party	VectorLinks/PMI
19	Malaria Advisor	GHSC-PSM/PMI
20	Health Coordinator	Child Fund SL
21	Programme Manager	GF-Malaria component, CRS
22	Representative	Christian Health Association Sierra Leone (CHASL)
23	Chairman	Country Coordinating Mechanism
24	Managing Director	Health Alert - Civil Society Organization
25	Representative	Health for All Coalition - Civil Society Organization
26	Representative	Private Hospital
27	Medical Coordinator	MSF-Belgium
28	Representative	Sierra Leone Pharmaceutical Businessmen Association

N O	DESIGNATION	DIRECTORATE/PROGRAMME/ORGANISATION
	HOSPITALS – PUBLIC AND PRIVATE	
1	Physician Specialist	Connaught Teaching Hospital
2	Director, Defence Medical Services	34 Military Hospital
3	Medical Superintendent	Police Hospital, Kingtom
4	Medical Superintendent	Macauley St hospital
5	Medical Superintendent	Rokupa Government Hospital
6	Medical Superintendent	Kingharman Road Hospital
7	Medical Superintendent	Lumley Government Hospital
8	Paediatrician Specialist	Ola During Children's Hospital
9	Specialist Gynaecologist/Obstetrician	Princess Christiana Maternity Home (PCMH)
	TRAINING INSTITUTIONS	
1	Principal	COMHAS
2	Representative	Njala university
3	Principal	National School of Midwifery, Freetown
4	Representative	University of Sierra Leone

NO	DESIGNATION	DIRECTORATE/PROGRAMME/ORGANISATION
DISTRICT HEALTH MANAGEMENT TEAMS		
1	District Medical Officer	District Health Management Team, Western Area Rural
2	District Medical Officer	District Health Management Team, Western Area Rural
3	District Medical Officer	District Health Management Team, Bombali District
4	District Medical Officer	District Health Management Team, Kambia District
5	District Medical Officer	District Health Management Team, Kono District
6	District Medical Officer	District Health Management Team, Pujehun District
7	Malaria Focal Point	District Health Management Team, Western Area
8	Malaria Focal Point	District Health Management Team, Bombali District
9	Malaria Focal Point	District Health Management Team, Kambia District
10	Malaria Focal Point	District Health Management Team, Kono District
11	Malaria Focal Point	District Health Management Team, Pujehun District

NO	DESIGNATION	DIRECTORATE/PROGRAMME/ ORGANISATION
NATIONAL MALARIA CONTROL PROGRAMME		
1	Assist Programme Manager	National Malaria Control Programme
2	Case Management Focal Point LEAD	National Malaria Control Programme
3	SM&E - Foca Point LEAD	National Malaria Control Programme
4	MIP/IPTi/ IEC/BCC- Focal Point	National Malaria Control Programme
5	Partnership- Focal Point	National Malaria Control Programme
6	IVM- Focal Point	National Malaria Control Programme
7	Senior Programme Accountant	National Malaria Control Programme
8	Programme Pharmacist	National Malaria Control Programme
9	M&E officer 1	National Malaria Control Programme
10	M&E officer 2	National Malaria Control Programme
11	M&E Assistant	National Malaria Control Programme
12	Case Management Focal Point 1	National Malaria Control Programme
13	Case Management Focal Point 2	National Malaria Control Programme
14	Programme Administrator	National Malaria Control Programme
15	Stores Supervisor	National Malaria Control Programme
16	Finance Officer	National Malaria Control Programme

Annex 2: Key players in malaria control

No.	Name of RBM Partner	Thematic Areas							PSM
		Governance & Programme Management	Malaria Vector Control	Malaria Dignosis & Case Management	Malaria Prevention & Treatment In Pregnancy	Intemittent Preventive Treatment in infants (IPTi)	Advocacy, IEC/BCC & Community Mobilisation	Epidemiology, Surveillance, M&E & Operational Research	
1	World Health Organisation (WHO)								
2	United Nations Children's Fund (UNICEF)								
3	Catholic Relief Services (CRS)								
4	World Vision Sierra Leone								
5	Sierra Leone Red Cross Society (SLRCS)								
6	PMI/USAID								
7	Medicines San Frontiers (MSF) Holland								
8	BRAC								
9	Restless Development								
10	United Methodist Church								

Sierra Leone

Elimination Strategic

No.	Name of RBM Partner	Thematic Areas							
		Governance & Programme Management	Malaria Vector Control	Malaria Dignosis & Case Management	Malaria Prevention & Treatment In Pregnancy	Intermittent Preventive Treatment in infants (IPTi)	Advocacy, IEC/BCC & Community Mobilisation	Epidemiology, Surveillance, M&E & Operational Research	PSM
12	Health Poverty Action								
13	Plan Sierra Leone								
14	Pikin to Pikin								
15	Save the Children								
16	FOCUS 1000								
17	IRC								
18	Impact Malaria/PSI/PMI								
19	Vectorlinks/PMI								
20	Measure Malaria/PMI								
21	Breakthrough/PMI								
22	GHSC-PSM/PMI								
23	Pharmacy Board of Sierra Leone								

No.	Name of RBM Partner	Thematic Areas							
		Governance & Programme Management	Malaria Vector Control	Malaria Dignosis & Case Management	Malaria Prevention & Treatment In Pregnancy	Intemittent Preventive Treatment in infants (IPTi)	Advocacy, IEC/BCC & Community Mobilisation	Epidemiology, Surveillance, M&E & Operational Research	PSM
24	Logistics Solution and Services								
25	ChildFund								
26	Concern Worldwide-Sierra Leone								
27	On Our Radar								
28	MIRAL								
29	CHASL								
30	Shan Steel Limited								

Source : NMCP/RBM partnership database 2019