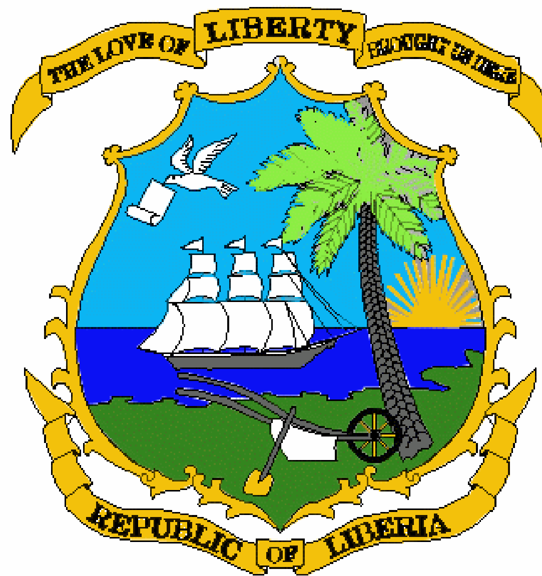
REPUBLIC OF LIBERIA

MINISTRY OF HEALTH

NATIONAL MALARIA CONTROL PROGRAM



NATIONAL MALARIA STRATEGIC PLAN

2016-2020

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Foreword

In 1998 the World Health Organization launched the 'Roll Back Malaria campaign' that has since encouraged the renewal of global commitment to fight the disease that causes the single largest number of mortality and morbidity. In April 2000, African Heads of State agreed to the goals enshrined in the Abuja Declaration in Nigeria which set about to reduce mortality and morbidity due to malaria.

These two most important events prompted many African countries to begin developing strategies to fight the malaria burden. These strategies are based upon international acceptable best practices, which call for the introduction of combination therapy, long lasting insecticide treated nets, integrated vector management and intermittent preventive treatment for malaria in pregnant, monitoring, evaluation and Research.

To prepare for this revision, the NMCP organized two types of reviews of the existing Strategic Plan. The first review in July 2013 lasted two weeks and consisted of short sessions with key NMCP staff, a consultant hired by WHO/RBM and USAID and key NMCP partners and stakeholders. A complete desk review and analysis of malaria data and activities were carried out. The plan was reviewed section by section with Strengths, Weaknesses, Opportunities and Threats (SWOT) Analysis and counties based consultation meetings held thus giving rise to the development and signing of Liberia Malaria Program Review aide memoire. Recommendations from the MPR led to the revision of the 2010-2015 strategic Plan. A one-week meeting with key partners was held in July 2014 to update and finalize the Fourth Strategic Plan (2016-20120) and make additional recommendations for improvement.

It is hoped that we can work with our partners in making optimal use of this national document in order to achieve our vision of a healthier Liberia with universal access to high quality malaria interventions with no malaria deaths.

We express our thanks to our partners who have worked with us to develop and implement the national strategic document. We appreciate your actions in bringing health care to the Liberian people.

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Dr. Francis N. Kateh,
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Executive Summary

Malaria is endemic in Liberia and the entire population of more than 3.8 million is at risk of the disease. Due to the perennial transmission of malaria, the entire population of Liberia is at risk of malaria infection. Children under five and pregnant women are the most affected groups. According to data from the recent Health Facility Survey (HFS, 2013) malaria accounted for 42% of outpatient department attendance and 39% of in-patient deaths, compared with 35% and 33% respectively in 2009 HFS.

Since August 2005, as part of the previous National Malaria Strategic Plans with funding largely from the Global Fund, some progress has been made in malaria control and prevention based on WHO Roll Back Malaria recommendations to use more effective strategies. The results of the malaria control effort based on findings from the LMIS 2011 and LDHS 2013 shows that:

- 36% (DHS 2013) of children under five are receiving prompt and effective treatment for malaria within 24hrs from the onset of fever, up from 26% (LMIS 2011)
- 48%(DHS 2013) of women are receiving two or more IPTp during their most recent pregnancy, down from 50% (LMIS 2011)
- 55%(LDHS 2013) of households have at least one ITN, up from 50% (LMIS 2011)
- 38%(LDHS 2013) of children under five slept under an ITN the previous night, up from 37%(LMIS 2011)
- 37%LDHS 2013) of pregnant women slept under an ITN the previous night, up from 33%(LMIS 2011)

This fourth Liberia National Malaria Strategic Plan for 2016-2020 addresses the need to scale-up these malaria control and prevention activities to build on gains made under the Millennium Development Goals (MDG-6). The fourth Strategic Plan addresses gaps identified in the implementation of the 2010-2015 Strategic Plan. It also includes a more detailed and budgeted strategy in dealing with the malaria situation. Given the lessons learned from negative effect of the Ebola Virus Disease on malaria programming, this strategy has included a plan and budget to ensure malaria control activities are able to continue with minimal disruptions during emergencies

1. Vision

The vision of the Liberia malaria program is a ***healthier Liberia with universal access to high quality malaria interventions with no malaria deaths***.

Mission and Values

The mission of the Liberia malaria program is to achieve the highest requisite capacity for the provision of comprehensive, coordinated and evidence-based interventions to eliminate malaria in Liberia.

Strategic Directions and Policy Priorities

The recent MPR process comprehensively reviewed the malaria program over the last eight to ten years. While progress has been made in the delivery of the key technical and supportive interventions, there are existing gaps that need to be addressed moving forward in order to maximize the potential impact of interventions.

Based on the current malaria epidemiological profile, a rapid scale up of insecticidal coverage through LLINs or IRS, parasitological diagnosis, and prompt treatment with effective ACT, sustain advocacy and awareness and increase IPTp coverage is required to achieve the vision of a Liberia free of malaria.

Goal and Objectives

Goal

The goal of the 2016-2020 National Malaria Strategic Plan is:
By 2020, reduce illnesses and deaths caused by malaria by 50%. (MIS 2011)

The objectives of the Liberia NMCP Strategic plan 2016-2020 are:

1. **To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective program management by 2020**

Key strategies under this objective highlights the building of both institutional and human resource capacities and advocacy, resource mobilize and oversight for effective program management.

2. **To increase access to prompt diagnosis and effective treatment targeting 85% of population by 2020.**

Strategies under this objective are: Conduct parasite based diagnosis at all levels and strengthen QA/QC for malaria diagnostics, Scale-up the management of uncomplicated and severe cases of malaria in both public and private health facilities throughout the country, Scale-up integrated community case management of malaria, Scale-up management of uncomplicated malaria in private sector facilities, Strengthen QA/QC

system for malaria commodities and service and Sustain Malaria in Pregnancy (MIP) services at all ANC facilities

3. **Ensure that 80% of the population is protected by malaria preventive measures by 2020**

   The key strategies under this objective are: Ensure Universal access to LLINs, Ensure implementation of IRS activities in targeted areas, Deploy effective and sustainable larviciding as a complementary vector control measure and Institutionalize entomological and insecticide resistance monitoring

4. **Increase the proportion of the population with knowledge and practice of malaria preventive measures to 95% and 75% by the end of 2020**

   Key strategies under this objective are: Promote Prevention, prompt and effective health seeking behavior amongst the population

5. **Strengthen the supply chain system for effective quantification and prompt distribution of commodities under a universal system by 2020**

Key strategies considered in this objective are: Ensure availability and access to antimalarial drugs and other commodities at all health facilities, Revise Logistics Management Information system tools to reflect key commodities, Ensure continuous availability of LMIS and SOP tools and Ensure availability and access to antimalarial Drugs at all health facilities

6. **improve routine data monitoring and program evaluation to ensure quality data management at all levels by 2020**

Key strategies under this objective are: Improve data management at all levels, Prioritize and strengthen local research agenda

7. **To initiate effective Preparedness and timely response during Emergencies**

Key strategy under this objective is to Support the determination of the magnitude of the emergency

This five-year National Malaria Strategic Plan builds on the achievements made thus far while recognizing the challenges and addresses the essential actions to be taken to reduce the morbidity and mortality trend of malaria in Liberia.

The total cost of this strategic plan (2016-2020) is One Hundred Eighty Two Million, Seventy Six Thousand, Six Hundred and Twenty Six United States Dollars (US$ **182,076,626**.**00**).

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

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Introduction

This National Malaria Strategic Plan 2016-2020 was developed in consultation with partners and stakeholders in malaria control and prevention. The plan creates a framework of priority activities to be carried out at various levels to increase access to and utilization of key malaria control and prevention interventions.

Through previous analysis, surveys, studies and reviews, factors that exacerbate the malaria situation in Liberia have been identified. This document identifies strategic approaches and activities that can alleviate these problems, coordinate efforts and facilitate the achievement of the overall goal of improved malaria control and reduction in morbidity and mortality due to malaria.

Political commitment exists at the highest level as exemplified by the fact that Liberia is a signatory to the Abuja Declaration on Roll Back Malaria (RBM) and currently represents Anglophone West Africa on the board of RBM Africa. This political commitment is also exemplified by the reduction of tariffs and taxes from 25% to 2.5% for insecticide treated nets and insecticides.

This fourth National Malaria Strategic Plan is being prepared at the time when Liberia is recovering from the devastation of the EVD outbreak and focusing on restoration of the health system decimated by EVD. This transition period is characterized by low access to health care and continued challenges to health care delivery: unrepaired health units, unrepaired roads affecting patient access and health facility support, poor motivation of health staff with low remuneration and incentives, and insufficient trained manpower from a "brain-drain" and insufficient training institutions in the country.

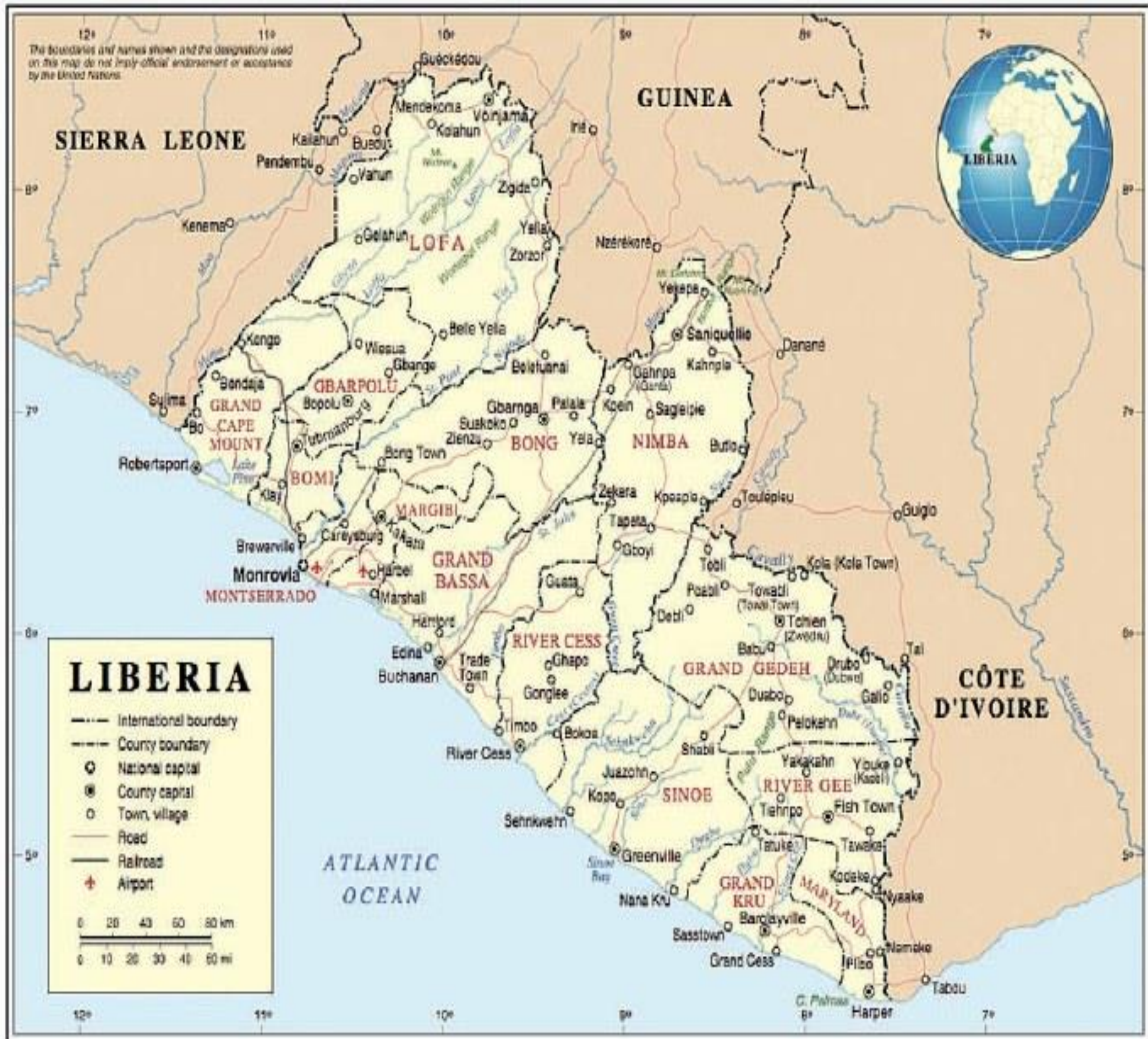
This Plan is based on international best practices and is in line with the RBM and WHO recommended strategies for malaria control and prevention in malaria endemic countries. This document provides a blueprint to scale up malaria control in Liberia for the next five years, and builds on the recommendation put forth in the review of the 2010-2015 strategic plan review, PMI MOP findings and WHO Global malaria program recommendations.

To complete this strategic plan, the NMCP organized series of in-house and external discussions and reviews to develop the technical content and estimated costs of implementing the strategy.

A series of in-house meetings were help with key units of NMCP to fine tune the review. The draft strategy and budget was then validated by key persons from the MOH in including the Deputy Minister of Health, PMI, UNICEF, WHO, Mercy, Mentor Initiative Plan International and MSH long term TA. Recommendations from the three day validation meeting were included in the final document. Finally given negative impact of the Ebola Outbreak on Malaria implementation, emergency preparedness and response plan and budget was included in the strategy to ensure that malaria control activities are implemented with minimal disruption in case of emergencies.

Chapter One

Liberia: Country Profile



NATIONAL MALARIA STRATEGIC PLAN 2016-2020

Background:

1.1 Overview

Liberia is Africa's oldest republic, which was founded by freed slaves in 1847. The West African state is bordered by the Atlantic Ocean to the south, Côte d'Ivoire to the east, Sierra Leone to the northwest and Guinea to the northeast. Administratively, it is divided into 15 counties and has a population of approximately 3.9 million.[1]

There are three branches of the Government: the Executive, Legislative and Judiciary. The Government is headed by a President, who is elected to serve for a term of six years. At the administrative level, the counties are headed by Superintendents, who are appointed by the President.

For close to two decades, the country endured years of civil crisis, which resulted in the loss of lives and the destruction of property. Since the end of the civil crisis, Liberia has held two peaceful general elections, becoming a model state for post war transformation. Despite the numerous economic challenges faced, the country is gradually transitioning from short-term relief and recovery to long-term national development within the context of stability and economic growth under a legitimate government. Since then significant progress has been made to:

a) Grow the economy through increasing mining, agriculture, forestry and manufacturing production;
b) Support the repatriation and re-establishment of displaced people in their communities, particularly in their former homes in rural villages.
c) Re-establish, through rebuilding or rehabilitation or re-opening, the local infrastructure (e.g. roads, schools, health facilities);
d) Improve agricultural production above the level of subsistence farming;
e) Address the origins of the previous conflict, by ensuring the inclusion of all peoples in political governance as well as securing access to the benefits that arise from economic growth and stability (for instance: improving land and property rights for the whole population);
f) Initiate the policy of de-centralization so as to move away from a Monrovia-centric infrastructure and services to a more equitable distribution of governance and services across the fifteen counties;
g) Reduce inequalities that had arisen due to the mismanagement of resources, ensuring that access to services is based on need rather than either the ability to pay (i.e. reduce the pro-rich bias) or other biases (e.g. age, gender);

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[1] Ministry of Health, Country Situational Analysis

h) Tackle the issues of power-based corruption through the implementation of the Anti-Corruption Strategy and the establishment of the Anti-Corruption Commission.

1.2 Demographic Data

It is estimated that the population of Liberia is 3.9 million, growing at an annual rate of 2.1%, from 3.5 million in 2008. There are sixteen indigenous tribes: Kpelle, Bassa, Gio, Kru, Grebo, Mano, Krahn, Gola, Gbandi, Loma, Kissi, Vai, Dei, Belle, Mandingo, and Mende making up 95% of the population, while Americo-Liberians make up the other 5% of the population.
Of the 15 administrative counties, the "big six" (Montserado, Nimba, Bong, Lofa, Grand Bassa and Margibi) accounted for 75.4% of the total population and 24.6% residing in the rest.

Three fourths of the population lives below the poverty line on less than US$1.25 a day. Despite these challenges, the economy is making a modest recovery and there is a gradual improvement in security in rural areas.

Table 2: Selection of Demographic Characteristics

Population	3.9 million (estimated)
Annual Population Growth	2.1%
Total Fertility rate	4.7% (DHS 2013)
Population density	93 per sq. mile
Crude mortality rate	34.4 (DHS 2013)
Under 5 mortality rate	94 per thousand live births (DHS 2013)
Infant mortality rate	54 per thousand live births (DHS 2013)
Maternal Mortality Rate	770 deaths per 100,000 births
Average life expectancy	60.56.3years (UNDP HDI 2014)

1.3 Ecosystem, Environment and Climate

The climate of Liberia is tropical and humid; temperatures vary between 26°C and 28°C all year round. There are two seasons: the rainy season starts in May and ends in October each year, while the dry season starts in November and ends in April of the following year. Most areas have a water surplus for 5-8 months each year.2

The country experiences relative humidity ranging from 65-80%, and vapour-transpiration is estimated to be between 3-5 mm per day.3 Along the coast, the average

2 Food and Agriculture Organization, Liberia: Country Pasture and Forage Resource Profile, July 2012
3 Ibid

relative humidity is about 82% during the wet season and 78% during the dry.4 The relative humidity may occasionally fall below 30% during the harmattan (the period between December and March, when dry heavily dust-laden winds from the Sahara Desert blow over the country)5.

In Liberia, the vegetation is mainly mangroves, scattered patches of bushes and savannah woodland.6 The vegetation and composition of plant communities are dictated by several factors, including hydrological conditions, such as the frequency and duration of flooding, depth of the water level, soil type, and physiography. The savannah plant communities in the coastal plains are potential pasture resources, especially those found in Grand Bassa, Maryland and Sinoe Counties.

Liberia is highly vulnerable to climate change in coastal areas. The country's capacity to adapt to climate change is very low, and resilience is very limited.

1.4 Socioeconomic Situation

According to the UNDP Human Development Index for 2014, Liberia ranked 175 out of 187, making the West African state one of the least developed countries in the world.
Over the years, slow economic performance, high rates of inflation, and a high unemployment rate are manifestations of this unprecedented level of poverty which affects the health care options for the population.

Selected Human Development Indicators

GDP, real growth rate7	8.3 %
National Budget8	Revenues: $481.5 million : $522.3 million (2012 estimates)
GDP Per Capita estimate 20129	$700
Population living below $1.25 PPP per day, 201310	83.8%
Population with access to sanitary facilities, 2009	45% access to improved; 43% no access11
HH with improved source of drinking water, 2011	72%
Literacy rate (age 15 – 49), 2008	41% women; 70% men
Employment rate	77.5% men; 59.2% women

Since 2008, Liberia's total health and social welfare expenditure reached over US$100 million (i.e. US$29 per person or 15% of GDP). The Government of Liberia has

4 Food and Agriculture Organization, Liberia: Country Pasture and Forage Resource Profile, July 2012
5 Ibid
6Ibid
7 Index Omundi, Liberia Economy Profile 2013
8 Ibid
9 Ibid
10 UNDP Human Development Index 2013

increased its portion of institutional expenditure on health over time: approximately 14% in 2009/2010, 22% in 2010/2011, and 33% in 2011/2012. The Government of Liberia is contributing approximately $54 million (28%) to the expected $196 million resource envelope for 2012/2013, and is currently the largest single financial contributor to the health sector while donors make up the rest of the resource envelope. Nevertheless, donors collectively contributed approximately 80% of the public funding for health in Liberia from 2008-2011.This reliance on external funding creates an insecure and unsustainable health care system where variances in donor contributions could lead to interruption of service delivery or commodity stock out.

1.5 Health System Analysis

1.5.1 Ministry of Health Organogram

The Ministry of Health organizational structure is divided into four departmental pillars, which are under the direct management of the Minister of Health and Social Welfare. The four departments are Disease, Surveillance and Epidemic Control, Planning, Research and Development, Administration and Health Services Department. The four departments are further sub-divided into different structures to ensure smooth operationalization of the Ministry's programs.

1.5.2 National Health and Social Welfare Policy and Plan

In 2011, the Ministry of Health (MOH) developed a ten-year National Health and Social Welfare Policy and Plan, 2011-2021 that set the health and social welfare development agenda for the medium-term. The mission of the ministry is to reform and manage the sector to effectively and efficiently deliver comprehensive, quality health and social welfare services that are equitable, accessible and sustainable for all people in Liberia. The policy vision is a healthy population with social protection for all, and the goal is to improve the health and social welfare status of the population of Liberia on an equitable basis.

The general objectives of the policy and accompanying ten-year plan are to:

1. Increase access to and utilization of quality health and social welfare services, delivered close to the community, endowed with the necessary resources and offering a comprehensive package of interventions of proven effectiveness.
2. Make health and social welfare services more responsive to people's needs, demands and expectations by transferring management and decision-making to lower administration levels, ensuring a fair degree of equity.

3. Make health care and social protection available to all people in Liberia, regardless of an individual's position in society, at a cost that is affordable to the country.

The ten-year plan adapts the WHO health systems framework and includes seven building blocks: financing, governance and leadership, human resources, information systems, management and organization, medical products and technology, and network infrastructure. Decentralization and the primary health care (PHC) approach are used to achieve the goal and objectives of the policy and plan.

1.5.3 Health Financing

Overall expenditure on health has been steadily increasing in Liberia over the years: US$100 million, US$126 million, and 240 million in 2007/08, 2010/10, and 2011/12 respectively. Whereas household contribution to total health expenditure has increased from 35% in 2007/08 to 51% in 2011/12, GoL contribution has remained at 15%, and external sources have decreased from 47% to 32%.

Review of the MoH Annual Report for 2012 indicates the percentage of the budget for health in relation to the national budget has remained around 10% for the 3 fiscal years between 2010 and 2012: namely 7.68%, 10.77%, and 9.53% for 2009/10, 2010/11, and 2011/12 respectively. A review of the National Health Accounts (NHA) shows government health expenditure, as percentage of total government expenditure was 8%, 7%, and 7% in 2007/08, 2009/10, and 2011/12 respectively.

Thus GoL expenditures on health are consistently lower than the Abuja Declaration of 2006 assented to by all countries in the Economic Community of West African States (ECOWAS) including Liberia, which commits governments to allocate at least 15% of the total annual government spending to health.

1.5.4 Health Infrastructure

Based on a rapid assessment carried out by the MOH in 2006, the 2007-11 National Health Policy set out to increase the number of functional health facilities from 354 to 550 in order to ensure the accessibility of primary health care. Accomplishing this required the rehabilitation of 110 facilities, reconstruction of 30 facilities and the construction of 30 facilities in underserved areas. This target has been met and according to figures received from the HMIS, there are now 551 functional health facilities operating in Liberia, although no assessment has been carried out as to whether these 551 facilities correspond to the needs previously identified.

While the BPHS provides guidelines on types of services and staff mix, no requirements are set out regarding the physical structure of the facility. In order to ensure that all health clinics would facilitate the provision of primary care services as per the BPHS requirements, the MOH developed a prototype clinic to be used in the design of all new and reconstructed facilities, as well as those being rehabilitated. The prototype clinic consists of 18 rooms and costs an average of 124,415 to construct [**Error! Reference source not found.**]. While the use of a prototype has the advantage of ensuring that minimum standards are met, it does not take into consideration catchment populations and therefore may result in inefficiencies of spending.

As discussed above, in the last three years, the Government has allocated only a very small proportion of its budget to capital expenditure. However, this is planned to change as the GoL have already committed to funding a number of large construction projects [see Table 1.1].

Table 1.1 Planned construction in 2011

Project	Total Cost (Approx.) [US$]	Financed by
Zwedru Mid-wifery School in Grand	1,000,000	40% GoL, 60% McCall McBien
River Gee Hospital	1,000,000	GoL
National Blood Bank	1,500,000	GoL
15 Duplexes for medical doctors	950,000	GoL
Drugs Depot Gbarpolu County	100,000	GoL

Source: Information obtained from the MOH Infrastructure Unit, 2010

In October 2010, 131 renovation or reconstruction projects have been approved by the MOH. However, a long-term needs assessment for construction and rehabilitation has not been carried out.

1.5.5 Human Resources

The National Health Plan (2007-11) was developed in a context of severe human resource constraints, with an uneven distribution of health workers between rural and urban areas; low level of productivity amongst health professionals; inconsistent staffing patterns in health facilities; and disparities in workforce remuneration (i.e. salaries and incentives) [**Error! Reference source not found.**]. Significant work has been undertaken in the intervening years to increase the number of qualified health workers (e.g. nurses, midwives, doctors, social workers) with the aim of doubling the number in post in 2008 to between 6,000 and 8,000 by June 2011, establish pre-service professional training, improve access to training through sponsorship and encourage a more equitable distribution of skills and personnel across the health system. By 2009, there were 5,813 health workers in post, compared to only 3,966 in 2007 Also, a number of "ghost" workers have been removed from the Ministry payroll.

There has been an increase in the numbers of registered health professionals following the re-establishment of formal nursing, midwifery, medical and physicians training programs in Schools of Nursing and/or Midwifery or Universities throughout Liberia. However, there is a cadre of experienced unqualified staff who have historically had limited opportunities for accessing ongoing training. There have been reports of urban and rural variations to access of enhanced training opportunities, and a lack of transparency in the selection processes

During the period of conflict, a number of qualified health workers left Liberia, some of whom have returned. Whilst details of international migration of health workers are not currently available, a recurring comment from some cadres of health workers is their keenness to secure enhanced or specialized training outside Liberia.

The groups of health and social welfare professionals that are currently needed to supplement the workforce and deliver the various policy objectives include: mental health workers, physiotherapists, occupational therapists, dieticians, clinical managers and supervisors and practice based teachers and assessors. It is expected that the National Workforce Plan will include details of numbers by cadre.

Some of the key HR challenges facing the Ministry will be: (i) securing the full participation of all providers in the implementation of the National Human Resources for Health and Social Welfare Policy; (ii) securing the engagement of all health workers in the new performance, productivity and efficiency monitoring arrangements; (iii) ensuring that staffing levels and skill mix are based on the size of the facility, its catchment area and type of services provided; (iv) reducing staff workloads; (v) changing existing professional profiles and/or creating new categories of health and social welfare workers as required to deliver the National Health and Social Welfare Plan (2011 – 2021); (vi) improving service quality by supporting staff accessing programs of training and education commensurate with their clinical responsibilities and performance; (vii) supporting the transfer of staff from MOH to County Teams; and (viii) supporting the retrenchment of staff for whom alternative employment within health and social welfare services .

The MOH is supporting the development of a National Human Resources for Health and Social Welfare Policy, and the associated implementation Plan with the aim of strengthening the long term professional and managerial needs of the workforce and introducing measures that will improve workforce performance. These measures will link recruitment, career development, standardize remuneration and hardship incentives to service distribution and service delivery priorities [32].

1.5.6 Health Management Information Systems

The Health Management Information System (HMIS) has been developed by the MOH to collect, analyze and disseminate routine data from front line providers. During the course of the implementation of the National Health Policy (2007-11), significant progress was made to strengthen the system through the modernization of IT infrastructure; training of staff; the harmonization of reporting forms and the development of a HMIS policy and strategy.

In spite of this progress however, the quality of the data remains a concern. While 70% of facilities are now sending paper reports to the County Data Officers, significant numbers of reporting errors continue to occur either at the facility or when the paper forms are inputted into the databases at county level, and the follow-up arrangements to fix these errors are not being carried out. Until this system of data cleaning and validation is put in place, poor data from a number of facilities or counties will continue to lower the quality of the HMIS.

Currently the HMIS focuses on a set of health utilization indicators and does not include financial data.

1.5.7 Medical Products and Technology

The Liberia Medical and Health Regulatory Authority is the government agency mandated to identify, select, approve and monitor all medical products allowed in the country for both the private and public sector use. The Liberia Medical and Health Regulatory Authority is also responsible for quality control of all medical products. All antimalarial medical products to be allowed in the country will have to meet the approval of the LMHRA.

Chapter Two

Malaria Situation Analysis

2.1 Epidemiology

Liberia is hyper- to holo-endemic to malaria with perennial intense transmission. The entire population of nearly four million people is at risk of malaria. Study records show a decline in parasite prevalence and malaria trends. According to the 2005 MIS, malaria prevalence was 66 %(RDT), while in2009; it was 32 %(Microscopy). Currently, the malaria prevalence is 28% using microscopy (LMIS 2011). This prevalence at the national level is not unique to every county. Distribution of prevalence ranges from 7% in Montserrado to 49% in southeastern B (Maryland, River Gee and Grand Kru).

The climate is favorable for mosquito breeding of major vectors of malaria: Anopheles gambiaes.s, An.funestus, and An.melas. The major parasite species causing the disease are Plasmodium falciparum (>90%), P. Ovale, and P. malariae. Most of the country lies below 500 meters in altitude; rain forest and swampy areas are common features. The climate is suitable for malaria transmission throughout the year in almost all parts of the country. During the peak of the rainy season—July to September—temperatures average 24.5°C and rise to 26.5°C in December and January when it is predominantly dry.

2.1.1 Geographical distribution of malaria

Most of the country lies below 500 meters. The coastal areas are characterized by mangrove swamps, which give way to tropical rain forest that gradually thins out northwards to be replaced by deciduous forest. All geographic areas of Liberia are favorable for the vectors that transmit malaria. Malaria is endemic in Liberia and thus it is evenly distributed across all geographical parts of Liberia due to a suitable climate for malaria transmission (NMCP Strategic Plan 2010). Malaria prevalence distribution as shown in a recent survey(LMIS2011) recorded 7% prevalence in Monrovia, North-western region 29% (Grand Cape Mount, Bomi and Gbarpolu counties), North-Central 35% (Bong, Nimba and Lofa counties), South-Central 26% (Margibi, Montserrado and Grand Bassa counties), South-eastern A 33% (Grand Gedeh, Sinoe and Rivercess counties) and South-eastern B 49% (Maryland, River Gee and Grand Kru counties).

2.1.2 Population at risk

The entire population of nearly 4 million is at risk of the disease, with an increased risk to pregnant women and children under five. Severe anemia is usually high among pregnant women and children under five years of age. Persistence fever and severe anemia have been found among the children less than five years of age and pregnant women (NHSP, 2010; MIS 2009).

2.1.3 Stratification and risk map

Results from malaria prevalence studies conducted between 2003-2005 classified Liberia as a country with hyper-holo-endemic malaria, with perennial transmission each year (Roll Back Malaria-National Desk Analysis-Liberia, 2001; HF, 2009).

The malaria risk mapping and stratification indicate that there have been changes over time and differences between regions in Liberia (see prevalence maps below). The trend in the prevalence periodically shifts from one region to another. For example, the MIS 2009 showed highest prevalence in the North Central Region (42%) while the MIS 2011 showed the highest prevalence in Southeastern B (49%). This is an area of research that needs to be prioritized in order to determine the factors precipitating the periodic regional changes in prevalence.

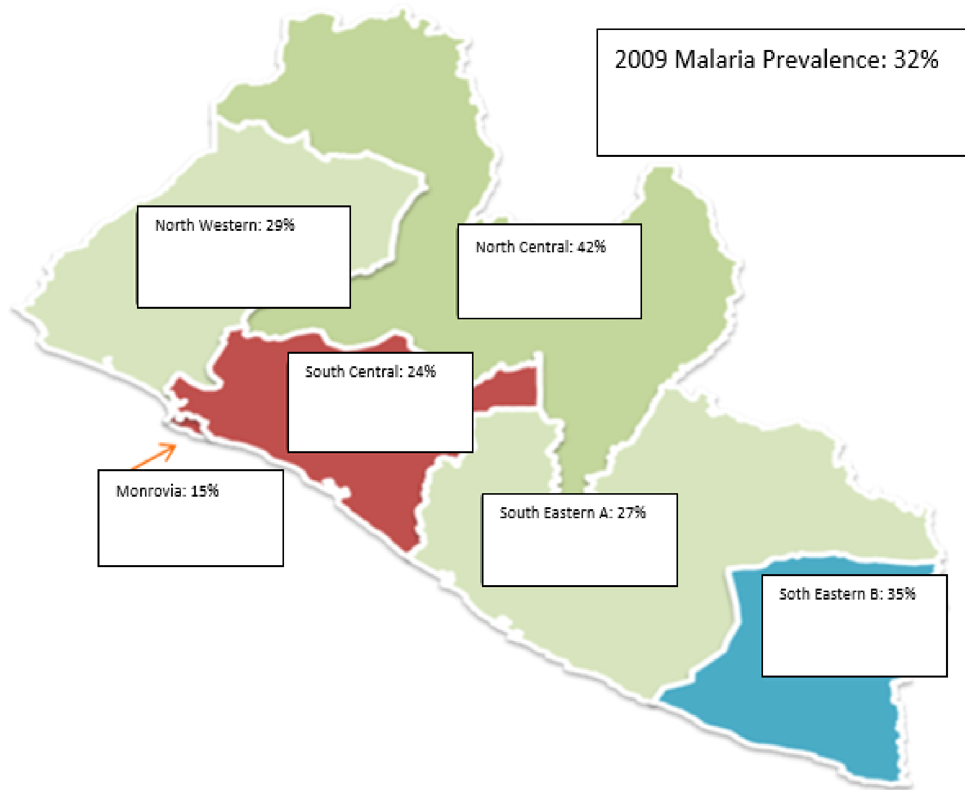
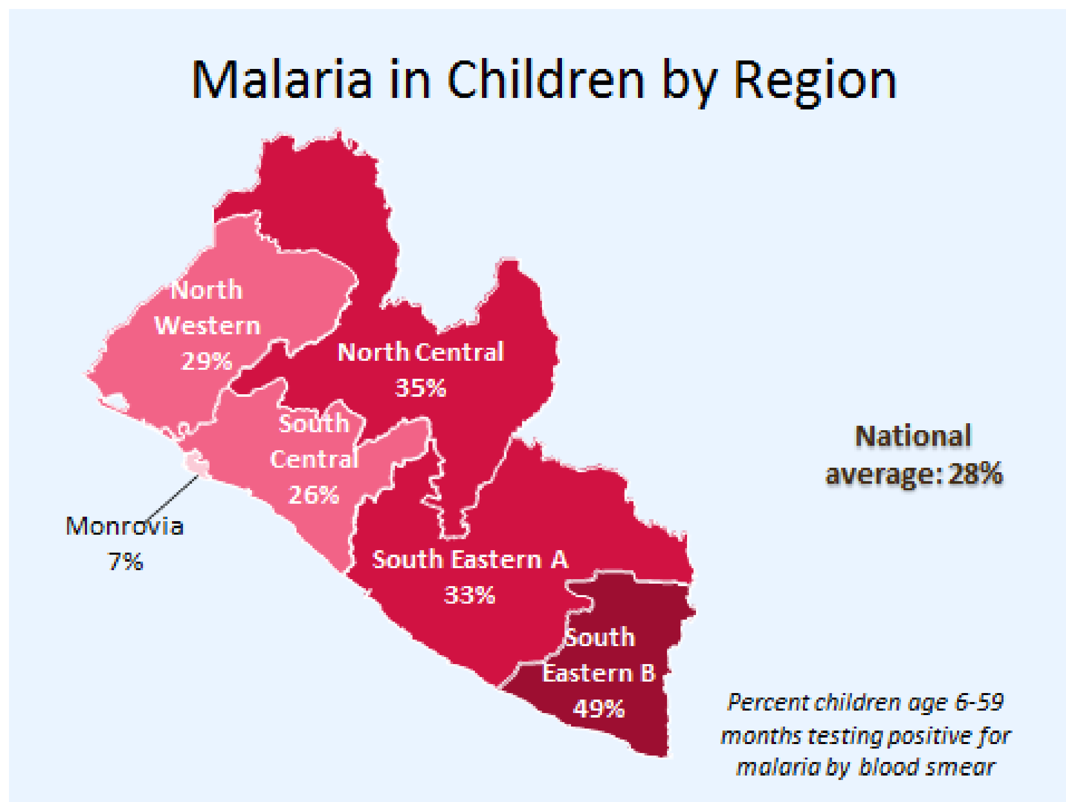
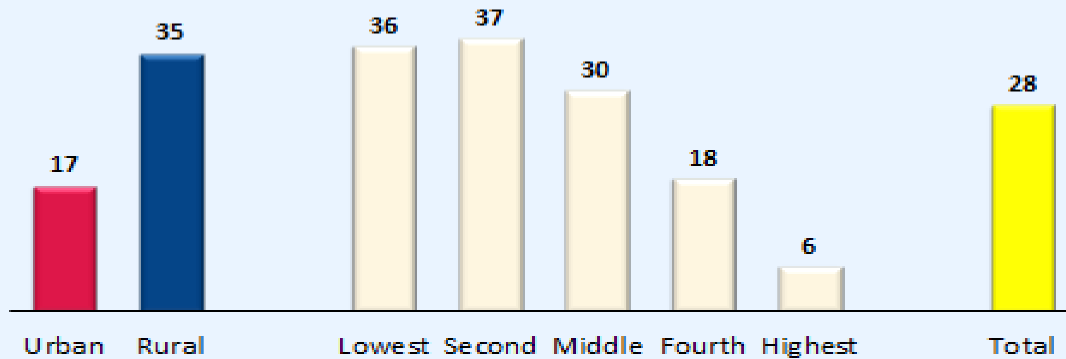


Figure 2.1. Malaria Risk Stratification in different regions of Liberia



Prevalence of Malaria by Residence and Wealth

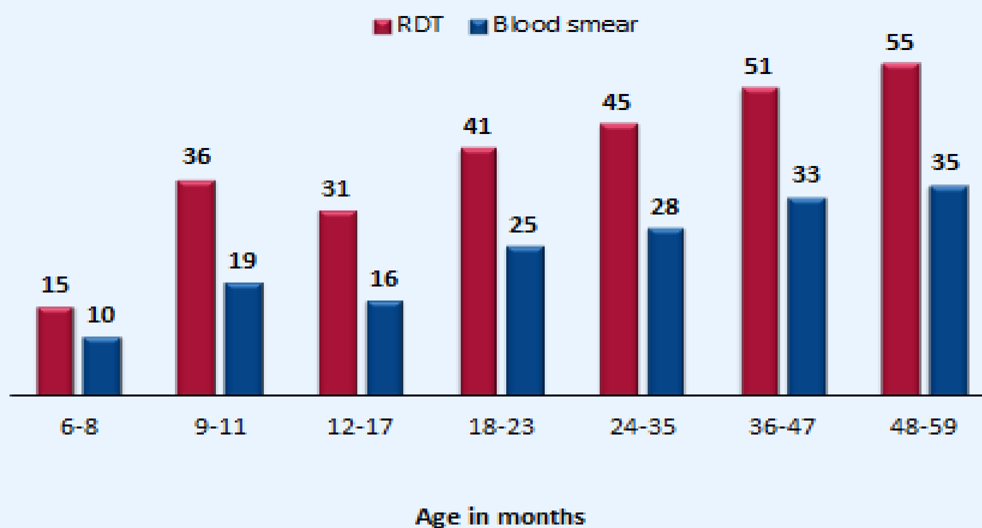
Percent children age 6-59 months testing positive for malaria by blood smear



The above graph indicates that overall malaria prevalence is higher in rural areas than the urban areas. This is borne out of the fact that urbanization tends to destroy conducive breeding place for the Anopheles species. Additionally malaria seems to affect poorer people more than high income people.

Prevalence of Malaria by Age

Percent children 6-59 months testing positive for malaria by rapid test (RDT) and blood smear



The table indicates malaria prevalence is higher using RDTs compared to Microscopy. This findings are in line with evidence elsewhere and is explained by the fact that RDT tests have higher false positives than microscopy. It is also instructive to note that in general malaria burden gets higher in older children.

2.1.4 **Malaria Parasites**

The major parasite species in Liberia are Plasmodium falciparum, Plasmodium ovale, and Plasmodium malariae. The most common parasite is P. Falciparum, which accounts for 90% of all malaria cases (Roll Back Malaria-National Desk Analysis-Liberia, 2001; HF, 2009).

2.1.5 Malaria Vectors

The climate is favorable for mosquito breeding of major vectors for malaria: Anopheles gambiaes.s, Anopheles funestus, and Anopheles melas.

A meta-analysis of annual P. falciparum (APf) entomological inoculation rate across 23 countries in Africa from 1980 to 2004 demonstrated that the APf entomological inoculation rate (EIR) of Liberia was 21.9 (Louis and McKenzie, 2009).

2.1.6 Malaria Burden and Disease Trends

Malaria is the leading cause of OPD attendance (42%) and is also the number one cause of inpatient deaths (39%) (HF survey 2013).

A review of data from the routine HMIS, health facility and Malaria indicator surveys and operational research provides a picture of the malaria epidemiology in Liberia. The data reviewed indicated that there was a decline in parasite prevalence and malaria trends. However, the data was not able to capture information on the vector densities and other entomological bionomics where ITNs and IRS were scaled up. As shown in the two figures below (from the HMIS as reported from health facilities and the MIS from the nationwide parasitaemia surveys that was conducted in 2005, 2009 and 2011. From the 2005 MIS the malaria prevalence was 66%-RDT, then in 2009 it decreased to 32%-Microscopy and in 2011 further decreased to 28%-Microscopy (MIS, 2005, 2009, 2011).

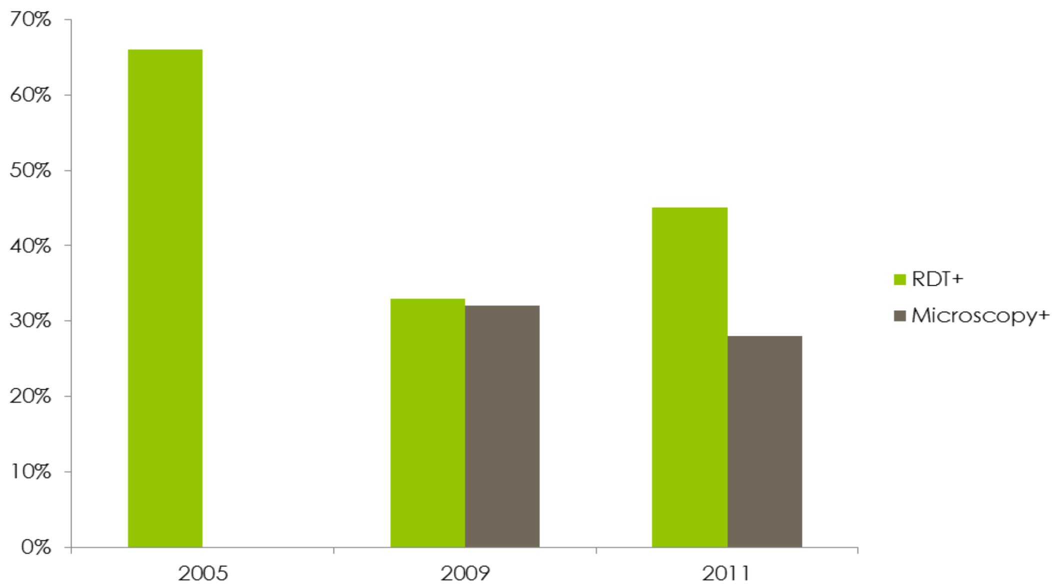


Figure 3.1. Malaria Parasite Prevalence in Liberia
Source: MIS (2005, 2009, 2011)

The number of deaths reported from HMIS has also reduced among children under-five and the entire population. The decrease in under-five mortality from over 2,500 deaths in 2011 to around 500 deaths in 2013 is a five-fold reduction. The overall mortality in the population also decreased from over 3,000 deaths in 2011 to around 800 deaths in 2013 representing a nearly four-fold reduction in the overall malaria mortality. There is still more work to be done to validate reported malaria deaths. Of note is the relatively small drop in malaria prevalence between 2009 and 2011. This is the principle behind the program's bid to rapidly scale up access and quality of malaria control interventions to further reduce the burden and sustain the gains achieved so far.

2.2 The Malaria Program Performance Review

The Malaria Program Review is a periodic collaborative high-level program management process instituted by the WHO for evaluation of progress and performance of country's malaria program as a part of the national health and development agenda. It is an important public health program management tool for countries striving to strengthen program structures and systems, and capacity to incrementally improve performance to scale up and sustain universal coverage with a mix of key interventions to all malaria risk populations.

The MPR was conducted in Liberia in March 2014, and constituted a mid-term review of the NMCP Strategic Plan 2010-2015. In addition, there were indications that the epidemiology of malaria is changing in the country due to a combination of factors,

which called for an evaluation. Within the period, there has been a renewed support from donors and the increasing scale-up in malaria interventions in Liberia, which may be connected to the decline in the malaria cases and the death rates.

2.2.1 Integrated Vector Management

Liberia has adopted WHO's recommended approach of an Integrated Vector Management (IVM) strategy for prevention of malaria transmission. The Liberia 2010-2015 National Malaria Strategic Plan (NMSP) articulated IVM as a key component of malaria control. Vector control activities in Liberia include LLIN distribution, Indoor Residual Spraying (IRS) and vector monitoring. Although recommended in the NMSP 2010-2015, larviciding and environmental management were not implemented.

LLINs were distributed either as stand-alone or in integrated mass campaigns using the door to door strategy, complemented by routine distribution through ANC and MCH clinics. Initially, LLIN distribution targeted vulnerable groups in 2002 but changed to universal access in 2008. A total of 4,869,708 LLINs were distributed from 2008 to 2013. According to DHS (2013) ITN ownership is 55% for the whole population There is however marked difference in ITN ownership between rural (61%) and urban households (50%). ITN utilization measured by the number of children and pregnant who slept under ITNs the previous night was 38 and 37 respectively. It is instructive to note that of households that own at least 1 ITN, the utilization was 63% among both under-fives and pregnant women. This underlines the need to increase LLINs availability in households.

IRS, which is supported by PMI, was implemented for six rounds from 2009 to 2013, covering 22 districts of five counties. Spray coverage was 92% of all targeted structures. There is also an established insectary for research and vector surveillance, and an IVM Task Force that regularly shares progress of vector control activities and plans amongst partners.

Despite the progress made, these challenges below conspire to reduce the gains of vector control in Liberia:

- Low LLIN utilization in the community.
- Stock-out of LLINs at health facility level.
- Declining donor support for IRS.
- Lack of well-established reference entomological laboratory for effective malaria vector monitoring and surveillance.

2.2.2 Malaria in Pregnancy (MIP)

Recognizing the adverse impacts of malaria on maternal and newborn health, Liberia has adopted the World Health Organization's (WHO) approach to combating MIP. This has resulted in improved outcomes for women and children. This approach includes: Intermittent Preventive Treatment of Malaria in pregnancy (IPTp) using Sulfadoxine-Pyrimethamine (SP), Long-Lasting Insecticide-Treated Nets (LLINs), and effective case management of malaria and anemia. This approach has demonstrated positive health impacts in the control of MIP.

The MIP Technical Guidelines provide guidance for Malaria in Pregnancy. The program has also produced an MIP treatment protocol. There is an integrated health service delivery, with MIP forming a crucial component, which is incorporated in the function of the CHDD and the DHO. At the health facility level there is a midwife who is responsible for MCH and thus coordinates the MIP at both the facility and community levels. At the community level, the MCH Supervisor works with the Community Health Volunteers (CHVs) especially the Trained Traditional Midwives (TTMs) to provide MIP services and improve coverage.

Antenatal care (ANC) visits at health facilities is the channel through which the NMCP provides SP and LLINs to pregnant women. Since the introduction of IPTp in Liberia in 2005, the coverage has been increasing, paralleling the gradual increase in access to healthcare. The proportion of pregnant women receiving at least 2 doses of SP has increased from 4.5% in 2005 to 50% in 2011. The DHS (2013) reported IPTp1 at 65% and 48% for IPTp 2. The drop in IPTp 2 coverage was due to a lot of factors including shortage of SP in health facilities. The LMIS (2011) showed that LLIN usage by pregnant women 39% in 2011 whilst the DHS 2013 put utilization at 37% .The NMCP in partnership with PMI has distributed 250,000 LLINs to all health facilities to be provided to pregnant woman visiting antenatal care and delivering in health facilities

Despite the progress made, there remain some key setbacks:

- Net utilization among pregnant women is below the global target of 80%.
- IPT2 coverage is low due to multifactorial causes.
- There is poor recording and reporting of IPT and LLINs at health facilities.
- The latest revised MIP guideline has not been rolled out.

2.2.3 Case Management and Diagnostics

Malaria case management services are integrated into the health delivery system and are available at all levels of care: national, county, district and community levels. As case management is essentially a clinical intervention, it involves the participation of all Clinicians, pharmacist and laboratory staff.

The coordination and supervision of case management are organized at different levels. The national level is responsible for policies and guidelines development, training of National and Regional Training of Trainers (TOTs) and supervising the County and District level trainings. At the County level, the County Health Department (CHD), is responsible for county level policy dissemination and enforcement, training and supervision, data compilation and reporting, etc. The District level is responsible for district level supervision, training and policy dissemination at each health facility. This level also supervised community level implementation of malaria case management, which is being done by gCHVs.

Since 2005, Liberia has made considerable progress in the diagnosis and treatment of malaria. The percentage of patients receiving appropriate malaria treatment within 24 hours increased from 21% in 2005 to 35% in 2009 and ??? 2003 (HFS). The proportion of children under five receiving prompt and effective treatment of malaria within 24 hours of the onset of fever increased from 5.26% in 2005 (MIS) to 17% in 2009 (MIS) and to 48% in 2011(MIS).

Since the introduction of RDTs, laboratory confirmed malaria diagnosis has increased significantly in the public sector. The emphasis on confirmed cases has also helped to specify the proportion of deaths attributable to malaria. The percentage of lab-confirmed malaria deaths in children less than five years for age has decreased from 58% in 2005 to 41% in 2009 (HFS 2005 & 2009).

Artemisinin-based Combination Therapy (ACT) was introduced as the first line for malaria in 2003. Since then, ACTs have been rolled out to all health facilities. Data from the 2011 MIS indicate that 70% of children under five years of age who received an antimalarial took an ACT. This is a significant increase from 2009, when only 44% of children who received an antimalarial received an ACT. To further increase the coverage the NMCP and MOH&SW have involved the private sector through which 46% of the Liberian population access antimalarial medications. In addition, to enable achieve universal access, the MOH&SW has initiated the rollout of integrated community-based case management program to serve hard to reach communities.

For treatment of severe malaria, cases are managed using three regimens separately based on the decision of the screener or attending physician. In the order of

recommended choice, they are: Artesunate IM/IV, Artemether IM and Quinine IV. The prevalence of severe malaria in Liberia is decreasing. The percentage of lab-confirmed malaria deaths in children less than five years of age has decreased from 58% in 2005 to 41% in 2009 (HFS 2005 & 2009). There is a policy on pre-referral treatment for severe malaria in the community by gCHVs. Although the overall management of severe malaria has improved, the HFS 2009 report revealed that only 20% of health workers investigated for the signs of severe/complicated malaria

Table 3.1 below demonstrates that there is an increase in trend for the diagnosis of malaria. Thus, this reinforces the point, that the program is making good progress by treating those who truly have malaria thus improving rational use of ACTs and properly managing non malaria fevers presenting to health workers.

3.1 Malaria case management status

Intervention	2005	2009	2011	2013	Source
Proportion of U5 receive appropriate treatment within 24 hrs.	5.2	17	48		LMIS,
				24	DHS
Proportion of confirmed U5 malaria deaths	58	41	N/A	55*	HFS

*Needs verification

BASELINE DATA TESTING

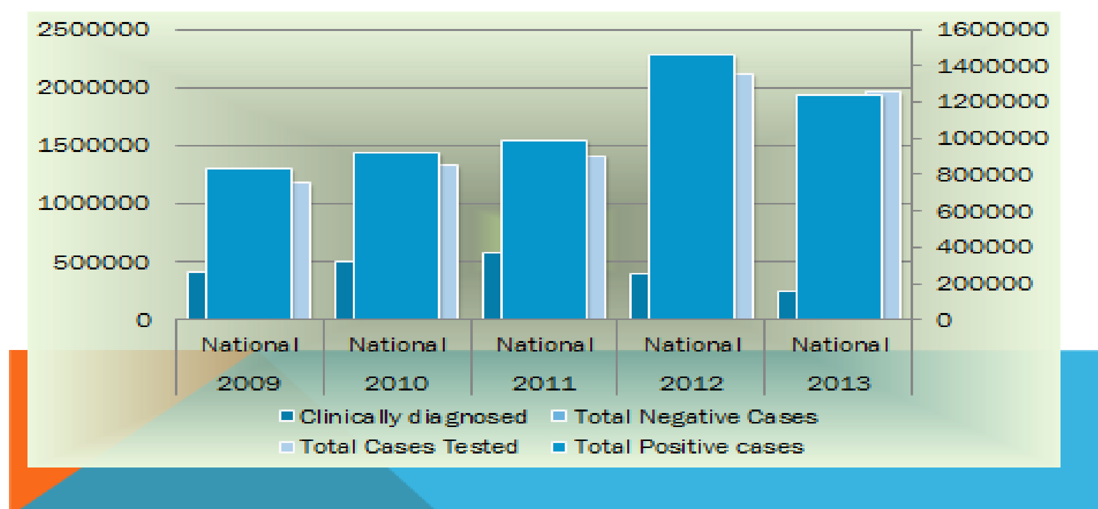


Table 3.1. Trend of Malaria Diagnosis
Source: HMIS, (2011, 2012, 2013)

Liberia is a malaria endemic country and malaria prophylaxis is not recommended for the general population. However, it is recommended for certain groups of people such

as tourists or non-immune travelers who intend to stay for short period in the country. The prophylaxis recommended by the program is a daily dose of 100mg doxycycline tablet or capsule while in country.

Despite the progress made in case management of malaria, the program recorded several challenges. These include the following:

- Low overall access to health services.
- Poor health-seeking behavior of caregivers or parents.
- Low patient adherence to treatment and self-medication
- Poor adherence to treating only malaria positive patients by a significant minority of clinicians
- Stock out of medicines and diagnostic supplies at health facilities.
- Treatment of fever cases with antimalarial without laboratory confirmation.
- Limited but continued use of chloroquine and other antimalarial monotherapy, especially in the private sector.
- Limited involvement of private sector and medical doctors in the training on malaria case management.

2.2.4 Procurement and Supply Chain Management

In the 2007-2010 National Health Strategy, the Ministry of Health (MOH&SW) noted that efficient procurement and distributions system are vital to the provision of its Basic Package of Health Services (BPHS). Since malaria accounts for the greatest disease burden in the country, this strategy places malaria commodities and supplies at the forefront of the health services. The Supply Chain Master Plan, 2010 identifies the National Drug Service (NDS) as the sole agent responsible for procurement of drugs and commodities, including anti-malarial drugs. Similarly, the Supply Chain Strategy (2010) guides the entire procurement and supply chain management system including the operationalization of the Logistic Management Information system (LMIS). The NDS procures all essential medicine and serves as the custodian and distributer of all commodities of the MOH&SW.

There is one central warehouse at NDS and 14 NDS-approved depots in 14 of the 15 counties. There is quarterly supply of malaria commodities to the county depot. On a monthly basis, the health facilities make requests for malaria commodities. Delivery is done from central warehouse to county depots. The depots then supply the facilities and then facilities supply the communities. Monthly and quarterly reports are submitted by health facilities to the Supply Change Management Unit (SCMU). The SCMU collects,

collates, analyses and stores reports on malaria commodities through the LMIS. The NMCP periodically access these reports to corroborate its planning process.

The program has over the years demonstrated a strong partnership with key stakeholders. This has resulted into crucial support for the supply chain system. There is a supply chain Technical Working Group that addresses critical supply chain issues. Another best practice by the program is the development of an adequate capacity to monitor procurement systems and pipeline at central level.

The supply chain management however has its challenges. A major issue is the irregularity of malaria drug supply across facilities. Delay in obtaining funding for procurement of pharmaceutical, inadequate/inaccurate consumption and morbidity data, , unsuitable storage, and poor inventory and warehouse management practices contribute to stock outs of commodities. Other issues include uncertainty of quality of drug/commodity quality.

Other notable key issues include:

- Stock outs of drugs and supplies.
- Leakage of public sector malaria commodities into the private sector
- Inadequate and inaccurate consumption and morbidity data impede quantification.
- There are no estimates of malaria commodity requirements in the 2010-2015 Malaria Strategic Plan.

2.2.5 Monitoring and Evaluation, Operational Research

The National M&E Policy and Strategy has been revised to align with the National Health Policy and Plan 2011-2021 (The National Health and Social Welfare Policy and Plan 2011 – 2021). The Health Management Information System has also been designed to ensure the required health and management information are available and accessible to all Programs and Divisions of the Ministry of Health. The strategy also defines how each piece of information is adequately and appropriately used for its intended purpose (National standard operating procedures for health management information system, National Malaria Monitoring and Evaluation Plan).

There is an integrated monthly report covering key malaria indicators that are captured via the HMIS. This report covers the followings: outpatients, inpatients, deaths, RDT and/or microscopy test results. The reports emanate from the facilities at the end of each month and are captured in the HMIS (Liberia District Health Information System Evaluation Report 2013; National Malaria Monitoring and Evaluation Plan, 2013). In

addition to the HMIS, there are quarterly monitoring and evaluation of malaria control activities conducted every quarter since 2008. There is also a mechanism for data verification/validation, which continues to be conducted since 2010.

The National M&E Plan and HMIS were established in 2009, and were updated with new ledgers and an updated electronic data entry tool. The District Health Information System 2 (DHIS 2) was launched in 2011. All health facilities reporting through the HMIS were trained in data collection, recordkeeping and reporting using the integrated tools. The primary objective of the HMIS is to provide reliable, relevant, up-to-date, adequate, timely and complete information on delivery of services, availability and use of resources, and effectiveness of services for health managers at facilities, county and national levels (National standard operating procedures for health management information system, 2013). Routine quarterly monitoring and evaluation activities are conducted to track program implementation and performance. Major studies and other operational research are conducted each year to inform key decisions in program planning and implementation.

The M&E unit of the NMCP continuously implement or collaborate in the implementation of surveys and evaluations. Key surveys implemented thus far include three Malaria Indicator Surveys and two Health facilities Surveys since 2009. Other collaborative surveys include: two Demography and Health Survey since 2007 and one National Population and Household Census since 2008.The Malaria Indicator Surveys were conducted in 2005, 2009, and 2011. The survey captures data on malaria prevalence, fever, case management, net ownership and use, Malaria in Pregnancy, and ICE/BCC. An important aspect each of these surveys was a measure of the progression in the knowledge, attitude, behavior and practice as well as quality of anti-malarias.

The following are the key challenges for the program M&E:

- Data quality is still poor.
- It is still difficult to clearly establish deaths due to malaria.
- Malaria Indicator Survey (MIS) does not capture County specific indicators.
- The documented increase in knowledge on malaria transmission and prevention and net ownership has not been translated into commensurate outcomes.

2.2.6 Advocacy, Communication and Social Mobilization

Currently, the MOH&SW has developed the framework for community involvement in health and the NMCP has strong collaboration with partners for the promotion of IEC/BCC and community involvement in health. Strategic documents, Community Health Development Committees (CHDC), and community-based health program have been developed and are contributing to raising awareness on Malaria at community

level. Indicators and targets for the IEC/BCC intervention are captured in the NMCP Strategic Plan 2010 – 2015.

The IEC/BCC strategy has increasingly reached its targets in the areas of knowledge on malaria transmission and malaria prevention. The MIS indicate that between 2005 and 2011, the knowledge on malaria transmission and prevention has increased from 43.1% to 83% in the MIS 2005 and 2011, respectively. The DHS 2013 indicate reported that 97% of the population know about malaria transmission and prevention. Unfortunately however, translating knowledge into practice lags behind knowledge. The DHS 2013 reported utilization of ITNs among children under five to be 36% although 55% of households had an ITN. Additionally although 97% of the population know malaria can be treated only 58% of children with fever were sent to health provider for management.

Most of the IEC/BCC activities are community-based using house-to-house awareness campaigns, health talks at facilities, and mass media (radio and TV). Training materials, fact sheets, posters, and other tools are also used to engage schools, community based organizations, and local authorities.
Given the slow adoption of behavioral changes in spite of the high knowledge among the population, the revised IEC/BCC communication strategy places stronger emphasis on community mobilization and innovative interpersonal communication measures to encourage utilization of malaria control services.

However, the following key issues have stunted the performance of the program in this intervention area:

- The 2005 IEC/BCC Strategy and guidelines have not been updated to include new interventions and strategies
- The 2005 IEC/BCC strategy and guidelines have not been revised to include innovative emphasis behavioral change tactics
- Low use of the distributed LLINs; some communities still use LLINs for sapo (bathing sponge), fishing nets, fence for chicks, among other misuses.
- High self-treatment of fevers by communities.
- Inadequacy of IEC/BCC materials at all levels.

Chapter Three

3. Strategic Plan Framework

3.1 Vision

The vision of the Liberia malaria program is a healthier Liberia with universal access to high quality malaria interventions with no malaria deaths.

3.2 Mission

The mission of the Liberia malaria program is to achieve the highest requisite capacity for the provision of comprehensive, coordinated and evidence-based interventions to eliminate malaria in Liberia.

3.3 Strategic Directions and Policy Priorities

The recent MPR process comprehensively reviewed the malaria program over the last eight to ten years. While progress has been made in the delivery of the key technical and supportive interventions, there are existing gaps that need to be addressed moving forward in order to maximize the potential impact of interventions.

Based on the current malaria epidemiological profile, a rapid scale up of insecticidal coverage through LLINs or IRS, parasitological diagnosis, and prompt treatment with effective ACT, sustain advocacy and awareness and increase IPTp coverage is required to achieve the vision of a Liberia free of malaria.

3.4 Goal and Objectives

3.4.1 Goal

The goal of the 2015-2020 National Malaria Strategic Plan is:
By 2020, reduce illnesses and deaths caused by malaria by 50%. (MIS 2011)

3.4.2 Objectives

The specific objectives of the 2015-2020 National Malaria Strategic Plan are as follows:

Objective 1:
To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective program management by 2020

The National Malaria Control Program, being the national institution mandated to lead and coordinate the malaria control efforts in Liberia has made significant progress over

the years. Through the leadership, the malaria prevalence has reduced from 66% using RDT in 2005 to 28%-Microscopy in 2011 MIS. The program has secured continuous funding for the control and prevention of malaria during the last five years. In spite of these achievements, the NMCP is confronted with challenges. Given the number of partners in malaria control, the coordination capacity of the program needs to be strengthened to enhance adherence to policies, guidelines and operational standards. The recent program review also recommended the enhancement of the technical capacity of NMCP. The NMCP is overly reliant on donor funding which was confirmed during the recent malaria program review.

The NMCP in recognition of the challenges mentioned above, will endeavor to broaden its capacity and funding base to be able to address challenges that it is currently confronted with.

Objective 2:

To increase access to prompt diagnosis and effective treatment targeting 85% of population by 2020.

The recent malaria program review identified several challenges in the area of malaria case management. Key issues identified were: the issue affecting access to health services in hard to reach communities, poor health-seeking behavior of caregivers or parents, patients' non adherence to treatment, stock out of medicines and diagnostic supplies at health facilities. Among these also included clinician non-adherence to national treatment protocol, continuous use of Chloroquine and other antimalarial monotherapy, especially in the private sector and limited involvement of private sector and Medical Doctors in the training on malaria case management. In response to the above, the NMCP would strengthen its capacity to scale up the quality and reach of its trainings, supportive supervision and innovative measures to reach the hard to reach communities.

Objective 3:

To ensure that 80% of the population are protected by malaria preventive measures by 2020.

Over the years, vector control activities have made significant contribution to the reduction of malaria burden in Liberia. The program has increased coverage of LLIN among the population from 51% in 2011 (MIS) to 55% in 2013 (DHS). In order to achieve universal coverage malaria preventive interventions, the NMCP would improve the following critical areas of implementation: Low LLINs utilization in the community, stock-out of LLINs at health facility level, lack of well-established reference entomological laboratory for effective malaria vector monitoring and surveillance.

Objective 4:

To increase the proportion of the population who practice malaria preventive measures from 40% to 85% and sustain knowledge at 98% by the end of 2020.

Though the IEC/BCC strategy has increasingly reached its targets in the areas of knowledge on malaria transmission and prevention; progress remains low on behavioral change. Attendance at the ANC and ITNs use are still very low. The 2011 LMIS results showed that health-seeking behavior amongst the population is very poor. The 2009 Health facility survey showed that only 35% of the cases presenting at the health facility arrived within 24 hours of onset of fever. It is also recognized that ready access to commodities encourages their utilization. As per the 2011 LMIS, although national LLINs utilization was 35% among households that had one, utilization was significantly higher 56% in households that had LLINS. A key thrust of NMCP is to expand access to commodities whilst ensuring their utilization through IEC/BCC interventions

Objective 5:

To strengthen the supply chain system for effective quantification and prompt distribution of commodities under a universal system by 2020.

The National supply chain system has made some strives as it relates to quantification, product selection and distribution. This can be seen in the establishment depots/warehouses in the fourteen counties to enhance storage and inventory management. However, inadequate and inaccuracy consumption and mobility data are some challenges that impede quantification thereby leading to periodic stock-out at some facilities. In order to reduce stock out to the barest minimum, the NMCP in collaboration with partners would strengthen data collection through LMIS, improve commodity quantification, ensure adherence to treatment guidelines as well as encourage rational and accountable use of malaria commodities.

Objective 6:

To improve routine data monitoring and program evaluation to ensure quality data management at all levels by 2020.

The M&E unit of the NMCP has over the years worked with the central Research-M&E/HMIS department of the Ministry of Health in the area of data collection, onsite data verification, analysis, and timely reporting. Every year the M&E and HMIS team conducts Annual Data Quality Audit (DQA) using standardized methodologies to assess the quality of routine health data to check the impact of data verification as an intervention to improving data quality. This DQA is national in scope and based on a representative sample of health at all health facilities

The unit has also worked with the Central MOH and others partners in the area of Operational Research to inform decision making in program management. in spite of these efforts, data quality is still a challenge. There is limited use of data for decision making at all levels.

Objective 7.
To initiate effective Preparedness and timely response during Emergencies

During emergencies, the National Malaria Control Program shall continue to provide specialized care to address the particular emergency situation. Additionally, NMCP will endeavor to sustain routine malaria activities during and after emergencies. The NMCP will coordinate with the National Emergency Operation Center (EOC) in responding to any emerging health emergency.

3.1 INTERVENTIONS AND IMPLEMENTATION STRATEGIES

Objective 1: *To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective program management by 2020*

To achieve this objective, the following strategies will be deployed:

3.1.1 Build capacity of NMCP to plan and coordinate Malaria Control activities nationwide

The NMCP is the implementing arm of the Ministry of Health in all malaria control throughout the country. In order to perform this important role, its management capacity has to strengthen. This will be done through the conduct of regular human, Financial, and Management capacity gaps assessment and putting in measures to respond to the identified gaps. Some of the measures will include training in malaria control management both internal and external as well as equipping the NMCP with the requisite tools and technologies to effectively manage malaria control effort

To ensure that the gains made in malaria control efforts are sustained and scaled up, health workers at all levels would be updated on skills and knowledge of malaria. This training will encompass case management, integrated vector management, IEC/BCC, supply chain and Research Monitoring and Evaluation elements. All of these trainings will be backed by regular onsite mentoring.
Given the emergence of new evidence and the changing epidemiology of malaria in both Liberia and Globally, the program will continually review and provide rapid response to

changing malaria control situation. This will be implemented through the collection/generation of evidence to inform the revision of guidelines and policies and their subsequent printing and dissemination to health workers and stakeholders
In an effort to improve and sustain the malaria control effort, the NMCP needs partnership across the formal and informal sectors. This will be done through assessing the capacity and potential of stakeholders. Armed with such information, NMCP will be able to effectively engage its stakeholders/partners for malaria control and prevention. The NMCP will also develop measures in respond to gaps identified during the assessment.

To ensure that policies, norms and guidelines are understood and adopted by partners, NMCP through various platforms like, malaria steering committee, Technical Working groups, Technical Coordinating Committee and the Liberia Coordinating Mechanism will provide leadership in providing direction and information on malaria control and prevention strategies, policies and guidelines.

The program with support from partners like WHO, UNICEF, PMI and others would evaluate progress toward sets outcomes and targets midway of the five year Strategic plan. Progress made in each thematic area of the program will be assessed, analyzed to determine as to whether the program is on track on achieving its targets. Remedial measure would then be introduced based on findings accordingly.

The midterm evaluation process will include a stakeholder consultative workshop, a complete SWOT analysis, a thorough thematic desk analysis looking at what has been done as well as the challenges during the first term of the strategic plan. A midterm evaluation report will be developed highlighting progress made and challenges identified during the first phase of the strategic plan implementation as well as advancing recommendation(s) on how to improve.

The program with support from partners like WHO, UNICEF, PMI would evaluate progress toward the end of the six years Strategic plan. Progress made in each thematic area of the program will be assessed, analyzed to determine as to whether the program is on track on achieving its targets.

The Malaria Program Review process will include a stakeholder consultative workshop, a complete SWOT analysis, a thorough thematic desk analysis looking at what has been done as well as the challenges during the first term of the strategic plan. A MPR report will be developed highlighting progress made and challenges identified during the strategic plan implementation as well as advancing recommendation(s) on how to improve.

3.1.2 Advocate and mobilize resources for effective program management

Over the past 11 years, the NMCP/government has been able to mobilize significant financial resources toward the prevention and control of malaria in Liberia. The achievement seen so far is attributed to supports from two major donors (GFATM and USAID/PMI) and government efforts. In an effort to broaden the resource envelope, the NMCP will have to actively seek funding from others donors through the identification of resource gaps follow by the development of resource mobilization plan and the conduct of the advocacy/fund raising meetings for resource mobilization.

Objective 2: ***To increase access to prompt diagnosis and effective treatment of the population from 68% to 85% by 2020.***

To achieve this objective, the following strategies will be deployed:

3.2.1 Conduct parasite based diagnosis at all levels and strengthen QA/QC for malaria diagnostics:

The NMCP having recognized the importance of parasitological diagnosis and its impact on program implementation adopted the World Health Organization (WHO) recommendation on parasite-based malaria diagnosis in 2012 and has planned to roll it out at all levels. This would dictate the following activities: Review, revise and printing of all diagnostic documents including guidelines, standard operating procedures (SOPs), training manuals etc. Other activities would include, identifying and training county diagnostic staff (laboratory technicians and Assistants), provision of diagnostic equipment and supplies, conduct of supportive supervision and on site coaching and mentoring. Also to conduct QA/QC for malaria diagnostics at all levels by collecting some positive and negative blood slides and mRDTs for malaria and send for QC

3.2.2 ***Scale-up the management of uncomplicated and severe cases of malaria in both public and private health facilities throughout the country***:

The management of uncomplicated and severe cases of malaria has largely been handled at public health facilities with few private health facilities involve. But in an effort to increase access to prompt diagnosis and effective treatment, all public and private health facilities have been targeted for the roll out of malaria case management. This scaling-up processes would entail updating all case management implementing documents (guidelines, treatment protocol & training manual), identifying and training professional health care providers (MDs, PAs, Nurses and CMs), conduct of supportive supervision and on site coaching and mentoring for care providers and promoting accurate data collection, compilation and timely reporting.

3.2.3 *Scale-up integrated community case management of malaria*:

This strategy aims at managing uncomplicated malaria in hard to reach areas and would align with the National Strategy for Integrated Community Case Management. The implementation of this strategy would require several activities including revising, validating and printing integrated community case management implementation documents (technical guidelines, manuals and treatment protocols), organizing community entrance meetings, conducting community sensitization workshops, organization of community structures, planning and conducting training for gCHVs, conduct supportive supervision and onsite coaching and mentoring, collect, compile and submit monthly reports as well as organize and conduct periodic meetings.

3.2.4 *Scale-up management of uncomplicated malaria in private sector facilities*:

This strategy aims at increasing access to effective antimalarial diagnosis and treatment of uncomplicated malaria at private pharmacies and medicine stores. The following activities would be employed to carry out this strategy: review, revise and validate technical documents, identify and recruit pharmacies and medicine stores, organize and conduct orientation meetings for proprietors, plan and conduct trainings for selected facilities' staff (dispensers), conduct supportive supervision and effect on site coaching and mentoring collection, compilation and submission of monthly reports.

3.2.5 *Strengthen QA/QC system for malaria commodities and service*:

The implementation of this strategy would require several activities including, collecting samples of each batch of every products for testing, collecting the certificates of analysis for each product for submission to NDS. To this end, the NMCP will continue to finance the LMHRA

3.2.6 Sustain Malaria in Pregnancy (MIP) services at all ANC facilities

MIP service is one of the strategies of the malaria program. This is provided as part of services at all ANC facilities. The program shall target 80% of all pregnant women for IPTp service and sustain this coverage through 2020.

Objective 3: ***Ensure that 80% of the population is protected by malaria preventive measures by 2020***

To achieve this objective, the following strategies will be deployed:

3.3.1 Ensure Universal access to LLINs

The campaign will aim at ensuring 100% coverage of households in Liberia. Mass campaigns will be conducted after every 3 years covering all households. The process will begin with the development and approval of a comprehensive Plan of Action and budget. Included in this plan would be micro-planning, logistics expectations, assessment, distribution, post distribution surveys. The distribution strategy would be reflected in the comprehensive plan of action that would be developed prior to the campaign.

In addition to mass campaign, there would be rolling routine distribution of LLINs through the following channels:

- ANC distribution
- Facility deliveries
- EPI and
- Institutional distribution (Schools, Prison, barracks, Orphanage etc.)

The routine distribution of LLINs is intended to sustain universal coverage and encourage pregnant women to attend ANC and deliver in health facilities

3.3.2 Ensure implementation of IRS activities in targeted areas

IRS would be implemented in targeted areas looking at the malaria Epidemiological profile and availability of funds. Areas of high prevalence would be where IRS would be conducted. IRS implementation would ensure that at least 90% of the structures in the targeted areas are sprayed. The insecticide selected would be WHOPES approved and would be based on susceptibility test using WHO's test paper or CDC's bottle assays.

3.3.3 Deploy effective and sustainable larviciding as a complementary vector control measure

Larviciding would be implemented in targeted areas that meet the WHO recommended principle of 3 Fs. This means larviciding would only be undertaken if sites are few, findable and fixed. Based on current evidence, Liberia does not meet the above criteria for effective larviciding. However the NMCP would continue to plan and prepare for larviciding should the conditions become right in the period of this strategic plan.

3.3.4 Institutionalize entomological and insecticide resistance monitoring

Routine entomological monitoring would be done across the country. A vector prevalence map of the country would be developed highlighting vector behavior, susceptibility and location. The NMCP's insectary would be the central information point for malaria vectors across the country. It would serve as a testing site for studies for malaria vectors. Insecticide resistance monitoring would be done across the country as warranted.

Objective 4: increase the proportion of the population who practice malaria preventive measures to 75% by the end of 2020

Currently malaria knowledge among women of child bearing age is at 98% (MIS 2011). However, this high knowledge is yet to be transformed into practice (LLINs use 32% and IPTp 2 uptake 48%). To achieve this objective, this strategy will be deployed:

3.4.1 Promote Prevention, prompt and effective health seeking behavior amongst the population

To revise and disseminate the BCC strategy, the National Malaria Program in collaboration with partners will use the following approaches:
The program will recruit a BCC Consultant through a competitive bidding process to assist with the process. Following the recruitment process, a week-long workshop to review and revise the current BCC strategy and will be held with the full participation of key stakeholders in the prevention and control of malaria. During the six days sitting, a first draft of the revised document will be produced considering all the strategic approaches, channels and medium through which malaria information can be disseminated to the targeted population. After the first draft is produced, a three day stakeholders meeting to validate said document will also be held during which time the document is expected to be finalized. The final document will then be printed into hard copies and disseminated to the counties and partners working in malaria control.

The National Malaria Control Program in collaboration with partners will organize a one week material/message design and update workshop. Following that one week workshop, a three-day pretesting trip will be organized to test the materials/messages with the end users at the county level selecting at least four out of the fifteen counties with four teams comprising of one supervisor, one note taker, one moderator and one assistant. Findings from the first pre-test will be compiled by each team over one week period after which another two-day workshop will be held to review the findings,

corrections and materials/messages for the final pre-test for a two-day period. Following that, the messages/materials will be finalized by hired Artist and recording studio to produce the master copies. Printing and recording followed thereafter in preparation of distribution and airing of messages at the various national and community radio stations.

To scale up BCC activities at the community level, the BCC unit will use a multi-channel approach, with a combination of various communication channels mutually reinforcing each other. A multi-channel approach works best to build synergy among the various interventions to strengthen the overall campaign impact. The approach encompasses:

- Hold monthly Advocacy and sensitization meetings with local leaders, youth, women and religious groups in the 15 counties;
- Conduct quarterly community outreach using drama and theater groups;
- Hold quarterly Focus group discussions in selected schools across the country;
- Air spot messages on national and community radio stations quarterly;
- Air spot messages on Televisions quarterly;
- Organize annual malaria competitions among high school students;
- Conduct House-to-House malaria education campaign before, during and after World Malaria Day; Community and county level communication activities to change social norms influencing care for the child's health within the home and community, the use of ITNs for pregnant women and children under five and IPT for pregnant women;
- A national level media campaign to address and empower parents regarding home-based management of malaria, treatment adherence, use of ITNs and importance of IPT for pregnant women; and

Enhancement of Community Health Workers (CHW) ability to educate target audience through interpersonal communication and counselling skills training and provision of provider and client support materials; Advocacy and media initiatives that contribute to a more conducive environment for home-based management of malaria, IPT and ITN usage.

Objective 5: Strengthen the supply chain system for effective quantification and prompt distribution of commodities under a universal system by 2020

To achieve this objective, the following strategies will be deployed:

3.5.1 Ensure availability and access to antimalarial drugs and other commodities at all health facilities

This strategy will require several activities including, revising, validating and printing supply chain implementation documents (technical guidelines, manuals and treatment

protocols SOP, supervisory checklist, etc.). Quantify and distribute antimalarial commodities to all health facilities, communities, private pharmacies and medicine stores; conducts monthly inventory of previous supplies and resupply needed commodities in all health facilities, communities and private pharmacies and medicine stores. Plan and conduct monthly supply chain working group meetings and collect, collate and submit all Supply Chain data in a timely manner.

3.5.2 Revise Logistics Management Information system tools to reflect key commodities

Stakeholders meetings would be called as the need arises to review and revise the LMIS tools. At least three meetings aimed at revising the tools would be planned for within the period of seven years.

3.5.3 Ensure continuous availability of LMIS and SOP tools

In an effort to sustain the progress, the Ministry of Health and its partners will ensure the printing and distribution of LMIS tools to all health facilities within the 15 counties. The LMIS tool includes, daily tally book, internal requisition booklets, consumption book, ledger, SBRR, and Bin Cards. In addition to the distribution of these tools, training of pharmacists and dispensers would be done as well. Quarterly monitoring aimed at ensuring the correct use and continuous availability of the tools and compliance to the use of the standard operating procedures (SOP) would be done

3.5.4 Ensure availability and access to antimalarial Drugs at all health facilities

This will be done through quantification workshops to appropriately forecast, procure the forecasted commodities and distribute to all health facilities including private pharmacies and medicine stores and communities.

Objective 6: Improve routine data monitoring and program evaluation to ensure quality data management at all levels by 2020

To achieve this objective, the following strategies will be deployed:

3.6.1 Improve data monitoring and management at all levels

Timely and reliable data reporting is critical and remains a major challenge for making informed decision. Given the need to improve the quality, reliability and timeliness of

data, the current quarterly monitoring will be strengthened. The NMCP will work with the HMIS to support poorly performing counties to help improve the system.

The current monitoring and evaluation plan runs up to 2016. A revised M&E plan would be developed to monitor Program progress toward achieving the 2016-2020 NSP targets. A technical committee will be constituted to review the current M&E taking into account the objectives and targets set in the 2020 strategic plan. The technical committee will then submit the revised M&E plan to stakeholders for validation.

Sentinel surveillance is one of the key steps in determining the burden of Malaria on a given population. The NMCP in the past established two sentinel sites in Montserrado and Grand Gedeh counties. These sites could not be sustained due lack of funding. Under the Global Fund Round 10 grant, funds were made available for the establishment of six sentinel sites throughout the country. Two sentinel sites have been established in two counties. (Grand Bassa and Nimba). Plans are on the way to establish the additional four sites in remaining Malaria regions.

The sites would be established using a regional geographic distribution in accordance to the six malaria regions (Monrovia, South-eastern A, South-eastern B, North Central, Western and South-Central regions). Data from these sites will be used monitor program performance.

NMCP will conduct Annual Program review using data from all sources (Sentinel sites, HMIS, routine monitoring, studies/surveys) to assess programmatic achievements made against planned activities, challenges and recommend means of mitigating the challenges identity to improve future program implementations.

3.6.2 Prioritize and strengthen local research agenda.

The NMCP under the round 10 GFATM grant established an operational research component within the M&E unit. Several research priorities have been identified in partnership with stakeholders. The Program has collaborated with partners in conducting series of studies based on identified priorities. The NMCP will continue providing oversight and work with partners in this regard. In other to continue this leadership role, the human and technical capacity of the M&E unit would be further strengthened.

Objective 7. *To initiate effective Preparedness and timely response during Emergencies:*

To achieve this objective, the below strategy will be deployed:

3.7.1 Support the determination of the magnitude of the emergency

Lesson learnt from the recent Ebola Virus Disease (EVD) outbreak shows that programs are affected adversely because of reallocation of human, materials and financial resources towards the control of such outbreak. During the recent EVD outbreak, access to malaria treatment was severely disrupted as most of the facilities were closed. For the few that were opened, patients refused to go there for the fear of contracting the virus. In order to fully respond to future emergency, the NMCP will collaborate with the Emergency Operation Center (EOC) of the Ministry of Health to assess of the impact of the emergency on malaria control. Potential activities under this strategy will include: Procurement of commodities, distribution, screening and treatment.

Chapter Four

4.1 Performance Framework

Goal	Indicators (Impact)	Baseline (Year)	2015	2016	2017	2018	2019	2020	Source
By 2020, reduce illnesses and deaths caused by malaria by 50%. (MIS 2011)	Malaria Parasite Prevalence in children U5 (Slide)	28% (2011)			7%	7%	7%	7%	MIS
	Malaria test (slide/RDT) positivity rate								HMIS
	% Children aged 6–59 months with haemoglobin measurement of <8g/dl)								MIS
	% Deaths due to Malaria								HMIS
Objectives	**Indicators (Outcome)**	**Baseline (Year)**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Source**
Objective 1: To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective	No. of annual review meetings held	NA	0	1	1	1	1	1	NMCP
	No. of midterm evaluation conducted	1/2 (2013-2014)			1				NMCP
	No. of malaria program review held	1/2 (2013-2014)						1	NMCP
	No. and percentage of NMCP's staff trained in	6/45 (2010-2013)	4	4	4	4	4	4	NMCP

program management by 2020	malaria program management								
	No. of HW/Health care service provider recruited and trained in key malaria programmatic areas	4/35 2012	2	2	2	2	2	2	NMCP
	No. of policies/guidelines revise or developed	(6/7) (2010-2014)		2					NMCP
	No. of institutional capacity assessment done	2/7 2013-2014			1			1	
	No. of advocacy and resource mobilization meetings held	0/7	1	1	1	1	1	1	
	No. of coordination and partnership meetings held	5mons/7yrs 2014	24	24	24	24	24	24	
	No. of standard guideline developed for public-private partnership	0	1						
Objectives	Indicators (Outcome)	Baseline (Year)	2015	2016	2017	2018	2019	2020	Source
Objective 2: To increase access to prompt diagnosis and effective treatment targeting	% of Suspected malaria cases that received a parasitological test at public and private health facilities	75%(2013)	80%	80%	80%	83%	85%	85%	HMIS

85% of population by 2020	# or % of Suspected malaria cases that received a parasitological test in private Pharmacies and Medicine stores (PSACT)	NA	75%	80%	85%	85%	90%	90%	HMIS
	# or % of Suspected malaria cases that receive a parasitological test at community level (ICCM)	NA	75%	80%	85%	85%	90%	90%	HMIS
	# or % of Confirmed malaria cases that received first-line antimalarial treatment according to national policy at public and private health facilities	NA(2012)	75%	80%	85%	90%	90%	90%	HMIS
	# or % of Confirmed malaria cases that received first-line antimalarial treatment according to national policy in private pharmacies and medicine stores (PSACT)	1,807 (2012)	85%	85%	90%	90%	95%	95%	HMIS
	% or # of Confirmed malaria cases that received nationally	NA	100%	100%	100%	100%	100%	100%	HMIS

	recommended ACT treatment according to national policy at the community level (ICCM)								
	# or %of children under five with confirmed uncomplicated malaria who received recommended ACT according to national policy in hard to reach communities(ICCM)	5,010 (2012)	100%	100%	100%	100%	100%	100%	~~Partners' report~~ NMCP
Objectives	**Indicators (Outcome)**	**Baseline (Year)**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Source**
Objective 3: To ensure that 80% of the population are protected by malaria preventive measures by 2020	% of households with at least **1** LLINs	54%	85%	85%	80%	98%	98%	92%	MIS
	% of under-5 Children who slept inside an LLIN the previous night	38% (DHS 2013)	65%	70%	75%	85%	85%	85%	MIS
	% of pregnant women who slept inside an LLIN the previous night	37%	65%	70%	75%	85%	85%	85%	MIS
	% population protected by IRS in targeted areas	0%						30%	NMCP
	% of pregnant women who received IPT during antenatal care visits (in public & private facilities)	1st dose 63.2% 2nd dose 49.6%						80%	MIS

Objectives	Indicators (Outcome)	Baseline(Year)	2015	2016	2017	2018	2019	2020	Source
	% of targeted vector breeding sites applied with larvicides	NA						50%	NMCP
Objectives	**Indicators (Outcome)**	**Baseline(Year)**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Source**
Objective 4: To increase the proportion of the population with knowledge and practice of malaria preventive measures to 95% and 75% by the end of 2020	% of women correctly identifying the cause of malaria	98%	98%	98%	98%	98%	98%	98%	
	% of women correctly identifying the ways to prevent malaria							98%	
Objectives	**Indicators (Outcome)**	**Baseline(Year)**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Source**
Objective 5: To strengthen the supply chain system for effective quantification and prompt distribution of commodities under a universal system by 2020	% of Health facilities without stock-outs of key commodities	549 (2013)						647	
	# of community health workers with no stock-outs)	N/A						1600/2000 (80%)	
	# of Private Pharmacy/Medicine Store without stock-outs of key commodities	107 (2013)							

Objectives	Indicators (Outcome)	Baseline(Year)	2015	2016	2017	2018	2019	2020	Source
Objective 6: To improve routine data monitoring and program evaluation to ensure quality data management at all levels by 2020	% of health facilities submitting timely reports according to national guidelines	88% (2013)						100%	HMIS
	% of established Sentinel sites that are functional	0% (2014)						100%	NMCP
	# of Operational Research agenda prioritised	NA						100%	
Objective 7. To initiate effective Preparedness and timely response during Emergencies:	NA	NA	NA	NA	NA	NA	NA	NA	NA

4.2 Tracking Progress: Measuring Outcome and Impact

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
Objective 1: To strengthen and sustain institutional capacity and human resource of NMCP for effective program management by 2020							
1. X	Conduct regular assessment to identify human, Financial, and Management capacity gaps			X			X
	Recruit the needed human resources to fill gaps						
	Conduct annual internal and external trainings for NMCP in malaria program management	X	X	X	X	X	X
	Procure the necessary tools and Technologies in order to effectively manage malaria control effort	X	X	X	X	X	X
	Organize annual internal review meetings	X	X	X	X	X	X
	Conduct strategic plan mid-term evaluation			X			
	Conduct Program Management supervision	X	X	X	X	X	X
	Conduct monthly coordination meetings	X	X	X	X	X	X
	Attend internal and external conference	X	X	X	`X	`X	X
2. `x	Identify resource gaps	X	X	X	X	X	X
	Develop resource mobilization plan	X	X	X	X	X	X
	Conduct advocacy/fund raising meetings to mobilize resources	X	X	X	X	X	X
	Develop proposal for identified source for funding	X	X	X	X	X	X
	Provide regular update on Program performance and challenges	X	X	X	X	X	X
	Set up and run a NMCP website and domain	X	X	X	X	X	X
Objective 2: To increase access to prompt diagnosis and effective treatment targeting 85% of population by 2020.							
1. Ensure parasite based diagnosis at all	Review, revise and validate all diagnostic implementation protocols, guidelines, manuals and supervisory checklists	X			X		

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
levels and strengthen QA/QC for malaria diagnostics	Print and disseminate all documents	X			X		
	Identify and train 1350 laboratory personnel in all 15 counties	X	X	X	X	X	X
	Conduct supervision for staff involve with diagnostics practices	X	X	X	X	X	X
	Conduct REFRESHER training for lab personnel	X		X		X	
	Conduct QA/QC TOT for County Diagnostics Officers	X		X		X	
	Carry out periodic (quarterly) monitoring of quality of all diagnostics available at health facilities	X	X	X	X	X	X
	Carry out periodic (quarterly) monitoring of quality of all diagnostics available at the community level	X	X	X	X	X	X
	Carry out periodic (quarterly) monitoring of quality of all diagnostics available at private pharmacies and medicine stores	X	X	X	X	X	X
	Conduct IN SERVICE Training for Instructors from Laboratory Training Institutions	X		X		X	
	Establish Slide bank to strengthen QA/QC for Malaria diagnosis	X		X		X	
2. `x	Review, revise, validate and print all technical implementation protocols, guidelines, manuals and supervisory checklists	X		X		X	
	Print and disseminate implementation document	X		X		X	
	Identify and train New health workers in both private and public health facilities	X	X	X	X	X	X
	Conduct refresher training for health workers in both private and public health facilities	X		X		X	

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
	Conduct IN SERVICE Training for Instructors from Health Training Institutions	X		X		X	
	Conduct monthly onsite coaching and mentoring of health workers in both private and public health facilities	X	X	X	X	X	X
	Conduct quarterly onsite coaching and mentoring of health workers in both private and public health facilities	X	X	X	X	X	X
	Organise quarterly TWG meetings to review and share findings and reports concerning health workers capacity strengthening	X	X	X	X	X	X
	Supervision of Malaria trainings conducted by Implementing Partners	X	X	X	X	X	X
	Organize orientation meeting for Trainers and Coachers before any training activities	X	X	X	X	X	X
3. Scale-up integrated community case management of malaria	Identify, plan and organize community entrance meetings	X	X	X	X	X	X
	Conduct community sensitization meetings to form communities ICCM structures	X	X	X	X	X	X
	Review, revise and validate technical guidelines, manuals and treatment protocols	X		X		X	
	Print and disseminate implementation documents	X			X		
	Procure non-cash incentives for gCHVs	X	X	X	X	X	X
	Organize quarterly meetings in targeted districts/communities	X	X	X	X	X	X
	Recruit Community Health Services Supervisors	X					
	Train Community Health Services Supervisors	X	X				
	Conduct REFRESHER training for CHSS	X	X	X	X	X	X
	Identify, Plan and conduct training for 2350 new gCHVs	X		X		X	

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
	Conduct REFRESHER training for 3767 old gCHVs	X	X	X	X	X	X
	Organize monthly iCCM meetings at County level	X	X	X	X	X	X
	Organize quarterly iCCM Technical Working Group Meetings	X	X	X	X	X	X
	Conduct monthly county level supervision	X	X	X	X	X	X
	Conduct quarterly National level supervision	X	X	X	X	X	X
4. Scale-up management of uncomplicated malaria in private sector (pharmacies and medicine stores)	Review, revise and validate technical guidelines, manuals, supervisory tools and treatment protocols	X			X		
	Print implementation documents	X			X		
	Identify, map and engage private pharmacies and medicine stores owners on the rollout plan for mRDTs& ACT	X	X	X	X	X	X
	Orient owners of private pharmacies and medicine stores of rollout strategies	X	X	X	X	X	X
	Train 2,450 private pharmacies and medicine stores dispensers	X		X		X	
	Develop/revise PSACT Supply Chain Standard Operating Procedure	X		X			X
	Conduct monthly monitoring and supervision and data collection and provide feedback (SR)	X	X	X	X	X	X
	Conduct joint quarterly Supervision (NATIONAL)	X	X	X	X	X	X
	National Launch of the Private sector strategy	X	X	X	X	X	X
	Collect and safely dispose of PSACT Medical waste	X	X	X	X	X	X
	Conduct quarterly TWG Meeting	X	X	X	X	X	X
	Conduct PSACT Operational Research		X		X		

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
	Conduct Process Assessment of PSACT in Liberia	X	X	X	X	X	x
	Recruitment of PSACT SR	X		X		X	
5. Strengthen QA/QC system for malaria commodities and service	Select sample of antimalarial	X	X	X	X	X	x
	Conduct testing	X	X	X	X	X	x
Sustain Malaria In Pregnancy (MIP) services at all ANC facilities	Review, revise and validate Malaria in Pregnancy Guidelines	X		X		X	
	Print and disseminate revised MIP documents			X			X
	Conduct training for Certified Midwives on the revised MIP Guidelines	X	X	X	X	X	x
	Conduct Pre Service Training at Health Training Institutions	X	X	X	X	X	x
	Organize quarterly MIP Technical Working Group meeting	X	X	X	X	X	x
Objective 3: To ensure that 80% of the population are protected by malaria preventive measures by 2020							
Ensure Universal Access to LLINs	Review/revise Integrated Vector Management (IVM) working documents		X			X	
	Print and disseminate IVM documents		X			X	
	Orient stakeholders at all levels on IVM		X			X	
	Micro-planning Training of Trainers			X			X
	Micro-planning at County level			X			X
	Consolidate County level Micro-plans			X			X
	Conduct gCHVs' training for Assessment and Distribution	X			X		
	Conduct Training of Trainers for Assessment and Distribution	X	X	X	X	X	X
	Conduct county level training for Assessment and Distribution	X	X	X	X	X	X
	Pre-position LLINs at all levels	X	X	X	X	X	X
	Conduct LLINs Campaign	X	X	X	X	X	x

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
	Conduct Hang Up, Keep Up Campaign	X	X	X	X	X	X
	Monitor LLINs Distribution	X	X	X	X	X	X
	Conduct Post Distribution Survey	X	X	X	X	X	X
Ensure routine distribution of LLINs through multiple channels	Quantification of Country ANC LLINs		X			X	
	Procure nets		X		X		X
	Supply nets to facilities regularly	X	X	X	X	X	X
	Monitoring of distribution for resupply	X	X	X	X	X	X
Ensure implementation of IRS in targeted areas	Conduct stakeholders meeting in IRS targeted areas selection	X	X	X	X	X	X
	Conduct pre-IRS survey	X	X	X	X	X	X
	Procure IRS commodities	X	X	X	X	X	X
	Pre-position IRS commodities	X	X	X	X	X	X
	Conduct IRS Training of Trainers	X	X	X	X	X	X
	Conduct Supplemental Environmental Assessment (SEA)	X	X	X	X	X	X
	Conduct IRS Spraying Training						
	Conduct IRS campaign	X	X	X	X	X	X
	Conduct Environmental Compliance	X	X	X	X	X	X
Deploy effective and sustainable Larviciding as a complementary vector control measure	Conduct stakeholder meeting in Larviciding targeted areas	X	X	X	X	X	X
	Conduct pre-Larviciding survey	X	X	X	X	X	X
	Procure larviciding commodities	X	X	X	X	X	X
	Pre-position larviciding commodities	X	X	X	X	X	X
	Conduct larviciding Training of Trainers	X	X	X	X	X	X
	Conduct Supplemental Environmental Assessment (SEA)	X	X	X	X	X	X
	Conduct larviciding Campaign	X	X	X	X	X	X

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
	Conduct larviciding Monitoring and Supervision	X	X	X	X	X	X
	Conduct Environmental Compliance	X	X	X	X	X	X
Institutionalize entomological and insecticide resistance monitoring	Maintain insectary						
	Procure entomological equipment	X	X	X	X	X	X
	Train County staff in Entomological monitoring	X	X	X	X	X	X
	Conduct Vector Mapping	X	X	X	X	X	X
	Conduct quarterly IVM stakeholders meeting	X	X	X	X	X	X
	Conduct quantification of IVM commodities	X	X	X	X	X	X
OBJECTIVE 4:TO INCREASE THE PROPORTION OF THE POPULATION WHO PRACTICE MALARIA PREVENTIVE MEASURES FROM 40% TO 85% AND SUSTAIN KNOWLEDGE AT 98% BY THE END OF 2020.							
Promote Prevention, prompt and effective health seeking behaviour amongst the population	Hire BCC Consultant to review and revise BCC Strategy	X				X	
	Review and revise the current BCC strategy	X				X	
	Organize BCC Strategy validation meeting						
	Print and disseminate IEC/BCC strategy	X				X	
	Design, update and disseminate messages and materials	X	X	X	X	X	X
	Pre-test of materials and messages	X		X		X	
	Hold monthly IEC/BCC Working Group meeting	X		X		X	
	Launch IEC/BCC Campaign	X		X		X	
	Hold quarterly Advocacy and sensitization meetings with local leaders, youth, women and religious groups in the 15 counties	X		X		X	
	Conduct quarterly community outreach using drama and theatre groups	X		X		X	
	Hold quarterly focus group discussion in selected schools across the country	X		X		X	

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
	Air spot messages on national and community radio stations quarterly	X		X		X	
	Conduct national quarterly level media campaign to address and empower parents regarding home-based management of malaria, treatment adherence, use of ITNs and importance of IPT for pregnant women;	X	X	X	X	X	X
	Air spot messages on Televisions quarterly	X	X	X	X	X	X
	Organize annual malaria competitions among high school students	X	X	X	X	X	X
	Conduct quarterly House-to-House malaria education campaign before, during and after World Malaria Day	X	X	X	X	X	X
	Hold World Malaria Day Program nationwide	X	X	X	X	X	X
	Conduct ToT for 15 counties on community outreach activities through Inter Personal Communication and counselling skills	X	X	X	X	X	X
	Train CHVs to conduct community outreach activities through interpersonal communication and counselling skills	X		X		X	
	Conduct Advocacy meeting with Media Executives, Legislature, Corporate entities, religious leaders etc..	X	X	X	X	X	X
Objective 5: To strengthen the supply chain system for effective quantification and prompt distribution of commodities under a universal system by 2020							
1. ***Ensure availability of quality malaria commodities***	Conduct malaria commodities quantification	X	X	X	X	X	x
	Develop malaria commodities procurement plan	X	X	X	X	X	x
	Procure malaria commodities	X	X	X	X	X	x
	Conduct weekly commodities security meeting	X	X	X	X	X	x
	Organize Supply Chain working group	X	X	X	X	X	x

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
2. Revise Logistics Management Information system tools to reflect key commodities	Train dispensers and health workers in the use of malaria commodities	X	X	X	X	X	X
	Train Pharmacists in the 15 counties in how to fill, collect and report LMIS data	X	X	X	X	X	X
	Conduct a meeting of key stakeholders bi annually to revise LMIS tools	X	X	X	X	X	X
	Conduct quarterly monitoring to ensure availability and use of LMIS and SOP	X	X	X	X	X	X
	Plan and conduct monthly Supply Chain Working Group Meeting	X	X	X	X	X	X
3. Ensure continuous availability of the LMIS and SOP tools	Print and distribute commodities tracking tools	X	X	X	X	X	X
	Conduct quarterly monitoring to ensure correct use of tools and commodities	X	X	X	X	X	X
	Develop/revise Supply Chain implementation documents (SOP, Supervisory Checklist etc..)	X	X	X	X	X	X
2. Ensure availability and access to antimalarial drugs at all health facilities	Clearing and transporting of commodities from Port to Warehouse	X					
	Distribute antimalarial commodities to all health facilities, communities and private pharmacies and medicine stores	X	X	X	X	X	X
	Conduct inventory of previous supplies and resupply needed commodities in all health facilities, communities, private pharmacies and medicine stores	X	X	X	X	X	X
	Supply diagnostic tools (mRDTs, microscopes and reagents) to all health facilities, communities and private pharmacies and medicine stores)	X	X	X	X	X	X

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		'15	'16	'17	'18	'19	'20
OBJECTIVE 6: TO IMPROVE ROUTINE DATA MONITORING AND PROGRAM EVALUATION TO ENSURE QUALITY DATA MANAGEMENT AT ALL LEVELS BY 2020							
Improve data management at all levels	Conduct annual M&E framework review	X	X	X	X	X	X
	Print and disseminate M&E framework	X	X	X	X	X	X
	Conduct quarterly M&E activities	X	X	X	X	X	X
2.	Set-up sentinel sites in five regions	X	X	X	X	X	X
	Procure sentinel sites equipment, materials etc….	X	X	X	X	X	X
	Provide continuous support to sentinel sites	X	X	X	X	X	X
	Conduct monthly supervision to sentinel site	X	X	X	X	X	X
	Conduct Health Facility survey every two years	X	X	X	X	X	X
	Conduct quarterly data review and feedback meeting	X	X	X	X	X	X
	Conduct Malaria Indicator Survey every two years	X	X	X	X	X	X
	Conduct annual program review meeting	X	X	X	X	X	X
	Print and disseminate annual malaria report	X	X	X	X	X	X
	Conduct Malaria Program Review	X	X	X	X	X	X
	Conduct Efficacy Study	X	X	X	X	X	X
	Conduct mid-term review			X			
	Conduct Post LLINs Distribution Survey			X			
Prioritize and strengthen local research agenda	Review quarterly operational research priority	X	X	X	X	X	X
	Conduct adherence and compliance study		X			X	
	Conduct Operational research in prioritized areas		X			X	
	Publish research reports		X			X	
Objective 7. initiate effective Preparedness and timely response during	Assessment	X	X	X	X	X	X

STRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)					
		‘15	‘16	‘17	‘18	‘19	‘20
Emergencies							
	Procurement of commodities	X	X	X	X	X	X
	Screening and distribution of commodities	X	X	X	X	X	X
	Monitoring and Supervision	X	X	X	X	X	X

Chapter Five

Program Management

POLICY STATEMENT

The **Ministry of Health** shall ensure that:

1) The National Malaria Control Program receives the staff and support to improve the management of malaria control and use of resources.
2) All partners and relevant stakeholders are invited and encouraged to participate in malaria control and prevention activities and steering committees.
3) All partners supporting malaria control activities are using the national guidelines.

Objectives

The National Malaria Control Program provides effective management and supervision of all malaria control activities in Liberia.
The NMCP is equipped to effectively coordinate malaria control activities at national, county, district and community levels.

Human Resources

In order for the National Malaria Control Program to carry out its functions, staffs with the appropriate skills and experience mix are needed. The program's staff will be required to carry out effective management and supervision of all malaria related activities in Liberia.
The qualification of NMCP staff should be in the following areas:

1. Public Health
2. Management and Administration
3. Parasitology
4. Entomology
5. Epidemiology
6. Biostatistics
7. Monitoring and Evaluation
8. Financial Management
9. Case Management
10. Procurement and Supply Management
11. Information, Education and Communication/Behavior Change Communication (IEC/BCC)
12. Information Technology

Organizational Structure

The program's organizational structure would evolve from time to time based on the country's decentralization process and capacity needs at the national and sub-national level. As service provision and health administration de- concentrate, the program structure would be aligned accordingly.

Capacity Building

In order to ensure that the National Malaria Control Program effectively carry out its functions of coordinating and providing expert advice on malaria prevention and control activities for Liberia, the appropriate capacity of the program needs to be strengthened and sustained. Capacity building should include institutional, systems as well as individual. Capacity Building should be provided in the form of training and support for more effective program management, monitoring & evaluation, and partnership. This capacity-building will be a continuous process, ensuring that at all times the NMCP has the necessary technical capability, resources and information needed to carry out its responsibilities, including fostering effective partnership among all the stakeholders.

In order to ensure continued capacity at the National Malaria Control Program the following need to be done:

- All units of the NMCP are strengthened and have a plan for regular in-service professional training for the staff

NMCP should be supported to recruit and retain requisite staff needed to perform it mandate as the leading organization in National Malaria Control

- Funding is available for NMCP staff to receive incentives commensurate with qualifications and experience to provide continuity for malaria control program interventions.
- The MOH and international donors support the NMCP with funding for the necessary vehicles, fuel, generator, stationery, and administrative support.
- The office and conference facilities for NMCP are adequate and equipped for the expanded staffing and program activities required to support the full program of malaria control and prevention in Liberia.

Planning and Implementation

The National Malaria Control Program is the technical arm of the Ministry of Health and Social Welfare responsible for planning, policy formulation, monitoring, and coordinating malaria control and prevention activities throughout the country. It leads regular evaluations of program achievements and ongoing challenges and adjusts the program design as needed. The NMCP has the responsibility to mobilize resources, financial and material, and distribute them to county health teams and partners to achieve the objectives and targets delineated in this Strategic Plan. It is the responsibility of the NMCP to share this information through regular meetings of the Malaria Steering Committee and other relevant forum.

NATIONAL MALARIA STRATEGIC PLAN 2016-2020

This fourth National Malaria Strategic Plan details the intervention activities planned for continued efforts for malaria control. The National Malaria strategic planning and implementation shall be focused in the following thematic areas where partners are also encouraged to support:

- Training / Malaria Case Management
- Management of Malaria in Pregnancy
- Integrated Vector Management (IVM)
- Research, Surveillance, Monitoring and Evaluation
- Data Management
- Supply Chain Management
- IEC/BCC /Advocacy
- Program Management and Planning

Consistent with the MOH emphasis on decentralization, activities under each thematic area above will be coordinated at the county level through the County Health Teams (CHTs), led by County Health Officers. The CHTs will work closely with the National Malaria Control Program and its subsequent partners in implementing activities related to each of the thematic area mentioned above.

Malaria case management shall be implemented at the facility and community level and also through private pharmacies and medicine store with the primary goal of increasing access to prompt and effective treatment. For malaria case management at the community level, the National Program and partners will work closely with the Community Health Department under the supervision of Community Health Director and the County Health Team for the implementation roll out.

This Strategic Plan has specific targets and timelines to measure implementation success which will clearly depict the degree of improvement in malaria control in the country. The needed resources will be required to achieve all activities and targets of this fourth National Strategic Plan from 2016 through the year 2020 to maintain Liberia's progress to achieving the goals and objectives expressed in this Strategic Plan.

Partnership Coordination

Consistent with the National Health Policy and Plan, the National Malaria Strategic Plan emphasizes the need for partnership and coordination as a cardinal orientation to achieving the goals and objectives of this strategic plan. In order to strengthen partnership and coordination, the following shall be carried out:

- Malaria Steering Committee (MSC) meetings shall be held quarterly to provide policy advice and guidance to the program, with minutes circulated to the members.
- The MSC identifies task forces or sub-committees required to assure that all targets and objectives for malaria control are achieved.
- Technical working groups on the various thematic area to assist in policy advice shall be established to include participation of program staff and partners

- The NMCP and partners shall provide regular program updates to the MOH Malaria Task Force, at the quarterly meetings, or more often as requested.
- The NMCP shall provide training and materials so that NGO members of the MSC can expand IEC/BCC activities and help implement private pharmacy and medicine store as well community-based distribution of ACTS and LLINS as appropriate.

Procurement and Supply Management System

Procurement and supply management of all national malaria commodities shall subscribe to applicable laws and regulations. Procuring of pharmaceutical products shall be in full compliance with national regulations, clinical standards and quality standards.

A quarterly quantification exercise shall be conducted to determine and update the country's commodity needs. The supply of commodities to health facilities, communities and private pharmacies and medicine stores shall be consistent with the supply chain system adopted by the Ministry of Health. However, the distribution of LLINs for mass campaign would be done through implementing partners using strategy that would be defined in the Plan of Action of each mass campaign.

Financial Resource Management

The management of all financial resources that would be entrusted to the Ministry of Health through the National Malaria Control Program for malaria related activities would be managed using the Ministry's financial management guidelines and policy.

Chapter Six

4.1 BUDGET AND FINANCIAL PLAN

UNFUNDED BUDGET	2015	2016	2017	2018	2019	2020	Total
TOTAL	$ 23,473,043.45	$ 22,962,913.57	$ 24,724,775.88	$ 43,638,073.81	$ 31,071,973.28	$ 35,529,525.52	**$ 181,400,305.50**
Objective 1: To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective program management by 2020.	$ 1,044,869.12	$ 534,834.49	$ 1,192,505.98	$ 1,287,913.50	$ 1,390,953.62	$ 1,502,236.95	**$ 6,953,313.68**
Objective 2: To increase access to prompt diagnosis and treatment targeting 85% of population by 2020.	$ 1,379,880.74	$ 1,486,830.50	$ 915,752.58	$ 1,561,267.83	$ 1,625,031.33	$ 2,026,815.75	**$ 8,995,578.73**
Objective 3. To ensure that 80% of the population are protected by malaria preventive measures by 2020.	$ 6,591,592.82	$ 6,607,592.82	$ 6,775,649.12	$ 8,299,987.55	$ 8,963,986.56	$ 9,704,614.73	**$ 46,943,423.60**
Objective 4. To increase the proportion of the population with knowledge and practice	$ 2,227,375.89	$ 2,227,375.89	$ 1,716,728.94	$ 2,747,406.86	$ 2,753,654.64	$ 3,224,778.07	**$ 14,897,320.30**

of malaria preventive measures to 95% and 75% by the end of 2020.							
Objective 5: Ensure that quality malaria commodities are available, accessible, and affordable to all Liberians anchored by a sustainable, reliable, responsive, efficient, and well-coordinated supply chain by 2020.	$ 9,670,490.93	$ 9,697,390.93	$ 11,279,660.62	$ 25,573,154.28	$ 13,156,596.15	$ 14,502,989.45	**$ 83,880,282.35**
Objective 6: By 2020, improve routine data monitoring, reporting and program evaluation to measure progress and provide evidence for better decision making	$ 335,833.95	$ 185,888.95	$ 251,571.43	$ 1,368,004.00	$ 157,384.02	$ 1,301,774.25	**$ 3,600,456.60**
Objective 7 To initiate effective Preparedness and timely response during Emergencies	$ 2,223,000.00	$ 2,223,000.00	$ 2,592,907.20	$ 2,800,339.78	$ 3,024,366.96	$ 3,266,316.31	**$ 16,129,930.25**
FUNDED BUDGET	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**Total**
Total	$ 3,476,078.14	$ 3,554,831.74	$ 3,226,066.17	$ 5,941,752.87	$ 4,476,431.79	$ 6,950,281.83	**$ 27,625,442.55**
Objective 1: To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective program management by 2020.	$ 703,300.64	$ 759,469.65	$ 820,315.22	$ 885,933.40	$ 956,801.03	$ 1,033,338.08	**$ 5,159,158.02**

Objective 2: To increase access to prompt diagnosis and treatment targeting 85% of population by 2020.	$ 1,969,357.34	$ 2,127,715.93	$ 1,482,553.28	$ 2,481,767.86	$ 2,644,264.74	$ 2,894,734.03	**$ 13,600,393.17**
Objective 3. To ensure that 80% of the population are protected by malaria preventive measures by 2020.	$ 16,926.96	$ 16,926.96	$ 5,832.00	$ 21,323.09	$ 23,028.94	$ 24,871.26	**$ 108,909.21**
Objective 4. To increase the proportion of the population with knowledge and practice of malaria preventive measures to 95% and 75% by the end of 2020.	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Objective 5: Ensure that quality malaria commodities are available, accessible, and affordable to all Liberians anchored by a sustainable, reliable, responsive, efficient, and well-coordinated supply chain by 2020.	$ 1,350.00	$ 1,350.00	$ 1,574.64	$ 1,700.61	$ 1,836.66	$ 1,983.59	**$ 9,795.50**
Objective 6: By 2020, improve routine data monitoring, reporting and program evaluation to measure progress and provide evidence for better decision	$ 785,143.20	$ 649,369.20	$ 915,791.03	$ 2,551,027.91	$ 850,500.42	$ 2,995,354.88	**$ 8,747,186.64**

making							
Objective 7 To initiate effective Preparedness and timely response during Emergencies	$ -	$ -	$ -	$ -	$ -	$ -	$ -

	Year 0 - 2015			Year 1 - 2016			Year 2 - 2017			Year 3 - 2018			Year 4 - 2019			Year 5 - 2020		
Summary																		
Objective	Funded	Unfunded	Total	Funded	Unfunded	Total	Funded	Unfunded	Total	Funded	Unfunded	Total	Funded	Unfunded	Total	Funded	Unfunded	Total
Objective 1: To strengthen and sustain institutional and human resources capacity of National Malaria Control Program for effective program management by 2020.	703,301	1,044,869	1,748,170	759,470	534,834	1,294,304	820,315	1,192,506	2,012,821	885,933	1,287,914	2,173,847	956,801	1,390,954	2,347,755	1,033,338	1,502,237	2,535,575
Objective 2: To increase access to prompt diagnosis and treatment targeting 85% of population by 2020.	1,969,357	1,379,881	3,349,238	2,127,716	1,486,830	3,614,546	1,482,553	915,753	2,398,306	2,481,768	1,561,268	4,043,036	2,644,265	1,625,031	4,269,296	2,894,734	2,026,816	4,921,550
Objective 3. To ensure that 80% of the population are protected by malaria preventive measures by 2020.	16,927	6,591,593	6,608,520	16,927	6,607,593	6,624,520	5,832	6,775,649	6,781,481	21,323	8,299,988	8,321,311	23,029	8,963,987	8,987,015	24,871	9,704,615	9,729,486
Objective 4. To increase the proportion of the population with knowledge and practice of malaria preventive measures to 95% and 75% by the end of 2020.	-	2,227,376	2,227,376	-	2,227,376	2,227,376	-	1,716,729	1,716,729	-	2,747,407	2,747,407	-	2,753,655	2,753,655	-	3,224,778	3,224,778
Objective 5: Ensure that quality malaria commodities are available, accessible, and affordable to all Liberians anchored by a sustainable, reliable, responsive, efficient, and well-coordinated supply chain by 2020.	1,350	9,670,491	9,671,841	1,350	9,697,391	9,698,741	1,575	11,279,661	11,281,235	1,701	25,573,154	25,574,855	1,837	13,156,596	13,158,433	1,984	14,502,989	14,504,973
Objective 6: By 2020, improve routine data monitoring, reporting and program evaluation to measure progress and provide evidence for better decision making	785,143	335,834	1,120,977	649,369	185,889	835,258	915,791	251,571	1,167,362	2,551,028	1,368,004	3,919,032	850,500	157,384	1,007,884	2,995,355	1,301,774	4,297,129
Objective 7 To initiate effective Preparedness and timely response during Emergencies	-	2,223,000	2,223,000	-	2,223,000	2,223,000	-	2,592,907	2,592,907	-	2,800,340	2,800,340	-	3,024,367	3,024,367	-	3,266,316	3,266,316
Totals	3,476,078	23,473,043	26,949,122	3,554,832	22,962,914	26,517,745	3,226,066	24,724,776	27,950,842	5,941,753	43,638,074	49,579,827	4,476,432	31,071,973	35,548,405	6,950,282	35,529,526	42,479,807
Yr 1-5 Grand total:						182,076,626												

Figure 4.14: 9.2 Donors Mapping

Key donors involved in malaria control implementation includes but not limited to:

- USAID/PMI
- GFATM
- WHO
- UNICEF

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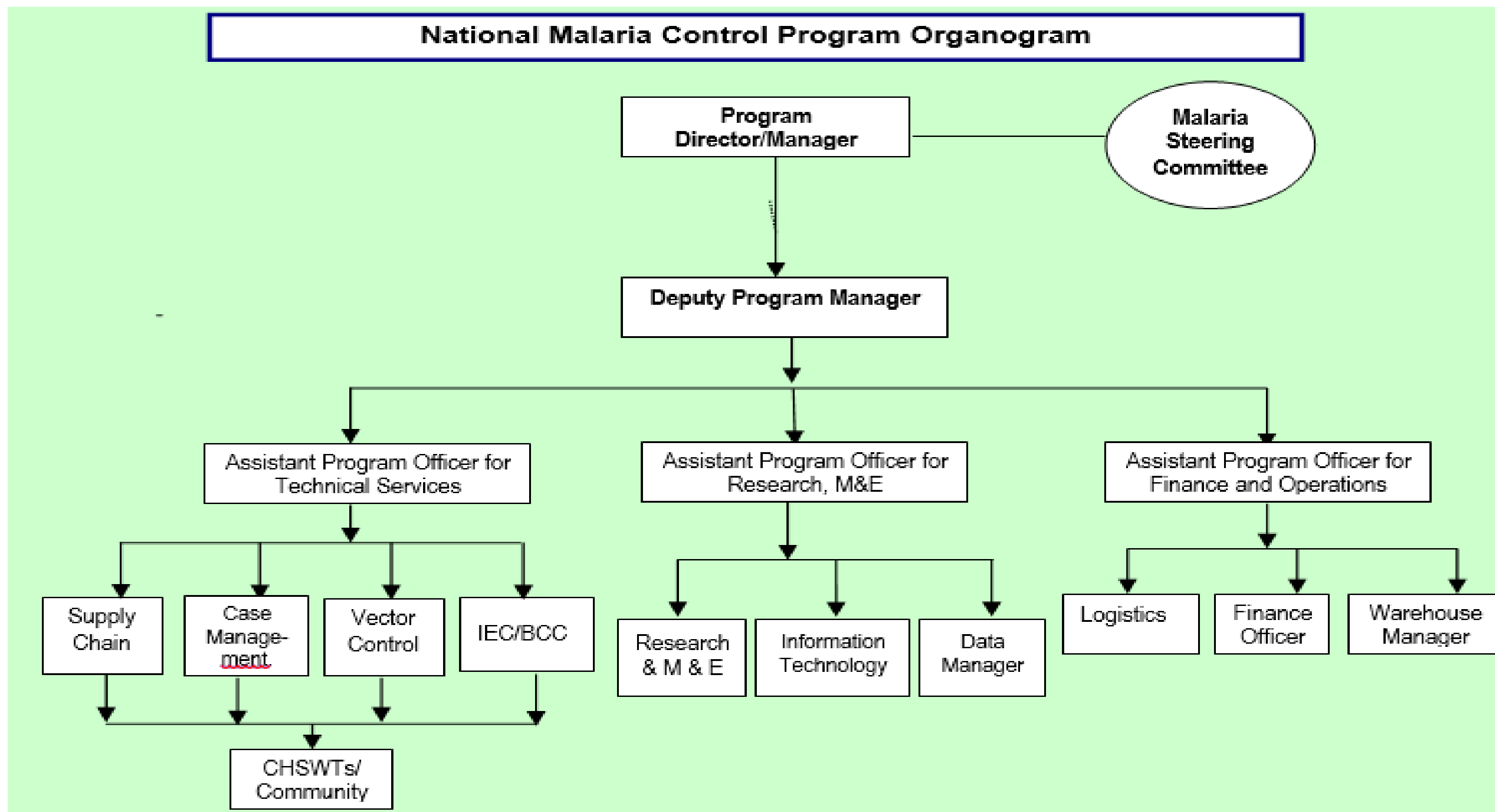
ANNEXES

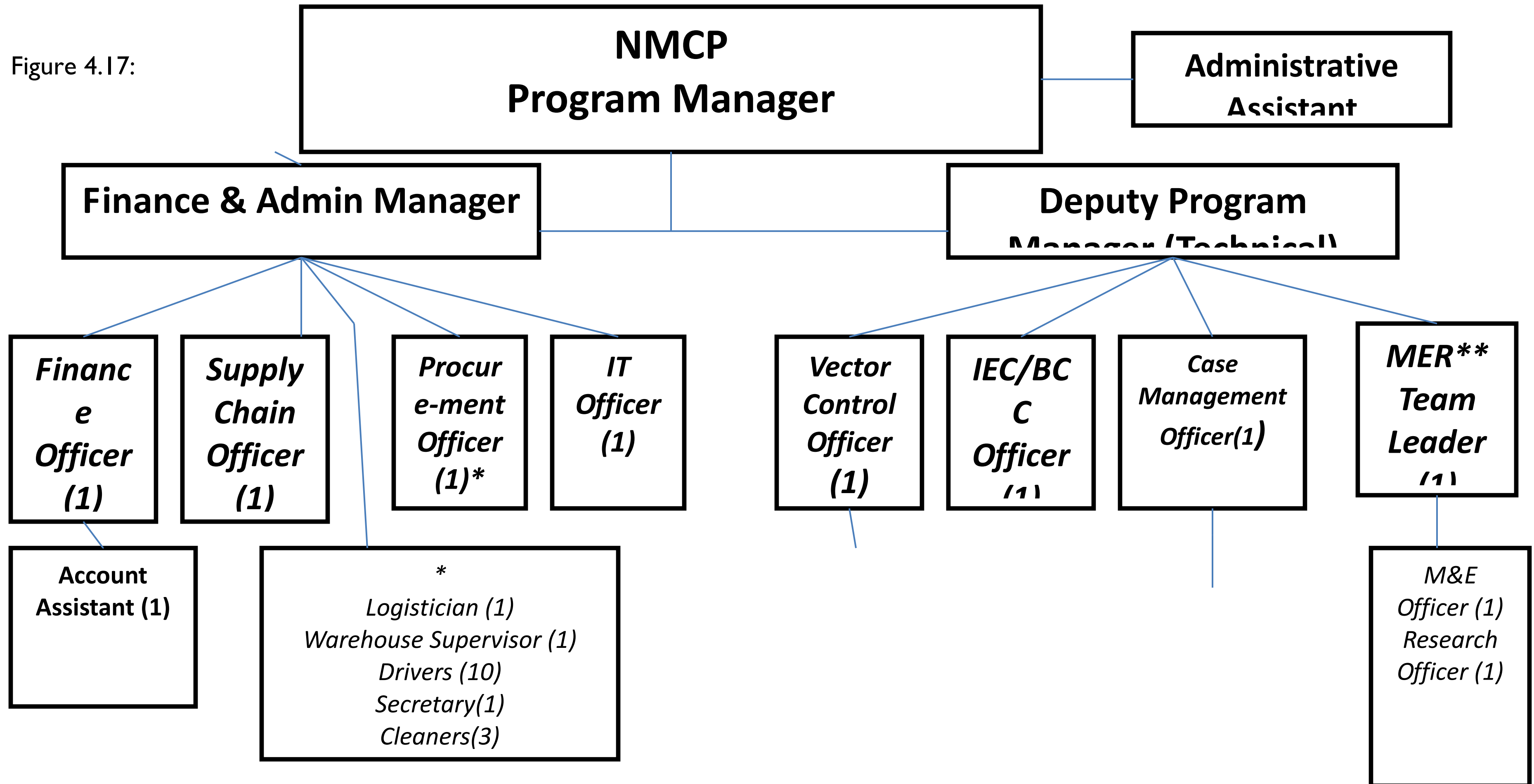
Figure 4.15: 1. Bibliography

Figure 4.16: 2. NMCP Organizational Chart Current



3. NMCP Organizational Chart-Proposed

Figure 4.17:



4. Programmatic Gap Analysis (to be done As A Separate Document)

Figure 4.18: 5. Implementation Plan (Can Be done As A Separate Document)

Figure 4.19: 6. Monitoring and Evaluation Plan (To Be done As A Separate Document)

Figure 4.20: 7. Commodities Needs (to be done As A Separate Document)

Figure 4.21: 8. Budget Details

Figure 4.22: 9. SWOT Analysis

Program Management

Strengths	Weaknesses
• Functional organizational structure • Availability of funding for key malaria interventions • Strategy, policies and guidelines in place • Mechanism for coordination in place • Research priorities set • Strong political commitment • ICCM and PSACT policies and guidelines in place	• Inadequate consumption data for malaria quantification • Donor dependency • Poor Work attitude of staff • Lack of comprehensive annual work plan • Poor communication of successes • Lack of critical communication strategic to engender change in malaria control activities
Opportunities	**Threats**
• Donors support • Strong leadership and partnership for malaria prevention and control • Sufficient global donor support for LLIN procurement and distribution • Increasing population demand for mosquito nets • Willingness of private sector to take ACTs if available • Establishment of the National Medicines Regulatory Authority • Availability of multiple channels for behavior change communication • An increasingly improving HMIS	• Competing priority at Central MOH (activities wise) • Drop in funding • Poor remuneration in the health sector • Key positions occupied by staff are donor funded • Financing, service delivery, leadership, Procurement, information system are not harmonized • External interference in program implementation (technical versus political and financial) • Lack of coherence in scheduling of county-based activities.

Procurement and Supply Management
SWOT analysis

Strengths	Weaknesses
•National Policy and guidelines •Linkages with technical departments in MOH&SW and Malaria partners •National quantification for malaria commodities •Established supply chain management unit •Established supply chain technical working group •Strong Diagnostic capacity resulting in the treatment of malaria •Adequate capacity to monitor procurement systems and pipeline at central level	•Inadequate/inaccurate consumption and morbidity data •No standard methodology for quantification and estimating requirements •Lack of expertise in quantification •Weak management information systems for commodities •No PSM plan for malaria commodities outside of GF applications/grant •Inadequate mechanisms for monitoring stock situation at facility level
Opportunities	Threats
•Collaboration with development partners in strengthening capacity for commodity management •Strengthening of HMIS •ACT, SP, RDTs are part of the ten tracer commodities List •Harmonized Stock Balance Reporting and Requesting forms for Stock tracking •Malaria Commodities included on the Drug Regulatory Authority register •Technical expertise in partner organizations •Strengthening of HMIS by various partners Active GF grant R10 phase II	•Poor quality of data from health facility for quantification •Lack of human resources capacity for quantification •Weakness of GF Mechanism-eg. Delay disbursement •Limited capacity of Drug Regulatory Authority to handle testing of large batches of malaria commodities Limited capacity to perform some quality testing eg. RDTs and other lab supplies

Figure 4.23: 9. Matrix of Role and Strategies for Malaria Control and Elimination at All Levels