



**Government of Sierra Leone
Ministry of Health and Sanitation**

Sierra Leone Malaria Control Strategic Plan

2011-2015

Access to malaria control for all

Table of Contents

Table of Contents	2
Acronyms	4
Executive Summary	7
1 Introduction	8
2 Background	9
3 Malaria Interventions	21
4 Support Systems	35
5 Overall program objectives and indicators	42
6 Estimated Cost	48
7 References	49
8 Annex	50
Table 1: Basic Demographic data of Sierra Leone	10
Table 2: Drug Efficacy Test Validated Results, 2003	15
Table 3: Summary of Strengths, Weaknesses, Opportunities and Opportunities	17
Table 4: Malaria Control human resource plan	37
Figure 1: Malaria Prevalence Model	15
Figure 2: NMCP Organogram	36
Annex 1: Logframe for strategic plan	50
Annex 2: Distribution of Health Personnel by Provider	54
Annex 3: Number of Health Facilities in Sierra Leone	54
Annex 4: Key international malaria control goals and targets	55

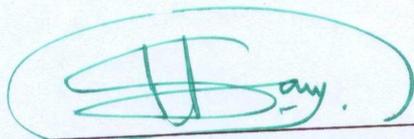
Foreword

Malaria is endemic in Sierra Leone with stable and perennial transmission in all parts of the country. As such, the entire population is at risk of developing the disease which accounts for over 40% of outpatient morbidity. Malaria is presently the leading cause of morbidity and mortality amongst children under five years of age with mortality attributed to malaria of 38.3% and 25.4% for all ages. This disease is a cause and a consequence of poverty and a major threat to the socio-economic development of the country with an estimated 7-12 days lost on the average per episode of malaria.

In response to this disease burden which has plagued the African continent with devastating consequences, urgent remedial actions were initiated as were crystallized in the Roll Back Malaria Initiative and the Abuja Declaration which, inter alia, emphasized the importance of partnership and collaboration with other sectors as well as the need to scale-up key interventions for impact within a stipulated time frame.

Consequently, the Ministry of Health and Sanitation through the National Malaria Control Programme using available evidence and scientific process and guided by extensive consultations with partners and key stakeholders, reached a consensus on the need to scale-up malaria control interventions for the attainment at the desired impact and that decision has formed the basis of this vital document titled: **Sierra Leone Malaria Control Strategic Plan 2011-2015**.

It is envisaged that this national reference document will serve as the road Map that will give direction and guidance to government, partners and key stakeholders engaged in the process of implementing various interventions geared towards malaria prevention and control in Sierra Leone for the next five years.



ALHAJI CHIEF SAMUEL SAM-SUMANA
HON. VICE PRESIDENT AND PRO TEM MINISTER
MINISTRY OF HEALTH AND SANITATION

Acknowledgements

The process of developing any document of strategic importance is a long and painstaking exercise that demands the overwhelming support of all concerned, the **Sierra Leone Malaria Control Strategic Plan 2011-2015** being no exception.

At this juncture, it is proper and fitting that the Ministry of Health and Sanitation and the National Malaria Programme acknowledge with thanks the support and contribution from development partners, like non-governmental organisations and private sector who have contributed in diverse ways towards the successful development of this strategic plan

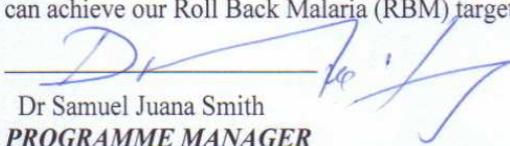
Our traditional partners in development namely: - WHO, UNICEF, etc and other key stakeholders are worthy of commendation for their unflinching support throughout the duration of this exercise.

The quality of this all-important document in consonance with international standards that will give direction and guidance to the Government, partners and other key stakeholders engaged in the process of implementing activities aimed at malaria prevention and control, mirrors their expertise.

Indeed their support is a vivid manifestation of partnership and collaboration of our respective efforts against a common enemy – the Malaria Disease.

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

Finally, it is my fervent hope that this document will become the single most important point of reference on issues pertaining to the control of malaria for the next five years. I hope together we can achieve our Roll Back Malaria (RBM) targets and Millennium Development Goals (MDGs).


Dr Samuel Juana Smith
PROGRAMME MANAGER

Acronyms

ACT	Artemisinin based Combination Therapy
BCC	Behavioural Change Communication
CHW	Community Health Workers
c-IMIC	Community – Integrated Management of Childhood Illnesses
DDT	Dichlorodiphenyl - Trichlorethane
DOT	Directly Observed Treatment
EPI	Expanded Programme on Immunisation
FANC	Focused Ante-Natal Care
FBO	Faith Based Organisation
GDP	Gross Domestic Product
GFATM	Global Fund to Fight TB, Malaria and AIDS
HBC	Home Based Care
HIV/AIDS	Human Immuno-Deficiency Virus/Acquired Immunity Deficiency Syndrome
IEC	Information, Education and Communication
IPT	Intermittent Preventive Treatment
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
IVM	Integrated Vector Management
LLIN	Long Lasting Insecticidal Net
M & E	Monitoring and Evaluation

MDGs	Millennium Development Goals
MiP	Malaria in Pregnancy
MoH	Ministry of Health
NGO	Non-Governmental Organisation
NMCP	National Malaria Control Programme
NMSP	National Malaria Strategic Plan
PMTCT	Prevention of Mother to Child Transmission
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
SP	Sulfadoxine-Pyrimethamine
TORs	Terms of Reference
WHO	World Health Organisation

Executive Summary

The Government of Sierra Leone recognizes malaria as a health and socio-economic burden and, as articulated in the National Health Sector Strategic Plan (NHSSP 2010–2015) considers malaria control a priority.

Malaria is endemic in Sierra Leone with stable and perennial transmission in all parts of the country. The entire populace is at risk of developing the disease and malaria is responsible for over 40 percent of outpatient morbidity. Malaria is presently the leading cause of morbidity and mortality amongst children under five years of age with a mortality attributed to malaria of 38.3% among children aged five years and below and 25.4% for all ages.

Development Process of the Strategic plan

The National Malaria Control Strategic Plan (NMCSPP) 2011–2015 has been developed through extensive consultations with partners and key stakeholders; collection and analysis of available evidence such as the Malaria Indicator Survey report, among other relevant documents. A plan development workshop was held with partners and key stakeholders including District Medical Officers (DMOs) and representatives of Community Based Organizations (CBOs) all of who made valuable inputs to produce the first draft. The Strategic plan was further developed with additional information from ongoing programme activities and experience sharing meetings / review workshop. This resulted in a the production of a second draft. After this process, the document was circulated to all participants at the meetings and workshops and also RBM partners and stakeholders for their comments and suggestions in an attempt to improve the quality of the plan. The final draft was submitted to RBM partners and key stakeholders for formal validation. This document is the outcome of the validation meeting.

The document is arranged into the following sections and each section contains objectives, strategies, operational design and expected outcomes:

- a) Case Management
- b) Multiple Prevention Methods (including Intermittent Preventive Treatment).
- c) Integrated Vector Management (including LLINs, IRS,
- d) Advocacy, Information, Education and Communication
- e) Surveillance, Monitoring, Evaluation and Operational Research
- f) Partnership Strengthening and Programme Management Support

It is envisage that this implementation of this document will guide the direction of malaria control activities in the country which will lead to the attainment of the goals and objectives as spelt out in the national strategic plan and the Millennium Development Goals.

A detailed costing plan by activity for each broad objective is also included.

1 Introduction

1.1 The Vision

“Access to malaria control for all”

The Government of Sierra Leone believes that every person has the right to access highly effective malaria curative and preventative services delivered as close to the home as possible. Malaria causes enormous suffering to a large proportion of the population each year and considerably hampers the economic growth of the country.

1.2 Goals

The Malaria control programme in Sierra Leone aims to improve the health of its people, and thereby their quality of life, by reducing the malaria burden in the country. This goal will be achieved through scaling up access to evidence based malaria control interventions to the entire population.

1.3 General Objective

To reduce the current levels of malaria morbidity by 50% and to reduce mortality by 25% by 2015.

Aim

The aim of the National Malaria Control Programme is to:

- Promote, co-ordinate and support the delivery of effective malaria control interventions that will prevent and reduce morbidity, mortality and disability due to malaria and its socio-economic consequences;
- Use new technologies available to produce results and implement improved diagnosis and ensure rapid and prompt treatment for malaria and establish selective malaria vector control activities;
- Develop decentralized multi-sectorial harmonious partnerships in malaria control activities in Sierra Leone from national up to community level.

1.4 Specific Objectives

1. To increase prompt and effective treatment of malaria from 50% in 2010 to 80% for all age groups by 2015.
2. To reduce the proportion of severe malaria cases by 50% by 2015.
3. To Increase access to the uptake of at least two doses of Intermittent Preventive Treatment (IPTp) among pregnant women at health facility and community levels from 72.3% to 90% by 2015.

4. To increase the percentage of people having access to at least one prevention method such as LLINs, IRS and or other methods from 25.9% to 80% by end of 2015.
5. Increase the utilization of at least one prevention method, Long Lasting Insecticide Treated Nets (LLINs), IRS and/or other appropriate methods among the entire population to 80% by 2015.
6. To increase the knowledge, attitude and skills of the general population towards the use of preventive and control measures against malaria from the current levels to 80% by 2015.
7. To strengthen management and implementation capacity of the National Malaria Control Programme through effective coordination of partners.
8. To strengthen surveillance, monitoring, evaluation and operational research for effective programme management.

2 Background

2.1 Country Profile

The Country

Sierra Leone is located on the West Coast of Africa, between latitude 8° 30' north and longitude 11° – 30° west. It is bounded by Guinea on the North and East, and Liberia on the South. The Atlantic Ocean forms a beautiful coastline to the south and west of the country. The country has a typical tropical climate with temperature ranging from 21°C to 32°C with a mean daily temperature of 25°C. It has two major seasons; wet season (May to October) and dry season (November to April) with heavy rains in July/August. It has an average rainfall of about 320cm annually. Relative Humidity is high ranging from 60 to 90%.



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

The country is composed of three provinces, The Northern, Eastern and Southern province and one region called Western Area, which includes the capital and surrounding area. The provinces are further divided into 12 districts and the districts into 149 chiefdoms with the exception of the Western Area which is divided into 2 districts, Freetown Urban and Rural.

The Population

The Sierra Leone Bureau of Statistics estimate the Sierra Leone's population as 5,746,800 (2010). Freetown the capital, with an estimated population of 1,070,200, is the largest city, and the economic, commercial, educational and cultural center of the country. Bo, to the southeast of the capital, is the second largest city with an estimated population of 269,000. Other cities/towns with an estimated population over 100,000 are Kenema, Koidu and Makeni.

The current population structure shows a youthful population of women within the child bearing age of 24.1% and 41.7% of young children. Also the projection shows that a large number of young people will continue to enter the working age and become economically active with all the potential consequences for youth empowerment. The implementation of national development strategies and frameworks like the Vision 2025 and the SL-PRSP are therefore bound to be affected by demographic concerns. The projections show that urbanisation levels will continue to increase and demand for quality housing, schooling and other social services, especially in Freetown, should be a priority for governments both at the national and local levels.

Table 1: Basic Demographic data of Sierra Leone

Indicator	Latest Estimated Value (See sources*)
Population: Total	5,746, 800 (2010 projected population est.)
Population: under five years	1,101,249 (17.1%)
Population: pregnant women	309,123 (4.8%)
Life expectancy at birth	42 years of age ³
Population growth rate	3.21 %
Population of children under 15years	41.7% ¹
Crude birth rate	46 per 1000 population ²
Crude death rate	22 per 1000 population ³
Infant mortality rate	89 per 1,000 live births ²
Under five mortality	140 deaths per 1000 live births ²
Maternal mortality ratio	495 deaths per 100,000 live births ¹
Anemia among children under five	75.9 % ²
Anemia among pregnant women	45.8 % ²
Children under five who slept under an Insecticide Treated Net (ITN) the night before the survey	28.0 % ²
Pregnant women age 15-49 who slept under an Insecticide Treated Net (ITN) the night before the survey	27.7 % ²
Last births in the five years preceding the survey for which the mother took antimalarial drugs for prevention during pregnancy	50.1 % ²
Last births in the five years preceding the survey for which the mother got Intermittent Preventive Treatment (IPT) during an antenatal visit	11.8 % ²

Children under five with fever (in two weeks preceding the survey) who took antimalarial drugs	30.1 % ²
Children under five with fever (in two weeks preceding the survey) who took antimalarial drugs the same day/next day after developing fever	15.1 % ²
Children under five with symptoms of ARI who sought treatment from a health facility/provider (excludes pharmacy, shop, and traditional practitioner)	45.8 % ²
Children under five with fever who sought treatment from a health facility/provider (excludes pharmacy, shop, and traditional practitioner)	43.5 % ²
Urban dwellers	40.2%
Rural dwellers	59.8%

¹ Statistics Sierra Leone 2004

² USAID, Demographic and Health Survey (DHS), Draft Copy, Sierra Leone, 2008

³ UNICEF, The State of the World's Children, 2009

⁴ CIA, The World Factbook, Sierra Leone, 2009 - <https://www.cia.gov/library/publications/the-world-factbook/print/sl.html>

Socioeconomic indices

The country is grouped among the least developed countries in the world ranking 180 out of 182 countries in the UNDP Human Development Index for 2009¹. Table 2 shows the Socio-economic profile of Sierra Leone by year and source of estimate.

Table 2: Socio-Economic Profile

Indicators	Percentage	Source
Economic growth rate	2%	MfED
GDP Per Capita	\$679	2009, HDI
External debt burden	NA	June 2010
Population in severe poverty	53%	2007, World Bank
Population with access to sanitary facilities	13%	NHSSP 2010-2015
Population with access to safe drinking water	54%	DHS, 2008
Adult Literacy rate	38.1%	2009, HDI
Employment rate	19.8%	Census 2004

Massive population displacement in the rural areas during the war led to accelerated urbanization that has remained, resulting in severe overcrowding in towns and cities. The literacy rate is less than 40%. More than half of the population lives below the international poverty line on less than US\$1 a day. The economy is, however, making a modest recovery, and there is a gradual improvement in security in rural areas

Allocation for health in the National budget is 12%² and government allocation to the National Malaria Control Programme is 0.3%. Malaria Programme in the country to alleviate poverty include:

- National Commission for Social Action
- Social Action for Poverty Alleviation (SAPA)

¹ UNDPs Human Development Index, 2009

² Budget speech, ministry of finance and economic development (MoFED 2010)

- International Monetary Fund (IMF) approved an economic programme in the context of the Emergency Post Conflict Assistance Facility in December 1999.
- The World Bank's Economic Rehabilitation and Recovery Credit to assist Government in restoring protective and economic security,
- The Integrated Health Sector Investment Project (IHSIP) has metamorphosed into Health Sector Reconstruction and Development Project.

National Development Initiatives

- a) Poverty Reduction Strategy Paper (PRSP)
- b) Highly Indebted Poor Countries (HIPIC)
- c) New Economic Partnership for African Development (NEPAD)

2.2 Global Context of Malaria Control

Malaria is the leading killer of children in Africa, accounting for approximately 30 percent of all-cause mortality in children under the age of five. "In 2008, there were an estimated 243,000,000 reported worldwide of these, the vast majority of cases (85%) were in the Africa region. Children under five years accounted for 88% of the cases in Africa"². Although the estimated mortality rate for the world is not given for the year 2009, however, the estimated worldwide mortality was estimated at 881,000. 91% of these deaths were in Africa, of which 85% were in children under five years³. Africa's malaria burden is worsening, and many factors, including expanding drug resistance, limited access to effective interventions and faltering health services contribute to malaria's growing toll on the continent's health and economic potential.

Malaria strains health systems, particularly in Africa where it accounts for between 30 and 50 percent of hospital admissions and up to 50 percent of outpatient visits in high-transmission areas. Malaria costs Africa more than US\$12 billion annually. It has slowed economic growth in African countries by 1.3 percent per year, the compounded effects of which are a gross domestic product level up to 32 percent lower than it would have been if malaria had been eliminated in the 1960s.

The global health and malaria community has developed ambitious and overlapping targets with respect to malaria control in Africa (see annex 4). On April 25, 2000, at the Abuja Summit in Nigeria, the Roll Back Malaria (RBM) Partnership and African health ministers set targets of exceeding 80 percent coverage for these interventions by 2015. Recent surveys indicate that current national coverage levels in Africa for each of the Abuja targets range from 5 to 40 percent⁴.

The Millennium Development Goals (MDGs) were established to focus international efforts on addressing critical issues related to health, poverty and equity. Malaria features prominently in the Millennium Development Goals and these internationally accepted goals build upon the Roll Back Malaria Partnership Goals and the Abuja Targets. The Sierra Leone 2011-2015 National Malaria Strategic Plan strives to achieve both the RBM Abuja Goals and the Health Millennium Development Goals (MDGs)."

² World Malaria Report, 2009, World Health Organization.

³ World Malaria Report 2008, World Health Organization.

⁴ Abuja Declaration, 2000.

2.3 Malaria Burden in Sierra Leone

Malaria is endemic in Sierra Leone with stable and perennial transmission in all parts of the country. *Plasmodium falciparum* is the dominant parasite mainly responsible for all severe cases and over 95% of uncomplicated cases. However, there are also cases of clinical malaria caused by *Plasmodium malariae and ovale* or a mixture of these and *falciparum* (British Medical Research Council, 1998).

The predominant vector is *Anopheles gambiae s.l.* but other species found in Sierra Leone are *Anopheles funestus* and *Anopheles melas*. The *Anopheles gambiae s.l.* is the predominant species during the rainy season. The peak biting period is between 10p.m – 2a.m.⁵ The most recent entomological studies were carried out prior to the civil war between 1990-1994. Those studies found Annual Entomological Inoculation Rates (EIR) ranging from 6.1 to 884.2.⁶

National prevalence data is limited to routine data collection and does not give the entire epidemiological picture as it only includes those cases seen at a health facility. Despite multiple national household surveys being carried out in the last few years (MICS 2005, DHS 2008, MIS 2010), none of them collected information on parasitemia. The best representation of the estimated malaria prevalence in country is the Malaria Prevalence Model map generated by MARA in 2002 (See figure 1).

Malaria is major public health problem in Sierra Leone and is also an important cause of mortality, morbidity, disability and poverty. Malaria risk and burden is evenly distributed across the country. Children under five, pregnant women and people living rural communities constitute the most vulnerable groups in the country. Malaria is stable and transmission is perennial. The tropical climate with optimal rainfall patterns, temperature and humidity support a continuous transmission all year round.

The entire population is exposed and living in stable malaria areas. As such, the entire populace is at risk of developing the disease and malaria accounts for about 40%⁷ of outpatient morbidity. It is therefore estimated that about 2,240,000 outpatient visits are due to malaria, of which about 1,000,000 patients are under five years. Pregnant women and under five children constituting 4.4% and 17.7%⁸ respectively of the current total population are the most vulnerable groups. Malaria is presently the leading cause of morbidity and mortality amongst children under five years of age with a mortality attributed to suspected malaria of 38.3% among children aged five years and below and 25.4% for all ages⁹.

Up to 50% of under-five in-patients in children's wards are admitted as a result of severe malaria illness. Malaria is also a leading cause of deaths in Sierra Leone, accounting almost for 30% of all deaths in children recorded at hospitals.

Malaria is also a major problem affecting pregnant women in rural areas where approximately 35% of pregnant women are parasitemia, and among them primigravidae show the highest

⁵ British Medical Research Council Research Station Bo, 1998

⁶ Hay, S.I., D.J. Rogers, J.F. Toomer and R.W.Snow. 2000. Annual *Plasmodium falciparum* entomological inoculation rates (EIR) across Africa. I. Literature survey, internet access and review. *Transactions of the Royal Society of Tropical Medicine and Hygiene* **94**, 113-127

⁷ CDC pop based survey 2007

⁸ National Census 2004, Statistics Sierra Leone

⁹ Malaria Situation Analysis, 2004

prevalence of about 50% in endemic areas. Anemia often associated with malaria is a major public health problem and more than 50% of pregnant women have a packed cell volume (PCV) of less than 33%.

Malaria overburdens the already weak health systems in Sierra Leone and it accounts for between 30 and 50 percent of hospital admissions and up to 50 percent of outpatient visits. It is an important contributing factor to the slow socio-economic development of the country with an annual GDP 32% lower when compared to its potential in a malaria free scenario. It is estimated that more than 60% live more than 10 km from the health facilities, situation which equates to no access for a large majority of the population. The true scale of the economic losses attributable to malaria in Sierra Leone is not well known. However, it is clear that illness due to malaria contributes to high rates of school absenteeism, poor agricultural productivity, the economic mainstay for the majority of the rural population, and consequent loss of income for families and communities.

Sierra Leone subscribes to the global MDGs and Abuja targets to reduce malaria morbidity and mortality and therefore reduce human suffering, socio-economic loss and promote economic development.

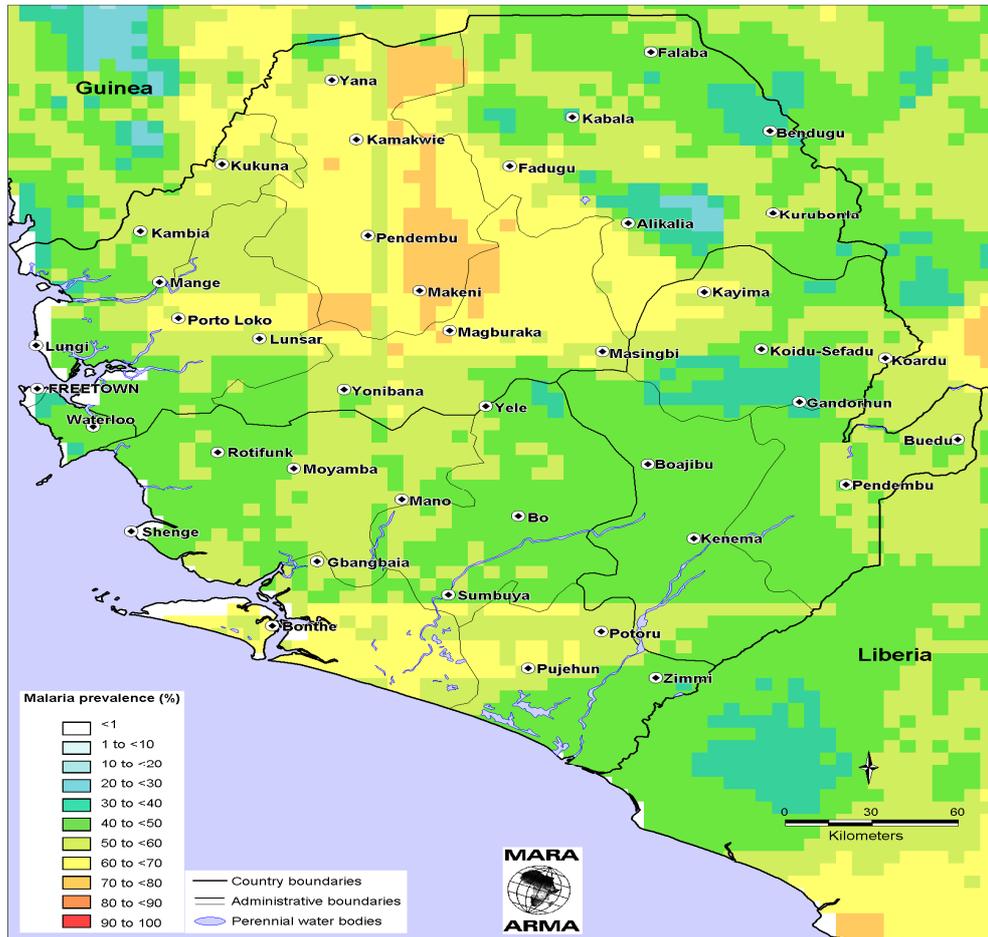
The national government with support from partners is endeavoring to avail resources and improve systems that enable efficient response to malaria and meet the continental and global goals. To achieve this, Sierra Leone in collaboration with partners established a national malaria control program to provide malaria services to communities.

Sierra Leone is signatory of the 25th April 2000, the African Heads of State Abuja declaration, on the Roll Back malaria Initiative and its plan of action. In this declaration, they committed themselves and their countries to undertake the necessary and sustainable measures to strengthen the health systems. Sierra Leone has increased resources to health and malaria following the Abuja political commitment.

Sierra Leone recognizes malaria as a national priority and thus developed a strong partnership to fight it. Decentralization makes the district the operational unit of the health system and created a framework that was favorable for malaria control. Funding from the government, Global Fund to Fight HIV/AIDS, TB and Malaria (GFATM) and other partners support operationalization districts' operational plans.

Figure 1: Malaria Prevalence Model

Sierra Leone: Malaria Prevalence Model



This map is a product of the MARA/ARMA collaboration (<http://www.mara.org.za>). March 2002, Medical Research Council, PO Box 17120, Congella, 4013, Durban, South Africa
 CORE FUNDERS of MARA/ARMA: International Development Research Centre, Canada (IDRC); The Wellcome Trust UK; South African Medical Research Council (MRC); Swiss Tropical Institute, Multilateral Initiative on Malaria (MIM) / Special Programme for Research & Training in Tropical Diseases (TDR), Roll Back Malaria (RBM).
 Malaria Prevalence Model: I. Kleinschmidt et al. 2001. An empirical malaria distribution map for West Africa. Tropical Medicine and International Health 6: 779-786.
 Topographical data: African Data Sampler, WRI, http://www.igcc.org/wri/edis/maps/ads/ads_id

Resistance to anti-malarials and insecticides

Currently, there is no data on insecticide resistance in Sierra Leone.

However, a few studies have been conducted to test the efficacy of antimalarial drugs. The Ministry of Health and Sanitation and partners conducted a study on chloroquine (CQ), sulfadoxine–pyrimethamine (SP), and Amodiaquine (AQ) in selected districts which was validated by MOHS and WHO in July 2003 as shown in the table below:

Table 2: Drug Efficacy Test Validated Results, 2003

Anti-malarial Drug	Clinical Cure Rate By Day 14 (%)	Failure Rate By Day 14 (%)	Failure Rate By Day 28 (%)	PCR Failure Rate By Day 14
--------------------	----------------------------------	----------------------------	----------------------------	----------------------------

CQ	20 – 60%	40 – 80%	67%	39.5 - 78.8
SP	72 – 98%	2 – 28%	50%*	17.6 - 46.1
AQ	92 – 100%	0 – 8%	31%	Not available

Source: F. Checchi et al. Evidence basis for antimalarial policy change in Sierra Leone, February 2005

Based on the validated drug efficacy results, a consensus meeting was held by MoHS and partners in March 2004. The merits and demerits of Artemisinin - based Combination Therapy (ACT) were extensively discussed; a decision was taken to adopt the use of ACTs and to review the current anti malarial treatment policy. Has to be updated to 2009 or taken out. Currently, ACTs constitutes the frontline drug of choice in the country.

2.4 Achievements & Challenges

2.4.1 Case management

About 12% of health care providers gave correct dosage of antimalarial drugs. Only about 11.5% of health workers are trained in malaria case management within the past two years.

About half (56%) of the health facilities are fully functional. Laboratory support for diagnosis of malaria is poor. Health facilities are poorly staffed and personnel poorly motivated. Treatment guidelines are available but inadequate to cover all health facilities. The use of non recommended therapies for malaria such as monotherapy of chloroquine and artesunate is still widespread, especially in the private sector where ACTs are more costly. Referral networks and System for monitoring and evaluation are poorly developed. Although the actual amount allocated to malaria may be relatively low, this trend is a demonstration of Government commitment in accordance with the Abuja Declaration.

The recent Malaria Indicator Survey (MIS March, 2010) reveals that, 50.4% of children under five years of age receive prompt and appropriate treatment of malaria according to national policy. Access to treatment by children under five years at health facilities and communities is 57.0% and 28.7% respectively.

Percentage of those children with fever that sought treatment and received an ACT in the previous 2 weeks, 42.3% (CDC pop based survey 2007).

2.4.2 Malaria in pregnancy

Intermittent Preventive Treatment for pregnant women (IPTp) using Sulfadoxine Pyrimethamine (SP) was adopted in the country in March 2004 during a national consensus meeting and began to be implemented in mid 2005.

The baseline survey conducted in 2005 revealed that the IPT usage rate was low about one in five mothers (22%) had it in the last pregnancy and about 19% took at least 2 doses. 42% of pregnant women took 2 doses of IPT (Routine data collected from Peripheral Health Units in the eight Global Fund supported districts - Jan-March 2007).

Percentage of pregnant women receiving IPT at Antenatal care clinics (routine data) 42% Routine Data 2007 but in (DHS, 2008) 11.8%.

Lessons learnt for future implementation

- Provide IPT drugs during PHU community outreach sessions (pregnant women support groups, etc.) in which TBAs were involved in delivering SP.
- PHU staff to work hand in hand with TBAs to sensitize pregnant women to visit PHU or to attend community outreach sessions for ANC where pregnant women are given IPT drugs

2.4.3 Long Lasting Insecticide Treated Nets (LLINs) promotion and using

With respect to progress on prevention, the LLINs distribution has increased during the past years. Free LLINs distribution has proved successful in increasing coverage of the most vulnerable populations. Distribution is linked to ANC/EPI clinics and national child immunisation campaigns.

Most of the LLINs currently in use by the under five children and pregnant women were distributed mostly in late 2006 and early 2007 through a multi-sector collaborative effort (Measles-Malaria campaign) with significant contribution by WHO, Unicef, the Canadian Government, Global Fund, European Union and World Bank.

Percentage of households with at least one insecticide treated net (ITN)*: 36.6%

Percentage of pregnant women sleeping under LLINs. (survey) From 2% in 2004 to 27.7% (DHS, 2008)

Percentage of children under five sleeping under LLINs. (survey) From 6.6% in 2004 to 25.9% (DHS, 2008).

2.5 Review of Malaria Programme: Summarised Status of Strengthens, Weaknesses, Opportunities and Threats

Table 3: Summary of Strengths, Weaknesses, Opportunities and Opportunities

Strengths	Weaknesses
Strong political will and Government commitment to the programme	Lack of knowledge on the interaction of the package of interventions and outcomes
Well established and effective RBM partnership especially at the National level.	Poor involvement of the private sector (health and non health) in implementation of activities at community.
An increased resource base from Global Fund Round 7, WHO, EU and other partners.	Inadequate funding for effective programme management.
A core of well trained staff at national level	Procurement and Supply chain system that is at its infancy stage.
Availability of national malaria policy documents and guidelines.	Irregular supportive monitoring and supervision at all levels.
Opportunities	Threats
Commitment by partners and other stakeholders that have committed funds for malaria programme.	Human resource gaps at all levels of health care delivery.
Knowledge on proven interventions for successfully rolling out on a countrywide basis.	Gaps in total required resources for meeting scaling up targets.
A decentralised health structure that is integrated into the health care delivery system and community level structures.	Malaria control programme activities not a priority for some health partners.
Communities identifying themselves to be key partners in operations and planning for successful programme implementation.	Global financial instability and civil unrest.

2.6 Links of the programme with cross cutting issues in the health care delivery service

The way forward in malaria prevention and control is based on sound scientific evidence. The National Health Policy states the nation's commitment to a core set of principles and values, some of which are critical to the success of malaria control efforts in Sierra Leone. The National Health Policy has priorities and practices which continue to reflect a strong commitment to the following operational principles:

Decentralization

Decentralisation forms an important approach towards ensuring the participation of people in the affairs of the planning and delivery of services to communities. The health care system is focused on the strengthening of popular structures some of which are unique to the sector. For instance, the Village Development Committees (VDC), which is part of the community based structures for participation in health care services provision and planning at the health centre level are part of this process and organisational structure. Others include the community health workers (CHWs), structures of the traditional leadership which are also key to community mobilisation.

Strengthening of the Health System:

The cost-effective delivery of the essential health care package is dependent on planning, procurement, logistics, information systems, financial management, monitoring, evaluation and other support services. In addition, reproductive health, child health, and laboratory services are significantly impacted by the performance of malaria control programmes. Therefore using avenues such as post natal and antenatal programmes provides an entry point into programmes such as prevention in pregnancy as well as prevention and prompt treatment of the child and pregnant women. Recognition that sustainability is only inherent given the successful integrated implementation process underlies the formulation and implementation strategy of the Strategic Plan. Close synergy and collaboration to protect the Country's vulnerable populations shall include strengthening of the follow:

- Reproductive and maternal health
- Child health
- Laboratory services. Among key disease control programmes for which strengthened diagnostic capacities will be available apart from child health and reproductive and maternal health are – TB and HIV/AIDS
- Procurement and Supply Chain Management

Equity and Increased Access

No person regardless of socio-economic background will or should be restricted for reasons of physical barriers, gender, age, infirmity, cultural, traditional or political or any other factor from accessing malaria preventative and curative services. The context of scaling up the malaria control interventions is designed to address restrictions in access

to these interventions previously due to various factors including economic factors. Prioritization in programming will be based on protecting those communities that bear the highest burden and/or are at the greatest risk of malaria illness and death. Given the poverty levels in the country providing services at no cost is crucial.

In line with the President of Sierra Leone agenda for change and the new health sector strategic plan, an essential package of health care services is delivered free of charge at the point of service to children under five years of age, pregnant women and lactating mothers to ensure a significant improvement in maternal and child health. The free health care strategy sets out the critical success factors and proposed timescale for implementation that will help the country achieve its maternal and child health Millennium Development Goals.

Partner Harmonization, Coordination, and Accountability

Multi-sectoral collaborations and a broad array of partnerships for public health will be accepted. Partnerships will be created on performance based accountability and national planning processes that are broadly inclusive. Through the strategic plan and programme management, the Ministry through the NMCP will provide key stewardship functions as well as strategic planning process coordination and ownership. Monitoring and evaluation and reporting functions shall be used in achieving accountability and transparency of resources as well as providing necessary assessment of progress and challenges.

2.7 National Health Plan

According to the National Health Policy, the overall goal of the health sector is to maintain and improve the health of all Sierra Leoneans resident within the country. The Government of Sierra Leone is committed to pursuing such a goal in an equitable manner. It will work towards ensuring that all citizens have access to basic health care. It has special responsibility to ensure the health of those citizens who are particularly vulnerable as a result of poverty, the results of conflict, gender or specific health problems. The Government of Sierra Leone also has responsibilities for ensuring the provision of adequate public health services including sanitation for food safety, and for specific communicable diseases.

Technical policies and guidelines exist for a number of these health priorities, which set specific objectives, targets, and strategies and where appropriate treatment protocols. Additional technical policies will be developed in each of the remaining priority areas and the existing ones updated as necessary.

Health care delivery: There is a strong history of Primary Health Care (PHC) within the health sector of Sierra Leone. The Government remains committed to this approach with an emphasis on primary care services and prevention as cost-effective strategies.

As such the delivery of health care will be based on the following principles:

The development of an integrated health system, which has clear and inter-linked roles for the primary, secondary and tertiary levels of care.

The strengthening of the referral system between the levels of care to ensure the efficient use of different levels of specialized and appropriate feedback between health care professionals. The importance of ensuring involvement of communities, and the

voiceless within these communities, in decisions about health and emphasis where appropriate on preventive strategies. All health care providers, both public and private, will be expected to conform to the specific technical policies and treatment protocols.

3 Malaria Interventions

3.1 Effective Case Management

Access to prompt and effective treatment should be assured through appropriate public-private mix with appropriate stewardship of the private sector by the government.

At public and private level, case management of malaria starts right from the community level through to the health facility. It involves the ability of people to recognize symptoms early and take the appropriate action. It will be ensured that people will have access to ACTs within 24 hours of onset.

Monitoring the Therapeutic efficacy of antimalarials should continue and the findings used to update/revise the national treatment guidelines. In addition to the promotion of use of standard treatment guidelines in various situations, tools will be shared to ensure the quality of diagnosis of malaria and standard protocols provided by WHO to monitor the therapeutic efficacy of antimalarials.

3.1.1 Diagnosis

Objective

To scale up confirmatory diagnosis of malaria in all patients from 25.8% to 80% by 2015.

Outcomes

- At least 80% of health facilities are providing diagnosis either through RDTs or microscopy.
- At least 80% of suspected malaria cases confirmed by laboratory testing (RDT or microscopy).
- At least 85% of targeted health facilities have at least 1 trained lab technician in microscopic diagnosis of malaria.

Strategies

- Provide malaria microscopy to all tertiary health facilities (hospitals) and Community Health Centres.
- Introduce Rapid Diagnostic Tests (RDTs) to health facilities without microscopy.
- Strengthening the human resource through in-service training of laboratory technicians and clinicians in the use of RDTs and microscopy.
- Institute periodic quality assurance of RDTs.
- Provide appropriate laboratory supplies for microscopy together with guidelines and logistics.

Operational Plan

Confirmatory diagnosis is essential in providing sound scientific basis for accurate malaria diagnosis and case management. The "Gold Standard" test for malaria diagnosis is microscopic examination of peripheral blood film.

In 2007, malaria accounted for 39.3% (CDC pop based survey 2007) of out-patients department attendance. Only five percent of all clinically diagnosed cases were confirmed as malaria by laboratory testing. Poor capacity for diagnosis due to inadequate numbers of laboratory technicians and technologists and equipment (microscopes, laboratory supplies and reagents) contributes towards the low rate of laboratory confirmation.

Additionally, the World Health Organization recommends the use of RDTs for all groups of patients before treatment. Only positive cases will receive ACTs treatment. Sierra Leone has endorsed this policy and it will be implemented.

In light of the WHO malaria treatment guidelines (2010), confirmatory diagnosis would continue to be strengthened and expanded since complete treatment of malaria should be done with combination drugs that are effective. These drugs are expensive and their indiscriminate use may also render them ineffective.

3.1.2 Treatment of Uncomplicated malaria

Objective

To increase prompt and effective treatment of malaria from 50% in 2010 to 80% for all age groups by 2015.

Specific Objectives

- To increase access to community-based treatment for uncomplicated malaria (100%) to all rural communities.
- To ensure that at least 90% of caretakers and parents recognize early signs and symptoms of malaria.

Outcomes

- Improve referrals from community level for severe malaria.
- Train at least 90% of targeted health facility workers in malaria case management
- Train at least 80% of targeted community health workers in malaria case management
- Train at least 80% patent medicine sellers / dispensers in malaria case management.
- Ensure the incorporation of current malaria treatment guidelines in curriculum of Community Health Training School, the Medical School and other health training institutions for health workers.
- At least 95% of health facilities have anti-malarial drugs at all times

- Ensure that anti-malarial drugs used in the country are periodically tested for quality.

Strategies

- Provision of appropriate and effective ACTs both at community and health facility levels on regular basis.
- Provide treatment guidelines and training manuals for health workers.
- Train and re-train health workers at all levels on malaria case management.
- Establish a system of quality assurance and pharmacovigilance.
- Strengthening of malaria component of IMNCL.
- Incorporate malaria component of IMNCL.
- Support strengthening of referral systems.

Operational Plan

Due to the wide spread occurrence of malaria, it is essential that all health workers be given the appropriate knowledge and skills of diagnosis and management of malaria. Through this process community based providers (CBPs) will be providing correct treatment at in the community and thereby significantly reducing the proportion of malaria cases to higher institutional levels.

3.1.3 Management of Severe malaria

Objective

To reduce the proportion of severe malaria cases by 50% by 2015.

Outcomes

- Number of admissions due to severe malaria reduced
- Number of deaths due to severe malaria reduced
- Number of Health facilities with stock of pre-referral artesunate suppositories increased.

Strategies

- To provide training for health workers on the recognition of signs and symptoms and management of severe malaria.
- Ensure that there exists a workable and effective referral system.
- Identify emergencies and refer immediately to next level of care.
- Provide pre-referral artesunate suppositories to under fives.
- Feedback system in place.

Operational Plan

Severe malaria accounts for a high proportion of deaths in children under five years in Sierra Leone. It is therefore essential that prompt recognition and treatment be provided for children especially under fives with the disease in order to reduce mortality rates. Community workers

and other institutional health workers will therefore be trained to recognize early signs and symptoms of severe malaria and also to provide appropriate treatment within 24 hours.

3.1.4 Community Case Management of Malaria (CCMm)

Outcomes

- Increased number of children under five years and pregnant women receiving prompt and appropriate treatment of malaria within 24 hours of onset of symptoms.
- Increased number of CBPs and Patent Medicine Vendors (PMVs) identified and trained on CCMm.
- Increased proportion of severe cases of malaria referred to the nearest health facility according to national treatment guidelines.
- Reduction in the deaths due to malaria especially in the underfives.

Strategies

- Training of health workers to deliver effectively manages malaria cases.
- Educate the community on the availability, benefits and rational use of community case management of malaria.
- Provision of supportive logistics to Community Based Providers (CBP) and Patent Medicine Vendors (PMV).
- Strengthening of the referral system.
- Monitoring of side effects of ACTs used by CBPs and PMVs.
- Identify and train CBPs and PMVs to improve practices for treatment with ACTs and referral of severe cases.
- Supply medicines and diagnostics to CBPs.
- Implement a supportive communication strategy.
- Institute regular supervision and monitoring of CBPs and PMVs.

Operational Plan

CCMm will specifically target children under five years of age, facilitating prompt access to ACTs for this target group as close to home as possible and the private sector to increase access to ACTs for all age groups.

Key private sector providers, patent medicine vendors and pharmacies will be trained and equipped to provide quality malaria case management services. The ACT packaging will be specially adapted to facilitate adherence and appropriate use at all levels.

Case management at community level will be strengthened through the dissemination of information regarding symptoms of malaria, where to get diagnosis and treatment services and also raising awareness through health forums will be done. Community meetings will be conducted for awareness raising to increase the knowledge of community people on malaria prevention and control. Meetings with the local opinion leaders (headmen) and other heads of the various groups in the community will be conducted in each chiefdom.

WHO recommends the use of RDTs at community level. Appropriate training and adequate quality assurance measures for RDTs will be put in place. RDTs will be provided at the community level.

3.2 Multiple Prevention Methods

3.2.1 Prevention during pregnancy

Objective

To Increase access to the uptake of at least two doses of Intermittent Preventive Treatment (IPTp) among pregnant women at health facility and community levels from 72.3% to 90% by 2015.

Outputs

- Percentage of pregnant women receiving IPT under direct observation (1st dose, 2nd dose, 3rd dose) at targeted clinics with antenatal services
- Number of health facilities providing IPTp
- Percentage of targeted health facility with antenatal services implementing IPT
- Percentage of targeted health workers trained on the implementation of IPT in targeted ante-natal clinics
- Number of TBAs Providing IPTp
- Number of pregnant women receiving IPTp from TBA
- Number of LLINs distributed to pregnant women

Strategies

- Increase access to IPT through Focused Antenatal Care (FANC).
- Improve community participation in the delivery of ANC.
- Improve supportive logistics to facilitate IPTp.
- Address pharmacovigilance issues.

Operational design

According to the Sierra Leone Demographic Health Survey (DHS,2008), 86.9% of women who gave birth in the past five years received antenatal care from a health professional at least once providing the avenue for achieving the specified target. Currently Intermittent Preventive Treatment for pregnant women (IPTp) using Sulfadoxine + Pyrimethamine (SP) is provided via both facility-based antenatal clinics and at the community level in all districts, as part of the minimum antenatal care package. At the community level the services of Traditional Birth Attendants (TBAs) are utilized to deliver IPT and to organize Belli Woman Support Groups (BWSG) [Pregnant women support group/mothers group]. Outreach services are also used as a channel to deliver the minimum antenatal package closer to home, which includes IPT and LLINS to pregnant women.

The implementation will be carried out according to the malaria in pregnancy (MiP) guidelines and will address access inequity issues (e.g. educational status of mothers, urban/rural split, etc.). The focus will be to strengthen MiP services at all levels of the health system throughout the country to improve the access and uptake of IPTp. About 72% of women currently receive at least one/two doses of IPT with very few women receiving the recommended three doses.

Efforts to reduce the burden of malaria during pregnancy focus on:

- All pregnant women will receive at least two doses of SP during the second and third trimester using the Directly Observed Treatment (DOT) strategy in the Antenatal Clinics.
- All HIV positive pregnant women will require to be given more than two doses of IPT during their pregnancy.
- Improving access and utilization of ITNs by pregnant women.
- Improved diagnosis and case management of pregnant women with clinical malaria.

3.2.2 Integrated Vector Management (IVM) & Environmental Management

The integrated vector management strategy is based on selective application of various control measures determined by the eco-epidemiological situation of malaria. An integrated stratified approach is recommended. Long Lasting Insecticide-treated Nets (LLINs) are useful where the vector is exophilic while indoor residual spraying (IRS) is useful where the vector is endophagic. Selected LLINs, insecticides and tools will be based on WHO recommendations and standards. As an adjunct to LLINs and IRS, the NMCP will explore and support other vector control measures such as limited larviciding and environmental modifications.

Objectives

- 1.** To increase the percentage of people using at least one prevention method such LLINs, IRS and or other methods, particularly children under five years and pregnant women, from 25.9% to 100% by end of 2015.
2. Increase the utilization of at least one prevention method, Long Lasting Insecticide Treated Nets (LLINs), IRS and/or other appropriate methods among the entire population, especially vulnerable groups such as children less than five years and pregnant women, to 80% by 2015.

Long Lasting Insecticide-treated Nets (LLINs)

To have impact on malaria morbidity reduction among the general population, Sierra Leone is transitioning to universal access, targeting at least 100% coverage and 80% utilization of the total population at risk of malaria. This will be done by distributing LLINs to all households by 2010 to ensure that every household has at least three LLINs. The mass distribution will begin in the last quarter of 2010. This is in line with the Global RBM Partnership Action plan (GMAP) that recommends that 80% utilization of LLINs by the entire population at risk as the most appropriate objective for universal coverage and based on the RBM Harmonization Working Group (HWG) guidance that countries budget for the entire population at risk at a ratio of approximately 1 LLIN for every 1.8 persons.

Use of Long Lasting Insecticide Treated Nets (LLINs):

For the current planned universal coverage, quantification of LLINs is given at one LLINs to 1.8 person with a population of 5,876,868. According to this quantification, a total of 3,264,927 (plus 8% buffer) LLINs will be required to cover the entire population.

A subsequent mass campaign will be undertaken in 2014 to replace worn out or damage LLINs covering a projected population of 6,348,350. The same strategy of 1.8 person to one LLINs totaling 3,526,861 LLINs will be required to cover the entire country.

The data available show the following:

% of households with at least one insecticide treated net (LLIN): 36.6%

% of pregnant women sleeping under LLIN; (survey) from 2% in 2004 to 27.7% (DHS, 2008).

% of children under five sleeping under LLIN; (survey) from 6.6% in 2004 to 25.9% (DHS, 2008).

Objectives/Targets

The country aims to attain the following targets for LLIN: use by 2015, in line with the goals of global malaria control initiatives:

- 100% of households will own at least one LLIN: by 2015
- 80% of the general population will sleep under LLIN: by 2015.
- The number of children under-five and pregnant women sleeping under treated net will increase from current levels to 85% by 2015.

Strategies

- Organise the integrated mass campaign of distribution of LLIN
- Scale up the use of LLIN to achieve universal coverage
- Organize partnership and coordination meetings at all levels.
- Sustain the routine distribution through EPI and ANC.
- Promote and facilitate the regular and correct use of LLINs, in order to translate rising ownership rates into high use rates.
- Hang up and keep up approach.
- Engage the private sector and local communities as partners in planning and implementation.

Operational design

- Only Long Lasting Insecticide Treated Nets (LLINs) will be procured.
- Improved coordination and communication will be promoted among the net providers; taking the form of a special sub-committee.
- To promote better supply chain management, storage facilities in each district will be improved as necessary and the NMCP will develop improved systems for assessing needs and tracking LLIN distribution.
- Behavioral Change Communication will focus on challenges of LLIN use.

Outcomes

- Increased proportion of households that own at least one LLINs.
- Increased proportion of children under five years who sleep under LLINs.
- Increased proportion of pregnant women who sleep under LLINs.
- Increased proportion of the general population who sleep under LLINs.

Indoor Residual Spraying

Indoor Residual Spraying (IRS) as one of the strategies of IVM has recently received renewed international attention as a potential strategy for vector control. Given the endemic, pervasive nature of malaria in Sierra Leone, in addition to the high level of rainfall and swamps, this strategy will require careful testing and operational research before considering implementation in suitable areas.

Although IRS has been part of the malaria control strategy in Sierra Leone it has never been applied. In order to significantly reduce the malaria burden and be able to achieve the set goals of the NMCP, the Abuja Targets and the Millennium Development Goal for Malaria, IRS shall be applied at first in selected areas and then spread to other areas with time.

Outputs

- Number of households sprayed

Strategies

- To start IRS in few targeted pilot districts
- IRS will be deployed in phases, initially on limited scale and based on experiences made by countries in the sub region with the same climate;
- Recognizing that IRS is a costly intervention, resources will be mobilized from both national and international sources, including engagement of the private sector, international agencies, and development partners.

Operational Design

Coverage of IRS, during the duration of the plan will be targeted at primarily achieving a minimum of 80% of eligible households in the pilot areas. The pilot areas will be selected using a strict criteria that takes into account, malaria prevalence, level of urbanization, population density, eligible housing structures as well as other factors such as health facility distribution as well as the capacity to handle IRS effective operations in line with national guidelines.

Additionally, sourcing available human resources, which are critical for achieving and sustaining coverage for effectiveness, will be important. During the implementation of IRS, the programme will ensure high standards of supervision, monitoring and evaluating with emphasis on personal and environmental safeguards through improved capacities for waste disposal management and storage will be maintained.

Additionally, sentinel surveillance system of the entomological component for vector binomics, inoculation rate and insecticide resistance will form a critical component in

IRS for further quality assessment of the intervention. It will therefore be strengthened at different levels through partnership with research and academic institutions.

Other IVM Interventions

Larviciding

Vector control interventions targeting the immature stage (larvae) of the vector such as environmental management, source reduction and larviciding can have role in specific situations. Different larval vector control interventions can be implemented in urban and semi-urban areas, refugee camps, development projects, water harvesting ponds, and irrigation scheme areas in conjunction with LLINs or IRS.

Larval control methods are considered in areas where breeding sites are few, accessible, and manageable. Communities are encouraged to participate voluntarily in environmental management activities under the direction of the health staff assisted by volunteer CHWs particularly for the application of anti-larval chemical, such as Temephos to ensure these are applied only into vector larvae positive sites.

Environmental Management

Habitat elimination or modification efforts have included general programs to reduce the abundance of mosquitoes as well as more targeted projects of “species sanitation” directed at the principal malaria vectors (Bruce-Chwatt 1985). Details on the methods are as follows:

(A) Environmental Modification Activities

Environmental Modification is a physical change of the environment (often long term) to potential breeding areas designed to prevent, eliminate or reduce vector habitat. Activities may include:

- Advocate for provision of drains and proper channels to improve water flow
- Advocate for enforcement of environmental legislation.
- Advocate for proper planning of new settlements
- Use larvivorous fishes in fish ponds e.g. Tilapia, Goldfish etc.
- Educate the general populace on proper use of environment

(B) Environmental Manipulation Activities

Environmental manipulation refers to activities that reduce larval breeding sites of the vector mosquito through temporary changes to the aquatic environment in which the larvae develop.

- Advocate for appropriate environmental manipulation measures.
- Intensify IEC on the impact of human behavior on mosquito breeding and malaria transmission.
- Empower communities to carry out activities to minimize malaria vector breeding sites.
- Sensitize key stakeholders, politicians, community leaders, etc on malaria prevention and control interventions.

Outcomes:

- Increased number of districts and municipalities carrying out appropriate Environmental Modification Activities.
- Increased number of districts and municipalities carrying out appropriate Environmental Manipulation Activities.

3.3 Empowering Individuals & Communities

The rapid scale up of malaria control in Sierra Leone will only prove successful if the population accept and use the prevention and treatment measures being implemented. Each requires individuals, families and communities to decide whether or not they believe malaria is a preventable and curable disease and requires that they take action to protect themselves and their loved ones.

Fostering effective community response through outreach services is necessary; achieving high coverage of effective interventions requires a well-functioning “close-to-client” health system that will ensure the delivery of high quality and technically sound services. Private sector channels, NGOs, and community-based organizations, including faith-based organizations, play an important role in delivering both prevention and treatment services. This requires local delivery structures (both public and private pathways), well-trained and well-supervised health workers, reliable and efficacious drugs and supplies, and stronger health system management, including surveillance and monitoring.

In Sierra Leone, efforts at information dissemination and communication strategies for behaviour change show great promise, there are established communication channels and strategies including television and radio advertisement placement, posters and print materials for dissemination at the health facilities, the use of community drama performances to inform and educate in addition to high profile annual events such as Africa Malaria Day that bring national visibility to malaria control efforts.

Preliminary assessment has been done regarding the current knowledge, attitudes and perceptions of community members in regards to malaria prevention and control.

Advocacy; and Information, Education and Communication: This is to promote and encourage positive health practices with regards to malaria control in the communities; and to secure full commitment and support of policy, decision makers and other relevant stakeholders to facilitate resource mobilization for malaria control.

3.3.1 Information, Education & Communication for Behavior Change

Objective

To increase the percentage of people having access to at least one prevention method such as LLINs, IRS and or other methods from 25.9% to 80% by end of 2015.

Outcomes

- A more enlighten population on the knowledge, positive attitude and skills towards malaria prevention and control.

Strategies

- **Mass Media**—Mass media messages and materials will be produced for each major intervention area and adopted for dissemination primarily through radio spots and dramas

with occasional TV jingles and spots used as appropriate, information and interviews through print media and documentaries. Messages will be tailored to different appropriate socio-economic level and geographic locations. A least two separate radio messages per intervention area (malaria prevention through LLINs, Malaria in Pregnancy, Prompt treatment with ACTs and Importance of Diagnosis) will be produced.

- **Advocacy to Districts and Local Government Authorities and community leaders—** Advocacy visits will be conducted by NMCP and Directorate of Disease Prevention and Control (DDPC) to key members of the District councils, Chiefdom and community leaders to sensitize them on the importance of data generation, feedback and use of data to inform decision-making.

At the district level, district malaria health communications working groups will be set up in all districts as a subset of the RBM partnership to co-ordinate activities. Implementation will take place according to the annual national and District plans, with stakeholders in a district taking the lead in their respective areas of operation and meeting regularly.

- **Prevention campaigns and dissemination: hang up and keep up—**In consultation with partners, develop national malaria communication strategic plan, mass media plan and develop and produce mass media materials Mass Media Campaign on the use of LLINs (“Catch up” and “Hang up” campaign) prior to and during LLINs mass distribution. A “Keep up’ campaign following the LLIN campaign.

Operational Design:

The 2010-2015 health communication strategic plan (preparation in progress) will highlight the need for malaria control action at all levels of society and support sustained behavior change through a series of specific but interlinked communications campaigns on the key objectives of the strategic plan.

A behavior change communications model that explores the determinants of sustained appropriate actions and includes evidenced-based message development will be used to guide community outreach and mass media activities. Multi-media collaboration will be promoted and media personnel trained in improved information and communication strategies of malaria. The social mobilization component will focus on providing a grassroots social support platform that facilitates behavior change within the household and demand for improved services. The malaria communications strategy will be supported by key advocates who are respected at national, district levels and community opinion leaders from the public and private sectors, faith based organizations and civil society, as well as personalities from the sports and entertainment industries. A coalition of civil society organizations working in malaria will be established to coordinate this aspect of activities and ensure effective dissemination of best practice.

3.4 Operational Research

Operational Research: This will provide the necessary scientific evidence for timely decision making to improve services provided. Research agenda relevant to each strategic approach will be identified in collaboration with research institutions and other RBM partners.

3.4.1 Research

Objective

To strengthen national capacity for developing evidence-based programming.

Outputs

- Research findings influencing policy formulation and decision making.
- Research findings influencing programming such as for IRS, larviciding and other component of Integrated Vector Management (IVM).

Strategies

- Develop a malaria specific research agenda.
- Develop a funding stream and contracting mechanism for programme responsive research
- Timely dissemination of research findings to stakeholders and integration of information in programming.
- Conduct Drug Efficacy Studies every two years.
- Conduct adherence studies every year.
- Entomological studies
- Insecticide susceptibility tests.
- A Knowledge, Attitude and Practice study (KAP).
- Sentinel sites surveillance.
- Malaria Indicator Survey (MIS)
- Pharmacovigilance of antimalarials
- Post market surveillance of malaria medicines

Operational Design

Research for operational and policy purposes is an integral part of programme implementation in order to inform and provide an input into the evaluation process of the programmes. As various technologies and interventions are utilised and applied, the outcomes being generated may not be known nor anticipated and it is essential that there are research areas for follow up. The research aspects have been addressed in various ways by the partner institutions such as Tropical Diseases Research Centre (TDRC) and other research institutions or organisations that carry out socio-economic related research.

The research framework will evolve to take into account contractual mechanisms for the research work that shall be a basis for informing programmatic and policy decision making processes.

3.5 Surveillance, Monitoring and Evaluation

This is necessary at all levels, especially at national and district levels to ensure proper implementation of activities, timely identification of problems to facilitate necessary actions to be taken among other things. Periodic evaluation of the impact of the interventions will be conducted.

Objective 7

To strengthen surveillance, monitoring, evaluation and operational research for effective programme management.

Outputs

- Timely information (reports) dissemination and feedback (national, provincial, district and community).
- Malaria control database (National, District and Community levels).
- M&E tools standardized and integrated into national HMIS system by 2010
- Annual feedback to data providers and relevant authorities to improve future planning
- Annual report detailing what planned strategies have achieved in terms of expected outcomes and impacts.
- Conduct malaria programme reviews.
- Review of strategic plan (mid term and end term)
- M&E plan for malaria control programme

Strategies

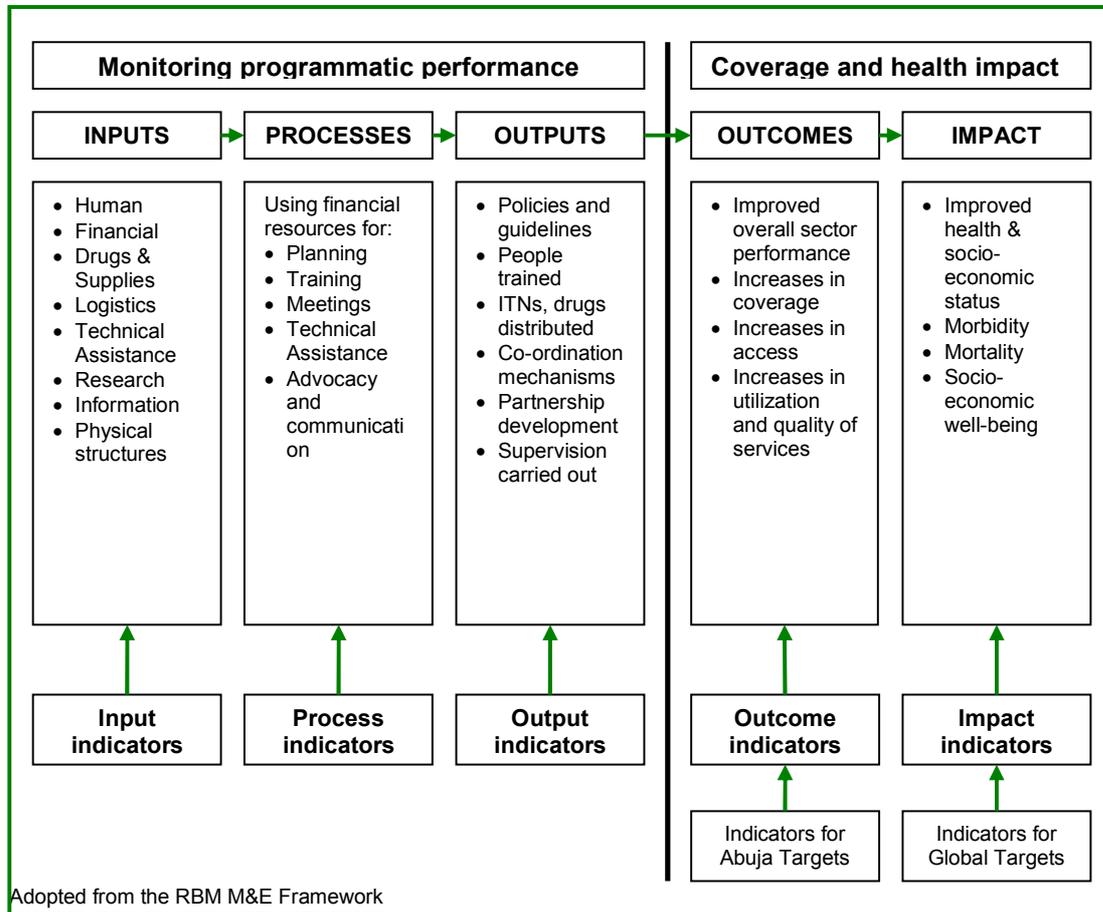
- Provide accountability for implementation according to programme plan.
- Improve programme implementation.
- Trigger rapid adaptation of programme response, particularly in crises or unstable contexts.
- Feed into evaluation and reprogramming.
- Provide information for advocacy for changing policies or strategies.

Operational Design

There is an established and functional Monitoring and Evaluation Unit within the National Malaria Control Programme.-The NMCP has four (4) M&E officers, and has recruited three (3) additional data entry clerks for the expected high volume of data received from the districts. Funding has been made available for formal master's level and short course trainings. The district level team, namely the Malaria Focal Persons have also and will continue to receive organized training in M&E and data collection/management as required.

M&E Unit is responsible for supervising all malaria related data collection and activities throughout the country. They are tasked to review all data forms and reports and take appropriate action. The M&E Unit verify data both when it is received and also during supervision visits in the field. This is done by comparing what is in the register with the summary forms.

The basic malaria M&E framework with the proposed inputs, outputs, processes, outcomes and impact measures:



3.6 Programme Management and implementation

Objective 8

To strengthen management and implementation capacity of the National Malaria Control Programme through effective coordination of partners.

Outputs

- Planning, coordination and monitor implementation of malaria activities.
- Provide technical and managerial leadership with the time available to assume individual responsibility for national malaria control activities.
- Coordinate technical working groups and task forces
- RBM partnership coordination meetings
- Coordinate the development of malaria policies and strategies and their interpretation in line with the national health policies
- Resource mobilisation
- Advocacy at higher political level.

- Ensure adequate staffing and appropriate skill mix at programme level to support service delivery

Strategies

- Meetings and communication interaction among stakeholders.
- Strengthening the malaria programme at the district and provincial levels
- Strengthening resource mobilization capacity to improve malaria control financing
- Strengthening procurement and supply management systems for malaria medicines and commodities.

4 Support Systems

The commitment to scaling-up for impact (SUFI) malaria prevention and control measures as defined in this strategic plan will require that the programme management systems at all levels of the health system are strengthened. The roll of the NMCP as the planning and policy focal point will require support and, in particular, authority and adequate latitude to address key programme components such as human resources, procurement and financial management. The Sierra Leone RBM partnership is growing and the capacity of NMCP to continue to provide leadership is vital.

4.1 Effective Programme Management

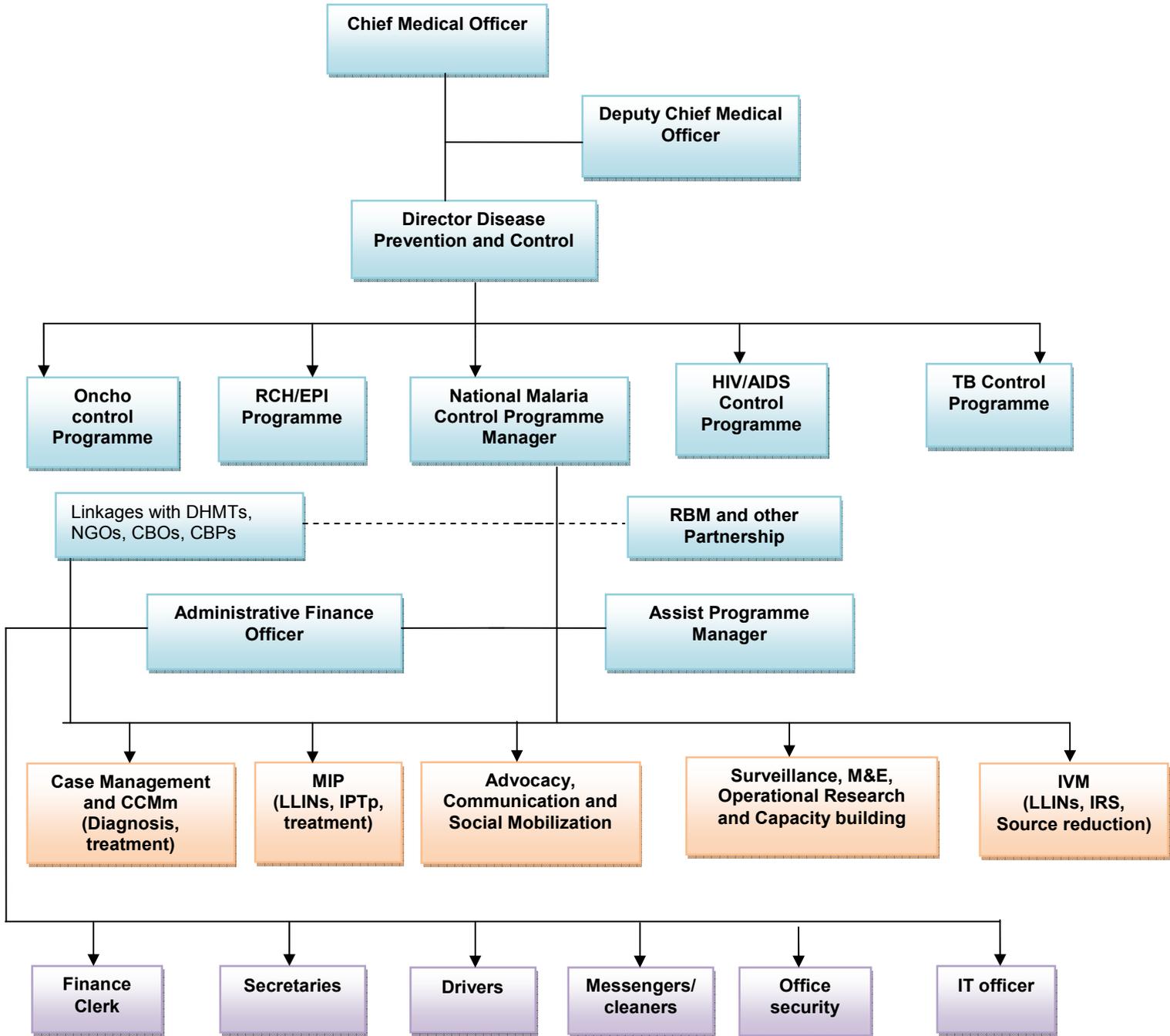
The National Malaria Control Programme structure and human resources

Malaria Control Programme is a unit in the Directorate of Disease Prevention and Control of the Ministry of Health and Sanitation (MOHS) and is a major component of the revised National Health Plan. The NMCP is headed by a Manager supported by a Programme Administrator and ten technical staff, one Finance Officer, twelve support staff and two Secretaries.

The mandate is to plan, facilitate the implementation, coordination, supervision, and monitoring of malaria control activities in an integrated disease control approach. MOHS has a specific budget line item for Malaria that supports the implementation and monitoring of various control interventions such as LLINs, Prompt and appropriate management of cases. To promote partnership, there is a broad based RBM Task Force Committee at the national level while there is District Health Management Team at the sub-national levels.

Institutional framework

Figure 2: NMCP Organogram



Management procedures

With sufficient staff and resources in place the NMCP will increasingly take the lead in expanding malaria control efforts throughout the country as well as to coordinate all activities implemented by the various partners. Additionally the programme will advocate for malaria within the Ministry of Health and Sanitation to ensure malaria control efforts are financially supported where possible and fully integrated into the overall health strategic plan.

Strengthening the capacity of malaria focal points at district level is crucial in order to ensure effective implementation and coordination. These malaria focal points will not only be supported through training, but will also continue to be provided with operational and logistic support such as office space, stationary, computers, motorbikes etc.

4.1.1 Human Resource Development & Management

There is a general shortage of trained manpower at all levels of the health system. In a bid to improve the situation, the Sierra Leone government has embarked on a programme of expanding the current training institutions to produce more qualified trained health staff and is also re-employing staff who have retired from the public service. Government has also created improved salary and incentive schemes.

Strategies:

- Ensure that there is a well established planning and forecasting framework for projecting human capacity needs and related costs across all cadres and levels of the health system.
- Provide planning support to districts to manage temporary staffing pools for rapid scale up of malaria control efforts.
- Invest in health workforce training capacity for improved development of supply of health care providers as well as to professional progress members of the health workforce.

Outputs

- An assessment will be completed of human resource requirements for rapid national scale up and maintenance of malaria control programming for all levels of the health system.
- A health workforce forecasting and costing framework will be in place that provides timely data for planning and budgeting purposes.
- All levels of the health system have staffing plans inclusive of malaria prevention and control related staffing requirements.

Table 4: Malaria Control human resource plan

NO.	AREA OF WORK	STAFFING NEEDS	OCCUPIED	GAP
1	Programme management	4	3	1
2	Case management	5	1	4
3	Integrated Vector Management	6	3	3
4	M&E , Surveillance, Capacity building and Operational Research	8	4	4
5	Malaria in Pregnancy	5	1	4
6	IEC/BCC (communication)	5	2	3
7	Support staff	20	16	4

8	Logistics	5	1	4
9	Malaria commodities (forecasting, quantification)	5	1	4

4.1.2 Financing and Resource Mobilization

The scaling up of malaria programmes intended to reduce the burden of malaria in the country, brings with it, issues of developing and institutionalising the capacities not just for malaria programme, but the health system as a whole, on the methodological, analytical and practical issues relating to the economics and financing of malaria and other health programming. The cost of malaria programme is a function of the targets, level and extent of the interventions. The interventions are themselves a function of the technology and the cost of the technology, especially in relation to effective case management, whereby the medicines and diagnostics may involve considerable costs. Furthermore the mere strategy of scaling up itself, requires more resources and better management of those resources.

The NMCP financial management system will be synchronised with that of the MoHS. All levels of the health system have financial planning and management plans inclusive of malaria prevention and control related requirements. A financial forecasting and costing framework will be in place that provides timely data for planning and budgeting purposes given programme priorities.

4.1.3 Procurement and Supply Chain Management (PSM)

Rapid national scale up of malaria prevention and control efforts will result in additional stress on the national procurement processes and capacity. The three year rapid scale up phase must be supported by procurement capacity that exceeds current government capacity. Advertisement for Procurement agents will be placed and successful agent hired. Commodities will be purchased in a cost-efficient manner, abiding by WHO guidelines and specifications.

The focus on prevention interventions will result in large shipments of non-drug commodities that will require transport, storage and inventory management at all levels of the health system. The ability to efficiently deliver commodities to community delivery points is crucial to effective programme implementation. NMCP will work to identify supply chain management constraints in concert with the hired consultants and develop solutions to constraints in the current system.

4.1.4 Reporting

Following data collection, entry and analysis, the information derived from the data are interpreted and summarized into quarterly and annual reports which the NMCP shares with Roll Back Malaria (RBM) partners. The NMCP shares the reports with RBM stakeholders during the quarterly RBM stakeholders' meetings and yearly ministry of health review meetings. The reports are also used to give feedback to the NMCP, DHMT/Malaria Focal Persons and health workers on their performance with regard to malaria activities. Often this report/feedback is given by way of on-the-job training during supervision visits to the health facilities and/or communities with the desired outcome to improve service provision and utilization.

Global Fund specific technical reports are submitted to the GFATM Principle Recipient(s) who then share it with the Country Coordinating Mechanism (CCM) for their information and action. Other avenues for report sharing are annual sub regional meetings of the Western Africa Regional Network (WARN). Reports from evaluation and research activities such as treatment efficacy studies and pharmacovigilance will be published in relevant peer review journals.

Financial reporting: Ministry of Health and Sanitation receive funding from Government of Sierra Leone through the Ministry of Finance in accordance with financial regulations and budgeting allocations made to the MoHS. Expenditure of funds disbursed to the NMCP are reported to the MoHS which in turn reports to the Ministry of Finance. Funds from other donor sources are reported to MoHS and expenditure of all such funds are controlled in accordance with letters of agreement signed with MoHS and the respective donor agencies. Expenditure of all funds are checked by an internal auditor system as well as professional auditing firms.

4.1.5 Programme Planning and Design

Invest in evidence-based programme planning capacity at all levels of the health system.

Outputs

- Strategic, implementation, business and annual work plans will be developed based on sound scientific and operations data.
- All levels of the health system have access to programme performance data and rationale for best practices from which to make sound programme implementation decisions.

Operational Design

- Annual malaria control programme planning cycle will include comprehensive consultation at the Central and District levels to ensure alignment of resources with programme goals and feasibility of overall programme objectives.

4.2 Coordination and Effective Partnerships

A two year rolling Coordination & Partnership implementation plan will be developed starting in 2010 in order to manage the implementation of the national malaria control programme. At district level, the coordination of malaria activities will be managed by the District Medical Officer and will be as much as possible integrated into the overall health coordination activities.

Nationally, the primary responsibility of coordination and monitoring of malaria related activities and their integration within the overall health sector is the responsibility of the NMCP. There will be two mechanisms of coordination at national level:

Partnership Strengthening and Programme Management Support: The overall goal of this intervention is to improve performance of the NMCP. The private and informal sectors will be encouraged among other partners to play increasing roles in RBM.

Malaria Technical Working Group (TWG)

This will meet at least quarterly and comprise of the technical staff of the Malaria Control Programme and any interested partner. This forum will discuss issues regarding policy and implementation guidelines of all aspects of malaria control, develop and update malaria related policies, strategies and guidelines as needed as well as to review emerging new evidence and make recommendations to the overall RBM coordination forum and the Ministry of Health and Sanitation.

RBM Coordination Committee

At the national level this committee will meet at least twice a year (mid-year and end of year) and brings together all partners from government ministries, civil society and the private sector. This forum will be chaired by the MoHS, Senior officers and discuss progress in malaria control and will take decisions on major issues based on the recommendation of the TWG. Results will be reported to the Directorate of Primary Health Care, MoHS.

5 Overall program objectives and indicators

MALARIA CASE MANAGEMENT INDICATORS

OBJECTIVE	INDICATOR(S) Outcome/coverage	BASELINE [year]	Targets				
			2011	2012	2013	2014	2015
To ensure that 80% of suspected malaria cases are correctly diagnosed by 2015							
	Number of targeted laboratory staff trained in microscopic diagnosis of malaria.	38.5% (2009, NMCP Training records)	42%	50%	65%	75%	80%
	% of targeted health facilities that are providing diagnosis either through RDTs or microscopy.	100%	100%	100%	100%	100%	100%
	% of targeted health facilities with at least 1 trained laboratory technician in microscopic diagnosis of malaria	7.5% (2009, NMCP Training records)	15%	25%	55%	70%	80%
Increase access to prompt and appropriate/effective treatment of <u>confirmed</u> uncomplicated malaria cases at health facility and community level by 2015 from 0% to 50% among patients under fives and from 32.2% to 80% in patients over five.							
	% of confirmed uncomplicated malaria cases in patients U5s treated with ACT within 24 hrs at the health facility level	N/A	30%	50%	60%	70%	80%
	% of confirmed uncomplicated malaria cases in patients over 5 years treated with ACT within 24 hrs at the health facility level	54.2% [Routine Data, 2009]	60%	70%	80%	80%	80%

OBJECTIVE	INDICATOR(S) Outcome/coverage	BASELINE [year]	Targets				
			2011	2012	2013	2014	2015
	% of confirmed uncomplicated malaria cases in patients U5s treated with ACT within 24 hrs at the community level	N/A	10%	25%	55%	65%	80%
	% of confirmed uncomplicated malaria cases in patients above 5 years treated with ACT within 24 hrs at the community level	N/A	10%	25%	55%	65%	80%
	% of uncomplicated malaria cases treated with ACT within 24 hrs at the private sector (health)	N/A	15%	30%	45%	70%	80%
	% of targeted health facility workers trained in case management	48% [Routine Data, 2009]	55%	60%	70%	75%	80%
	% of targeted community health workers trained in malaria case management	62.4% [NMCP training records 2009]	68%	75%	80%	80%	80%
	% of health training institutions (paramedical, medical clinical students) trained in case management	N/A	100%	100%	100%	100%	100%
	% of targeted health facilities without stock-outs of anti-malarial drugs during the last 3 months.	76.6% [Routine Data, 2009]	80%	87%	90%	95%	95%
	Number of quality assurance reports on anti-malaria drugs	N/A	1	1	1	1	1
To reduce the proportion of severe malaria cases by 50% by 2015.							
	% of severe malaria cases treated appropriately at the referral health facility level	N/A	80%	90%	100%	100%	100%

OBJECTIVE	INDICATOR(S) Outcome/coverage	BASELINE [year]	Targets				
			2011	2012	2013	2014	2015
	% of severe malaria cases treated appropriately with pre-referral treatment and referred at the Peripheral Health Unit (PHU) level	N/A	80%	85%	95%	100%	100%
	% of severe malaria cases referred appropriately at the community level	N/A	20%	35%	70%	80%	80%

MULTIPLE DISEASE PREVENTION INDICATORS

OBJECTIVE	INDICATOR(S) Outcome/coverage	BASELINE [year]	Targets				
			2011	2012	2013	2014	2015
Increase access among pregnant women to at least two doses of Intermittent Preventive Treatment (IPTp) at community and health facility levels from 72.3% to 90% by 2015.							
	% of pregnant women receiving at least 2 doses IPT under direct observation during 2 nd /3 rd trimesters.	72.3% [MIS 2010]	80%	85%	85%	90%	90%
	% of targeted health workers trained on the implementation of IPT in targeted ante-natal clinics	48.2% [2006 NMCP Reports]	65%	80%	80%	80%	80%
	% of pregnant women who receive LLIN during Ante-natal clinics	70.3% (2009 Routine data)	78%	80%	80%	80%	80%
To increase the percentage of people having access to at least one prevention method such as Long Lasting Insecticide Treated Nets (LLINs), IRS and or other methods from 25.9% to 80% by end of 2015.							
	% of people having access to at least one of the following: LLINs, IRS and any other vector control methods.	25.9%					

	% of households having at least one LLINs	38.9% [MIS. 2010]	95%	95%	100%	100%	100%
Increase the utilization of at least one prevention method, Long Lasting Insecticide Treated Nets (LLINs), IRS and/or other appropriate methods among the entire population, especially vulnerable groups such as children less than five years and pregnant women, to 80% by 2015.							
	% of children under five who slept under LLINs the previous night.	44.1% [MIS. 2010]	70%	75%	80%	80%	80%
	% of pregnant women who report having slept under LLINs the previous night.	46.8% [MIS. 2010]	75%	78%	80%	80%	80%

INDICATORS FOR ADVOCACY, IEC/BCC INDICATORS

OBJECTIVE	INDICATOR(S) Outcome/coverage	BASELINE [year]	Targets				
			2009	2010	2011	2012	2013
To increase the knowledge, attitude and skills of the general population towards the use of preventive and control measures against malaria from the current levels to 80% by 2015.							
	% of people nationwide with knowledge of at least one method of prevention and control of malaria.	N/A	50%	60%	70%	80%	80%
	% of persons in a household who practice at least one method of malaria prevention and control	N/A	50%	65%	75%	80%	80%

INDICATORS FOR SURVEILLANCE, MONITORING, EVALUATION, CAPACITY BUILDING AND OPERATIONAL RESEARCH

OBJECTIVE	INDICATOR(S) Outcome/coverage	BASELINE [year]	Targets				
			2011	2012	2013	2014	2015
To strengthen surveillance, monitoring, evaluation and operational research for effective programme management.							
	Number of trained M&E staff in place.	2 (2009 NMCP training report)	2	3	4	5	6
	Number of operational research undertaken to strengthen management.	1 (2010, NMCP report)	2	1	1	1	5
	Number of sentinel sites strengthens for monitoring drug efficacy and insecticide resistance.	15 (2009, assessment reports)	15	15	15	15	15
	Strengthen data management system at all levels.	13 (2009 DHIS2)	13	13	13	13	13
	Number of sentinel sites reports regularly.	15 (2009)	15	15	15	15	15
	Number of supportive supervision undertaken in the quarter – from national to district (with availability of reports)	6 (2009 – 2010 NMCP supervision report)	4	4	4	4	4
	Number of supportive supervision undertaken in the month – from district to PHUs (with availability of reports)	19 (2009-2010 DHMT reports)	12	12	12	12	12

	Number of quarterly M&E subcommittee meetings conducted.	1 (2010, NMCP report)	4	4	4	4	4
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INDICATORS FOR SURVEILLANCE, MONITORING, EVALUATION, CAPACITY BUILDING AND OPERATIONAL RESEARCH

To strengthen management and implementation capacity of the National Malaria Control Programme through effective coordination of partners.							
	Number of annual meetings of partners, donors and stakeholders conducted. (with availability of reports)	N/A	1	1	1	1	5
	Number of RBM monthly meetings conducted (with availability of reports)	12 (2009, NMCP reports)	12	12	12	12	12
	Number of mid term evaluation meetings conducted (with availability of reports)	N/A			1		1
	Number of end term evaluation meetings conducted (with availability of reports)	N/A					1

6 Estimated Cost

SDA	ACTIVITY	2011	2012	2013	2014	2015	Total
		42,548,434.6	38,050,764.9	43,079,791.7	59,382,183.8	47,626,176.0	230,687,351.0
Objective 1: To increase prompt and effective treatment of malaria from 50% in 2010 to 80% for all age groups by 2015.							
	EFFECTIVE CASE MANAGEMENT						-
SDA1	Effective Case Management	4,635,692.6	4,704,060.3	5,067,466.7	4,898,582.2	4,706,748.7	24,012,550.4
	Treatment of uncomplicated and severe malaria	2,361,432.9	2,012,136.4	1,808,587.0	1,746,125.9	1,743,149.2	9,671,431.3
	Establish a system of quality assurance and pharmacovigilance.	1,215,600.0	45,000.0	1,212,360.0	45,000.0	1,170,000.0	3,687,960.0
	Severe malaria	73,949.1	57,860.9	125,334.0	64,594.7	78,642.4	400,381.0
	Community case management of malaria	2,444,400.0	11,100.0	1,044,600.0	11,100.0	26,100.0	3,537,300.0
Objective 2: To increase access to the uptake of at least two doses of Intermittent Preventive Treatment (IPTp) among pregnant women at health facility and community levels from 72.3% to 90% by 2015.							
SDA 2	MULTIPLE PREVENTION METHODS						
	Prevention during pregnancy	815,107.8	415,050.3	757,024.6	417,033.9	712,443.2	3,116,659.8
Objective 3: To increase the percentage of people having access to at least one prevention method such as Long Lasting Insecticide Treated Nets (LLINs), IRS and/or other methods from 25.9% to 80% by end of 2015.							
	Integrated Vector Management (IVM) and Environmental management						
	Long lasting insecticide (LLINs) treated nets.	2,150,752.1	2,480,217.1	2,855,459.4	2,897,611.7	2,999,758.8	13,383,799.2
	Organize integrated LLIN Mass campaign distribution	-	-	32,760.0	22,104,235.6	4,886,133.8	27,023,129.4
	IRS) Indoor residual spraying)	22,832,000.0	22,792,500.0	22,847,000.0	22,550,000.0	22,859,000.0	113,880,500.0
	Larviciding	250,000.0	250,000.0	250,000.0	250,000.0	250,000.0	1,250,000.0
	Environmental management	222,000.0	222,000.0	222,000.0	222,000.0	222,000.0	1,110,000.0
Objective 4: To increase the knowledge, attitude and skills of the general population towards the use of preventive and control measures against malaria from the current levels to 80% by 2015.							
SDA 3	INFORMATION, EDUCATION & COMMUNICATION FOR BEHAVIOR CHANGE.	1,397,300.0	1,122,340.0	2,507,500.0	485,900.0	1,622,500.0	7,135,540.0
Objective 5: To strengthen national capacity for developing evidence-based programming.							
SDA 4	RESEARCH	176,000.0	228,500.0	325,500.0	-	2,325,500.0	3,055,500.0
Objective 6: To strengthen surveillance, monitoring, evaluation and operational research for effective programme management.							
SDA 5	SURVEILLANCE, MONITORING, EVALUATION & OPERATIONAL RESEARCH	3,596,000.0	3,596,000.0	3,596,000.0	3,596,000.0	3,596,000.0	17,980,000.0
Objective 7: To strengthen management and implementation capacity of the National Malaria Control Programme through effective coordination of partners.							
SDA 6	MANAGEMENT AND IMPLEMENTATION CAPACITY OF THE NMCP	378,200.0	114,000.0	428,200.0	94,000.0	428,200.0	1,442,600.0

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8 Annex

Annex 1: Logframe for strategic plan

NO	ACTIVITY	TIME LINE				
		YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5
SDA 1	EFFECTIVE CASE MANAGEMENT					
1.1	DIAGNOSIS					
1.1.1	Procurement of Rapid Diagnostic Tests (RDTs)	x	x	x	x	x
1.1.2	Distribution of Rapid Diagnostic Tests (RDTs) from National level through district stores to health facilities/communities	x	x	x	x	x
1.1.3	Printing and distribution of manuals for laboratory microscopy and RDT use	x		x		x
1.1.4	Ensure training/ retraining of Senior medical personnel on basic malaria microscopy and RDT diagnostic.	x		x		x
1.1.5	Ensure training /retraining of laboratory technicians on basic malaria microscopy and RDT diagnostic.	x		x		x
1.1.6	Ensure training /retraining of public and private health care providers on basic malaria microscopy and RDT diagnostic	x		x		x
1.1.7	Provide laboratory equipment and reagent supplies for laboratory diagnosis.	x	x	x	x	x
1.2	TREATMENT OF UNCOMPLICATE AND SEVERE MALARIA					
1.2.1	Procurement of ACTs	x	x	x	x	x
1.2.1a	Artesunate plus Amodiaquine – co-formulation					
1.2.1b	Artemether plus Lumefantrine					
1.2.2	Distribution of ACTs from National level through district stores to health facilities.	x	x	x	x	x
1.2.3	Procurement of Artesunate suppositories for health facilities.	x	x	x	x	x
1.2.4	Distribution of Artesunate suppositories from National level through district stores to health facilities	x	x	x	X	x
1.2.5	Review , print and distribute case management training manuals for all cadres of health service providers (public and private)	x		x		x
1.2.6	Training and retraining of public and private sector health providers (secondary and tertiary) on malaria case management for all cadres and at all levels including IMNCI	x		x		x
1.2.7	Establish a system of quality assurance and pharmacovigilance.					
1.2.7.1	Train and retrain staff on pharmacovigilance	x		x		x
1.2.7.2	Print ADR forms and guidelines	x	x	x	X	x
1.2.7.3	Train and retrain staff on quality assurance	x	x	x	X	x
1.2.7.4	Provide materials for quality assurance test	x		x		x
1.3	SEVERE MALARIA					
1.3.1	Procure parenteral quinine	x	x	x	X	x
1.3.2	Procure oral quinine	x	x	x	X	x
1.3.3	Procure artemether injection	x	x	x	X	x
1.3.4	Procure Artesunate suppositories	x	x	x	X	x
1.3.5	Distribution of quinine (injectable and oral), Artemether injection and artesunate suppositories from National level through district stores to health facilities.	x	x	x	X	x
1.3.6	Provide training /retraining for health workers (public and private) on the recognition and management of severe malaria	x		x		x
1.4	COMMUNITY CASE MANAGEMENT OF MALARIA (CCMm)					

1.4.1	Develop training manuals for community based providers	x				
1.4.2	Printing and distribution of training manuals for community based Providers			x		x
1.4.3	Retrain all Community-Based Providers (CBPs) on use of RDTs, management of uncomplicated malaria, identification and referral of severe cases of malaria and on Behaviour Change Communication.	x		x		x
1.4.4	Provide Medicine storage boxes for newly trained CBPs.	x		x		x
1.4.5	Provide bicycles for CBPs to facilitate their mobility in implementing malaria activities at community level.	x		x		x
1.4.6	Procurement of back pack carrier bags, flashlights and rain gears (suits and boot) for CBPs.	x		x		x
1.4.7	Distribution of training manuals, job aids and supplies (boxes etc..) to all districts.	x		x		
1.4.8	Annual community based providers meetings.	x	x	x	X	x
SDA 2	MULTIPLE PREVENTION METHODS					
2.1	PREVENTION DURING PREGNANCY					
2.1.1	Procure SP for IPT for public and private not for profit health facilities	x				
2.1.2	Distribute SP for IPT from National level through district stores to public sector health and private not for profit health facilities	x				
2.1.3	Support for outreach services for delivering minimum ANC package (IPT, ITN, HMM).	x	x	x	X	x
2.1.4	Reproduce IPT guidelines	x		x		
2.1.5	Train/re-train midwives at private and public hospitals nationwide	x		x		x
2.1.6	Train/re-train MCHA at PHU level	x		x		x
2.1.7	Train/re-train CBPs in the community on malaria in pregnancy and distribution of IPT	x		x		x
2.1.8	Support mothers/womens groups to promote IPT	x	x	x	x	x
2.2.	INTEGRATED VECTOR MANAGEMENT (IVM) AND ENVIROMENTAL MANAGEMENT					
2.2.1	LONG LASTING INSECTICIDE TREATED NETS (LLINs)					
2.2.1.1	Conduct KAP study for malaria prevention and control			x		x
2.2.1.2	Procure LLINs for routine distribution through ANC/EPI services at public and private not for profit health facilities	x	x	x	X	x
2.2.1.3	Distribution from district level to pregnant women through ANC and children through EPI clinics (routine).	x	x	x	X	x
2.3.	ORGANISE INTEGRATED LLIN MASS CAMPAIGN DISTRIBUTION					
2.3.1	Procurement and Handling of LLINs including port clearance for LLINs for integrated mass campaign.				X	
2.3.2	Distribute LLINs for integrated mass campaign from district to chiefdom levels and distribution points.				X	
2.3.3	Warehousing/Storage/Security of LLINs.			x	X	
2.3.4	Macro-planning and establishing coordination structures for campaign and routine delivery at national level.			x	X	
2.3.5	Micro-planning at district and chiefdom level.				X	
2.3.6	Training of health facility staff on LLIN delivery (routine and campaign) /distributors for campaign				X	
2.3.7	Training of supervisors /distributors, independent monitors, community facilitators for campaign and support to routine distribution of LLINs.				X	
2.3.8	Conduct household registration survey			x		
2.3.9	Conduct "hang up" and "keep up" campaign					x
2.3.10	Support community groups to monitor use					x
2.3.11	Technical Assistance to conduct the campaign			x	X	

2.3.12	Monitoring and supervision				X	x
2.3.13	Advocacy and social mobilization				X	x
2.3.15	Conduction of LLINs sub committee meetings				X	
2.3.15	Partnership meetings at all levels		x		X	
2.3.16	Support campaign coordination				X	
2.2.2	INDOOR RESIDUAL SPRAYING (IRS)					
2.2.2.1	Support efficacy bioassay on insecticides		x			
2.2.2.2	Environmental Assessments of breeding sites		x	x	x	x
2.2.2.3	Entomological Survey (vector behavior and parasite capacity, etc.)		x			
2.2.2.4	Procure protective clothing and gloves for spray operators		x			
2.2.2.5	Procure Hudson's sprayer and accessories		x			
2.2.2.6	Procure insecticides		x	x	x	x
2.2.2.7	Training of spray operators on IRS		x			
2.2.2.8	Reproduce IVM training manuals		x			x
2.2.2.9	Printing of data collection tools on IRS		x	x	x	x
2.2.3	LARVICIDING					
2.2.3.1	Procure larvicides		x			
2.2.4	ENVIRONMENTAL MANAGEMENT					
2.2.4.1	Conduct community sensitization campaigns	x	x	x	x	x
2.2.5	INFORMATION, EDUCATION & COMMUNICATION FOR BEHAVIOR CHANGE.					
2.2.5.1	BCC MASS MEDIA					
2.2.5.2	Review and update national malaria communication strategy	x				
2.2.5.3	Printing and dissemination of communication strategy	x		x		x
2.2.5.4	Review/Develop & pre-test of mass media messages/materials	x				
2.2.5.5	Production and dissemination of mass communication pieces and IEC promotional materials (jingles, radio /TV discussion programmes, drama production, T-shirts, caps, billboards, posters, brochures, billboards, car stickers, door stickers)	x		x		x
2.2.5.6	Support to special events (WMD, Mothers day, MAMI Eh Pekin weeks)	x	x	x	x	x
2.2.6	BCC-COMMUNITY OUTREACH					
2.2.6.1	Conduct yearly communication task force quarterly meetings to review and update messages.	x	x	x	x	x
2.2.6.2	Annual review meeting for IEC/BCC community outreach partners at central level.	x	x	x	x	x
2.2.6.3	Advocacy meeting with stakeholders on key malaria interventions at all level.	x	x	x	x	x
2.2.6.4	Produce and distribute Community Self Assessment Materials.		x			
2.2.6.5	A 3 day training on Community Self Assessment.		x			
2.2.6.6	Conduct 1 day session on malaria competence self assessment		x			
2.2.6.7	Conduct open air 1 day sensitization through street theaters. (10 performances per year x 13 districts)	x	x	x	x	x
2.2.6.8	Create school health clubs.		x			
2.2.6.9	Train members of the school health clubs		x			
2.2.6.10	Develop a national peer education training manual		x			
2.2.6.11	Printing and distribution of peer education training manual.		x			
2.2.7	RESEARCH		x			
2.2.7.1	Develop a malaria specific research agenda.					
2.2.7.2	Set up a malaria research unit within the NMCP.					
2.2.7.2.1	Research Coordinator		x			

2.2.7.2.2	Secretary		x			
2.2.7.3	Establish a network of researchers in malaria		x			
2.2.7.4	Conduct Drug Efficacy Studies every two years.			x		x
2.2.7.5	Conduct adherence studies every two years.			x		x
2.2.7.6	Entomological studies.		x			
2.2.7.7	Insecticide susceptibility tests.		x	x	x	x
2.2.7.8	Community Case Management of malaria (CCMm) follow-up survey.		x			
2.2.7.9	Conduct Malaria Indicator Survey					x
2.2.7.10	Conduct operational research on provision of artesunate suppositories		x			
2.2.7.11	Pharmacovigilance of antimalarials	x	x	x	x	x
2.2.7.12	Post market surveillance of malaria medicines	x	x	x	x	x
2.2.8	SURVEILLANCE, MONITORING, EVALUATION & OPERATIONAL RESEARCH					
2.2.8.1	Print appropriate data collection tools for central district and community.	x	x	x	x	x
2.2.8.2	Conduct monthly M&E subcommittee meeting (data review).	x	x	x	x	x
2.2.8.3	Monitoring and supportive supervision of malaria programme activities					
	From central to district	x	x	x	x	x
	From district to PHU	x	x	x	x	x
	From PHU to community	x	x	x	x	x
2.2.8.4	Support quarterly review meetings on programme performance at central, district and community levels.	x	x	x	x	x
2.2.9	MANAGEMENT AND IMPLEMENTATION CAPACITY OF THE NMCP					
2.2.9.1	Train malaria focal point persons at the provincial and district levels on malaria control and programme management	x	x	x	x	x
2.2.9.2	Provide office equipment and operational support for national, provincial and district programme offices	x	x	x	x	x
2.2.9.3	Support programme mid term review			x		
2.2.9.4	Support programme end term review					x
2.2.9.5	Conduct programme review meeting (quarterly)	x	x	x	x	x
2.2.9.6	Organise annual meetings of partners, donors and stakeholders.	x	x	x	x	x
2.2.9.7	Conduct monthly RBM partners meetings	x	x	x	x	x
2.2.9.8	Coordinate the development of malaria policies and strategies and their interpretation in line with the national health policies					x

Annex 2: Distribution of Health Personnel by Provider.

Specialty.	No. of Specialists	No. of Specialists	Established Vacancies.	%Shortfall
	Required.	In-Post.	(Gap).	
Ob/Gynaecologists	26	5	21	81%
Paediatricians	30	2	28	93%
General Practitioners	150	115	35	23%
Physician Specialists	26	3	23	88%
Surgeon Specialists	26	5	21	81%
Radiologists	30	1	29	97%
Ophthalmologists	22	1	21	95%
ENT Specialists	8	1	7	88%
Nephrologists	8	0	8	100%
Anaesthesiologists	12	1	11	92%
Neurosurgeons	8	0	8	100%
Gastroenterologists	8	0	8	100%
Neurologists	8	0	8	100%
Psychiatrists	12	0	12	100%
Paediatric Nurses	72	0	72	100%
Peri-operative Nurses	44	0	44	100%
ICU Nurses	20	2	18	90%
Midwives	300	111	189	63%
State Registered Nurses	600	245	355	59%
SECHNs	1,500	635	865	58%
MCH Aides	1,500	825	675	45%
Pharmacy Technicians	300	80	220	73%
Laboratory Technicians	150	14	136	91%
Comm. Health Officers	300	132	168	56%
Environmental Health Officers	300	135	165	55%
Vector Controllers	75	30	45	60%
Ophthalmic Nurses	30	20	10	33%
Refractionists	30	0	30	100%
Cataract Surgeons	12	2	10	83%
Anaesthetic Nurses	34	20	14	41%

Source: MOHS HRD Up-Dated Survey September, 2006.

Annex 3: Number of Health Facilities in Sierra Leone

District	Government					Mission		Private		NGO	Total
	CHC	CHP	MCHP	Clinics	Hospital	Hospital	Clinic	Hospital	Clinic	Clinic	
Bo	23	12	50	1	1	1	6	0	11	3	108
Bombali	16	20	49	0	2	2	3	1	3	0	96
Bonthe	9	9	20	0	2	1	2	0	0	2	45
Kailahun	9	34	12	0	2	1	1	0	0	0	59
Kambia	11	8	31	0	1	0	2	0	0	1	54
Kenema	21	17	63	1	2	1	2	0	3	1	111
Koinadugu	12	6	33	1	1	0	0	0	0	1	54
Kono	11	15	46	0	1	0	1	0	4	4	82
Moyamba	12	6	56	1	2	0	5	0	0	1	83
Port Loko	11	21	55	0	2	1	4	0	1	0	95
Pujehun	14	10	25	0	1	0	0	0	0	0	50
Tonkolili	9	8	65	0	1	2	1	0	0	1	87
Western Area	20	10	15	7	12	2	11	2	23	3	105
Total	178	176	520	11	30	11	38	2	45	17	1028

Source: Revised National PHC Handbook, June 2004

Annex 4: Key international malaria control goals and targets

Key International Malaria Control Goals and Targets RBM Partnership
To halve malaria-associated mortality by 2010 and again by 2015
Millennium Development Goals
<u>Goal 2: Achieving universal primary education</u> Malaria is a leading source of illnesses and absenteeism in school age children and teachers. It adversely affects education by impeding school enrolment, attendance, cognition, and learning.
<u>Goal 4: Reducing child mortality</u> Malaria is a leading cause of child mortality in endemic areas.
<u>Goal 5: Improving maternal health</u> Malaria causes anemia in pregnant women and low birth weight.
<u>Goal 6: Combating HIV/AIDS, malaria, and other diseases</u> Target 8: to have halted by 2015 and begun to reverse the incidence of malaria and other major diseases. Malaria morbidity and mortality are increasing in Africa.
<u>Goal 8: Developing a global partnership for development, including as a target the provision of access to affordable essential drugs</u> There is a lack of access to affordable essential drugs for malaria
Abuja Targets by 2005
<ul style="list-style-type: none">• At least 80% of those suffering from malaria should be able to access and use correct, affordable and appropriate treatment within 24 hours of onset of symptoms.• At least 80% of those at risk of malaria, particularly pregnant women and children under 5, should benefit from suitable personal and community protective measures such as ITNs.• At least 80% of all pregnant women who are at risk of malaria, especially those in their first pregnancies should receive IPT