National

MALARIA

Strategic Plan

2014 – 2020

National Malaria Elimination Programme
Federal Ministry of Health,
Abuja,

Nigeria.

Foreword

Malaria control interventions in Nigeria have evolved over the years with a lot of laudable strides made in the implementation of Malaria control activities in Nigeria. In the last 5 years, about 58 million LLINs were distributed as part of the universal LLIN campaigns to protect an estimated 29 million households, access to free and/or highly subsidized ACTs improved significantly both in the public and the private sector, and newer tools for diagnosis and prevention of malaria were deployed in the country guided through evidences from research. Newer approaches have been used to channel our focused interventions through the health system down to the community level thereby increasing access to malaria commodities and services for all. My Ministry has relentlessly worked on developing a Strategic document which speaks to our desire to better the quality of lives by translating strategies into proper service delivery which will impact positively on the health system and invariably on the health status of the society.

The National Malaria Strategic Plan (2014 - 2020) will ensure transition from malaria control to malaria elimination in Nigeria. The nation faces a promising future with regard to the reduction of the ill-health and death caused by malaria leading eventually to a complete elimination of malaria. In consonance with this the Federal Executive Council has approved the re-designation of the National Malaria Control Programme as **National Malaria Elimination Programme** (NMEP).

Resources for malaria control activities have improved in the last few years, but a substantial gap still exists for successful programme implementation. There is a renewed zeal on the part of the Government to plough more resources for malaria interventions towards sustaining our gains, achieving desirable results and improving the health status of Nigerians. I am happy to note that in the last few years, this zeal has been translated to a partial change in the resource clime for the better. This is attributable to collaboration with our development partners in addition to a steady increase in Government's financing in the last few years. At the same time, the domestic contribution (i.e. National, State/LG) has grown steadily over the period 2009-2011, both in absolute terms and in terms of percentage of overall funding. In order to achieve universal coverage targets, the Federal and State governments committed an increasing amount of their own resources to malaria control, increasing the overall financing (domestic and external) for malaria programming to 75% by 2015. Nigeria therefore exceeds current Global Fund requirements on counterpart financing. The robust partnership in the malaria programme has provided a veritable platform for ensuring that we hold the programme with accountability in our planning, management and operational activities.

Our traditional partners such as WHO, the Global Fund to fight HIV and AIDS, TB and Malaria, World bank, DFID, USAID, UNICEF and other RBM partners have continually supported this drive to improve the health system and ensure that the malaria trend is reversed by the end of the seven year strategic plan period.

The thrust of the 2014-2020 Strategic plan will be based on the following principles;

- Robust multiple prevention strategies driven by significant scale-up of IRS, universal coverage of LLIN and strategic use of larval source management (larviciding and environmental management). Use of IPT with SP for pregnant women will be invigorated while also strategically deploying seasonal malaria chemoprevention (SMC).
- Providing universal prompt access to effective case management with emphasis on parasite confirmation before treatment.

The delivery systems for these interventions will lean heavily on community structures using the integrated community case management (iCCM) and the promotion of an enabling environment for the private sector participation in the production, distribution and use of antimalarial intervention using a business-investment public- private partnership model. Deliberate efforts will be intensified to increase uptake of the various interventions through different Behavioural Change Communications (BCC) channels, Operations research, improved surveillance and information management.

This Strategic Plan expressed Federal Government's commitment in moving from malaria control to malaria elimination as encapsulated in the vision towards a **Malaria free Nation**. I am not unmindful of challenges that may be encountered in achieving the lofty objectives set out in this plan, my Ministry is, nevertheless, committed to providing the leadership and impetus for achieving these objectives.

While reassuring the General Public that Government is determined to bring remarkable improvements in health care services and ultimately improve their health status, I wish to thank all our Partners and other Stakeholders who contributed immensely to this process.

Thank you.

Professor C. O. Onyebuchi Chukwu
Honourable Minster of Health

Acknowledgements

The current Malaria Strategic Plan 2014-2020 is anchored on a greater determination to speed up the actualization of malaria elimination in Nigeria. Consequently it is a product of widely experienced consultants, national malaria officers and partners. It has also benefitted from inputs from experts as well as a broad spectrum of stakeholders in the malaria programme environment. The malaria strategic plan development process has been both tasking and rewarding. We wish to express our gratitude to the Honourable Minister of Health, Professor. C.O. Onyebuchi Chukwu, who approved, encouraged and guided the process. Similarly our thanks go to the Permanent Secretary, Ambassador Sani Bala as well as the Director of Public Health, Dr. Bridget Okoeguale for their leadership and commitment to the development of this plan. Our thanks go to all the Departments of the Federal Ministry of Health especially the Directors and staff of Department of Planning, Research and Statistics, Department of Hospital Services and the Department of Family Health for participating actively in the process of development of the plan.

I also want to thank the Malaria Partnership in Nigeria who supported the development of the plan. Particular thanks go to DFID /SuNMaP, USAID /MAPS, the World Bank, John Snow Incorporated, the World Health Organization and Global Fund for providing both technical and funding support for the MSP development process. I must acknowledge the invaluable contributions and commitment demonstrated by all consultants especially the lead Prof. Olugbenga Mokuolu who's managerial and technical abilities have been brought to

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I sincerely thank all the members of the Technical Working Group (TWG), the subcommittees of the TWG, the NMEP heads of Branches and Staff of the National Malaria Elimination Programme for their priceless contributions.

Dr Nnenna Ezeigwe

National Coordinator

National Malaria Elimination Programme

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List of Acronyms

Acronym	Meaning
ACOMIN	Association of Civil Society Organizations in Malaria, Immunization and Nutrition
ACSM	Advocacy Communication and Social Mobilization
ACT	Artemisinin based Combination Therapy
AL	Artemether – Lumefantrine
AMFm	Affordable Medicines Facility – Malaria
An	Anopheles
ANC	Ante Natal Care
AQ	Amodiaquine
ARFH	Association for Reproductive and Family Health
ARI	Acute Respiratory Infections
ATM	AIDS Tuberculosis and Malaria
BCC	Behaviour Change Communication
CBOs	Community Based Organizations
CCM	Country Coordination Mechanism (GFATM)
CDR	Crude Death Rate
CHEW	Community Health Extension Worker
CHO	Community Health Officer
CIDA	Canadian International Development Agency
C-IMCI	Community-Integrated Management of Childhood Illnesses
CMS	Central Medical Store
CORPs	Community Oriented Resource Persons
CSOs	Civil Society Organisations
DDT	Dichlorodiphenyl – Trichloroethane
DFID	Department for International Development (UK)
DHIS	District Health Information System
DODWRPN	Department of Defense Walter Reed Program Nigeria
DOT	Directly Observed Treatment
DPH	Department of Public Health
DPHC	Department of Primary Health Care
DPRS	Department of Planning, Research and Statistics
DQA	Data Quality Audits
DTET	Drug Therapeutic Efficacy Test
EIRs	Entomological Inoculation Rates
EPI	Expanded Programme on Immunization
FBO	Faith Based Organizations
FCT	Federal Capital Territory
FGD	Focus Group Discussion
FHI 360	Family Health International 360
FMOH	Federal Ministry of Health

GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, TB Malaria
GIS	Geographic Information Systems
H/H	Household
HF	Health Facility
HIV/AIDS	Human Immunodeficiency Virus / Acquired Immune Deficiency Syndrome
HMM	Home Management of Malaria
HOD	Head of Department
HSB	Health Seeking Behaviour
HSP	Health System Plan
HW	Health Worker
iCCM	Integrated Community Case Management
IDIS	In-Depth Interviews
IDSR	Integrated Disease Surveillance and Response
IEC	Information, Education, Communication
IHVN	Institute of Human Virology, Nigeria
IMCI	Integrated Management of Childhood Illnesses
IPC	Inter Personal Communication
IPCC	Inter Personal Communication and Counselling
IPT	Intermittent Preventive Treatment
IPTc	Intermittent Preventive Treatment in children
IPTp	Intermittent Preventive Treatment in Pregnancy
IRS	Indoor Residual Spraying
ISS	Integrated Supportive Supervision
ITN	Insecticide Treated Net
ITTCL	Integrated Test, Treat, Cure and Larviciding
IVM	Integrated Vector Management
JHPIEGO	JHPIEGO (an affiliate of Johns Hopkins University)
JICA	Japan International Corporation Agency
JSI	John Snow Incorporation
KPMG	KPMG (Consulting firm for audit, tax and accounting)
LGA	Local Government Area
LLIN	Long-lasting Insecticidal Net
LQAS	Lot Quality Assurance Sampling
LSM	Larval Source Management
M & E	Monitoring and Evaluation
MAPS	Malaria Action Programme for States
MCH	Maternal and Child Health
MCLS	Malaria Commodity Logistics System
MDGs	Millennium Development Goals
MiP	Malaria in Pregnancy
MIS	Malaria Indicator Survey
MOH	Ministry of Health
MPR	Malaria Programme Review

MTN	Mobile Telecommunication Network
NAFDAC	National Agency for Food and Drug Administration and Control
NAPMED	Nigeria Association of Medicine Dealers
NCC	Nigerian Communications Commission
NDHS	National Demographic Health Survey
NGO	Non-Governmental Organization
NHMIS	National Health Management Information System
NHSDP	National Health Sector Development Plan
NIFAA	Nigerian Inter-Faith Action Association
NMCP	National Malaria Control Programme
NMEF	National Monitoring and Evaluation Framework
NMEP	National Malaria Elimination Programme
NMOD	Nigeria Ministry of Defense
NMP	National Malaria Programme
NMSP	National Malaria Strategic Plan
NPC	National Population Commission
NPHCDA	National Primary Health Care Development Agency
NPI	National Programme on Immunization
PCR	Polymerase Chain Reaction
PHC	Primary Health Care
PHCC	Primary Health Care Coordinator
PLC	Public Liability Company
PMI	President's Malaria Initiative (US)
PMV	Patent Medicine Vendors
POA	Plan of Action
PPMVs	Proprietary Patent Medicine Vendors
PPP	Public Private Partnership
PR	Principal Recipient
PSM	Procurement and Supply chain Management
QA	Quality Assurance
QC	Quality Control
RaCE	Rapid Access Expansion Programme
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
RH	Reproductive Health
RMC	Role Model Caregivers
RMM	Role Model Mothers
SBCC C	Social and Behaviour Change Communication
SFH	Society for Family Health
SHI	Sustainable Healthcare Initiative
SMC	Seasonal Malaria Chemoprevention
SMS	Short Message Service
SP	Sulfadoxine/Pyrimethamine
SR	Sub-Recipient (Global Fund)

SUFI	Scaling – up for Impact
SuNMaP	Support for National Malaria Programme
TB	Tuberculosis
TOR	Terms of Reference
TruScan	TruScan (handheld device)
TWG	Technical Working Group
UNDP	United Nation Development Programme
UNICEF	United National Children's Fund
USAID	United States Agency for International Development
USD	US-Dollar
USG	United States Government
WB	World Bank
WHO	World Health Organization
WHOPES	WHO Pesticide Evaluation Scheme
WHR	World Health Report
WMR	World Malaria Report
YGC	Yakubu Gowon Centre

Executive Summary

Introduction

Substantial malaria control investments have been made in Nigeria in the last decade in the context of the National Malaria Strategic Plans, 2001-2005, 2006-2010 and 2009-2013. The 2014-2020 Malaria Strategic Plan presents a major scale up of key interventions, draws from a robust evidence base and the experience in previous years. The Strategic Plan, which spans over a 7-year period, aims to achieve pre elimination status and reduction of malaria related deaths to zero by 2020 in Nigeria. The section below summarizes the background, goal, objectives, strategic directions, resources and performance framework required to implement the Malaria Strategic Plan.

Background

Malaria is endemic in Nigeria with all year transmission and 97 percent of the population at risk. *Plasmodium falciparum* is the predominant parasite species, mainly transmitted by *Anopheles gambiae S.S., An. funestus* and *An. arabiensis*. Prior to 2010, available data was insufficient to clearly micro stratify the country's malaria epidemiological profile. However, the 2010 Nigeria Malaria Indicators Survey (NMIS) revealed that malaria parasite prevalence is still high, with an average parasite prevalence of 42% among children under five years of age with zonal variations ranging from 27.6% in the South-east to 50.3% in the South-west zone.

Thus, malaria remains an important cause of morbidity and mortality in Nigeria. Nigerian accounts for 32% of the global estimate of 655,000 malaria deaths annually in 2010 [WMR, 2012]. With an estimated population of 160 million, Nigeria has a large population at risk of malaria. However, children under five years of age and pregnant women are the most vulnerable to illness and death from malaria infection in Nigeria.

The NMSP 2009-2013 delivered malaria control through three core interventions; prevention of malaria transmission through Integrated Vector Management (IVM) strategy; prompt diagnosis and adequate treatment of clinical cases at all levels and in all sectors of health care; and prevention and treatment of malaria in pregnancy. This strategy achieved increased resources from government and Partners with increased supply availability of antimalaria commodities, distribution of over 60 million long lasting insecticidal nets with massive influx of resources from donors to achieve universal access and universal coverage.

Recent information has provided evidence of a progress divergence of in-country variation in malaria endemicity [Snow et al, 2012]. Bayesian model-based geo-statistical methods were used to interpolate in space and time, age-corrected malaria point prevalence data in children 2-10 years old, to provide a prediction of malaria risk across Nigeria for the years 2000, 2005 and 2010 based on the effects of temperature, rainfall, distance to major rivers and urbanization [SNOW et al, 2012]. As at 2010, 85% of Nigerians lived in areas supporting mesoendemic transmission, 15% lived under conditions of hyper-holoendemicity and areas within FCT Abuja, Adamawa and Borno States support hypoendemicity. The recent MARA mapping (2000-2010) have shown some changes in the parasite risk patterns in the past decade with up to 19 of the 36 states and the federal capital falling within the national target of a 50% reduction in morbidity below year 2000. Efforts must be made to safe guard the gains and mitigate against loss in momentum, while further research is required to understand the driver of change of malaria prevalence. The trends identified indicate the need to carefully target interventions to address local needs in addition to

strengthening surveillance in anticipation of changes in the epidemiology of malaria over the course of this strategic plan.

Steps in the Development of the 2014-2020 Strategic Plan

A participatory approach that is fully aligned with the WHO recommendations for development of strategic plans was adopted. There was initial widespread input from states that formed the cannel of the Malaria Programme Review. Recommendations from the MPR formed a significant basis for the derivation of the objectives of the NMSP. Following the entry meeting of the thematic consultants; there were initial sub-committees set up to develop further specific objective areas. The output from the sub-committees led to the development of the zero draft of the document. There was then another broad-based stakeholder workshop, including representation from states and partners, to build consensus on the strategies, actions and performance targets. Several such meetings were organized at different stages of the document. Lastly, a full meeting of the technical working group reviewed and finalized the NMSP 2014-20.

Costing of the strategic plan was done using the One-Health Planning and Costing tool following orientation processes that was conducted for the NMSP Team.

Vision, Mission, Goal and Objectives

The ***Vision*** is to have a **MALARIA FREE NIGERIA.**

The ***Mission*** is to provide equitable, comprehensive, cost effective, efficient and quality malaria control services ensuring transparency, accountability, client satisfaction, community ownership and partnership.

The **Goal** is to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero

The **Objectives** of this Strategic Plan are;

1. ***To ensure at least 80% of targeted population utilizes appropriate preventive measures by 2020***: Core technical strategies here include expanding universal access to insecticide treated materials. This will involve sustained mass distribution of Long Lasting Insecticidal Nets (LLINs), significantly scaling up Indoor Residual Spraying (IRS) and expanding larval source management (larviciding and environmental management). There will also be support for Intermittent Preventive Therapy (IPTp) and Seasonal Malaria Chemoprevention (SMC).
2. ***To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020***: This will be through a massive scale-up in the availability of facilities for parasitological confirmation (RDT and/or Microscopy) at all levels (including the private sector and community systems) of health care delivery in the country. Policies will be updated as necessary and there will be systems in place to ensure quality of diagnostic products.
3. ***To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020;*** This will be achieved by promoting availability of appropriate antimalarial medicines through free, subsidized or commercial systems. Malaria Management will also be delivered through the community systems using malaria case management as the driver for the iCCM and Ward Minimum Health Package. The secondary and tertiary level health facilities will be strengthened to deliver on the treatment objectives of severe malaria while the community level intervention will focus in pre-referral treatment and improved referral systems.

4. ***To provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment measures as necessary by 2020*:** Evidence based innovative behavioural change communication messages delivered through multiple platforms and targeting both health workers and the general public will drive the efforts at pursuing the attainment of this objective. There will be advocacy to policy makers and stakeholders while social mobilization will be highly promoted.

5. ***To ensure the timely availability of appropriate antimalarial medicines and commodities required for prevention and treatment of malaria in Nigeria wherever they are needed by 2018:*** Forecasting and quantification will be strengthened, while efforts is made to ensure effective and efficient distributions systems that rides on completeness of the logistic management information systems. There will be also be partnerships with key government agencies to strengthen and update malaria related regulatory policies and in the conduct of pharmacovigilance.

6. ***At least 80% of health facilities in all LGAs report routinely on malaria by 2020*:** This will be with stronger emphasis on the use of ICT platforms and deployment of the DHIS and HMIS. The use of SMS platforms for feeding information from the peripheral facilities to central systems will be introduced. Supervision and coordination activities to enhance completeness of reporting from facilities will be strengthened. Capacity on M and E will emphasise the special pre-elimination needs in surveillance and reporting. A robust M and E framework has been developed to guide the scheduling of data collection processes.

7. ***To strengthen governance and coordination of all stakeholders for effective program implementation towards an "A" rating by 2018 on a standardized scorecard.*** Building on the existing gains of the partnership arrangement, Programme management will promote human capacity development, ensure public, private partnerships in facilitating availability and use of antimalarial commodities and strengthening of governance with the use of electronic dash board.

Implementation Plan

The Implementation of this plan aims at attaining universal coverage levels for major interventions over the first 5years and consolidating on these levels over the next two years of the Strategic plan in order to achieve malaria pre-elimination status. Thus implementation will be based on adherence to the 3 ones; health sector leadership- responsiveness to broader health system context and tailoring priority investments on high impact interventions responsive to the epidemiological context. Transparency and broad stakeholder participation in the operationalization of this plan, with efforts made to ensure good governance, transparent recruitment of implementing partners (IPs); equitable access to malaria control resources; and performance monitoring and mutual accountability. There will be institutional strengthening for the NMEP at the National and State levels regarding planning, coordination, partnership and surveillance, especially within the context of anticipated changes in malaria epidemiology. Provision is made for the conduct of two Malaria Programme Reviews thereby providing opportunity for review of some of the strategies with emerging or evolving issues.

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

Budget

The cost of the NMSP 2014 – 2020 is US$ **4,133, 110,170.** This consists of Programme Cost of $348,944,127; Drug, Commodities and Supplies of $3,553,248,668 and Health System Cost for Logistics (Drug & Commodity distribution) of $230,917,375.

1 Introduction

1.1 Background

The National Malaria Strategy Plan (NMSP) 2009-2013 put in place a robust system for malaria control through three core interventions, which were; prevention of malaria transmission through Integrated Vector Management (IVM) strategy; prompt diagnosis and adequate treatment of clinical cases at all levels and in all sectors of health care; and prevention and treatment of malaria in pregnancy. There was a significant increase in resource availability from the Government and Partners over the period of this Strategic plan with appreciable successes in the core intervention areas. However with the expiration of the term of this strategic plan it became necessary to have another Strategic Plan that will be aligned with the global desire of eliminating the disease as a public health problem.

Preparatory to the development of the National Malaria Strategic Plan 2014-2020, a number of activities were carried out with the intent that the relevant evidence will be available to properly guide the current cycle of the NMSP;

- First, a description of the epidemiology of malaria to guide the planning of control in Nigeria (Snow RW *et al*, 2013) was produced. Despite the limitations regarding the quality of data available for use, the document describes an overall decline in the malaria prevalence, a change in the seasonality of malaria, and more importantly provided a map of the current burden of malaria across the country.
- Second, a Malaria Programme Review (MPR) was conducted November 2012 through April 2013. This exercise identified achievements and challenges, analyzed strengths, weaknesses, opportunities and threats and recommendations were made towards improving performance of the malaria programme.
- Third, a partners' entry meeting was held from 4th -6th June 2013 to build the capacity of stakeholders (NMEP and relevant partners) and to provide guidance in the development of the Malaria Strategic Plan 2014-2020. This meeting provided broad guidelines for the development of the NMSP and articulated its Vision statement, Mission statements and Objectives.

The 2014-2020 NMSP is based on lessons learnt from the experiences gained on malaria control over the last 10-years. The plan also emphasizes the need for bold and new initiatives for actions to significantly impact on malaria disease burden and take Nigeria to pre-elimination status.

1.2 Country Profile

Nigeria lies on the West coast of Africa with a surface area of 923,708 sq. kilometres lying between latitudes 4° and 14°N and longitudes 2° and 15°E. It borders Cameroon in the East, Benin on the West, Chad to the North- East, Niger to the North and on the south by the Atlantic Ocean. The topography of its landmass is diverse with its terrain consisting of lowlands in the South, plateaus and hills towards the Centre, mountains in the South East and plains in the North. The highest point is Chappal Waddi at 2,419m in Taraba State in the North Eastern Region of the Country. The Rivers Niger and Benue run from the North-Western and North-Eastern parts of the Country respectively with their confluence in Lokoja from which it runs to the Delta region in the South where it communicates with the Atlantic Ocean. Its population size was 169,304,554 based on the 2006 National Population Census, with 41% of the population below 15 years of age, 55% between the ages 15-64 and only 4% in the age group 65 years and above. The country has experienced a decline in fertility, falling from 5.4 births per woman in 1988 to 3.8 in 2005-6. The crude birth rate (CBR) and the crude death rate (CDR) were reported in the 2006 Census to be 43 births per

thousand population, while 18 deaths per thousand population were reported in the World Population Data Sheet of 2007. The Census reported life expectancy at birth at 45 years while the World Health Report (WHR) of 2006 reported a life expectancy of 36 years.

The economy of Nigeria, Africa's largest oil producer, will probably expand 6.8% this year, according to the National Bureau of Statistics. The economy is forecast to grow at 7.3% in 2014, 6.9% in 2015 and 6.6% in 2016. • Inflation will average 9.8% 2012. • At the year end of January 2013, Nigeria's foreign direct investments (FDI) totalled $5 billion. Blue-chip corporations and conglomerates from countries such as the USA, Canada, The Netherlands and Turkey have vigorously increased their investment stakes in the country. According to Central Bank, the 3Q 2012 investments amounted to $4.6 billion in portfolio investments. • Nigeria is undergoing rapid changes in its agriculture sector. The Agricultural Transformation Action Plan is intended to cut Nigeria's dependency on food imports, industrialise food production particularly in poorer regions in rural Nigeria and stimulate private sector investment throughout Nigeria. The key socio-demographic characteristics is shown in Table below:

Table 1-1: Key Socio- Economic and Demographic Information

Variable/Indicator	Value	Source
Population (2013)	169,304,554	National Population Commission Census of 2006 (Projected)
Crude Birth Rate, 2011	40	UNICEF, 2011
Crude Death Rate per 1000, 2011	14	UNICEF, 2011
Total Fertility Rate	5	UNICEF, 2011
Under-5 mortality rate (U5MR), 2011	124	UNICEF, 2011
Infant mortality rate (under 1), 2011	78	UNICEF, 2011
Neonatal mortality rate 2011	39	UNICEF, 2011
Maternal Mortality Ratio 2007 – 2012	550	UNICEF, 2011
Antenatal Attendance (%) At least Once 2007-2012	58	UNICEF, 2011
GNI per capita (US$) 2011	1200	UNICEF, 2011
Life expectancy at birth (years) 2011	52	UNICEF, 2011
Total adult literacy rate (%) 2007-2011*	61	UNICEF, 2011
Primary school net enrolment ratio (%) 2008-2011*	58	UNICEF, 2011

1.2.1 Climate

The climate varies from arid in the North, with annual rains of 600-1,000 mm lasting for 3-4 months, to a predominantly humid weather in the South with an annual average of 1,300-1,800 mm (and in some coastal areas up to 2,500 mm) lasting for 9-12 months. Rainfall is highest in the Northern parts of the country between the months of June and September and from March to November in the Southern parts, which usually coincides with the peak incidence of malaria. The country's vegetation changes from Sahel Savannah in the far North followed by Sudan Savannah merging into Guinea Savannah in the Middle Belt, then rain forest in the South and mangrove forest in the coastal areas. As a result of increases in rainfall in Nigeria and neighbouring countries, flooding has now become a frequent occurrence in all parts of the country, most especially in riverine communities and the Niger Delta Regions.

1.2.2 Demography

Nigeria is the most populous country in Africa with a population of 169 million (projected from 2006 National Population); the Housing Census for 2013 reported a population of 140 million with a population density of 156 per square kilometre. Children under five years of age constitute 20% of the population and the proportion of the population pregnant during one year is put at 5%. Majority of the people are farmers living in rural areas where there exists a deficiency of access to infrastructure and health facilities. There is a strong rural to urban drift resulting in pressure on existing facilities in the urban centres. The infant mortality rate is 78 per 1000 live births and under five mortality rates is 124 per 1000 live births (World Bank, 2011). Maternal mortality ratio in 2008-12 was 630/100,000 live births (World Bank, 2012).

1.2.3 Economy

Agriculture is the major source of livelihood for most of the population who are subsistence farmers. The nation's major source of income is crude oil exports. Other sources of income include mining and export of cash crops. Nigeria is currently classified as a lower middle income country by the World Bank. In 2012, the Gross Domestic Product (GDP) was 262.6 billion USD; while GDP per capita was 1,555 USD, with a GDP growth rate of 6.6% (World Bank, 2012). About 54.7% of the population live below the poverty line of less than $1.25 per day (2007). Most health expenses are borne by families and individuals as "out of pocket" expenses while limited health insurance services are available, especially to civil servants and some rural communities.

1.2.4 Infrastructure

The nation has a road network linking the urban cities and most rural communities. The internal road network remains a challenge, as most of the roads linking smaller towns and villages are in poor condition, which negatively affects the accessibility of peripheral health facilities in terms of both the provision of essential supplies and the ability of people to reach the facilities.

Rail facilities that have recently been revitalised exist connecting the Northern and Southern parts of the country. Transportation via the waterways also occurs. A well-developed international and domestic air transport infrastructure exists with airports in most states of the country. Telecommunication is well developed with an estimated (June 2013) 120,362,218 active phone lines (NCC) with 99.7% of these lines being mobile lines with a potential to serve as a valuable tool for reaching out rapidly to majority of the population. Internet infrastructure is rapidly developing in urban and rural communities with mobile internet facilities being increasingly available in rural communities.

1.2.5 Language

English is the official language although there are over 250 different languages spoken, the commonest being Hausa, Ibo and Yoruba.

1.2.6 Administration

Nigeria is made up of six geopolitical zones and 36 States and the Federal Capital Territory as represented in the map below (Figure 1). There are 774 Local Government Areas and 9,555 wards. A three tier government is the system in place with Federal, State and Local Governments.

Figure 1-1: Map of Nigeria showing States and Geopolitical Regions

1.3 Health System and Health Status of the Population

The Nigerian Constitution provides the administrative context for the organization of health services. It places health on the Concurrent Legislative List (Section 17(a) of the Part II of the Second Schedule of the Nigerian Constitution, 1999). The public health system of Nigeria is divided into three tiers, each of which is associated with one of the administrative levels of government.

The Federal Government is responsible for tertiary health care and also formulates health policies through the Federal Ministry of Health. This level provides specialized services through the Teaching Hospitals, Federal Medical Centres, Specialist Hospitals and Medical Research Institutes. ***The State Governments*** provide secondary health care through the state General Hospitals. ***The Local Governments Areas*** (LGAs) are generally responsible for primary health care services. Both the state and LGAs receive resources from the federation account, a percentage of which is expected to be dedicated to health. The Private Health sector is registered and supervised by the government. The private sector NGOs and local communities provide considerable services at all levels of health care.

Federal and State Ministries of Health also have agencies and parastatals under them such as National Primary Health Care Development Agency (NPHCDA), National Agency for Food, Drug Administration and Control (NAFDAC), and State Health Management Boards etc. In the same regard, the LGAs have the Ward Health Committees, Village Health Committees, Private Health Care Providers, and Traditional and Alternative Health Care Providers.

1.3.1 The Tertiary Level

The Tertiary Health Care is at the apex of the health care delivery. It consists of the highly specialized services, which are provided by the teaching hospitals and other specialist hospitals providing care for specific groups of patients. These health facilities are largely provided by the

Federal Government with every state having at least one Teaching Hospital or a Federal Medical Centre. A number of states and (to a much lesser extent) private hospitals are also providing tertiary health care.

From the Federal Ministry of Health directory of health facilities in Nigeria there were a total of 34,173 health facilities in Nigeria as at December 2011. Of this number 30,098 (88.1%) are primary health care (PHC) facilities, 3992(11.7%) are secondary level facilities while 83 (0.2%) are tertiary facilities. More than 66% of the facilities are (public) government owned (FMOH, 2012). The table below shows the distribution of the health facilities by levels and ownership. With this distribution there are on the average 22 health facilities per 100,000 populations in Nigeria.

Table 1-2: Health Facilities in Nigeria by Type and Ownership, 2012

Type	Ownership		Total
	Public	Private	
Primary	21,808	8,290	30,098
Secondary	969	3,023	3,992
Tertiary	73	10	83
Total	**22,850**	**11,323**	**34,173**

1.3.2 Secondary Health Care Level

This level provides specialized services to patients referred from Primary health care level through outpatient services of hospitals for medical, surgical, paediatrics, obstetric and gynaecological patients and community health services. Secondary health care is available at the LGAs as defined by the authorities of the state. Supportive services such as laboratory, diagnostics, blood bank, rehabilitation and physiotherapy are provided at the Secondary health care level.

1.3.3 Primary health care level

The Primary Health Care level is designed to provide general health services of a preventive, curative, promotive and rehabilitative nature to the population. It is the entry point of the health care system. Provision of care at this level is largely the responsibility of the local governments with support of the state Ministries of Health and within the overall National Health Policy.

Health facilities are static or mobile structures where different types of health services are provided by various categories of health workers. These health facilities are in different groups and called different names depending on the structure (building), staffing, equipment, services rendered and by ownership. Many terminologies have been used over the years including dispensaries, health clinics, health centres, primary health centres, maternities, health posts and comprehensive health centres. However based on the Ward Health System, the three recognised facility types are; (1) ***Health Post*** (2) ***Primary Health Clinic*** and (3) ***Primary Health Care Centres***. (NPHCDA, 2011).

Most private sector practitioners are located at this level but placed directly under the supervision of the Private Hospital Regulatory and Licencing Board. The Primary Health Facilities are designed to serve catchment area populations of about 10,000-30,000 people.

Managerial System for a Primary Health Centre at Ward level consist of the Ward Development Committee (WDC) co-managing with health workers and LGA PHC department. The composition, roles and responsibilities are well defined in the NPHCDA Manual on Minimum Standards for PHC in Nigeria

1.3.4 Private Health System

The private health care system consists of formal tertiary, secondary, PHC health facilities, pharmacies as well as informal PMV and drug sellers. The private sector comprising the not-for-profit and for-profit health facilities provides health care for a substantial proportion of the population. They account for 40% of registered health facilities especially at the primary and secondary health care levels. The informal private sector consists of about 36,000 PMV (2002 estimates) and an unknown number of drug sellers.

Services provided by the private sector are either partially subsidised as in the case of some missionary health facilities, or not at all as in the case of individually owned clinics/hospitals. Their distribution therefore tends to follow a greater density in urban areas compared to rural areas except the informal PMVs and drug sellers (who often times) establish in rural areas as much as in urban areas.

Sixty-four percent of the population is within 20km from a hospital. Urban areas are better served, as 78% of households are within 20km of a hospital compared to 58% in rural areas. Seventy-one percent of households are within 5 km of a PHC facility. Again urban areas are better served with 80% of households in urban areas being within 5km of a PHC facility whereas 66% have similar access in rural areas. Thirty-nine percent of households live in communities visited by a community health worker (CHEW) at least once a month. The average is similar in urban areas (43%) as in rural areas (38%). (FMOH 2001 and the World Bank 2005).

An assessment carried out by the FMOH that included a household survey found that 56% of respondents who were ill in the previous two weeks purchased drugs from a private seller compared to 35% who obtained drugs from a public health facility. A relevant finding in the 2003 NDHS, among children aged under five years who experienced symptoms of fever and or an acute respiratory infection (ARI), treatment was sought from a health facility or provider for 31.4% of them (NDHS 2003).

1.4 Institutional framework for malaria control

The National Malaria Control Programme (now NMEP) is domiciled in the National Malaria and Vector Control Division, which is a division in the Department of Public Health of the Federal Ministry of Health Nigeria and has the leading role of overseeing and coordinating efforts to control malaria.

1.4.1 Federal Ministry of Health

The Federal Ministry of Health has the mandate to develop and implement policies and programmes as well as undertake other necessary actions that will strengthen the national health system to be able to deliver effective, efficient, quality and affordable health services that foster improved health status of Nigerians to serve as the engine for the pursuit of accelerated economic growth and sustained development. Its vision is to reduce the morbidity and mortality due to communicable diseases to the barest minimum, reverse the increasing prevalence of non-communicable diseases, meet global targets on the elimination and eradication of diseases, and significantly increase the life expectancy and quality of life of Nigerians. One of its major priority areas is malaria which it recognises as a scourge with its attendant contribution to morbidity and mortality. The Public Health Department of the Ministry is responsible for the administration of the malaria control programme.

1.4.2 National Malaria Elimination Programme

The NMEP is mandated to formulate and facilitate policy and guidelines, coordinate the activities of partners and other stakeholders on malaria control activities, provide technical support to implementing bodies including states, LGAs and stakeholders, mobilize resources, monitor and

evaluate progress and outcomes in malaria control efforts. In order to fulfil its role, NMEP is organized into seven branches as shown below with other supporting units and entities that provide financial, technical and human resource support as may be required.

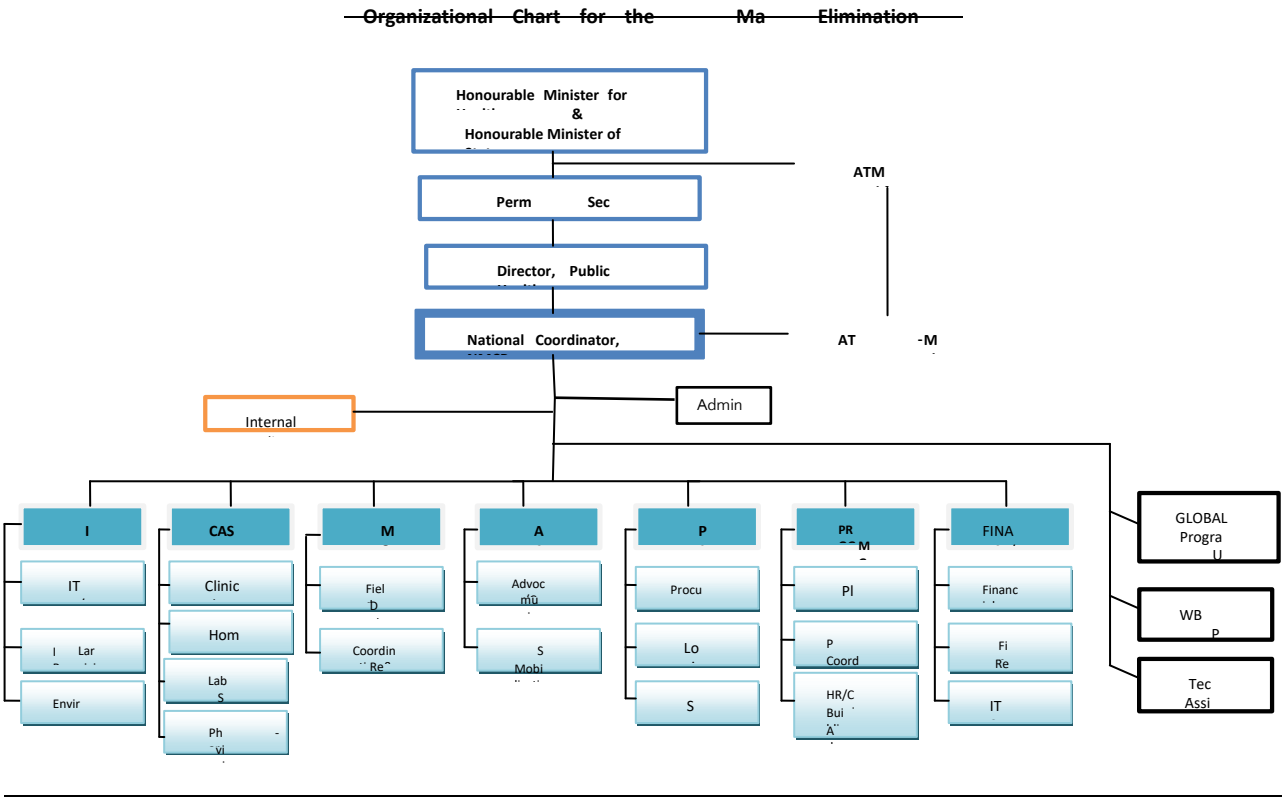

Figure 1-2 Organizational Chart of the National Malaria Elimination Programme

For effective internal coordination within the NMEP, the organizational structure of the National Malaria Control Program was reviewed by KPMG on the request of the Federal Ministry of Health in other to develop a functional system and improve human and institutional capacities required for the expanding role of NMEP. A revised organogram was recommended (see National Coordination Framework) providing opportunity for the Deputy Coordinator, Technical Services and Deputy Coordinator, Programme Support. The revised organogram is yet to be implemented. The terms of reference (ToR) of the various branches of NMEP were also revised at the stakeholders' workshop with inputs from the representatives of the FMOH, the National Coordinator, branch heads and branch representatives, development partners, representatives of state programme managers and representative of KPMG

1.5 Roll Back Malaria Partnership in Nigeria

The Roll Back Malaria (RBM) was founded in November, 1998 to mobilize resources and actions against Malaria globally. Following the meeting of the African Heads of State in Abuja on April, 2001 and the pledged to halve malaria burden in Africa by 2010 (Abuja Declaration), the RBM Partners in Nigeria has provided significant financial resources, commodities and technical assistance to the National Malaria Control Programme. The RBM Partners have supported Nigeria to develop fundable proposals and secured significant funding from Global Fund for AIDS,

Tuberculosis and Malaria (GFATM), World Bank (WB), Presidential Malaria Initiative (PMI-USAID), United Kingdom's Department for International Development (DFID), United Nation agencies (WHO and UNICEF), etc.

In addition to an increasing government budget at national and state levels towards malaria control, the country also receives support from from the RBM Partners. Nigeria was a recipient of Round 2, Round 4 and Round 8 GFATM grants for the sums of US$20,994,149, US$74,542,287 and US$285,711,275 respectively. The country is presently implementing the Round 8 GF grant. There are several other on-going projects supporting malaria control including the World Bank Booster Project, DFID funded SuNMaP Project and the USAID funded MAPS project.

In line with the Paris Declaration on Aid Effectiveness, the country adopted the 3-Ones principle for the delivery of all the intervention activities and developed a common Strategic Plan, 2009 – 2013 endorsed by all partners. The National Malaria Strategic Plan, 2009 - 2013 promoted adoption of common implementation strategies and the coordination of the administration of resource envelope to ensure complementarity as exemplified by the LLINs distribution through the mass campaigns.

The private sector also have a proven track record in supporting malaria programming in Nigeria, For example, the private sector manufacturers, importers and distributors of pharmaceutical products and other Malaria commodities have participated in the development of national guidelines on pre-packaging of ACTs and the campaign against the marketing and use of artemisinin-derived oral monotherapies. They also participated in the supply and delivery of LLINs during the nationwide campaign.

1.5.1 Coordination of Malaria Programme

Coordination of all Malaria activities in Nigeria is the responsibility of the National Malaria Elimination Programme with oversight function from the Federal Ministry of Health. The State Malaria Programmes provide leadership for state level coordination with support from NMEP while coordination at the community and local levels is the responsibility of the Primary Health Care department of the LGAs.

1.5.2 Technical Working Group (TWG) - MALARIA

At the national level and under the chairmanship of the Honourable Minister for Health, the ATM Task Force coordinates the activities of the HIV & AIDS, Malaria and Tuberculosis Control Programmes of the Federal Ministry of Health. This task force is made operational through three Technical Working Groups (TWG) namely TWG HIV & AIDS, TWG TB and TWG Malaria.

The Technical Working Group Malaria is the highest coordination platform for the Malaria Control Partners and other stakeholders at the national level. This central coordination platform is supported by six technical subcommittees as show in the diagram below.

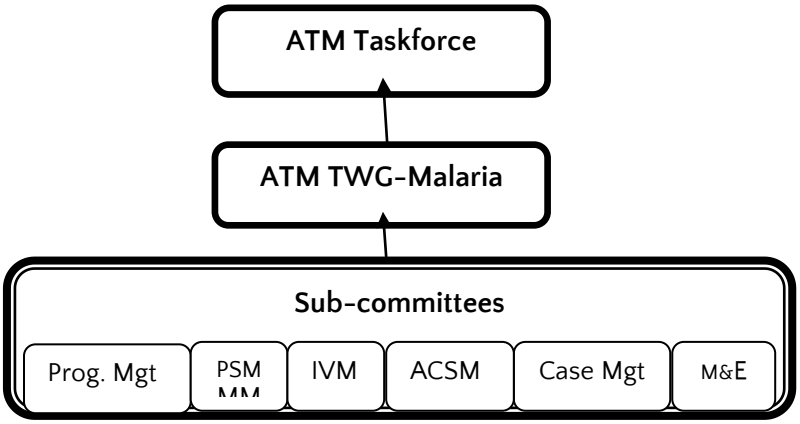

Figure 1-3 ATM Coordination

The National Malaria Elimination Programme is the secretariat of the TWG Malaria while the branches of NMEP serve as the secretariat for the six technical sub-committees.

The key mandates of the TWG Malaria include:

- Jointly assess the status of national programme in conjunction with NMEP in accordance with result framework and ascertain the programme status / performance on an ongoing basis
- Support NMEP and other Malaria Stakeholders to identify areas for improvement and provide needed financial, technical and material support for the agreed option for improvement on the national response.
- Support NMEP to design and implement operation research and use the findings suggests options for improvement in policy formulation and implementation.
- Resources mobilization from public, private and other stakeholders based on approved plan and budget by national programme.
- Regularly explore areas of collaboration and harmonization with other disease TWGs and Health Systems Group of FMOH
- Provide regular reports to ATM Task Force of the FMoH

Coordination at the sub-national level is reported to be weak due to various reasons ranging from capacity issues to inadequate resources. A national Coordination Framework was developed to provide necessary guidance on State and LGA level coordination and this should be adapted by states based on their peculiarities.

1.5.3 Malaria Partners' Forum

The Partners' Forum at the national level consists of the senior officials of the National Malaria Control Programme and the Roll Back Malaria (RBM) partners including the private sector. The forum provides an opportunity to mobilize resources and share lessons. It meets quarterly and all activities within the quarter are reported at the meeting.

Membership includes:

- National Coordinator, Head of Branches and key officials of FMoH-NMEP
- Multilateral Organizations – WHO, UNICEF, World Bank, UNDP, etc
- Bilateral Organization – PMI-USAID, DFID, CIDA, JICA, etc
- Implementing Agencies - FHI 360, ARFH, IHVN, Jhepigo, Malaria Consortium, YGC, SFH, SHI, Carter Center, etc.
- Representative of umbrella CSOs – ACOMIN, NIFAA, etc
- Private Sector - Nigerian Bottling Company, Nigeria LNG, Novartis Pharmaceuticals, Chevron, Exxon Mobil, Stanbic Bank, Access Bank, Shell, Syngenta, Guinness, Nigerian Breweries, Unilever Nig. PLC, MTN, Dangote group, Harvestfield, Vestergard Fransen, Syngenta/Patemglobal, etc.

1.5.3.1 Terms of Reference for the Malaria Partners' Forum

- Provide opportunities for leveraging financial and technical support to government authorities at Federal, State and LGA in the area of planning implementation and evaluation of RBM intervention.

- Provide and disseminate relevant information on RBM interventions including report of activities, research findings and other relevant information by NMEP
- Receive feedback from Partners on key activities carried out within the period.
- Facilitate effective collaboration among the government and donor Agencies for achieving a common national goal.
- Provide and share information on integration effort of the Federal Ministry of Health in the context of integrated disease control to ensure the efficient use of limited resources.
- Support the effort of government through advocacy in the mobilization of internal and external resources for implementation of RBM activities at all levels.
- Encourage Partners commitment to the operationlization of the 'three ones'.
- Perform any other function as may be determined by the forum with approval of NMEP from time to time

1.5.4 Planning and Reporting

The national strategies and targets of the NMSP can only be achieved through a well-articulated and evidence informed annual operational plan that details contribution from all sources and promotes efficiency. The annual operational planning process of NMEP should be improved upon to reflect as much as possible government and implementing partners' resources across all thematic areas. Implementation, monitoring and reporting should also be jointly conducted to improve programmatic efficiency and accountability. NMEP should develop mechanism to improve planning and reporting periodically at the sub-national levels

1.6 Malaria Programme and the Health System

The National Health Policy promulgated in 1988 was revised in 2004. The overall policy objective is to strengthen the national health system such that it will provide effective, efficient, quality, accessible and affordable health services that will improve the health status of Nigerians through the accelerated achievement of the health-related Millennium Development Goals. It recognises the importance of malaria as a major public health issue. There is a cross-linkage between the overall health policy targets and those of the malaria control/elimination. In addition and owing to the vertical relationships in levels of malaria control interventions, malaria control/elimination targets at the various levels of health care delivery lends itself as a catalyst for strengthening the health system. For each of the levels of health care, from community to the tertiary level, attainment the focus of malaria intervention is expected to have a knock-off effect on the health system as illustrated in Figure 1-4.

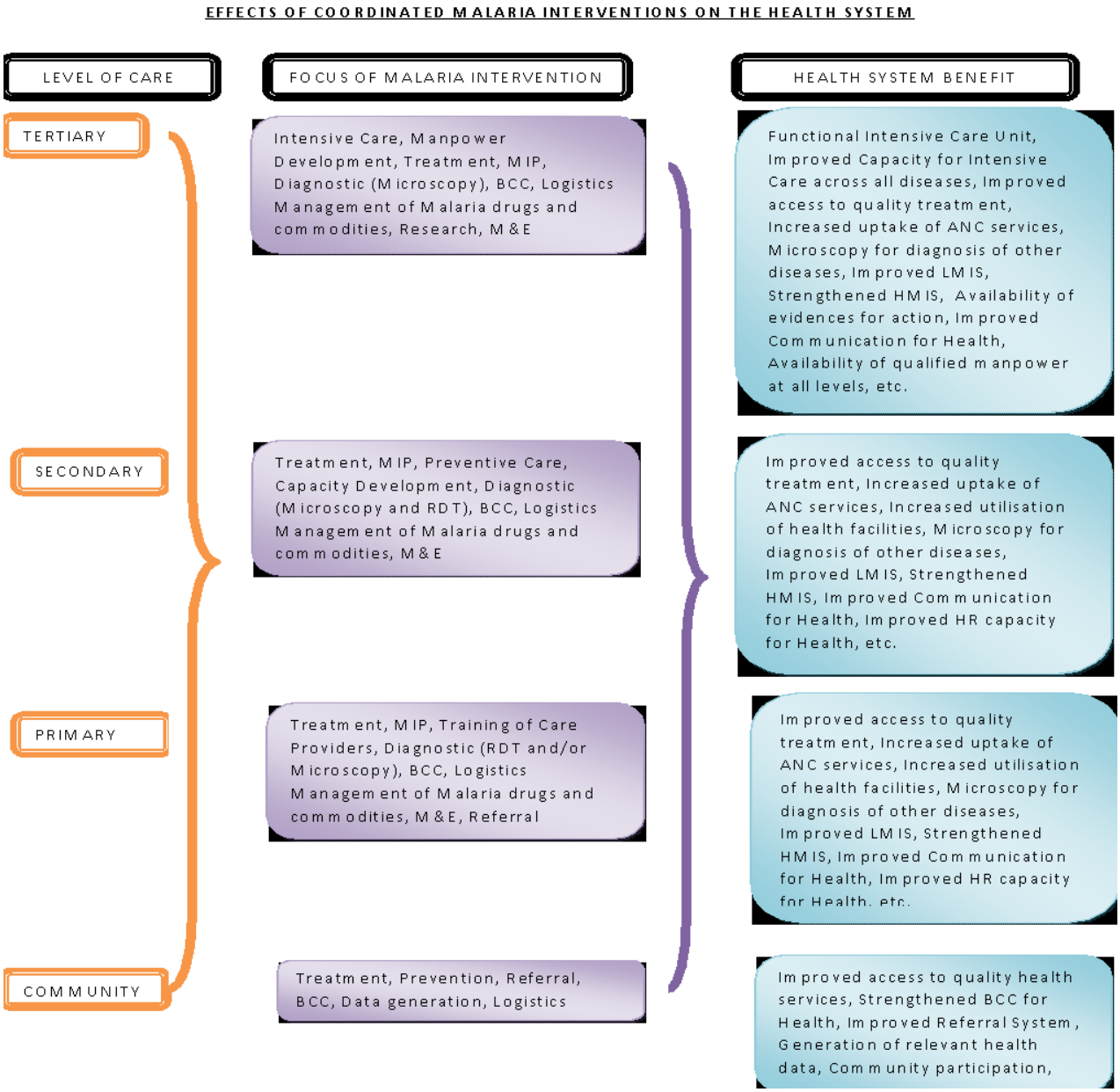

Figure 1-4: Effects of Coordinated malaria Interventions on the Health System

2 Malaria in Nigeria

2.1 Malaria Transmission

Hitherto, malaria transmission and risk had been judged to be high across the country; it was estimated that approximately 30% of the population lived in areas of high to very high transmission intensity and 67% in the moderate transmission zone [NMSP 2009]. However, recent information has provided evidence of a progress divergence of in-country variation in malaria endemicity [Snow *et al*, 2013][1]. Bayesian model-based geo-statistical methods were used to interpolate in space and time, age-corrected malaria point prevalence data in children 2-10 years old, to provide a prediction of malaria risk across Nigeria for the years 2000, 2005 and 2010 (Figure 2.1) based on the effects of temperature, rainfall, distance to major rivers and urbanization [Snow *et al*, 2013]. As at 2010, 85% of Nigerians lived in areas supporting mesoendemic transmission, 15% lived under conditions of hyper-holoendemicity and areas within FCT Abuja, Adamawa and Borno States support hypoendemicity (Figure 2.2).

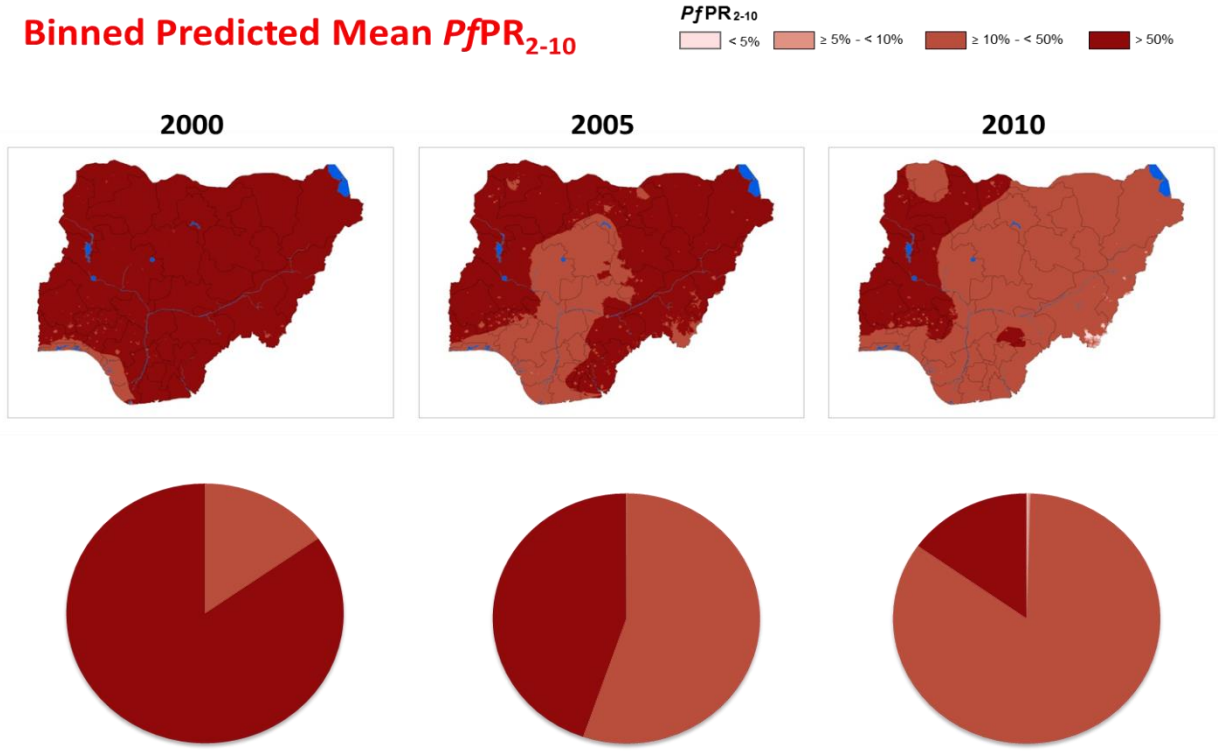

Figure 2-1: Malaria risk across Nigeria for the years 2000, 2005 and 2010

[1]Snow RW, Mundia CW, Kinyoki D, Linard C, Baba ES, Adegbe E, Ozor L, Mohamed AB, Amratia P, Kabaria CW, Noor AM (2013). *A description of the epidemiology of malaria to guide the planning of control in Nigeria*. Report prepared by SunMAP, WHO-Country Office Nigeria and the KEMRI-Wellcome Trust-University of Oxford Programme, Kenya for the Federal National Malaria Control Programme, Abuja, Nigeria. February 2013.

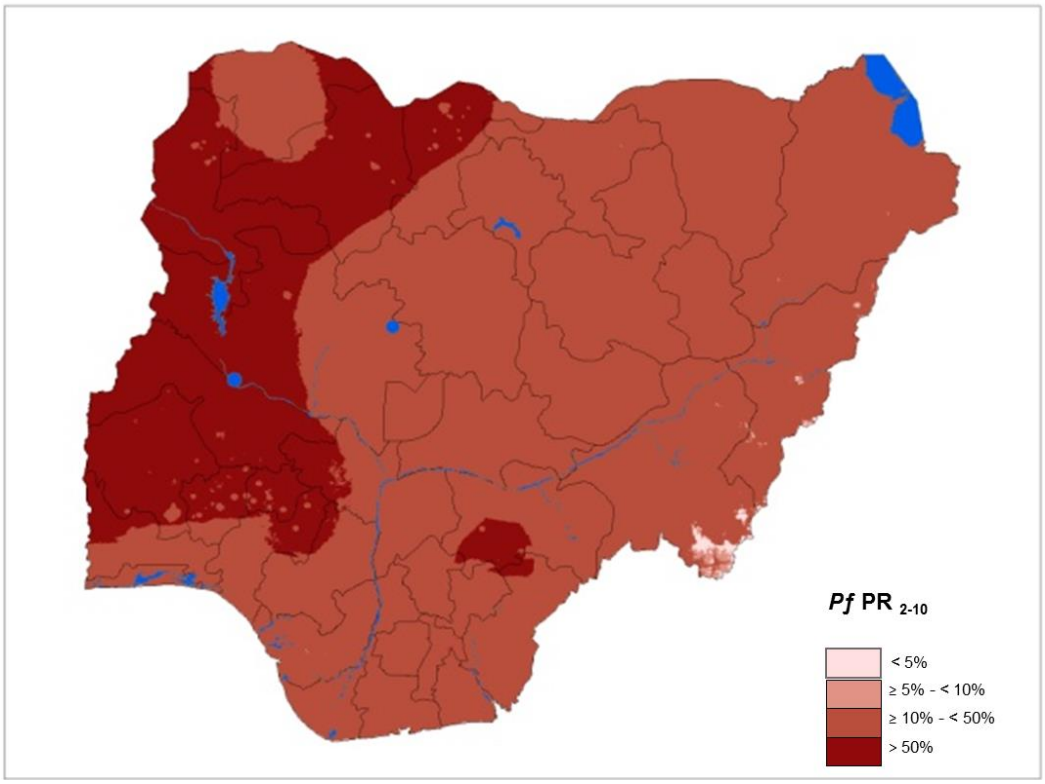

Figure 2-2: Malaria Endemicity in Nigeria

2.2 Malaria parasites and vectors

The dominant species of malaria parasites in Nigeria is *Plasmodium falciparum* (≈95%); the most pathogenic of the five human malaria parasites, which also occur as mixed species with other *Plasmodium* species. The other non-falciparum species species are: *P. malariae* (9.8%) and *P. ovale* (5.8%) and mixed infections (10.4%).[3]

In Nigeria, the major malaria vectors include the *Anopheles gambiae* complex (*An. gambiae s.s.* and *An. arabiensis*) and the *Anopheles funestus* group. These three species are widely distributed across the country, from the mangrove and coastal areas of the south to the Sahel savannah of the far north. *An. gambiae* and *An. arabiensis* typically breeds in sunlit, shallow, temporary bodies of fresh water such as ground depressions, puddles, pools and hoof prints. *An. funestus* breeds in permanent or semi-permanent body of fresh water with emergent vegetation; such was swamps, large ponds which sustains malaria transmission during dry season. *An. Melas, another member of the Anopheles gambiae* complex, breeds in the mangrove and coastal areas of the south-south and southwestern zones.

The molecular forms (M and S) of *An. gambiae s.s.* have been found in Nigeria with no apparent relationship to the ecological transition from savannah to forest zones, but there is no additional information on spatial distribution. *An. gambiae s.s.* feeds primarily on humans (anthropophagic) and rest indoors (endophilic) with sporozoite rates ranging from 0.2 to 11.8%. *An. Arabiensis* feeds on humans and other animals and mainly rests outdoors (exophilic) with sporozoite rates of 0-4.8%. *An. funestus* feed on both humans and other animals predominate in the forest, rest indoors, with overall infection rates of 1.2 to 2.3%. Where the major malaria vectors co-exist, infection rate

was always higher in *An. gambiae s.s.* followed by *An. funestus* and *An. arabiensis*. In most cases, sporozoite infections in the wet season were maintained by *An. gambiae s.s*. and *An. arabiensis* in the dry season. Transmission studies show that the entomological inoculation rates (EIR) range from 18-145 infective bites per man per year for *An. gambiae* in the north central and 12-54 infective bites per man per year for *An. funestus* in the southwest. The EIRs estimated for *An. arabiensis* ranged between 0-12.4

With the scaling up of vector control there should be evidence of declining vector densities and transmission, but as LLIN and IRS coverage increases, behavioral adaptation by malaria vectors remains a future possibility.

Insecticide resistance in the main malaria vector (*An. gambiae s.s.)* has been reported from Kano, Sokoto, Kaduna and Zaria in the northern area, Abeokuta, Ibadan and Lagos in the southwest zone based on independent research. There are no records or published data for the South-South and South East zone of the country. The spectrum of insecticide resistance in *Anopheles gambiae s.s.* include DDT, carbamate, and pyrethroid. Dieldrin and DDT resistance was reported in *An. funestus* and pyrethroid resistance only for *An. Arabiensis*.

2.3 Malaria Morbidity and Mortality Trends

Malaria is still a major cause of morbidity and mortality in Nigeria. Along with two other countries, India and Democratic Republic of Congo, Nigeria accounted for over 40% of the estimated total of malaria cases and deaths globally in 2010 [WHO, 2012][2]. With an estimated population of 160 million, Nigeria has a large population at risk of malaria. However, children under five years of age and pregnant women are the most vulnerable to illness and death from malaria infection in Nigeria.

Malaria has been reported to account for 60% of outpatient visits and 30% of hospitalizations among children under five years of age in Nigeria [MIS, 2010]. The National Malaria Indicator Survey of 2010 showed that Slide Positivity Rate was 42% in children under-five [NPC et al, 2012][3]. In the preceding year, it was reported that the percentage of children under age five with fever and/or convulsions in the two weeks preceding the National Demographic and Health Survey was 32.6% [NPC and ICF Macro, 2009][4]. Until recently, when diagnostic facilities were scaled up and policies were updated, malaria prevalence (and treatment) was based on fever cases among the population at risk. The 32.6% reported in 2009, represented a slight increase over the 31.6% reported as the percentage of children under age five with fever in the two weeks preceding the NDHS in 2003 [NPC and ORC Marco, 2004][5]. As shown in Figures 2.1-2.2, recent geo-statistical modelling of the available body of data enabled the mapping of malaria intensity in Nigeria, not only in terms of geographical spread but also of time trends [Snow et al, 2013]. The maps showed a progressive downward change in the endemicity of malaria over a ten-year period (2000-2010). The downward trend in the endemicity of malaria is arguably due to the increase in malaria control interventions that the country has witnessed, in particular over the past decade of the Roll Back Malaria campaign. The insidous changes in the environmental conditions, and the add-on effects of other interventions and programmes on the National health systems, are also plausible explanations in these observed trend in malaria morbidity.

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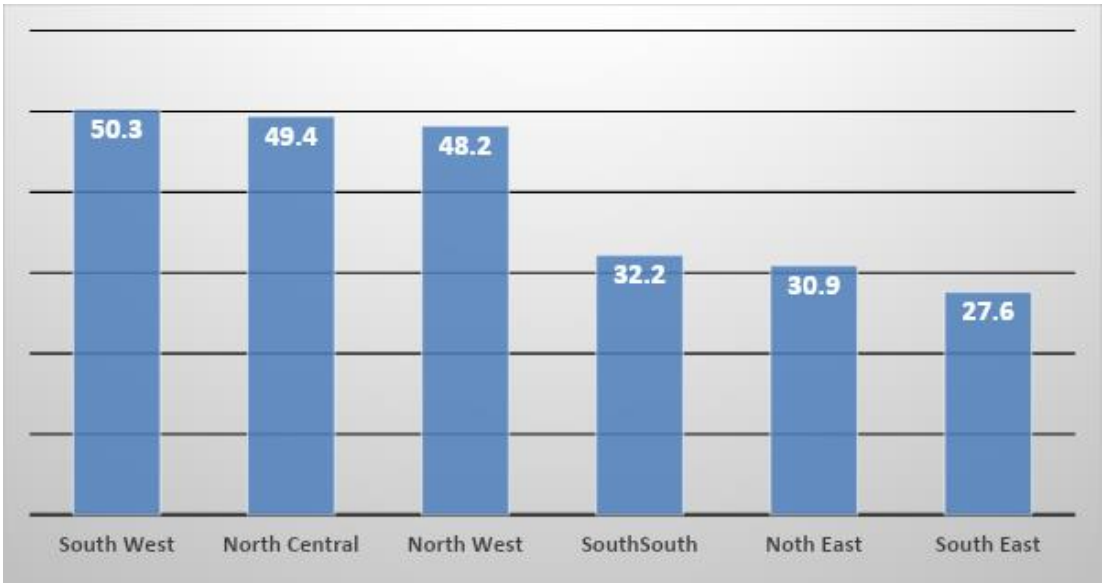
[2]World Health Organization (2012).World Malaria Report. Geneva, World Health Organization.

[3] National Population Commission (NPC) [Nigeria], National Malaria Control Programme (NMCP) [Nigeria], and ICF International. 2012. Nigeria Malaria Indicator Survey 2010. Abuja, Nigeria: NPC, NMCP, and ICF International.

[4]National Population Commission (NPC) [Nigeria] and ICF Macro. 2009. Nigeria Demographic and Health Survey 2008. Abuja, Nigeria: National Population Commission and ICF Macro.

[5]National Population Commission (NPC) [Nigeria] and ORC Macro. 2004. Nigeria Demographic and Health Survey 2003. Calverton, Maryland: National Population Commission and ORC Macro.

Hetereogenity in the geographic spread of malaria is also evident from recent data from the 2010 National Malaria Indicator Survey, as shown in Fig. 2.3. Malaria prevalence (slide positivity rate) was higher in children under five in the south-west zone of the country at 50.3%, and lowest in the south-east zone [NPC *et al*, 2012]. Variations in climate and ecological in the geopolitical zones readily offer explanations on the observed pattern of spread. However, socio-demographic factors and varying states of the health systems including programme implementation could also account for this regional differences.



Adapted from: United States Embassy in Nigeria (2011). Nigeria Malaria Facts Sheet.

Figure 2-3: Malaria Prevalence among Children under-five years by geopolitical zones

Deaths resulting from malaria have been estimated at over 300,000 deaths per year in Nigeria. At this rate, malaria accounts for more deaths per year than HIV/AIDS, and is the major contributor to deaths in children under-five years and in pregnant women.

Improvements have been noted, with the recent Nigeria DHS [NPC and ICF Macro, 2009], reporting under-five mortality, as reducing from 187 (NDHS 2003) to 157 (NDHS 2008). However, pregnant women living in places where malaria is highly prevalent are four times more likely than other adults to get malaria and twice as likely to die of the disease [MICS 2007].Malaria related deaths account for up to 11% of maternal mortality, 25% of infant mortality, and 20% of under-five mortality resulting in 300,000 childhood deaths annually [NPC *et al*, 2012].

The nation's response to the impact of malaria has been progressively purposeful, drawing impetus from the catalytic Abuja Declaration meeting of African Heads of State in 2000. Among other interventions, monotherapy with Chloroquine since gave way to combination drugs with Artemisinin derivatives for case management of malaria. However, the emergence of resistance to common antimalarial medicines has remained a major threat to the ongoing malaria control efforts. This therefore has necessitated the continual evaluation of the efficacy of these medicines to inform decisions on malaria treatment policy through Drug Therapeutic Efficacy Tests/Trials (DTETs). DTET on chloroquine and Sulphadoxine-pyrimethamine in the six epidemiological zones in 2002 showed the inability of these medicines to completely clear malaria parasites in the blood; giving credence to the adoption of ACTs by 2005. The most recent DTET study of 2009 showed an 'adequate clinical and parasitological cure rate' of about 98% for both Artemether-Lumefantrine and Artesunate-Amodiaquine; Currently, the 2013 DTET is on the way with monitoring of efficacy

of Dihydroartemisinin-piperaquine in addition to the two currently deployed antimalarials being done at 8 sentinel sites across Nigeria.

3 Current Situation of Malaria Control Programme

3.1 Background

Substantial malaria control investments have been made in Nigeria in the last decade in the context of the national malaria control strategic plans, 2001-2005, 2006-2010 and 2009-2013. This chapter sets to review challenges, achievements and priority actions of the National Malaria control programme guided by the previous National Malaria Strategic Plan.

3.2 Overview of 2009-2013 RBM Strategic Plan

The National Malaria Control Programme Strategic Plan 2009-2013 was conceived with the vision that Malaria will no longer be a major public health problem in Nigeria as illness and death from malaria will significantly reduce as families will have universal access to malaria prevention and treatment. The Overall objectives for the period 2009 – 2013 were:

- To nationally scale up for impact (SUFI) a package of interventions which include appropriate measures to promote positive behaviour change, prevention and treatment of malaria
- To sustain and consolidate these efforts in the context of a strengthened health system and create the basis for the future elimination of malaria in the country.

Building on the experiences and achievements of the previous strategic plan, the 2009-2013 NMSP identified and implemented the following strategic priorities and guiding principles with measurable success;

- Rapid Scale Up For Impact (SUFI) for prevention and treatment of malaria which led to distribution of over 58 Million LLINs during Universal LLIN campaigns, improved distribution of ACTs in public and private health facilities and improved access to subsidized ACTs through the AMFm project
- Focus was shifted from prioritizing the biologically vulnerable as primary target groups for interventions (pregnant women, children less than 5 years of age, people living with HIV/AIDS) to universal and equitable access of all at risk populations.
- Integration of malaria interventions into general health activities which achieved synergies as well as increased cost-effectiveness and support the strengthening of the health system.
- Broad partnerships involving all sectors of society from the various levels and sectors of government, civil society organizations, traditional and religious leaders and the private sector.
- Community involvement during implementation of major intervention which improved community acceptability and served as a fulcrum for sustainability.

3.3 Malaria Programme Review

The MPR documented a 10 year review of the situation of the Malaria programme along nine thematic areas: epidemiology; programme management, policies and strategies; integrated vector management; case management; malaria in pregnancy; procurement and supply management; advocacy, communication and social mobilization; malaria in complex emergencies; and

surveillance, monitoring and evaluation and Operations research. This is detailed in the SWOT analysis in the MPR 2012 report.

Major strides have been made in effective management of the National Malaria Elimination Programme including the development of the following strategic documents:

- National malaria control strategic plans 2001-2005, 2006-2010 converted to a roadmap 2009-2013;
- Annual Operational Plans (AOPs) at Federal level, and in some states; and
- Development and dissemination of National policies and guidelines in major intervention areas.
- There is a functioning Malaria Technical Working with active subcommittees.

However, some challenges persist; sub-optimal funding of malaria control at all levels due to inadequate prioritization during funding allocation; absence of a national malaria policy document; non-availability of annual operational plans in some states and in all LGAs; non-maximization of the potential contribution of Nigeria's private sector in malaria control; and over-dependence of the national malaria control programme on development partners' funds. Below is a review according to thematic areas:

3.4 Integrated Vector Management

Long Lasting Insecticidal Nets: The national malaria control strategic plan 2009-2013 targeted that the distribution of 63 Million LLINs by the end of 2010 with at least 80% ultilization. Of this over 58 million LLINs were distributed through mass distribution campaigns and other channels. The various States led the distribution campaigns in collaboration with NMCP and partners. Mobilization of beneficiaries took place at community and household levels through door-to-door strategy to register the households, issue net cards (that were redeemed for 2 LLINs at distribution points) and promote LLIN uptake and use. Fixed campaign distribution points were established for net distribution.

Figure3.1 shows that although net ownership is increasing, it is still below universal coverage targets. Figure 3.2 depicts LLIN ownership among the six geopolitical zones with a national average of 42%.

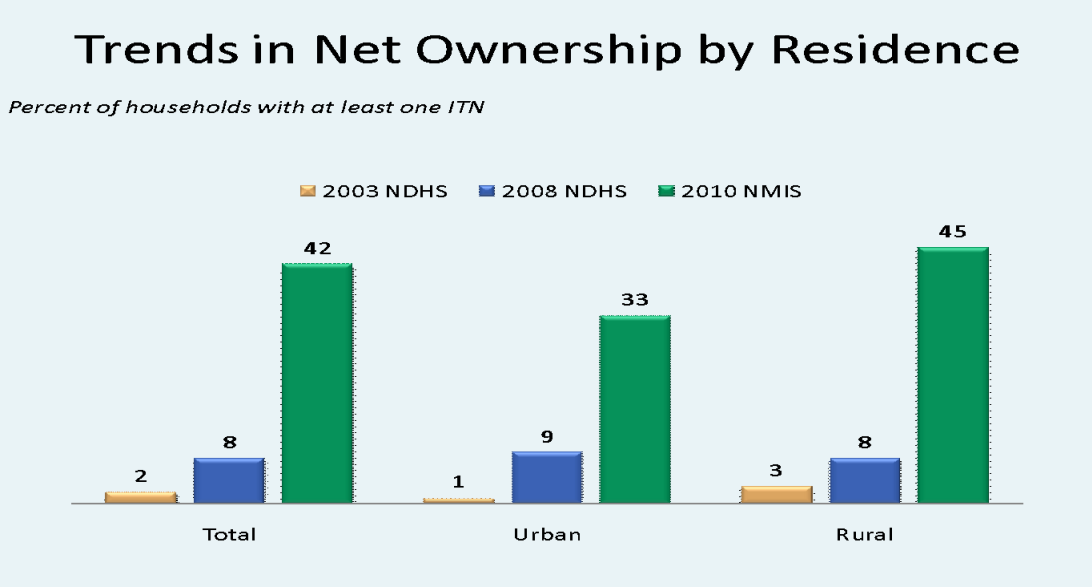


Figure 3-1: Percentage of households with at least one ITN/LLIN (source NMIS, 2010)

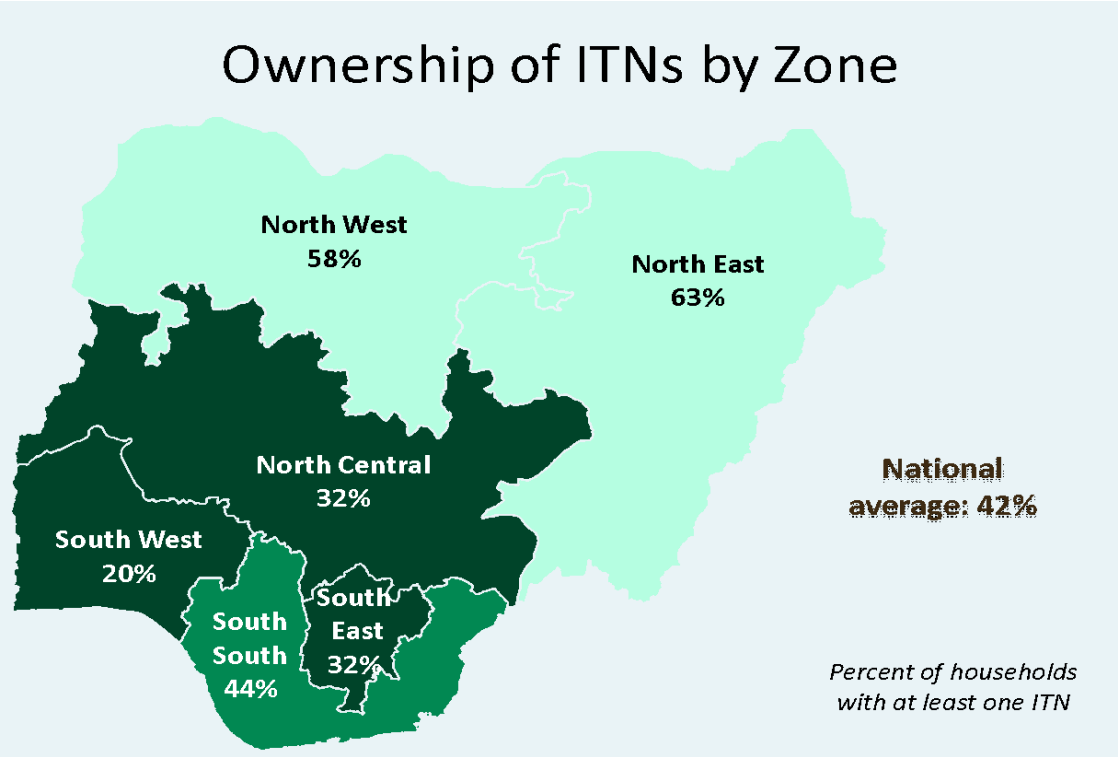


Figure 3-2: LLIN ownership in the 6 geopolitical zones in Nigeria.

Indoor Residual Spraying: In 2010, IRS was implemented in 3 LGAs in each of the 7 States supported by the World Bank Malaria Booster programme, viz. Bauchi, Jigawa, Gombe, Kano Anambra, Akwa-Ibom and Rivers State. However, data on programmatic IRS coverage and population protected were scanty. This was largely on account of the following: inadequate definition of the implementation targets and that implementation was based on availability of resources and partner preference rather than epidemiology of disease; e.g IRS by World bank in 3 LGAs represented less than 20% of the LGAs in the selected states and unlikely of be of significant impact. IRS intervention was also carried out in Lagos State through the State Ministry of Health from 2009 to 2012 with a total of 250, 000 households protected. Additional IRS was provided in Nasarawa State through the US President Malaria Initiative (PMI) in 2011. The aforementioned notwithstanding valuable lessons have been learnt with regard to planning for the short rainy season, as well as the feasibility of inter-sectorial collaboration and capacity building.

Larval source management (LSM): In redefining its long term vector control strategies in Nigeria, the NMEP incorporated LSM as a component of IVM within the last two years. Pilot larviciding has been carried out in five locations in Nigeria (Rivers, Nasarawa, Ogun Lagos and Jigawa) and is sparingly implemented in Lagos and Rivers States with low coverage. Environmental management includes environmental modification and manipulation as well as manipulation of human habitations and behaviour. Aside from the routine monthly environmental sanitation, little attention is given to the environment in connection to malaria. The major challenge regarding LSM is the need to define the Policy, strategic framework and plan of action. There is also the need for the NMEP to foster stronger collaboration with the Ministries of Environment, Ministry of Water resources, Agriculture and Education.

Monitoring Insecticide Resistance: There is no systematic coordination of insecticide resistance monitoring at the national level. This is compounded by the absence of vector surveillance sentinel sites in Nigeria. Although, there are some data available on vector resistance to a number of public

health insecticides in south west, north central and north Eastern zones, there is no records or published data for the South-South and South East zones of the country.

3.5 Malaria Case Management

Nigeria has updated policies, guidelines, and other operational documents, but these are not available across all levels. Access to recommended malaria medicines has improved in increasing number of public and private facilities.

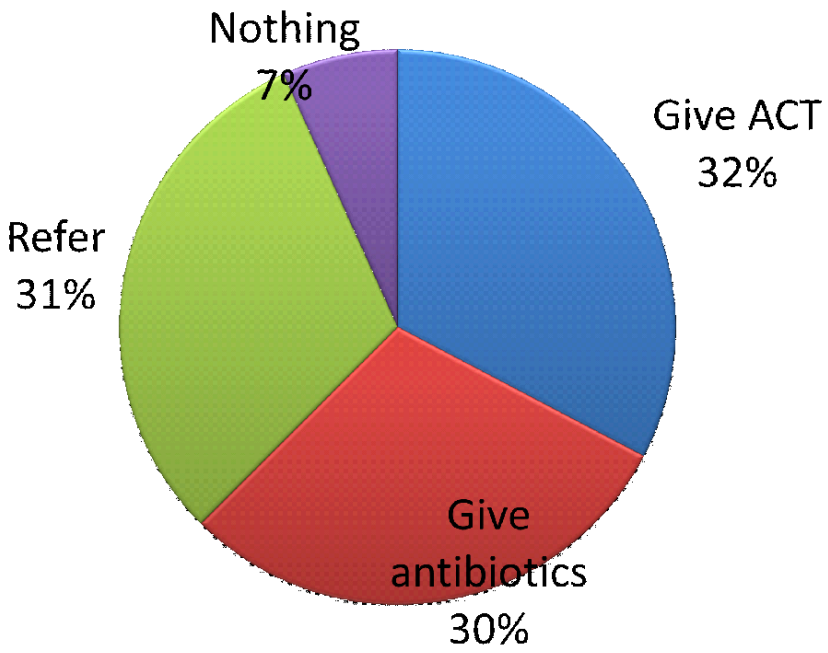
3.5.1 Parasite-based diagnosis of malaria

The NMSP 2009-2013 set a target to scale-up parasitological diagnosis of malaria in public and private health facilities to at least 80 %. The MPR showed that some progress was made towards the attainment of this objective but the target was not achieved. Data obtained from health facilities showed that less than 15% of fever cases were tested before treatment with antimalarial drugs. However since the conduct of the MPR and RDT implementation research was carried out by the NMEP. A cross-sectional survey was conducted in 120 randomly selected PHCs across six states, across the six geopolitical zones of Nigeria in January 2013. Compliance was the proportion of ACTs correctly prescribed in relation to RDT result. There were 248,485 clinic attendees of which 129,272 (52.7%) presented with fever. The testing rate was 52,343 (39.8%) using RDT kits. Compliance rate with RDT results was 81.7%. Among the health workers' responses, about one-third each reported they would prescribe ACT (32.9%) or give antibiotics (29.8%) or refer (30.7%) when RDT is negative. (Figure) Age of patients less than 5years (p=0.04) and "high" educational status of care givers (p=0.0006) were added determinants of health workers prescription of ACT to RDT negative patients. Overall, HWs had good knowledge of RDT[6]. These findings provide evidence for deployment of RDTs at PHC levels and opportunities for rapid scale-up.

Concurrently there has been a number of capacity development opportunities to strengthen miscroscopy. The NMEP, in partnership with research institutions are partnering to update the skill of laboratory personnel on microscopy.

Figure 3-3 Actions taken when RDT is negative

[6] Mokuolu OA et al, (2013) Experiences with implementation of malaria diagnostic testing at Primary Health Care level in Nigeria: implications for scale-up



3.5.2 Access to affordable quality-assured antimalarial drugs

Artemether-lumefantrine (AL) and Artesunate-amodiaquine are the recommended ACTs for treating uncomplicated malaria in Nigeria. Results of therapeutic efficacy studies conducted in the six geo-political zones of Nigeria in 2009-2010 showed that PCR-confirmed D-28 cure rates were above 95%, thus authenticating their suitability as first line therapy for uncomplicated malaria in Nigeria.

Availability of ACTs increased with a total of 268.9 million doses of ACTs provided between 2007 and 2013. However the percentage of children under-five presenting with fever who received prompt treatment with ACTs lags behind operational availability data (i.e. 47.5% of the estimated 565.9 million doses required). The percentage of under-five that received prompt treatment with ACTs was 7.8% in the urban area (7.8%) and 2.1% in the rural (2.1%). The Affordable Medicines Facility-malaria (AMFm) contributed to the scale up of access to ACTs but percentage of those treated with "undesirable antimalarial drugs" like Chloroquine and Sulphadoxine-Pyrimethamine are still unacceptably high at 28.5% and 10.9% respectively (NMIS 2010).

3.5.3 Management of severe malaria

Data on severe malaria which are treated largely in secondary and tertiary health facilities have been under-reported. Over the period of the NMSP 2009 -2013, there was a renewed emphasis on management of severe malaria. In 2012, the NMEP adopted a change in treatment policy from quinine to artesunate treatment of severe malaria. Nigeria became the first country to align with the updated WHO recommendation. Following the change, and in collaborations with partners (the Clinton Health Initiative, MMV and Academia), several activities to conduct an appraisal of the state of severe malaria in Nigeria, build capacity on management of severe malaria to different health professionals and procurement and distribution of injection artesunate were undertaken. The health system and referral system have continued to adversely affect the quality and outcome of treatment of severe malaria in Nigeria, hence effort will be made to strengthen this. There are also weaknesses in the health system in providing the most critical care (ICU services) for severe malaria; which calls for further strengthening.

3.5.4 Private sector involvement

During the 2009-2013 plan period, strong strategic efforts were made predominantly with funds from The Global Fund (Round 8 grant and the AMFm Phase I grants) to support and improve the performance of the private sector in diagnosis and treatment of malaria. This included strategies to effectively integrate and engage proprietary patent medicine vendors (PPMVs) in community case management of malaria. Given the high patronage enjoyed PPMVs in both urban and rural Nigeria effective involvement of this category of health providers in diagnosis (with RDTs) and treatment of malaria would immensely contribute to the rapid upscale of parasite-based diagnosis and treatment of malaria. There are about 40,000 registered PPMVs in Nigeria with probably a large number unregistered and operating without license. This give a huge critical mass of care providers who can potentially by trained and equipped to offer their clients prompt diagnosis (with RDTs), treatment (with ACTs) or referral in severe illness. To boost the rapid scale-up of diagnosis and treatment malaria alongside preventive interventions will require innovative strategies and strong national commitment to mobilization of adequate resources.

3.5.5 Integrated Community Case Management

While the MPR showed that very little progress was made towards realizing the wish expressed in the strategic plan to promote community case management. The number of community-based providers required to fully scale-up iCCM in Nigeria is yet unclear. An estimate based on the assumption that one one CHW will be required to provide iCCM to 500 persons among 65% who reside in rural areas (using a projected total population of 173 million in 2013), shows that a total 225,561 community-based frontline health workers may be required to adequately reach the rural population. Empirical evidence abounds on the effectiveness of community case management and its potential to rapidly upscale access and utilization of malaria treatment services within essential health package that includes other key life-saving reproductive and child health interventions. High rate of attrition of trained health workers has been identified as a barrier to success in iCCM implementation which could be mitigated by a concurrent initiative to motivate volunteers and retain health workers by building a locally-acceptable and sustainable incentive programs into the iCCM strategy. The current plan acknowledges also the planned roll out of iCCM in two states of the Federation, Niger and Abia states by the Malaria Consortium and Society for Family Health respectively through the RaCE funding from the Canadian Government. The experiences from the implementation of the iCCM by these partners will be invaluable in the national scale-up of iCCM.

3.5.6 Malaria in Pregnancy

The National Malaria Strategic Plan (2009-2013) proposed the use of LLINs, Intermittent preventive treatment with sulphadoxine-pyrimethamine (SP) and prompt treatment of confirmed malaria as the core strategies for control of malaria in pregnancy. These interventions were all supposed to be delivered in the health facility with emphasis on promotion of focused antenatal care. Implementation of malaria control in pregnancy appears to be fairly well integrated at all level facility across the country. The MPR noted that the percentage of women that attend antenatal care in health facilities varies widely across the country with lowest rates of ANC attendance in the Northern states. It is crucial to promote community-based prenatal care options for women in such settings.

3.5.6.1 Intermittent preventive treatment (IPTp)

Recent national surveys showed that the percentage of pregnant women that received at least two doses of IPT remained low across the country with marginal increase from 6.5% in 2008 (NHDS 2008) to 13.2% in 2010 (NMIS 2010). Facility data pooled from the States (by the NMEP) showed slightly higher operation coverage of 18.7% with a wide variation IPTp use across the States.

3.5.6.2 Treatment of malaria in pregnancy

The current Guidelines on diagnosis and treatment of malaria in Nigeria (FMOH 2011) recommend that pregnant women with uncomplicated malaria in the second and third trimesters should be treated with the recommended Artemisinin combinations therapy (ACT), while only oral quinine is recommended for those with malaria in the first trimester of pregnancy. It cautions that use of ACTs in the first trimester should be only in situations where no alternatives are available.

Information obtained from MPR 2012 suggests that majority of pregnant women with suspected malaria seen at public and private health facilities were treated with ACTs or quinine but diagnostic tests were not used in most cases. Rapid diagnostic tests (RDTs) were not available in most of these facilities visited. There were also no guidelines, standard operating procedures or charts on prevention and treatment of malaria in pregnancy in most public and private facilities visited across the country.

3.5.6.3 Community delivery of Malaria control in Pregnancy

The role of community-oriented resource persons in the level health providers (such as role model caregivers and trained traditional birth attendants) in the delivery of IPTp remains unclear. The NMEP will be collaborating with the reproductive health programme to develop explicit guidance on whether these community-based health personnel or trained volunteers should offer IPTp or treat pregnant women with uncomplicated malaria.

3.6 Procurement and Supply Management

Procurement and Supply Management activities cut across the scope of malaria interventions. The outcomes of malaria prevention and treatment activities undertaken to achieve the mission of the National Malaria Elimination Programme are contingent on the timely and full supply of antimalarials. The operations of the malaria PSM branch are guided by general national policies, specific policies governing pharmaceutical sector operations, as well as policies and guidelines for malaria programme management in particular. Such policies and guidelines include:

- the Public Procurement Act (2007);
- the National Drug Policy (2005);
- the National Antimalarial Treatment Policy (updated in 2011);
- the National Standard Treatment Guidelines (updated in 2011)
- A Framework for malaria PSM in Nigeria (2012)

An assessment of the National Malaria Strategic Plan (2009-2013) revealed steady progress of PSM activities, from 2007, when the PSM unit was created within the NMEP. The achievements include the development of PSM Tools, and subsequent training on MCLS, across national, state and LGA levels. Quantification exercises, now undertaken with an impressive complement of RBM Partners along with NMEP, have become more robust, scientific and participatory. Significant capacity to conduct major procurement and distribution of bed nets has been demonstrated with multiple procurements of ACTs, RDTs and LLINs conducted over the years. Framework contracts have been signed for the distribution of antimalarial medicines from the national to state level. The prevalence of counterfeit medicines, especially antimalarials, is presently being assisted by the NAFDAC use of on-the spot tests through TRUSCAN, a hand held device.

Overall, the PSM Thematic area performance has recorded progress in the organization of the branch into a discrete component of the national malaria strategic programme, inclusive of excellent growth in partnership, responsive commitment and coordination.

Despite this achievement, The MPR conducted in 2012 recorded challenges in several stages of malaria PSM processes (procurement, distribution, financial disbursement). The quantification of

antimalarial medicines is still undertaken with the morbidity method, because consumption figures are not yet generated on a national scale. Thus, there is low accuracy in predicting needs for the pipeline components of antimalarial medicines and commodities. There are as yet no clear cut national procedures to address the widespread stock outs of malaria medicines and health commodities, and expiries when they occur. Procurements of antimalarials for the programme are still fragmented, and essentially dependent on procurement plans defined by different external funding donors.

Distribution has been negatively impacted by the inadequacy of funds allocated for distribution from the state stores down to the facility level, with resulting delays in distribution or short changes in the scope of the distribution process. Distribution plans have to estimate needed logistics determined per realistically determined hubs, so that allocations will reflect differing terrain and logistic contexts.

The storage infrastructure and inventory management is mostly substandard, especially at the health facility level, while there are needs for more robust quality assurance activities at all levels of care; furthermore, there are yet no Standard Operating Procedures for detecting and reporting poor quality medicines. The malaria PSM information process is presently unable to deliver timely and accurate information for evidence-based decisions on pharmaceutical management for malaria.

In November 2010, a manual was developed for the purpose of strengthening malaria procurement and supply management: key indicators (in numbers or percentages) revolved around procurements at central level, expiry of medicines and health commodities, good storage practices, quality assurance, use of inventory control tools, ordering of stock (sending and receiving), stock outs, and submission of PSM reports. However, there is little evidence that tangible attempts were made to collate reports answering to the indicators, neither to analyze nor report on them, when they are available.

3.7 Capacity for responding to changing malaria epidemiology, new technology and other emerging issues

3.7.1 Malaria in Complex Emergencies and Epidemic Preparedness

Nigeria has a National emergency response programme managed by NEMA. However, neither NEMA nor FMOH/NMCP has mainstreamed malaria emergency preparedness in their planning processes and response. The key challenges are as follows: Poor documentation of malaria in complex emergencies; absence of effective collaboration with meteorological, education and tourism departments/agencies. Provision will be made in this strategic plan to strengthen the policy environment for effective handling of epidemics and malaria-related emergencies as the herd immunity continues to decline with sustained drop in malaria transmission as a result of the evidence-based interventions proposed in this strategic plan.

3.7.2 Emergence of Artemisinin Resistance

The emergence of resistance to Artemisinin compounds or component drugs of existing ACTs in Southeast Asia poses a potential risk to the successful achievement of the goals of this strategic plan given that ACTs are the mainstay of the treatment strategy. So far evidence from DTETs and TRAC study (2010-2012) showed sensitivities of artemisinin compounds >95%. Nigeria will nevertheless continue to promote effective surveillance of case management practice and outcome of treatment with ACTs using molecular confirmation through sentinel its various sentinel

sites and by partner research institutions. This has been addressed in the relevant section of this strategic plan.

3.7.3 Seasonal Malaria Chemoprevention

Nigeria has acknowledged the WHO Policy on SMC and the significant benefit of SMC which has been shown to reduce malaria morbidity by 50-75% among children under five years of age in areas of low transmission. The NMEP will in the course of the current strategic plan adapt the WHO guidelines for the development of an implementation framework in areas of the country with low transmission of malaria.

3.7.4 Malaria Vaccine

A prospect of an effective malaria vaccine being licensed as a large-scale public health intervention tool in high disease burden countries is nearer now than ever. As a major high burden country where malaria still contributes to nearly a third of under-five mortality, Nigeria stands to benefit from the deployment of a truly effective malaria vaccine. The likelihood that a new malaria vaccine will become available during the lifespan of this strategic plan makes it imperative to processes that would guide the country to make evidence-informed decision on the adoption of this technology or otherwise. The plan to set up this national process will be addressed as a programme management task in this strategic plan. The level of priority accorded this priority is likely to change as more data become available from the phase III trials, following global licensing of the vaccine and when WHO guidance on this matter becomes available.

3.8 Advocacy, Communication and Social Mobilization (ACSM)

A four year National ACSM Strategic Framework and Implementation Plan (ACSM-SF & IP) was developed in June 2010 to drive the implementation of the ACSM component of the NMSP 2009 - 2013. Sixteen States of the Federation have since adapted the ACSM-SF & IP to their specific needs. Each of the 16 States has also constituted all stakeholders in malaria communication into an ACSM Core Group that is responsible for planning, implementing and evaluating State-based ACSM activities.

3.8.1 Communication & Social Mobilization

Through community mobilization and use of IEC materials, ACSM contributed significantly to the successful distribution of about 60million LLINs during the LLIN campaigns of 2009 to 2013. The campaigns were bolstered by with the strategic production, distribution and deployment of IEC materials and innovative and entertaining community mobilization activities that were developed and adapted by the States, guided in some cases by the ACSM-SF&IP.

3.8.2 Advocacy

Counterpart funding for net distribution was successfully leveraged from a couple of States during the LLIN campaigns, as a result of advocacy events by NMEP. Advocacy kits were developed and deployed by NMEP to promote adequate and timely release of funds and equitable deployment of health providers to rural and hard to reach places for malaria control activities.

3.8.2.1 Challenges

Several challenges limited the ability of the ACSM component of NMSP 2009 – 2013 to deliver to capacity. The challenges include the following:

- Most of the ACSM implementation successes were scored with the significant support from donor agencies and bilateral & multilateral Implementation Partners.
- More than half of the States and all the 774LGAs and Wards still do not have ACSM Core Groups and have not articulated their individual strategic frameworks and implementation Plans.
- The current National ACSM-SF & IP is due for review in 2013.
- Implementation of ACSM activities was largely un-strategic and not backed up with operational plan, targeted and pre-tested communication materials, inadequately conceptualized annual operational plans, limited budgets and inadequate skilled advocates and communicators

3.9 Surveillance, Monitoring and Evaluation

Critical investments in the areas of information management; Routine Monitoring, Measuring for outcome and Impact and Operations research where prioritized towards attaining the M&E objectives in the plan

3.9.1 Progress

- Quarterly supportive supervisory/data verification visits were the hall mark of activities conducted by the M&E branch of the national program during the plan years. These were complemented by hands-on capacity development of M&E staff at lower levels of reporting.
- Commencement of the process of harmonization of programmatic data capturing tools with NHMIS tools.
- The transition of the National HMIS from a wholly paper-based system to an electronic based system has seen marked movements during the implementation period of the last strategic plan. Specifically, the District Health Information System (DHIS) was introduced in 2010 by the DPRS as a desktop based electronic platform and has slowly been migrated to the web based DHIS2.0 version in 2012. Support for this expansion has been from the Global Fund, DFID and USAID-PMI.
- The work stream of measuring outcome and impact also recorded some significant milestones. The Malaria Indicator Survey (MIS) was conducted in 2010, the Multi Indicator Cluster Survey (MICS) in 2011 and the National Demographic Health Survey (NDHS) in 2012 (data still awaited). Other relevant epidemiologic data were generated through sentinel surveys and some behavioural surveys. Of mention include the Post LLIN distribution Campaign Net tracking Surveys (State Specific); Monitoring Area Surveys (five cycles completed); Retail Outlet Survey (1 cycle) and the OMNIBUS KAP surveys.

3.10 Key Challenges

The following is the summary of the key challenges in relation to malaria control in Nigeria

Integrated Vector Management

- Non-attainment of universal coverage of insecticides
- Low utilization of LLINs
- No proper baseline entomological indices prior to LLINs and IRS implementation.
- Limited capacity regarding IRS implementation
- Poor infrastructure (e.g. storage facilities) to support IRS commodities and activities.
- Inadequate infrastructure for effective and routine entomological and insecticide resistance monitoring

Diagnosis and Treatment

- Relatively low level of testing
- Inequity in access to appropriate treatments with patients in rural areas disadvantaged.
- Inadequate trained human resources for case management including iCCM
- Developing a framework for implementation of SMC
- Lack of access to malaria treatment guidelines.
- Weak referral systems militating on quality of care for severe malaria.
- Poor pharmacovigilance and irregular monitoring of efficacy of malaria medicines and non-functional malaria sentinel sites.
- Failure to sustain supply of affordable quality-assured ACTs after AMFm
- Continued use of non-recommended malaria medicines in malaria treatment.

Malaria in Pregnancy

- Low uptake IPTp and low utilization of ANC services
- Need for innovative delivery mechanism for IPTp
- Persisting reports of SP stock-outs raise issues about the availability of adequate funds and the efficiency of the supply chain management system for pharmaceutical products.
- National guideline for malaria control in pregnancy needs to be revised to align with current best evidence and global health best practices

Advocacy Communication and Social Mobilization

- Inadequate number of skilled staff in ACSM
- Generally no costed AOPs available at the state and LGA levels
- Limited availability and utilization of IEC/BCC materials
- Inadequate operational research: weak, un-strategic and inconsistent advocacy engagement with the health promotion division of the Federal Ministry of Health
- No tracking mechanism for process level indicators
- Inadequate media engagement strategy for tracking and reporting ACSM activities nationwide
- Inadequate monitoring and evaluation of ACSM activities
- Inadequate partner coordination for tracking ACSM activities nationwide
- Inadequate articulation of ACSM in NMSP
- Persistent non-strategic planning, implementation and monitoring of ACSM activities due to inadequate participation of ACSM officials in decision-making
- Inadequate IPC skills coupled with low adherence to client's rights leading to gap between health workers knowledge and practice in service delivery

Procurement and Supply Management System

- Delays in stages of the PSM process (procurement, distribution, financial disbursement);
- Quantification for distributions from State to HF's are not based on client population to be served
- Persistent stock-outs of malaria commodities;
- Lack of good storage infrastructure and practices (e.g. for LLINs), inventory control management and reporting, in some health facilities;
- Quality assurance of antimalarials not yet institutionalized at all levels of care;

- Lack of a comprehensive PSM Management Information System.

Monitoring and Evaluation

- The relatively low completeness and timeliness of routine reporting continued to challenge the programme.
- The dearth of trained human resources for M&E at all levels of reporting; the continued use of paper based systems for reporting; and
- Continued existence of vertical reporting systems also contributed to quality of routine reporting.
- Fund limitations informed the paced roll out of the DHIS 2.0 technology and related capacity building for its use.

3.11 Priority action points for 2014-2020 NMSP

The underlisted summarises the key priority actions identified during the 2012 MPR. The NMSP 2014-2020 is expected to address these priority actions;

Integrated Vector Management

- Scale up insecticide coverage for rapid reduction in malaria burden.
- Complete the roll-out of LLIN distribution replacement campaigns to achieve overall universal coverage.
- Scale up of IRS implementation be guided by epidemiological data.
- Capacity building for IRS, surveillance, monitoring of Anopheles vectors and mapping using GIS techniques;
- Evaluate the use of larviciding in pilot sites such as Rivers and Lagos states and formulate a scale up guided by WHO best practices on larviciding
- Monitoring the efficacy and/.or durability of the LLINs and proper use and upkeep of the LLINs, sleeping habits, washing and drying practices.

Diagnosis and Treatment

- Scale-up parasite-based diagnosis in the private sector
- Scale up implementation of community case management (including training, equipping and retaining adequate numbers of volunteer community-based providers)
- Strengthen pharmacovigilance and post marketing surveillance system.
- Establish quality assurance programme for malaria diagnosis (leveraging on existing institutional capacity).
- Health system strengthening to improve the quality of severe malaria case management (high quality emergency medical services and intensive care)
- Support surveillance activities at the sentinel sites
- Develop strategies on use of diagnostics by PMVs and community level H/W

ACSM

- Urgently develop, adapt and disseminate evidence-based IEC/BCC materials for all major interventions to all health facilities.
- Evolve a mechanism for verifiable Federal support to States in the development of costed Annual Operational Plans.

- State Malaria Programme to ensure, monitor and report on proper implementation of developed AOPs.
- Resource mobilization for Malaria Elimination Programmes and ACSM activities in particular.
- Development and integration of ACSM related indicators to national HMIS
- Capacity development in ACSM for focal persons.
- Identification and engagement of Malaria Control Advocates/ Ambassadors
- Conduct In-depth Qualitative Studies and Operational Research for ACSM

Procurement and Supply Management Systems

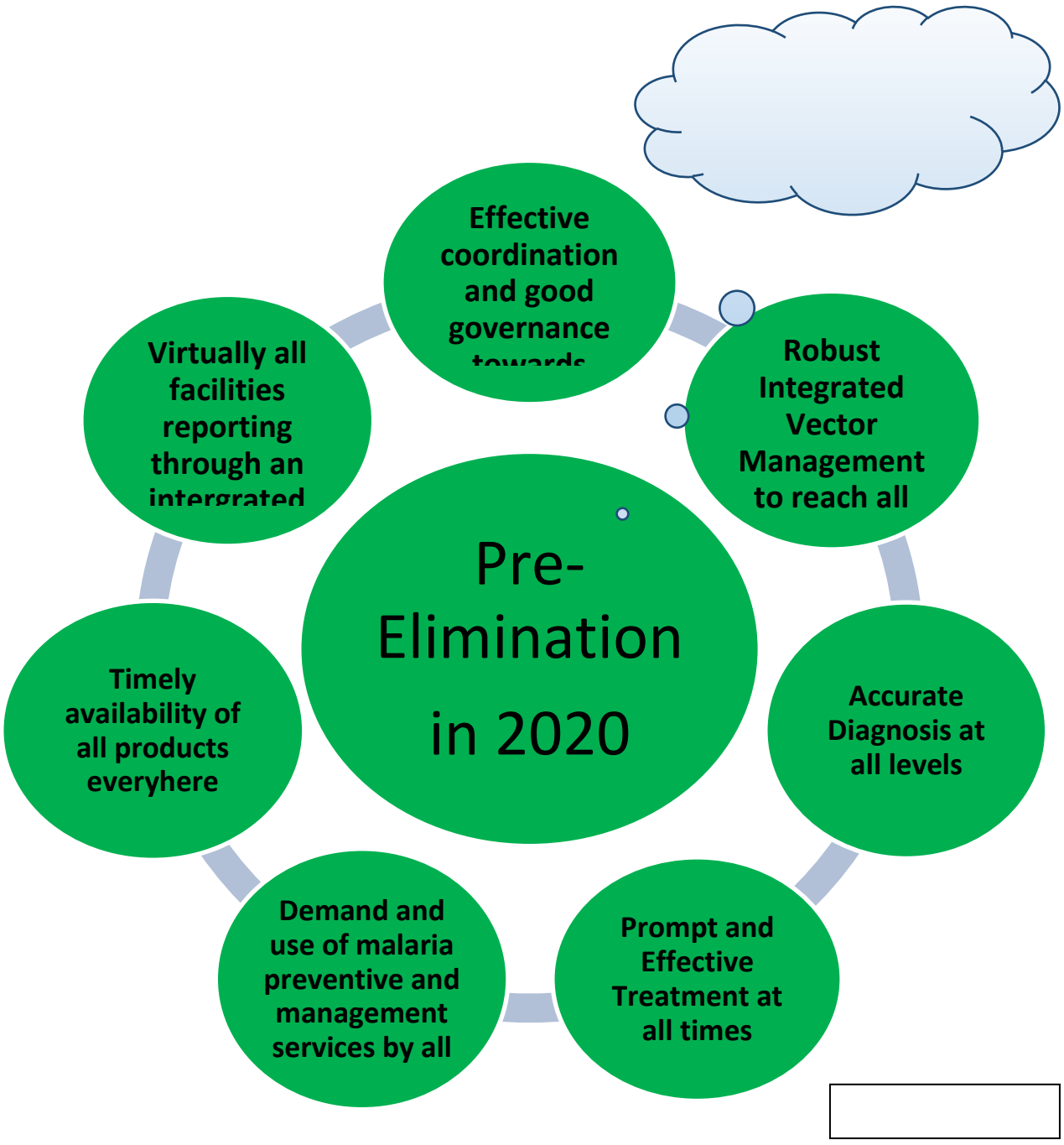
- Ensure timely availability of quality assured commodities for diagnosis, treatment and communication at all service points
- Adopt quantification for distribution to Health Facilities based on consumption data.
- Adapt an effective model for delivery of MiP services, utilizing existing community systems.
- Strengthen the national supply chain planning processes and management information system.
- Improve storage infrastructure at health facility level.
- Strengthen collaboration with National Agency for Drug Administration and Control.

Monitoring and Evaluation

- Generate evidence to update malaria epidemiological profile
- Conduct a comprehensive epidemiological mapping of malaria to include epidemic proneness.
- Integrate malaria into the National Disaster Management Framework and National Contingency Plan of NEMA and other line Ministries and departments
- Incorporate Complex Emergencies EPR options into the next National Strategic Plan.
- Reinforce the one-NHMIS model by re-defining and simplifying routine reporting;
- Update federal level plans and guidance for Surveillance, M&E, and Operation Research.
- Develop National Operational Research Agenda to generate evidence for decision making

Programme Management

- Develop a Malaria Health Financing Strategic Framework with an intensive advocacy effort to increase malaria budget allocations within overall health budgets



4 Strategic Plan 2014 – 2020

4.1 Introduction

In line with the global push for malaria elimination and arising from the gains in the implementation of the Malaria Strategic Plan 2008-2013, the Malaria Strategic Plan 2014 – 2020 aims at achieving a marked reduction in malaria burden in Nigeria to pre-elimination levels at the end of 2020.

Prerequisite for pre-elimination is the attainment and substance of Universal coverage targets of key interventions for a period of two years. Thus, while the ultimate vision is to eliminate Malaria in Nigeria and achieve a malaria free country, the goal of the current strategic plan is to significantly scale up high impact control measures in order to accelerate the reduction in malaria morbidity and mortality. It is envisaged that universal coverage will be attained for most intervention categories within the first 5-years of this plan. The last two years will focus on vigorously sustaining these coverage levels so that the country will attain the desired pre-elimination status. Hence the vision, mission and strategic objectives have been aligned to ensure the attainment of this goal. To further give credence to the commitment of the Government of Nigeria towards the goal of elimination of malaria, the Federal Council on Health recently re-designated the National Malaria Control Programme as National Malaria Elimination Programme (NMEP).

4.2 Vision, Mission, Goal and Objectives

4.2.1 Vision and Mission

For the National Malaria Elimination Programme;

The ***Vision*** is to have a **MALARIA FREE NIGERIA.**

The ***Mission*** is to provide equitable, comprehensive, cost effective, efficient and quality malaria control services ensuring transparency, accountability, client satisfaction, community ownership and partnership.

4.2.2 Goal and Objectives

4.2.3 Goal

- The Goal of this Strategic Plan is to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero

4.2.3.1 Objectives

The Objectives of the National Malaria Elimination Programme for this Strategic Plan are to ensure that;

i. At least 80% of targeted population utilizes appropriate preventive measures by 2020

ii. To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020

iii. To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020

iv. To provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment measures as necessary by 2020

v. To ensure the timely availability of appropriate antimalarial medicines and commodities required for prevention and treatment of malaria in Nigeria wherever they are needed by 2018.

vi. At least 80% of health facilities in all LGAs report routinely on malaria by 2020, progress is measured, and evidence is used for programme improvement

vii. To strengthen governance and coordination of all stakeholders for effective program implementation towards an 'A' rating by 2017 sustained through to 2020 on a standardized scorecard

4.3 Strategies and Actions

4.3.1 OBJECTIVE 1: At least 80% of targeted population utilizes appropriate preventive measures by 2020.

Overview

The thrust of the strategies under this objective is the provision of high impact vector control interventions towards universal insecticide coverage. This will be implemented through the following: sustained and improved distribution of LLINs using a modified mixed-model approach that is focused on both cyclical mass campaigns and continuous distribution targeting all households; rapid scale up of IRS and larval source management targeting at least 80% coverage of selected intervention households/LGAs; establishment of vector surveillance sites and capacity building in Integrated Vector Management. Other vector control strategies such as house screening and personal protection will be promoted. Prevention of malaria in the pregnant women will be further complemented with use of Sulfadoxine-pyrimethamine for intermittent preventive treatment. To drive these strategies, a host of cross cutting actions will be involved. These includes vibrant ACSM, quantification of commodities based on up to date real time data , procurement and supply chain management, including commodity tracking; and focused M&E including entomological monitoring. The mix of the interventions as articulated will be reviewed at intervals to make necessary adjustments, as may be indicated, to observable changes in the epidemiology of malaria over the plan period.

Target Populations

LLINs – 100% of households. There is however an anticipation that if there is evidence of significantly low parasite prevalence dropping below 20% such areas may be preferentially targeted for IRS alone in the next round of mass campaigns

IRS: To be scaled up to 40% of all households. There will be some overlap with LLINs but the goal is to prioritise the IRS for areas with poor utilization of LLINs, high prevalence of malaria, where the vector/s is endophilic, where most houses are permanent, relatively well constructed and where community outdoor sleeping is uncommon.

Larviciding: 30% of breeding sites

IPTp: 100% of pregnant women

SMC: 2million Children under 5 in 9-Northern states within the Sahel belt

4.3.1.1 Strategy 1: Ensure Universal Access to LLINs

Nigeria aims for LLIN universal access to all population at risk of malaria with at least one LLIN per 2 persons. There will be an adoption of the modified mix model for LLIN distribution which will include the following core actions:

a. **Mass free distribution campaigns**. There will be mass replacement campaigns for nets for Universal LLIN coverage using a mix model approach especially in areas with low coverage.
b. ***"Keep-up strategy" for continuous distribution of nets***. The "Keep up strategy" will be through continuous distribution to maintain universal coverage levels as supplement to mass campaign. This will be done through multiple distribution channels such as routine mechanism (EPI, ANC), Integrated MNCH week, school based distribution, Community based distribution Community Directed Distribution (CDD) through CSOs/NGOs and existing community structures; and the commercial sector.
c. ***Creation of an enabling environment for private sector involvement:*** NMEP will mobilize and encourage private sector buy-in to the business plan on LLIN ownership and use. The private sector will leverage on their distribution and business models to generate demand and use of LLINs, including use of LLINs in hotels, schools, workplace etc. Core actions will also include policy development to support local production of LLIN and enforcement of quality control and assurance
d. **Monitoring:** There will be monitoring of ownership, utilization and net integrity to continue to inform strategic programme actions

4.3.1.2 Strategy 2: Scale up IRS Coverage

Indoor Residual Spraying will be implemented as a core strategy for transmission interruption in selected areas in Nigeria. The country will be clearly delineated and entomological surveys will be conducted to identify areas where IRS will be feasible and effective. Implementation will be progressive, phased and spraying will target 45% of households in the country by 2020 with focus on contiguous communities and LGAs. Areas selected for IRS must meet the following criteria; high prevalence of malaria, low utilization of LLINs, vectors are endophagic and endophilic and there are sprayable and permanent structures. The following will be the main actions in relation to this strategy:

a. **Mapping and geographical reconnaissance:** This will be undertaken for the targeted areas for systematic and effective spraying. Each State shall be stratified to guide the mapping of areas for the intervention into; malaria epidemic prone areas, areas with short malaria transmission season, and areas with high prevalence of malaria. The least unit for IRS will be a Local Government Area.
b. **Baseline entomological survey and selection of insecticides:** Prior entomological survey will be conducted in areas targeted for IRS to guide insecticide selection, ascertain if vectors are endophilic/endophagic and other entomological indices. All insecticides for IRS must be chosen from the list of WHO Pesticides Evaluation Scheme (WHOPES) recommended list and approved by NAFDAC.
c. **Capacity building for IRS**: Capacity building will cover a wide range of competences that will have to be addressed for IRS implementation. Special skills for mapping, enumeration, stratification and logistics management will be addressed. The capacity of the IRS expert group will be strengthened for oversight functions while IRS field staff will also be trained on the spraying and surveillance operations.
d. **Quantification and procurement of commodities/insecticides:** IRS commodities and insecticides will be quantified based on expected structures to be covered. Adequate time

should be allowed for the procurement process to ensure delivery of commodities and insecticides before spraying season.

e. **Household mapping and spraying**: Households will be mapped and placed with unique identifier cards for the recording of spraying episodes. Spraying will occur once or twice a year depending on the epidemiological status, evidence from entomological surveys and type of insecticide used. Standard reporting tools will be used for data collection with regular supervisory visits from the LGAs, States and monitored by the National programme.
f. **Monitoring:** This will include epidemiological, entomological and environmental monitoring to determine progress and impact.

4.3.1.3 Strategy 3: Implement Larval Source Management (LSM) for malaria control

The NMEP will implement LSM in line with the WHO recommendations using larviciding as a complementary strategy to IRS and LLIN as a means of reducing the malaria vector density. Evidence from other countries like Equatorial Guinea suggest that there are important landing behaviours of mosquito. Depending on whether mosquito lands more in-doors or outdoors, the use of IRS alone may lead to a selective killing of mosquitoes with indoor human landing behaviour. This may result in a behavioural resistance as the mosquitoes avoid the indoor environment with residual insecticides. Hence larviciding will be implemented concurrently to ensure both indoor and outdoor destruction of the vectors. Environmental management shall be deployed as a component of LSM in collaboration with relevant ministries and agencies, State Ministry of Health and State Environmental Agencies, International Partners involvement and Private/Commercial sector involvement. The core actions for this strategy include the following:

a. **Develop national guidelines:** The National guidelines for LSM will be developed in line with WHO recommendations to guide the implementation at State and LGA levels.
b. **Capacity building for Larval Source management:** The capacity of LSM Expert Group will be strengthened to provide technical guidance and oversight function. Field staff will also be trained on site identification, insecticide applications and environmental management.
c. **Identification and mapping of malaria vector breeding sites**: Local communities will be trained and engaged to identify malaria vector breeding sites.
d. **Insecticide selection**: Quantification and procurement of larvicidal commodities. Selection of larvicides will be based on susceptibility status of the local vector, residuality, safety, environmental safety as well as cost effectiveness.
e. **Implement larviciding:** Larviciding will be conducted nationwide in targeted areas where breeding sites are few, findable and fixed as recommended by WHO and guided by evidence. It will be carried out as an integrated package of intervention.
f. **Deploy environmental management:** Environmental management activities will focus on elimination of larval breeding sites through the following activities; sand-filling of identified breeding sites, construction and maintenance of drainage network in collaboration with relevant Government Agencies and Ministries. The local communities will be empowered to carry out simple environmental measures to eliminate larval breeding sites. Enforcement of relevant laws and bye laws will be promoted in collaboration with States and Local Governments.

4.3.1.4 Strategy 4: Provision of IPTp to all pregnant women attending Antenatal Clinics in targeted districts

All pregnant women will use malaria preventive measures. In line with WHO recommendation an IPTp _SP dose will be given at every scheduled antenatal care visit at least one month apart after the 1st trimester. This equates to at least 3 doses of IPTp_SP. This strategy will ride on Reproductive Health Service delivery and during the training of midwives the issue of IPTp will be included. Already the current ANC card has a provision for IPTp monitoring. Priotiry actions will include:

a. **Review evidence update and disseminate** among health workers in secondary and tertiary facilities
b. **Device and apply innovative means of supporting DOT for IPTp**
c. **Promote use of ANC services**

4.3.1.5 Strategy 5: Implement seasonal malaria chemoprevention (SMC) in Nine Sahel States

Seasonal Malaria Chemoprevention (SMC) will be implemented in nine Northern States that fall within the Sahel belt. About two million under-five children will benefit from this intervention in these States.

a. **Produce Guidelines and Manuals**: Develop and disseminate national guidelines, training manuals and job aids for SMC implementation.
b. **Desk review**: Perform a comprehensive desk review and mapping of areas and target populations to provide the necessary evidence for planning and implementation of SMC.
c. **Advocacy**: Conduct advocacy, stakeholder engagement and sensitization at State, LGA and community levels.
d. **Mobilization:** Print and disseminate suitable and culturally-sensitive BCC materials through recognized communication channels.
e. **Capacity Building**: Train Health workers on SMC implementation (including diagnostics, treatment, pharmacovigilance, and logistics management).
f. **Procurement:** Procure pre-packaged (or repackage) drugs recommended for SMC namely Sulphadoxine-pyrimethamine (SP) plus Amodiaquine (AQ) for distribution to the target population (under-five children in nine States located in the Sahel).
g. **Undertake SMC delivery campaigns** (involving the mass media and community dialogues) ahead of distribution of the drugs during peak transmission season.
h. **Pharmacovigilance:** Integrate pharmacovigilance on the SMC medicines into existing adverse event reporting system.
i. **Operations Research**: Identify and commission research on priority operations research topics to inform decisions and actions to improve on the efficiency and effectiveness of the SMC strategy. This will include baseline parasitological susceptibility information (on efficacy of Sulphadoxine-Pyrimethamine plus Amodiaquine i.e. SP-AQ) from selected intervention areas prior to commencement SMC implementation to provide data for future monitoring and assessment of the antimalarial and program effectiveness.

4.3.1.6 Strategy 6: Conduct vector sentinel surveillance and resistance monitoring

The NMEP and Partners, including the academia and research community will continue to monitor the efficacy of the insecticides used and the vector susceptibility. At least three vector surveillance sentinel and insecticide resistance monitoring sites in each of the six ecological zones will be established to conduct vector surveillance, resistance monitoring and quality assurance of commodities. NMEP will collaborate with NAFDAC and SON for QA of vector control commodities. Bio efficacy of randomly selected samples of all imported/locally manufactured vector control commodities will be carried out.

a. **Set up sentinel sites for vector surveillance** (at least 3 per geopolitical zone)
b. **Collaborate with Partners and academia to train staff** on vector surveillance and insecticide resistance monitoring
c. **Conduct vector surveillance and insecticide resistance monitoring surveys**.
d. **Conduct QA for vector control commodities in collaboration with NAFDAC**
e. **Build local entomologic capacity** by assisting the States malaria programmes to conduct entomological studies.

4.3.1.7 Targets:

i. At least 80% of households with at least 1 LLINs for 2 persons.
ii. At least 80% of children U5 will sleep inside LLINs
iii. At least 80% pregnant women will sleep inside LLINs
iv. At least 40% of the households in IRS targeted areas will be protected by 2020
v. 100% of households have IRS coverage in the targeted LGAs by 2020.
vi. At least 85% of all structures in targeted LGAs will be covered using IRS during each spray cycle.
vii. 100% of Pregnant women attending ANC receive at least 3 doses of SP-IPT by 2020
viii. At least three vector surveillance sentinel sites established in each of the six ecological zones
ix. At least 90% of identified breeding sites treated with larvicides
x. Support the development and use of simple technologies and improved tools for vector control such screening of households' window and door with nets and use of durable linings, insecticides and LLINs with improved efficacy.

4.3.1.8 Indicators

LLINs

i. Number of LLINs distributed
ii. Proportion of households with at least 1 LLIN for every 2 persons
iii. % of persons who slept inside LLINs the night before the survey
iv. % of U5 who slept inside LLINs the night before the survey
v. % of pregnant women who slept inside LLINs the night before the survey

IRS

vi. Number of LGAs mapped for IRS intervention
vii. Proportion of LGAs implementing IRS
viii. Proportion of structures in the targeted LGAs sprayed with recommended insecticides in the last 12 months
ix. Number of people trained in IRS

LSM

x. Availability of Nationally adopted guideline on LSM
xi. Number of breeding sites identified in targeted LGAs for larviciding
xii. Number of breeding sites in the targeted LGAs treated with recommeded larvicides
xiii. Number of people trained in LSM

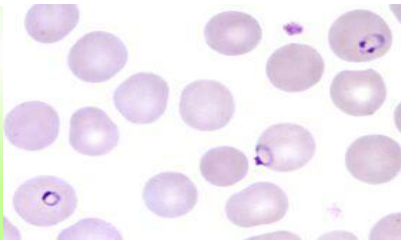
IPTp

xiv. Proportion of pregnant women with malaria who received appropriate and timely treatment according to national treatment guidelines
xv. Proportion Pregnant women that received three doses of SP for IPTp

Vector Surveillance and Insecticide Monitoring

xvi. Number of New sentinel sites established
xvii. Number of sentinel sites monitoring insecticide resistance
xviii. Number of Entomological Technicians trained

xix. National POA on Insecticide Resistance Management developed


4.3.2 OBJECTIVE 2: To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020

Overview

Malaria case management will be focused on scaling up of universal access to parasitological confirmation of malaria and treatment at all service delivery levels and access to case management of malaria in the private sector. The feasibility of this is further strengthened by the recent successes with the deployment of RDTs at the Primary Health Care levels. There will also be delivery of innovative approaches to service provision with focus on iCCM and SMC (in the Sahel). The following are the strategies underpinning this objective:

4.3.2.1 Strategy 1: Ensure availability of and access to equipment and supplies for parasitological confirmation of malaria

The availability of high quality materials and supplies for parasitological confirmation of malaria in health facilities and designated community settings will ensure prompt and effective testing and treatment of suspected malaria cases. Private and public sector collaboration will be encouraged to ensure that best practices in malaria diagnostic expertise and resources are equitably accessible to all patients receiving care in private and public health facilities. This strategy will be through the following actions:

a. **Procure High Performing Malaria RDTs**. Use of quality RDTs will boost the confidence of both the health care providers and the patients in test outcomes. The WHO/FIND RDT Product testing report will guide the selection of high performing RDTs with sufficiently high panel detection score (PDS). The RDT Procurement guide of the NEMP would be updated periodically for inclusion on new quality assured test products as they become available. The NMEP, State malaria programmes, Partners, agencies, organizations, institutions etc shall be guided in their procurements by this guide.

b. **Develop a strategic model for the supply and sales of RDTs to increase access.** A strategic model that makes RDT and ACT available especially at top drug distributors' level should be developed by NMEP and partners through engaging ACT/drug and RDTs importers/distributors to ensure the availability of both commodities where they are sold and used especially through the private sector mechanism.

4.3.2.2 Strategy 2: Build capacity of personnel in public and private health facilities, and at community level for parasitological confirmation of malaria

Capacity building will focus on test competences in microscopy and RDTs and in treatment decisions on the basis of test results. The aim will be to have a critical mass of competent miscroscopist while extending RDTs as far peripheral as possible to include community levesl and the PMVs at the private sectors. This capacity building strategy in RDT and microscopy shall entail the following:

a. **Standardize/harmonize Malaria RDT and/or Microscopy Training Manual.** The training manual for Malaria RDTs would be standardized and harmonized to ensure that all capacity

building activities by NMEP, State and Local Government Malaria Programmes, Partners and other organizations utilize a standard training tool. The WHO Malaria Microscopy manual and bench Aids shall be the minimum training tool to be used for malaria microscopy. Where possible, this manual could be made more robust to address peculiar skill and knowledge gaps for different categories of Microscopists, for instance, the Laboratory scientists and technicians.

b. **Increase critical mass of trained health workers in RDT and microscopy.** All cadres of health workers at all levels of health care that offer treatment for malaria will be trained on use of rapid diagnostic tests and microscopy, as may be applicable, using innovative formats. The training will also be cascaded to empower health workers in facilities with laboratories such as the private clinics, secondary and tertiary hospitals to use RDTs in out-patient departments (OPDs) and emergency centres. The training and equipping community-based providers (role model caregivers or CORPs) and PPMVs on use of RDT kits will form part of the actions for the scale-up of integrated community case management.

c. **Develop innovative and cost-effective capacity building strategy.** As we seek a pre-elimination end point capacity building on diagnosis will be innovative in content and format. New approaches like short video on the performance of RDTs and treatment options should be produced and translated to local Nigerian languages. While in-service training will continue to serve its purpose, the NMEP, State malaria programmes, Partners and other stakeholders shall strengthen malaria microscopy training at pre-serve training institutions (School of Health Technology, Polytechnics and Universities) through collaborative programmes. Online and continuing medical education platforms will be developed to facilitate re-training of health workers within 2-3 years intervals from previous training as a quality assurance strategy.

4.3.2.3 Strategy 3: Update and implement policies and guidelines for parasitological confirmation of malaria

The current policies provide for parasite-based malaria confirmation in the public and private sectors. Data shows that up to 60% of persons with fever are attended to at the informal private sector. However, there are external policies as well as regulatory bottlenecks that impede the use of RDTs in community case management by the proprietary patent medicine vendors (PPMVs) in the private sector. The actions for this strategy are:

a. **Conduct action research on RDT use by PPMVs.** The feasibility studies should not only cover blood safety issues but the economic aspect of charges for test done and sales/non-sales of ACTs and compliance with national guideline.

b. **Update Policy to remove bottle-neck to RDT implementation by PPMVs.** Advocacy and stakeholder engagements should be facilitated by the NMEP, State Malaria Programmes and Partners to address policy barriers at the highest level to ensure adherence to the policy on parasitological diagnosis and treatment by the PPMV.

c. **Benchmark PPMVs for implementing Parasitological confirmation.** The overall goal is institute a system that provides the platform for lower PPMVs to be profiled and elevated slowly to attain the standards required for them to perform RDTs to sell their ACTs. The approved PPMV will be connected to an ICT reporting platform for easy monitoring.

4.3.2.4 Strategy 4: Deploy RDTs and microscopy for parasitological confirmation of malaria in public and private health facilities and the community level

Universal diagnosis rests on premise that quality assured malaria diagnostics are available and accessible at the various levels. The following actions shall guide this strategy:

a. **Deployment of RDTs and/or Microscopy to Public and Private health facilities.** The programme will deploy diagnostic tools, and engage other stakeholders to fast-track the deployment of RDT/microscopy to all public health facilities.

b. **Deployment of RDT at the community level:** RDTs will be deployed at the community level through the ward health system (including to informal private sector: PPMVs).

c. **Develop algorithms for the use of RDTs and Microscopy.** This algorithm would provide guidance on patients' selection for testing in relation to available tools and points of consultations.

4.3.2.5 Strategy 5: Strengthen systems for quality assurance and quality control of malaria diagnostic processes and services

The framework for the implementation of the policy and guideline on parasitological confirmation of malaria is hinged on quality and this should be ensured at all times. The actions for this strategy are to:

a. **Develop Guidelines and tools for quality control of parasitological confirmation of malaria.** The National QA guideline for microscopy and RDTs will be produced through inputs by selected experts and distributed.

b. **Conduct Training and supervision of QA/QC Team.** Training and supervision of health workers and laboratory personnel will be conducted at interval to ensure that QA procedures for RDTs and malaria microscopy are observed. Refresher training shall be conducted to health workers performing RDTs and microscopy every two years. On-the-job supervision of health workers performing RDTs and/or microscopy using standard blood or surrogate panel or slides shall be done periodically.

c. **Strengthen National Malaria QA/QC Centre and designation/establishment of states' QA/QC Centres/Teams.** The NMEP will in collaboration with partners strengthen the current national malaria QA/QC Centres for malaria RDT and microscopy and support states to establish malaria diagnosis QA/QC teams and designate facilities that will serve as QA/QC Centres. Pre-deployment and post-deployment testing of RDTs shall be conducted periodically on all RDT lots. Molecular biology tool shall also be provided for molecular profiling of Plasmodium species and slide validation.

d. **Establish a coordinating platform for National QA/QC of malaria diagnosis.** An ICT-based platform shall be set-up to monitor progress of health workers and QA Teams in the states. Data from the states will be uploaded on an online platform that will also serve to reinforce skills and knowledge on malaria diagnosis. Logistics to physically track QA/QC activities, including telephone, transportation shall be provided.

e. **Undertake advocacy to decision makers to support the weak health system.** Effective malaria case management has the potential to strengthen the weak health system of the country. This potential should be fully canvassed and exploited.

4.3.2.6 Strategy 6: Create demand for utilization of parasitological confirmation of malaria processes and services

The realization of the fact that the current policy requirement for testing before treatment is a paradigm shift will require substantial behavior modification and advocacy as routine approaches may not be effective. Actions that targets both the health workers and the general public will speed up acceptance and insistence on having a malaria test. Details of the actions are included in the ACSM section

4.3.2.7 Strategy 7: Conduct operational research on parasitological confirmation of malaria processes and services

Research and synthesis of research findings in-country should be done to provide evidence for to strengthen the parasitological confirmation of malaria. The following actions will be undertaken:.

a. **Conduct Operational research**. Focus will be on capacity of the laboratory to provide quality and prompt services (laboratory assessment on internal/external quality control, quality assurance of materials/reagents, human resource capacity, turn-around-time for results, user and operational performance of malaria diagnostics etc).
b. **Facilitate and track the validation of New Malaria tests**. Validation of new malaria tests for their clinical and epidemiological utility will be facilitated and where possible be conducted when these tests become available to provide evidence for clinical case management and for population screening at the pre-elimination and elimination phase of malaria in the country. Regular performance testing of malaria tools should be incorporated with the Drug therapeutic efficacy testing trials or done alone using standard approaches.
c. **Mine and synthesize data on diagnostic performance, ease**-of-use and cost. In-country research on existing or new diagnostics and other operational and cost related issues should be compiled and analyzed to provide direction for improvement of malaria diagnostic services and its delivery

4.3.2.8 Targets

i. 100% of suspected malaria cases are confirmed by RDT/Microscopy in the public sector by 2018
ii. At least 80% of suspected malaria cases are confirmed by RDT/microscopy in the private sector and the community by 2018 and 100% by 2020.
iii. At least 80 % of RDTs needed in facilities and communities are accessible/distributed by 2017
iv. At least 80% of facilities/communities mapped receive RDTs by 2018
v. 100% of public facilities with laboratories have microscopes by the end of 2016
vi. At least 80% of health workers who conduct RDTs and/or microscopy are trained by the end 2016.
vii. 100% of procured RDTs are tested before and after deployment (lot tested) by 2014.
viii. National and State Microscopy QA/QC are functional by 2015.
ix. Policy update for RDT use among PPMVs to be effected by 2015.
x. 80% of Communities/PPMVs for RDT deployment to be mapped by 2015.
xi. Guidelines, Manuals, SOPs, strategies, and algorithm for RDT and/or microscopy in facilities and communities/PPMVs finalized by 2015.

4.3.2.9 Indicators

DIAGNOSIS

i. Proportion of persons (U5 and Above 5) with suspected malaria receiving a parasitological test (RDT and/or microscopy)
ii. Proportion of all persons (U5 and above 5) testing positive with a parasitological test (RDT and/or microscopy)

4.3.3 OBJECTIVE 3: To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020

Overview

Providing prompt and effective antimalarial drugs will be achieved through the involvement of the entire health system viz, public, private, and community level health services. The identification and management of severe malaria will be focused on its linkages with the broader health system strengthening. Hence severe malaria spans through the range of early identification and pre-referral at community level, referral systems through to intensive care for the severely ill at the tertiary health facilities.

4.3.3.1 Strategy 1: Ensure availability of and access to commodities and supplies for treatment of uncomplicated and severe malaria

The following actions are prioritized for this strategy:

a. **Engage in resource mobilization for procurement of antimalarial drugs** - NMEP and State malaria programmes will coordinate the procurement and distribution of ACTs, other antimalarials and supplies to enable health facilities to provide prompt and appropriate treatments in all age-groups and at all levels of the health care system
b. Quantification and procurement of antimalarial commodities: (Objective 5)
c. Improve efficiency in distribution of antimalarial commodities
d. **Engage the private sector in the manufacture and distribution of antimalarial drugs:** Private and public sector collaboration will be encouraged to ensure that best practices in malaria treatment expertise and resources are equitably accessible to all patients receiving care in private and public health facilities

4.3.3.2 Strategy 2: Treat cases of uncomplicated malaria according to National Treatment Guidelines

a. **Train and re-train health workers** at all levels in the management of uncomplicated malaria
b. **Provide essential job aids and guidelines** at all levels in suitable formats for various cadres of health workers.
c. **Scale up and sustain access to affordable, quality assure-ACTs** in public health facilities, community providers and private sector outlets (including PPMVs)

4.3.3.3 Strategy 3: Strengthen capacity of public and private facilities for management of severe malaria

Emphasis will be given to building the capacity of health personnel in public and private hospital for management of severe malaria:

a. **Provide on-the-job training and mentorship on management of severe malaria** for health personnel in public and private secondary health facilities.
b. **Provide all secondary and tertiary health facilities with recommended medicines and supplies** for effective treatment of severe malaria.

c. **Train Community-level health workers to recognize and promptly refer suspected cases of severe malaria** and provided them with job aids and pre-referral treatment.
d. **Support secondary and tertiary health facilities to acquire essential laboratory and clinical equipment** for management, monitoring and intensive care of persons with severe malaria.
e. **Strengthen referral systems**

4.3.3.4 Strategy 4: Implement a comprehensive national strategy for effective participation of the private sector in malaria case management

In recognition of the strategic role of the private sector in the Nigerian health care system, a comprehensive national strategy has recently been developed to strengthen and guide the participation of this sector in malaria case management.

a. **Policy update for private sector**: Develop and obtain approval from relevant organs of government for specific enabling policies for malaria case management by private sector providers such as PPMVs
b. **Create demand and provide incentives for the use of RDTs in the private sector** Adopt appropriate strategy to create demand and provide incentives for the use of RDTs in the private sector.
c. **Produce Guidelines and Algorithms:** Develop and disseminate guidelines, algorithms, and other job aids on malaria case management
d. **Capacity development:** Develop the capacity of key members of private sector health associations to provide training for their colleagues.
e. **Advocacy** : Advocacy to the ban and de-registration of ineffective antimalarials

4.3.3.5 Strategy 5: Scale up community case management of malaria as a component of integrated community case management (iCCM)

Rapid scale up of iCCM across the nation will be key component of this strategy that seeks to massively reduce malaria burden. The implementation of this strategy is going to rely heavily on collaboration with the National Primary Health Care Development Agency (NPHCDA) and other partners working at the community level to deliver the Community Base Minimum Health Package. NMEP will therefore seek to complement the iCCM implementation using the community malaria case management as a catalyst. The priority actions are

a. **Mapping the country**, in conjunction with NPHCDA and partners for iCCM personnel needs such number of community units to implement iCCM successfully
b. **Develop a joint frame-work** for providing adequate pool of community or ward units for iCCM.
c. **Train and re-train adequate numbers of community-based providers** (including PPMVs and volunteer role model caregivers) to recognize, test and treat uncomplicated malaria, and to refer sick persons (especially under-five children).
d. **Procure and distribute adequate supplies of affordable, quality-assured ACTs, RDTs and pre-referral treatments** to community level health providers including CORPs and PPMVs.
e. **Provide, where necessary but in collaboration with NPHCDA, iCCM kits** with regular replenishment of essential medicines to community providers.
f. **Create demand for iCCM services and induce** positive health-seeking behavior by implementing strong advocacy, communication and sensitization strategy
g. **Train CORPs and PPMVs in pharmaco-vigilance and record keeping**.
h. **Undertake advocacy** at Federal, State and LGA levels to mobilize resources for iCCM.

4.3.3.6 Strategy 6: Strengthen delivery of prompt treatment of malaria for pregnant women

a. **Review and reproduce the National guideline for Malaria control in pregnancy** (with the related job aids) and widely disseminate same to health facilities and reproductive health personnel at all levels.
b. **Promote Parasitological confirmation in Pregnant women:** Ensure testing of all pregnant women with suspected malaria (with microscopy or RDT) before treatment
c. **Train all reproductive health personnel on malaria diagnosis and management pregnancy** and provide RDTs, ACTs and pre-referral treatment at all prenatal care service units in both the private and public sector.
d. **Promote malaria prevention in pregnancy**: Promote and support delivery of prenatal care and malaria control services to pregnant women.
e. **Strengthen Malaria in Pregnancy Working Group** at national level and established same at the State and LGA levels to foster support for malaria control in pregnancy and facilitate the integration MiP into reproductive health services at Federal, State and LGA levels.

4.3.3.7 Strategy 7: Strengthen sentinel surveillance of malaria treatment and conduct drug efficacy tests (DTET)

Sentinel surveillance of malaria treatment will be scaled up to cover all 36 States and the Federal Capital Territory.

a. Provide basic diagnostic, data management facilities and funding for logistic support for at least 37 sentinel surveillance sites (one site per State and FCT).

b. Train clinical, laboratory and data personnel at the sentinel sites on the key procedures, data management and reporting.

c. Perform regular supportive supervision of the sentinel sites.

Antimalarial drug therapeutic efficacy test (DTET)

a. **Conduct DTET every two years** to ascertain the susceptibility of *Plasmodium falciparum* to the recommended antimalarials.
b. **Protocol development and planning meetings:** Each round of DTET will be preceded by protocol development and planning meetings by the technical committee that includes consultants and the principal investigators from the sites identified for DTET. Ensure that all DTET treatment outcomes are confirmed by molecular techniques to differentiate recrudescence from new infections.
c. **Resource mobilization for DTET**: NMCP and partners will raise the funds to ensure that the DTET will meet international ethical and best practice standards including independent clinical monitoring of all study sites.
d. **Prepare and disseminate DTET findings** through technical reports and publication in high impact peer-reviewed journal.

4.3.3.8 Strategy 8: Strengthen capacity for Pharmacovigilance

- NMCP will strengthen pharmacovigilance in collaboration with NAFDAC, Food and Drug Department of the Federal Ministry of Health, States and Partners.
- Hold regular coordination meetings on pharmacovigilance with NAFDAC and partners.

- Review, update, produce and widely disseminate guidance documents and operational tools.
- Train and re-train health workers on pharmacovigilance, including on the job training and supportive supervision.
- Scale and sustain sensitization stakeholders and general public on Adverse Event reporting.

4.3.3.9 Indicators

TREATMENT

i. Proportion of persons (children under 5 years of age and other age groups) with parasite-based diagnosis of malaria who receive prompt antimalarial treatment according to national treatment policy.
ii. Proportion of patients admitted with severe malaria receiving injectable artesunate/quinine tabs+ injection at a health facility

MALARIA IN PREGNANCY

i. Proportion of pregnant women with malaria who received appropriate and timely treatment according to national treatment guidelines
ii. Proportion Pregnant women that received three doses of SP for IPTp

4.3.3.10 Targets:

Case Management

i. 80% persons (children under 5 years of age and other age groups) with parasite-based diagnosis of malaria receive prompt antimalarial treatment according to national treatment policy by 2017 and 100% by 2020.
ii. 80% of patients admitted with severe malaria receiving correct treatment at a health facility by 2017, and 100% by 2020
iii. 80% health facilities with no stock out of recommended antimalarial drug for a week or longer at any time during the preceding three months by 2017, and 100% by 2020

Malaria in pregnancy

i. 80% of pregnant women with fever/malaria receive appropriate and timely treatment according to the national treatment guidelines by 2017 and 100% by 2020
ii. 80% of pregnant women receive at least three doses of intermittent preventive treatment (IPT) for malaria in pregnancy by 2017 and 100% by 2020
iii. 80% of pregnant women regularly sleep under LLINs by 2017, and 100% by 2020

4.3.4 OBJECTIVE 4: To provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment measures as necessary by 2020

Overview

Social and behaviour change communication will be driven by the understanding of changing paradigms that emphasize engagement with various participant groups and deepened empowerment of households and communities to adopt appropriate behaviours. To this end ACSM activities will seek to reduce malaria morbidity and related mortality through advocacy, communication and social mobilization by motivating every Nigerian to take recommended actions to fund, prevent, diagnose and treat, control and eventually eliminate the disease. The implementation of the malaria communication programme interventions will be measured as they

occur through process and output indicators. The outcomes of the interventions will also be assessed to determine the contribution of the ACSM strategy to the overall goal of the NMSP 2014 – 2020. The following are the core strategies for this objective:

4.3.4.1 Strategy 1: Maintain high knowledge of malaria prevention and treatment practices

The level of awareness currently stands at 94%. ACSM interventions will aim to sustain the high level of awareness and nudge it to 100% by 2020.

a. **Engage community leaders and members through social mobilisation**: A mix of approaches and platforms, including community traditional structures and systems will be adopted to promote and sustain knowledge and understanding, and build consensus on moving towards practice.
b. **Mobilize communities**: To participate in the planning, implementation and evaluation of malaria control initiatives to facilitate ownership of malaria control and prevention programmes.

4.3.4.2 Strategy 2: Scale-up demand for malaria prevention and management services

a. **Conduct survey on health seeking behaviour:** To identify level and determinants of the use of preventive and management commodities/services. This will guide development of appropriate messages.
b. **Put in place system for monitoring the trend in relation to malaria knowledge, attitude and practices.** This will help to monitor behaviour of the population on a continuous basis and adjusting the communication strategies to address emerging issues.
c. **Develop and deploy IEC materials (Print and electronic)**: This will focus on creating social and behaviour change communication (SBCC). Nigeria will adopt the SBCC approach targeted at social, individual, environmental and health systems levels through promotion of a supportive society at family, community, State and Federal levels. Communication materials on malaria will be developed or updated in alignment with the Communication Pathways Model of strategic communication for behaviour change, namely: (i) at the policy level to create enabling environments; (ii) at the health systems level to improve services; (iii) at the community levels to mobilize and strengthen community capacity and change social norms; and (iv) at the level of engaging the individual and households for behaviour change.The most effective ways of creating demand to sensitize the general population (through music, drama, sports, competitions,etc.) will be explored. The motivation will be for patients to insist on a test before using ACTs, whether they are in health facilities or medicine stores.
d. **Create demand for use of diagnostic and treatment commodities among health workers**. NMEP and Partners are to develop an effective strategy to sensitize high level Professionals such as the Paediatric Association of Nigeria Conference (PANCONF), Medical Laboratory Science Council of Nigeria (MLSCN); Medical and Dental Council of Nigeria (MDCN), Nigerian Medical Association (NMA), National Nursing Council, Pharmacy Council of Nigeria/Pharmaceutical Association of Nigeria and through annual/clinical meetings (chart reviews, morbidity and mortality meetings), Continuing Medical Education/Continuing Professional Development sessions etc.
e. **Conduct community mobilization**: Focused household visits, community dialogue and other social mobilization interventions will be deployed to boost LLIN use, IPTp, RDT and ACTs uptake amongst other interventions, and track the redemption of policy and resource commitments to effective service delivery in communities. There will also be strategic engagement of school pupils and targeted gatekeepers to champion malaria intervention messages at home and among peers. Social mobilization and peer mentoring techniques will also be used to facilitate integration of malaria talking points into the activities of the

clergy, community leaders and the heads of primary and secondary schools, transport unions, and similar organizations.

4.3.4.3 Strategy 3: Enhance political will and enabling environment for malaria control/elimination activities

a. **Develop advocacy materials for briefing of various stakeholders and policy makers**: A structured briefing material will be developed to guide advocacy efforts by different teams at different levels.
b. **Conduct advocacy visits**: Strategic and sustained advocacy events will target political leaders, policy-makers and the private sector for appropriate policies and adequate, timely and sustained funding of malaria control/elimination activities. Advocacy materials will be developed, pretested, finalized, produced and distributed to trained advocates for use.

4.3.4.4 Strategy 4: Scale-up facilities-based dissemination of appropriate information for malaria prevention and management practices

a. **Develop talking points and other materials for interpersonal communication and counselling at the work place**. Review of the HSB survey conducted in ***Strategy 2*** will show health and non-health facilities-based barriers to (and opportunities for) behaviour change for improved access to malaria prevention, diagnosis, treatment (and elimination) services. This information will be used to develop job aids, talking points and other materials for interpersonal communication and counselling (IPCC).
b. **Distribute IPCC materials to health facilities**
c. **Build capacity of the Health Workers on use of the IPCC materials:** Additional core action here will include building the capacity of health providers, teachers, community and religious leaders for the routine use of IPCC and job aids to integrate malaria information into the services they offer routinely to their clients. Respect for client's rights will be emphasized in the process.

4.3.4.5 Strategy 5: Improve ACSM Coordination at all Levels

This plan will focus on improving ACSM coordination at Federal, State and LGA levels and among partners in order to ensure that government and partners use strategic communication approaches to plan, implement and evaluate malaria interventions.

a. **Update the current National ACSM strategic framework**. This will contain information about strategic interventions, key messages and communication approaches to guide ACSM implementation at all levels
b. **Set up ACSM core groups in states**: Every State will be assisted by the NMEP and partners to set up an ACSM Core Group. NMEP will work through the Core Groups (consisting of public, private, NGO and CBO malaria stakeholders) to effectively coordinate ACSM activities at the state level and adapt the Federal level malaria communication policies, guidelines, plans and materials, etc., to State, LGA and Ward needs.
c. **Train ACSM core group members:** To effectively deliver on their roles, responsibilities and expected outputs.
d. **Conduct monthly tracking meetings:** The Core Groups will also serve as appropriate channels for tracking all ACSM activities through monthly meetings and reporting mechanisms put in place by Monitoring and Evaluation (M&E). The ACSM Core Groups will bridge the gap in the monitoring and evaluation of malaria ACSM activities in the LGAs and Wards.

4.3.4.6 ACSM Targets

i. To reach 100% of Nigerians 5years and above with sustained information, education and communication about prevention and management of malaria by 2020.

ii. To advocate to at least 80% of targeted political leaders, policy-makers and the private sector leaders for adequate, timely and sustained funding of malaria control activities by 2020.

iii. To ensure that at least 80% of individuals visiting health facilities receive information for malaria prevention and management by 2020.

iv. To ensure that at least 80% of individuals receive information at the community level (schools, community and faith-based organizations etc.) on malaria prevention and management by 2020.

v. To set-up functional ACSM core group in all the states and the FCT by 2016.

vi. To ensure that 80% of pregnant women and children under 5years use LLINs by 2018.

4.3.4.7 Indicators

i. Proportion of the population who recall seeing or hearing malaria messages during the last 6months.

ii. Proportion of persons with fever who go to a healthcare giver/provider for diagnosis and treatment within 24hours.

iii. Number of targeted BCC activities carried out in a year.

iv. Number of advocacy visits to opinion leaders and other targeted audience.

4.3.5 OBJECTIVE 5: To ensure the timely availability of appropriate antimalarial medicines and commodities required for prevention and treatment of malaria in Nigeria wherever they are needed by 2018.

Overview

In the NMSP 2014 to 2020, a critical objective is to ensure a consistent supply of safe, effective, good quality, affordable and accessible medicines and health commodities for malaria prevention and control. This will be achieved through well-coordinated activities of the pharmaceutical management cycle, i.e. the selection, forecasting and quantification, procurement, inventory management, distribution and rational use of antimalarial medicines. The strategic thrust for this objective is the strengthening and coordination of structures, mechanisms and systems for the provision of access to commodities/products required for prevention and treatment of malaria, with special focus on scale-up in the private sector. Whereas issues related to supply of commodities are traditionally regarded as a supportive intervention that is often indicated under specific activities, it has been scaled up to a standalone objective

4.3.5.1 Strategy 1: Strengthen Procurement-related processes

To improve on existing processes for Forecasting and Quantification, such that the outputs generated through the timely and inclusive use of accurate consumption data will support the uninterrupted availability, and sufficiency of malaria medicines and commodities in Nigeria.

Priority Actions:

a. **Set up a Functional National Forecasting and Quantification Committee** inclusive of all relevant stakeholders at all levels of activities.
b. **Conduct annual quantification and gap analysis exercises**: At Zonal Level, there will be **c**onduct of annual quantification and gap analysis exercise based on actual needs identified. At National Level, there will be conduct of annual quantification and gap analysis exercise based on actual needs identified
c. **Conduct meetings** to evaluate the accuracy of the Forecasts for antimalarial medicines and commodities
d. **Develop a unified framework for procurement***:* To synchronize fragmented procurement processes a unified framework following the guidelines and other activities will be activated through the following actions:

- Dissemination of the PSM Framework at Sub-National Level
- Institutionalization of the PSM Framework at State and LGA levels
- to harmonize procurement and donation processes with the National Procurement Guidelines.
- to develop and utilize a tracking and response system to the procurement and delivery processes.

4.3.5.2 Strategy 2: Develop efficient distribution systems for antimalarial medicines and commodities (storage, transport distribution and inventory management).

Priority Actions:

a. **Upgrade storage** (infrastructure and processes) facilities for appropriate storage of malarial medicines and commodities in selected health facilities *(to obtain minimum good storage requirements)*
b. **Develop distribution plans**: Develop Comprehensive plans for distribution of medicines and commodities National stores to States Stores and from State Stores to facilities
c. **Align Realistic Costing and Resource Mobilization/Allocation** for transporting antimalarials per facility according to States and Zones, to deliver to the "last mile".
d. **Distribute antimalarial medicines and commodities** from States to Health facilities
e. **Undertake periodic tracking** of availability of Antimalarial medicines to assess the level of Stock outs in health facilities
f. **Strengthen inventory management**: Support better Inventory Management of antimalarial medicines
g. **Improve Pipeline Monitoring** through System Upgrades such as "SMS 4 Life" to facilitate responsiveness

4.3.5.3 Strategy 3: Strengthen Logistics Management

Priority Actions:

a. **Integrate the LMIS for antimalarial medicines and commodities with the national DHIS**, such that data captured within the DHIS represent the core of routine LMIS This will be jumpstarted by stakeholders' meetings first to define LMIS needs within the framework of the DHIS and subsequently joint meetings with the M and E team, and then with the enlarged stakeholders for national health information.
b. **Build capacity for Supportive Supervision for PSM** at national, State, LGA and Facility Levels
c. **Develop comprehensive Plan for integrated Supportive Supervision Activities:** Integrated supportive supervision for cross cutting services and logistics data) will be developed and implemented

4.3.5.4 Strategy 4: Implement Policies on Quality Assurance and Pharmacovigilance

Priority Actions:

a. **Collaborate with NAFDAC for increased Pre and Post marketing Surveillance** of antimalarial medicines and commoditieswill be strengthened through the development of Annual (NMCP-NAFDAC) Joint Action Plans
b. **Conduct batch testing of products:** Post Market Surveillance-Batch testing will be conducted

c. **Advocacy for innovative Policies to discourage use of monotherapies**: Implement Policy Changes to reduce access to Chloroquine, SP and **oral** artemisinin for the **treatment** of malaria
d. **Conduct pharmacovigilance:** Joint Action Plans for Coordinated Pharmacovigilance of antimalarial medicines will be implemented by developing Annual (NMCP-(PSM and Case Management) NAFDAC) plans. Desk Officers for Pharmacovigilance, representing PSM and Case Management to coordinate PV activities in NMCP and maintain liaison with NAFDAC will be assigned.

4.3.5.5 Strategy 5: Operationalize and update where necessary existing policies for malaria case management in the private sector

Priority Actions:

- **Policy and Regulatory Issues:** In conjunction with other sections, advocacy and collaboration with the appropriate regulatory organizations for the review of the existing guidelines on diagnostics and antimalarials to align with policies. Policy updates may also extend to reduction of taxes that inhibits affordability of antimalarial medicines and commodities in the private sector as well as incentives to encourage local manufacturing of high quality malaria intervention commodities

4.3.5.6 Strategy 6: Increase access to antimalarial prevention and management commodities in the private sector

Priority Actions:

The country programme will aim to provide an enabling environment to promote equitable distribution of antimalarial commodities through private facilities in all parts of the country by advocating for and implementing incentives to private sector operatives to establish outlets in hard to reach areas. The approach here will be to enhance availability of cheap and affordable antimalarial drugs and other commodities

a. **Private sector subsidy**: Resource mobilization for ACT and RDTs subsidy at the level of manufacturers. Also definition of beneficiaries of the subsidy program to ensure reduction in the channel;
b. **Price regulation**: Provision of price information on labels, electronic and print media
c. **Price negotiation**: Negotiation of prices of ACTs and RDTs at the level of manufacturers
d. **Incentives:** Advocating for full implementation of taxes and tariff waivers with relevant regulators

4.3.5.7 Strategy 7: Strengthen collaboration with NAFDAC to put in place regulatory requirements for distribution including storage and transportation of antimalarial products in the private sector

Priority Actions:

a. NAFDAC to draft national distribution guidelines for the private sector. This will incorporate the licensing and subsequent monitoring of private outlets involved in the distribution or sales of antimalarial commodities, and will focus on adherence to acceptable storage practices that will not compromise the integrity of the products; including the availability of cool chain for relevant products.
b. Communication and awareness on the layers of processes for preventing counterfeit and substandard drugs and for validating purchase of quality assured antimalarial products will

be strengthened. There will be provision of mobile technologies to support testing of products in the supply chain

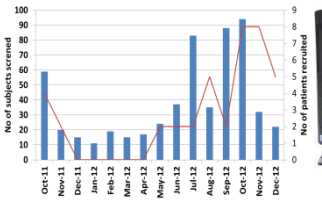
c. NAFDAC inspectors will be trained in supply chain surveillance

4.3.5.8 Indicators:

i. % of health facilities reporting stock-outs of RDTs lasting more than 1 week at any time during the past 3 months

ii. % of health facilities with stock-out of ACTs lasting more than 1 week at any time during the past 3 months

iii. % of product batches tested in previous year that met National and International Control Standards





4.3.6 Objective 6: At least 80% of health facilities in all LGAs report routinely on malaria by 2020, progress is measured, and evidence is used for programme improvement

Overview

This objective seeks to ensure that reliable, timely and complete data is generated through routine monitoring of the implementation of planned interventions and episodic monitoring for impact. While setting the target at 80% reporting, ensuring that all health facilities report on selected malaria indicators by 2020 remains the desired end point of this strategic plan. As progress is made towards achieving elimination, the monitoring and evaluation system will be strengthened to attain the requisite level of sensitivity and robustness to generate information for decision making. The M&E framework to guide the plan is adapted from the Global Fund M&E toolkit for Malaria. See Figure 4.1

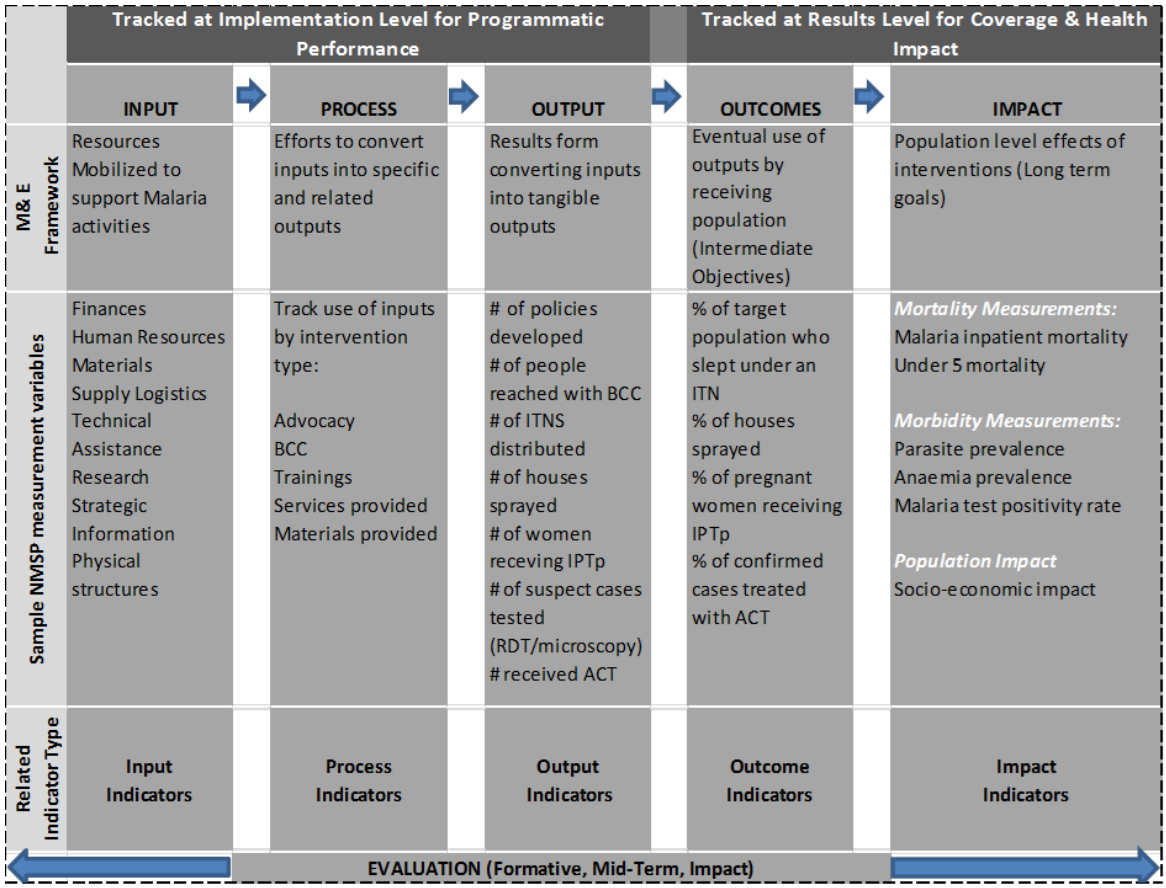
4.3.6.1 Strategy 1: Strengthen routine data generation and flow from public/private facilities and community-based health providers for the National Health management information system (NHMIS)

The process of rationalization of data elements and harmonization of tools and roll out will be completed to ensure that the Malaria Management Information System (MIS), now harmonized with the National Health Management Information System (NHMIS) is able to capture only relevant information for decision making. This will reduce significantly the reporting burden on health records officers at the health facilities.

Priority Actions:

a. **Rationalization of data elements and harmonization of data collection tools** for use in Public and private health facilities
b. **Finalization of Community level tools** to ensure that malaria data at community level and through the patent medicine vendors also enter the national database.
c. **Printing and distribution of the revised tools** will also be ensured to promote their use.
d. **Training of health records officers , PMVs and Community service providers** on the revised tools

Figure 4-1: M & E Framework adapted from GF M&E Toolkit



4.3.6.2 Strategy 2. Operationalize electronic database for malaria control using DHIS version 2.0

Priority Actions:

a. ***Create a malaria module in the DHIS 2***: In conjunction with the DPRS and partners a malaria module will be created in the DHIS to facilitate data retrieval and use by programme implementers at the national and sub-national levels. The National Malaria Program will have access rights to the DHIS platform and will generate routine and data analysis reports from this central platform.

b. ***Roll out of DHIS 2.0 to all LGAs***: The National Malaria Programme will leverage investments across the health sector and in particular the AIDS, TB and Malaria network towards ensuring DHIS use in all the LGAs in the federation.

c. ***DHIS training and re-training for M&E officers at LGA level***: Records Officers of tertiary facilities will also be trained on the DHIS to facilitate direct data entry. Moreover, malaria control programme officers at the national and sub-national levels will also be trained on the DHIS version 2.0 to enable them use the platform for data retrieval, analysis and use for decision making in programme implementation.

d. ***Roll out of mobile technology to health facilities***: The use of mobile technology for reporting has been piloted in Nigeria by the DPRS for the HIV program and its effectiveness at improving timeliness and completeness of reporting demonstrated. This technology will be scaled up to health facilities to further reduce reporting burden. Current developments require software configuration on java enabled phones which can utilize existing mobile data coverage for transmission. This cost effective approach will be adopted to reach all

health facilities as a simplified method of reporting for the malaria program. Software configuration and roll out will be coordinated in partnership with the DPRS and partners.

4.3.6.3 Strategy 3: Strengthen human resources for monitoring and evaluation for ATM

Human resource capacity for monitoring and evaluation will be improved as part of a larger health systems strengthening approach.

Priority Actions:

a. ***Training and re-training of M&E officers at facility, LGA, State and National levels***: These cadre of staff will be trained and retrained on M&E fundamentals including the use of the newly harmonized data capturing tools, data analysis and data quality assurance. This approach will be important for achieving the sensitivity and reliability of the malaria M&E system as progress is made towards achieving elimination.
b. ***M&E curriculum revision in Schools of health technology***: The National Malaria Programme and partners will work with State governments towards revising the M&E training curriculum at schools of health technologies to ensure that the medical records officers produced from those institutions are acquainted with the national HMIS and tools including the electronic platforms described earlier.
c. ***Advocacy for M&E staff recruitment*:** States and LGAs will be encouraged to recruit more medical records officers to attain the gold standard of at least one medical records officer per health facility.
d. ***Leverage current M&E human resources of other public health programs*** *(e.g EPI, HIV)*: This is a strong recommendation from the MPR that will be explored by the National Malaria program.

4.3.6.4 Strategy 4: Strengthen routine monitoring & supervision

Priority Actions:

a. **Harmonization of ISS tools and roll out to states**
b. **Scale up Integrated supportive supervision**: This will be conducted by National, State and LGA teams utilizing harmonized ISS tools. Elements of monitoring visits will include assessing programme implementation, administration and management of malaria interventions; identifying challenges/bottlenecks/gaps in programme implementation and proffering on-site solutions where possible

4.3.6.5 Strategy 5: Strengthen Data Quality Assurance (DQA) at all levels of reporting

Priority Actions:

a. ***Routine DQA training for M&E staff***: Efforts will be made through trainings for M&E staff at all levels for routine data quality checks prior to transmission to the next level.
b. ***Quarterly Data Quality Audits***: These will be conducted quarterly by the National Malaria Program

4.3.6.6 Strategy 6: Develop and implement an Operations Research (OR) agenda for the Malaria Programme

The recent Malaria Programme Review recommends the strengthening of operations research guidelines and an improvement of links with state malaria control programs.

Priority Actions:

a. ***Convene Operational Research stakeholder meeting***: An operations research agenda will be defined by the various technical working groups particularly around areas where there are limited bodies of evidence to aid with planning and implementation. Some of the recommendations (Box above) are highlighted here for emphasis but the final research questions will be defined through a consultative process involving NMP, TWGS, partners and research institutions.

   Some possible areas for Operational research would include:

   - Operational research on use of RDTs by PPMVs
   - Testing new RDTs for diagnostic accuracy and quality
   - Formative and operations research to determine appropriate mechanisms for delivery of MiP services for the diverse geo-political and socio-cultural grouping in the country
   - Monitoring the efficacy and/or durability of LLINs
   - Study to understand the behaviour and acceptability of IRS access to households
   - Evaluate the use of larviciding in pilot sites such as Rivers State
   - Conduct In-depth Qualitative Studies and Operational Research for ACSM

   Also to be addressed at the stakeholder meeting will be the larger issue of public health research as well as innovative research financing.

b. ***Earmark resources for OR in National and State budgets for Malaria****:* A proposed 40% of total M&E budget is recommended for earmark for Operations Research. This funding will also provide seed support towards making the NMEP Operational research unit functional. A resource mobilization plan will be developed and advocacy to partners and research institutions for support (technical and financial) will be an added approach.

c. ***Conduct of approved OR protocols****:* Selected OR questions will have robust protocols developed and conducted in line with National research ethical standards.

d. ***Documentation and dissemination of OR findings to inform program implementation****:* Implementation of the strategic plan will be guided by new bodies of evidence generated through routine data, surveillance data and operations research findings. Efforts will be made to ensure wide dissemination of research findings.

4.3.6.7 Strategy 7: Strengthen malaria surveillance coordination and linkages with National HMIS

The malaria surveillance system will be intensified towards achieving the required sensitivity for Malaria Pre-elimination - Elimination. Surveillance will be improved to identify and track cases of

malaria and also changes to malaria epidemiology in Nigeria particularly serving as a progress monitor for this strategic plan and its goals.

Priority Actions:

a. ***Increase number of sentinel sites****:* Sentinel sites will be increased to at least one in each state with consideration for locations where there are already inputs from other partners or departments. This will help build collaboration and links across the health sector.
b. ***Scale up surveillance at human, vector and parasite levels****:* These sites will have function to include *a)*Serve as starting point for improving reporting capacity alongside routine LGA reporting *b)* Generate high quality efficacy data for the currently used anti-malaria medicines c) Drug resistance monitoring d) Generate detailed epidemiological trend analysis to compliment the simplified routine system e) Insecticide susceptibility monitoring /Vector resistance in view of IRS scale up *f)* Positivity rate monitoring among febrile patients suspected of malaria *g)* Active case detection in later years preceding Pre-elimination (2018-2020) *h)* Engaging and training state medical entomologists and teams in surveillance and monitoring of Anopheles vectors *i)* Vector mapping using GIS techniques

4.3.6.8 Strategy 8: Strengthen data generation and sharing from evaluations and reviews

Program evaluations/reviews will be conducted to measure Outcome and Impact of this strategic plan.

Priority Actions:

a. ***Revision of the NMSP to align with NHSDP****:* A provision is made for the revision of this plan to align with the National Health Sector Development Plan 2010-2015 (NHSDP) up for review in 2016.
b. ***Conduct Malaria Indicator Survey (MIS)***
c. ***Conduct Health Facility Survey***
d. ***Conduct Rapid Impact Assessment***
e. ***Demographic and Health Survey***

4.3.6.9 Strategy 9: Strengthen M&E Coordination

Priority Actions:

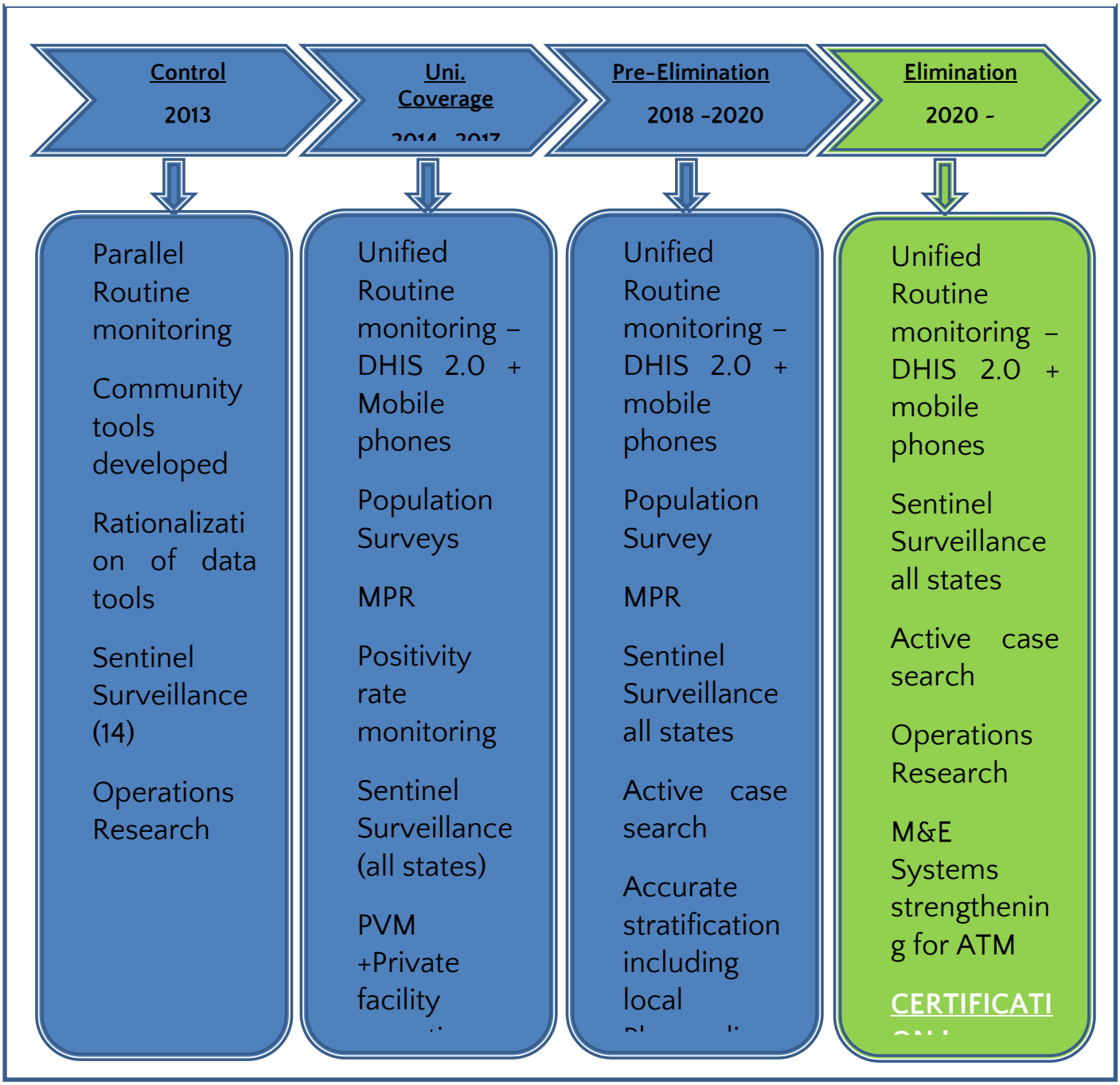
a. ***Develop an M&E coordination framework****:* In line with "The Three Ones" principle, there will be only one agreed upon monitoring and evaluation coordination framework to serve the NMP and its partners.
b. ***Strengthen the existing linkages between the malaria programme and the larger ATM network*****:** The NMP through the M&E branch and supported by the M&E TWG will strengthen the existing linkages from within the malaria programme and with the larger AIDS, TB & Malaria (ATM) network .
c. ***Improve coordination with DPRS*****:** The M&E Unit will work closely with the DPRS housing the national HMIS for routine access to malaria data and other related health indices of interest.
d. ***Improve linkages across all health stakeholders for resource leveraging****:* Linkages will be strengthened between the NMP, SMP, other health divisions (e.g. EPI, MCH, HIV, TB, IMCI etc.), relevant ministries, Government Departments, CSOs, Local Authorities, the Private Sector and partners (e.g. WHO, USG, GFATM, UNICEF, DFID, WB, CHAI etc.).

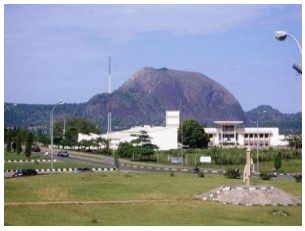
4.3.6.10 Indicators

i. Proportion of tertiary facilities reporting malaria data through the DHIS
ii. Proportion of PHCs reporting malaria data through mobile technology

iii. No of planned DQA conducted (yearly)
iv. Proportion of planned Operations Research conducted (yearly)
v. Proportion of planned surveys conducted

Figure STYLEREF 1 \s 4 SEQ Figure * ARABIC \s 1 2: Transition of M&E over plan years






4.3.7 OBJECTIVE 7: To strengthen governance and coordination of all stakeholders for effective programme implementation towards an 'A' rating by 2017 that is sustained through to 2020 on a standardized scorecard

Overview

Programme management component articulates the critical steps and approach expected of different stakeholders to take responsibility for planning, supervision, resource mobilization, capacity development and other management arrangements for efficient utilization of resources for effective programming. The leadership and platforms will be able to ensure delivery of Programme goal through well-coordinated actions at all levels. In the light of the scope of the strategic plan and the need for paradigm shifts in programme implementation especially as the country seeks a pre-elimination endpoint emphasis will be placed on institutional strengthening for monitoring and effective surveillance. There will be strategic advocacy visits for resource mobilization and key policy issues that will create an enabling environment for programme implementation. Overall the governance offered by the NMEP will ensure that malaria control/elimination is linked to the general health sector at national and sub-national levels as part of an integrated national health system.

4.3.7.1 Strategy 1: Build capacity at national, state and LGA levels to deliver malaria control/elimination interventions.

Human resource capacity and management is central to the delivery of various strategies and priority actions identified in this strategic plan. Human capital development required to achieve the goal of NMSP, 2014 – 2020 should be based on identified needs and be coordinated o improve quality while avoiding overlap. Specifically human resource development will focus on planning, budgeting, reviewing and supervision. There will also be emphasis on competences necessary for the health sector linkages. Performance Management of human resource through objective appraisal including development of necessary tools and systems needs to be put in place at the federal and state levels.

Priority actions

a. **Capacity Needs Assessment:** Assess capacity need in various intervention areas and develop capacity building plans annually
b. **Update Capacity building materials**: Update the harmonised capacity building materials and disseminate to Implementing Partners.
c. **Obtain Technical Assistance**: To improve efficiency local and internal Technical Assistance will be obtained as may be required to complement capacity development needs
d. **Coordinate capacity development activities of various stakeholders**
e. **Human Resource Management**: Improve Human Resource management mechanism of NMEP and SMEPs to improve performance

4.3.7.2 Strategy 2: Strengthen programme coordination at national and sub-national levels.

Coordination of national and sub-national stakeholders is central to the achievement of 'three ones' and efficiency in programme management. The existing National Coordination Framework requires an update to reflect critical issues of coordination and required platforms to bring stakeholders to common agreement and manage relationships.

The priority actions are to:

a. **Partners' Mapping**: Conduct periodic mapping and profiling of RBM Partners at national and sub-national levels
b. **National Coordination framework**: Review/adapt and disseminate the National Coordination framework
c. **Strengthen coordination platforms** (TWG - Malaria and Partners Forum) at the national level.
d. **Technical Coordination Meetings**: Hold technical TWG-Malaria subcommittees' meetings regularly
e. **Revitalize State TWGs**: Constitute and operationalize State Malaria TWG
f. **Hold Coordination meetings** regularly at sub-national levels
g. **Implement decisions taken at coordination meetings**
h. **Coordinate the implementation of Integrated Supportive Supervision (ISS)**
i. **Conduct annual State Programme Review**

4.3.7.3 Strategy 3: Improve unified annual operational planning

NMEP annual operational plan should as a necessity reflect key activities of the national stakeholders and their contributions to Malaria control at the federal level. Annual planning should therefore involve key RBM Partners and government MDAs (including NPHCDA, Ministry of Environment, etc) that have direct or supportive responsibilities for malaria control. SMEPs will also be supported to develop their capacities to develop costed annual operational plan reflecting the programmatic and financial contributions of all stakeholders in their states.

The priority actions are to:

a. **Develop annual unified costed operational plan**
b. **Conduct periodic review of the plan at the Federal level**
c. **State level reviews**: Develop and implement annual unified costed operational plan and conduct periodic review at the State level
d. ***Conduct Malaria Program reviews (MPR)***: There will be two MPRs planned for 2016 and 2018. One review will be at mid-point and the other review just preceding the expiration of the plan.
e. **New strategies**: Update strategies as evidence and tools become available e.g. Programmatic deployment of ***Malaria Vaccine***

4.3.7.4 Strategy 4: Strengthen Malaria Resource Mobilisation and Financial Management mechanisms.

NMEP with support from RBM Partners should develop a Resource Mobilisation and Financial Management Strategy that clearly maps the available resources, projects anticipated resources, improve public sector resourcing, articulates strategies for innovative sources of funding and improve accountability as well as transparency. Improving financial governance of Malaria Elimination Programmes will strengthen donor's confidence and private sector investment.

Priority actions

a. **Resource Mobilization Framework**: Develop and implement a National Malaria Resource Mobilization and Financing Framework
b. **Stakeholder's malaria expenditure profile**: Conduct an assessment of stakeholders' spending on Malaria elimination in Nigeria
c. **Strengthen financial management**: Develop/Harmonize financial management guideline for NMEP
d. **Tracking**: Develop financial management and reporting tool (including an acceptable software) for financial tracking.
e. **Auditing**: Conduct biannual internal management audit and annual external audit.
f. **Accountability:** Develop and disseminate annual financial report
g. **Efficiency Studies**: Conduct efficiency studies to determine the cost effectiveness of key interventions

4.3.7.5 Strategy 5: Develop a comprehensive strategy for private sector engagement

A comprehensive approach to engaging various private sector players on production, marketing and distribution, communication, service provision and resourcing of malaria control should be articulated in the Malaria PPP strategy. This strategy should cover all critical dimensions and contributions to the national malaria control efforts.

Priority actions

a. **Business Plan:** Develop Malaria Control/Elimination Business Plan
b. **Malaria PPP Strategy**: Develop and disseminate Malaria Public-Private Partnership (PPP) strategy
c. **Operationalize PPP arrangements**: Constitute and operationalize PPP coordination platforms for private sector stakeholders
d. **Support key Malaria related industries and Markets to improve availability Malaria medicines and commodities**

4.3.7.6 Strategy 6: Strengthen timely reporting of Malaria control activities at all levels and promote dissemination of all reports to relevant stakeholders.

The reporting mechanisms at national and sub-national level require significant improvement in term of timeliness and accuracy. The national and state programmes should drive the harmonisation of different programmatic reports into one national or state malaria reports through their convening authorities on quarterly and annual basis. All activities implemented should be periodically reported to relevant stakeholders to improve planning, allocative efficiency and documentation of results In addition, the drive towards elimination and scale-up of interventions like IRS will require having setting up special units that will coordinate mapping activities

Priority actions

a. **Report Writing:** Develop periodic reports at national and sub-national levels to relevant stakeholders.
b. **Report Dissemination**: Disseminate all reports at national and sub-national levels to relevant stakeholders.

4.3.7.7 Indicators:

i. Proportion of scheduled TWG-malaria held per annum

ii. Proportion of partners coverage in the malaria programme by states
iii. Proportion of states with at least 80% implementation of annual operation plan
iv. Proportion of states that hold coordination meetings
v. Number of MPR conducted in the lifespan of the NMSP
vi. Number of states with financial management guidelines
vii. Proportion of states with PPP coordination platforms
viii. Proportion of capacity building plan implemented
ix. Proportion of overall malaria elimination budget funded by Government/Private sector/development partners

5 Implementation Framework and Budget

5.1 The NMSP Implementation Framework

The implementation of the national strategic plan are guided by multi sector approach anchored on the following principles

1. **Adherence to the 3 ones**- All malaria control implementing and development partners will adhere to the principles of the three ones: One country coordination mechanism through national coordination framework; one country malaria control strategy (National Malaria Strategy, 2014–2020), and one country monitoring and evaluation mechanism.
2. **Health sector leadership-** The federal and state ministries of health have statutory responsibility for malaria control and elimination and will lead the multi-sector response to malaria. The National Malaria Control Programme as the secretariat of the multi-sector response will coordinate the following: development of norms, standards, policies, guidelines and tools; planning; resource mobilization and management; capacity building including technical support; monitoring and evaluation; and operational research.
3. **Responsiveness to broader health system context –** within states , states ministries of health are led by the honourable commissioners of health, with public health departments , planning departments, department for pharmaceutical and lab services , health management boards, primary health care development agencies , related ministries , departments and agencies such as ministries for local government and chieftaincy affairs, environment , education, women affairs , local government public health teams all play important roles in public health management , these roles will need to be recognized in the implementation of the strategic plan .
4. **Tailoring priority investments on high impact interventions responsive to the epidemiological context-** Investment of available resources will prioritize quick win, high impact activities addressing core and support interventions, responsive to the evidence on the disease epidemiology.
5. **Transparency and broad stakeholder participation-** Success in the implementation of the strategic plan is predicted on the transparency and involvement of a broad range of stakeholders at household, community, LGA, State, Federal levels. The traditional institution, civil society groups, voluntary community based associations, development and religious groups shall also be involved in the drive towards elimination of malaria.

In the operationalization of this plan efforts shall be made to ensure good governance, transparent recruitment of implementing partners (IPs); equitable access to malaria control resources; and performance monitoring and mutual accountability.

5.2 Core components of the implementation framework

The National Malaria Elimination Programme of the Federal Ministry of Health shall lead the multi stakeholder response towards the control and elimination of malaria, beyond its policy development role and recognizing health system complexities, its focus shall be galvanizing a multipronged approach guided by its implementation framework. Important components of this framework include resource mobilization and financing, capacity building, service delivery,

evidence based decision making, private sector participation, demand creation and programme coordination and management. These core components are relevant across all levels of the health system and draw from a broad spectrum of stakeholder capacities.

The implementation of the national malaria strategic plan shall be guided and coordinated through the development of annual activity plan at LGA level, and annual operational plans at state and federal levels. These annual plans shall be developed in a manner to align and feed into with broader annual health sector plans, just as the national malaria strategic plan shall feed into the national health sector strategic development plans.

Figure 5.1 below highlight some key stakeholders who form part of the implementation framework.

5.3 Resource Mobilization

Achieving the goal of the Strategic Plan 2014-2020 will require active efforts at resource mobilization. This will involve commitment from all tiers of Nigerian government, development partners, the private sector and institutions. Plans, guidelines and tools will be developed to support resource mobilization. Concept papers and funding proposals will be developed and submitted to groups and organizations on the basis of outcomes of advocacy meetings. The NMEP coordination of the resource pool will be to ensure additionality and complementality. Already the federal government has made strong commitment for part-funding some of the key interventions like the IRS and Larviciding. Proposals for support for malaria control/elimination interventions will continue to be submitted to development partners and funding agencies like the GFATM to address gaps in resource needs. State governments are going to be pivotal in the funding and implementation of the Strategic plan. Hence special advocacy visits will be conducted by top level FMOH and NMEP officials to state governments for them to underwrite the cost for key interventions

Within the implementation framework, the private sector is also looked upon as potential major contributors to the resource pool either through direct contributions in cash or through their involvement in the sales and distribution of antimalarial commodities at affordable prices. Advocacy meetings to present the malaria control business plan will be held with various institutions and agencies to mobilize resources to support malaria control interventions in cash or kind.

Financial systems will be strengthened and reporting on grant performance will be routine to stimulate confidence from various partners.

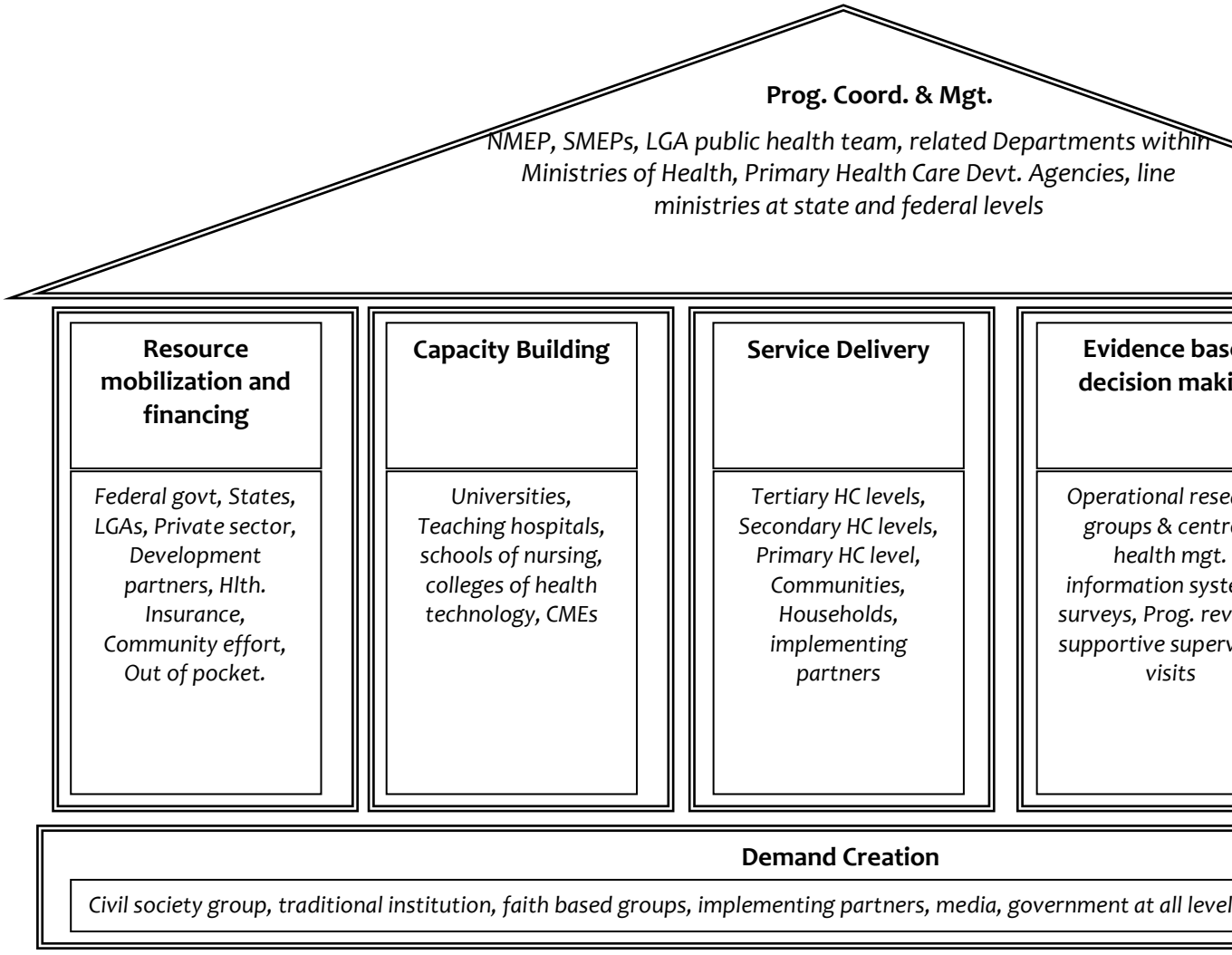


Figure 5-1: Core components of implementation framework

5.4 Performance Framework

Table 5-1: Performance Framework

	Indicators (Impact)	Baseline (Year)	2014	2015	2016	2017	2018	2019	2020
s to burden ion g o	All cause under-5 mortality rate per 1000 population	157 (2008)	150	130	115	100	90	80	70
	% children aged 6–59 months with hemoglobin measurement of <8g/dl)	13% (2010)	11.0%	9.0%	7.0%	5.0%	3.0%	3%	3%
	Malaria Parasite Prevalence in children U5 (Slide)	42% (2010)	34.2%	26.4%	18.6%	10.8%	3.0%	2.0%	<1.0%
	Malaria test (slide/RDT) positivity rate	60% (2010)	40%	30%	20%	10%	5%	<5%	<5%
	% Deaths due to Malaria	31% (2010)	25%	20%	15%	10%	5%	3%	0%
	Indicators (Outcome)	**Baseline (Year)**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**

f ation riate sures by	% of households with at least 1 LLINs for two persons	14.2% (2010)	36%	47%	58%	69%	80%	80%	90%
	% of under-5 Children who slept under an LLIN the previous night	28.7% (2010)	40%	50%	60%	70%	80%	80%	80%
	% of household residents who slept under an LLIN the previous night	49% (2010)	50%	60%	70%	80%	90%	90%	90%
	% of pregnant women who slept under an LLIN the previous night	65% (2010)	71%	77%	83%	89%	95%	95%	95%
	% of households reached with IRS	<1% (2010)	5%	10%	20%	30%	35%	40%	40%
	% population in target areas protected by IRS	TBD	60%	80%	80%	80%	80%	80%	80%
	% of mapped mosquito breeding sites sprayed with larvicides annually	TBD	50%	60%	80%	80%	90%	90%	90%
	% of pregnant women who received intermittent preventive treatment during antenatal care visits (in public & private facilities)	17% (2012)	35%	55%	75%	95%	100%	100%	100%
-seeking spected DT or 2020	% of persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy)	22% (2012)	40%	50%	60%	70%	80%	90%	100%
	% of health facilities with malaria diagnostics capabilities (microscopy and/or rapid diagnostic testing)	TBD	50%	60%	70%	80%	90%	100%	100%
viduals malaria or public ffective rug by	% of persons testing positive that receive antimalarial treatment (in public and private health facilities) according to national guidelines	42% (2012)	55%	70%	85%	100%	100%	100%	100%
	% of Children younger than 5 years of age with fever in the last 2 weeks who received any antimalarial treatment	49% (2010)	60%	70%	80%	90%	100%	100%	100%
quate all that at e ually ate tive and sures as 020	% women aged 15-49 reached with mass media activities about malaria prevention and control in the four weeks preceding the survey	30% (2010)	40%	50%	60%	70%	80%	90%	90%
	% of women aged 15 -49 years with knowledge of the preventive measures for malaria	92% (2010)	100%	100%	100%	100%	100%	100%	100%
mely	% of health facilities reporting stock-outs of RDTs lasting more than 1 week at any time during the past 3 months	TBD	<40%	<35%	<30%	<25%	<20%	<10%	<10%

edicines es evention of ria are .	% of health facilities with stock-out of ACTs lasting more than 1 week at any time during the past 3 months	TBD	<40%	<35%	<30%	<25%	<20%	<10%	<10%
	% of product batches tested in previous year that met national and International Control Standards	TBD	80%	80%	80%	90%	90%	90%	90%
f health GAs on 0, asured, used for	% of health facilities using the revised data collection tools	TBD	70%	75%	80%	85%	90%	100%	100%
	% of LGAs reporting malaria data through the DHIS	TBD	70%	80%	90%	100%	100%	100%	100%
	% Completeness of facility reporting into the National HMIS	44% (2012)	60%	70%	80%	90%	90%	90%	90%
d f all r am n rating ed 0 on a corecard	Proportion of states that have adapted the National Coordination framework	TBD	30%	40%	50%	70%	80%	80%	80%
	Proportion of government contribution to total annual expenditure for Malaria Elimination	TBD	20%	30%	30%	40%	40%	50%	50%
	Number of Malaria Programme Review conducted	1 (2012)	-	-	1	-	-	1	-

5.5 Costing and Budget of the NMSP 2014 -2020

National Malaria Strategy 2014 to 2020 cost estimation was facilitated by the UN One-health tool. OneHealth was adopted by the programme on the premise of the global consensus for a unified costing template and approach across all programme with capacity to effectively approximate the cost of Health Services and System inputs required to achieve desired health outcome and impact such as reduction in mortality rates. Additional consideration for the utilization of One Health tool in the Malaria Strategy planning process include its ability to support priority setting within each health program providing impact projection, ensure effective integration of health system capacity estimates, align the strategy within the projected fiscal space and generate scenarios that encourage data based discussions before finalization of the plan.

5.5.1 Overview of the OneHealth Tool

OneHealth tool is a new software for medium term strategic health planning (3-10 yrs) designed to strengthen health system analysis, costing and to develop financing scenarios at the country level. It incorporates UN epidemiology impact models to demonstrate the achievable health gains of the medium term strategy. OneHealth was developed to respond to country requests for a single tool which reflects the best aspects of the existing tools. The primary purpose of the tool is to assess health investment needs in low- and middle-income countries. For the first time, planners have a single framework for planning, costing, impact analysis, budgeting and financing of strategies for all major diseases and health system components.

Most existing costing tools take a disease-specific approach. OneHealth is the first tool to present the detailed components of these existing tools in a uniform format and link them with a view to strengthening the overall capacity of national health systems. The tool is modular in format and can easily be adapted to the country context. The tool illustrates the health system implications of scaling up intervention delivery, shows the capital investment gap and allows a comparison of costs with the estimated financial resources available. In this manner, the tool facilitates scenario generation and informs priority setting processes. The identification of impediments to intervention scale-up emphasizes the need to strengthen systems for sustainable long term planning.

The tool facilitates an assessment of costs related to the areas of maternal, newborn and reproductive health, child health, vaccination, malaria, tuberculosis, HIV/AIDS, nutrition, and water sanitation and hygiene, to inform progress towards the Millennium Development Goals, including assessment of achievable health impact. In addition it contains modules for the areas of human resources, infrastructure, logistics, financial space, programme and channel analysis, intervention coverage and costing, bottleneck analysis, programme costing, summary outputs and budgeting.

One health has been introduced in Francophone Africa, Anglophone Africa, Asia, Caribbean, Arab States, UN headquarters and among some donors. Reaction has been very positive with users pleased with the applicability to strategic planning, ease of use, and clarity of methodology. The tool has been applied in Burkina Faso, Laos, Senegal, Zambia, Lesotho, Liberia, Malawi, and Sri Lanka at National and Sub national for both Sector wide and Disease specific cost estimation.

5.5.2 Cost Outputs of the National Malaria Strategy 2014 – 2020

Major budget categories of the Malaria Strategy for which costs were aggregated in one health include health services, programme activities and health Systems. Intervention costed as Malaria Services include the distribution of Insecticide treated Net to the total population and pregnant women, In-door Residual Spraying, Larviciding and Malaria preventive and curative treatments targeting pregnant women, children including children with severe Malaria and Adult population.

Programme management costs of the strategy were defined by the aggregates of the following support activities; (1) Trainings, (2) Supervisions, (3) Monitoring and Evaluation, (4) Infrastructure and Equipment, (5) Transport, (6) Communication, Media and Outreach, (7)Advocacy and (8) General Programme Management and Coordination to be implemented with the six thematic objectives of the National Malaria Strategy. Malaria Programme share of the health systems include the logistic cost for the procurement and distribution of drugs and commodities. Key outputs of the costing process include the summary cost of the plan detailing the annual contribution for Malaria services, Programme activities and Health System Contribution

Table 5-2 Population in Need (Disease Incidence)

Population in need (disease incidence) - NMSP 2014-2020							
Malaria	2014	2015	2016	2017	2018	2019	2020
Insecticide treated materials	97.1	94.3	91.4	88.6	85.7	82.9	80.0
Pregnant women sleeping under an ITN	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Indoor residual spraying	25.0	25.0	28.0	31.0	34.0	37.0	40.0
IPT (pregnant women)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Malaria Diagnosis (Adult)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Malaria treatment (adults)	32.9	28.2	23.6	18.9	14.3	9.6	5.0
Treatment of malaria (pregnant women)	72.0	51.8	37.3	26.8	19.3	13.9	10.0
Malaria Diagnosis (Children)	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Malaria treatment (children)	44.9	44.1	40.0	31.3	27.1	26.4	26.2
Treatment of severe malaria (children)	10.0	9.8	8.9	7.0	6.0	5.9	5.8

Table 5-3 One-Health Intervention Coverage Costing (%)

One-health Intervention Coverage for costing - NMSP 2014-2020 (%)							
	2014	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Insecticide treated materials	41.9	44.3	57.2	84.3	97.2	99.6	100.0
Pregnant women sleeping under an ITN	40.3	46.9	53.5	60.2	66.8	73.4	80.0
Indoor residual spraying	5.7	11.4	17.1	22.9	28.6	34.3	40.0
IPT (pregnant women)	49.1	64.6	80.0	80.0	80.0	80.0	80.0
Malaria Diagnosis (adults)	37.5	30.1	24.1	19.4	15.5	12.5	10.0
Malaria treatment (adults)	50.2	51.4	58.1	71.9	78.6	79.8	80.0
Treatment of malaria (pregnant women)	50.2	51.4	58.1	71.9	78.6	79.8	80.0
Malaria Diagnosis (Children)	50.0	46.7	43.3	40.0	36.7	33.3	30.0
Malaria treatment (children)	35.6	42.3	50.3	59.7	70.9	84.2	100.0
Treatment of severe malaria (children)	44.2	48.8	53.8	59.4	65.6	72.5	80.0

Table 5-2 Total Cost – NMSP 2014-2020 (US$)

	Total Cost –NMSP 2014 -2020 in US$					
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
Programme Cost	80,327,249	64,659,469	62,876,695	46,249,886	37,372,598	30,769,771
Drug, Commodities and Supplies	169,589,986	339,422,719	653,422,862	437,175,117	485,703,632	695,998,286
Health System Cost for Logistics (Drug & Commodity distribution)	9,638,312	10,103,330	44,027,377	34,608,829	27,711,480	56,670,024
Total	**259,555,547**	**414,185,518**	**760,326,934**	**518,033,832**	**550,787,710**	**783,438,081**

Table 5-4: Programme Costing for NMSP 2014-2020 (US$)

	Programme Costing – Malaria – NMSP 2014-2020 in US$				
	2014	**2015**	**2016**	**2017**	**2**
1. Programme-Specific Human Resources	233,333	245,609	257,885	270,161	282,
2. Training	6,696,826	7,269,156	7,027,350	5,344,205	5,462,
3. Supervision	354,375	354,375	354,375	354,375	354,
4. Monitoring and Evaluation	7,707,504	5,414,584	4,789,584	7,082,504	4,852,
5. Infrastructure and Equipment	3,682,506	3,773,124	4,067,364	312,500	625,
6. Transport	165,926	174,656	183,385	192,115	200,
7. Communication, Media & Outreach	2,312,756	1,411,600	1,292,388	1,292,388	1,411,
8. Advocacy	451,827	1,021,420	454,445	137,753	137,
9. General Programme Management	5,122,813	5,950,390	5,468,694	5,431,142	5,266,
Others					
• **Research/Surveillance/Impact Assessment**	13,248,075	12,143,683	12,080,353	12,382,307	12,053,
• **IRS Coordination, Site Mapping and Surveillance**	40,351,308	26,900,872	26,900,872	13,450,436	6,725,
Total	**80,327,249**	**64,659,469**	**62,876,695**	**46,249,886**	**37,372,**

Table 5-5: Total Drug and Supply Costs (US$)

Drug and supply costs (Drugs and supplies) not including drugs and supplies added in Logistics or safety stock purchases and						
Malaria	2014	2015	2016	2017	2018	
Insecticide treated materials	12,034,968	6,281,630	133,031,819	82,722,195	39,986,119	139,19
Pregnant women sleeping under an ITN	8,408,597	10,059,095	11,789,817	13,623,400	15,524,561	17,52
Indoor residual spraying	43,733,974	89,846,329	155,082,477	235,270,500	331,535,371	445,07
IPT (pregnant women)	289,523	391,562	498,225	511,637	525,431	53
Malaria Diagnosis (Adult)	35,319,898	29,147,759	24,054,586	19,850,605	16,380,349	13,51
Malaria treatment (adults)	14,559,234	13,167,242	12,790,551	13,074,397	11,094,832	7,81
Treatment of malaria (pregnant women)	6,165,872	4,670,510	3,903,799	3,570,416	2,884,756	2,16
Malaria Diagnosis (children)	26,673,006	25,524,438	24,313,315	23,037,242	21,686,768	20,25
Malaria treatment (children)	10,605,386	12,700,031	14,032,346	13,386,029	14,157,158	16,78
Treatment of severe malaria (children)	11,799,529	13,129,763	13,469,735	11,953,043	11,752,633	12,95
Larviciding		134,504,360	260,456,192	20,175,654	20,175,654	20,17
Total	**169,589,986**	**339,422,719**	**653,422,862**	**437,175,117**	**485,703,632**	**695,99**

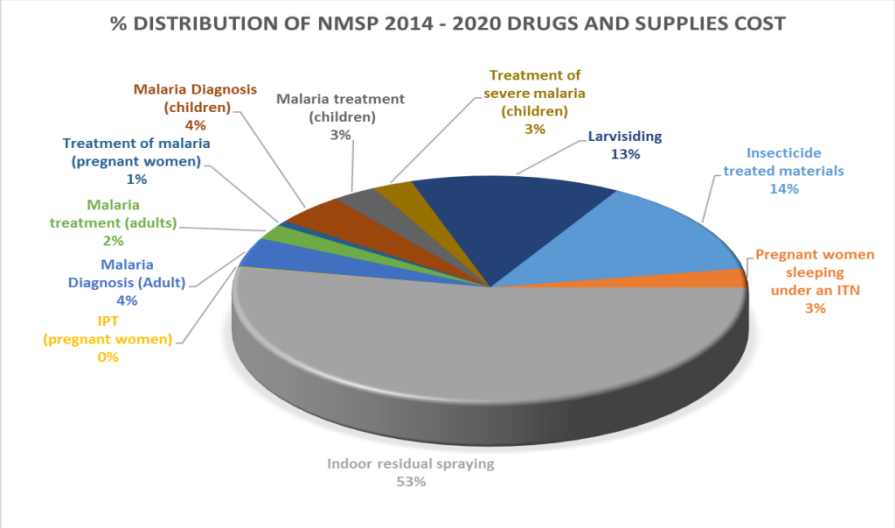


Table 5-6 Units of Drugs and Supplies Need

	Units of drugs and supplies needed (Drugs and supplies) , Malaria					
	2014	**2015**	**2016**	**2017**	**2018**	**2019**
Artemether + Lumefantrine, tablets, 20 + 120 mg, 6 x 1 blister	184,307,257	187,397,032	193,104,062	189,856,183	180,856,188	176,320,58
Artesunate + Amodiaquine, tablets, 50 mg + 153 mg, 3 + 3 blister	8,179,321	6,576,046	5,813,940	5,562,168	4,588,489	3,353,600
Artusenate Injection; 30mg, 60mg or 120mg ampoule	870,140	968,236	993,306	881,460	866,681	955,410
Blood glucose level test	3,480,559	3,872,944	3,973,227	3,525,841	3,466,725	3,821,642
Blood, one unit	696,112	774,589	794,645	705,168	693,345	764,328

Glucose inj 5 %, 500 ml with giving set	2,784,447	3,098,355	3,178,581	2,820,673	2,773,380	3,057,313
IV giving/infusion set, with needle	2,784,447	3,098,355	3,178,581	2,820,673	2,773,380	3,057,313
Indoor residual spraying drugs/supplies to service a client	656,010	1,347,695	2,326,237	3,529,057	4,973,031	6,676,074
Insecticide-treated net	4,594,060	3,672,073	32,544,188	21,650,696	12,474,310	35,216,34
Malaria test kit (RDT)	123,221,746	109,150,001	97,338,071	87,220,943	77,871,011	69,322,47
Nasal prongs	696,112	774,589	794,645	705,168	693,345	764,328
Oxygen, 1000 liters, primarily with oxygen concentrators	696,112	774,589	794,645	705,168	693,345	764,328
Sulphadoxine-Pyrimethamine+Amodiaquine	46,869,125	48,368,788	49,916,602	51,514,118	53,162,939	54,864,71
Slide and stain for microscopy	63,948,399	52,429,026	43,308,481	36,027,072	29,678,194	24,310,81
Amoxicillin DT 125mg						
Sulfamethoxazole + trimethropin, tablet 400 mg + 80 mg	27,626,203	37,362,834	47,540,582	48,820,277	50,136,509	51,499,09

5.6 Logical Framework Matrix

Table 5-7 Logical Framework Matrix

TRATEGIES	PRIORITY ACTIONS	TIMELINES (2014-2020)						
		'14	'15	'16	'17	'18	'19	'2
BJECTIVE 1: At least 80% of targeted population utilizes appropriate preventive measures by 2020								
: Ensure Universal ccess to LLINs	i. Procure LLINs		x					
	ii. Conduct mass replacement campaign for LLIN at 3-yearly cycle			x			x	
	iii. Ensure routine distribution of LLINs	x	x	x	x	x	x	x
	iv. Mobilize private sector for production, sale and distribution of LLIN	x	x	x	x	x	x	x
	iv. Promote LLIN use	x	x	x	x	x	x	x
	v. Post campaign surveys			x			x	
2: Scale up Indoor esidual Spraying overage	i. Conduct mapping and geographical reconnaissance for IRS implementation	x						
	ii. Conduct baseline entomological survey and selection of insecticides:	x						
	iii. Build capacity for IRS (For IRS expert group and field staff)	x	x			x		
	iv. Conduct quantification and procurement of commodities/insecticides	x	x			x		
	v. Conduct household enumeration and spraying		x	x	x	x	x	x
	vi. Carry out monitoring exercises for progress and impact.		x	x	x	x	x	x
3: Implement Larval ource Management LSM) for malaria ontrol	i. Develop national guidelines for LSM	x						
	ii. Capacity building for Larval Source management (For supervision and operation).		x					
	iii. Identification and mapping of malaria vector breeding sites		x					
	iv. Undertake insecticide selection exercise		x					
	v. Conduct insecticide spraying in the targeted areas		x	x	x	x	x	x

4: Increase uptake of IP-IPTp among Pregnant women Attending Antenatal Clinics	i. Review evidence update and disseminate among health workers in secondary and tertiary facilities	x	x					
	ii. Build capacity of community level health workers on IPTp and deploy at community level	x	x					
	iii. Device and apply innovative means of supporting DOT for IPTp	x	x	x	x	x	x	x
	iv. Promote use of ANC services	x	x	x	x	x	x	x
5: Implement seasonal Malaria Chemoprevention (SMC) in Nine Sahel States	i. Develop and disseminate national guidelines, training manuals and job aids for SMC implementation.	x			x			
	ii. Conduct advocacy, stakeholder engagement and sensitization at State, LGA and community levels.		x	x	x	x	x	x
	iii. Train Health workers on SMC implementation	x	x	x	x	x	x	x
	iv. Undertake SMC delivery campaign		x	x	x	x	x	x
	v. Identify and commission research on priority operation to inform decisions and actions to improve on the efficiency and effectiveness of the SMC strategy.		x			x		
6: Conduct vector Sentinel surveillance and resistance monitoring, quality assurance of commodities	i. Set up sentinel sites for vector surveillance (3 per geopolitical zone)	x	x	x				
	ii. Collaborate with Partners and academia to train staff on vector surveillance and insecticide resistance monitoring	x	x	x	x	x	x	x
	iii. Conduct vector surveillance and insecticide resistance monitoring surveys		x		x		x	
	iv. Conduct QA for vector control commodities in collaboration with NAFDAC	x	x	x	x	x	x	x
	v. The NMEP will continue to build local entomologic capacity by assisting the States malaria programmes to conduct entomological studies.	x	x	x	x	x	x	x
OBJECTIVE 2: To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020								
1: Ensure availability of and access to equipment and supplies for parasitological confirmation	Develop a procurement guide on RDT	x						
	Procure High Performing Malaria RDTs.	x		x		x		
	Develop and apply innovative models for the supply and sales of RDTs to increase access.	x	x	x	x	x	x	x
	Procure microscopes and distribute to secondary and tertiary facilities	x	x	x	x	x	x	x
2: Build capacity of personnel in public and private health facilities, and at community level for parasitological confirmation of malaria	Standardize/harmonize Malaria RDT and/or Microscopy Training Manual.	x				x		
	Increase critical mass of trained health workers in RDT and microscopy at all levels as applicable.	x	x	x	x	x	x	x
	Develop innovative and cost-effective tools for continuous capacity building to meet the needs of the anticipated pre-elimination end-point. Example produce self-explanatory video on performing RDT.	x	x	x	x	x	x	x
	Strengthen malaria microscopy training at pre-serve training institutions (School of Health Technology, Polytechnics and Universities) through collaborative programmes	x	x	x	x	x	x	x
	Develop online and continuing medical education platforms to facilitate re-training of health workers within 2-3 years intervals	x	x	x	x	x	x	x

3: Update and mplement policies and uidelines for arasitological onfirmation of malaria	Conduct action research on RDT use by PPMVs.	x	x					
	Update Policy to remove bottle-neck to RDT implementation by PPMVs.	x	x					
4: Deploy RDTs and icroscopy for arasitological onfirmation of malaria public and private ealth facilities and the ommunity level	Benchmark PPMVs for implementing Parasitological confirmation.		x	x	x	x	x	x
	Deployment of RDTs and/or Microscopy to Public and Private health facilities.	x	x	x	x	x	x	x
	Deployment of RDT at the community level: RDTs will be deployed at the community level through the ward health system	x	x	x	x	x	x	x
5: Strengthen systems or quality assurance nd quality control of alaria diagnostic rocesses and services	Develop algorithms for the use of RDTs and Microscopy. This algorithm would provide guidance on patients' selection for testing in relation to available tools and points of consultations.	x	x					
	Develop Guidelines and tools for quality control of parasitological confirmation of malaria.	x						
	Conduct Training and supervision of QA/QC Team.	x	x	x	x	x	x	x
	Strengthen National Malaria QA/QC Centre and designation/establishment of states' QA/QC Centres/Teams.	x	x	x	x	x	x	x
	Establish a coordinating platform for National QA/QC of malaria diagnosis.	x	x	x	x	x	x	x
6: Conduct operational esearch on arasitological onfirmation of malaria rocesses and services	Conduct Operational research on in optimizing parasitological diagnosis.	x	x	x	x	x	x	x
	In-country research on existing or new diagnostics and other operational and cost related issues should be compiled and analyzed to provide direction for improvement of malaria diagnostic services and its delivery	x	x	x	x	x	x	x
	Facilitate and track the validation of New Malaria tests.	x	x	x	x	x	x	x
BJECTIVE 3: To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020								
: Improve availability f and access to ommodities and upplies for treatment f malaria	Engage in resource mobilization for procurement of antimalarial drugs - ACTs, Injectable artesunate, rectal artesunate, injectable quinine	x	x	x	x	x	x	x
	Quantification and procurement of antimalarial commodities	x			x			x
	Improve efficiency in distribution of antimalarial commodities	x	x	x	x	x	x	x
	Engage the private sector in the manufacture and distribution of antimalarial drugs	x	x	x	x	x	x	x
2: Improve compliance ith National reatment Guidelines	Update and distribute Treatment Guidelines	x				x		
	Train and retrain health workers on management of malaria	x	x	x	x	x	x	x
	Engage the private sector to ensure best practices in malaria treatment	x	x	x	x	x	x	x
3: Strengthen capacity f public and private acilities for anagement of severe alaria	Support secondary and tertiary health facilities to acquire essential laboratory and clinical equipment for management, monitoring and intensive care of persons with severe malaria.	x	x	x	x	x	x	x
	Provide essential job aids and guidelines at all levels in suitable formats for various cadres of health workers.	x	x	x	x	x	x	x
	Provide on-the-job training and mentorship on management of severe malaria for health personnel in public and private secondary health facilities.	x	x	x	x	x	x	x

	Provide essential drugs and supplies for management of severe malaria in secondary and tertiary facilities	x	x	x	x	x	x	x
	Build capacity of Community-level health recognition and pre-referral treatment for severe malaria	x	x	x	x	x	x	x
4: Implement a comprehensive national for effective participation of the private sector in malaria case management	Policy update malaria case management by private sector providers such as PPMVs	x	x	x	x	x	x	x
	Create demand and provide incentives for the use of RDTs in the private sector.	x	x	x	x	x	x	x
	Develop and disseminate guidelines, algorithms, and other job aids on malaria case management	x	x	x	x	x	x	x
	Develop the capacity of key members of private sector health associations to provide training for their colleagues.	x	x	x	x	x	x	x
5: Scale up community case management of malaria as a component of iCCM	Train and re-train adequate numbers of community-based providers on management of malaria	x	x	x	x	x	x	x
	Provide iCCM kits with regular replenishment of essential medicines to community providers.	x	x	x	x	x	x	x
	Create demand for iCCM services and induce positive health-seeking behavior by implementing strong advocacy, communication and sensitization strategy	x	x	x	x	x	x	x
	Promote and support delivery of prenatal care and malaria control services to pregnant women at the community level.	x	x	x	x	x	x	x
	Train CORPs and PPMVs in pharmaco-vigilance and record keeping.	x	x	x	x	x	x	x
	Undertake advocacy at Federal, State and LGA levels to mobilize resources for iCCM.	x	x	x	x	x	x	x
6: Strengthen delivery of prompt treatment of malaria for pregnant women	Review and reproduce the National guideline for Malaria control in pregnancy (with the related job aids) and disseminate same to health facilities and reproductive health personnel at all levels.	x	x	x	x	x	x	x
	Promote Parasitological confirmation in Pregnant women	x	x	x	x	x	x	x
	Train all reproductive health personnel on malaria diagnosis and management pregnancy	x	x	x	x	x	x	x
	Provide RDTs, ACTs and pre-referral treatment at all prenatal care service units in both the private and public sector.	x	x	x	x	x	x	x
	Promote and support delivery of prenatal care and malaria control services to pregnant women at the community level.	x	x	x	x	x	x	x
	Strengthen Malaria in Pregnancy Working Group	x	x	x	x	x	x	x
7: Strengthen sentinel surveillance of malaria treatment and conduct drug efficacy tests (DTET)	Create one functional surveillance site per state and FCT for trends in malaria epidemiology	x	x	x	x	x	x	x
	Train clinical, laboratory and data personnel at the sentinel sites on the key procedures, data management and reporting.	x	x	x	x	x	x	x
	Perform regular supportive supervision of the sentinel sites.	x	x	x	x	x	x	x
	Constitute Teams and develop protocols for DTET	x			x			
	Conduct DTET every two years using 1-2 sentinel sites per geo-political zone		x			x		
	Prepare and disseminate DTET findings through technical reports and publication in high impact peer-reviewed journal			x	x		x	x

3: Strengthen capacity for Pharmacovigilance	NMCP will strengthen pharmacovigilance in collaboration with NAFDAC, Food and Drug Department of the Federal Ministry of Health, States and Partners.	x	x	x	x	x	x	x
	Hold regular coordination meetings on pharmacovigilance with NAFDAC and partners.	x	x	x	x	x	x	x
	Review, update, produce and widely disseminate guidance documents and operational tools.	x	x	x	x	x	x	x
	Train and re-train health workers on pharmacovigilance, including on the job training and supportive supervision.	x	x	x	x	x	x	x
	Scale and sustain sensitization stakeholders and general public on Adverse Event reporting.	x	x	x	x	x	x	x
OBJECTIVE 4: To provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment measures as necessary by 2020								
1: Maintain high knowledge of malaria prevention and treatment practices	Mobilize communities to participate in the planning, implementation and evaluation of malaria control initiatives to facilitate ownership	x	x	x	x	x	x	x
	Engage community leaders and members using a variety of platforms	x	x	x	x	x	x	x
2: Scale-up demand for malaria prevention and management services	Conduct survey on health seeking behaviour in relation to use of preventive and management commodities/services.	x			x			x
	Develop, pre-test and deploy IECs materials for mass media (print and electronic) to generate demand and promote use of preventive, diagnostic and treatment commodities and services by members of the public	x	x	x	x	x	x	x
	Deploy targeted communication to promote use of diagnostic and treatment commodities by health workers through various health professional associations	x	x	x	x	x	x	x
	Conduct community mobilization through focused household visits, community dialogue forums, engagement of school pupils and targeted gatekeepers to champion malaria intervention messages at home and among peers.	x	x	x	x	x	x	x
3: Enhance political will and enabling environment for malaria control/elimination activities	Develop advocacy materials for briefing of various stakeholders and policy makers	x	x	x	x	x	x	x
	Conduct advocacy visits: Strategic and sustained advocacy events will target political leaders, policy-makers and the private sector	x	x	x	x	x	x	x
	Designate Malaria Elimination Ambassadors	x	x	x	x	x	x	x
4: Scale-up facilities-based dissemination of appropriate information for malaria prevention and management practices	Develop talking points and other materials for interpersonal communication and counselling (IPCC) at the work place.	x	x	x	x	x	x	x
	Distribute IPCC materials to health facilities	x	x	x	x	x	x	x
	Build capacity of the Health Workers and other institutional leaders on use of the IPCC materials at health/educational/religious facilities	x	x	x	x	x	x	x
5: Strengthen ACSM coordination at all	Set up ACSM core groups in states: Every State will be assisted by the NMEP and partners to set up an ACSM Core Group.	x	x	x	x	x	x	x

evels	Conduct monthly tracking meetings for all ACSM activities and for Monitoring and Evaluation (M&E)	x	x	x	x	x	x	x
OBJECTIVE 5: To ensure the timely availability of appropriate antimalarial medicines and commodities required for prevention and treatment of malaria in Nigeria wherever they are needed by 2018.								
1: Strengthen procurement-related processes	Set up a Functional National Forecasting and Quantification Committee inclusive of all relevant stakeholders at all levels of activities.	x			x			
	Conduct annual quantification and gap analysis exercises at zonal and national levels	x	x	x	x	x	x	x
	Conduct meetings to evaluate the accuracy of the Forecasts for antimalarial medicines and commodities	x	x	x	x	x	x	x
	Develop a unified framework for procurement	x				x		
2: Develop efficient distribution systems for antimalarial medicines and commodities storage, transport distribution and inventory management).	Upgrade storage (infrastructure and processes) facilities for appropriate storage of malarial medicines and commodities in selected health facilities (to obtain minimum good storage requirements)	x	x	x	x	x	x	x
	Develop Comprehensive plans for distribution of medicines and commodities from National to States Stores and to facilities	x			x			x
	Align Realistic Costing and Resource Mobilization/Allocation for transporting antimalarials per facility according to States and Zones, to deliver to the "last mile".	x	x	x	x	x	x	x
	Distribute diagnostic commodities and antimalarial medicines from States to Health facilities	x	x	x	x	x	x	x
	Undertake periodic tracking of availability of Antimalarial medicines to assess the level of Stock outs in health facilities	x	x	x	x	x	x	x
	Strengthen inventory management: Support better Inventory Management of antimalarial medicines	x	x	x	x	x	x	x
	Improve Pipeline Monitoring through System Upgrades such as "SMS 4 Life" to facilitate responsiveness		x	x	x	x	x	x
3: Strengthen Logistics Management	Integrate the LMIS for antimalarial medicines and commodities with the national DHIS, such that data captured within the DHIS represent the core of routine LMIS	x	x					
	Build capacity for Supportive Supervision for PSM at national, State, LGA and Facility Levels	x	x	x	x	x	x	x
	Develop comprehensive Plan for integrated Supportive Supervision Activities (cross cutting Service and Logistics Data)	x	x	x	x	x	x	x
4: Reinforce Policies on Quality Assurance and Pharmacovigilance	Collaborate with NAFDAC for increased Pre and Post marketing Surveillance of antimalarial medicines and commodities through Annual Joint (NMCP-NAFDAC) Action Plans	x	x	x	x	x	x	x
	Conduct post market surveillance batch testing of antimalarial commodities -(preventive, diagnostic and treatment commodities)		x	x	x	x	x	x
	Implement Policy Changes to reduce access to Chloroquine, SP and oral artemisinin for the treatment of malaria	x	x	x	x	x	x	x
	Conduct both passive and active pharmacovigilance.	x	x	x	x	x	x	x

5: Operationalize and pdate where ecessary existing olicies for malaria ase management in he private sector	Review and align guidelines on diagnosis, treatment and prevention in the Private sector with related National Case Management Policies	x	x	x				
	Conduct advocacy for Policy update to empower the broad spectrum of the private sector wherever such measure is consistent with best strategy for malaria elimination.	x	x	x	x	x	x	x
	Distribute guidelines and policy documents to private facilities	x	x	x	x	x	x	x
6: Increase access to ntimalarial prevention nd management ommodities in the rivate sector	Resource mobilization for ACT and RDTs subsidy at the level of manufacturers	x	x	x	x	x	x	x
	Enforcing subsidy through provision of price information on labels, electronic and print media	x	x	x	x	x	x	x
	Negotiation of prices of ACTs and RDTs at the level of manufacturers	x	x	x	x	x	x	x
	Developing innovative processes that will allow the effect of subsidy to reach teaming masses of Nigerians	x	x	x	x	x	x	x
	Advocating for full implementation of taxes and tariff waivers with relevant regulators	x	x	x	x	x	x	x
7: Put in place egulatory requirements or distribution ncluding storage and ransportation of ntimalarial products in he private sector	NAFDAC to draft national distribution guidelines for the private sector.	x	x	x	x	x	x	x
	Communication and awareness on the layers of processes for preventing counterfeit and substandard drugs and for validating purchase of quality assured antimalarial products will be strengthened.	x	x	x	x	x	x	x
	NAFDAC inspectors will be trained in supply chain surveillance	x	x	x	x	x	x	x
Objective 6: At least 80% of health facilities in all LGAs report routinely on malaria by 2020, progress is measured, and evidence is used for rogramme improvement								
1 Strengthen routine ata generation and ow from ublic/private facilities nd community-based ealth providers for the HMIS	Rationalization of data elements and harmonization of data collection tools for use in Public and private health facilities	x	x					
	Finalization of Community level tools to ensure that malaria data at community level and through the patent medicine vendors also enter the national database.	x	x					
	Printing and distribution of the revised tools will also be ensured to promote their use.		x	x	x	x	x	x
	Training of health records officers , PMVs and Community service providers on the revised tools		x	x	x	x	x	x
2. Operationalize lectronic database for alaria control using HIS version 2.0	Create a malaria module in the DHIS 2 in conjunction with the DPRS and partners.	x						
	Roll out of DHIS 2.0 to all Local Government Areas	x	x					
	DHIS training and re-training for M&E officers at LGA level and records officers of tertiary facilities will also be trained on the DHIS to facilitate direct data entry.	x	x	x	x	x	x	x
	Roll out of mobile technology to health facilities for data capture, in conjunction with Partners	x	x					
	Logistic support for use of mobile technology	x	x	x	x	x	x	x

3: Strengthen human resources for monitoring and evaluation for ATM	Training and re-training of M&E officers at facility, LGA, State and National levels with emphasis on completeness of reporting and capabilities towards the demands of the pre-elimination goal	x	x	x	x	x	x	x
	M&E curriculum revision in Schools of health technology to acquaint products with DHIS.	x	x	x	x	x	x	x
	Advocacy for M&E staff recruitment state and LGA levels.	x	x	x	x	x	x	x
	Leverage current M&E human resources of other public health programs (e.g EPI, HIV) for malaria management needs	x	x	x	x	x	x	x
4: Strengthen routine monitoring & supervision	Harmonization of ISS tools and roll out to states	x	x	x	x	x	x	x
	Scale up Integrated supportive supervision: This will be conducted by National, State and LGA teams utilizing harmonized ISS tools.	x	x	x	x	x	x	x
5: Strengthen Data Quality Assurance (DQA) at all levels of reporting	Routine DQA training for M&E staff: Efforts will be made through trainings for M&E staff at all levels for routine data quality checks prior to transmission to the next level.	x	x	x	x	x	x	x
	Quarterly Data Quality Audits: These will be conducted quarterly by the National Malaria Program	x	x	x	x	x	x	x
6: Develop and implement an Operations Research (OR) agenda for the Malaria Programme	Convene operational research stakeholder meeting comprising the various working groups	x	x	x	x	x	x	x
	Identify and set research priority needs for research institutions to key into thereby linking research outputs to programme needs	x	x	x	x	x	x	x
	Earmark resources for OR in National and State budgets for Malaria: A proposed 40% of total M&E budget is recommended for earmark for Operations Research.	x	x	x	x	x	x	x
	Conduct of approved OR protocols: Selected OR questions will have robust protocols developed and conducted.	x	x	x	x	x	x	x
	Documentation and dissemination of OR findings to inform program implementation	x	x	x	x	x	x	x
7: Strengthen malaria surveillance coordination and linkages with National HMIS	Increase number of sentinel sites: Sentinel sites will be increased to at least one in each state with consideration for locations where there are already inputs from other partners or departments.	x	x	x	x	x	x	x
	Scale up surveillance at human, vector and parasite levels including special training for the preceding Pre-elimination period (2018-2020). Engaging and training state medical entomologists and teams in surveillance and monitoring of Anopheles vectors i) Vector mapping using GIS techniques	x	x	x	x	x	x	x
8: Strengthen data generation and sharing from evaluations and reviews	Program evaluations/reviews will be conducted to measure Outcome and Impact of this strategic plan.	x	x	x	x	x	x	x
	Conduct Malaria Program reviews (MPR): There will be two MPRs planned for 2016 and 2019.	x	x	x	x	x	x	x
	Revision of the NMSP to align with NHSDP: A provision is made for the revision of this plan to align with the National Health Sector Development Plan 2010-2015 (NHSDP) up for review in 2016.	x	x	x	x	x	x	x
	Conduct Malaria Indicator Survey (MIS)	x	x	x	x	x	x	x
	Conduct Health Facility Survey	x	x	x	x	x	x	x
	Conduct Rapid Impact Assessment	x	x	x	x	x	x	x

	Demographic and Health Survey	x	x	x	x	x	x	x
trategy 9: Strengthen M&E Coordination	Develop an M&E coordination framework in line with "The Three Ones" principle for one monitoring and evaluation coordination framework	x	x	x	x	x	x	x
	Strengthen the existing linkages between the malaria programme and the larger ATM network	x	x	x	x	x	x	x
	Improve coordination with DPRS	x	x	x	x	x	x	x
	Improve linkages across all health stakeholders for resource leveraging: Linkages will be strengthened between the NMP, SMP, other health divisions (e.g. EPI, MCH, HIV, TB, IMCI etc.), relevant ministries, Government Departments, CSOs, Local Authorities, the Private Sector and partners (e.g. WHO, USG, GFATM, UNICEF, DFID, WB, CHAI etc.)	x	x	x	x	x	x	x
OBJECTIVE 7: To strengthen governance and coordination of all stakeholders for effective program implementation towards an 'A' rating by 201 ustained through to 2020 on a standardized scorecard								
Strengthen rogramme oordination at national nd sub-national levels.	Conduct periodic mapping and profiling of RBM Partners at national and sub-national levels	x			x			
	Review/adapt and disseminate the National Coordination framework	x	x	x	x	x	x	x
	Strengthen coordination platforms (TWG - Malaria and Partners Forum) at the national level.	x	x	x	x	x	x	x
	Hold technical TWG-Malaria subcommittees' meetings regularly	x	x	x	x	x	x	x
	Constitute and operationalize State Malaria TWG	x	x	x	x	x	x	x
	Hold Coordination meetings regularly at sub-national levels	x	x	x	x	x	x	x
	Implement decisions taken at coordination meetings	x	x	x	x	x	x	x
	Coordinate the implementation of Integrated Supportive Supervision	x	x	x	x	x	x	x
	Conduct annual State Programme Review	x	x	x	x	x	x	x
: Improve unified nnual operational lanning	Develop annual unified costed operational plan	x	x	x	x	x	x	x
	Conduct periodic review of the plan at the Federal level	x	x	x	x	x	x	x
	Develop and implement annual unified costed operational plan and conduct periodic review at the State level	x	x	x	x	x	x	x
	Conduct Malaria Programme Review as necessary.	x	x	x	x	x	x	x
: Strengthen Malaria esource Mobilisation nd Financial Management echanisms.	Develop and implement a National Malaria Resource Mobilization and Financing Framework	x						
	Conduct an assessment of stakeholders' spending on Malaria elimination in Nigeria	x	x	x	x	x	x	x
	Develop/Harmonize financial management guideline for NMEP	x				x		
	Develop financial management and reporting tool (including an acceptable software) for financial tracking.	x	x					
	Conduct biannual internal management audit and annual external audit.	x	x	x	x	x	x	x
	Develop and disseminate annual financial report	x	x	x	x	x	x	x
	Conduct efficiency studies to determine the cost effectiveness of key interventions		x		x		x	
: Develop a omprehensive strategy or private sector ngagement	Develop and disseminate Malaria Public-Private Partnership (PPP) strategy	x	x					
	Constitute and operationalize PPP coordination platforms for private sector stakeholders	x	x	x	x	x	x	x

	Support key Malaria related industries and Markets to improve availability Malaria medicines and commodities	x	x	x	x	x	x	x
: Strengthen timely eporting of Malaria ontrol activities at all evels and promote issemination of all eports	Develop periodic reports at national and sub-national levels to relevant stakeholders.	x	x	x	x	x	x	x
	Disseminate all reports at national and sub-national levels to relevant stakeholders.	x	x	x	x	x	x	x
: Strengthen human esource management o deliver malaria ontrol/elimination nterventions	Assess capacity need in various intervention areas and develop capacity building plans annually	x	x	x	x	x	x	x
	Update the harmonised capacity building materials and disseminate to Implementing Partners.	x	x	x	x	x	x	x
	Coordinate capacity development activities of various stakeholders	x	x	x	x	x	x	x
	Improve Human Resource management mechanism of NMEP and SMEPs to improve performance	x	x	x	x	x	x	x

6 Annexes

6.1 SWOT Analysis of NMSP 2009-2013

The Strengths, Weaknesses, Opportunities, and Threats identified are summarized in the tables below.

Table 6-1 SWOT Analysis of the IVM framework of the NMCP

STRENGTHS	WEAKNESSES
• Strong administrative will for evidence-based implementation of IVM activities. • Strong private sector engagement. • Well-articulated strategic framework, plan of action and SOPs for IVM related activities. • Mass distribution campaign had created awareness of LLINS and availability/ accessibility of nets.	• No proper baseline entomological indices prior to LLINs and IRS implementation. • IVM related activities are donor driven with inadequate Federal Government funding. • Inadequate technical capacity to support • Large scale IRS implementation at State level. • Limited capacity for quantification of IRS commodities and needs. • Poor infrastructure (e.g. storage facilities) to support IRS commodities and activities. • Inadequate infrastructure for effective and routine entomological monitoring • No system in place for insecticide resistance management plan.
OPPORTUNITIES	**THREATS**
• Local evidence of the proven efficacy of LLINs and IRS interventions provides an opportunity for scale up. • Global recognition of the proven efficacy of the use of LLINs and IRS. • Availability of technical and funding support from international partners (GFATM, DFID, WB, UNICEF, WHO) • Current malaria elimination agenda is an avenue for scale up of evidence-based IVM activities.	• Massive area for IVM coverage requiring huge technical, infrastructure and funding resources. • Low usage of LLINs. • Adaptation of vectors to the environment, e.g. water pollution. • IRS is sparingly implemented in Nigeria. • Although the policy framework and IRS POA exist, in most cases the minimum required coverage (80%) is not achieved. • Monitoring vector resistance to Insecticide is not a priority in the IVM policy framework. • Dwindling international funding support.

Table 6-2 SWOT Analysis of Malaria Diagnosis and Treatment

Strengths	Weaknesses
• Availability of relevant policy and guidelines for case management, iCCM,	• Poor commitment (and little resource allocated) to implementation of iCCM

• Increased number of trained personnel for malaria microscopy • Availability of quality assured ACTs, increased market share of QA-ACTs, decreased market share of artemesinin and other monotherapy and reduced price of QA-ACTs through the AMFm • Policy guidelines for parasite-based diagnosis and treatment of malaria, iCCM and SMC are available	• Inequity in access to appropriate treatments and services was highlighted in the 2010 NMIS report which revealed that patients in rural areas are disadvantaged. • Inadequate trained human resources for case management including iCCM • Lack of access to malaria treatment guidelines. • Poor infrastructure, transport, communication could impede the effective treatment of severe malaria. • Poor pharmacovigilance and irregular monitoring of efficacy of malaria medicines and non-functional malaria sentinel sites.
Opportunities	**Threats**
• There is a WHO/TDR lot testing and RDT quality assurance centre in the country which supports support QA/QC for malaria diagnostics (RDTs and microscopy). • Commitment to eliminate malaria expressed at the highest level of national political leadership • Joint regional and sub-regional leaders • The government's commitment towards achievement of the set goals and targets for global health priorities. • Increased international goodwill with potential for more financial and technical support (GF R8; AMFm, World Bank, USAID, DFID etc). • Potential for additional national resources from SURE-P, National Health Insurance	• Over-dependence on donor funds • Failure to sustain supply of affordable quality-assured ACTs after AMFm • Continued use of non-recommended malaria medicines in the treatment of malaria, such as SP, CQ and other mono therapies could result in increased malaria morbidity and mortality. •

Table 6-3: SWOT analysis of malaria control in pregnancy

Strengths	**Weaknesses**
• Relevant policy documents and guidelines in place thus making the policy environment for prevention and control of malaria in pregnancy in Nigeria quite conducive • Antenatal attendance remains high in many States especially in the Southwest and Southeast • Analysis of monthly reports of routine facility data on malaria in pregnant women indicates a downward trend in the incidence of malaria among these pregnant women although the overall burden remains relatively high. • Malaria prevention and treatment malaria in pregnancy fairly integrated with other services at facility level	• There is no evidence that proposed plan to improve ANC use through focused ANC was implemented. • There is little involvement of community-based health care providers in MiP service delivery • No clear budget lines were available for malaria in pregnancy, and no records of actual investment control of MiP. • Paucity of morbidity and mortality data suggest that poor monitoring, evaluation and limited operational research • Level of attainment in respective core MiP indicators still fall far short of national targets • Knowledge of effective control measures remains suboptimal with up to a third of women still holding misconceptions about effective preventive measures. • Inadequate use of advocacy, communication, and social mobilization strategies
Opportunities	**Threats**
• Collaboration between NMCP and the	• Strategies for prevention and control of malaria

Reproductive Health programme at National level; opportunities exist for strengthening this collaboration at sub-national levels. ● Implementation research reports from one Nigeria State and several other African researchers indicate that community-based approach is feasible and can significantly increase access and adherence to MiP services ● Research finding suggest that poor knowledge and perception among women which hinder utilization and adherence to IPTp and ITN amenable to effective use of BCC strategies. ● National and international efforts to attain MDGs four; five and six have created immense goodwill and support for women's health. This provides an opportunity to leverage more support and funding prevention and control of malaria in pregnancy. ● Growing research interest in malaria in pregnancy in the country will benefit from organized support to prioritize research questions, raise funds to build stronger multi-disciplinary research teams ● Malaria control in pregnancy could be emphasized in the pre-service training of midwives, CHEWs and other cadres of health workers	in pregnancy have been predominantly facility-based to the exclusion of pregnant women that do not use formal heath facilities ● No designated focal persons, sub-committee or branch for malaria in pregnancy at NMCP or in the States ● No specific budget line for malaria in pregnancy in Federal, State and LGA Budgets ● Antenatal care attendance varies widely across the country, areas with low attendance rates could be disadvantaged by uniform deployment of facility-based strategies

Table 6-4 SWOT Analysis of Past ACSM Interventions in Malaria Control

Strengths	Weaknesses
• There is a national malaria policy, currently under review (policy support for malaria control exists) • Existence of a coordination mechanism • Existence of a structure for ACSM activities (Strategic framework) • Existence of malaria control champions	• Inadequate number of skilled staff in ACSM • Generally no costed AOPs available at the state and LGA levels • Limited availability of IEC/BCC materials • Limited utilization of IEC/BCC materials in facilities • Inadequate funding of ACSM activities • Inadequate operational research • Weak, un-strategic and inconsistent advocacy engagement with the health promotion division of the Federal Ministry of Health • No tracking mechanism for process level indicators • Inadequate media engagement strategy for tracking and reporting ACSM activities nationwide • Inadequate monitoring and evaluation of ACSM activities

	• Inadequate partner coordination for tracking ACSM activities nationwide • Inadequate articulation of ACSM in NMSP • ACSM activities are traditionally few and far between rather than routine and sustained • Persistent non-strategic planning, implementation and monitoring of ACSM activities due to inadequate participation of ACSM officials in decision-making
Opportunities	**Threats**
• Increased awareness of malaria as a problem • Growing investments national health system strengthening • Involvement of the private sector • GSM: Text messaging or some other innovative use of it • Existence of New and Social Media • Increasingly supportive media outlets • Government's expressed commitment • Malaria control has a budget line support	• High reliance on donor funding/ perennial donor dependence • Donor fatigue and expectations of dwindling donor funds in the future • Inadequate IPC skills coupled with low adherence to client's rights leading to gap between health workers knowledge and practice in service delivery • Inadequate budget for malaria control activities • Untimely release of budgeted funds for malaria control activities

6.2 Attendance Lists

Table 6-5 Attendance List for Entry/Capacity Building Meeting on the New NMSP

Date: 4th – 6th June, 2013, **Venue:** SuNMaP Conference room, 3rd floor, Abia House

S/N	NAME	ORGANIZATION	E-MAIL	PHONE NO
1	Dr.(Mrs) Ezeigwe Nnenna	NC-NMEP	drninaezeigwe@gmail.com	08033000296
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6.3 Programmatic Gap Analysis for NMSP

Table 6-7 Programmatic Gap Analysis

	2013	2014	2015	2016	2017	2018	
Total Population (Projected)	174,722,300	180,313,413	186,083,442	192,038,112	198,183,332	204,525,199	21
ACTs							
Total Malaria Treatment Courses(ACTs) Needed	119,922,048	112,758,704	100,720,257	71,610,772	93,905,951	103,218,755	11
Total ACTs Financed	74,298,756	34,989,202					
Gap in ACTs	45,623,292	77,769,502	100,720,257	71,610,772	93,905,951	103,218,755	11
RDT							
Total RDTs Needed	34,487,386	60,160,893	66,207,721	74,475,203	86,682,417	85,327,504	8
RDT Financed	12,476,695	5,344,736					
Gap in RDT	22,010,691	54,816,157	66,207,721	74,475,203			
LLIN							
LLIN Needed	39,964,892	48,471,292	49,371,911	33,788,224			
LLIN Financed	36,085,772	15,090,712	5,031,711	1,556,711			
Gap needed	3,879,120	33,380,580	44,340,200	32,231,513			
SMC							
Total Need for SMC	0	140,861	290,737	2,322,316			
Total Financed	0	0	0	0			
Gap		140,861	290,737	2,322,316			
IPTp							
IPTp needed	9,365,115	12,080,999	18,031,341	19,203,811	19,203,811	19,203,811	1
IPTp funded	0	0	0	0	0	0	
Gap in IPTp	9,365,115	12,080,999	18,031,341	19,203,811	19,203,811	19,203,811	1
INDOOR RESIDUAL SPRAY							
Total number of structures to be sprayed annually	290,778	800,330	929,364	19,186,956			
No of structures for which financing is already secured	290,778	800,330	410,474	80,918			
Gap to be covered	0	0	518,890	19,106,038			
ACSM							
Total estimated costs	1,241,395	1,303,464	1,368,638	1,437,070			
Available Fund	0	0	0	0			
Funding Gap	1,241,395	1,303,464	1,368,638	1,437,070			
M&E							
Needs	6,361,945.70	8,787,205.81	8,780,792.22	7,268,615.16			

Funded	2,730,139.10	7,247,630.90	-	-			
Gaps	3,631,806.60	1,539,574.91	8,780,792.22	7,268,615.16			
PROGRAMME MGT							
Total needs	6,074,942.07	6,771,186.56	7,136,099.29	8,131,516.80			
Funded	1,662,811.74	1,662,811.74	49,506.12	-			
Financial gap	1,617,731.48	2,313,975.97	5,451,586.32	6,496,509.95			
IRS							
Total needs	39,820,844	108,718,960	171,909,550	148,911,064			
Funded	32,246,321	0	0	0			
Financial gap	7,574,523	108,718,960	171,909,550	148,911,064			