Mid Term Review of the

National

MALARIA

Strategic Plan

2014 – 2020

National Malaria Elimination Programme
Federal Ministry of Health,
Abuja,
Nigeria.

November 2017

EXECUTIVE SUMMARY

Malaria burden

Nigeria is the most populous country in Africa with an estimated population of 199,220,487 in 2017 (projected from the 2006 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.

In 2016, the World Malaria Report estimated that Nigeria contributed 29% of the 212 million malaria cases and 26% of the 429,000 malaria deaths reported globally. Malaria accounts for 21% of general outpatient attendance and 32% of pediatric outpatient attendance in secondary health facilities across the country. Malaria transmission is supported by the favorable climate and vegetation patterns across Nigeria conducive for both the vectors and parasites, with transmission stable and uniform throughout the year in the South, to highly intense and seasonal in the North. The most prevalent species (>95%) of malaria parasite in Nigeria is *Plasmodium falciparum*.

NMSP 2014 - 2020

The goal of the National Malaria Strategic Plan 2014 – 2020 (NMSP) to achieve malaria pre-elimination by 2020. The NMSP set out to achieve the following objectives by 2020: (i) provide at least 80% of targeted population with appropriate preventive measures; (ii) test all care-seeking persons with suspected malaria using RDT or microscopy; (iii) treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug; (iv) provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment measures as necessary; (v) 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) 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.

Review Objectives and process

The Mid-Term Review (MTR), which was participatory and consultative of all malaria partners in the country set out to assess the progress of the National Malaria Elimination Programme towards the *epidemiological and entomological impact targets of the Malaria Strategic Plan* (MSP) from 2014-2020 and make appropriate recommendations towards enhanced impact; review *the level of financing of the national malaria programme* during the period under review and make appropriate recommendations towards optimal financing; review *the capacity of the national malaria control programme to implement planned activities* during the period under review and make appropriate recommendations towards optimal capacity

for programme implementation; review *the attainment of programme outcome targets during the period under review* and make appropriate recommendations for optimal delivery of malaria services; review set targets with a view to making it realistic and achievable and to *define the programming implications of the lessons learned in the implementation of the MSP*.

Four phases were identified, namely: planning and preparation, thematic desk review, validation and programme strengthening. In September 2017, NMEP and partners initiated the planning process for the MTR by identifying required technical and financial resources to be able to conduct the MTR. The planning also included collection and building a library of documents that were used for conducting thematic desk reviews. In October 2017, NMEP and partners conducted thematic desk reviews that covered the key interventions areas and level of attainment of the MSP objectives at midterm. Validation and programme strengthening phases were completed in November 2017.

Key achievements at mid term

Overall, at the mid-point of the MSP, epidemiological impact is varied where a decline in deaths due to malaria is observed with little or no changes in malaria morbidity. The gains seen however are not at a pace initially projected at the start of the NMSP in 2014, underscoring the likelihood that malaria pre-elimination may not be achieved if current implementation approaches are maintained.

In general, '*malaria prevalence and severe anemia*' indicators were found to have achieved their 2015 set targets. An analysis of the trends of confirmed malaria cases for the period 2014 – 2017 show a strong seasonality in confirmed cases, with '*test positivity rate*' observed to have increased from 60% in 2014 to 75% in 2016 in facilities reporting through DHIS2, way above the set target of 20% in 2016.

There is decline in both entomological inoculation rates (EIR) and sporozoite rates in 2016 across all eco-zones ranging from 2.6-55 infective bites per person per year for *An. gambaie* s.s and 0-18 infective bites per person per year in *An. arabiensis* in the Guinea Savannah.
Studies in sentinel sites from 2014 to 2017 continue to show indoor biting activity of the main vectors with peak biting times between 11pm-12am to 4-5am across the various ecological zones. Outdoor peaks varied between 7-8pm, 8-9pm, 10-11pm 2-3am and 3-4am across different eco-zones.
Insecticide resistance (still focal) is spreading in all the ecological zones, with resistance recorded against all the four main classes: organophosphates in Plateuau, DDT and pyrethroids in all eco-zones and carbamates in Sokoto, in the Sahel region.

Overall programme capacity to implement planned activities is low to medium at 44%. Activities under case management had the highest rating (52%) while programme management had lowest rating of 20%.

NMEP has been able to develop required policies and guidelines guided by and adapted from international standards from WHO and partners. Capacity to coordinate partners is improving, however some weaknesses were observed in the coordination between NMEP and State governments which are autonomous by statute. The further improve on its coordinating and oversight role, NMEP needs to complete the partner mapping that was planned but not yet done.

Generally, majority of fever cases seek care in the private sector, however the supervision and integration of this sector remains fragmented and poorly coordinated at both national and sub national levels. Plans to create the Public – Private Partnership (PPP) desk were initiated, but yet to be implemented due to lack of funds.

Between 2014 and 2017, the main funding sources for malaria activities included the Global Fund, USAID/PMI, DFID, WB and Government of Nigeria. Nearly 69% of planned resources for the period 2014 – 2017 were mobilized to implement NMSP activities. However, overall government allocation to Health has consistently remained below the 15% WHO recommendation with malaria specific allocation less than 1% of the required funding. A decline in funding for malaria particularly in 2017 is observed creating a huge unmet demand for antimalarial commodities and services.

Universal coverage with LLINs has moderately increased from a baseline of 14% in 2010 to 35% in 2015, with notable increase in use by pregnant women (62%) and children under 5 (43%) the night before the survey. The planned NMIS in 2018 will provide current estimates with regard to access and use of LLINs. LLIN durability studies have been carried out in 3 states provide positive finding with median survival of LLIN varying between 4.2 and 5.8 years in the different study sites, with minimal insecticidal performance at 80%-90%. These findings show that LLINs can be used for more than the standard 3 years currently recommended by WHO.

Over the review period, IRS implementation has been sporadic in very few LGAs due to limited funding, despite ambitious target of covering 45% of the population with IRS by 2020. Also improvements in IPTp update have been modest increasing from 29% in 2014 to 39% in 2016, still far below the 2016 NMSP target of 75%, partly attributed to lack of reporting from the private sector, limited availability of Sulphadoxine-Pyrimethamine (SP) for IPTp in health facilities across the country due to logistics and security challenges in some States.

The proportion of the persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy in the public sector has increased from 51% in 2014 to 82% in 2016 attributed to the continuous availability of RDTs especially in the primary health care facilities. However, implementation of iCCM has remained largely at pilot stage in only 2 states.

Despite previous challenges that affected availability of malaria commodities to public facilities, in recent years, there has been a paradigm shift in PSM operations across health programmes, following the establishment of National Product Supply Chain Management Programme (NPSCMP), under the Department of Food and Drugs Services, Federal Ministry of Health in 2012; and the Nigeria Supply Chain Integration Project (NSCIP) in 2014 whose implementation has been progressive till 2017. The MTR found that the Malaria PSM is integrated into the NSCIP and is fully functional at national and with varying degrees of operational at the different states.

The content of the M&E plan and guidelines for SMEOR were found to be adequate, clear, explicit, and appropriate for providing useful information for decision making. However, community level data, seasonal malaria chemo-prevention (SMC) as well as private health facilities malaria data is not yet reported through the established routine surveillance system. An analysis of the DHIS2 showed improvements in reporting rates by states overall with a few states showing declines. More importantly only a few secondary and tertiary facilities ae currently reporting through the DHIS2 and majority of private sector facilities do not report at all, limiting the ability to generate nationally representative programme monitoring data using routine surveillance system.

Key Lessons learned implementing the MSP

The total cost of NMSP 2014 – 2020 is US$4,133,110,170.00. NMEP and partners mobilized 68.58% of the total required amount (US$ 1,178,485,153) for the period 2014 - 2017, with domestic resources accounting for an average of 3% of resources available to finance malaria activities. This implies that majority of malaria activities are donor dependent raising concerns of sustainability of these activities should external resources dwindle as observed in 2017. It is critical for the Government of Nigeria at both Federal and State level to prioritize malaria as a major public health problem and direct adequate local resources to fund the key malaria prevention activities if Nigeria is to meet its 2020 targets.

LLINs and IRS are the primary vector control measures stipulated in the NMSP. However, no significant investment has been made on IRS with patchy attempts in some local governments in Lagos state. Also, LLINs universal coverage cannot be achieved at a given point in time across Nigeria given the huge financial resources needed to procure and logistical needs to distribute over 100 million LLINs given the sheer size of the country and its massive population. It means that at any time a significant proportion of the population is not adequately protected, leading to a failure to interrupt malaria transmission.

The importance to monitor programme performance at national scale cannot be over-emphasized. However, the current routine surveillance system is majorly operational in only the public health sector, with minimal involvement of the private sector which serves more than 60% of the population. It means NMEP and partners have to rely on expensive population

surveys that are conducted at long intervals to be able to generate reliable measurements of key indicators. It is crucial for NMEP and partners to pro-actively engage the private sector facilities to include them in the routine reporting system through DHIS2, so that this information can be used to regularly monitor programme performance at national level. All agencies that supervise private sector practice should be involved in these efforts to ensure that private facilities report routinely through the national HMIS system for a holistic monitoring and evaluation of malaria activities.

Malaria response needs to be multi-sectoral for gains to be achieved and sustained. While a framework for the coordination of these partners exists, led by NMEP, weaknesses are noted. The NMEP and States should be supported to fully implement this mandate to ensure that the planning, implementation and evaluation of all malaria activities with the different stakeholders is well coordinated, for increased effectiveness, efficiency and equity, to ensure that no segments of the population are left behind in the universal coverage with malaria interventions as the case is now. Government of Nigeria should ensure that all states are supported to have adequate resources to direct to malaria prevention and control, with the technical and financial support of partners.

The recommended approach to national review and planning of malaria activities has been occurring regularly. However, this good practice is not well replicated at state level due to limitations in funding and technical capacity. The Federal system of Nigeria empowers states to be in charge of implementing their own activities, however, these need to be in consonance with the national strategic plan. It imperative therefore that state planning and reviews must have the guidance and input of NMEP if activities at state level are to meet the set targets in the national strategic plan.

On the positive side, findings from the sentinel vector surveillance system show the prevalent vectors continue to be majorly indoor biters. This implies that current vector control measures – LLINs and IRS are still useful to protect populations. On the other hand, there is also evidence from the sentinel sites showing emergence of resistance to the four classes of insecticides primarily to pyrethroids and organochlorines. This is cause for concern as pyrethroids is the only insecticide currently impregnated in LLINs. NMEP and partners should therefore work with international partners to identify new tools for the gains against malaria to be sustained.

At midterm, it was found that NMEP capacity to implement planned activity was low to medium, with little information on state capacity to implement malaria activities. This low capacity affects ability to achieve universal access and coverage and ultimately to meet the targets of reducing malaria morbidity and mortality. Government should urgently conduct a human resource review of both NMEP and states to ensure that the right number of health staff with the right skills are available at these levels if the targets of the strategic plan are to be attained by 2020.

Key recommendations

1. With NMEP staff strength of over 80, this HR needs to be optimized by having clearly defined job descriptions to ensure that all the expected roles of NMEP are identified and adequately manned, and this should be replicated at state level for improved implementation of all planned malaria activities.

2. The role of the private sector is critical in Nigeria's efforts to achieve pre-elimination as majority of the population seek care in the private sector. Also, in order to increase domestic financing for malaria, private sector players are critical in providing alternative non-traditional sources of funding for malaria. NMEP and partners should therefore highlight the magnitude and impact of malaria to households, private organizations and to the socio-economic development of the country in general, thereby making a case for why private sector players are an important ally in malaria prevention and control.

3. NMEP should strengthen the routine surveillance system to ensure that it is able to collect information from both public and private sectors in order to be able to properly measure programme performance at national level, with increased capacity for data analysis and use at all levels, to inform programme planning, implementation and monitoring.

4. The role of communities and households to be responsible for their own health and perceiving malaria as a serious health problem should be highlighted so that malaria response is household led. With this regard, NMEP and partners should advocate to the highest levels of government at national level (Presidency, Senate and House of Representatives) and at state level (Governors and health commissioners) to prioritize malaria and thus increase budgetary allocation for health in general and malaria in particular.

ACKNOWLEDGEMENTS

FOREWORD

The mid-term review of our National Malaria Strategic Plan (NMSP) 2014 – 2020 offers an opportunity to scrutinize and appraise our management systems and approaches of steps in achieving the goal of malaria elimination in Nigeria. It provides us evidence base to assess how well programme implementation at both Federal and State level is progressing and if these actions are generating our results and impact.

This present review evaluates the systems used to deliver interventions, identifies bottlenecks and barriers to achieving intended objectives and provides NMEP, States and partners an opportunity to re-think approaches and reset the malaria agenda in the medium.

In conducting the MTR, NMEP ensured it was an inclusive and participatory process led by the NMEP and its partners under the guidance of WHO and RBM. The findings highlighted here are the result of our individual contributions to malaria response in Nigeria and therefore enjoins us to also embrace the recommendations proposed for a more invigorated response, if we are to achieve our 2020 goals of reaching pre-elimination status.

It is my singular duty to ask all our gallant health staff at all levels of the health pyramid to ramp up efforts in partnership with the private sector and our development partners to ensure we fully implement all recommendations. I assure you of the highest commitment of His Excellency, the President of the Federal Republic, Governors of States and all leaders to spare no effort to create the best conditions for sustained response against malaria so that in 2020, Nigeria will report a successful attainment of its goal.

Finally, I congratulate all of you who spared your valuable time to conduct this review and believe that together, we will achieve malaria elimination in Nigeria.

Thank you.

Professor Isaac F. Adewole, FAS, FSPSP, DSc (Hons)

Honorable Minister of Health.

ACRONYMS

ACT	Artemisinin-based Combination Therapy
AIDS	Acquired Immune-Deficiency Syndrome
AL	Artemether- Lumefantrine
ALMA	African Leaders Malaria Alliance
ANC	Antenatal Care
AMFm	Affordable Medicines Facility malaria
BCC	Behavioral Change Communication
CDC	Communicable Disease Control
CSO	Civil Society Organization
DFID	Department for International Development
DDT	Dichlorodiphenyltrichloroethane
DHS	Demographic and Health Survey
DHIS 2	District Health Information System 2
EPR	Epidemic Preparedness and Response
EIR	Entomological Inoculation Rate
EQA	External Quality Assurance
FBO	Faith-Based Organization
GDP	Gross Domestic Product
GFATM	Global Fund to Fight AIDS, Tuberculosis and Malaria
GON	Government of Nigeria
HBMF	Home-Based Management of Fever
HMIS	Health Management Information System
HIV	Human Immune-Deficiency Virus
HW	Health Worker
iCCM	Integrated Community Case Management
IDSR	Integrated Disease Surveillance and Response
IPTp	Intermittent Preventive Treatment in pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
IVM	Integrated Vector Management
LLIN	Long Lasting Insecticidal Net
M&E	Monitoring and Evaluation
MCH	Maternal and Child Health
MDG	Millennium Development Goals
MIS	Malaria Indicator Survey
MSP	Malaria Strategic Plan
MTR	Mid-Term Review
FMoH	Federal Ministry of Health
MoU	Memorandum of Understanding
NDP	National Development Plan
NGO	Non-Governmental Organization
NHP	National Health Policy
NMEP	National Malaria Elimination Programme

NMS	National Medical Stores
NPA	National Planning Authority
NRH	National Referral Hospital
NPO	National Professional Officer
OPD	Outpatient Department
PFP	Private for Profit
PNFP	Private Not-for-profit
PSM	Procurement and Supply Management
QA	Quality Assurance
RBM	Roll Back Malaria
RDTs	Rapid Diagnostic Tests
RRH	Regional Referral Hospital
SAM	Service Availability Mapping
SBCC	Social Behaviour Change Communication
TWG	Technical Working Group
NMIS	Nigeria Malaria Indicator Survey
UNICEF	United Nations Children's Fund
USD	United States Dollars
USAID	United States Agency for International Development
WHO	World Health Organization
WHOPES	World Health Organization Pesticides Evaluation Scheme

TABLE OF CONTENT

List of Figures

List of Tables

Chapter 1: Introduction

1.1 Background: Country profile and malaria situation

1.1.1 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 to 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.

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 transmission 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 recent increases in rainfall in Nigeria and neighbouring countries (possibly as a result of climate change), flooding has now become a frequent occurrence in all parts of the country, most especially in riverine communities and the Niger Delta Regions.

Nigeria is the most populous country in Africa with an estimated population of 199,220,487 in 2017 (projected from the 2006 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[1]. The crude birth rate (CBR) and the crude death rate (CDR) were reported in the 2006 Census to be 43 births per 1000 population, while 18 deaths per 1000 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. 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

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[1] DHS 1988 & 2005

facilities. In recent decades, there is a strong rural to urban drift resulting in pressure on existing facilities in the urban centres.

The economy of Nigeria, is majorly driven by crude oil. Other sources of income include mining and export of cash crops. However, Nigeria is undergoing rapid changes to diversify its economy to promote agriculture underpinned by the Agricultural Transformation Action Plan (ATAP). This 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. Agriculture is the major source of livelihood for most of the population who are subsistence farmers. Due to drop in oil prices globally over the last few years, the economy of Nigeria experienced significant declines in growth and is forecast to grow by 2% in 2017[2].

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 to peripheral health facilities in terms of both the provision of essential supplies and the ability of people to reach the facilities.

Figure 1: Map of Nigeria showing States and Geopolitical Regions

Nigeria is made up of six geopolitical zones and 36 States and the Federal Capital Territory as represented in 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. The organization of the health system is structured along the political/administrative way; where the Federal Government formulates health policies through the Federal Ministry of Health, and is responsible for tertiary health and specialized services through Teaching Hospitals, Federal Medical Centres, Specialist Hospitals and Medical Research Institutes. The State Governments provide secondary health care through the state General Hospitals, while the Local Governments Areas (LGAs) are generally responsible for primary health care services. Both States and LGAs receive resources from the federation account, a percentage of which is expected to be dedicated to health. The private health sector in Nigeria is vast and can be categorized as formal (hospitals, clinics and pharmacies) and informal (NGOs/CBOs/FBOs, patent medicine sellers, etc.). The private sector

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[2] NBS 2017

operates under licenses and registrations issued by the Federal and State Ministries of Health as well as other agencies of government. NGOs and local communities provide complimentary, and sometimes, holistic services at all levels of health care[3].

Federal and State Ministries of Health have agencies under their jurisdiction such as the National Primary Health Care Development Agency (NPHCDA), National Agency for Food, Drug Administration and Control (NAFDAC), and State Health Management Boards responsible for a range of health service related functions. In the same regard, the Local Government Areas (LGAs) have the Ward Health Committees, Village Health Committees, Private Health Care Providers, and Traditional and Alternative Health Care Providers that enhance service delivery and community mobilization. The government of Nigeria at both Federal and State levels, provide financing for health services, however, 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.

1.1.2 Malaria Situation in Nigeria

In 2016, the World Malaria Report estimated that Nigeria contributed 29% of the 212 million malaria cases and 26% of the 429,000 malaria deaths reported globally[4]. Malaria accounts for 21% of general outpatient attendance and 32% of pediatric outpatient attendance in secondary health facilities across the country[5]. Nonetheless, there has been a reduction in the prevalence of malaria from 42% in 2010 to 27% in 2015[6]. Figure 2 shows malaria prevalence in the different states as found in NMIS 2015.

The differences in malaria epidemiology across the country are also reflected by the variation in transmission; from stable and uniform throughout the year in the South, to highly intense and seasonal in the North. The most prevalent species (>95%) of malaria parasite in Nigeria is *Plasmodium falciparum*[7].
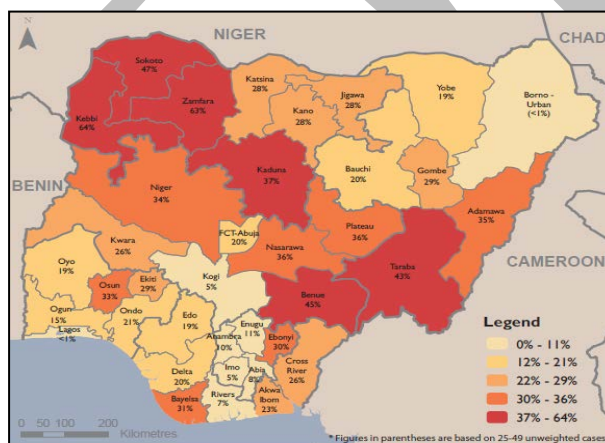
Figure 2: Malaria prevalence by state
Source: NMIS 2015

A recent assessment of the health system in Borno, Yobe, Adamawa and Gombe States (in North Eastern Nigeria) revealed that an estimated 7 million persons (41%) need health

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[3] NHA 2014

[4] WMR 2016

[5] RIA 2015; p7

[6] NMIS 2010 & 2015

[7] NMSP; pp 28 – 32

assistance, in a situation where 35% of the 800 health facilities assessed have been destroyed[8]. In addition, other public infrastructures (roads, water system, electricity, etc.) have been largely damaged resulting in limited access to social and health services.

In Nigeria, there is also a rural-urban divide in health indices; vulnerable groups in the rural population fare worse than in the urban population. This is attributable to inequity in access to functional health facilities, skilled health personnel, and geographical barriers due to difficult terrains[9]. The 2015 Malaria Indicator Survey found that malaria and severe anemia were twice more prevalent in rural children than their urban counterparts[10]. Also, the NDHS 2013 showed that although U5 mortality is 128 per 1000 live births in Nigeria, death rates were higher among rural children at 167 per 1000 live births compared to 100/1000 in urban communities[11]. The NDHS 2013 also showed that 47% of rural women reported no access to ANC compared to 11% women living in urban communities. Urban women were also more likely to have received 3 or more doses of IPTp during their last birth (24%) compared to rural women (16%). This further justifies the importance of prioritizing vulnerable groups and addressing gender-related or socio-economic barriers to achieving universal coverage in malaria control interventions.

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[8] North East Health Sector Plan 2016; P19 & 21
[9] Scheil-Adlung Xenia 2015; p25
[10] NMIS, 2015; p96
[11] NDHS 2013; p117

Chapter 2: Overview of the National Malaria Strategic Plan 2014 - 2020

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 (NMSP) aims at achieving a marked reduction in malaria burden in Nigeria to pre-elimination levels at the end of 2020. The NMSP recognizes the need to achieve and sustain universal coverage of the population with key malaria interventions, if Nigeria is to reach pre-elimination. Therefore 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. 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 re-designated the National Malaria Control Programme as National Malaria Elimination Programme (NMEP).

2.1 Vision, Mission, Goal and Objectives

2.1.1 Vision and Mission

The **Vision** is to have a "malaria free Nigeria"; and the **Mission** for NMEP is to provide equitable, comprehensive, cost effective, efficient and quality malaria control services ensuring transparency, accountability, client satisfaction, community ownership and partnership.

2.1.2 Goal and Objectives

- *Goal*

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

- *Objectives*

The NMSP 2014 – 2020 has 7 Objectives including:
1. To provide at least 80% of targeted population with appropriate preventive measures by 2020;
2. To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020;
3. To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020;

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;

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;

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;

7. 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.

A set of indicators as shown in Annex 1 were identified and are hereby reviewed to establish achievement at mid-term.

Chapter 3: Mid Term Review process

3.1   Review Objectives

The objectives of the Mid-Term Review (MTR) are as follows:

- To assess the progress of the National Malaria Elimination Programme towards the *epidemiological and entomological impact targets of the Malaria Strategic Plan* (MSP) from 2014-2020 and make appropriate recommendations towards enhanced impact;
- To review *the level of financing of the national malaria programme* during the period under review and make appropriate recommendations towards optimal financing;
- To review *the capacity of the national malaria control programme to implement planned activities* during the period under review and make appropriate recommendations towards optimal capacity for programme implementation;
- To review *the attainment of programme outcome targets during the period under review* and make appropriate recommendations for optimal delivery of malaria services
- To review set targets with a view to making it realistic and achievable
- To *define the programming implications of the lessons learned in the implementation of the MSP*.

3.2   Review phases

The Mid-Term Review (MTR) covered all technical and management areas of malaria control policy and programming in the country. Four phases were identified, namely: planning and preparation, thematic desk review, validation and programme strengthening.

In September 2017, NMEP and partners initiated the planning process for the MTR by identifying required technical and financial resources to be able to conduct the MTR. The planning also included collection and building a library of documents that were used for conducting thematic desk reviews. The MTR process was consultative and participatory involving all malaria stakeholders in the country. In October 2017, NMEP and partners conducted thematic desk reviews that covered the key interventions areas and the objectives of the MSP. Validation and programme strengthening phases were completed in November 2017.

3.2.1   Phase 1 - Planning and Preparatory Phase

The planning and preparatory phase included development of resource mobilization plan and concept note outlining review methodology, compilation of reference documents, appointment of review coordinator, thematic review teams, and technical assistance.

3.2.2 Phase II - Thematic Desk Review

In this phase, the different teams (the thematic working groups, review secretariat and sub-working committees) collectively analyzed all available data pertinent to the implementation of the NMSP over the previous 3 years under the identified work streams. The main work streams were modelled along the objectives of the MSP. The product of the desk reviews (thematic reports) constituted the basis for validation through field visits to selected States and to national level stakeholders. Information generated was then used to develop the MTR report.

3.2.3 Phase III: External Validation

The validation phase provided an opportunity for external reviewers drawn from WHO IST and Geneva and other external consultants to review the reports developed in phase 2 by the in-country teams to ensure an unbiased, objective and evidence-based evaluation of the status of implementation of the MSP and by inference the national malaria programme.

The eternal reviewers also participated in field visits to States and national level as a process to further validate the findings from the thematic desk reviews. The final report incorporates the inputs from these processes. The field visits to the States were structured to ensure inclusion of the main geopolitical and ecological zones and included state and LGA levels, health facilities and communities to obtain primary data for validating the information in the thematic desk reports.

Chapter 4: Progress towards the epidemiological and entomological impact

4.1 Epidemiological and entomological impact at mid term

Overall, at the mid-point of the MSP, epidemiological impact is varied where a decline in deaths due to malaria is observed with little or no changes in malaria morbidity. The gains seen however are not at a pace initially projected at the start of the NMSP in 2014, underscoring the likelihood that malaria pre-elimination (measured by SPR less than 5% and attainment of zero deaths by 2020) may not be achieved if current implementation approaches are maintained.

4.1.1 Progress towards epidemiological indicators of the NMSP

The goal of National Malaria Strategic Plan (NMSP 2014-2020) is to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero as measured by the following indicators:

- All-cause under-five mortality rate per 1000 population
- Percentage children aged 6-59 months with haemoglobin measurement of <8g/dl
- Malaria parasite prevalence in children under-five (slide)
- Malaria test (slide/RDT) positivity rate
- Percentage death due to malaria

4.1.1.1 Progress towards NMSP malaria impact targets

A review of the impact indicators as shown in Table 1 compares actual achievements against annual targets. In general, '*malaria prevalence and severe anemia'* indicators were found to have achieved their 2015 set targets. However, '*test positivity rate'* was observed to have increased from 60% in 2014 to 75% in 2016, way above the set target of 20% in 2016.

Table 1: Impact indicators: baseline, target and achievements 2014-2016

Indicators (Impact)	Baseline (Year)	2014 Target	Actual	2015 Target	Actual	2016 Target	Actual	Source
All cause under-5 mortality rate per 1000 population	157 (2008)	150	NA	130	NA	115	NA	NDHS
% children aged 6–59 months with hemoglobin measurement of <8g/dl	13% (2010)	11	NA	9	9.3	7	NA	MIS
Malaria Parasite Prevalence in children U5 (Slide)	42% (2010)	34.2	NA	26.4	27.4	18.6	NA	MIS
Malaria test (slide/RDT) positivity rate	60% (2010)	40	60	30	67	20	75	HMIS
% Deaths due to Malaria in under 5	31% (2010)	25	56	20	49	15	47	HMIS

Information on all-cause under-5 mortality is limited as this data is collected during demographic and health survey due in <mark>20XX</mark>. At the time of the MTR, only one data point was available for comparison (MIS 2015) for impact indicators proportion of children with anaemia and malaria parasite prevalence. The next MIS is planned to be conducted in <mark>2018.</mark>

4.1.1.2 Malaria parasite prevalence

Overall, malaria parasite prevalence among children under 5 has declined from 42% in 2010 to 27.4% in 2015. Regional variations are observed as shown in Figure 3 across Nigeria. Malaria prevalence is slightly higher among children living in rural areas (11.5%) compared to children living in urban areas (35.6%). Malaria prevalence is highest in the North West and North Central zones (37% and 32% respectively) and lowest in South East and South West (14% and 17% respectively).
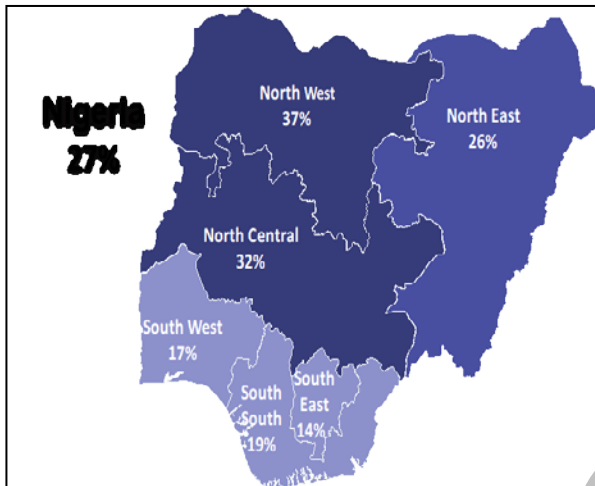
Figure 3: Malaria prevalence among children under five years by Geopolitical zones

Source: NMIS 2015

4.1.1.3 Trend in Malaria Deaths among Under 5s

The yearly number of deaths (all cause among under five) in Nigeria has decreased from 24,870 in 2014 to 15,765 in 2016. Similarly, the number of deaths attributed to malaria has decreased (Figure 4). In 2014, percent of deaths due to malaria in under five was 56%, followed by 49% in 2015 and 47% in 2016 (HMIS/DHIS, 2017).
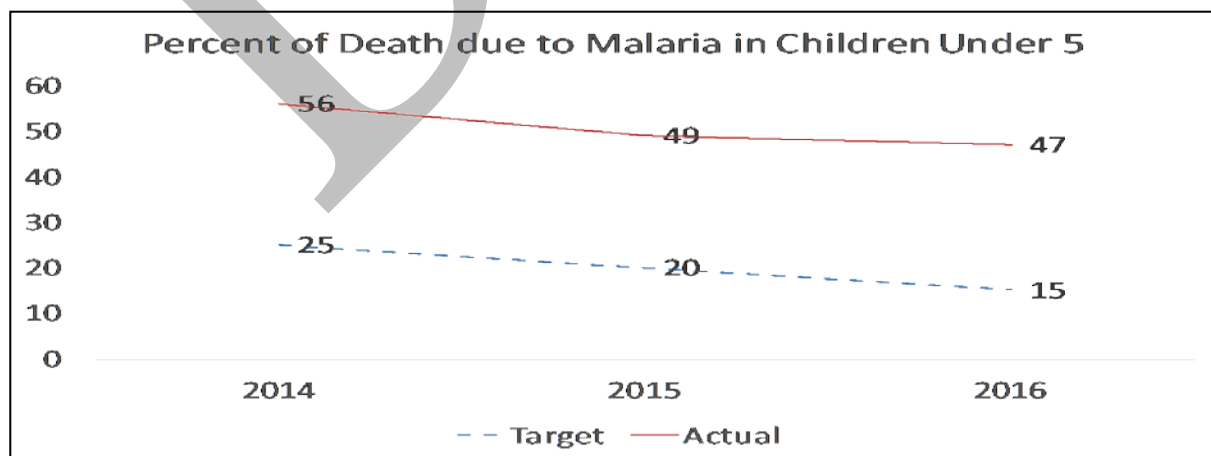
Figure 4: Trends in malaria deaths and all-cause deaths, 2013-2016

Source: HMIS

A decline in deaths attributed to malaria as reported in the HMIS is observed but does not meet the projected targets of the NMSP.

4.1.2 Assessment of appropriateness of impact indicators

Overall, the five impact indicators were found to be appropriate. They enabled the measurement of the performance of the program in terms of malaria morbidity and mortality and allowed decision makers to take appropriate action in response. The baseline used for '*All cause under five mortality rate'* was the 2008 NDHS, whereas the recent (2013 NDHS) figure existed. In addition, the '*percent of death due to malaria among under five'* data was adjudged not to be reliable due to data quality issues and it did not take into account changes in population. '*In-patient malaria mortality per 100,000 persons per year'* is more appropriate for assessing trends in malaria mortality. Indicators whose data is collected using HMIS need to be interpreted with caution given the low reporting from secondary and tertiary health facilities and the private sector. The *'malaria incidence per 1,000'* indicator is missing in both the performance framework and the M&E plan. Reporting malaria cases is important in showing malaria burden as it is a major contributor to outpatient attendance in health facilities. Information on malaria cases is provided below.

4.1.3 Trends in confirmed Cases as reported in the HMIS 2014 - 2017

An analysis of the trends of confirmed malaria cases for the period 2014 – 2017 show a strong seasonality in confirmed cases. Also, there has been a steady increase in malaria burden, which may be attributed to improved case reporting and improved testing rate as shown in Figure 5.
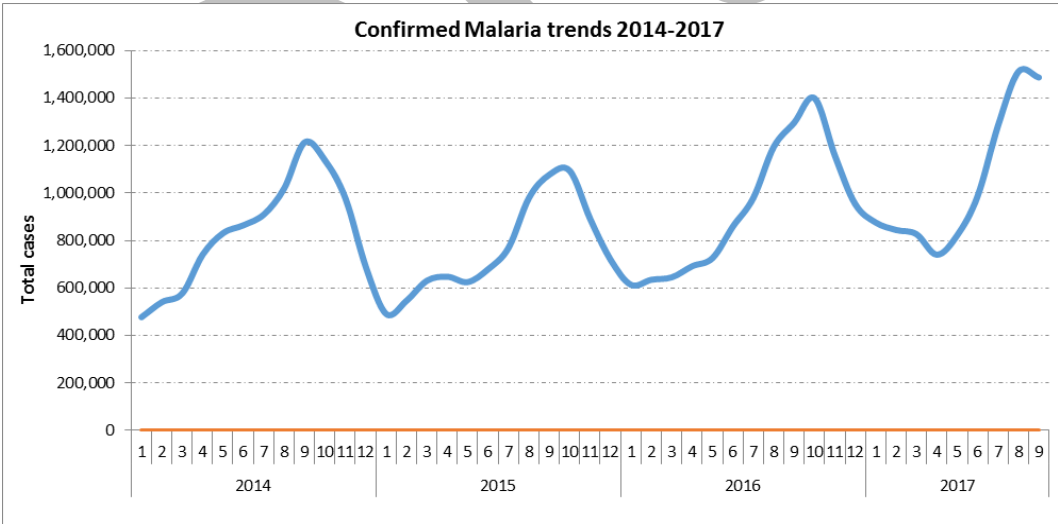
Figure 5: Confirmed malaria morbidity trends 2014 - 2017

4.1.4 Parasite Distribution Species

The major parasite species in Nigeria is *Plasmodium falciparum* accounting *for* between 94% - 98% of infections. *P. malariae* accounts for almost 2% of infections. *Plasmodium ovale* is a rarer infection, accounting for approximately 0.2% of all infections. The mixed infections represent account for 4%.

4.1.5   Malaria transmission risk map and stratification

In 2017, the NMEP in collaboration with LINK project of London School of Hygiene and Tropical Medicine (LSHTM) updated the malaria stratification for Nigeria using hierarchical Bayesian spatial and temporal small area estimation (SAE) techniques. Controlling for covariates such as distance from rivers, humidity, rainfall intensity and temperature. The malaria transmission intensity map (Figure 6) shows a predicted age corrected *plasmodium falciparum* parasite prevalence (*pf*PR$_{2-10}$) of between 10% - 30% (meso-endemic pattern) in more than half of the country. There are other parts that show a transmission pattern of 0% - 10% with unstable transmission and there will be a need to investigate further through routine surveillance of malaria cases. This is compared to transmission risk estimated in 2010[12].

Malaria stratification map showing the four malaria zones in Nigeria (2010)

Malaria stratification map showing the four malaria zones in Nigeria (2017)
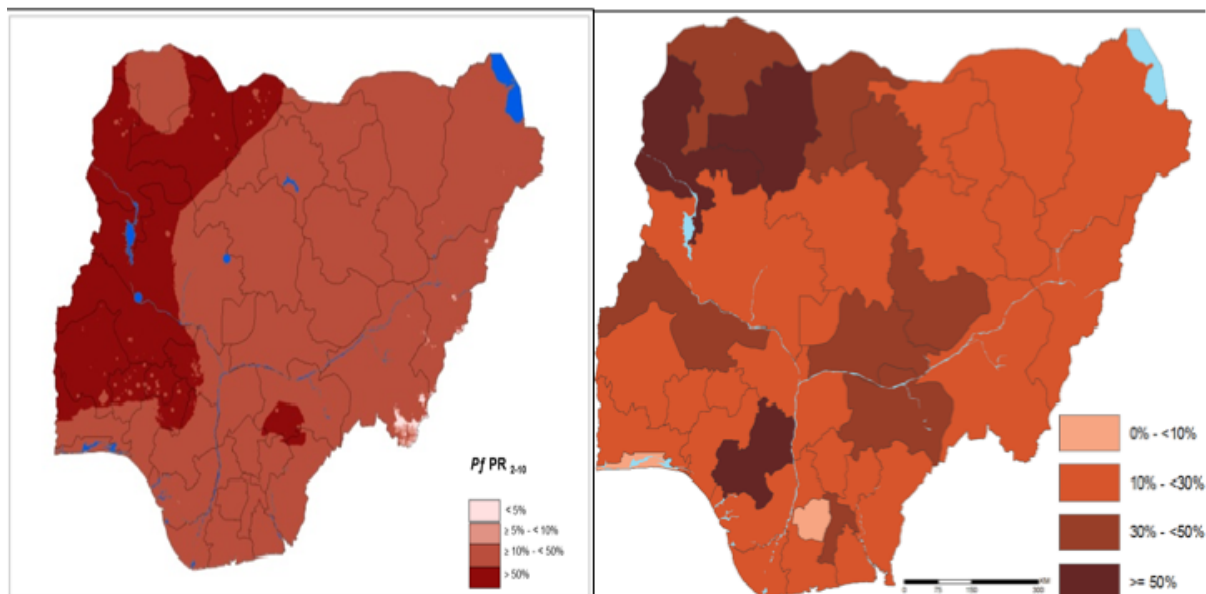
Figure 6: Malaria transmission risk maps 2010 and 2017

Transmission risk in 2010 shows more homogeneity than in 2017, where heterogeneity is becoming prominent.

4.2   Conclusions and Recommendations

Conclusion

- Although malaria prevalence dropped between 2010 and 2015, we do not have additional data points in 2017 to be able to confirm if this drop is sustained or not.
- Observed changes in malaria transmission intensity indicates increased heterogeneity showing some areas with low risk however this should be interpreted with due caution given different methodologies and completeness of data used

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[12] Snow *et al*, 2013

from different spatial locations given low reporting from tertiary, secondary and private health facilities.

- There is observed decline in deaths attributed to malaria from routine reports from health facilities however the decline is not at a rate previously envisaged in the MSP.

Recommendations

- NMEP and partners should improve the availability and quality of data (routine and survey) at all levels so as to have regular information for monitoring impact of malaria interventions.
- Accelerate and achieve universal coverage of population with key malaria prevention and control interventions for impact.

4.3   Entomology

4.3.1   Assessment of progress towards entomological impact of the MSP

Malaria entomology and vector surveillance generate evidence in changes in the geographical distribution and density of the vector, evaluate control programs, obtain relative measurements of the vector population over time and facilitate appropriate and timely decisions regarding interventions.

4.3.2   Baselines and targets for entomological impact indicators

Only entomological inoculation rate (EIR) and sporozoite rate baselines were included in the MSP. There were no targets set. Studies conducted in 2016 show variations in trends in EIR and sporozoite rates across the various ecological zones in the country. Table 2 summarizes current findings of EIR and Sporozoite rates from vector surveillance sites.

Table 2: Baseline values and current trends of Entomological Impact Indicators

	An. gambiae		An. arabiensis		An. coustani	
	Baseline in MSP	2016	Baseline in MSP	2016	Baseline in MSP	2016
EIR	18-145	2.6-232	0-12.4	0-55.6	-	-
Sporozoite rate	0.2 -11.8%.	0-7.3%	0-4.8	1-2.1%	-	0.8-1.8*

An. coustani has been implicated as a malaria vector for the first time in Nigeria biting both indoors and outdoors

There is decline in both EIR and sporozoite rates in 2016 compared to baseline in MSP. Entomological Inoculation Rates across all eco-zones in 2016 have been found to range from 2.6-55 infective bites per person per year for *An. gambaie* s.s and 0-18 infective bites per person per year in *An. arabiensis* in the Guinea Savannah.

4.3.3   Changes in vector behaviour

The baseline for vector behaviour was not documented in the malaria strategic plan. However, findings during this performance review indicates variations in vector behaviour across the various ecological zones. Studies conducted in 2015 and 2016 show significantly higher *An. gambiae* s.l were collected indoors than outdoors across the different ecological zones whereas in *An. funestus,* more mosquitoes were collected outdoors than indoors in Enugu (rain forest), and Nasarawa States (Guinea Savannah).

Studies in sentinel sites from 2014 to 2017 continue to show indoor biting activity of the main vectors with peak biting times as shown in Figure 7. Indoor peak biting time for *An. gambiae* s.l. monitored during the period under review indicated a range of between 11pm -12am to 4-5am across the various ecological zones. There is also considerable outdoor biting activity in the study areas. Outdoor peaks varied between 7-8pm, 8-9pm, 10-11pm 2-3am and 3-4am across different eco-zones.
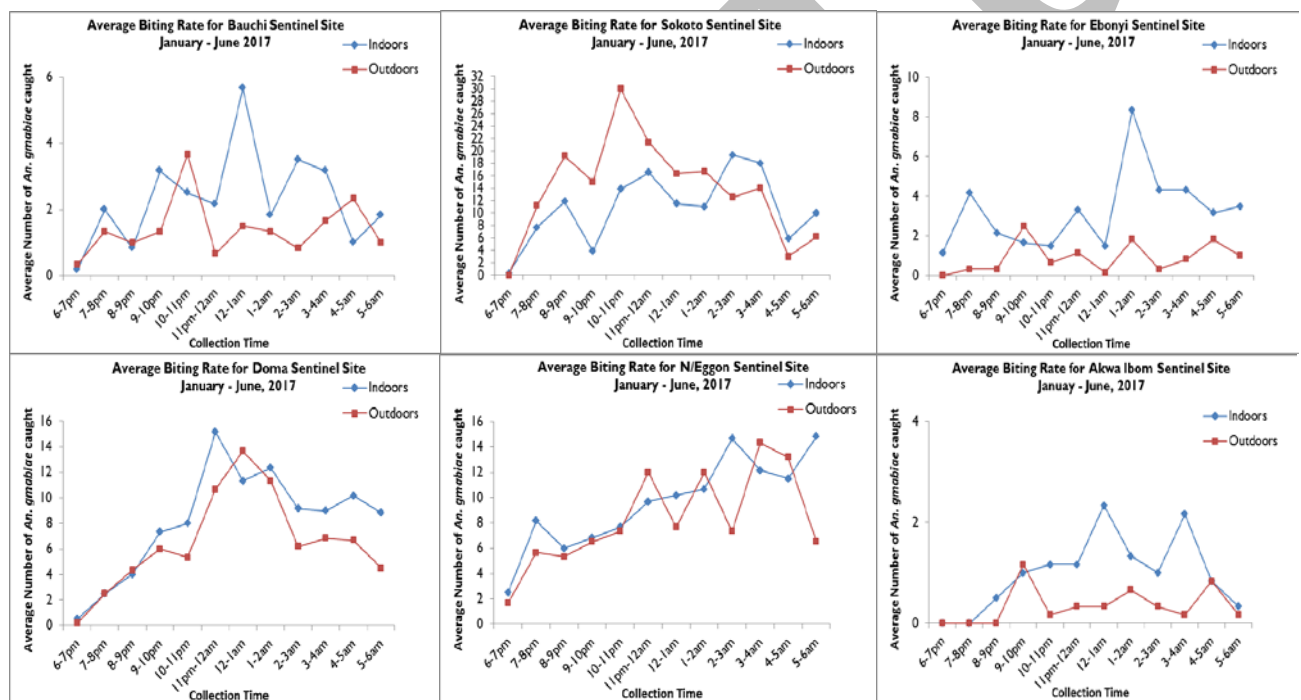
Figure 7: vectors with peak biting times

4.3.4   Trends towards malaria vector bionomics: 2014-2017

From 2014-2017, monthly mosquito collections using Pyrethrum spray catches (PSC), indoor resting catches, human landing catches, human-baited CDC Light trap collections and larval sampling methods were carried out in 6 PMI- supported sentinel sites to track entomological impact indicators which include malaria vector species composition, vector density, vector feeding time and location, parity rates, biting rates, infectivity rates, human blood index and entomological inoculation rate.

Major malaria vectors found across the various ecological zones of Nigeria include *Anopheles gambiae* s.s., *An. arabiensis* and *An. funestus*. Recently *An. coustani* has been implicated as a

malaria vector for the first time in Nigeria transmitting both indoors and outdoors with infection rate ranging from 0.8% to 1.8%. *An. gambiae* s.s is reported to be the most widely distributed in the country ranging from 69.5% to 83.8%, followed by *An. arabiensis* which ranges from 9.5% to 25.5%. Infection rate in *An. gambiae* s.s has been found to range from 0.0% to 11.8% while it is from 0.0 % to 2.8% in *An. arabiensis* with a human blood index of 64.4% in *An. gambaie* s.s. and 34.8% in *An. arabiensis*. The indoor resting density of *An. gambiae* s.l is found to vary. Regarding host preferences, *An. gambiae* s.s. has been found to be more anthropophilic than *An. arabiensis*, which is more readily attracted to cattle.

Also, it has been observed that *Anopheles* mosquito larval habitats are mainly rain-dependent and they tend to breed in sun-lit habitats with blue-green algae and vector activities coinciding with the rainy season and dominated by *An. gambiae* s.l. for most of the rainy season across the various zones. As the rainy season recedes and breeding places became fairly stable, a sharp increase in vector population has been observed in July and September. Also the presence of *An. funestus* has been observed to be evident in areas where the vegetation is quite lush.

4.3.5 Vector Map and Species Distribution

Figure 8 shows distribution of malaria vectors across Nigeria from various entomological studies*. An. gambiae* s.l. has been found to be predominant across the various ecological zones compared to other *Anopheles* groups[13].
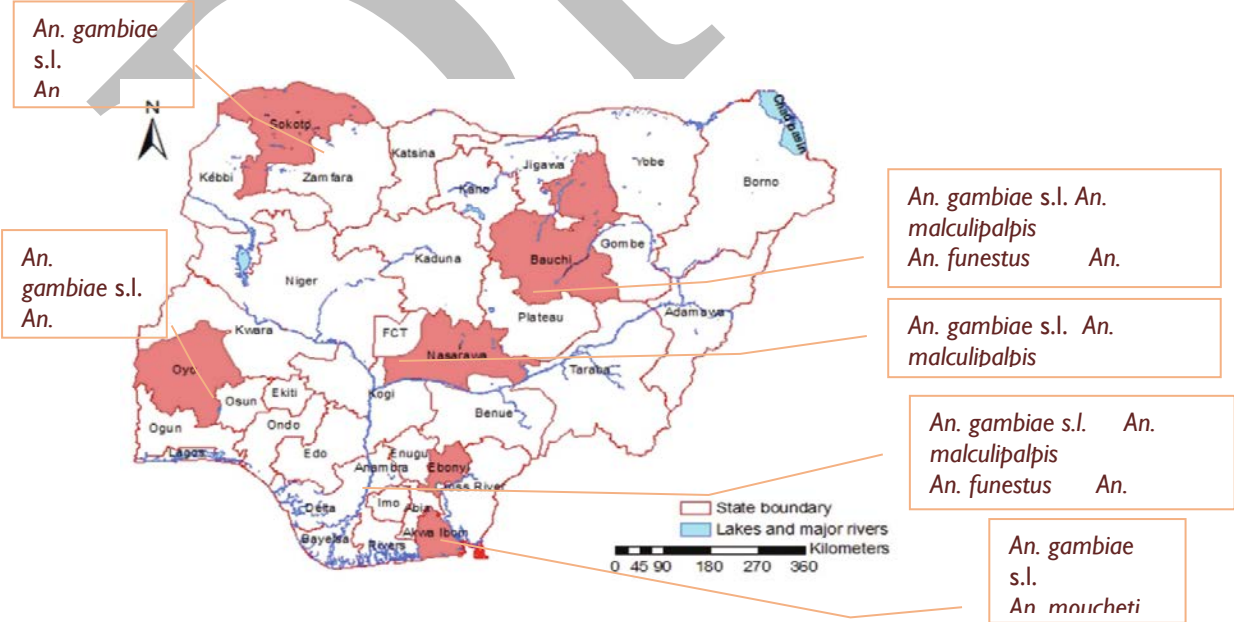
Figure 8: Vector Map showing distribution of Malaria vectors across the ecological zones of Nigeria in 2017

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[13] PMI AIRS Report 2016

4.3.6   Insecticide Resistance Status and Mechanism of Resistance

Insecticide resistance has been found to be focal although it is spreading over the years in all the ecological zones. The spectrum of insecticide resistance in *An. gambiae* s.l. include DDT, carbamates and pyrethroids. Pyrethroid and DDT resistance were recorded across all eco-zones. No significant difference was observed between DDT and pyrethroids indicating the possibility of cross resistance between DDT and pyrethroids across the eco-zones. In the carbamate class, susceptibility to bendiocarb has been documented across all sentinel sites except Sokoto, in the Sahel region and Lagos in the mangrove while propoxur was susceptible in Lagos but suspected resistance was recorded in Plateau in the Guinea Savannah and Enugu in the rain forest.

4.3.7   Appropriateness of entomological impact indicators

It was observed that entomological Impact indicators were not included in the performance framework although mentioned in the National Malaria Strategic Plan (NMSP). The following indicators are suggested to be included in the M & E plan: % of vector species; Vector density (bites/person/night); % of blood meal index; Changes in biting behavior; Entomological Inoculation Rate; sporoizoite rate; Resistance status and mechanisms.

4.4   Conclusions and Recommendations

Conclusion

- There is a general decline in both EIR and sporozoite rates however the probability of malaria infection (EIR) is higher in Sahelian region compared to the rest of the regions in the country.
- Indoor Resting Density and biting behavior of Malaria vectors shows appropriateness of LLINs and IRS intervention. However, observed increased outdoor biting of malaria vectors is noted as it requires different prevention approaches.
- Emerging resistance to commonly used insecticides especially to pyrethroids used in impregnation of LLINs   is spreading widely and is a threat to available prevention methods necessitating new vector control tools.

Recommendations

- Rapid scale up of LLINs and IRS interventions is required to achieve universal coverage as these interventions are still potent for malaria prevention.
- NMEP and partners should promote deployment of innovative interventions and tools in view of increased outdoor biting behavior of malaria vectors.
- NMEP and partners should disseminate and operationalize the National Insecticide Resistance Management (IRM) plan to address emerging resistance.

Chapter 5: Programme capacity to implement planned activities

The NMSP 2014 – 2020 defined specific strategies and activities under each of the objectives that were to be implemented if the intended objectives are to be achieved. For the period 2014 – 2017, a total of 585 activities were planned to be implemented. To assess programme capacity to implement planned activities, whose effect is the attainment of planned outputs, outcomes and overall impact, two parameters were measured to generate a proxy to assess programme capacity to implement. These two measures include: (1) the proportion of planned activities that were implemented in the period under review – quantitatively; and (2) an assessment of how well the given activities were implemented in terms of scope, timeliness and completeness as a proxy for quality of implementation. Table 3 provides overall summary of programme capacity to implement.

Table 3: Assessment of programme capacity to implement planned activities 2014 - 2017

SUMMARY PERFORMANCE BY GOAL		
Goal:	To reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero	44%
SUMMARY PERFORMANCE BY OBJECTIVE		
Objective 1:	To provide at least 80% of targeted population with appropriate preventive measures by 2020	43%
Objective 2:	To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020	48%
Objective 3:	To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020	52%
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	52%
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.	50%
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	46%
Objective 7:	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	20%

From this assessment, overall programme capacity to implement planned activities is 44%. Activities under objective 3 (confirmation of malaria) and 4 (proper treatment of malaria) had the highest rating (52%) while objective 7 (programme management) had lowest rating of 20%.

A detailed assessment of programme capacity to implemented is provided as Annex 2

Chapter 6: Effectiveness of the health system in delivering malaria services

6.1 Programme Management System

Introduction

Programme Management branch of the National Malaria Elimination Programme (NMEP) is responsible of coordinating the activities of all the branches of NMEP. It spells out the crucial steps and approaches expected of different stakeholders for planning, supervision, resource mobilization, capacity development, collation of reports and dissemination of information (FMOH, 2014). Programme Management branch harmonizes all public and private efforts towards malaria elimination in Nigeria.

6.1.1 MSP Objective

The objective: *"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"* is addressed by activities under programme management.

6.1.2 Programme structure/ management systems.

The programme structure/management is reflected in the current organogram of the NMEP (FMOH, 2014). The organogram depicts the relationship within NMEP and the linkage with Federal Ministry of Health (FMOH) as shown in Figure 9.
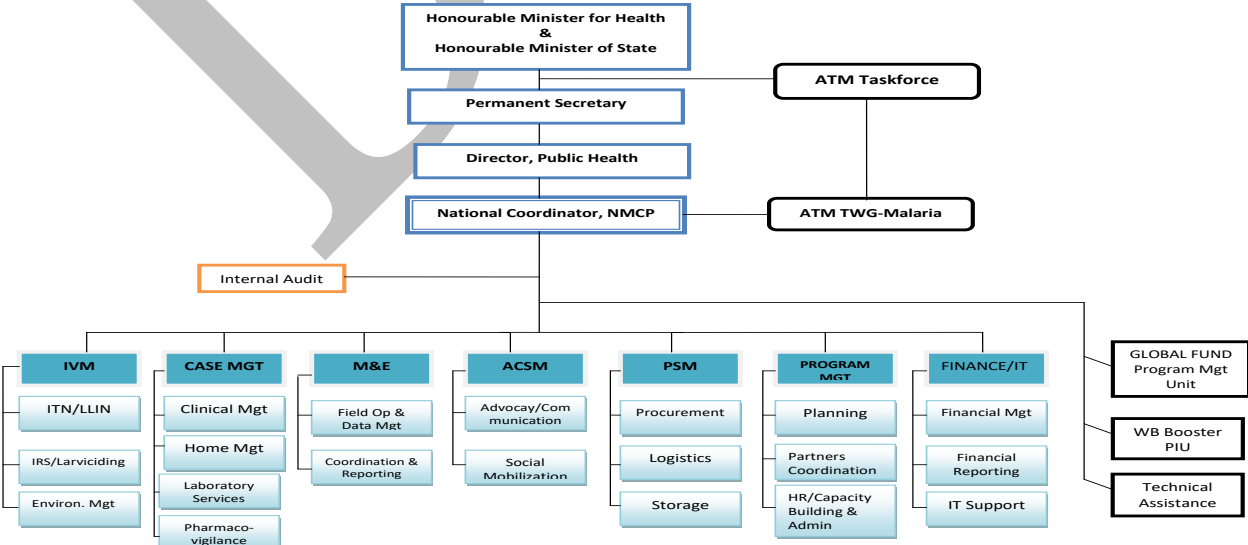
Figure 9: Organizational Chart of the National Malaria Elimination Programme

Source: NMSP 2014 – 2020

The organogram is well illustrated and depicts integration with FMOH. However, the organogram is inadequate because there is need for inclusion of additional units in some branches. New units proposed by various branches are as follows: Programme Management Branch - Resource Mobilization, Emerging issues and Knowledge Management units; M & E Branch - Surveillance and Data Management, Coordination and Reporting units; ACSM Branch - Civil Society/Organization Coordination and Media Regulation Units.

6.1.3 Programme governance and coordination

6.1.3.1 Oversight and Guidance
The roles and responsibilities of NMEP as outlined in the National Malaria Strategic Plan are to formulate and facilitate policy and guidelines development; 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[14]. From the aforementioned, it is seen that the roles and responsibilities are well articulated, suitable and feasible. A review at mid-term of these activities is provided below.

6.1.3.2 Policies and Guidelines
To ensure effective coordination of all malaria activities, partners and other relevant stakeholders at national and sub–national levels, NMEP developed the following polices and guidelines (i) National Malaria Policy; (ii) National Malaria Strategic Plan; (iii) Annual Operational Plan; (iv) Coordination Framework. A review of these documents found them to be well articulated, suitable and feasible and adapted international guidance from WHO. However, the 2017 Annual Operational was not developed within the expected timeline.

The field validation exercise carried out in the selected states from the 6 geopolitical zones showed an excellent adoption of these policies & strategies where adequate dissemination had occurred. However, most policies have not been implemented optimally, and operationalization of some of the guidelines are lower levels is sub-optimal.

6.1.3.3 Linkages within the MOH and with other key stakeholders
The organogram in Figure 9 shows relationships between NMEP other units of the government and partners. The review found that NMEP had good collaboration with some sectors and less with others. In particular, weaknesses were observed in the coordination between NMEP and State governments which are autonomous by statute. Also stronger relationships are needed with malaria partners to ensure that NMEP can play its oversight role effectively.

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[14] FMOH, 2014

Furthermore, linkages with other ministries and agencies such as the Federal Ministry of Environment, Agriculture, Education, the National Primary Health Care Development Agency (NPHCDA) and National Agency for Food & Drug Administration & Control (NAFDAC) were found to be weak.

Findings from the field validation exercise reiterated the need for increased political commitment especially at the highest level of presidency at the Federal level and Governors at State levels.

6.1.3.4 Capacity strengthening

With regard to its role of ensuring availability of adequate human resources and appropriate skills mix for malaria prevention and control at all levels, NMEP in collaboration with FMOH and States has ensured adequate number of staff at national level (over 80 staff), however there are gaps at state level given that only one person is dedicated to malaria coordination at state level. NMEP worked with partners to conduct training programmes for staff capacity building, although these were sometimes dictated by partner priorities, rather than identified needs at the different levels. The last structured capacity building plan was developed in 2012 and has not been updated as well as capacity building materials to address the changing malaria epidemiology in the country.

Field validation findings confirm the availability of adequate numbers at national and sub-optimal numbers at state level for malaria control. Also, to note is the significant turnover of staff who typically are absorbed by the private sector. Within NMEP there is also observed disproportionate allocation of man power across the main branches and functions.

6.1.3.5 Programme Coordination

A coordination framework to guide the NMEP and partners on their roles and mandate exists however it was last revised in 2009. Technical coordination is based on existing technical committees and working groups at national level and are not necessarily replicated at state level. Some of the TWGs are fully functional with participation of both NMEP and partners. These meet regularly (either monthly or quarterly), while some of the TWGs meet infrequently. The relationship with states is poorly structured given the autonomous nature of the state governments, limiting the ability of NMEP to enforce implementation of guidelines.

At mid-term, partner mapping had not yet been conducted although it was planned for as it is critical to support the coordination role of NMEP.

6.1.3.6 Operational Planning

NMEP leads the function of planning at both national and state levels. Except in 2017, annual operational plans have been developed on time, however there is always delay in release of

funds leading to delays in implementation of planned activities. Where partners exist, they support the planning processes of state governments. Annual reviews typically precede annual operational planning except in 2017 when there has been delay in conducting both at Federal and state levels.

While integrated supportive supervisory activities from national level to state level had been planned, however due to lack of funds support supervision has not been conducted regularly.

6.1.3.7   Malaria Resource Mobilization and Financial Management mechanisms

To support and strengthen resource mobilization, NMEP developed a draft framework, which is yet to be completed. While planned, the following have not yet been conducted: deployment of a financial expenditure tracking system, auditing and efficiency studies to determine cost effectiveness of key malaria interventions.

6.1.3.8   Private sector engagement

Majority of fever cases seek care in the private sector. While a framework for private sector engagement was developed and plans to create the Public – Private Partnership (PPP) desk were initiated, however these two are yet to be implemented due to lack of funds.

6.1.3.9   Programme reporting and dissemination

NMEP has been providing weekly and quarterly reports at national level. However this is not replicated at state level. Also the dissemination of available reports to partners and states is poor.

6.1.4   Enablers and constraints to implementation of programme management activities

Enabling factors to implementation

The following factors were some of the enablers:

- Availability of funding and implementing partners such as the Global Fund, US PMI and DFID to mention but a few.
- Presence of a coordination platform for interaction between NMEP and partners in for a such as the Technical Working Groups and Partners Forum.
- Existence of a structure in place to ensure implementation of activities, defined at both Federal and sub-national levels.
- Availability of evidence based policies, plans, frameworks, manuals, and guidelines that inform programme planning, review and evaluation provided by WHO and other partners.

Constraints to implementation

Within the period under review, a number of constraints hindered implementation namely:

- Delays in implementation of activities due to dual levels of approval from the FMOH for major activities and reporting

- Inadequate technical skills in many branches despite the presence of many staff
- Poor morale and motivation of staff due to poor remuneration
- Loss of highly trained and experienced NMEP staff as a result of Civil service redeployment and attrition to private sector.
- Inadequate domestic funding despite malaria being a priority, leaving financing of activities to be reliant on donor resources.
- Non-inclusion in the current strategic plan of interventions such as emergency response in humanitarian setting among others as experienced in the North-east resulted in malaria being the major cause of morbidity and mortality in the IDP camps
- Lack of partners profiling and resource mapping has led to unequal delivery of key malaria interventions across the country as some states do not have funding partners.
- Absence of Public Private Partnership plan to strengthen private sector engagement in malaria prevention and control.

6.1.5   Conclusion and recommendations

Conclusion
- NMEP building on international and partner support has developed evidence based policies, and guidelines that inform programme planning, review and evaluation. However, there is need to strengthen programme reviews at state level.
- The existing organizational structure provides clear linkages within NMEP and between NMEP and other government units and partners.
- States are an opportunity to deliver targeted malaria services, however, limited capacity impedes their ability to implement at scale key malaria interventions.
- Coordination structures and mechanisms exists such as TWGs to support proper coordination of all malaria stakeholders, however these are not replicated at state level.
- Limited domestic funding is a hindrance to proper and efficient programme management and activity implementation.

Recommendations
- Strengthen resource mobilization capacity at both national and state level from both donor and domestic sources.
- Develop and operationalize a Public Private Partnership plan to increase the participation of private sector in malaria prevention and control.
- Institute State-partners forum as a platform for strengthening partner coordination at state level.

- Conduct HR Review of NMEP at both Federal and State levels with the objective of improving its effectiveness, to ensure adequate and proper mix of skillset.

6.2   Programme Review Financing Analysis

For the period under review, overall Federal budgetary allocation increased from US$29.4bn in 2014 to US$47bn in 2017. However, proportion of funds allocated to the Federal Ministry of Health decreased from 5.7% in 2015 to 4.14% in 2017 as shown in the Table 4. This allocation is far from WHO recommended 15% of the total national budget allocated to health[15].

6.2.1   Trends of budgetary allocation to malaria programming within health sector

Allocation to Health from the national budget stagnated around US$1.6 billion from 2014 to 2016 with a slight increase to US$1.9 billion in 2017. However, percentage allocation to malaria elimination never went beyond 0.27 percent of the health budget. In 2017, this allocation has further declined to about 0.05 percent as shown in Table 4.

Table 4: Budgetary allocation to malaria programming within the health sector & Gaps by Year

Year	Total allocation to health ($)	% allocation	NMSP projected budget for malaria ($)	Allocation to malaria by GON & partners ($)	gap by year
2014	1,648,245,845	0.18	604,914,891	324,196,153	280,718,738
2015	1,650,921,627	0.17	685,975,197	478,793,048	207,182,149
2016	1,649,885,596	0.27	828,663,941	186,997,348	641,666,593
2017	1,947,942,059	0.05	1,042,473,949.45	171,135,763	871,338,186.5

source: National Appropriation Acts 2014 – 2017

6.2.2   Trends of Government & Partners' financial contribution to malaria programming

The major funding sources for malaria prevention and control include the Government of Nigeria (Federal and States), the Global Fund (GF), US President's Malaria Initiative (USAID/PMI), UK Department for International Develop (DFID), World Bank (WB), World Health Organization (WHO) and UNITAID.

The government of Nigeria supports malaria elimination through allocation from the national budget both at the national and states levels as well as through specific programmes such as **"Saving One Million Lives"** (SOML) which made allocations to malaria services at state level and through the National Health Insurance Scheme (NHIS). GON Budgetary allocation to malaria has not gone above 0.27% of the total health budget.

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[15] WHO 2001

In 2015, the GON obtained a loan from World Bank to support states through a financing mechanism code-named "Saving One Million Lives" (SOML) to be made available to states based on Performance for Results (PfR). The SOML programme made a total of $500m available to states for the implementation of health programmes including maternal and child health, nutrition, essential drugs, routine immunization, mother to child transmission of HIV/Aids and malaria. So far each state has received $1.5m, indicating poor draw down by States of these resources. Another financing mechanism available to support malaria is through the National Health Insurance Scheme which presently spends about N8.0 billion on disease management, of which 30% (about N2.4bn) is spent on malaria treatment. States also appropriate some funds from their locally generated resources for malaria services with variable levels of expenditure, through State Annual Operational Plans (AOPs) which range between N600m and N1.0bn annually, however releases for programme implementation are erratic and data on such releases are not readily available to establish actual value of funds available for malaria services from state resources. The potential funding to malaria by states is not fully harnessed as it is poorly coordinated. This is further constrained by a lack of a streamlined approach to track State and LGA funding for malaria activities on an annual basis.

The main funder for malaria in Nigeria is the Global Fund to fight AIDS, TB and Malaria (GF). GF's investment to malaria increased from US$144.9m in 2014 to US$372.9m in 2015 and then declined to US$107.5m in 2016 and US$95.1 in 2017. The GF supports malaria programme implementation both in the public (national, states and local governments) and private sectors, as shown in Table 5.

Between 2007 and 2015, the World Bank through the malaria control booster project extended financing for malaria to the tune of US$280m to fund malaria activities in the states of Gombe, Jigawa, Kano, Bauchi, Rivers, Akwa Ibom and Anambra. The project increased LLINs ownership to 99.2% in 2005 and U5 LLINs use to 68.7%[16]. Since the closure of this booster project, efforts to secure additional financing from the World Bank to support malaria implementation are yet to yield results.

PMI has consistently supported malaria activities in selected states with an annual allocation of $75m from 2015-2017[17]. Starting in 2017, PMI support will be targeted to only 11 states of Bauchi, Sokoto, Zamfara, Kebbi, Nasarawa, Benue, Plateau, Akwa Ibom, Ebonyi, Cross River and Oyo. The interventions covered include vector control (LLINs), intermittent preventive treatment (IPTp), surveillance, monitoring and evaluation (SME) and social and behavioral change communication (SBCC).

In the period under review, UK DFID support reduced from US$89.3m in 2014 to US$2.9m in 2015. The support covered 10 states including Lagos, Ogun, Anambra, Enugu, Niger, Kaduna,

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[16] NMS 2015
[17] PMI Malaria Operational Plans

Kano, Katsina, Jigawa and Yobe, implemented through the SUNMAP project which closed in 2015.

WHO continues to provide technical support to the Malaria Elimination Programme. In the period under review some of the support includes funding for the Programme Managers' annual meeting and routine surveillance, monitoring and evaluation activities and review and adaptation of guidelines.

Other important funders that have supported malaria elimination in Nigeria include Clinton Health Access Initiative (CHAI), Bill and Melinda Gates Foundation (BMGF), Dangote Foundation (DF) and Mobil Oil to mention but a few. These have supported some projects and or activities in the programme from time to time. Table 5 provides a summary of funding available for malaria 2014 – 2017.

Table 5: Funding Landscape for Malaria Control 2014 - 2017

	2014 ($)	2015 ($)	2016 ($)	2017 ($)
GoN	4,892,000	3,320,000	3,818,000	16,625,000
GLOBAL FUND	144,939,060	372,939,170	107,456,251	95,109,335
WORLD BANK	4,973,210	17,902,441	NIL	NIL
USAID PMI	73,230,000	75,000,000	75,000,000	75,000,000
DFiD	89,272,524	2,967,421	NIL	NIL
OTHERS (Unicef, WHO, UNITAID)	8,877,446	7,163,295	x	x

*X: not known

In the period under review, funding need for malaria increased consistently over the three-year period as shown in Figure 10. While the needs increased, available funds from all the various sources declined leading to increase in funding gap year by year.
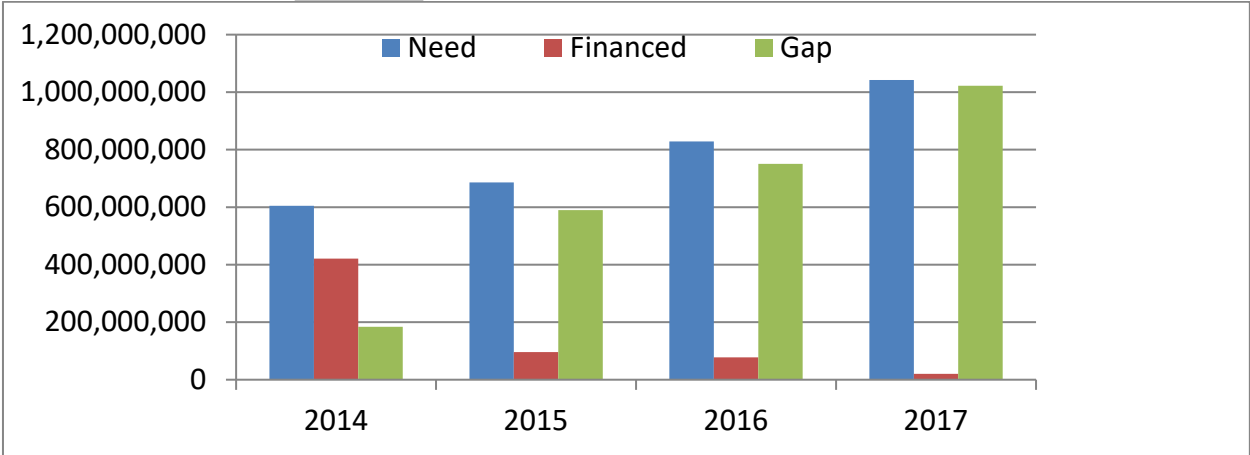
Figure 10: Malaria funding Needs versus available Funding 2014 - 2017

It is observed that financing for malaria has rapidly declined in the last four years, increasing the gap from less than US$200 million in 2014 to more than US1 billion in 2017. The unprecedented decline in financing for malaria in 2016 and 2017 is attributed to close out of malaria donor funded projects namely: PMI –MAPS, DFID-SuNMaP and the World Bank creating huge financial gaps in 2016 and 2017 of $641,666,593 and $871,338,186.5 respectively and the suspension of Global Fund grant at the end of 2016.

Despite the declining support to malaria, a review of total financing to the health sector by disease in the National Health Accounts 2014 shows that malaria received the highest allocation compared to other diseases as shown in Figure 11.
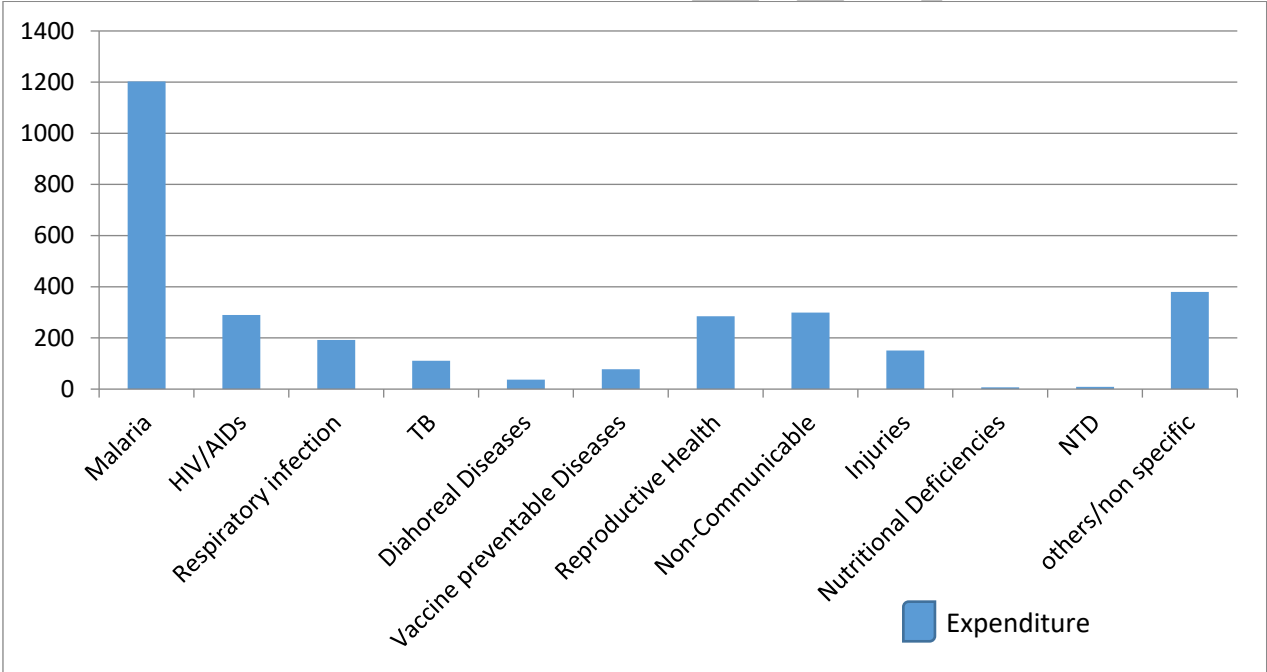
Figure 11: Expenditure classification by disease condition in the National Health account report

Source: 2014 NHA

The allocation to Health has consistently remained below the 15% WHO recommendation consequently funding for the Health sector has remained insufficient.

The decline in funding for malaria creates a huge unmet demand for antimalarial commodities.

One of the potential sources of financing for malaria would be the private sector to which more than 60% of the population seeks care from, however the review found that engagement with the private sector is uncoordinated, leading to missed opportunity for attracting non-traditional funding for malaria.

6.2.3   Conclusion and recommendations
Conclusion
- In the period under review, funding for malaria has remained largely donor – dependent and grossly in-sufficient to support key prevention and control

interventions such as LLINs, ACTs RDTs and other supportive activities such as capacity building, SBCC and M&E, necessary to ensure proper uptake of available services.

- For Nigeria to meet the set target of reducing malaria morbidity and mortality to pre-elimination level by 2020, there must increased and sustained funding, and the development of innovative funding strategies with the aim of ensuring un-interrupted implementation of malaria control interventions.

Recommendations

- NMEP and partners should advocate to the highest levels of political authority at both Federal and state levels for malaria to be prioritized and adequately funded with domestic resources, to reduce dependence on external resources to finance malaria activities.
- Government of Nigeria at both Federal and State levels need to progressively increase domestic budgetary allocation to health in general and to malaria in particular if the country is to progress on the path to malaria pre-elimination and for sustainability of all malaria interventions.
- GON should harness the untapped potential that exists in the private sector to raise non-traditional financing for malaria to diversify the resource envelope for malaria.

6.3   Malaria Vector Control

Introduction

The first of strategic objectives of Nigeria Malaria Strategic Plan (2014-2020) is to provide at least 80% of targeted population with appropriate preventive measures by 2020. The thrust of the strategies under this objective is the provision of proven high impact vector control interventions towards universal insecticidal coverage to the entire population.

The key interventions include Long Lasting Insecticidal Net (LLINs) and Indoor Residual Spraying (IRS) with Larval Source Management (LSM) complementary in areas where it is feasible. During the review period, the country implemented a modified mixed model approach of LLIN replacement campaigns and continuous distribution; small scale IRS informed by vector surveillance in sentinel sites and capacity building at national and sun-national levels for entomological surveillance.

6.3.1   Policies and guidelines

During the review period, NMEP and partners developed and made available relevant guidelines and policy documents to guide implementation of vector control interventions. The following documents were reviewed and are available to reflect current changes and recommendations:

- National Guidelines on LLIN replacement Campaigns (2014)

- National Guidelines on Integrated Vector Management for Malaria Elimination in Nigeria (2015)
- Decision System for Integrated Vector management (IVM) in Nigeria. A tool for selecting Appropriate Vector Control Options for States and Implementing Partners (2016)
- Larval Source Management Implementation Framework (Draft-2017)
- Operational Manual for Implementation of LLINs Campaigns in Nigeria (2017)
- National Insecticide Resistance Management Plan (2017).

6.3.2 Progress in Vector Control indicators

At midterm, the progress in vector control indicators is shown in Table 6.

IVM team please complete the table below with achievements for IRS, LSM and IPT

Table 6: Progress in vector control interventions 2014 - 2017

Objectives	Indicators (Outcome)	Baseline (Year)	2014 Target	Actual	2015 Target	Actual	2016 Target	Actual	2017 Target	Actual	Source
Objective 1: To provide at least 80% of targeted population with appropriate preventive measures by 2020	% of households with at least 1 LLINs for two persons	14.2% (2010)	36%	NA	47%	35%	58%	NA	69%	NA	MIS
	% of under-5 Children who slept under an LLIN the previous night	28.7% (2010)	40%	NA	50%	43.4%	60%	NA	70%	NA	MIS
	% of household residents who slept under an LLIN the previous night	49% (2010)	50%	NA	60%	50%	70%	NA	80%	NA	MIS
	% of pregnant women who slept under an LLIN the previous night	65% (2010)	71%	NA	77%	62%	83%	NA	89%	NA	MIS
	% of households reached with IRS	<1% (2010)	5%		10%		20%		30%		National IRS program reports
	% population in target areas	TBD	60%		80%		80%		80%		National IRS program reports

	<mark>protected by IRS</mark>								
	<mark>% of mapped mosquito breeding sites sprayed with larvicides annually</mark>	<mark>TBD</mark>	<mark>50%</mark>	<mark>60%</mark>		<mark>80%</mark>	<mark>80%</mark>		<mark>Larvicide spraying activity report</mark>

Universal coverage with LLINs has moderately increased from a baseline of 14% in 2010 to 35% in 2015, with notable increase in use by pregnant women (62%) and children under 5 (43%) the night before the survey18. The planned NMIS in 2018 will provide current estimates with regard to access and use of LLINs.

6.3.3   Progress in LLINs distribution 2014-2017

LLIN replacement campaigns have been done in 25 states since 2014 with **64,566,021** LLINs distributed out of the 37 states expected to have been covered between 2014 and 2017. In 2017, replacement campaigns are currently ongoing in 3 States where 8,737,306 LLINs are planned to be distributed. This leaves LLINs gap of 18,709,609 required for LLINs replacement campaigns in 9 States.

Table 7 shows year by year LLIN mass distributions

Table 7: Number of LLINs distributed through mass replacement campaigns 2014 - 2017

S/N	Year of distribution	LLIN required for distribution	LLIN distributed	Remarks
1	2014	31,714,079	29,352,037	93% coverage
2	2015	20,526,029	19,893,339	97%
3	2016	7,391,455	6,984,190	94%
4	2017	18,499, 886	8,336,455	85%
5	2017	27,446,915	8,737,306	18,709,609 gap in LLINs for Replacement campaigns exists
Total 2014-2017		96,841,057	64,566,021	32,275,036 LLIN Gap for 2014 - 2017

The gap of 18,709,609 LLINs for 2017 exists for FCT, Abuja, Bayelsa, Borno, Delta, Enugu, Lagos, Taraba, Yobe States.

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18 NMIS 2015

NMEP and states have also provided LLINs through continuous distribution through EPI and ANC to children under 1 and pregnant women respectively. Table 8 depicts number of LLINs distributed through routine channels (ANC and EPI) 2014-2017 (Sept). A total of **9,108,818 LLINs** were distributed through ANC and EPI in the period under review.

Table 8: LLINs distributed through ANC and EPI 2014 - 2017

S/N	Year	Routine Distribution Channel		Total
		Immunization Clinic	*Ante Natal Clinic*	
1.	2014	919,372	1,275,172	**2,194,544**
2.	2015	696,249	1,014,468	**1,710,717**
3	2016	1,303,616	1,667,802	**2,971,418**
4.	2017 (Jan-Sept)	1,031,109	1,201,030	**2,232,139**
Total		**3,950,346**	**5,158,472**	**9,108,818**

Given the population of Nigeria, the LLINs available for distribution through ANC and EPI clinics are grossly inadequate to cover all the vulnerable populations estimated at nearly 10% of the total population annually.

LLIN ownership and use

The mass replacement campaigns, supplemented with routine distribution through ANC and EPI have shown remarkable progress as found in the ownership and utilization of LLINs from 2015 NMIS findings shown in Figure 12.
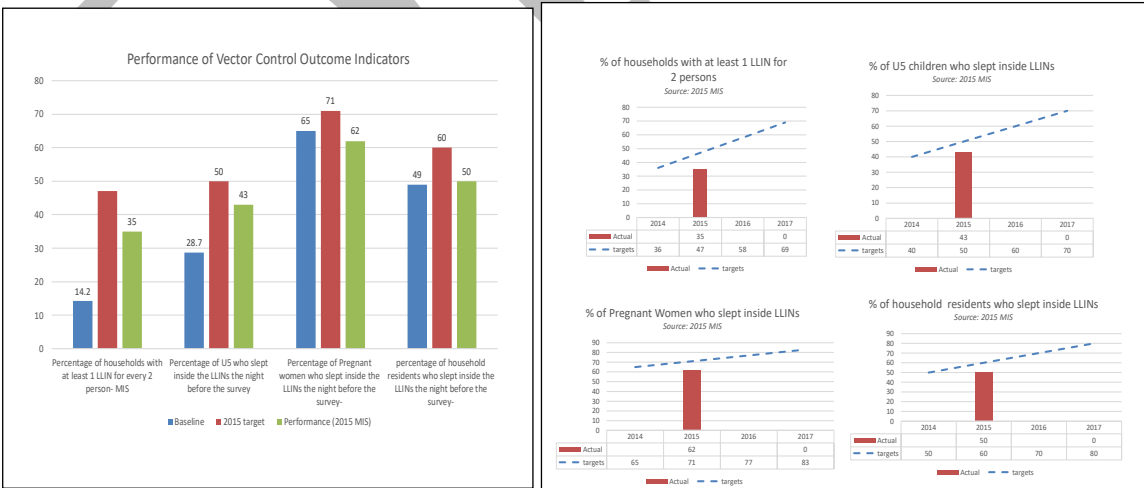
Figure 12: Access and use of LLINs in households

Progress in LLIN durability monitoring

LLIN durability studies have been carried out in 3 states representing different ecological zones of the country to measure the physical integrity of the nets (net loss, physical conditions like tear, handling and care) and insecticidal durability. This revealed that the median survival

of LLIN varies from 4.2-5.8 years in the different study sites. In addition, the residual efficacy of sampled LLINs with WHO Cone bioassay ranged from 17%- 30% optimal insecticidal performance in study sites. However, the minimal insecticidal performance remains good at 80%-90%. These findings show that LLINs can be used for more than the standard 3 years currently recommended by WHO.

6.3.4   Progress on IRS

IRS is a key vector control intervention for its ability to rapidly cut transmission. Implementation of IRS was planned to be phased and targeted cover 45% of households in the country by 2020. However, MIS 2015 reported a low IRS coverage of 1%[19]. The main class of Insecticide used for vector control in the country is Pyrethroids.

Over the review period, IRS implementation has been sporadic due to limited funding. Lagos state conducted IRS in selected LGAs from 2012, however this was discontinued in 2015 due to lack of funds. GON and WB supported IRS in only 6 LGAs in 2014 and 2016, and this too was abandoned due to lack of funds. Table 9 shows LGAs and number of structures sprayed 2012 – 2016 in the selected LGAs.

Table 9: LGAs and structures sprayed with IRS 2012 - 2016

SN	Year of Implementation	No of LGAs/ States	No of households reached	No of rooms sprayed	No of people protected	Implementing Partners	Remarks
1	2012-2015	7	-	650,000	-	Lagos State Government	only a few LGAs were reached with IRS
2	2016	6	19, 837	70, 218	130,061	FGN	
3	2014	6				WB	

Implementation of IRS has not been optimal and sustained to be able to cut down transmission in any of the settings where it was applied.

6.3.5   LSM Implementation

The MSP 2014 – 2020 envisaged LSM to be complementary intervention to LLINs and IRS, and in the review period no LSM activities have been conducted.

6.3.6   Progress in vector sentinel surveillance and Insecticide Resistance monitoring

Nigeria institutionalized vector surveillance and Insecticide Resistance Monitoring through the establishment of 36 vector surveillance sentinel sites across the five ecological zones of the country between 2014 and 2017. The key stakeholders include academia and researchers

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[19] NMIS, 2015

from Universities and research institutes, funders (USAID PMI, DOD/NAMRU, Government of Nigeria (FGN and Lagos State Government as well as the States /LGA and communities where sentinel sites are located.

The results from the sentinel sites showed that insecticide resistance is spreading across the country although it is currently focal. The emergence of insecticide resistance to pytheroids, the chemical impregnated in LLINs poses threatens to effective vector control intervention in the country. Consequently, the country developed an Insecticide Resistance Management (IRM) Plan to manage this resistance. Figures 13 and 14 depict the insecticides resistance profile to the four classes on insecticides.
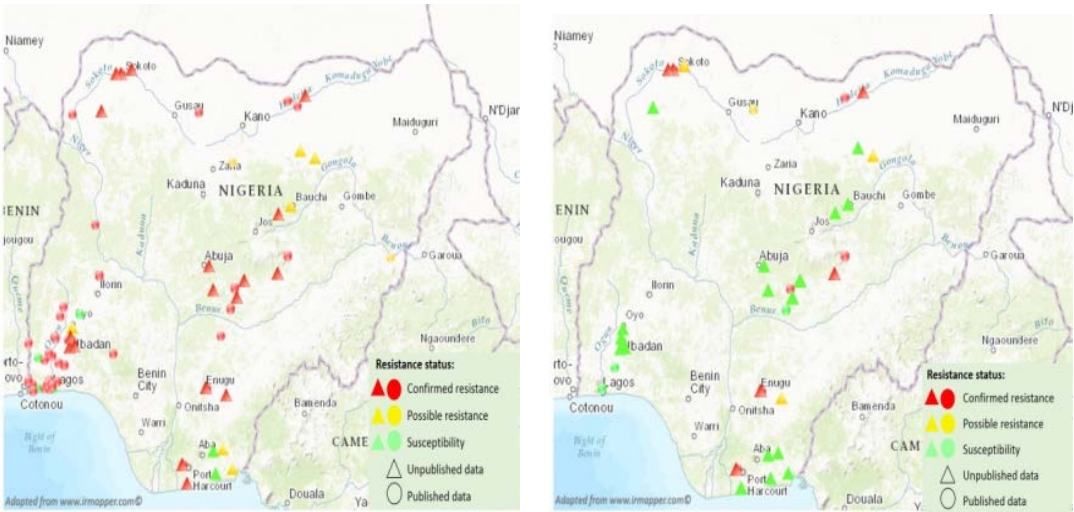
Figure 13 Insecticide resistance profile for Organochlorines and Organophosphates
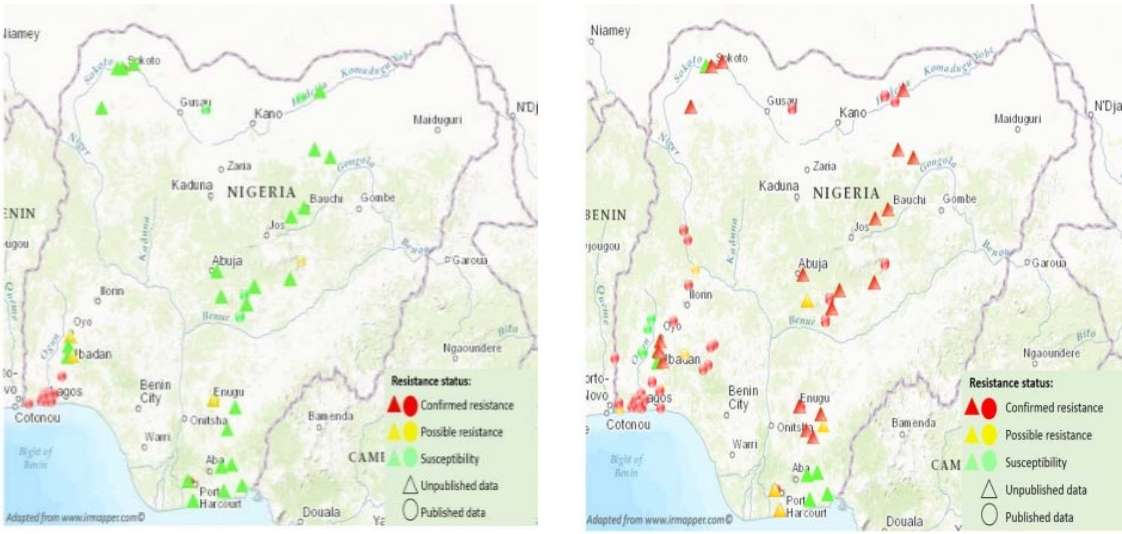
Figure 14: Insecticide resistance profile for carbamates and pyrethroids

6.3.7 Progress in capacity building on Vector Control Interventions

During the review period, considerable efforts towards capacity building of healthcare providers, researchers and programme managers at all levels on vector control interventions have been conducted. Table 10 shows a summary of the number of health workers whose capacity on vector control was built between 2014 and 2017.

Table 10: Summary of the Vector Control capacity building carried out in the country between 2014 and 2017

Intervention	Type of training	Assumptions	Estimated No. trained
LLINs	LLINs replacement campaign	Average of 12,000 per States (x25 States)	300,000
	LLINs continuous distribution	3 SMEP per State, 3 per LGA, 2 CDD per LGA/community, 3 teachers per community @11 per State	407
	LLINs durability monitoring	10 @ National, 3 per states, 6 per LGA	47
IRS	National TOT for SMEP	3 per State	111
	Training for LGAs managers (supervisors and team leaders) and spray personnel	4 per LGA, 11 supervisor per team, 5 spray team leader, 3 town announcers, 3 storekeepers, 12 mobilizers, 6 ushers, 3 security @ 47 per LGA per State	1,702
Vector surveillance	Training for PIs and entomology technicians	Average of 11 per State	99
Vector control	Continuous medical education for health workers on vector control intervention	96 per zone @ 6 zones	384
Total		**302,750**	

6.3.8 Enabling factors and constraint to implementation

Enabling factors

The following factors were enablers in the implementation of IVM activities:

- The presence of an effective IVM coordination mechanism through the Expert Groups/subcommittee meetings facilitated planning and implementation of IVM activities.
- There have been strong collaborative partnerships between NMEP, funding Partners, Academia and research Institutions that have created an enabling environment for planning and implementation of capacity building activities and vector and entomological surveillance activities in the country.
- The decentralization of implementation of some vector control activities such as LLIN distribution to sub national levels has improved implementation of IVM activities in terms of scope, scale and timeliness of implementation

Constraints
- Inadequate political will leading to low prioritization and investment for IRS and other IVM activities have impeded planned scale up and achievement of universal insecticidal coverage of the population for effective malaria prevention throughout the country.
- There is over-reliance on donors to fund LLINs distributions in particular, leaving some populations without protection for states without a designated funder.
- The size of the country and its vast population coupled with insecurity and humanitarian crisis in some states pose huge financial needs and logistical challenges to be able to achieve universal population coverage with vector control interventions at one point in time.
- Emerging insecticide resistance to available insecticides by malaria vectors poses a threat to deployment of the current vector control tools, further threatening any current gains that have been achieved.

6.3.9 Conclusion and Recommendations

Conclusion
- There is gross inadequate funding for the key vector control interventions particularly LLINs and IRS, if the country is to achieve and sustain universal coverage with protective measures.
- The sheer size of the country and population pose significant financial and logistical challenges if universal coverage with LLINs is to be achieved at one point in time, to deliver over 100 million LLINs.
- Vector control interventions are largely donor dependent and any decline in donor resources will lead to rapid loss of any gains achieved so far.
- Limited political commitment to rid the country of malaria as evidenced by low investment in vector control interventions has led to little or fragmented implementation of key vector control interventions such as IRS.

- While capacity for vector surveillance and Insecticide Resistance Monitoring has greatly improved nationally, the threats posed by emerging insecticide resistance to commonly used insecticides by the malaria vectors calls for introduction of new tools which are currently not available. This will further erode any gains achieved in malaria prevention and control.

Recommendations
- NMEP and partners need to advocate to the highest political actors at Federal and state levels for increased investment to vector control interventions in the country including filling existing gaps for LLINs replacement campaigns in the States that are overdue for replacement.
- There is urgent need to implement the insecticide resistance management plan to curtail the spread of emerging resistance to commonly used insecticide to protect current gains.
- New tools are needed to be deployed if the country is to achieve its planned targets of reducing malaria morbidity and mortality and reach pre-elimination by 2020.

6.4   Case Management

Introduction

One of the major strategies for malaria control in Nigeria is Case Management, which includes prompt diagnosis and adequate treatment with appropriate antimalarial medicines. It is the focus of the second strategic objective of the NMSP 2014 -2020 which is *"to test all care-seeking persons with suspected malaria using RDT or microscopy by 2020".* The focus of malaria case management is to reduce the burden of the disease by reducing morbidity and mortality.

The review assessed case management activities that include: scaling up the use of antimalarial diagnostics and uptake of appropriate antimalarial medicines for confirmed cases, as well as monitoring the efficacy of nationally deployed antimalarial medicines. Other areas assessed include policies and guidelines relevant to case management, access and utilization of diagnosis and treatment, seasonal Chemoprevention and integrated community case management (iCCM).

6.4.1   Progress on case management indicators

The progress on case management indicators monitored in the implementation framework are shown in Table 11 over the review period. The NMSP envisaged that indicators would provide findings from both public and private sectors, more especially that majority of the population (over 60%) first seek care in the private sector. However, the pace of including private sector in the national HMIS reporting system has been slow with only a small proportion of facilities reporting through the DHIS2. More so, even within the public sector, only a small proportion of secondary and tertiary facilities are routinely reporting through the

DHIS2. This therefore skews the reporting patterns towards primary health facilities and level of achievement reflected in the performance of indicators shown below. A state by state reporting rate is shown in Figure 15 and is noted that there is variability in reporting from states through the DHIS2, with some showing improvements overall during the period of review and a few showing declines.
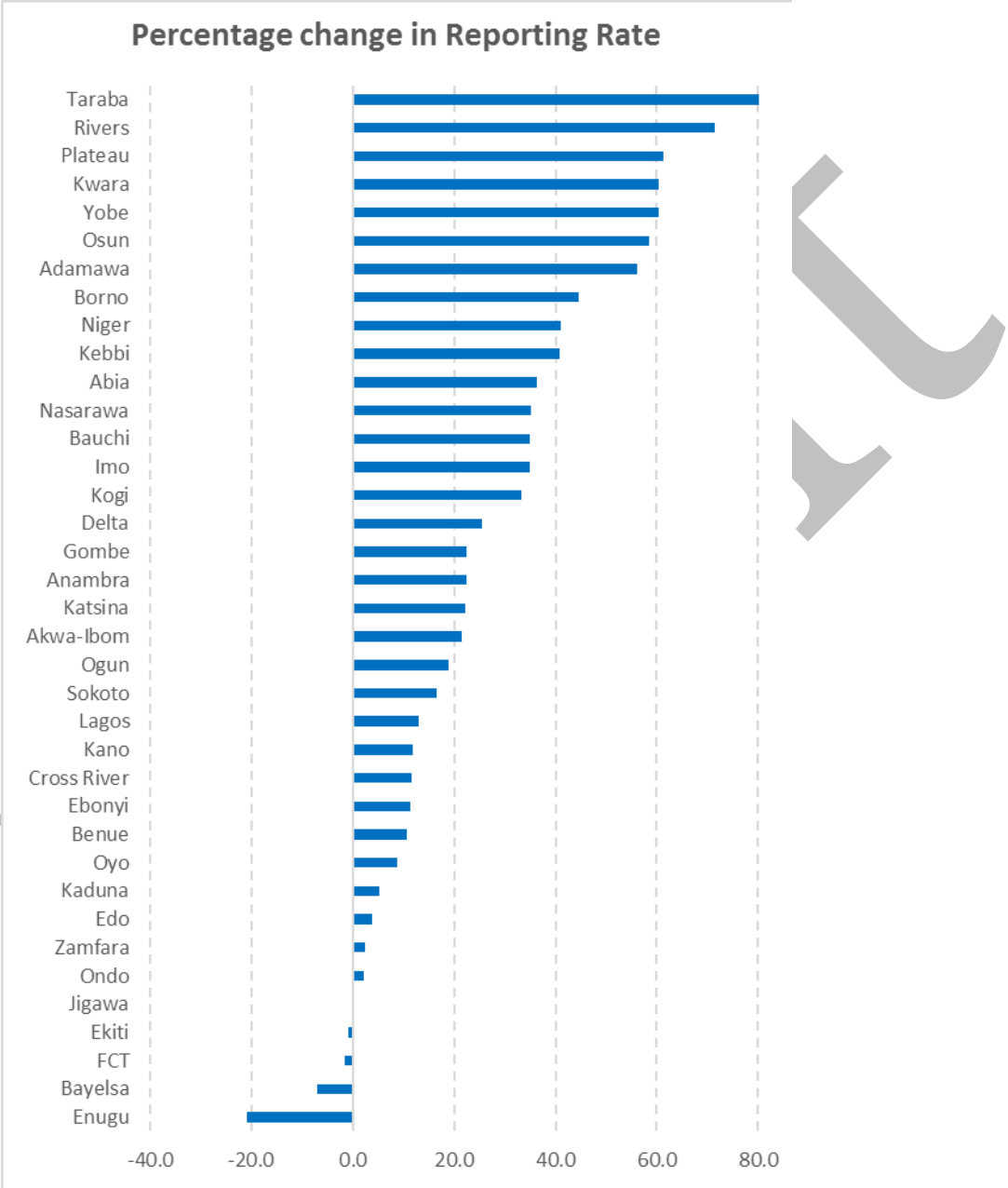
Figure 15: Percentage change in reporting by state through DHIS2, 2014 - 2020

Table 11 shows level of performance of majorly public facilities that report through the DHIS2 and largely excludes the outputs and outcomes of services provided by the private sector.

Table 11: Achievements in case management indicators for the period 2014 - 2017

Indicators	Baseline	Target 2014	Actual 2014	Target 2015	Actual 2015	Target 2016	Actual 2016	Reference
% of pregnant women who received intermittent preventive treatment during antenatal care visits (in public & private facilities)	17% (2012)	35%	29%	55%	33%	75%	39%	HMIS
% of persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy)	22% (2012)	40%	51%	50%	48%	60%	82%	HMIS
% of health facilities with malaria diagnostics capabilities (microscopy and/or rapid diagnostic testing)	TBD	50%	NA	60%	NA	70%	NA	HMIS/LMIS
% of persons testing positive that receive antimalarial treatment (in public health facilities) according to national guidelines	42% (2012)	55%	102%	70%	95%	85%	82%	HMIS
% of Children younger than 5 years of age with fever in the last 24 hours who received any antimalarial treatment	49% (2010)	60%	102%	70%	94%	80%	96%	HMIS

In the public facilities for which data is available in the HMIS, it was observed that indicators measured have seen improvements particularly in testing before treatment now at 82%. This data should however be interpreted with caution as there is little or no information captured and reported from private sector facilities that provide services to more than 60% of individuals seeking treatment for fever. This paucity of information is a matter of urgent concern to NMEP and its partners to address if the true performance of the programme is to be measured.

6.4.2   Malaria Policy, Guidelines and Plan

In line with its role of ensuring that appropriate policies and guidelines for proper case management are available, NMEP and partners during the review period ensured that the national treatment guidelines were updated to reflect WHO guidance in the revised

Treatment Guidelines 2010[20]. The latest edition of the guidelines emphasizes the requirement for parasitological confirmation of malaria cases through microscopy or Rapid Diagnostic Test (RDT) before treatment; the use of injection Artesunate for the treatment of severe malaria; the use of intermittent preventive treatment in pregnancy (IPTp); as well as provision of clear and easy-to-understand steps with recommendations provided in National Guidelines for Diagnosis and Treatment of Malaria in Nigeria.

Other guidelines that have been developed and disseminated include:
- Operational Guidelines for Malaria Parasite Sentinel Surveillance (MPSS) 2014. An analysis of this guideline in the review found it to be adequate, clear, explicit, and appropriately phrased, and have been disseminated.
- National Strategies and Guidelines for Malaria Prevention and Control in Pregnancy, 2014. Its review was found that this guideline needs to be updated in line with the new WHO recommendations of at least 8 contacts by the pregnant woman with the health facility as part of focused antenatal care; however, the number of doses of IPTp per pregnancy remains at least 3 doses at intervals of one month with the first dose given after quickening.
- Orientation Package for Focused Antenatal Care Package (FANC) for Health Care Providers, 2015. The contents of the Guidelines were found to be adequate, clear, explicit, and appropriately phrased and have been disseminated.
- Operational Guidelines for integrated Community Case Management (iCCM), 2017. In the review it was found that this document has not been disseminated awaiting printing though the contents of the Guidelines are adequate, clear, explicit, and appropriately phrased.
- Operational Guidelines for External Quality Assurance (EQA)-June 2015. The guideline has been disseminated and is clear and up to date.
- Training Manuals on: Uncomplicated and Severe malaria training; Focused Antenatal Care; Community Management of malaria; iCCM and on Microscopy were developed, disseminated and were found to be clear, up to date and appropriate for intended audiences.

6.4.3 Progress towards achieving MSP targets for Intermittent Preventive Treatment (IPTp) outcome

As shown in Table 6 the proportion of pregnant women who received intermittent preventive treatment during antenatal care visits in public health facilities increased from 29% in 2014 to 39% in 2016, yet it is still far below the 2016 NMSP target of 75%, which could be attributed to lack of reporting from the private sector, limited availability of Sulphadoxine-Pyrimethamine (SP) for IPTp in health facilities across the country due to logistics and security challenges in some States. During the field validation visits to the selected states, it was found that indeed uptake of IPTp 2 & 3 was low as shown in Figure 16. The field visits also found that

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[20] WHO, 2010

the current HMIS tools do not capture IPT3 and thus not available in the DHIS2.
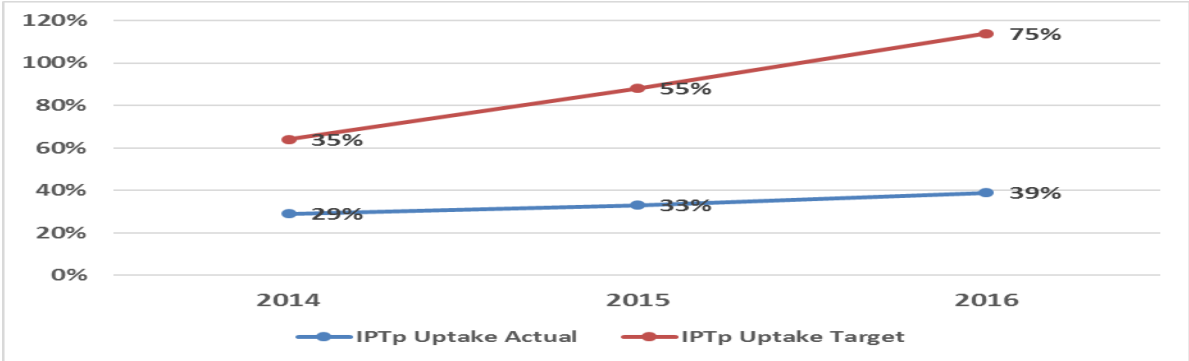
Figure 16: *Uptake of IPTp in public facilities 2014 - 2016*

Source: HMIS, 2015.

6.4.4 Progress towards achieving MSP targets for persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy

The proportion of the persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy in the public sector increased from 51% in 2014 to 82% in 2016 attributed to the continuous availability of and increased accessibility to quality assured RDTs especially in the primary health care facilities. From the field reports it was evident that RDTs are available with only sporadic cases of stock outs. However, it was noted that more needs to be done to conduct training and retraining of health care providers on both use of RDTs and microscopy. It was also noted that the attitude of health workers towards RDTs affect their use, as health workers are reported to low confidence and doubt the accuracy of test results provided by RDTs, leading to non-adherence and compliance to test results. This is most pronounced in the private facilities and in the secondary and tertiary facilities. Figure 17 shows reported increase in testing in public facilities reporting through the DHIS2.
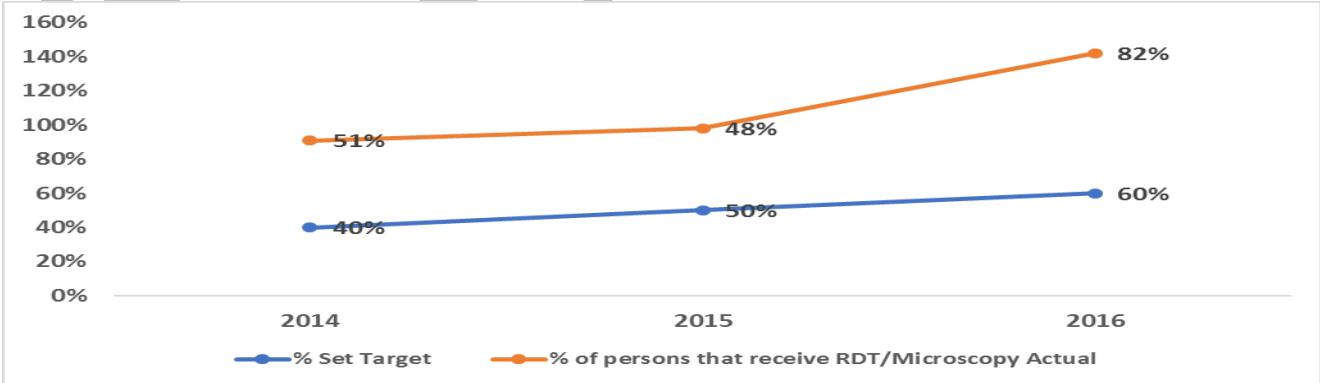
Figure 17: Proportion of persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy)

Source: HMIS, 2015.

Overall there is increased testing as shown in Figure 18. More states have progressively improved on this indicator over the review period.
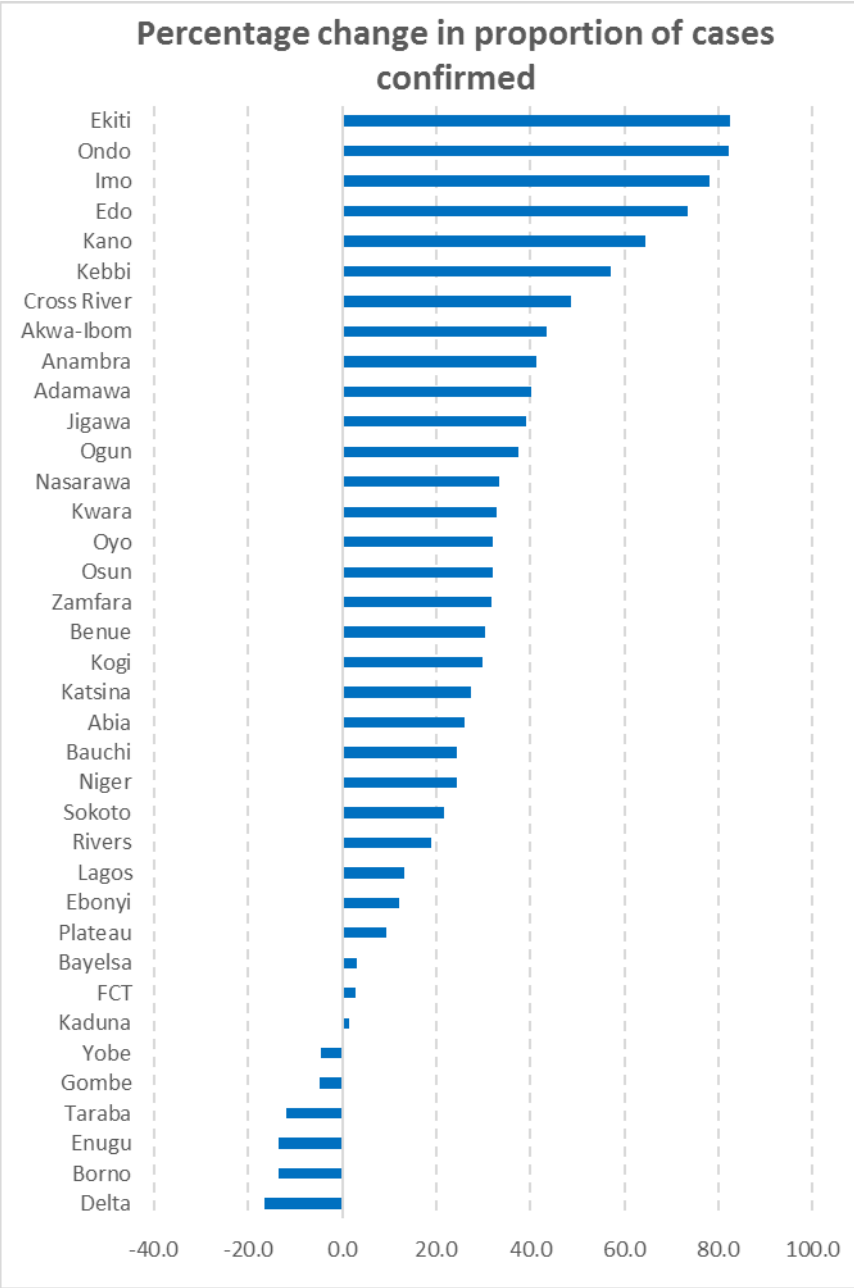
Figure 18: change in malaria confirmation by state, 2014 - 2017

Attention should be given to Yobe, Gombe, Taraba, Enugu, Borno and Delta which have declined in parasitological testing of fever cases.

6.4.5   Trends of the proportion of test positives that received ACTs, HMIS

As shown in Table 11, there is improved access to ACTs and improvement in adherence to treatment guidelines. Previously even cases that did not need ACTs were treated with ACTs, however there is better adherence to guidelines and improved access to ACTs. In 2016, 82% of persons testing positive received antimalarial treatment with ACTs. Due to lack of

information from the private facilities it is difficult to assess how well health care providers in those facilities are adhering to national treatment guidelines. Field visits also reported that the cost of ACTs in the private sector was a hindrance to proper treatment especially for the poor who cannot afford expensive ACTs.

6.4.6   Progress in management of severe Malaria

The review found that management of severe malaria continues to face a lot of challenges in the country as a result of multiple factors including: poor diagnosis where severe malaria cases are treated as uncomplicated malaria, lack of an efficient referral system from lower levels to secondary and tertiary facilities where severe malaria should be managed and poor availability of the recommended rectal artesunate for pre-referral treatment and injection Artesunate for the treatment of severe malaria according to the national guidelines. This is attributed to poor dissemination of treatment guidelines which has not yet been scaled up nationally, with only few facilities reached by partners and the cost of injectable artesunate in the private sector.

6.4.7   Integrated Community Case Management of Malaria (iCCM)

iCCM policy and guidelines have been adopted by the country. However, the implementation of this approach has remained at pilot stage in only 2 states so far under the RaCE project funded by WHO and partners and implemented by Malaria Consortium. There is a need to scale up the intervention to focus on communities with poor access to health facilities and services, however its expansion is constrained by lack of funding.

6.4.8   Enabling factors and constraint to implementation

Enablers

The following factors have provided an enabling environment for implementation of case management activities:

- Improved availability of RDTs particularly in the primary health facilities has increased testing of fevers before treatment.
- As a follow up to the affordable medicines for malaria pilot of the Global Fund, Nigeria continued to invest significant resources to support the co-payment mechanism for ACTs in the private sector. This increased accessibility of quality assured ACTs and reduced the price of ACTs in the private sector thus addressing the problem of monotherapy.
- In the states where iCCM has been implemented, the capacity building provided to Community Health Workers and Role Model Caregivers/Coordinators to conduct testing with RDTs increased opportunities to test before treatment.

Constraints

The following constraints were noted:

- Poor dissemination of the national malaria treatment guidelines especially to facilities in hard to reach areas and to the private sector has affected adherence to recommended treatment guidelines.

- The poor referral system in the country and the poor infrastructure including lack of transport, poor communication has hampered the effectiveness of treatment of severe malaria further affected by poor availability of rectal artesunate for pre-referral treatment and injectable artesunate for definite treatment of severe malaria.
- Health worker attitude and low confidence in test results provided by RDTs has been a major impediment to universal testing even when RDTs are available in both the public and private sector. The other related problem is the lack of clear guidelines to health workers on what to do in the event of a sick person having negative RDT test result limiting the ability of health workers to adhere to national treatment guidelines that stipulate treating only test positive cases.
- The cost of initiating and sustaining a well-planned and implemented iCCM programme in which all the required commodities for management of diarrhea, pneumonia and malaria in addition to the capacity building requirements necessary for community health workers to be able to properly test and treat malaria cases in the community has affected the potential scale up of iCCM to communities in need of this programme.
- Lack of funds to be able to implement a well-structured supportive supervision system and schedule from national to subnational levels affects both the adherence to treatment guidelines and poor reporting particularly from private sector and secondary and tertiary facilities. The lack of data from these facilities makes it difficult to assess progress in these indicators for which data should be collected routinely through the DHIS2.
- The poor management of supply chain system for case management commodities (RDTs and ACTs) has led to some stock out of these communities in some facilities, making it difficult to achieve all the case management objectives of the NMSP.

6.4.9 Conclusion and Recommendations

Conclusions
- Assessing progress in case management indicators is complicated by the lack of or limited reporting from private health facilities through the national HMIS system, and yet over 60% of the population seeks care from the private sector. The progress demonstrated is therefore largely from public facilities that report through the DHIS2.
- NMEP and partners have provided required policies and guidelines to support diagnosis and confirmation of malaria and the treatment of both uncomplicated and severe malaria, however these documents are not universally available to health workers in both public and private facilities due to poor dissemination. This is further complicated by the poor attitude of health workers and their low confidence in test results from RDTs affecting the implementation of the test, treat and track policy as outlined in the national treatment guidelines.
- The lack of resources to fully finance iCCM has affected its planned scale up limiting it to the current pilot states. Hard to reach communities for which iCCM is appropriate

cannot therefore access these services that would improve prompt diagnosis and treatment for malaria especially for children under 5.

- There is heavy reliance on donors to finance case management commodities (RDTs and ACTs for the public sector and subsidized ACTs for the private sector (through the co-payment mechanism), with limited investment of domestic resources. This dependence raises questions of sustainability of these interventions in case of a decline in donor resources for malaria.

Recommendations

- NMEP and partners must urgently disseminate all policies and guidelines that have been developed including in the private sector and to address the low confidence and poor attitude of health workers towards RDT test results if Nigeria is to meet the policy of test, treat and track.
- NMEP and partners should map the country to properly identify hard to reach communities where services are absent and mobilize resources to expand iCCM to serve such communities.
- The lack of reporting from private sector facilities to the national HMIS is affecting assessment of indicators and yet majority of sick people seek care from this sector. NMEP and relevant institutions should devise innovative mechanisms to enforce reporting by private sector and adherence to national guidelines.

6.5 Advocacy Communication and Social Mobilisation

Introduction

Advocacy, Communication and Social Mobilization (ACSM) is an intervention, whose activities cuts across all the objective areas of the National Malaria Strategic Plan (NMSP). It plays a key role in the reduction of malaria morbidity and related mortality using Social and Behavior Change Communication (SBCC) strategies.

6.5.1 Objective

Specifically, the strategic objective of the ACSM in the NMSP is *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*.

6.5.2 Performance of the programme

6.5.2.1 Malaria ACSM Structure and Coordination

At the national level, ACSM is one of the six branches of NMEP responsible for coordination of advocacy, communication and social mobilization activities. The branch has 4 units, namely Advocacy, Communication, Social mobilization and coordination/capacity building. There are also subcommittees (ACSM Subcommittee, Advocacy working group, Communication working group Social mobilization working group and Content design teams) through which partners support the ACSM branch to carry out its mandate effectively. The review indicated that the

branch is staffed by eleven (11) personnel, which was found to be inadequate. The units of the branch and ACSM Subcommittees are effectively functional, with monthly and quarterly meetings.

At State level, there are dedicated ACSM focal officers for ACSM core groups in some states who support ACSM activities. The review found out that the capacity at state level was inadequate in the use of the ACSM Guidelines and the Social Mobilization Training Manual as these documents were not seen at health centers in the LGAs hence needs to be printed and distributed to all states.

6.5.2.2   Baselines and targets for SBCC outcome indicators

Even though yearly targets are set for the SBCC outcome indicators in the NMSP performance framework, there is no available source to monitor these indicators annually. The only reference for measuring the current performance of these indicators is the MIS, 2015. Table 12 shows the performance of indicators as at 2015.

6.5.2.3   Progress towards achieving NMSP targets

To measure the progress of each of the SBCC outcome indicators in the NMSP performance framework, their targets were measured against their actual outcome in 2015 through the MIS, which is the only available data source for the indicators. It was however noted that, these two outcome indicators are not enough to measure the strategic contribution of SBCC to the outcomes of malaria interventions as set forth in the NMSP.

Table 12: Progress on SBCC Outcome Indicators with Baseline, Annual Targets and achievements

Indicators	2010 Baseline	2014 Target	2014 Actual	2015 Target	2015 Actual	2016 Target	2016 Actual	2017 Target	2017 Actual	Source
% women aged 15-49 reached with mass media activities about malaria prevention and control in the four weeks preceding the survey	29.7% MIS 2010	40%	N/A	50%	35.6% MIS 2015	60%	N/A	70%	N/A	MIS 2010 & 2015
% of women aged 15-49 years with knowledge of the preventive measures for malaria	92.1% MIS 2010	100%	N/A	100%	92.7% MIS 2015	100%	N/A	100%	N/A	MIS 2010 & 2015

Access to knowledge on malaria prevention increased from 29.7% in 2010 to 35.6% in 2015, which is below the target of 50%. Knowledge on malaria preventive measures remained high (92.2%) during this same period.

Although the MSP was restricted to only two indicators, additional two indicators below were reviewed to ensure that progress on the key SBC are assessed: (i) Proportion of population who slept inside LLIN the previous night; Net use among under five increased from 29% to 44% while among pregnant women increased 34% to 49% from 2010 to 2015 respectively; (ii) Proportions of children under 5 with fever who go to a healthcare giver/provider for diagnosis and treatment within 24 hours(formal) (66.2%)[21].

6.5.2.4   Description of achievements

The field visit findings confirm the low access to health messages as evidence by non-availability of IEC materials/teaching aids in most health facilities. The Private Sector Engagement Strategy (PSES) developed in 2016 outlines how resources, innovations and broad reach of the private sector can be leveraged on in the engagement with the private sector has commenced. Guidelines for Malaria ACSM and National malaria advocacy developed in 2014 and 2015 respectively served as a guide for the National, States, LGAs and Partners to design and implement malaria interventions that are consistent with national and international policies and standards as well garner enabling environment for malaria interventions. Lastly, Social Mobilization Training Manual was developed in 2017 that will guide the interaction of NMEP and partners with Health care workers and NGOs/CBOs so as to build the capacity of community volunteers to conduct malaria community mobilization activities.

6.5.3   Enablers and Constraints

Enabling Factors to Implementation of ACSM Activities included:
- With the existence of a PSES, there is ample possibility and willingness to involve the private sector to contribute towards malaria elimination efforts including SBCC.
- The availability of financial and technical support from SBCC partners in-country helps to improve SBCC outcomes.
- The existence of a coordination structure for the ACSM, which includes the subcommittee, working groups and content design teams helps to monitor and coordinate partners' activities even up to the sub-national level.
- The vast and evolving landscape of the country's digital technology and availability of media organizations provides an opportunity to expand the reach of malaria SBC messages.

Constraints to Implementation include:
- Inadequate funding, high reliance on partners, poor prioritization of ACSM, coupled with non-release of funds poses a challenge to effective coordination, supervision/monitoring of SBCC activities up to the sub-national level.

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[21] NMIS 2015

- The inadequacy of technical expertise and staff attrition poses challenge to effective coordination of national and sub-national ACSM activities.
- The lack of documentation and working tools to capture, archive and showcase ACSM activities poses a problem of knowledge management, which may have been able to reduce the effect of staff attrition.
- Due to lack of adequate Operational Research for malaria, except in some donor funded states, ACSM activities in several states are not evidence-based and thus may not contribute to improved SBCC outcomes.

6.5.4 Conclusion and Recommendations

Conclusion

ACSM is a cross-cutting unit of the NMEP but its SBCC roles are not comprehensively captured in the NMSP. There is need for more attention in this area coupled with robust and consistent output and outcome indicators that will strategically guide effective implementation and performance measurement.

Recommendations

- Strengthen Advocacy to policy makers at highest level both at national and state levels so that stake holders take ownership as well as prioritize funding for SBCC activities across all states. This has to been done through innovative approaches that highlight the impact of the high burden of malaria in country.
- NMEP and partners should fully implement the actions points highlighted in the Private Sector Engagement Strategy and National Malaria Advocacy Plan, so as to mobilize adequate funding to support full implementation of ACSM activities at National and state particularly on capacity building, Operational Research, IEC materials.
- Leverage on the vast and evolving landscape of the country's digital technology and availability of media organizations to expand the reach of malaria SBC messages.
- Include additional SBCC indicators in the NMSP performance framework, M&E Plan, NDHS and MIS.

6.6 Procurement and Supply Chain Management

Introduction

Procurement and Supply Chain Management (PSM) is required for commodities security and is an essential component of National Malaria Elimination programme (NMEP), provided through the six (6) rights of supply chain management, improved cost effectiveness and efficiency, quality care, increased programme impact and risk management.

Over the years, Nigeria's national PSM for health products has been plagued with numerous challenges such as poor supply and demand management, weak human resources, parallel systems by different programs and implementers that have resulted in stock outs, damaged commodities and expires.

6.6.1 Objective

The NMEP PSM objective is *"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".*

6.6.2 Performance of the Programme

6.6.2.1 Structure, Coordination and Management

The National Product Supply Management Program (NPSCMP) under the Department of Food and Drugs, Federal Ministry of Health collaborates with all public health programmes within the Federal Ministry of Health especially Malaria, HIV/AIDS, Tuberculosis, Reproductive Health and Vaccines to ensure effective management of respective supply chain systems and proper handling of products in a professional compliant manner.

There is the coordination framework at national and state levels through the NMEP and the NPSCMP/NSCIP. The coordination and technical oversight functions of NMEP is also carried out by PSM focusing on activities related to the product pipeline with the involvement of all relevant Stakeholders. The capacity of PSM nationally and at state level is inadequate due to presence of some unsupported states and inadequate compliment of personnel.

6.6.2.2 Progress on policies and guidance

NMEP, supported by partners formulated the following policy documents and guidelines to improve PSM functions at all levels.

- The Guidelines and policies on The Public procurement act, National Drug Policy, and National Drug Distribution Guidelines, framework for malaria PSM in Nigeria have been developed between 2005 and 2012.
- Between 2014 and 2017, the following guidelines were developed: Supply chain policy for pharmaceuticals and Other Healthcare, Quality Assurance Policy for Medicines and other Health Products, Diagnosis and treatment of Malaria, Standard Treatment, Essential Medicines list and NMEP Procurement Manual.

The MTR found that these policies and guidelines do not fully address the Essential Medicine List (EML) as it does not include Artesunate Suppository which is recommended in the National Standard Treatment Guideline (2015) for pre-referral treatment of severe malaria.

6.6.2.3 Progress on coordination and partnership

There has been a paradigm shift in PSM operations across health programmes, since the establishment of National Product Supply Chain Management Programme (NPSCMP), under the Department of Food and Drugs Services, Federal Ministry of Health in 2012; and the Nigeria Supply Chain Integration Project (NSCIP) in 2014 whose implementation has been progressive till 2017. The MTR found that the Malaria PSM is integrated into the NSCIP and is fully functional at national and with varying degrees of operational at the different states.

6.6.2.4   Progress on Procurement and Supply Management

The level of attainment of procurement supply management against the MSP targets and achievements are indicated Table 13. The review observed that the MSP had no baselines for the PSM indicators.

Table 13: MSP indicators, baseline, targets, and actuals

Indicators (impact)	Baseline (Year)	2014 Targets	Actual	2015 Targets	Actual	2016 Targets	Actual	2017 Targets	Actual	Source
% of health facilities reporting stock outs of RDTs lasting more than1week at any time during the past 3months	TBD	<40%	NA	<35	NA	<30	3.5	<25	9.1	LMIS Data
% of health facilities with stock-out of ACTs Lasting more than 1week at any time during the past 3months	TBD	<40%	NA	<35	NA	<30	8 AL1 13 AL4	<25	13.6 AL1 21.8 AL4	LMIS Data
% of product batches tested in previous year that met National and International Control Standards	TBD	80%	NA	80%	NA	80%	NA	90%	NA	LMIS Data

Percentage of facilities reporting stock out of RDT reduced from about 40% to 9% in 2016 Percentage of facilities reporting stock out of ACTs reduced from about 40% to 14% for AL1 and 22% for AL4 in 2016.

Overall, there has been remarkable improvement in availability of both RDTs and ACTs for the public sector. However, in the private sector, the level of stock out of these products could not be ascertained due to lack of reporting system, although the Global Fund has been involved in co-paid ACTs since 2014 as a continuation of the AmFm.

From the analysis of the available data, the percentage stock out rates of anti-malarial medicines were within the targets for the years 2016 and 2017, however, this does not represent the exact situation due to insufficient data.

It was observed that the indicator on percentage of product batches that met national and international control standards could not be evaluated due to non-availability of standardized systems for evaluating quality assurance and quality control of the health products tested.

USAID through the United State Pharmacopeia (USP) provides support to NAFDAC Post Market Surveillance (PMS) effort to ensure sub-standard and adulterated medicines are removed from the local market in Nigeria[22].

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[22] USP. The Global Fund-Nigeria, Strengthening NAFDAC PSM Unit, 2017

6.6.2.5 Forecasting and Quantification

To improve accuracy of quantification and forecasting, the NPSCMP developed a supply chain policy direction on the quantification and forecasting to ensure efficient, coordinated and integrated procedures. The PSM Sub-Committee of the NMEP which meets monthly, oversees the forecasting and quantification of malarial commodities and supports management of the supply chain.

6.6.2.6 Inventory Management

A Malaria Commodity Logistics System (MCLS) developed in 2010, with support from John Snow Incorporated (JSI) under the Global Fund Capacity Building Services/Supply Chain Management Assistance CBS/SCMA PSM technical assistance provides information on indicators such as: impending stock out of commodities, remaining Shelf Life of Commodities, impending expiries and pipeline monitoring through National Stock Status Report (NSSR)[23]. The system is generally functioning although there remain some challenges in the states not supported by partners.

6.6.2.7 Warehousing and Distribution

As part of the ongoing efforts to integrate fragmented, vertical program-driven supply chain systems in Nigeria, the National Warehousing Advisory Committee (NWAC) has been established by the NPSCMP/NSCIP. NWAC operations unit provides oversight to the Nigeria's warehousing system and manage private sector contracts of third party logistics providers. Currently 6 Zonal warehouses (Abuja, Lagos, Imo, Gombe, Calabar, and Sokoto) have been identified as axial hubs and upgraded to Pharma grade status from which health products are distributed to the health facilities. These have increases efficiency and reduced stock outs of malaria commodities. However, these six zonal hubs are inadequate for the volume of the commodities managed within the country and the size of Nigeria.

6.6.3 Enablers and Constraints

Enablers

The following have been the main enablers for PSM

- A number of Policies and Guidelines have been developed and are available E.g. MSP, National quality assurance policy (NQAP), National supply Chain policy (NSCP) have been developed.
- Decentralization of PSM functions to sub-national levels through establishment and operationalization of State Logistics Management Coordinating Unit (LMCUs) has provided hitherto limited capacity at state level to manage PSM activities at state level.
- Availability of Pharma grade warehouses namely; Abuja and Lagos; Premier Medical warehouses a.k.a warehouse in a box (WiB), has improved the national capacity to handle medicine and supplies capacity across Nigeria.

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[23] Biannual National Stock Status Report for Public Health Commodities, NPSMCP, 2017

- Distribution Models such as the use of third party Logistics(3PLs), Direct Delivery and Information capture (DDIC) using a combination of long hull and last mile distribution (LMD) to reach health facilities
- There is QA/QC process in place by NAFDAC for random sampling of malarial medicines at all level to ensure quality products are delivered at the points of service.

Constraints

Key constraints identified include:

- Decreased partner support and other stakeholders, for malaria programming, and for PSM since 2015, including at sub national levels.
- Industrial disputes and nonpayment of salaries to health workers in some states results in down time and wasted manpower hours.
- Inadequate capacity in many health facilities across the nation, especially the PHCs.
- Staff attrition of well trained staff in PSM creating capacity gaps at both national and sub national levels.
- Security challenges in some states in the country especially the North-east zone affects programme capacity to ensure uninterrupted supply of malaria commodities.

6.6.4   Conclusion and Recommendations

Conclusion

Nigeria's national PSM for health products have been plagued with numerous challenges. The capacity of PSM nationally and at state level is inadequate due to presence of some unsupported states and inadequate compliment of personnel. In addition, the capacity of the NMEP, PSM to adequately evaluate and achieve a true representation of the PSM outcome indicators in the first two and half years, the period of this Mid Term Review (MTR) was sub-optimal, particularly around availability of data to evaluate stock out rate of antimalarial medicines and setting up of standard strategies to assess the quality assurance/quality control of the health products tested.

Recommendations

- NMEP and partners should mobilize adequate funding from both donor and domestic sources for logistic management including distribution costs of commodities and construction of additional pharma grade warehouses to better serve states and facilities.
- Improve reporting through provision of tools and training and improve linkage to the DHIS2 system which is already operational from the LGA level.
- Conduct ongoing training and supervision of all staff involved in PSM to strengthen capacity to manage the supply chain system efficiently at all times.

6.7   Surveillance, monitoring and evaluation and operational research (SMEOR)

Introduction

The malaria data are collected through various channels; routine, e.g. Health Management Information System (HMIS); population based surveys, e.g. Malaria Indicator Survey (MIS), Demographic and Health Survey (DHS) and other sources to inform policy decision making. The MTR reviewed the following SMEOR policy, mechanisms, processes and systems.

6.7.1   Objective

The strategic objective of the SMEOR of the Malaria Strategic Plan (MSP) is *to ensure the availability of reliable, timely and complete data for tracking progress towards the attainment of the MSP target, which is that at least 80% of all Health Facilities report routinely on malaria data by 2020.*

6.7.2   Performance of the Programme

6.7.2.1   SMEOR policy, mechanisms, processes and systems

The NMEP has the following policies and guidelines: National Malaria M&E Plan; Standard Operating Procedures for Data Management; Guidelines for Supportive Supervisory visit and DQA; M&E Training manuals and; National Malaria Operations Research Agenda.

The content of the M&E plan and guidelines for SMEOR was found to be adequate, clear, explicit, and appropriate for providing useful information for decision making. However, the M&E plan was found to have less clarity on the pathway for incorporating community level data (e.g. PPMVs and CORPs), seasonal malaria chemo-prevention (SMC) data as well as private health facilities malaria data into the routine surveillance system. The findings from the field visit showed absence of guidelines and standard operating procedures (SOPs) on data management at both State and LGA levels.

6.7.2.2   Malaria SMEOR Structure and Coordination

At the national level, SMEOR is one of the six branches of NMEP responsible for coordination of Surveillance, M&E, Operations Research, Coordination and Reporting as well as Information Technology. The branch has 4 units, namely Surveillance & Data Management (SDM), Operations Research (OR), Coordination & Reporting (CR), and Information Technology (IT). There are also subcommittees (M&E subcommittee, Data Management Expert Group & Malaria Operations Research Expert Group) through which partners support the M&E branch to carry out its mandate effectively.

The branch is staffed by eleven (11) personnel, which was found to be inadequate, particularly in SDM and OR units. Also, the skills mix was inadequate, particularly on data management. The units of the branch and SMEOR Subcommittees are effectively functional, with monthly and quarterly meetings as well as data reviews.

At State level, there are dedicated malaria M&E Desk Officers who support SMEOR activities. However, the capacity at state level was inadequate in the use of data for decision-making; though data forms and tools existed, field visits found no or limited evidence of data analysis charts at health centres in the LGAs.

6.7.2.3   Malaria M&E Data Flow Pathway

Nigeria has harmonized its health information system since 2013 and introduced District Health Information System (DHIS) in 2014. As at October 2017, DHIS has been fully rolled out nation-wide across all LGAs, where facility-level data entry is conducted. Routine malaria data is reported monthly through the DHIS.

The chart below (Figure 19) shows the pathway for reporting of routine malaria data from the health facility to the national level with clear roles and responsibilities at various levels. However, there is no clearly defined feedback mechanism in the data flow chart. In addition, the non-routine malaria data sources such as Malaria Parasite Sentinel Surveillance (MPSS), Entomological Surveillance, LLIN Durability Monitoring, Drug Therapeutic Efficacy Testing (DTET) and M&E activity reports are not linked to the DHIS for easy availability of such data for programming and decision making.
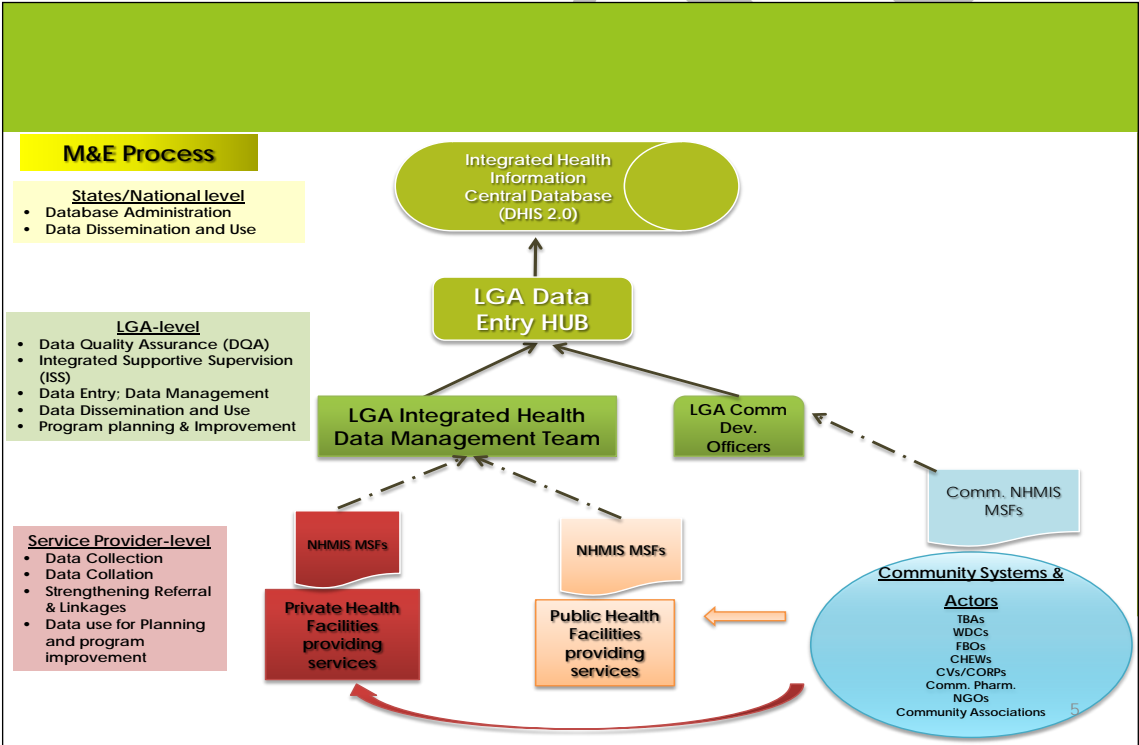
Figure 19: M&E Data Flow Pathway

Source: FMOH, DPRS

6.7.2.4   Progress on SMEOR

The SMEOR indicators included in the MSP and achievements are as shown in the table below.

Table 14: Baselines and targets for SMEOR Indicators

Indicators	Base	2014	2015	2016	2017	Data Sources
% of health facilities using the revised data collection tools	NA	70%	75%	80%	85%	HMIS
% of LGAs reporting malaria data through the DHIS	NA	70%	80%	90%	100%	HMIS
% Completeness of facility reporting into the National HMIS	44% (2012)	60%	70%	80%	90%	HMIS

Source: NMSP, 2014 – 2020

Some of these indicators are not SMART, e.g. the unit of reporting is the health facility and not the LGA as captured in the indicator above. Timeliness of reporting which is reported monthly on the DHIS is not captured in the MSP and the M&E plan.

The NMEP has conducted the following surveys/assessments since 2014: Rapid Impact Assessment (RIA) 2014/2015, Health Facility Assessment (HFA) 2014, End line Household Survey in Malaria Booster States 2015, MIS 2015 and Update of malaria epidemiological profiling for Nigeria 2017. The reports from these surveys have provided data and information that have been used for programme planning and decision making such as the development of the Concept note for the GF Funding Request 2018-2020.

6.7.2.5   Reporting timelines and completeness targets

The yearly completeness targets for reporting was set in the MSP, however, yearly targets for timeliness are not set. Although completeness targets were not attained, there was (27%) increase in completeness of reporting from 55% in 2014 to 70% in 2016 (Figure 20)

Figure 20: Reporting rate (%) of health facilities, 2014 – 2015 (national)

Source: DHIS-2

While there is a general increase in reporting rate it should be noted that only a few secondary and tertiary facilities ae currently reporting through the DHIS2 and majority of private sector facilities do not report at all.

State level comparison on improvements in reporting rates as shown in Figure 13 shows that there are some states that are falling back in reporting for which immediate remedial action needs to be taken.

6.7.2.6   Adoption and Adaptation of Technology for SMEOR

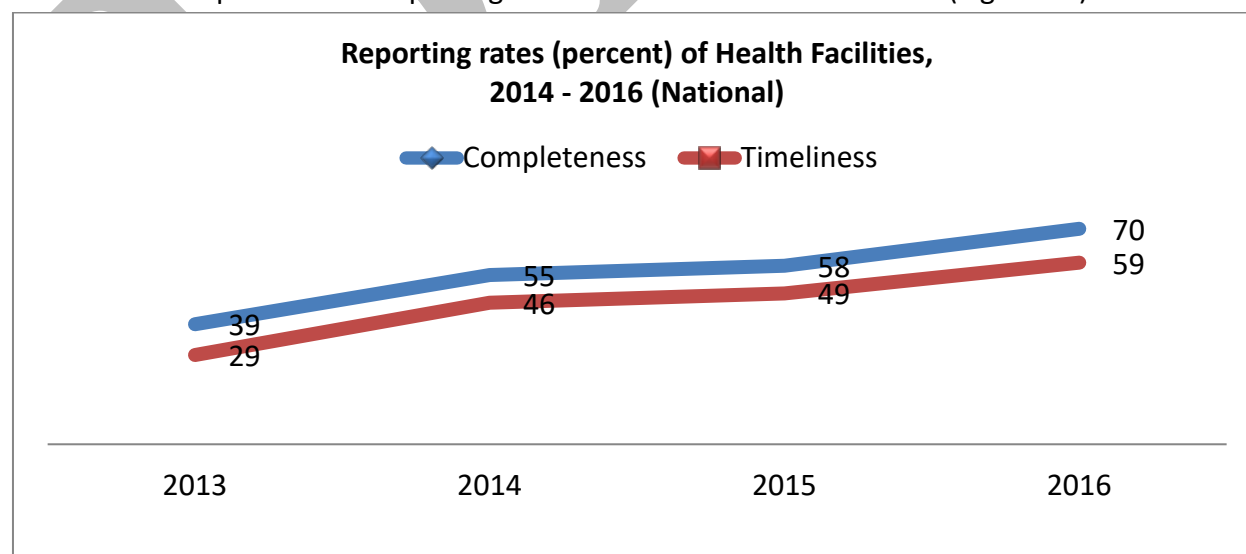Not much progress has been achieved on the adoption and adaptation of mobile technology for data reporting in spite of a target of achieving 80% reporting through the mobile technology by 2020. During the period under review, only a small fraction of states (Lagos and Kaduna) have adopted the use of mobile data capturing device for reporting into the DHIS; No yearly targets for mobile technology were set in the MSP performance framework.

6.7.2.7   Prioritization of Operational Research

The development of Nigeria Malaria Operational Research Agenda (NMORA) for Nigeria in early 2017 was achieved through country dialogue for malaria OR, establishment of malaria research expert group, thematic desk review on NMEP OR, planning meetings on NMORA, preliminary study on OR needs and gaps, and review/update of 2014 harmonized OR prioritized questions.

The NMEP and its partners has implemented different surveys such as the Drug Therapeutic Efficacy Testing (DTET), RDT implementation Research, ACT Watch, Durability monitoring (DM) of LLIN, Insecticide Resistance Monitoring (IRM) and Malaria Indicator Survey (MIS), in order to have evidence for policy decisions in these areas. However, most of the prioritized OR questions set by NMEP and its partners were not implemented during the review period due mainly to paucity of funds for OR as well as poor collaboration between the program and researchers on malaria OR. Recently, the capacity of Malaria M&E and Programme officers at both State and National levels have been built on Malaria Surveillance, Monitoring and Evaluation (SME).

Field validation visit showed that research institutions like Nigeria Institute of Medical Research (NIMR) rated malaria as a priority. Research institutions also confirmed that significant improvement has been made in the organization and management of malaria control OR in Nigeria, although there is room for implementation of more interventions.

6.7.3 Enablers and Constraints

Enabling Factors to Implementation of SMEOR activities include:
- Harmonization of data collection tools (HMIS), availability of single national reporting platform for routine data (DHIS2), and leveraging on existing national surveillance system to add-on malaria data elements on DHIS.

- Existence of non-routine malaria data e.g. MPSS, DTET, Entomological Surveillance and DM of LLIN.
- Existence of a strong partnership for SMEOR between partners and NMEP.
- There has been increased attention to make SME core intervention since this recommendation by the Global Technical Strategy and recognition by NMEP and partners of the value of monitoring programme performance routinely.

Constraints to Implementation include:
- Low reporting by secondary and non-reporting by tertiary health facilities to the DHIS platform.
- Lack of enforcement mechanism for private sector reporting.
- Low capacity of M&E personnel especially at sub-national level and suboptimal analysis and use of data generated for decision-making.
- Inadequate funding for SMEOR particularly data quality assessments (DQA) and support supervision.

6.7.4   Conclusion and Recommendations

Conclusions
- The SMEOR is generally well-functioning although some areas need be improved. Some key M&E activities such as OR Agenda setting, routine data reporting, MIS 2015, DM of LLIN were fully implemented. Others were partially implemented such as DQA/ISS resulting in data quality issues, and delay in release of DTET findings due to different reasons like lack of funds.
- The private sector reporting is integrated into HMIS, however, mechanisms for collecting data from such HFs are not well defined and followed-up to ensure regular reporting from that sector.
- The National Malaria Operations Research Agenda for Nigeria is well defined and published for OR activity implementation. However no OR outcome indicators are captured in the MSP.

Recommendations
- NMEP and partners should strengthen mechanism for community and private sector data reporting through the NHMIS and DHIS 2.
- NMEP and partners should integrate and link non-routine data sources such as MPSS, DTET, Entomological surveillance, DM of LLIN, surveys, etc; to the national HMIS system.
- Strengthen monitoring and supervision at the State/LGA level with standardized with standardized on regular basis and data analysis and use.

Chapter 7: Programming Implications of the Lessons Learned Implementing the MSP

7.1   Lessons learned implementing the MSP

The total cost of NMSP 2014 – 2020 is US$4,133,110,170.00. NMEP and partners mobilized 68.58% of the total required amount (US$ 1,178,485,153) for the period 2014 - 2017, with domestic resources accounting for an average of 3% of resources available to finance malaria activities. This implies that majority of malaria activities are donor dependent raising concerns of sustainability of these activities should external resources dwindle as observed in 2017. It is critical for the Government of Nigeria at both Federal and State level to prioritize malaria as a major public health problem and direct adequate local resources to fund the key malaria prevention activities if Nigeria is to meet its 2020 targets.

LLINs and IRS are the primary vector control measures stipulated in the NMSP. However, no significant investment has been made on IRS with patchy attempts in some local governments in Lagos state. Also, LLINs coverage cannot be achieved given the huge financial resources needed to procure and distribute over 100 million LLINs for universal coverage to be achieved in Nigeria, accompanied by the huge logistical challenge were this to be attempted given the sheer size of the country and its massive population. It means at any time a significant proportion of the population is not adequately protected, leading to a failure to interrupt malaria transmission.

The importance to monitor programme performance at national scale cannot be over-emphasized. However, the current routine surveillance system is majorly operational in only the public health sector, with minimal involvement of the private sector which serves more than 60% of the population. It means NMEP and partners have to rely on expensive population surveys that are conducted at long intervals to be able to generate reliable measurements of key indicators. It is crucial for NMEP and partners to pro-actively engage the private sector facilities to include them in the routine reporting system through DHIS2, so that this information can be used to regularly monitor programme performance at national level. All agencies that supervise private sector practice should be involved in these efforts to ensure that private facilities report routinely through the national HMIS system for a holistic monitoring and evaluation of malaria activities.

Malaria response needs to be multi-sectoral for gains to be achieved and sustained. While a framework for the coordination of these partners exists, led by NMEP, weaknesses are noted. The NMEP and States should be supported to fully implement this mandate to ensure that the planning, implementation and evaluation of all malaria activities with the different stakeholders is well coordinated, for increased effectiveness, efficiency and equity, to ensure

that no segments of the population are left behind in the universal coverage with malaria interventions as the case is now. Government of Nigeria should ensure that all states are supported to have adequate resources to direct to malaria prevention and control, with the technical and financial support of partners.

The recommended approach to national review and planning of malaria activities has been occurring regularly. However, this good practice is not well replicated at state level due to limitations in funding and technical capacity. The Federal system of Nigeria empowers states to be in charge of implementing their own activities, however, these need to be in consonance with the national strategic plan. It imperative therefore that state planning and reviews must have the guidance and input of NMEP if activities at state level are to meet the set targets in the national strategic plan.

On the positive side, findings from the sentinel vector surveillance system show the prevalent vectors continue to be majorly indoor biters. This implies that current vector control measures – LLINs and IRS are still useful to protect populations. On the other hand, there is also evidence from the sentinel sites showing emergence of resistance to the four classes of insecticides primarily to pyrethroids and organochlorines. This is cause for concern as pyrethroids is the only insecticide currently impregnated in LLINs. NMEP and partners should therefore work with international partners to identify new tools for the gains against malaria to be sustained.

Nigeria has adopted WHO guidance to ensure that surveillance is a core intervention. There is increased focus by NMEP and partners on ensuring that surveillance is strengthened. Also, NMEP in its policies and guidelines has underscored the role of testing, treating and tracking of malaria cases. For this to be realized, it is imperative that diagnosis is universally accessible to all fever cases in both the private and public sectors. However, it is noted that there is poor health workers' attitudes to RDT test results in particular, calling for strengthened support supervision and mentoring of health workers. Similarly, a national campaign should be conducted targeting both communities and health workers to always demand for testing before treatment with ACTs. The observed increase in testing is only in the public sector with little information available from the private sector. Linking this to increased reporting from private sector will allow NMEP and partners monitor overall adherence to national treatment guidelines.

Over the last 3 years, iCCM has only been implemented on a pilot basis in two states out of the 37, yet there are communities that are hard to reach with limited access to health and malaria services, ideal for implementation of iCCM. The key challenge is lack of funding to scale up iCCM to these communities across all states of Nigeria where it is appropriate. The government should increase accessibility to formal services in partnership with the private sector and expand iCCM to provide services to pockets of communities that either for reasons of geography or otherwise will continue to have limited access to formal services. Similarly, Nigeria has experienced unprecedented security breakdown in North Eastern part of the Country leading to a humanitarian crisis due to internal displacement of persons and

destruction of health facilities. While the response effort is led by WHO and other humanitarian agencies, government of Nigeria and NMEP need to be able to provide a clear plan for addressing the malaria problem and mobilize and direct resources to procurement and deploy of malaria prevention and control commodities. This capacity needs to be further strengthened given that the end to this insurgency is not known.

At midterm, it was found that NMEP capacity to implement planned activity was low to medium, with little information on state capacity to implement malaria activities. This low capacity affects ability to achieve universal access and coverage and ultimately to meet the targets of reducing malaria morbidity and mortality. Government should urgently conduct a human resource review of both NMEP and states to ensure that the right number of health staff with the right skills are available at these levels if the targets of the strategic plan are to be attained by 2020.

While Nigeria's health system has grappled with numerous challenges with its national PSM for health products such as poor supply and demand management, weak human resources, parallel systems by different programs and implementers resulting in stock outs, damaged commodities and expiries. During the period under review, GON and partners have addressed through nationally coordinated efforts where PSM is now fully integrated into the NSCIP and is functional at national and with varying degrees of functioning at the different states. Overall, there has been remarkable improvement in availability of both RDTs and ACTs for the public sector. However, stock levels in the private sector cannot be ascertained due to lack of reporting system from this sub-sector.

7.2   Future strategic directions

1. Government of Nigeria should strengthen capacity at state level to be able to properly plan, implement and monitor malaria programmes if the NMSP 2020 targets are to be achieved, reducing the burden at national level, thus giving NMEP the space to play its role of mobilizing resources, developing and providing policies and guidelines to states.

2. The role of the private sector is critical in Nigeria's efforts to achieve pre-elimination as majority of the population seek care in the private sector. Also, in order to increase domestic financing for malaria, private sector players are critical in providing alternative non-traditional sources of funding for malaria. NMEP and partners should therefore highlight the magnitude and impact of malaria to households, private organizations and to the socio-economic development of the country in general, thereby making a case for why private sector players are an important ally in malaria prevention and control.

3. NMEP should strengthen the routine surveillance system to ensure that it is able to collect information from both public and private sectors in order to be able to properly measure programme performance at national level, with increased capacity for data analysis and use at all levels, to inform programme planning, implementation and monitoring.

4. The role of communities and households to be responsible for their own health and perceiving malaria as a serious health problem should be highlighted so that malaria response is household led. With this regard, NMEP and partners should advocate to the highest levels of government at national level (Presidency, Senate and House of Representatives) and at state level (Governors and health commissioners) to prioritize malaria and thus increase budgetary allocation for health in general and malaria in particular.

Annexes

Annex 1: NMSP indicators reviewed at mid-term

Goal	Indicators (Impact)	Baseline (Year)	2014	2015	2016	2017
The Goal of this Strategic Plan is to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero	All cause under-5 mortality rate per 1000 population	157 (2008)	150	130	115	100
	% children aged 6–59 months with hemoglobin measurement of <8g/dl)	13% (2010)	11.0%	9.0%	7.0%	5.0%
	Malaria Parasite Prevalence in children U5 (Slide)	42% (2010)	34.2%	26.4%	18.6%	10.8%
	Malaria test (slide/RDT) positivity rate	60% (2010)	40%	30%	20%	10%
	% Deaths due to Malaria	31% (2010)	25%	20%	15%	10%
Objectives	**Indicators (Outcome)**	**Baseline (Year)**	**2014**	**2015**	**2016**	**2017**
Objective 1: *To provide at least 80% of targeted population with appropriate preventive measures by 2020*	% of households with at least 1 LLINs for two persons	14.2% (2010)	36%	47%	58%	69%
	% of under-5 Children who slept under an LLIN the previous night	28.7% (2010)	40%	50%	60%	70%
	% of household residents who slept under an LLIN the previous night	49% (2010)	50%	60%	70%	80%
	% of pregnant women who slept under an LLIN the previous night	65% (2010)	71%	77%	83%	89%
	% of households reached with IRS	<1% (2010)	5%	10%	20%	30%
	% population in target areas protected by IRS	TBD	60%	80%	80%	80%
	% of mapped mosquito breeding sites sprayed with larvicides annually	TBD	50%	60%	80%	80%
	% of pregnant women who received intermittent preventive treatment during antenatal care visits (in public & private facilities)	17% (2012)	35%	55%	75%	95%
Objective 2: *To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020*	% of persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy)	22% (2012)	40%	50%	60%	70%
	% of health facilities with malaria diagnostics capabilities (microscopy and/or rapid diagnostic testing)	TBD	50%	60%	70%	80%

Goal	Indicators (Impact)	Baseline (Year)	2014	2015	2016	2017
Objective 3: *To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020*	% of persons testing positive that receive antimalarial treatment (in public and private health facilities) according to national guidelines	42% (2012)	55%	70%	85%	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%
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*	% 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%
	% of women aged 15 -49 years with knowledge of the preventive measures for malaria	92% (2010)	100%	100%	100%	100%
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.*	% 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%
	% 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%
	% of product batches tested in previous year that met national and International Control Standards	TBD	80%	80%	80%	90%
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*	% of health facilities using the revised data collection tools	TBD	70%	75%	80%	85%
	% of LGAs reporting malaria data through the DHIS	TBD	70%	80%	90%	100%
	% Completeness of facility reporting into the National HMIS	44% (2012)	60%	70%	80%	90%
Objective 7: *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*	Proportion of states that have adapted the National Coordination framework	TBD	30%	40%	50%	70%
	Proportion of government contribution to total annual expenditure for Malaria Elimination	TBD	20%	30%	30%	40%
	Number of Malaria Programme Review conducted	1 (2012)	-	-	1	-

Annex 2: An analysis of programme capacity to implement activities

SUMMARY PERFORMANCE BY GOAL

Goal: To reduce malaria burden to pre-elimination levels and bring malaria-related

SUMMARY PERFORMANCE BY OBJECTIVE

Objective 1:   To provide at least 80% of targeted population with appropriate preventive

Objective 2:   To test all care-seeking persons with suspected malaria using RDT or

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

Objective 4:   To provide adequate information to all Nigerians such that at least 80% of the populace habitually takes appropriate malaria preventive and treatment

Objective 5:   To ensure the timely availability of appropriate antimalarial medicines and commodities required for prevention and treatment of malaria in Nigeria

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

Objective 7:   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

Annex 3: MTR programme

NATIONAL MALARIA ELIMINATION PROGRAMME

2014-2020 NATIONAL MALARIA STRATEGIC PLAN MID-TERM REVIEW

N°2	**Checklist for Partners**

NAME OF DEPARTMENT:	
POSITION OF OFFICER:	
NAME OF INTERVIEWER:	
DATE OF INTERVIEW:	

Introduction

The NMEP is currently conducting the mid-term review of the National Malaria Strategic Plan (MTR). The objectives of the MTR are:

To assess progress towards the global targets of reducing morbidity and mortality due to malaria, with the view to ascertain gaps that will lead the country to malaria elimination

To review the policy and programming framework of the country within the context of the health system and the national development agenda

To review the current program service delivery systems, their performance and challenges

To review the malaria epidemiology (endemicity, seasonality, parasite, vector situation) in the country.

Define the next steps to improve programme performance and/or redefine the strategic direction and focus inclusion revision of the strategic Plan and annual operational plan

As part of the MTR the NMEP acknowledges your valued contribution to malaria control programme and would like to get your opinion on the current programme performance of malaria control.

This consultation and interview will focus on a) view on malaria control in the country, b) the political and financial commitment for malaria in the country, c) challenges the government facing in fighting malaria and, d) recommendations for improving malaria control in the country.

CHECKLIST

Opinion on the fight against malaria in the country

☐ 1.1	In your opinion, what is the level of priority given to malaria control by the government??	☐ High ☐ Average ☐ Low
☐ 1.2	What is your opinion on the organization and management of malaria control in Nigeria? …………………………………………………………………	

Political and financial Implication

2.1	a)- Is your organization involved in malaria control (check the corresponding checkbox) Yes /__/ No /__/ b)- if Yes, which thematic areas of malaria control is your organization supporting? ……………………………………………………………………
☐ 2.2	a)- Do you have the current 2014-2020 strategic plan for malaria control? Yes/_ _/No/__/ b)- If Yes, does it guide or inform planning in your organization? Yes/_ _/No/__/
☐ 2.3	Do you think that the current human resources for the NMEP are adequate and qualified (number, Expertise)? (Nombre, Expertise)? Yes/_ _/ No/__/ Justify your answer ……………………………………….………………………..
☐ 2.4	What was the role of your organization in implementing the strategic plan for malaria control between 2014 and 2017? ……………………………………………………………………………..
☐ 2.5	What was the role of your organization in mobilizing resources for malaria control over the 3 years (2014-2017)?. …………………………………………………………………………………
☐ 2.6	Do you think that the current funding granted by the Government for malaria control is sufficient? Yes/_ _/ No/__/ Justify your answer …………………………………………..……………..

| 2.7 | What is the amount allocated by your organization for malaria control in the four last years?

In 2014: (USD). ....   In2015: (USD.). ....

In 2016: (USD) ……….. .... ….   In 2017: (USD)…………………. .... |

Challenges/recommendations in the malaria control

3.1	3.1 In your opinion, what are the challenges that the malaria control program faces? ....
3.2	As an organization, what would you say are going to be the potential threats to control malaria in this country over the next 5 years? . ...
3.3	What suggestions/recommendations would you make to improve the program's performance for the next 3 years (2018-2020)? ....
3.4	As an organization, what would you say are the required "game changing" ideas to control malaria in this country over the next 5 years? . ...
3.5	What would be the role of your organization in the malaria control programme over the next 3 years (2018-2020)? . ...

State level field visit guides

FIELD VISIT FINDINGS

Description of the sampling

During the field work, different levels were visited as indicated in table 1 and 2 below:

Places visited

Table 1: Managers, Health facilities and Communities visited

STATE	Managers (State, LGA)	General Hospital	Urban LGA	Rural LGA	FGD	CORPs	Private

Officials and partners met

In addition to the NMEP Coordination, many partners were visited (see table 2).

Table 2: Interventions domains per organization visited

Organization Name	Donor/ Funding	Service delivery CM, LLIN, IRS, SMC, IPTp	Advocacy/ Social mobilization	Community: iCCM	Surveil/ M&E, OR	Programme management, and Capacity building, RBM	Private sector
PMI							
MC							
CHAI							
HC3							
Abt Associates							
JHPIEGO							
AFENET							

POLITICAL COMMITMENT AND MALARIA PRIORITY LEVEL

a)- Government's commitment

b)- Malaria programme management and coordination at different levels

Malaria management

Human resources and capacity building

Planning and implementation

M&E and data management

c)- Resource mobilization for 2014-2020

Mobilization by government

-In 2014-2017

-Willingness for 2018-2020

Mobilization by Partners

-In 2014-2017

-Willingness for 2018-2020

d)- Success consolidation and changes game for 2014-2020

MALARIA INTERVENTIONS IMPLEMENTATION AT STATES LEVEL

Malaria management

a)- Norms & procedures

b)-Human resources for malaria and Capacity building

c)-Planning and implementation

d)-Partners and Resource mobilization in 2014-2017

e)- SME and data management

Malaria service delivery organization

a) - Human resources trained on malaria interventions

b) - Integrated service delivery at health facilities: triage, treatment, prevention, laboratory, pharmacy …

c)-HMIS tools and other tools

Malaria services availability and coverage

a)- preventive measures Case

Vector control: LLIN (routinely and through campaign), IRS, ..etc

Malaria in pregnancy: IPTp, LLIN

SMC

b)- Case management

b1)- At public Health facilities

Biological diagnosis (RDTs, microscopy)

Malaria specific treatment

b2)- At private health facilities

Biological diagnosis (RDTs, microscopy)

Malaria specific treatment

b3)- At community level (iCCM)

Biological diagnosis (RDTs, microscopy)

Malaria specific treatment

c)-ACSB

Availability of tools and planning documents

Advocacy

Communities KAP (FGD results)

Social mobilization (World Malaria Day, etc)

d)- SME and Malaria Data management

MALARIA PROGRAMME PERFORMANCE

States Indicators	State 2	State 3	State 4	State 5	State 6	Nigeria
Parasitemia prevalence: children aged 6–59 months with malaria infection (by microscopy)						
Test positivity rate (RDT and microscopy) in 2016						
Malaria incidence in 2016						
Proportion of severe malaria in 2016						
Malaria fatality rate in 2016						
Malaria mortality rate in 2016						
LLIN administrative coverage 2014-2016						
Proportion of pregnant women who received IPTp3 dose during her last pregnancy						
Proportion of population at risk who slept under LLIN during the previous night						

Annex 5: List of new indicators to be included in the Performance Framework

72

SMEOR

SBCC

Annex 6: MTR participants

TEAM MEMBERS:

(IVM)
- Dr Akila Joel- NMEP
- Dr Arowolo Tolu- WHO
- Dr Henry Nsa- PMI AIRS
- Dr Petrus Inyama- PMI AIRS
- Mr Godwin Aidenagbon- PMI GHSC-PSM
- Mrs Grace Adamu- NMEP
- Mrs Hope Obokoh- NMEP
- Mr Mohammed Ndaliman Yusuf

(Case Management)
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- Dr Bolatito Aiyenigba- Independent Consultant.
- Dr Saleh Jalal-Eddeen – NPO, WHO
- Dr Barthlomew Odio- Jhpeigo
- Dr Godwin Ntadom - NMEP
- Dr Aisha Gubio - NMEP
- Wudi Natasha Tanko- NMEP

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- Dr. Maikore Ibrahim
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Annex 7:

Annex 8: