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Abuja, Nigeria



**Malaria Programme Review**  
2019

National Malaria Elimination Programme (NMEP),  
Department of Public Health,  
Ministry of Health  
Abuja  
December, 2019

## Progress toward the Implementation of National Malaria Strategic Plan, 2014-2020



U.S. President's Malaria Initiative

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**Nigeria Malaria Programme Review, 2019**

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## *Foreword*

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To be provided by NMEP

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## ***Acknowledgement***

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To be provided by NMEP

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## *Abbreviations*

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ACSM	Advocacy Communication Social Mobilisation
ACTs	Artemisinin based Combination Therapy
ANC	Ante Natal Care
AOP	Annual Operational Plan
BCC	Behaviour Change Communication
CBOs	Community based Organizations
CCM	Country Coordination Mechanism (GFATM)
CHEW	Community Health Extension Workers
CHO	Community Health Officer
C-IMCI	Community-Integrated Management of Childhood
CMS	Central Medical Stores
CORPS	Community Oriented Research Persons
CSOs	Civil Society Organizations
DPH	Department of Public Health
DDT	Dichlorodiphenyl – Trichloroethane
DFDS	Department for Food and Drugs
DFID	Department for International Development (UK)
DHIS	District Health Information System
DOT	Directly Observed Treatment
DPRS	Department for Planning, Research and Statistics
DRF	Drug Revolving Fund
DTET	Drug Therapeutic Efficacy Test
ECOWAS	Economic Community of the West African States
EIR	Entomological Inoculation Rate
EPI	Expanded Programme on Immunization
EPR	Emergency Preparedness and Response
FBO	Faith Based Organization
FM	Financial Management
FMOH	Federal Ministry of Health
GDP	Gross Domestic Product
GF	The Global Fund to Fight AIDS, Tuberculosis, and Malaria
GFATM	Global Fund to Fight AIDS, TB Malaria
GMP	Global Malaria Programme
HDCC	Health Data Coordination Committee
HF	Health Facility
HFA	Health Facility Assessment
HIV/AIDS	Human Immuno-Virus/ Acquired Immuno-Deficiency Syndrome
HMB	Hospital Management Board
HMIS	Health Management Information System
HMM	Home-based management of malaria
HR	Human Resources
HSS	Health Systems Strengthening
HW	Health Workers
IDSR	Integrated Disease Surveillance Reporting

IEC	Information, Education and Communication
IPC	Inter-Personal Communication
IPD	Immunization Plus Days
IPT	Intermittent Preventive Treatment
IRS	Indoor Residual Spraying
ISS	Integrated Supportive Supervision
ITN	Insecticide Treated Net
IVM	Integrated Vector Management
KABP	Knowledge, Attitude, Behaviour and Practice
LFA	Local Fund Agent
LGA	Local Government Area
LLIN	Long-lasting Insecticides Net
LMIS	Logistics Management Information System
LQAS	Lot Quality Assurance Sampling
M&E	Monitoring and Evaluation
MAPS	Malaria Action Programme for States
MC	Malaria Consortium
MCLS	Malaria Commodities Logistics System
MDA	Ministry, Department and Agencies
MICS	Multiple Indicator Cluster Survey
MiP	Malaria In Pregnancy
MIS	Malaria Indicator Survey
MOF	Ministry of Finance
MOH	Ministry of Health
MPR	Malaria Program Performance Review
NAFDAC	National Agency for Food and Drug Administration and Control
NCH	National Council on Health
NDHS	Nigeria Demographic and Health Survey
NEMA	National Emergency Management Agency
NetWorks	PMI Implementing Partner
NGO	Non-Governmental Organization
NHIS	National Health Insurance Scheme
NHMIS	National Health Management Information System
NMEP	National Malaria Elimination Programme
NMIS	Nigeria Malaria Indicator Survey
NMSP	National Malaria Strategic Plan
NPHCDA	National Primary Health Care Development Agency
NPI	National Programme on Immunization
OOP	Out-of-Pocket (payment)
OPD	Outpatient Department
OR	Operational Research
PCN	Pharmacy Council of Nigeria
PHC	Primary Health Centre
PIU	Project Implementation Unit
PMI	President's Malaria Initiative (US)
PMV	Patent Medicine Vendors
POA	Plan of Action

PPP	Public Private Partnership
PR	Principal Recipient
PSM	Procurement and Supply Management
QA	Quality Assurance
QC	Quality control
RBM	Roll Back Malaria
RDT	Rapid Diagnostic Test
RMC	Role Model Caregivers
SDA	Service Delivery Area
SDP	Service Delivery Point
SFH	Society for Family Health
SMEP	State Malaria Elimination Programme
SMOH	State Ministry of Health
SOP	Standard Operating Procedure
SP	Sulphadoxine/Pyrimethamine
SPHCDA	State Primary Health Care Development Agency
SR	Sub-Recipient
SuNMaP	Support for Nigeria Malaria Control Programme
SWOT	Strengths, Weaknesses, Opportunities and Threats
TOT	Training-of-Trainers
TWG	Technical Working Group
UN	United Nations
UNICEF	United National Children's Fund
USAID	United States Agency for International Development
USD	US-Dollar
WB	World Bank
WHO	World Health Organization

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## *Executive Summary*

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### **1. Introduction**

Malaria programme reviews are management tools for evidence-based appraisal of the malaria situation and programme performance of a country, with the purpose of strengthening the programme for better results and impact. They evaluate the systems used to (1). deliver interventions, (2). encourage success and (3). propose solutions for bottlenecks and barriers.

The National Malaria Elimination Programme in collaboration with RBM Partnership to End Malaria in Nigeria commissioned this MPR to assess the progress made towards the implementation of the National Malaria Strategic, Plan 2014 – 2020,

The purpose of this review is to ascertain the current malaria epidemiology and response with regards to burden, trends and efforts invested; carry out a revised stratification and create a framework for strategic revision in order to attain the relevant global and national targets in the light of the changing environment, new trends and other developments in malaria control and elimination space globally.

The 2019 Nigeria MPR had five objectives built around the five MPR questions:

- To assess the progress of the NMCP towards the epidemiological and entomological impact targets of the MSP during the period under review and make appropriate recommendations towards enhanced impact
- To review the level of financing of the NMCP during the period under review and make appropriate recommendations towards optimal financing
- To review the capacity of the NMCP 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 define the programming implications of the lessons learned in the implementation of the NMSP, 2014-2020

### **2. Key findings, conclusions and recommendations**

The goal of the National Malaria Strategic Plan, 2014-20 plan was to reduce the malaria burden to pre-elimination levels and bring malaria-related death to zero. While these goals were not achieved, substantial declines in malaria prevalence from 2010 values were achieved (42% in 2010 to 23% in 2018).

The percentage budgetary allocation for health by Governments (Federal and States) as a percentage of overall investments have remained low (average of 5-7%) and consistently below the 15% recommended by African Heads of State during the Abuja Declaration of 2001.

Domestic Financing for Malaria Elimination has declined, and the proportion of the budget allocated to NMEP as a component of the FMoH budget reduced from 0.003% in 2016 to 0.0003% in 2019 representing a 10-fold decrease, widening the funding gap for Malaria Strategic Plan.<sup>1</sup>

The prevailing resource constraints will require innovation and identification of efficiency gains, while limitations in available tools in the tool kit for malaria control and elimination persist.

## Epidemiological and entomological impact

- *Plasmodium falciparum* accounts for 94% - 98% of infections, *Plasmodium malariae* accounts for almost 2% of infections, while *Plasmodium ovale* is rare, accounting for approximately 0.2% of all infections. The mixed infections account for 4%.<sup>2</sup>
- Nigeria accounts for 25% of the global burden of Malaria and reported the highest absolute increases in case incidence estimates for malaria in 2018 compared with the 2017<sup>3</sup>. There however is a significant decrease in Malaria Parasite Prevalence from 2010 values of 42%<sup>4</sup> to 23% in 2018<sup>5</sup>.
- National prevalence figures, however obscure significant and progressive variations across the geopolitical and ecologic zones with the highest prevalence observed in the North-West and Kebbi State has the highest with 52%. The lowest prevalence of 1.8% was recorded in Lagos State<sup>6</sup>.
- Estimates of Malaria deaths globally reduced from about 400 000 in 2010 to about 260 000 in 2018, the most substantial reduction being in Nigeria, from almost 153 000 deaths in 2010 to about 95 000 deaths in 2018<sup>4</sup>.
- Entomological Inoculation Rate (EIR) varies across the transmission season by vector and ecological zone. These differences may contribute to variations in malaria transmission dynamics across regions<sup>7</sup>.
- Findings during this MPR indicate variations in vector behaviour across the various ecological zones. Indoor biting rates were higher than outdoor biting rates in Akwa Ibom, Bauchi, Ebonyi, and Nasarawa states while in Sokoto (Sahel), evidence of outdoor biting rates exceeding indoor biting rates was established. Evidence of significant outdoor biting is emerging in other sentinel sites<sup>8</sup>.

## Vector control

### Key Issues

- LLINs were the primary vector control intervention with distributions through mass campaigns, and through routine platforms to pregnant women and children under the age of 5 years in ANC facilities and during immunizations, respectively. Indoor residual spraying (IRS) has been implemented in a few local governments in a few targeted states as pilot projects<sup>9</sup> mainly

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<sup>1</sup> National Malaria Gap Analysis NMCP

<sup>2</sup> NMEP 2019

<sup>3</sup> World Malaria Report, 2019

<sup>4</sup> Malaria Indicator Survey, 2010

<sup>5</sup> National Demographic and Health Survey, 2018

<sup>6</sup> National Demographic and Health Survey, 2018

<sup>7</sup>. An average EIR of 147.7 infective bites/person/night for *Anopheles coluzzii* was found in the Guinea Savannah and 137.4 infective bites/person/night was recorded in the mangrove swamp, but these have varied over time. The highest numbers of infective bites indoors and outdoors were from *Anopheles coluzzii* and *Anopheles arabiensis* respectively

<sup>8</sup> NMEP reports

<sup>9</sup> Pilot projects implemented in Nassarawa, Anambra, Lagos, Jigawa, Rivers and Bauchi states



with donor support. These interventions have been complimented with limited larval source management.

- Within the period covered by this MPR, a total of 127.9 million LLINs were reported to have been distributed through 45 campaigns in 32 states. In addition, 16.3 million LLINs were distributed through the routine system. LLINs durability monitoring shows an estimated median of 5.3 years in Zamfara and 3.2 years in Oyo State, the difference attributable to the difference in net use environment and net handling<sup>10</sup>.
- Funding for LLINs distribution was largely donor-driven with very limited Federal and State government contribution. States without donor support have not been able to conduct mass LLIN distribution in the past seven years.
- The proportion of households with at least one ITN for every two persons<sup>11</sup> rose from 22% in 2013 to 30% in 2018<sup>12</sup>. The national strategic target of 80% ownership and use of ITNs for the period under review was not achieved.
- It is noteworthy that the proportion of pregnant women and children under five sleeping under ITN increased remarkably during the period under review. In 2018, 58% of pregnant women slept under ITN compared to 16% in 2013, while 52% of children under 5 slept under ITN compared to 17% in 2013.
- While the significant disparity in reported LLIN coverage exists between the states, it is evident that the problem is not predominantly a problem of use, but adequate coverage. Except for some of the northern states, adequate coverage is indeed the main issue that needs to be addressed.
- There is some skepticism expressed among various stakeholders as to the effectiveness of ITN in the context of malaria elimination in Nigeria. This includes the efficacy, acceptability and use.
- Programmatic deployment of Indoor Residual Spraying (IRS) and Larva Source Management (LSM) were key vector management priorities for scale-up in the MSP; they, however, remained mostly unfunded and unimplemented beyond isolated pilots during the period under review. The determination of the measure of the effectiveness of LSM within these pilot studies was challenging to establish due to the very weak evaluation of the projects. Another area of concern is on the accurate reporting of coverage during the implementation of IRS and LSM, which need to be based on the targeted population/house structures.
- Entomological surveillance – including monitoring of insecticide resistance has been undertaken extensively by both NMEP and partners with routine collection and reporting of the entomological data from representative sentinel sites<sup>13</sup>. There has been, however, minimum evidence that such data is routinely being used to guide current interventions.

### *Recommendations*

- Ensuring programmatic coverage and use is an essential factor to achieve the desired effectiveness of any vector control intervention. Resources to ensure adequate and timely coverage with appropriate vector control intervention should be sourced.
- The research community to urgently generate evidence (including exploring the use factors) to guide the deployment and uptake of appropriate intervention or mix of interventions as part of Integrated Vector Management.

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<sup>10</sup> Source NMCP reports

<sup>11</sup> Indicator "least one ITN for every two persons" a proxy for sufficient nets in a household

<sup>12</sup> National Demographic and Health Surveys

<sup>13</sup>. Context described not inclusive of research settings

- Strengthen Social, behavioural Change Communication (SBCC) associated with vector control interventions, tailored to the local context and informed by proper formative research to improve community participation and ownership.
- Strengthen entomological surveillance: that routine collection and reporting of the entomological data from representative sentinel sites to be used for updating species composition; biting preferences and biting rates; sporozoite rates where this is feasible; and insecticide resistance status.
- Nigeria to consider the use of novel technology solutions and implementation research to improve efficiency in programme delivery

## **Diagnosis and Treatment**

### *Key Issues*

- The National Guidelines for Diagnosis and Treatment of Malaria was updated in 2015. The main changes were an emphasis on the definitive diagnosis of malaria with either microscopy or RDT before treatment and an update on the treatment of severe malaria to include artesunate in line with WHO recommendations<sup>14</sup>.
- Diagnostics testing with either microscopy or RDT from both public and private health facilities was 14% in 2018, which was significantly lower than the targeted > than 70%.
- The current recommended treatment (Artemisinin-based Combination Treatments-ACTs) remain efficacious in the treatment of uncomplicated malaria.
- Access to ACTs has improved significantly to 52% (from 18% in 2013), achievements; however, progress fell short of the strategic plan target of 100% by 2018 through to 2020.
- Recognizing progress made, it is pertinent to note the significant contribution of the private sector in the delivery of care in the country context. While being a broader health system factor, this impact significantly on access and quality of appropriate case management. Significant variations exist in the distribution and quality of care across service delivery categories. Efforts to strengthen regulation through engagement at state and federal levels have been reported in the course of the programme review.
- During the period of the strategic plan, the end of the Affordable Medicine for Malaria initiative which provides quality-assured medicines and a crowd out effect on non-quality assured medication in the private sector, ended<sup>15</sup>. It is unclear how the sudden withdrawal of the initiative may have affected the availability of quality-assured antimalarial medicines in the private sector and its implications on case management.
- There is currently no quality control programme for malaria diagnostics.

### *Recommendations*

- Establish and maintain a network of reference training institutions to support malaria diagnosis capacity-building efforts and support the quality control system.
- The National Guidelines on Diagnosis and Treatment should be reviewed based on the reports of ongoing Therapeutic Efficacy Test.
- Drug efficacy studies should be conducted more routinely, e.g., biennially as recommended by WHO and should be expanded to include molecular analysis of artemisinin-resistant markers

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<sup>14</sup> NMEP

<sup>15</sup> Project end in 2017

- Strengthen and sustain collaboration with NAFDAC on the monitoring of substandard drugs and NAPRID on Therapeutic Efficacy Studies
- Strengthen engagement with health worker registration bodies on providing support to initiatives aimed at Continued Medical Education (CMEs) on appropriate case management

## **Chemoprevention**

### *Key Issues*

- The target of the MSP to achieve 100% uptake of IPTp for pregnant women attending ANC by 2018 through to 2020 was not met. Only 40.4% of pregnant women reported having taken two or more doses of SP in 2018 compared to 14.6% in 2013.
- Some Partners have implemented Seasonal Malaria Chemoprevention in the Sahel region; the need to take same to scale as a complementary prevention strategy should be considered a high priority.

### *Recommendations*

- The NMEP to collaborate with the Family and Reproductive Health (FRH) department to implement health promotion and peer support interventions to enhance early ANC first visits, to improve IPTp uptake among pregnant women, efforts should be made to ensure that all eligible health facilities, provide ANC services to their clients.
- As the country marches towards fully integrating managed care process into our health systems for equitable healthcare access, there is the need for stronger collaboration between NMEP and managed care providers improve access to chemoprevention strategies.
- Improved collaboration between the Department of Family and Reproductive Health (FRH) and NMCP and SMCPs on optimizing the delivery of IPTp through ANC
- Collaboration with SPHDA and NPHCDA on the deployment at scale on community-based malaria chemoprevention such as SMC
- Scale-up of SMC to eligible populations

## **Procurement and Supply Management**

### *Key Issues*

- The public procurement and supply chain management system supporting the management malarial medicines and other malarial products is highly complex, with several interconnected product pipelines with both free drugs and drug procured as part of drug revolving funds.
- Overall public procurement of malaria medicines at state and federal levels appear to have declined within the period under review. The public sector records from LMIS showed discordance in the number of RDT and ACTs supplied; the number of RDT provided appear to be much less than the number of ACTs treatments supplied in 2018 and 2019. Private sector LMIS remains a challenge for the National Malaria Programme.
- Generation and availability of logistics data remain poor, making consumption-based forecasting and pipeline monitoring difficult.
- The MPR noted the non-inclusion of Artesunate Suppository in the Essential Medicine List (EML) as recommended in the National Standard Treatment Guideline (2015) for pre-referral management of severe malaria.

### *Recommendations*

- Governments of Nigeria at Federal and State levels MUST fund procurement and distribution of Malaria medicine and commodities to ensure continuous availability in the logistic pipeline.
- FMOH and SMOH should sustain the strengthening of the collaboration with the LMIS/LMCU work-stream of the National Products Supply Chain Management Program (NPSCMP). All inventory from various Partners should be domiciled with NMEP for easy access.
- FMOH/NMEP should improve the sustain collaboration with NAFDAC to establish systems for Routine SC sampling of Malaria Commodities.
- An appropriate Accountability Framework to track Malaria Commodity Supply Chain Performance should be developed.

### **Advocacy, Communication and Social Mobilization**

#### *Key Issues*

- The 2019 MPR showed discrepancies between ACSM outcome indicators and targets in national plans, results frameworks and surveys; weak monitoring of SBCC activities; inadequate ACSM drivers with limited capacities at the sub-national level and poor follow up on advocacies to track commitments made.
- The observed weakness in the conceptualization and deployment of ACSM activity may have contributed to the failure to achieve related services delivery targets, notably ownership, use or access to malaria prevention and treatment strategies.
- The percentage of children under five years of age seeking treatment the same or next day rose from 4.2% in 2013 to 37.9% in 2018; however, this did not meet the target set in the MSP under review.
- Funding was identified as a significant challenge of strategic communication for Malaria prevention and treatment in the last five years.
- For success to be achieved would require intensified advocacy to sustain political will at the highest levels of Federal and State structures

#### *Recommendations*

- Revise the National Malaria ACSM strategic document and other ACSM strategic documents and manuals based on evidence from the evaluations. The process should be inclusive of stakeholders in a bottom-up process, tailored to the context and felt needs of the target audience. It should cater to the heart of advocates. Strategy/intervention/message design should be about building a deep empathy with the target audience and participatory from the bottom up.
- There is an urgent need for strengthening and broadening of the advocacy elements of the national malaria programme with innovative approaches to engage, sensitize, influence and mobilize various target groups (policymakers, private sector leaders, and community leaders) towards improved ownership of the programme.
- Strengthen the technical capacity of ACSM drivers at state and national levels with necessary skills to respond to their mandate. The ACSM branch should be supported to coordinate, generate, analyze and share data on the impact of SBC activities and systematically build evidence for improved uptake of malaria interventions.

- Use of local context-specific evidence from operational research to design context-specific ACSM activities.
- Recognize that partnership is powerful and leverage or integrate with existing structures/programs at the community levels.
- Establish or strengthen social accountability mechanism to promote citizens' engagement and improve public confidence in Malaria interventions.
- Devote time to the identification, training, and support of community-based health workers. (CHIPS CHEWs VHWs) Community involvement in the selection of frontline workers from the locale increases the likelihood of their acceptability in door-to-door and group education as well as receptivity to their messages

## **Malaria in Emergency Situations**

### *Key Issue*

- Malaria in humanitarian and complex emergencies occupied only little mention in the 2014-2020 strategic plans. Deployments of Malaria interventions in North-East part of Nigeria through other departments and agencies are not visible to the National Programme and are largely unreported.

### *Recommendations*

- NMEP and Partners should develop a concise guideline detailing the implementation of clear malaria prevention and case management strategies in emergencies – including where and how malaria commodities may be obtained. The next MSP should drive the national response
- NMEP and SMEP should work more collaboratively with National Emergency Management Agency (NEMA), the State Emergency Management Agency (SEMA) and other MDAs with responsibility for managing emergencies to put Malaria Prevention and Treatment on the priority lists of these agencies

## **Surveillance, Monitoring & Evaluation and Operations Research (SMEOR)**

### *Key Issues*

- The timeliness and completeness of reporting on DHIS 2.0 platform steadily increased over five years, virtually all the LGAs in the country are currently reporting malaria data. However, data generated from the private sector care providers remains a major challenge.
- Field validation visit to Lagos revealed a high proportion of registered private health facility reporting to HMIS, lessons from the state can drive national strategy for private sector engagement.
- Adoption of mobile technology for data reporting has been slow. Only Lagos and Kaduna States have piloted the use of mobile data capturing device for reporting into the DHIS.
- The National Malaria Operations Research Agenda (NMORA) was developed in 2016 by NMEP in collaboration with development partners, research institutions, the academia and non-governmental organizations; implementation has been slow due to inadequate funding of the malaria research questions. Only 12% (4 out of 33) of the prioritized questions in the NMORA have been addressed between 2014 to 2019 as reported to NMEP

## *Recommendations*

- The FMoH, SMOH and the Malaria Programme should develop strategies of sustained engagement of private health providers, provide tools and strengthen their capacity to report Malaria data into the NHMIS.
- To improve data quality, NMEP and Partners should ensure that the capacities of M&E officers at all levels are commensurate with their tasks and facilitate capacity building of persons with responsibility for data collection, retrieval, analysis and reporting. Prioritize the adoption and adaptation of mobile technology for data reporting in the next MSP.
- Continuous advocacy to Department of Planning Research and Statistics (DHPRS) to expedite action on the roll-out of the revised 2018 NHMIS data capturing tools.
- There is a need to prioritize seed funding for Operation Research in support of calls from to academia of relevant research questions to guide the deployment of strategies and adoption of best practices. The Malaria Research Expert Group must be supported to deliver on its mandates.
- Establish a research Technical Working Group with representation from major research institutes and researchers working in the field of malaria.
- Making malaria data repositories functional through the development of capacities required for the maintenance and the development of malaria bulletins.

## **Programme Management /Implementation Framework**

### *Key Issues*

- NMEP and Partners developed and disseminated the Coordination Framework for Malaria Control in Nigeria in 2009. This Framework provides the general guide for internal and external coordination of RBM Partners. The framework may need to be revised and adapted by sub-national governments with a focus on decision implementation and integration of Malaria interventions into the broader health system
- Although the RBM Partners and the Malaria Technical Working Group provide a strong partnership for the National Malaria Programme, internal coordination of NMEP branches and with the other Departments and Agencies of Government remains a significant challenge in the period under review
- Significant variations in epidemiologic and health system context in respective states require a different approach to capacity strengthening tailored to the setting, using participatory, hands-on approaches; roles and institutional capacities within states are critical for success.
- Private sector engagement across different domains of the Malaria Programme is weak. The PPP framework needs to be reviewed to allow the NMEP leverage on the strength of the private sector for services and financing.
- Critical gaps in implementation framework are fit for purpose engagement mechanism with private sector stakeholders and accountability elements at executive and legislative levels
- The MPR noted consistent improvement in Planning at Federal and State levels, plan implementation is, however, deficient year in year out at both levels. Efficiency in resource allocation and use are also significant issues of activities implementation.

## *Recommendations*

- Review the current Coordination Framework to reflect the emerging realities of broadened Malaria Elimination Stakeholders and to improve sub-national level coordination arrangement that will support Universal Health Coverage
- To address local variations in the mix of capacity needs at the sub-national level, building the capacity of states to adapt and implement national strategies to their context informed by best practice.
- Review the PPP Framework and operationalize an effective PPP coordination arrangement that will leverage on all domains of the private sector strengths.
- A structured KM framework within NMP that would harness lessons identified in resolving implementation bottlenecks as a resource to implementers (National could shift its focus to the harmonization of efforts, technical review and bottleneck resolution).

## **3. Programming implications of the lessons learned in the implementation of the MSP**

### **Lessons Learnt**

Substantial domestic financing and adequate capacity to implement planned activities are central to achievement of the goal and the strategic objectives of the MSP. Significant donor funding as observed in the period under review was helpful, it was however not enough to achieve any of the targets set across all the outcome level objectives of the NMSP, 2014 2020.

- The huge numbers of LLINs distributed in supported states did not translate to increase use in some states across Nigeria. Additional efforts are required to improve net use culture.
- The low coverage of IPTp is attributable to poor access to ANC services and limited engagement of poor pregnant women with RMNCAH service. The Malaria control Programme should engage with the Family Health Department, NPHCDA and other entities with mandate for ANC services to leverage on their platforms.
- Providers' behavior on RDT testing and rational use of ACT remains a big concern looking at the data generated from the facilities despite declining prevalence of Malaria. The need to ensure adherence to treatment guidelines at the facility level will improve efficient deployment of Malaria medicines.
- There was inadequate engagement and monitoring of Malaria treatment by the private care providers. There is need for a private sector implementation plan to provide guidance on training and mentorship, quality assurance for antimalarials and diagnostics, and monitoring of quality of care provided in the private sector.
- Decentralization of PSM functions to sub-national levels through establishment and operationalisation of State Logistics Management Coordinating Unit (LMCUs improved availability of Malaria products at the facility level.
- Despite the steady increase in the completeness of reporting over five years with virtually all the LGAs in the country currently reporting malaria data through the DHIS 2.0, data quality and reporting from the private sector remain a major challenge. This makes HMIS information difficult to use as national data.

- There is need to strengthen advocacy at the federal and state levels for policy, resource mobilisation, and increased use of interventions.
- Many of the strategic priorities of NMEP require a strong health system and integration into the activities of other departments and agencies who work in silos. Achieving targets set in MSP became a major challenge,
- Mobilising private sector resources requires higher level commitment and a well-coordinated strategy. Mandate allocation and expectation management should be a priority going forward.

### **Future Strategic Direction**

- Increase domestic financing of malaria programme activities at federal and state levels, with investments into areas that improve system resilience and promote sustainability of gains achieved.
- Strengthen evidence base for operational and strategic decision making; The evidence base should drive strategic direction in terms of strategy mix of strategies especially at sub-national levels
- Significant capacity strengthening of the NMEP, along with defining structures and pathways for better internal coordination with relevant departments or agencies of the FMOH.
- Leveraging on domestic homegrown flagship initiatives aimed at improving universal access to care such as the Basic Healthcare Provision Fund (BHCPF) through enhanced collaboration with NPHCDA/SPHCDA
- Urgent need to further strengthening of existing platforms for Federal-State interface and collaboration. The efficient functioning of these platforms would be especially critical to ensure improved leverage of capacities of SMOH and SMEPs.
- GoN Strategic catalytic investments to provide active participation of the private sector participation such as deliberate country investment and regulatory concessions toward the development of local institutional production capacities and transfer of technology
- To address local variations in the mix of capacity needs at the sub-national level, a review of the current structure and function of the NMEP at the federal levels is needed to ensure a progressive shift in focus to building capacity of states to adapt and implement national strategies to their context informed by best practice.
- Development of a holistic national TA plan incorporating all partner TA support rather than partner-specific plans.
- Prioritizing collaboration with the research community to urgently generate evidence (including exploring the use factors) to guide the deployment and uptake of appropriate intervention or mix of interventions as part of Integrated Vector Management in the immediate term and all subsequent operational research needs of the programme.



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## Chapter 1: Introduction

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### 1.1 Background

#### 1.1.1 Geography, climate and malaria transmission

Nigeria, the most populated country in Africa lies between latitudes 4° and 14°N and longitudes 2° and 15°E on the West coast of the continent with a total surface area of 923,708 sq. km. 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.

Nigeria has various ecological zones with vegetation changing 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. In the northern part of the country, transmission is highly intense during the short-wet season as compared with the low transmission during the long dry season. In the central and southern parts of the country, transmission is intense, stable and uniform throughout the year.

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.

#### 1.1.2 Demography

With a population of 203,081,567<sup>16</sup>, Nigeria is inhabited by 250 ethnic groups<sup>17</sup> of which the three largest are the Hausa, Igbo, and Yoruba; these ethnic groups speak over 500 different native languages and are identified with a wide variety of cultures.

Nigeria has a predominantly young population with 46% of individuals in the 0-14 dependency age group, while 4% are in the 65 and above dependency age group<sup>18</sup>. Children age 0-17 form the bulk of the population 52%<sup>3</sup>. The broad base of the population pyramid shows that Nigeria's population is typical of countries with a low life expectancy and high fertility rates. The average household size in Nigeria is **4.7 persons**. Urban households are slightly smaller than rural households (4.3 persons versus 5.0 persons). Majority of the households in Nigeria are headed by men (82%)<sup>3</sup>.

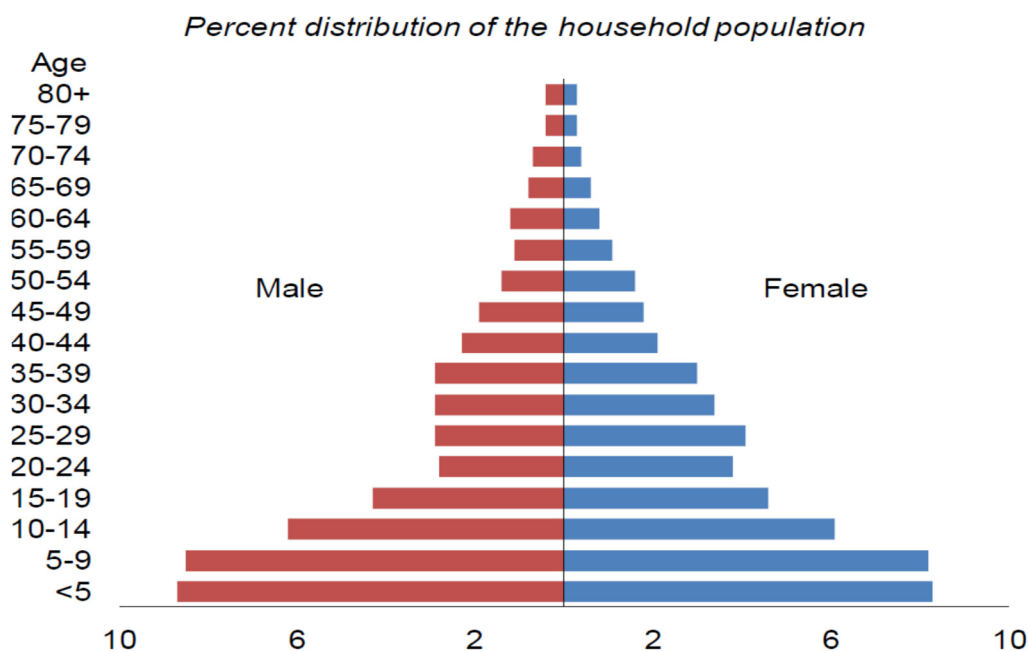
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<sup>16</sup> World Population Review, November, 2019: <http://worldpopulationreview.com/countries/nigeria-population/>

<sup>17</sup> "Nigeria Fact Sheet" (PDF). United States Embassy in Nigeria. Retrieved 23 September 2018.

<sup>18</sup> NDHS, 2018

**Figure 1: Population distribution by age group and sex (NDHS, 2018)**



## 1.2 The national health system and the national malaria control programme

### 1.2.1 Organization of the health system

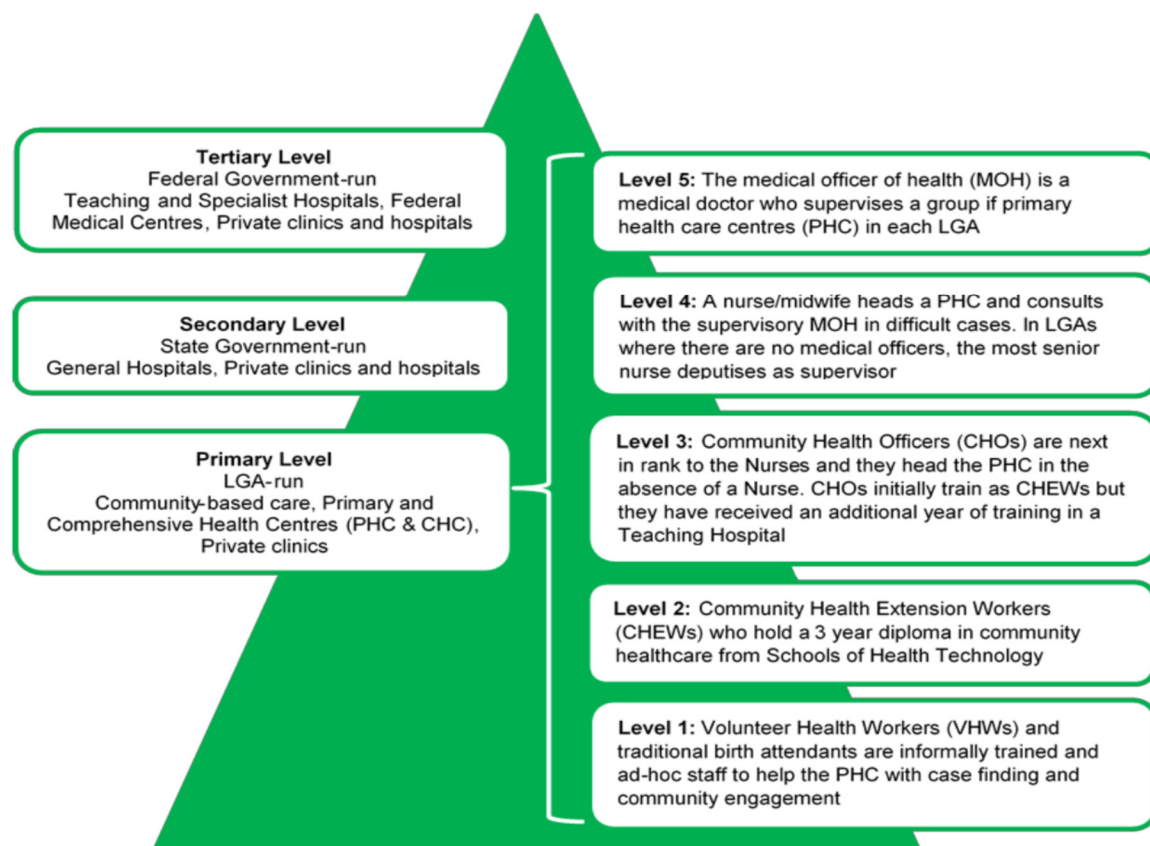
Healthcare provision according to the Nigerian Constitution, 1999 (as amended) is a concurrent responsibility of the three tiers of government. The Federal Government is responsible for tertiary health care and also formulates health policies through the Federal Ministry of Health. This level provides specialized services through the Teaching Hospitals, Federal Medical Centres, Specialist Hospitals and Medical Research Institutes.

The State Governments provide secondary health care through the state General Hospitals. The Local Governments Areas (LGAs) are responsible for primary health care services. Both the state and LGAs receive resources from the federation account, a percentage of which is expected to be dedicated to health.

Federal and State Ministries of Health have agencies under their jurisdiction such as the National/State Primary Health Care Development Agency (NPHCDA & SPHCDA), National and State Health Insurance Agencies, National Agency for Food, Drug Administration and Control (NAFDAC), State Health Management Boards, etc., 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.

**Figure 2: The Nigerian Health System<sup>19</sup>**



With full fiscal decentralisation, each State Governor, the Parliament and State level ministries that echo the Federal-level set-up determine its own budget and fund same despite being dependent on the consolidated income transfers from the Federation account. It is therefore advisable that Nigeria is treated like the Federal Government and 36 different entities each with their own peculiar context. Donors and Implementing Partners working in Nigeria therefore have to work not only at the Federal level but also with the relevant States if they want to provide impactful development support.

Private sector accounts for 60% of the health care services, this includes not-for-profit services provided by faith-based and non-governmental organizations; the private-for-profit providers, the traditional medicine providers, patent and proprietary medicine vendors (PPMVs), drug shops and complementary and alternative health practitioners

### 1.2.2 National Malaria Elimination Programme (NMEP)

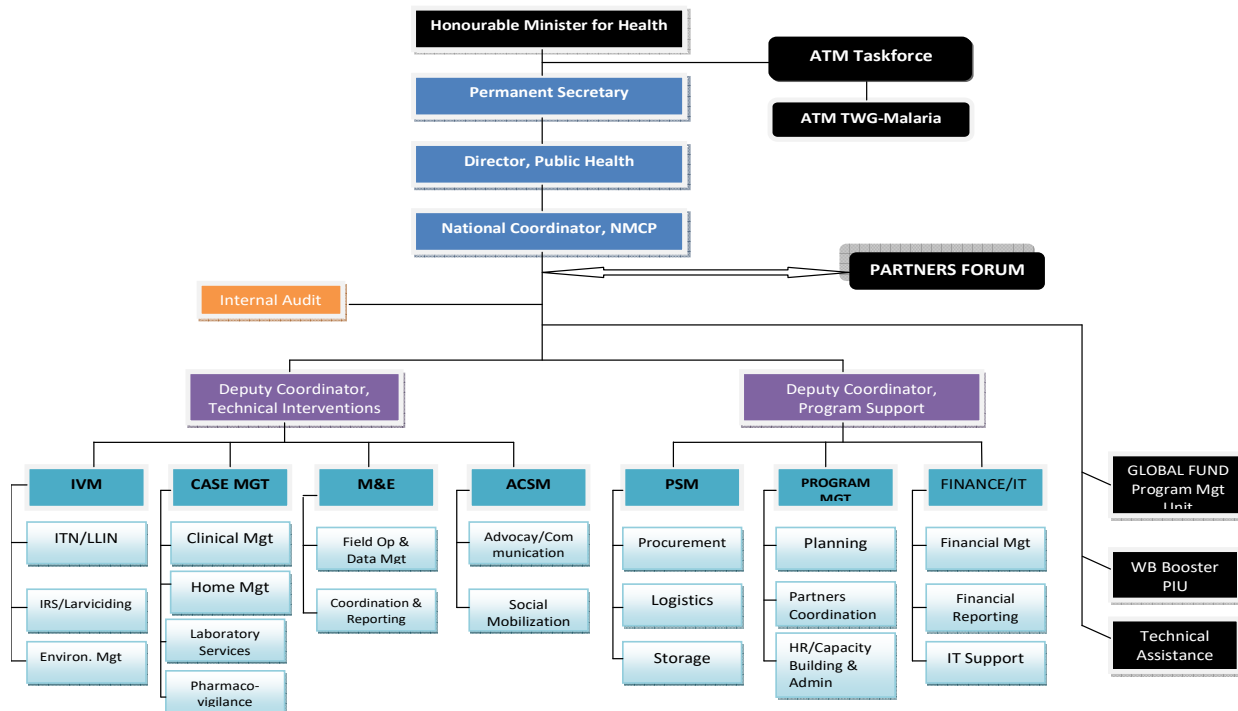
The NMEP is a division of the Department of Public Health of the Federal Ministry of Health responsible for policy formulation, coordination and regulatory roles on all matters that concern Malaria control and elimination in Nigeria. NMEP also serves as a significant fund holder and an

<sup>19</sup> The Second National Strategic Health Development Plan (NSHDP II)

implementing agency. With the Partners involved in malaria control, form the country RBM partnership.

NMEP has seven branches representing the programmes core task units, they include: Programme Management; Integrated Vector Management; Case Management; Procurement and Supply Management; Monitoring and Evaluation; Advocacy, Communication, and Social Mobilization and Finance. See Organogram below:

**Figure 3: Organogram of NMEP**



NMEP envisions a malaria free Nigeria and its goal is to see to the reduction of malaria burden to pre-elimination levels and bring malaria-related mortality to zero. The NMEP’s pursuit of universal access to prompt malaria diagnosis, effective treatment and universal coverage with preventive interventions made it to develop a very ambitious plan in 2014 targeting Elimination. At the sub-national level, the State Malaria Elimination Programme, responsible for all Malaria Control activities in the State is a unit under the State Department of Public Health and it consists of officers deployed by State Ministry of Health to occupy key positions within the programme. A typical state program consists of the following key officers: The State Program Manager, Deputy Program Manager/Case Management Officer, M&E /Data Management Officer, Procurement and Logistics Officer, Integrated Vector Management Officer and the ACSM Officer.

The Local Government Malaria Elimination efforts is coordinated by the Malaria Focal Persons in all LGAs across the country, the Malaria Focal Person works under the supervision of the Medical Officer of Health or the PHC Coordinator.

### 1.2.3 Malaria Situation in Nigeria

Malaria is endemic in Nigeria with 97% of the population living in areas of high malaria risk and an estimated 3% living in malaria free highlands. Nigeria accounts for 25% of the malarial disease burden globally<sup>20</sup>.

Nigeria is one of the two countries (the other being Ghana) that reported the highest absolute increases (about 6%) in cases of malaria in 2018 compared with 2017. The burden in 2018 was similar to that of 2017 in all other countries, apart from in Uganda and India, where there were reported reductions of 1.5 and 2.6 million malaria cases, respectively, in 2018 compared with 2017. However, Nigeria recorded the largest reduction in Malaria deaths from about 400 000 in 2010 to about 260 000 in 2018<sup>4</sup>,

Malaria-related deaths account for up to 11 % of maternal mortality, 25% of infant mortality and 30 % of under-5 mortality. The disease overburdens the already-weakened health system by contributing up to 60% of outpatient visits and 30% of hospital admissions

In 2018, Malaria Parasite Prevalence amongst children under 5 was 36.2% by RDT and 22.6% by microscopy<sup>21</sup>. The prevalence varies greatly from 57.1% (by RDT) in children of the lowest wealth quantile to 10.7% (by RDT) in children of the highest wealth quantile<sup>5</sup>. There was also a wide range in prevalence based on the mothers' education status.

Parasite prevalence was higher in children under 5 living in rural areas (47.2% by RDT) compared to those of urban area with a prevalence of 22.3% by RDT. Similarly, region difference does exist with prevalence of Malaria in children in North-West (33.8%) region more than double the prevalent in South-South (15.6%) region, (NDHS, 2018)

### 1.2.4 The National Malaria Strategic Plan

Nigeria developed an ambitious six-year National Strategic Malaria Strategic Plan, 2014 – 2020, targeting Malaria Elimination. The Strategic Plan expressed the Federal Government's commitment in moving from malaria control to malaria elimination as encapsulated in the vision towards a **Malaria free Nation**<sup>22</sup>.

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

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

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

#### Objectives

The Objectives of the National Malaria Elimination Programme for NMSP, 2014-2020 are to ensure that;

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

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<sup>20</sup> World Malaria Report, 2019

<sup>21</sup> NDHS, 2018

<sup>22</sup> NMSP, 2014 -2020

- To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020
- To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020
- 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
- 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.
- 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
- 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

### 1.3 The MPR

#### 1.3.1 Definition

Malaria programme reviews are management tools for evidence-based appraisal of the malaria situation and programme performance of a country, with the purpose of strengthening the programme for better results and impact. They evaluate the systems used to:

- deliver interventions.
- encourage success and
- propose solutions for bottlenecks and barriers.

They assist countries and partners in setting or resetting the malaria agenda in the medium- or short-term.

#### 1.3.2 Justification

The National Malaria Elimination Programme in collaboration with RBM Partnership to End Malaria in Nigeria commissioned this MPR to assess the progress made towards the implementation of the National Malaria Strategic, Plan 2014 – 2020,

The purpose of this review is to ascertain the current malaria epidemiology and response with regards to burden, trends and efforts invested; carry out a revised stratification and create a framework for strategic revision in order to attain the relevant global and national targets in the light of the changing environment, new trends and other developments in malaria control and elimination space globally.

#### 1.3.3 Objectives of MPR

The 2019 Nigeria MPR had five objectives built around the five MPR questions:

- To assess the progress of the NMCP towards the epidemiological and entomological impact targets of the MSP during the period under review and make appropriate recommendations towards enhanced impact
- To review the level of financing of the NMCP during the period under review and make appropriate recommendations towards optimal financing

- To review the capacity of the NMCP 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 define the programming implications of the lessons learned in the implementation of the NMSP, 2014-2020

### 1.3.4 Methodology of the MPR

The National Malaria Elimination Programme in collaboration with Roll Back Malaria Partners in Nigeria kick-started the MPR, 2019 with an Inception meeting on Monday, 18th November, 2019. Planning for the MPR had started weeks before the Inception meeting with the support of the MPR Advisory Committee

#### **Phase One: Planning and Preparation**

The first phase of planning started in ....2019. During this phase, there were consultation meetings with Who and other Malaria stakeholders to define the need for the review and to develop terms of references (TORs). Different structures of the MPR were put in place, these include: i) Nomination of the MPR Coordinator; ii) Selection of the members of the secretariat iii) Recruitment of the thematic area consultants and the lead consultant; iv) Constitution of the MPR Advisory Committee. The relevant sub-committees of the Malaria TWG were also mobilized to provide the needed support for the various technical branches of NMEP. Activity Plans were developed and budgets were shared for funding support from the RBM Partners. Mandatory request for technical assistance was sent to WHO – AFRO.

#### **Phase Two: Thematic Desk Reviews**

The second phase started on 19<sup>th</sup> November, 2019 through to the Review Workshop at Kini Resort Hotel in Akwanga, Nasarawa State between 3<sup>rd</sup> – 7<sup>th</sup> December, 2019. This phase involved presentation of the draft thematic reports, group works with the sub-committee of the TWG Malaria, collation of inputs from Implementing Partners present at the workshop and revision of the generic tools for the field review. Thematic review reports were shared with the MPR secretariat and the Lead Consultant for further review, feedbacks and writing the MPR report. This desk review focused on the progress made on the outcome level indicators and targets between 2014 and until recently and the performance of the different technical areas in term of access, coverage, quality, and use of different strategic interventions. It allowed the program to identify best practices, recognize problems, determine the priority of those problems and propose appropriate recommendations. This phase also addresses the opportunities and weaknesses of the Malaria Control programme at the federal and the sub-national level.

#### **Phase Three: Field Review**

The third phase of Nigeria MPR which is essentially field visit and external validation commenced on Sunday, 12<sup>th</sup> January, 2020 with the arrival of the External Review Team from WHO-AFRO. The preparatory orientation training for the in-country support team members for the field visit held on 13<sup>th</sup> and 14<sup>th</sup> January, 2020.

The external review team met with diverse health and malaria stakeholders, reviewed relevant documents shared by the MPR secretariat, facilitated several technical meetings and workshops,

led the central and the state field validation teams and supported the development of the MPR Aide Memoire.

The External Review Team and NMEP presented the revised MPR report and the Aide-Memoire to the Honourable Minister of Health on Friday, 24<sup>th</sup> January, 2020.

#### **Phase 4: Follow-Up**

The aims of this phase include dissemination of findings and recommendations of the MPR and implementation of its recommendations. It is hoped that following the approval of the Hon. Minister for Health, the recommendations of the MPR will guide the development of the new Nigeria Malaria Strategic Plan and the Malaria M&E Plan.

#### **1.4 Outline of the document**

The Chapters and Sections that follow include key findings in terms of progress made in the thematic areas and the strategic priorities of NMSP, key achievements, challenges, conclusions, and recommendations.



## Chapter 2: Assessment of Progress towards Epidemiological and Entomological Impact

### 2.1 Findings

#### 2.1.1 Progress towards epidemiological impact of the NMSP

##### NMSP Goal level indicators and targets

The goal of NMSP 2014-2020 was to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero as measured by the impact indicators and targets shown in Table 1 below. A critical review of the indicators revealed that they were appropriately phrased with the exception of the “*All cause under-5 mortality rate per 1,000 populations*” which is not an indicator measured by any of the national surveys in Nigeria. The denominator for under-5 mortality rate in all relevant surveys is “number of *live births*”.

Using population as the denominator will not allow for consistency in reporting because the survey reports that provide the value of the indicator use “*live birth*” as the denominator for under-5 mortality rate. In addition, the baseline value quoted for the indicator for under-5 mortality rate was from 2008 NDHS report instead of the more recent 2013 NDHS report. This was probably because the 2013 NDHS report was not readily at the time of development of the MSP in late 2013.

Furthermore, the information to trend the first three goal level indicators are sourced from national surveys while the last two indicators are measured by the analysis of routine data from DHIS 2.0 platform. The baseline values of all the impact indicators are indicated in table 1 below, however, the milestone targets appear to be overambitious.

**Table 1: MSP impact indicators and targets**

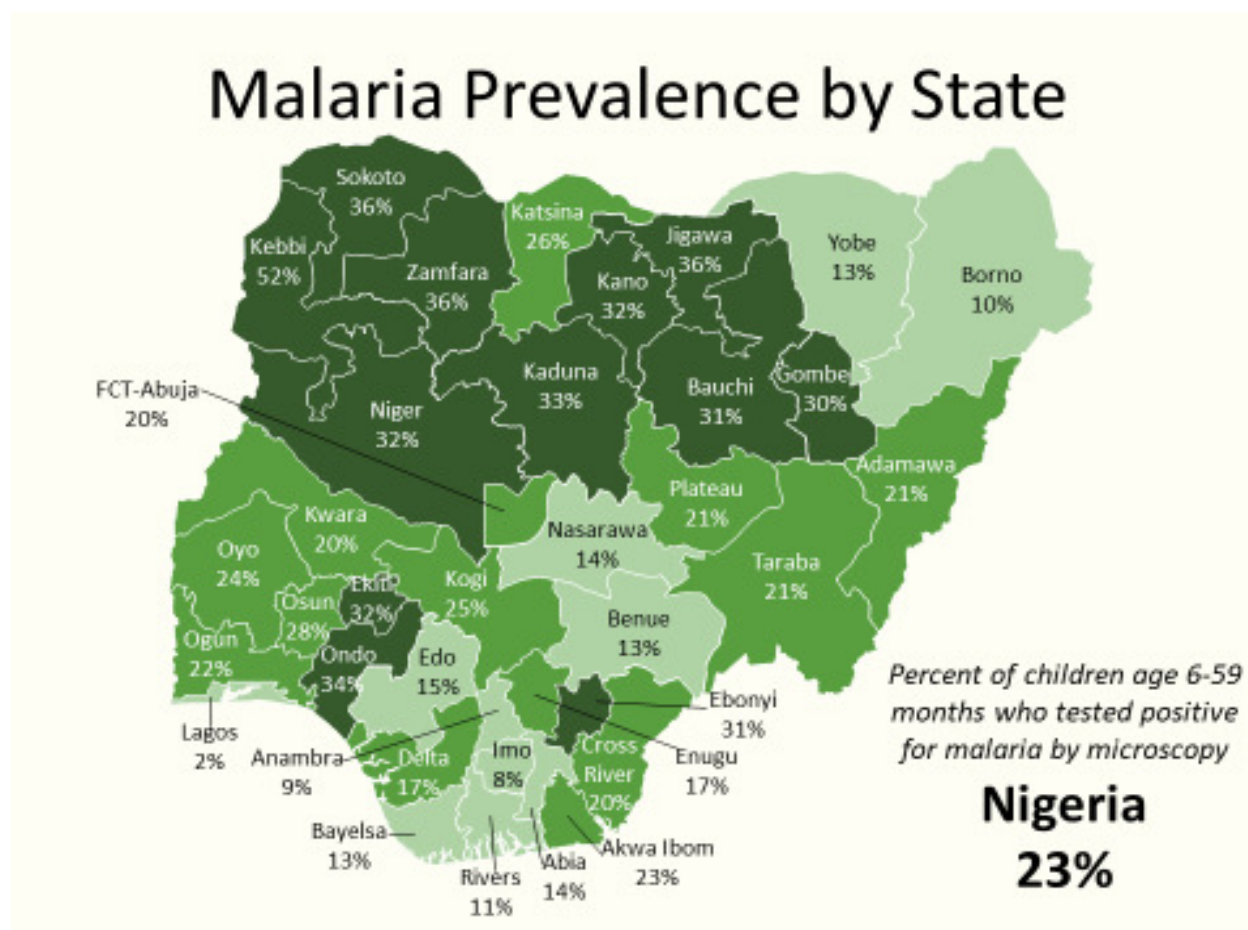
Impact indicator	Source	Baseline value	Target						
			2014	2015	2016	2017	2018	2019	2020
Malaria Parasite Prevalence in children U5 (Slide)	MIS, 2010	42% (2010) <sup>b</sup>	34.2%	26.4%	18.6%	10.8%	3.0%	2.0%	<1.0%
% of children aged 6–59 months with Hb measurement <8g/dl)	MIS, 2010	13% (2010) <sup>b</sup>	11.0%	9.0%	7.0%	5.0%	3.0%	3%	3%
Malaria test (slide/RDT) positivity rate	HMIS, 2010	60% (2010) <sup>c</sup>	40%	30%	20%	10%	5%	<5%	<5%
All cause under-5 mortality rate per 1000 population	NDHS, 2008	157 (2008) <sup>a</sup>	150	130	115	100	90	80	70
% Deaths due to Malaria	HMIS, 2010	31% (2010) <sup>c</sup>	25%	20%	15%	10%	5%	3%	0%

Hb = Haemoglobin; a = NDHS; b = MIS; c = HMIS

### **Malaria Parasite Prevalence in under-5 children**

This indicator decreased from 42% in 2010 through 27% in 2015 to 23% in 2018. The NDHS, 2018 revealed that Malaria Parasite Prevalence in under-5 children varied across the geopolitical zones with the highest prevalence observed in the North-West, followed by North-Central region. Kebbi State was the only state with prevalence of 52%, while Sokoto, Zamfara, Kaduna, Jigawa and Ondo States had prevalence of between 33 – 42%. *The lowest prevalence was recorded in Lagos State (1.8%) despite being the State with the lowest LLINs use amongst this age group in Nigeria.* Parasite prevalence of below 12% was recorded in Anambra, Imo, Rivers and Borno State, please see figure 4.

**Figure 4: Distribution of the prevalence of Malaria among under 5 children (source: NDHS, 2018).**

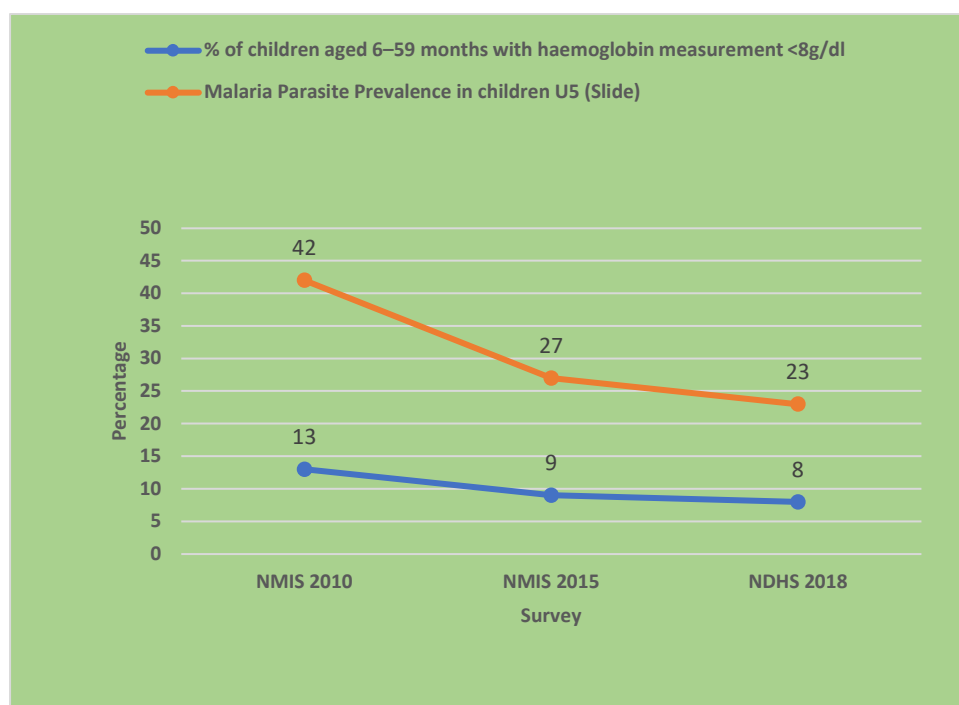


### **The % of children aged 6–59 months with haemoglobin measurement <8g/dl):**

Similar to the Malaria Parasite Prevalence in under-5 children, this indicator decreased from 13% in 2010 through to 9% in 2015 to 8% in 2018 (please see figure 4 below). This indicator is invariably peculiar to Malaria programme because the cut-off of 8 g/dl is often used to classify malaria-related anaemia. Even though the values of these two morbidity indicators decreased over a period of eight years, they decreased at varying degrees.

While the Malaria Parasite Prevalence in under-5 children decreased by 45.2% over eight years, the percentage of children aged 6–59 months with haemoglobin measurement <8g/dl decreased over the same period by 38.5%. This difference is understandable because the former is a more proximal indicator - reduction in Malaria Parasite Prevalence precedes reduction in malaria-related anaemia.

**Figure 5: Trend in Malaria Parasite Prevalence and Haemoglobin Measurement <8g/dl in U-5**



### State Level Epidemiological Impact Indicators across states

Although, the NMSP, 2014 – 2020 provided only national averages across all indicators and milestone targets in the Performance Framework, the MPR observed significant variation in epidemiological indices across states in Nigeria. Further analysis of the variables will help the Federal and State Malaria stakeholders better programme based on state level realities rather than the one-size-fit-all approach. It is also expected that the availability of sub-national level information will define intervention mixes across states and where possible the geo-political zones.

Table 2 below shows the percentage reduction or increase (- red) in the Prevalence of Malaria amongst children under five and the haemoglobin measurements in clusters of States across the go-political regions of Nigeria.

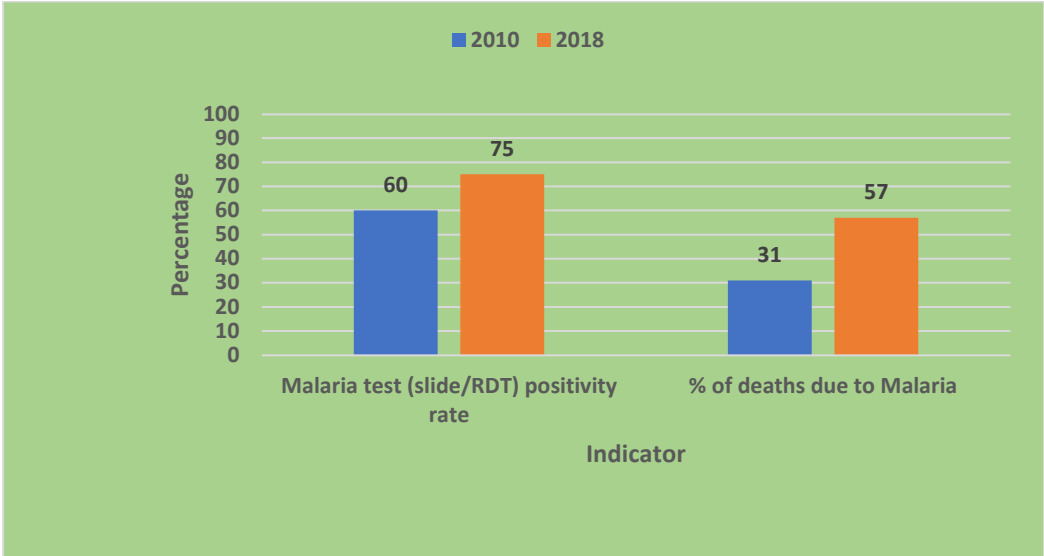
**Table 2: The State level changes in Malaria Prevalence and Heamoglobin measurement between 2015 and 2018.**

State	U5MR*	Prevalence of Malaria (%)			Haemoglobin < 8g/dl (%)		
	NDHS 2018	NMIS 2015	NDHS 2018	Reduction	NMIS 2015	NDHS 2018	Reduction
<i>National average</i>	132	27.4	22.6	4.8	9.3	7.6	1.7
<b>North Central</b>							
FCT-Abuja	75	20.2	20.1	0.1	9.0	5.1	3.9
Benue	59	44.5	12.7	31.8	1.6	1.3	0.3
Kogi	148	5.4	25.4	-20	5.1	6.6	-1.5
Kwara	74	26.4	20.2	6.2	5.4	7.1	-1.7
Nasarawa	120	35.9	13.6	22.3	6.5	11.2	-4.7
Niger	98	33.5	31.6	1.9	0.6	5.6	-5
Plateau	106	35.8	21.4	14.4	10.2	7.3	2.9
<b>North East</b>							
Adamawa	104	34.7	21.1	13.6	11.4	6.7	4.7
Bauchi	147	19.6	30.6	-11	6.9	13.4	-6.5
Borno	86	0.0	10.0	-10	1.6†	6.6	-5
Gombe	189	28.6	30.3	-1.7	5.6	12.0	-6.4
Taraba	129	42.6	20.8	21.8	8.2	10.1	-1.9
Yobe	152	18.9	13.3	5.6	5.2	4.0	1.2
<b>North West</b>							
Jigawa	213	27.9	35.7	-7.8	17.1	2.8	14.3
Kaduna	187	36.7	33.0	3.7	14.3	3.4	10.9
Kano	164	27.7	32.4	-4.7	25.8	12.6	13.2
Katsina	188	27.8	25.5	2.3	16.1	12.1	4
Kebbi	252	63.6	52.2	11.4	3.7	13.1	-9.4
Sokoto	197	46.6	36.4	10.2	19.4	12.5	6.9
Zamfara	130	62.6	35.7	26.9	21.4	24.0	-2.6
<b>South East</b>							
Abia	86	8.2	13.5	-5.3	1.4	2.8	-1.4
Anambra	58	10.2	8.8	1.4	6.0	5.4	0.6
Ebonyi	91	30.0	30.5	-0.5	7.9	9.5	-1.6
Enugu	61	10.5	17.4	-6.9	4.7	6.0	-1.3
Imo	87	5.1	7.8	-2.7	4.4	3.1	1.3
<b>South South</b>							
Akwa Ibom	98	22.8	23.2	-0.4	4.1	13.5	-9.4
Bayelsa	31	31.4	12.5	18.9	5.5	8.4	-2.9
Cross River	80	26.1	19.5	6.6	7.2	4.5	2.7
Delta	53	20.4	17.0	3.4	4.6	7.0	-2.4
Edo	71	18.6	14.7	3.9	8.2	2.0	6.2
Rivers	79	7.3	11.2	-3.9	5.2	4.8	0.4
<b>South West</b>							
Ekiti	95	28.8	32.3	-3.5	6.5	3.3	3.2
Lagos	59	0.0	1.8	-1.8	2.1	1.4	0.7
Ogun	30	14.7	21.6	-6.9	3.9	4.6	-0.7
Ondo	79	21.3	33.5	-12.2	0.0	10.4	-10.4
Osun	70	33.4	27.7	5.7	10.5	5.4	5.1
Oyo	64	19.2	23.8	-4.6	6.4	6.9	-0.5

**The Malaria test (slide/RDT) positivity rate**

The current value of this indicator, with data sources being the DHIS 2.0, is higher than the baseline value, please see figure 6 below. This unexpected trend of Test Positivity Rate in the face of declining prevalence in the general population can be attributed to the common observation by several implementers on providers behaviour in justifying ACT use by the number of 'positive tests' conducted. Reporting into the DHIS 2.0 platform is largely from the public primary care facilities supported by partners that demand justification for the number of ACT use based on the policy of 'Test' before Treatment.

**Figure 6: Trend in Malaria Test (slide/RDT) positivity rate and percentage deaths due to Malaria (Data Source: DHIS 2.0).**

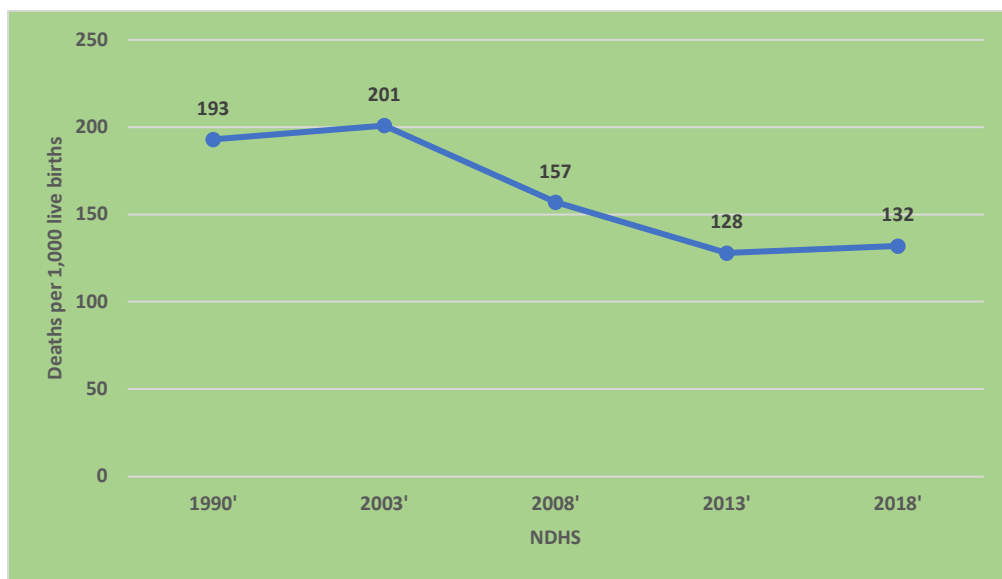


**All cause under-5 mortality rate**

The all cause under-5 mortality rate increased from 128 deaths per 1,000 live births in 2013 (NDHS,2013) to 132 deaths per 1,000 live births 2018 (NDHS, 2018) after it had declined from 201 deaths per 1,000 live births in 2003 to 157 deaths per 1,000 live births in 2008, please see figure 7 below.

It may be difficult to attribute the reverse in the trend to Malaria because many factors, both within and outside the health sector including the timing of the DHS may affect the outcome of this indicator.

**Figure 7: Trend of all cause under 5 mortality**

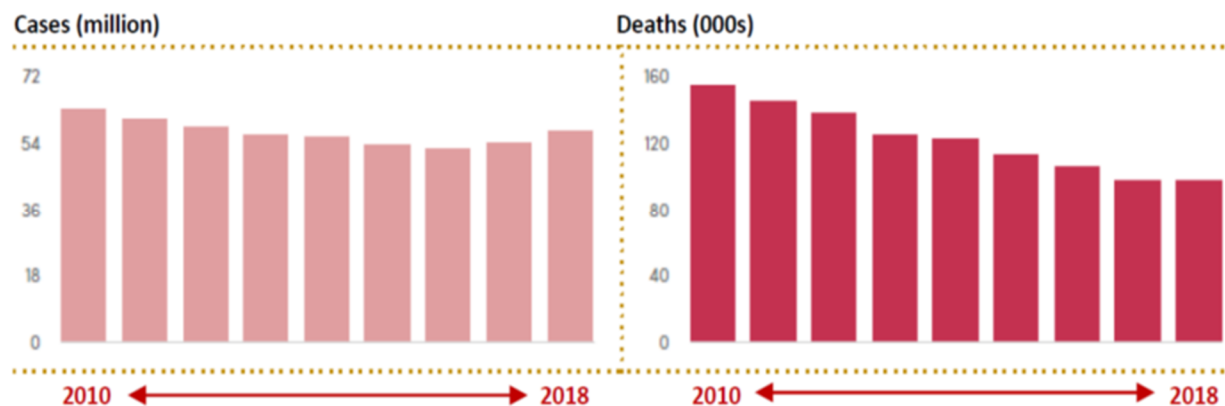


**% Deaths due to Malaria**

Similar to the Malaria test (slide/RDT) positivity rate, the percentage deaths due to malaria is also currently higher than the baseline value despite the decline in the parasite prevalence as revealed by the NMIS and NDHS reports. The observed trend may not be unconnected to data quality issues often raised by NPEP and Partners as a perennial challenge of the national programme. Review of documents also revealed that the routine data through the DHIS 2.0 was the data source of the World Malaria Report 2019, which revealed that Nigeria contributed 25% of total malaria cases and 24% of deaths due to malaria globally in 2018. However, it should be noted that the NDHS and NMIS revealed a 45.2% decline in the parasite prevalence of malaria from 2010 to 2018.

WHO reported a decline in estimated malaria cases in Nigeria from 2010 to 2016 with an increase from 2016 to 2018, it also reported a decline in malaria deaths from 2010 to 2017 with no further decline in 2018 (see figure 8 below).

**Figure 8: Estimated malaria cases and deaths (Source: WHO 2019)**



**Changes in parasite species distribution**

Malaria in Nigeria is principally due to *Plasmodium falciparum* and, a lesser extent to *Plasmodium malariae* and *Plasmodium ovale*. *Plasmodium vivax* is thought to be absent in Nigeria in particular and sub-Saharan Africa in general, due to the near fixation of the Duffy negative gene in this population. However, there are reports of *P. vivax* infection in Duffy negative individuals in the country.<sup>23</sup> *Plasmodium falciparum* accounts for 94% - 98% of infections, *Plasmodium malariae* accounts for almost 2% of infections, while *Plasmodium ovale* is rare, accounting for approximately 0.2% of all infections. The mixed infections account for 4%.<sup>24</sup> A recent study revealed that *Plasmodium falciparum* remains the dominant malaria infection in Nigeria, though *Plasmodium malariae* was found to account for 9% of infections.<sup>25</sup>

### **Malaria transmission risk map and stratification**

The Nigeria's climatic conditions are favourable for malaria transmission. However, transmission is seasonal and varies in intensity and duration across the five vegetation types in the country. The duration of the transmission season decreases as one moves from the Swamp forest and Rainforest in the South through the Guinea savannah in the Central to the Sudan savannah and Sahel savannah in the North. The transmission season tends to be perennial in the South but lasts for only  $\leq 3$  months annually in the North-East.

The malaria burden stratification revealed a gradual change in malaria transmission map from 2000 to 2018 (figures 9-11). The maps show that the areas that were hyperendemic (red) became mesoendemic (brown) over 15 – 18 years period, while some areas that were hypoendemic (green) became mesoedemic over the same period of time. The stratification study also combined the reported cases, prevalence and mortality due to malaria as a composite measure of malaria burden, thereby dividing the country into four strata: low, medium, high and very high burden areas (figure 11).

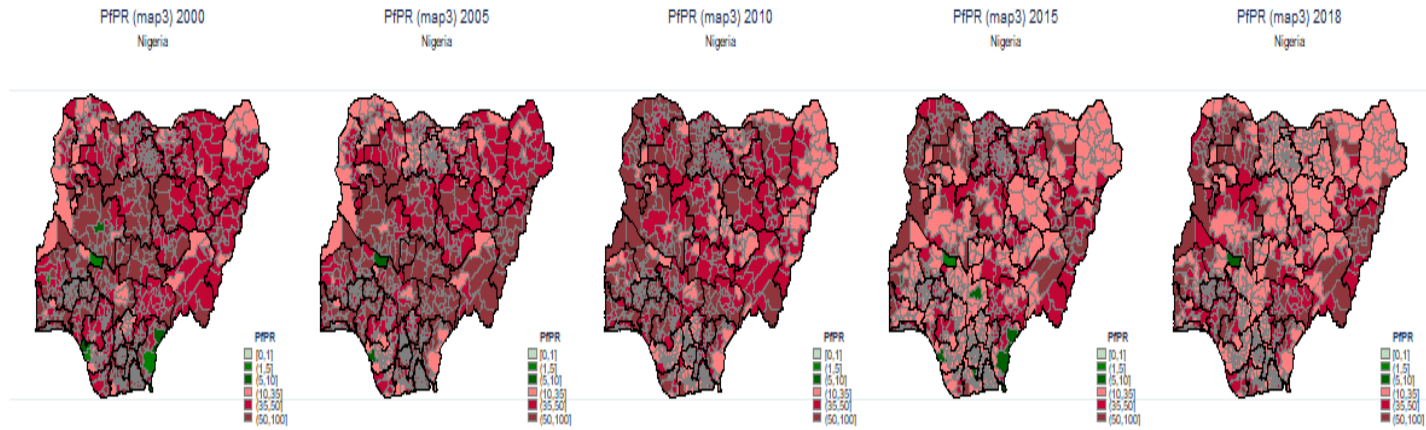
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<sup>23</sup> Oboh MA, Badiane AS, Ntadom G, Ndiaye YD, Diougue K MA Diallo, Ndiaye D. Molecular identification of Plasmodium species responsible for malaria reveals Plasmodium vivax isolates in Duffy negative individuals from southwestern Nigeria. Malar J (2018) 17:439.

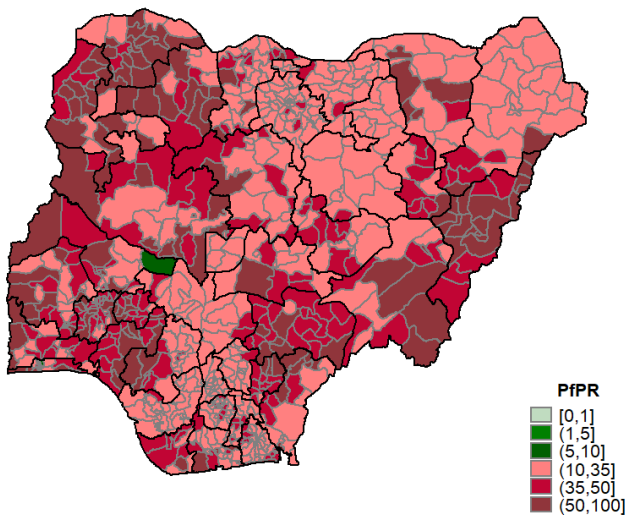
<sup>24</sup> NMEP 2019

<sup>25</sup> NMEP- LSHTM. Epidemiology and Control Profile of Malaria in Nigeria

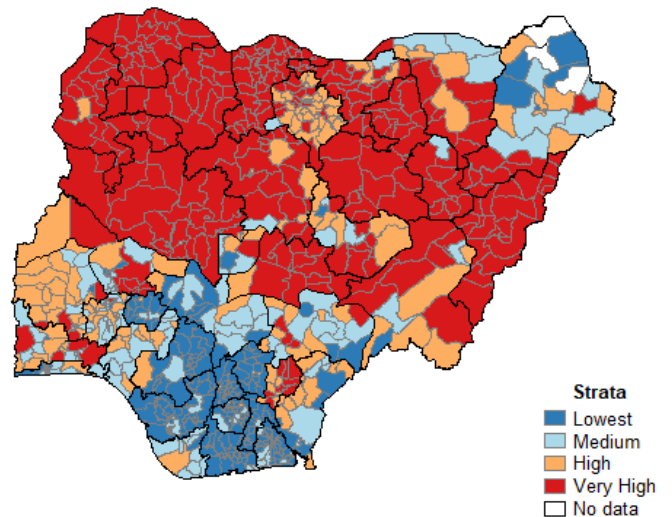
PfPR only with climate covariates



**Figure 9: Change in the age-corrected *Plasmodium falciparum* parasite rates (PfPR<sub>2-10</sub>) in Nigeria from 2000-2018 (Source: WHO 2019)**



**Figure 10: Maps of age-corrected *Plasmodium falciparum* parasite rates (PfPR<sub>2-10</sub>) in Nigeria in 2018 (Source: WHO 2019)**



**Figure 11: Stratification of malaria burden based on a composite: incidence, prevalence and mortality (Source: WHO 2019)**



## 2.1.2 Progress towards entomological impact of the MSP

### MSP entomological indicators and targets

Historically, thirty Anopheles species have been reported in Nigeria. Current data emanating from longitudinal surveillance sites supported by PMI and Global Fund across the five geo-ecological zones in Nigeria have recorded eleven Anopheline species. These are *An. gambiae*, *An. coluzzii*, *An. arabiensis*, *An. funestus*, *An. nili*, *An. moucheti*, *An. pharoensis*, *An. coustani*, *An. squamosus*, *An. pretoriensis* and *An. longipalpis*. Ten of these have been implicated in malaria transmission. *An. coluzzii*, *An. gambiae*, and *An. arabiensis* and *An. funestus* are the predominant vectors across all ecozones of the country. The composition of each of these vector species vary across the states and ecological zones in Nigeria.

Both *An. gambiae* and *An. funestus* observed in most of the ecozones mainly rest indoors and are highly anthropophilic (human biters). *An. funestus*, a permanent water breeder, has been found mainly in rice fields in the dry season and complementary to *An. gambiae* in many parts of Nigeria. *An. arabiensis*, another member of the *An. gambiae* complex is very flexible over its ecological range and behavior. While *An. gambiae* and *An. coluzzii* predominate in the rainy season, *An. funestus* reaches its peak density at the end of the dry season, taking over from *An. gambiae*, thereby extending the malaria transmission season. Continuous monitoring of these vectors in the context of LLIN interventions will provide further understanding on the impact of these interventions on the distribution of vectors and their role in malaria transmission both indoors and outdoors.

### Progress towards MSP entomological indicators

The MPR 2019 observed that NMSP, 2014 -2020 and the Performance Framework have no entomological impact or outcome level indicators and targets listed for the purpose of measuring progress. Some of the vector surveillance and resistance monitoring indicators listed were output level indicators without any targets provided.

It is worthy of note that a baseline of 18-145 and 0-12.4 Entomological Inoculation Rates (EIRs) were recorded for *An. gambiae* s.s, and *An. arabiensis* respectively in the body of the MSP. The sporozoite rates baseline of 0.2 – 11.8% and 0-4.8% were also recorded for *An. gambiae* s.s. and *An. arabiensis* respectively. Since the targets for these indicators were not set in the MSP therefore progress could not be measured.

However, the table below summarizes the baseline values, current findings of EIR and sporozoite rates from some of the vector surveillance sites.

### Trends of malaria vector bionomics

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 coincide with the rainy season and dominated by *An. gambiae* s.l. for most of the rainy season across the various zones. These habitats are sustained by permanent water bodies during dry seasons. As the rainy season recede and breeding places became fairly stable, a sharp increase in vector population has been observed in July and September.

## Trends of entomological inoculation rate

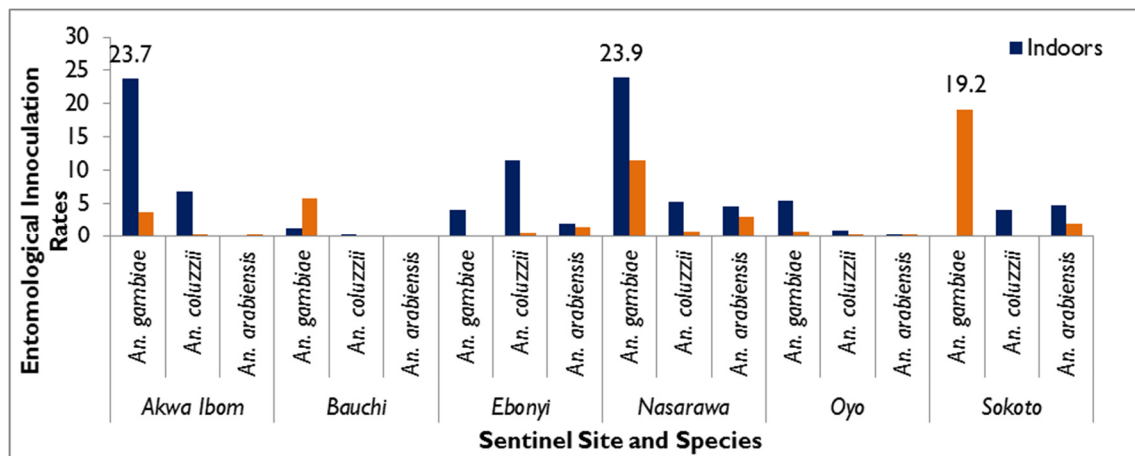
In 2017, the EIR in five states showed that indoor EIR values for *An. gambiae* s.l. ranged from 1.2 infective bites per person per year (Ib/p/yr) in Sokoto to 23.9 Ib/p/yr in Nasarawa. and Ebonyi, indoor EIR values for *An. coluzzii* ranged from 0.9 Ib/p/yr In Oyo to 11.4 Ib/p/yr in Ebonyi, respectively. For *An. arabiensis*, the highest indoor EIR (4.68 Ib/p/yr) occurred in Sokoto, followed by 4.55 Ib/p/yr in Nasarawa.

For outdoor EIR, *An. gambiae* remained the dominant malaria vector, with the highest EIR (19.17 Ib/p/yr) in the Sokoto and the lowest EIR (0.82 Ib/p/yr) in Ebonyi. For *An. coluzzii*, outdoor EIR ranged from 0.08 Ib/p/yr in Adwa Ibom to 0.74 Ib/p/yr at Nasarawa. Outdoor EIR for *An. arabiensis* ranged from 2.93 Ib/p/yr at Nasarawa to 0.16 Ib/p/yr in Ebonyi and Adwa Ibom.

In 2018, EIRs varied across months according to the vector and ecozone. An average EIR of 147.7 infective bites/person/night for *An. coluzzii* in the Guinea Savannah and 137.4 infective bites/person/night was recorded in the mangrove swamp but these have varied over time. The highest numbers of infective bites indoors and outdoors were from *An. coluzzii* and *An. arabiensis* respectively.

Entomological Inoculation Rates across all ecozones in 2018 have been found to range from 0 - 147.7 infective bites/person/year for *An. coluzzii*, 0-75.6 infective bites per person per year for *An. gambiae* and 0-33.8 infective bites/person/year in *An. arabiensis* in the Guinea Savannah. Studies have shown that there are no sites with less than 50% prevalence when the EIR exceeds 15 infective bites per year, therefore, annual entomological inoculation rates (EIRs) must be reduced to less than one to substantially reduce the prevalence of malaria infection.

**Figure 12. Annual EIRs of *An. gambiae*, *An. coluzzii*, and *An. arabiensis* across sites in 2017**



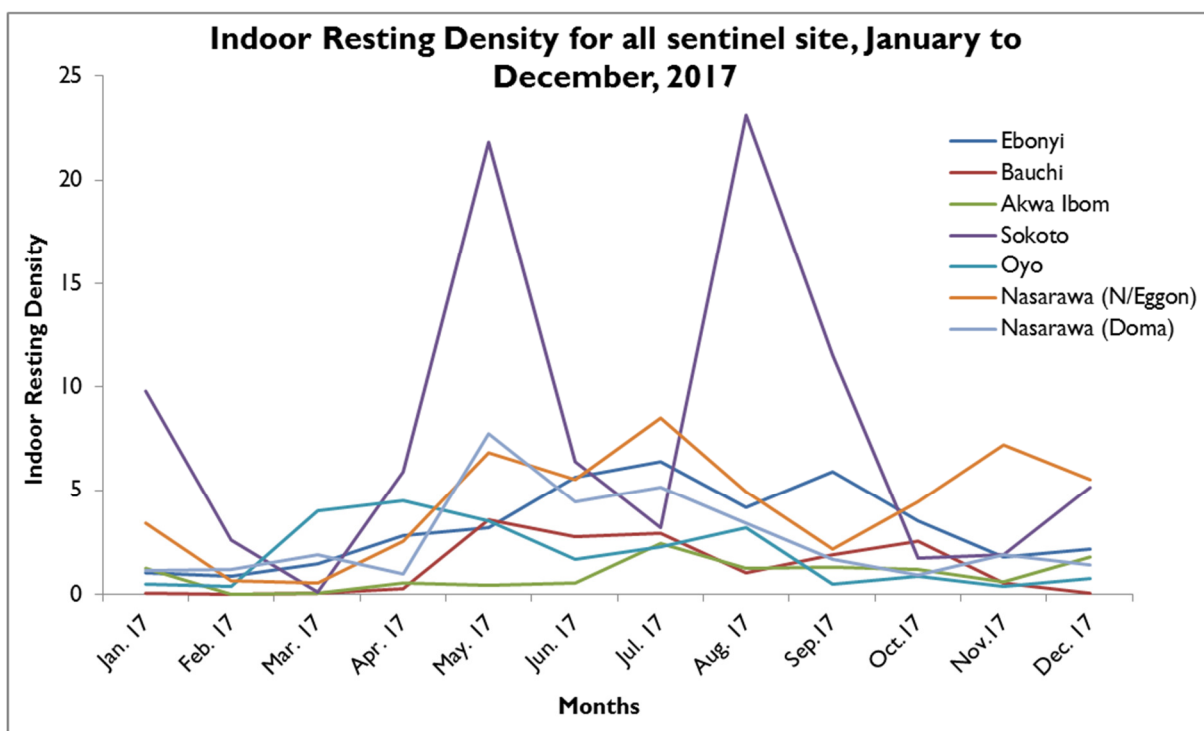
## Changes in vector behaviour

The baseline for vector behaviour was not documented in the NMSP, 2014-2020. However, findings during this MPR indicate variations in vector behaviour across the various ecological zones. In 2017, indoor biting rates were higher than outdoor biting rates in four of the six sites (Akwa Ibom, Bauchi, Ebonyi, and Nasarawa).

In Sokoto (Sahel), evidence of outdoor biting rates exceeding indoor biting rates was established. Indoor biting mainly occurred between 10:00 p.m. and 6:00 a.m., with peak biting periods varying between 10-11 p.m. in Sokoto to 5-6 a.m. in Bauchi. Early evening biting was low across all sites. This result highlights the potential for significantly reducing malaria transmission in Nigeria with IRS and LLINs.

In 2018, the mean indoor biting rates of *An. gambiae* s.l. peaked in September at Akwa Ibom, Bauchi and Ebonyi while in Nasarawa Doma, Nasarawa Eggon, and Plateau, the peak occurred in July. In Sokoto, indoor and outdoor biting rates peaked in August. The biting pattern in Oyo was not clear due to low numbers of mosquitoes collected across all months.

**Figure 13: Indoor Resting density for all sentinel site, January to December, 2017**



## 2.2 Conclusions and recommendations

### 2.2.1 Conclusions

1. Most of the epidemiological impact indicators were appropriately phrased with baseline value provided. However, the targets were overambitious. The “all cause under-5 mortality rate per

1000 population” needs to be replaced because it is usually not measured by surveys in Nigeria.

2. Although some progress was made towards improving some of the morbidity impact indicators, however the milestone targets were not met. There were also wide variations in the progress made in different states.
3. Not much progress was made towards the target for the mortality impact indicators most probably because they are affected by a wide range of programmes and factors some of which are outside the health sector.
4. There is a wide variation in the intensity and duration of transmission of Malaria across the different zones of the country with the north experiencing shorter duration and higher intensity compared to the south.
5. Members of *An. gambiae* s.l. (*An. coluzzii*, *An. gambiae*, and *An. arabiensis*) are the predominant vectors across all ecozones of the country.
6. Major malaria vectors remained the *An. gambiae* complex and *An. funestus* group in Nigeria. However, while *An. gambiae* is widespread, *An. funestus* has a limited spread. Secondary vectors such as *An. coustani* have been implicated as transmitting malaria parasite both indoors and outdoors
7. Insecticide resistance in malaria vectors has been documented in all 4 classes (pyrethroid, oc, op and car) of insecticides and it is local and focal
8. Pyrethroid resistance has been documented in all six ecological zones and even at higher concentration of the insecticide (Resistance intensity assay)

### 2.2.2 Recommendations

1. A more result focused and state specific intervention mix for malaria programme based on the epidemiological indices, sociodemographic peculiarities and acceptable strategies should be employed in the next MSP development in order to accelerate progress towards elimination.
2. Because the mortality impact indicators are affected by a wide range of programmes and factors, NMEP should strengthen collaborations with other programmes for greater impact.
3. Routine entomological surveillance and insecticide resistance monitoring should be institutionalized to curtail the spread of resistance to commonly used insecticide.
4. Innovative interventions targeting outdoor/residual transmission of malaria
5. Some of the following entomology indicators are suggested to be considered in the next MSP: Percentage composition of vector species, Human biting rate (bites/person/night), Percentage of blood meal index, Sporozoite infection rate, Entomological Inoculation Rate, Resistance intensity

## Chapter 3: Review Programme Financing

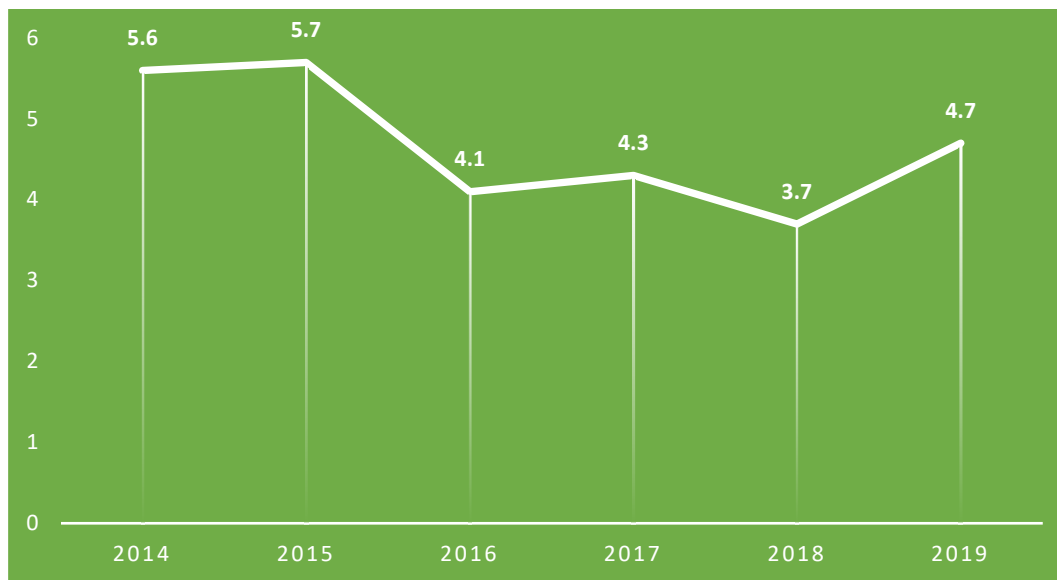
### 3.1 Findings

Although the Federal Budget moved from ₦4.67 trillion in 2014 to ₦8.9 trillion in 2019, the proportion for Health in the budget decreased from ₦0.26 trillion representing 5.6% in 2014 to ₦0.37 trillion representing 4.7% in the 2019 budget. The relative increase in the absolute figure of the budget for health between 2014 and 2019 would have been diluted by the rapid population growth between this period. In 2019, the Health Budget was ₦0.37 trillion. In specific, the Malaria Program allocation within the Ministry of Health can best be described as abysmal.

**Table 3: Federal Budget and Health Allocation**

Detail	2014	2015	2016	2017	2018	2019
FEDERAL BUDGET (Trillion)	4.67	4.5	6.1	7.1	9.1	8.9
HEALTH BUDGET (trillions)	0.26	0.26	0.25	0.31	0.34	0.37
CAPITAL EXPENDITURE – Health (trillions)	0.05	0.02	0.03	0.06	0.07	0.057
% of Health Budget to Federal Budget.	5.6	5.7	4.1	4.3	3.7	4.7
% of Capital Health Budget to Health Budget.	18.7	8.7	11.4	18.0	20.5	15.4

**Figure 14: Proportion of Health Budget from the Federal Budget**



### 3.1.1 Trends of budgetary allocation to malaria programming within health sector

The annual budgetary allocation to the National Malaria Elimination Programme for programmatic support (exclusive of salaries) within the Federal Health budget continues to decline from 2016 despite the absolute increase in the total health budget. The proportion of Malaria budget as a component of the Federal budget reduced from 0.003% in 2016 to 0.0003% in 2019 representing a 10-fold decrease (see Table 4 below).

The gross inadequacy of budgetary allocation to Malaria explains why several of the strategic priorities of the NMSP, 2014-2020 were not implemented and the documented achievements at Federal and sub-national level are largely donor supported.

**Table 4: Federal Budget for Malaria** (Source; NMEP Team @ Financial Planning Workshop)

Year	Annual Health Budget	Approved Budget	% of Health Budget	Actual Release	Malaria Budget Performance
2016	250 billion	750,508,198	0.003%	750,508,198	100%
2017	310 billion	284,060,532	0.0009%	284,060,532	100%
2018	340 billion	102,999,500	0.0003%	15,000,000	14.5%
2019	370 billion	102,999,500	0.0003%	-	-

Apart from the allocation and releases by the Federal Government, other public sector funding sources for Malaria in the period under review are the State and the Local Governments, empirical evidence however showed that the picture at the sub-national level is not better when compared to the Federal level. This MPR was unable to retrieve reliable state level budget information for analysis. It is expected that NMEP will intensify efforts to coordinate annual collection of state level information as part of the National Data Repository (NDR)

The implementation of the activities of the MSP is largely donor supported with key support indicated in the table below

**Table 5: Funding commitments to Malaria activities by source (to be filled by Partners)**

	2014 (\$)	2015 (\$)	2016 (\$)	2017 (\$)	2018 (\$)	2019 (\$)
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		

#### Funding support to Malaria Programming

Apart from the Government of Nigeria (Federal and States), other sources of funding for Malaria include, the Global Fund, US President's Malaria Initiative, UK Department for International Develop, The World Bank, World Health Organization and UNITAID.

The government of Nigeria supports malaria elimination through allocation from the budget both at the national and states levels as well as through specific programmes including the health insurance schemes, the RMNCH week, Saving One Million Live (SOML) Project and funding of other PHC activities through the SPHCDA's.

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.

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%<sup>26</sup>. 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<sup>27</sup>. 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, Kano, Katsina, Jigawa and Yobe, implemented through the SUNMAP 1 project which closed in 2015. The SuNMaP 2 implementation of SuNMaP 2 project is expected to fill some of the gaps created by the closure of the first project.

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

## **Malaria Expenditure**

The review of the report from the National Health Account (NHA) showed that household spending formed the bulk of the expenditure on Malaria with a total of ₦981.6 billion in 2014 representing 82% of the total expenditure on Malaria. The household expenditure decreased to 78.5% in 2017. It was also observed that expenditure by donors as a percentage of total expenditure declined from 10.13% in 2014 to 3.5% in 2017. The expenditure by corporate bodies as a proportion of

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<sup>26</sup> NMS 2015

<sup>27</sup> PMI Malaria Operational Plans

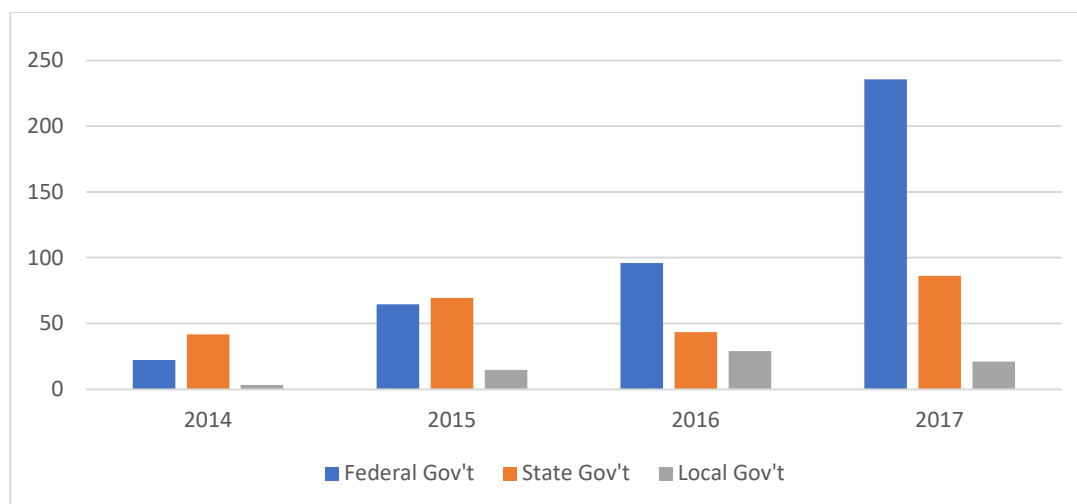
total expenditure on Malaria also significantly reduced from ₦26.6 billion (2.22%) in 2014 to ₦2.4 billion (0.12%) in 2017.

**Table 6: Malaria Financing Source, 2014- 2017**

Malaria Financing Sources	2014	2015	2016	2017
	₦' Billion	₦' Billion	₦' Billion	₦' Billion
Households	981.6	1,109.4	1,273.4	1,516.2
Corporations	26.6	9.9	13.9	2.4
Rest of the world	121.3	85.2	56.6	69.2
Federal Gov't	22.2	64.6	95.9	235.6
State Gov't	41.7	69.5	43.5	86.2
Local Gov't	3.4	14.8	29.0	21.1
Total	1,196.9	1,353.5	1,512.3	1,930.7
Share of Total CHE	39.4%	41.1%	40.4%	44.4%

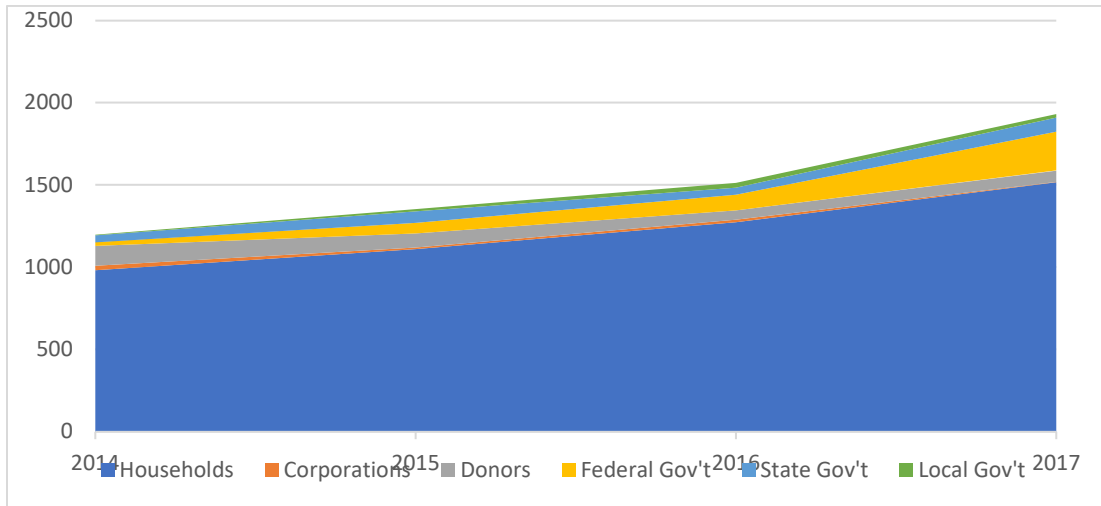
Source: National Health Account

**Figure 15: Comparing Expenditure on Malaria by the tiers of Government**





**Figure 16: Household Financing for Malaria in relation to others sources**

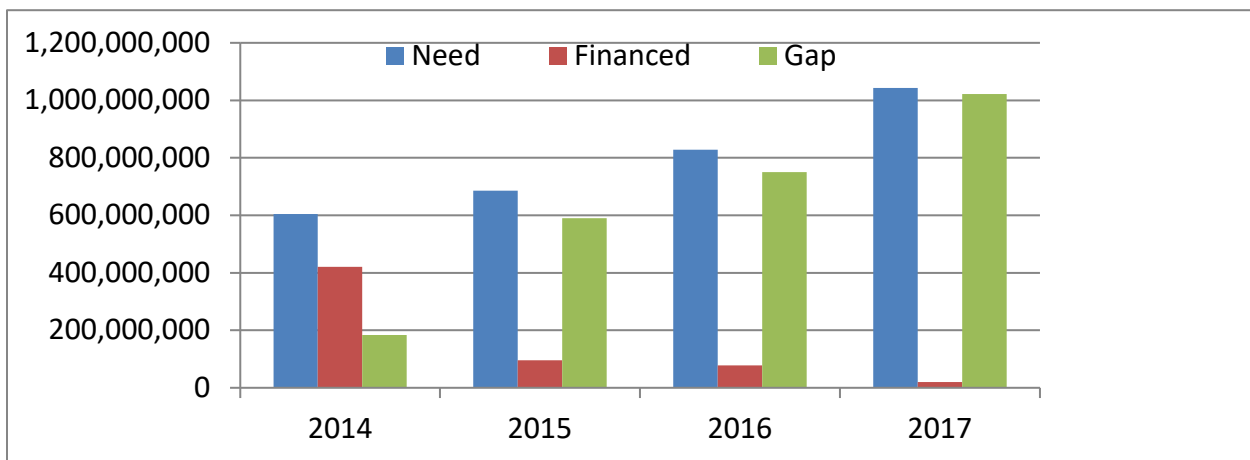


The donor spending on malaria in absolute naira declined from N121 billion in 2014 to N85.2 billion in 2015 and N56.6 billion in 2016 before a slight rise to 69.2 billion in 2016. This may be due to the completion of prior donor supported projects and the delay implementation of subsequent project. The review of the Malaria Expenditure from all sources in 2017 is indicated below, the pattern is not too different from that of the previous years.

### 3.1.2 Malaria Expenditure Analysis in the context of need-based budget

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 17: Malaria funding Needs versus available Funding 2014 - 2017**



## 3.2 Conclusions and recommendations

### 3.2.1 Conclusions

- Budgetary allocations for health in Nigeria decreased from 5.6% of the total budget in 2014 to 4.7% in 2019, worst still the Malaria component of the budget decreased almost 10 folds over the same period of time. The declining trend of Government allocation to Malaria worsens the financing gap should be a major source of worry as it constitutes the greatest threat to the achievement of the goal of MSP.
- The budgetary allocation to Health over the years have been much lower than the recommended 15 percent as stipulated in the 2001 Abuja Declaration. Expenditure in malaria by the federal government is abysmally low.
- Out of Pocket Expenditure by Household for malaria still takes the greatest percentage in malaria financing in Nigeria, this should be a cause for worry as the disposable income of Nigerians continue to dwindle.
- Donors funding for Malaria in declining and innovative domestic financing has become inevitable

### 3.2.2 Recommendations

- The National Program should develop and disseminate a sustainable financing framework for malaria elimination in Nigeria. FMoH and NMEP should advocate for more resources from governments, individuals, corporate bodies and donors to move towards increased funding and financial sustainability.
- Budgetary allocations and actual disbursements by government at various levels should be significantly increased and efficient use of resources guaranteed.
- The system should device a means of tracking financial data relating to allocation and spending on malaria at levels of government to provide information on indicators, including the proportion of malaria budget to total health budget and the proportion of total malaria budget contributed by partners.
- Innovative sustainable financing for Malaria should be a priority of the next MSP leveraging on existing opportunities like the NHIS, State HIS and the National health Account.
- The National Programme should develop and implement a National Malaria Resource Mobilization and Financing Framework
- NMEP and Partners should develop and disseminate annual financial report for the National Malaria Programme to replace the donor specific reports.

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## **Chapter 4: Review of the Capacity of the Programme to Implement Planned Activities**

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This chapter covers the overall assessment of programmatic outputs and outcomes focusing on the levels of attainment of outputs and outcome targets in the following programme areas: vector control; chemoprevention; case management; procurement supply management; social behaviour change communication; epidemic preparedness and response; surveillance, monitoring and evaluation and operational research; and analysis of the functionality of the management support system.

### **4.1 Findings**

#### **4.1.1 Performance Rate in Implementation of MSP Objectives and Strategies**

The analysis of the Malaria Programme's capacity to implement planned activities was done for all the seven (7) Strategic Objectives of the Nigeria Malaria Strategic Plan, 2014-2020 using the Excel based 'Nigeria MPR 2019 Technical Performance Tool' shared with the Thematic Consultants and the relevant Technical Sub-Committees of the Malaria TWG.

Using this tool, the assessment of the capacity of NMEP to implement planned activities under each strategy was conducted to determine the overall performance rate by activity based on both quantitative and qualitative dimensions.

In terms of ratings, the strategy-level implementation performance was considered high if the performance rate analysis yielded a score of above 90 percent. It was considered moderate if the achieved rate ranged from 75 percent to 90 percent, and it was considered low if the score was under 75 percent.

The implementation of the recommendations of the Mid-Term Review (MTR) was also assessed in the course of the MPR and the progress made towards the implementation of the MTR recommendations can also define the capacity of NMEP to implement planned activity. See Table 7 below

#### ***Objective 1: To provide at least 80% of targeted population with appropriate preventive measures by 2020***

The achievement for this objective and the associated strategic priorities were analysed under thematic areas covering LLINs, IRS, LSM and Vector Sentinel Surveillance. The overall score was low, at 40%.

**Table 7: Assessment of Implementation of planned activities under Objective 1 of MSP**

		<b>Score</b>
<i>Objective 1: To provide at least 80% of targeted population with appropriate preventive measures by 2020</i>		<b>40%</b>
Strategy 1	Ensure Universal Access to LLINs	61%
Strategy 2	Scale up IRS Coverage	17%

Strategy 3	Implement Larval Source Management (LSM) for malaria control	10%
Strategy 4	Provision of IPTp to all pregnant women attending Antenatal Clinics in targeted districts	46%
Strategy 5	Implement seasonal malaria chemoprevention (SMC) in Nine Sahel States	37%
Strategy 6	Conduct vector sentinel surveillance and resistance monitoring	65%

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

The overall performance for this objective was very low at 46 percent. Performance of the seven strategies under this objective ranged from 19 percent to 100 percent.

**Table 8: Assessment of Implementation of planned activities under Objective 2 of MSP**

		Score
<i>Objective 2: To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020</i>		<b>46%</b>
Strategy 1	Ensure availability of and access to equipment and supplies for parasitological confirmation of malaria	25%
Strategy 2	Build capacity of personnel in public and private health facilities, and at community level for parasitological confirmation of malaria	47%
Strategy 3	Update and implement policies and guidelines for parasitological confirmation of malaria	100%
Strategy 4	Deploy RDTs and microscopy for parasitological confirmation of malaria in public and private health facilities and the community level	19%
Strategy 5	Strengthen systems for quality assurance and quality control of malaria diagnostic processes and services	41%
Strategy 6	Create demand for utilization of parasitological confirmation of malaria processes and services	43%
Strategy 7	Conduct operational research on parasitological confirmation of malaria processes and services	43%

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

The overall performance for this objective was low at 70 percent, with its seven strategies scoring between 55 and 100 percent. One major challenge in the achievement is the inability to capture treatment data from the private facilities into the national reporting template

**Table 9: Assessment of Implementation of planned activities under Objective 3 of MSP**

		Score
<i>Objective 3: To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020</i>		<b>70%</b>
Strategy 1	Ensure availability of and access to commodities and supplies for treatment of uncomplicated and severe malaria	55%
Strategy 2	Treat cases of uncomplicated malaria according to National Treatment Guidelines	84%

Strategy 3	Strengthen capacity of public and private facilities for management of severe malaria	57%
Strategy 4	Implement a comprehensive national strategy for effective participation of the private sector in malaria case management	77%
Strategy 5	Scale up community case management of malaria as a component of integrated community case management (iCCM)	67%
Strategy 6	Strengthen delivery of prompt treatment of malaria for pregnant women	67%
Strategy 7	Strengthen sentinel surveillance of malaria treatment and conduct drug efficacy tests (DTET)	100%
Strategy 8	Strengthen capacity for Pharmacovigilance	55%

***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***

Objective-level implementation rate was put at **60%** (low). This rate is considered low, going by the scoring system used for the desk review. A total of 14 distinct activities contributed to the 60% implementation rate. Seven activities were fully implemented (100%), contributing to half of the Objective-level implementation rate, that is, 30% of the 60%, One (1) activity was moderately implemented at 83% (4.3% of the 60%), while the remaining 6 activities were implemented at a percentage lower than 75%, contributing to 25.7% of the 60%.

Strategies 2 and 3 contributed more than 70% each to ACSM activities implementation performance. Though, these 2 Strategies also contributed more to the objective-level performance score, no strategy scored up to 75%, the highest contributing Strategy was Strategy 2 (73%). Interestingly, the least contributing strategy in terms of performance at the objective level is Strategy 4, while it is Strategy 5 for the MSP-level (activities implementation) performance (see table 10 below).

**Table 10: Assessment of Implementation of planned activities under Objective 4 of MSP**

		Score
<b><i>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</i></b>		<b>60%</b>
Strategy 1	Maintain high knowledge of malaria prevention and treatment practices	50%
Strategy 2	Scale-up demand for malaria prevention and management services	73%
Strategy 3	Enhance political will and enabling environment for malaria control/elimination activities	70%
Strategy 4	Scale-up facilities-based dissemination of appropriate information for malaria prevention and management practices	45%
Strategy 5	Improve ACSM Coordination at all Levels	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.***

The overall performance of the PSM is 51 % (low). The capacity of NMEP to implement PSM planned activities of NMSP, 2014-2020 was measured as indicated in the table below.

In total, the PSM objective comprising seven PSM strategic priorities had 29 sub-activities.

**Table 11: Assessment of Implementation of planned activities under Objective 5 of MSP**

		Score
<i>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.</i>		<b>51%</b>
Strategy 1	Strengthen Procurement-related processes	59 %
Strategy 2	Develop efficient distribution systems for antimalarial medicines and commodities (storage, transport distribution and inventory management).	62 %
Strategy 3	Strengthen Logistics Management	48 %
Strategy 4	Implement Policies on Quality Assurance and Pharmacovigilance	48 %
Strategy 5	Operationalize and update where necessary existing policies for malaria case management in the private sector	38 %
Strategy 6	Increase access to antimalarial prevention and management commodities in the private sector	56 %
Strategy 7	Strengthen collaboration with NAFDAC to put in place regulatory requirements for distribution including storage and transportation of antimalarial products in the private sector	27 %

***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***

There was a total of 225 planned activities on SMEOR spread across nine strategies, out of which 173 (77%) were implemented. The overall performance rating was low at **68%**. The performance rating was moderate in Strategies 8 and 9 (85%and 83% respectively), while the rating was low in the first six strategies, please see the table below.

**Table 12: Assessment of Implementation of planned activities under Objective 6 of MSP**

		Score
<i>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</i>		<b>68%</b>
Strategy 1	Strengthen routine data generation and flow from public/private facilities and community-based health providers for the National Health management information system (NHMIS)	67%
Strategy 2	Operationalize electronic database for malaria control using DHIS version 2.0	65%
Strategy 3	Strengthen human resources for monitoring and evaluation for ATM	50%
Strategy 4	Strengthen routine monitoring & supervision	73%
Strategy 5	Strengthen Data Quality Assurance (DQA) at all levels of reporting	60%
Strategy 6	Develop and implement an Operations Research (OR) agenda for the Malaria Programme	52%
Strategy 7	Strengthen malaria surveillance coordination and linkages with National HMIS	62%
Strategy 8	Strengthen data generation and sharing from evaluations and reviews	85%
Strategy 9	Strengthen M&E Coordination	83%

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

The NMEPs overall capacity to implement its Project Management objective was far less than 75% across all the strategies with the highest scores in the improvement of operational planning (53%) and strengthening of programme coordination. The least score was recorded in timely reporting of Malaria control activities (5%)

**Table 13: Assessment of Implementation of planned activities under Objective 7 of MSP**

		Score
<i>Objective 7: To strengthen governance and coordination of all stakeholders for effective programme implementation towards an ‘A’ rating by 2017 that is sustained through to 2020 on a standardized scorecard</i>		<b>37%</b>
Strategy 1	Build capacity at national, state and LGA levels to deliver malaria control/elimination interventions	40%
Strategy 2	Strengthen programme coordination at national and sub-national levels.	50%
Strategy 3	Improve unified annual operational planning	53%
Strategy 4	Strengthen Malaria Resource Mobilisation and Financial Management mechanisms	11%
Strategy 5	Develop a comprehensive strategy for private sector engagement	35%
Strategy 6	Strengthen timely reporting of Malaria control activities at all levels and promote dissemination of all reports to relevant stakeholders	5%

#### 4.1.2 Implementation of MTR Recommendations

In 2017, Nigeria Malaria Elimination Programme with support from WHO and other RBM Partners conducted a Mid-Term Review of NMSP, 2014-2020. The review examined among other things the progress made towards achievement of milestone targets and the rate of implementation of planned activities. The SWOT Analysis conducted at mid-term highlighted the key implementation challenges and opportunities. Key recommendations were made to drive accelerated implementation of priority activities of the NMSP, 201-2020. The status of implementation of the MTR recommendation also reflects the capacity of NMEP and Partners to deliver planned activities.

**Table 14: Status of Implementation of MTR Recommendations**

Thematic Area	Key MTR Recommendation	Status of Implementation at MPR
<b>Vector Control</b>	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.	Mobilising Domestic Resources remains a major challenge. However, the application for World Bank facility to support vector control strategies in the 13 non-supported state has been approved.

	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.	Further deployment of insecticide through LLINs and other strategies will be determined guided by evidence
	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.	Consensus is being built around invention mixes based on evidence
<b>CM</b>	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.	Not fully implemented though plan is on-going
	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.	NMEP with NPHCDA is exploring a Malaria + RMNCAH strategy leveraging on the NPHCDA strength on community programming
	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.	This has not been significantly addressed
<b>ACSM</b>	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.	MSP Technical performance indicated 78% implementation status for the activities that drove the implementation of the Advocacy recommendation (reports of advocacy to Policy-makers at the National and state levels, Dangote Foundation and the country office of the Corporate Alliance on Malaria in Africa (CAMA) were part of validation for this achievement).
	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.	Action points contained in the Private Sector Engagement Strategy and National Malaria Advocacy Plan have not been adequately addressed. This in part, may be due to inadequate financial resources and coordination efforts of Private Sector interventions within the Malaria landscape.
	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.	Evidences abound on a lot of media engagements and activities, such as Articles, news stories published. However, opportunities in the use of digital technology have not been



		adequately maximized to expand the reach of malaria SBC messages. Media involvement has not been structured in a way that ensures continuous championing of malaria by media personnel
	Include additional SBCC indicators in the NMSP performance framework, M&E Plan, NDHS and MIS.	Suggested inclusion of additional SBCC/ACSM indicators for NMSP performance framework, M&E Plan and MIS is still anticipated. Recommended additional indicators have been included in the 2018 NDHS.
<b>PSM</b>	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.	Advocacy efforts towards achieving this is on-going. The approved World bank facility will support this in the benefiting states
	Improve reporting through provision of tools and training and improve linkage to the DHIS2 system which is already operational from the LGA level.	On-going efforts at achieving this has not achieved desired result
	Conduct ongoing training and supervision of all staff involved in PSM to strengthen capacity to manage the supply chain system efficiently at all times.	Partially implemented
<b>SMEOR</b>	NMEP and partners should strengthen mechanism for community and private sector data reporting through the NHMIS and DHIS 2.	There is an ongoing effort to capture reporting from formal private health facilities on the DHIS. Currently, there are is 26% contribution of private hospitals on the DHIS. The rationalization and harmonization of data elements in the Community Health Management Information System (CHMIS) at the ward level has been completed. Currently, reporting to the DHIS through the CHMIS is on the pilot phase (about in 2 or three states).
	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.	Data repository is being set up to house all malaria data from routine and non-routine data reporting system. Different level of access will be provided to different players. It will become fully operational in January 2020.
	Strengthen monitoring and supervision at the State/LGA level with standardized with standardized on regular basis and data analysis and use.	Integrated Monitoring and Supervisory Visit (iMSV) tool has been harmonized and integrated, DQA checklist has been revised and national officers are now conducting biannual DQA using Mobile technology and iMSV. The states

		conduct quarterly DQA for the LGAs, while the LGAs conduct the DQA monthly for the health facilities.
	Ensure a functional malaria research expert group	There is an existing functional malaria research expert group chaired by a researcher in the academic community with the NMEP as secretariat.
<b>PM</b>	Strengthen resource mobilization capacity at both national and state level from both donor and domestic sources.	Roadmap for domestic resource mobilization at federal and 6 states (37 targeted)
	Develop and operationalize a Public Private Partnership plan to increase the participation of private sector in malaria prevention and control.	PSES developed and PPP subcommittee constituted
	Institute State-partners forum as a platform for strengthening partner coordination at state level.	Mapping has commenced
	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.	Review carried out at Federal level and 4 states (37 states targeted)
<b>Finance</b>	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.	NMEP and partners (SUNMAP) conducted Advocacy to National Assembly and Ministry of Finance, Budget and Planning to prioritize funding for malaria
	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.	NMEP advocates for increased funding by states during state engagements
	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.	NMEP developed private sector engagement strategic document

## 4.2 Conclusions and Recommendations

Based on the findings described in this chapter, the review made the following conclusions and recommendations on the capacity of the NMEP to implement the planned strategies and activities.

### 4.2.1 Conclusions

- Implementation rate of all the seven objectives was generally low, ranging from a score of 37 percent for objective 7 on Governance and Coordination to 70 percent for objective 3 which deals with treatment of confirmed cases
- None of the strategies in the NMSP, 2014-2020, achieved a moderate or high score. All the strategies achieved a low score of under 75%.

- Funding, particularly domestic financing was cited as a big challenge that affected full implementation of various strategies. However, internal coordination within NMEP and to a reasonable extent, Partner's coordination also affected the implementation.
- The review also discovered that reports of some strategic interventions were not domiciled with NMEP but were kept with the implementing partner. Access to such report was a big challenge in the course of this MPR and may account for unintended low rating of some strategies.
- Internal Coordination in NMEP is weak and the mechanisms for horizontal engagement between NMEP branches needs to be clearly defined
- Key recommendations of the MTR, 2017 were not significantly implemented.

#### 4.2.2 Recommendations

- NMEP leadership should take full responsibility for internal coordination, ensure regular internal meeting, harmonization of plans, activity implementation, documentation and reporting.
- A comprehensive review of factors that led to under-achievement of strategy implementation across all objectives by NMEP and Partners is necessary. Responsible entities MUST also be mandated to follow through with decision implementation.
- The interface between the Federal level implementers and sub-nation Malaria stakeholders needs to improve so that reporting by NMEP can reflect sub-national level strategy implementation
- The support from the sub-committees of Malaria TWG should include documentation, harmonization of reports of strategies and activities; and domiciliation of all reports in NMEP.

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## *Chapter 5: Review of the Effectiveness of the Health System in Delivering Malaria Services*

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### **5.1 Level of attainment of vector control outcome targets**

#### **5.1.1 Findings**

##### **Vector control outcome indicators and targets**

The review of the vector control and entomology indicators' appropriateness revealed that the LLINs, IRS and LSM outcome indicators in the MSP are appropriate, specific and measurable through periodic population-based surveys. Entomological Impact Indicators were not included in the performance framework. LLINs, IRS and LSM outcome indicators contain baselines and targets. Other malaria vector control interventions discussed in the MSP such as environmental management and LSM in the context of IVM do not appear in the performance framework and National M&E plan. There are no indicators for proportion of population protected with IRS and LSM. Additionally, no entomological outcome indicators appear in the MSP although the NMEP has been tracking entomological indicators since 2014.

The NMSP, 2014–2020 had the following indicators and targets for measuring vector control outcomes as contained in the performance framework:

1. 80% of households with at least one LLIN for two persons by 2020
2. 80% of under 5 children who slept under an LLIN the previous night by 2020
3. 90% of household residents who slept under an LLIN the previous night by 2020
4. 95% of pregnant women who slept under an LLIN the previous night by 2020
5. 40% of household reached with IRS by 2020
6. 80% of population in target areas protected by IRS by 2020
7. 90% of mapped mosquito breeding sites sprayed with larvicides annually

Most of these are standard indicators and were thus appropriate for measuring achievement of the vector control interventions. However, the review found that there was lack of established standardized entomological impact indicators at the national level. These indicators not captured in the current MSP should be included in next MSP.

##### **Progress towards MSP VC outcome indicators**

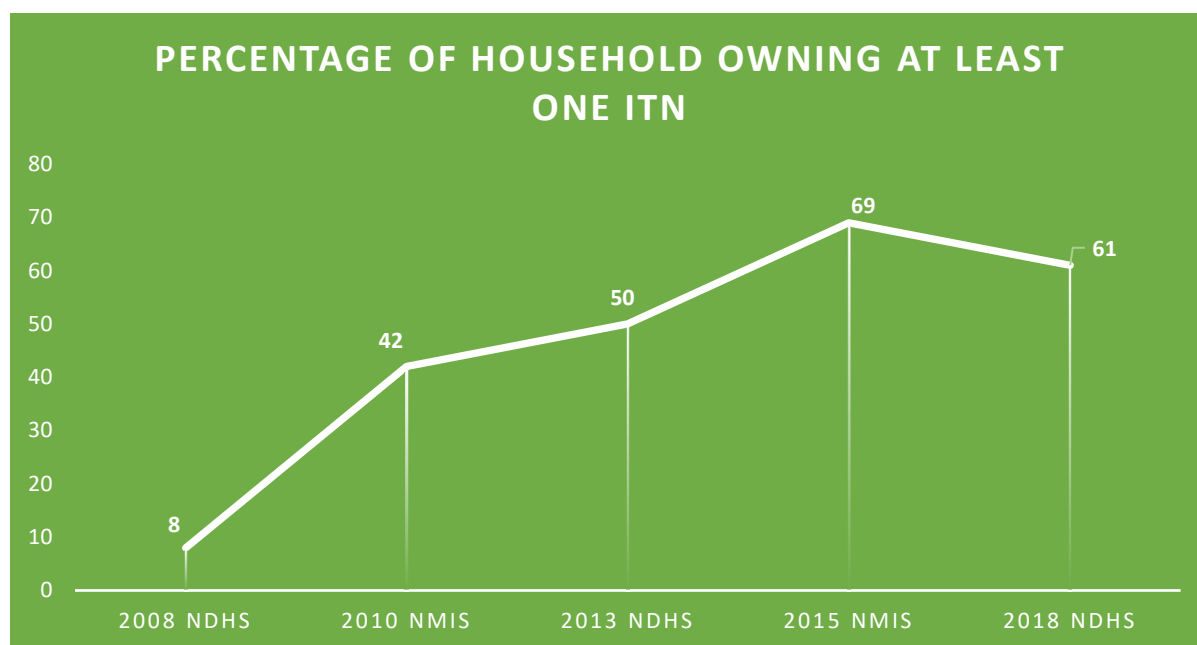
The progress on vector control indicators was captured by the NDHS 2013 and NDHS 2018 respectively. Table 15 shows the trend in these indicators. In summary there are improvement in the indicators. However, IRS indicator was not measured in the 2018 NDHS. The review team agreed that the IRS indicator should have been measured.

**Table 15. Vector Control Outcome indicators**

Outcome Indicators	NDHS 2013	NDHS 2018
Proportion of households with at least one ITN	49.5%	61%
Proportion of households with at least one ITN for every two persons	22%	30%
Proportion of pregnant women sleeping under ITN	16%	58%
Proportion of children under five sleeping under ITN	17%	52%
Proportion of people sleeping under one ITN	24%	65%
Percentage of houses sprayed out of those targeted in the past 12 months	1.7%	-

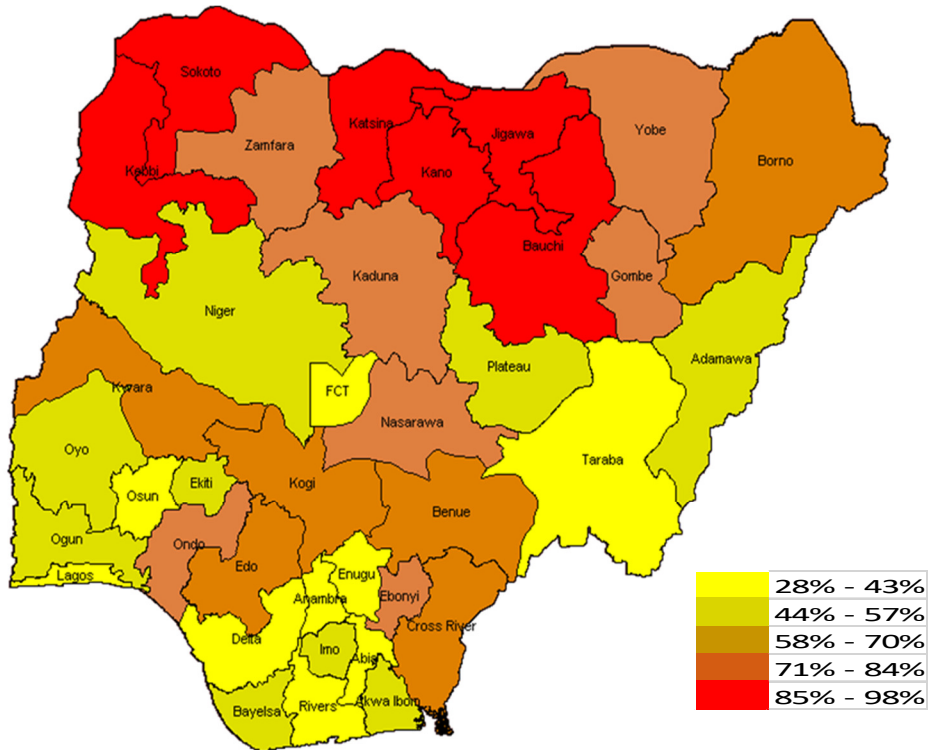
**Progress towards Access to LLINs**, proportion of households with at least one LLIN for every two persons, ranged from 22 percent (NDHS 2013) and increased to 30 percent (NDHS 2018) which is below the 80 percent target.

**Figure 18. Trends in household ownership of ITNs**



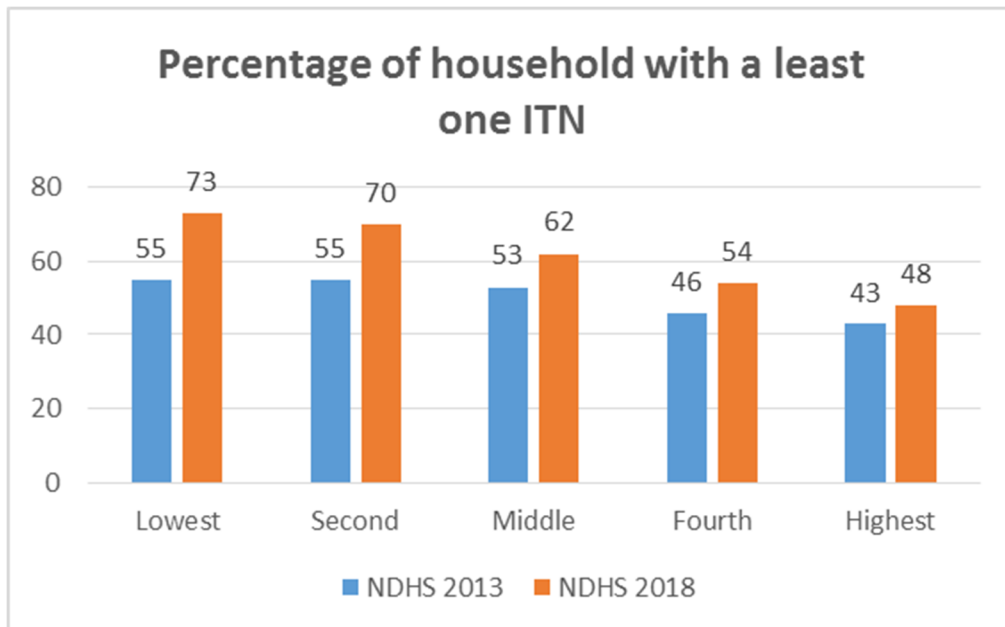
There was a steady increase from 8% in 2008 (NDHS, 2008) through to 50% in the 2013 (NDHS, 2013) and to 60% in 2015 (NMIS, 2015) before a decline to 61% in 2018 (NDHS, 2018). However, it can be said that there was an increase from 50% to 61% within the review period (2013-2019). That notwithstanding, the target of 80% set in the NMSP 2014-2020, was not met.

**Figure 19. ITN ownership by state (NDHS 2018)**



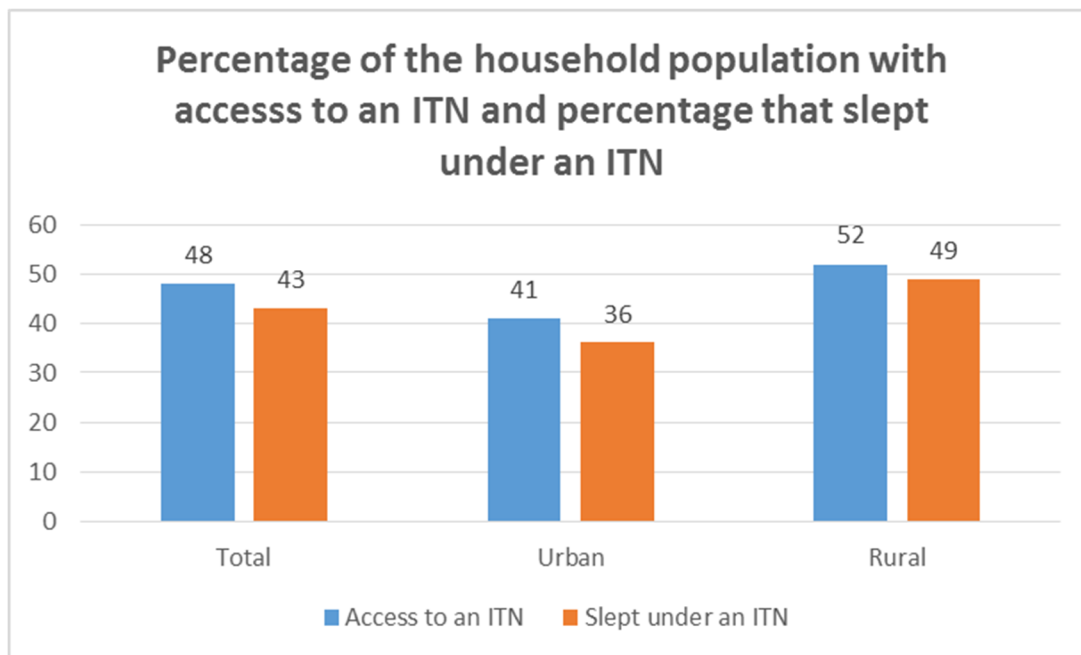
This review has clearly shown that household ownership of an ITN is lowest in Lagos (28%) and highest in Jigawa and Kebbi (98% each). Almost all states in the North West have achieved the national target of 80% household ownership of ITNs. However, use of ITNs still remains low in Nigeria.

**Figure 20. ITN ownership by household wealth quintile**



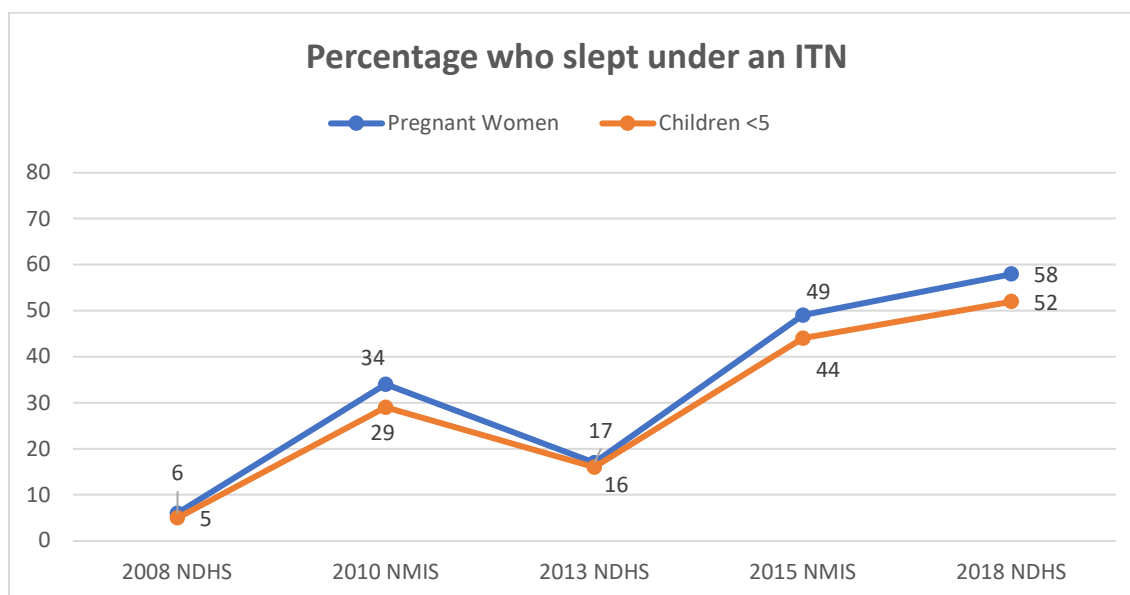
Within the review period, household ownership of ITNs decreases with increasing wealth from 55% in the lowest wealth quintile to 43% in the highest quintile in 2013 NDHS. Similarly, in 2018 NDHS from 73% in the lowest wealth quintile to 48% in the highest quintile.

**Figure 21. Access to and use of ITNs by resident**



Access to ITN is measured by the proportion of the population that could sleep under an ITN if each ITN in their possession were used by two people. In 2018 NDHS, 48% of household members in Nigeria who slept in the household could sleep under an ITN. Figure 21 shows that 43% of the population slept under an ITN the night before the survey. It also showed that access to ITNs is higher in rural areas (52%) than in urban areas (41%).

**Figure 22. Trends in use of ITNs by pregnant women and children under 5**



The use of ITNs among children under age 5 has increased over the past 7 years, from 16% in 2013 to 52% in 2018. Similarly, use of ITNs by pregnant women has increased from 17% in 2013 to 58% in 2018. However, the target of 80% set for both indicators in the NMSP, 2014 – 2020 was not met.

### Progress towards Mass LLINs Distribution

**Table 16. Number of LLINs Distributed from 2014 – 2019 through mass campaigns**

S/N	State	Total LLIN Distributed	LLIN MASS CAMPAIGNS (1 NET/2PEOPLE) BY YEAR						Number of Campaigns: 2014-2019)	Donor / Implementing Partner
			2014	2015	2016	2017	2018	2019		
1	Abia	1,864,830		1,864,830					1	
2	Abuja-FCT	0							0	
3	Adamawa	2,511,329				2,511,329			1	GF (CRS-SFH)
4	Akwa Ibom	5,696,971	2,627,002					3,069,969	2	PMI (GHSC-PSM & BA)
5	Anambra	2,662,825	2,662,825						1	
6	Bauchi	6,588,157	2,730,375					3,857,782	2	PMI (GHSC-PSM & BA)
7	Bayelsa	0							0	
8	Benue	2,916,177			2,916,177				1	PMI
9	Borno	0							0	
10	Cross River	4,077,220		1,727,493				2,349,727	2	PMI (GHSC-PSM & BA)
11	Delta	3,186,914						3,186,914	1	GF (SFH)
12	Ebonyi	3,131,357		1,425,748				1,705,609	2	PMI (GHSC-PSM & BA)
13	Edo	2,110,210				2,110,210			1	GF (CRS)
14	Ekiti	1,419,446	1,419,446						1	
15	Enugu	0							0	
16	Gombe	3,690,463	1,624,245					2,066,218	2	GF (CRS)
17	Imo	2,761,038				2,761,038			1	GF (CRS)
18	Jigawa	6,571,876	2,914,513					3,657,363	2	GF (SFH)
19	Kaduna	9,145,250		4,050,738				5,094,512	2	GF (SFH)
20	Kano	14,566,545		6,335,262				8,231,283	2	GF (SFH)
21	Katsina	8,793,172	3,836,839					4,956,333	2	GF (SFH)
22	Kebbi	4,737,269	2,186,973					2,550,296	2	PMI (GHSC-PSM & BA-N)
23	Kogi	2,058,043				2,058,043			1	PMI
24	Kwara	1,699,721				1,699,721			1	GF (CRS)
25	Lagos	0							0	
26	Nasarawa	3,226,357	1,617,099					1,609,258	2	PMI (GHSC-PSM & BA-N)
27	Niger	6,069,468	2,561,628					3,507,840	2	GF (SFH)
28	Ogun	5,178,353	2,243,420					2,934,933	2	GF (CRS)
29	Ondo	2,448,208				2,448,208			1	GF (CRS)
30	Osun	2,470,742				2,470,742			1	GF (CRS-SFH)
31	Oyo	4,068,013			4,068,013				1	PMI
32	Plateau	2,065,653		2,065,653					1	PMI (GHSC-PSM & BA-N)
33	Rivers	2,784,319	2,784,319						1	
34	Sokoto	2,834,809				2,834,809			1	PMI (GHSC-PSM & BA-N)
35	Taraba	1,859,862						1,859,862	1	GF (CRS)
36	Yobe	2,333,814						2,333,814	1	GF (MC)
37	Zamfara	2,373,621		2,373,621					1	
	<b>Total</b>	<b>127,902,032</b>	<b>29,208,684</b>	<b>19,843,345</b>	<b>6,984,190</b>	<b>18,894,100</b>	<b>24,702,152</b>	<b>28,269,561</b>	<b>45</b>	
	count		12	7	2	8	8	8		

Note; Campaigns were not conducted in 4 states and FCT.



## Progress towards Routine/Continuous LLINs Distribution

The MPR noted that 24 out of 37 states in Nigeria are currently implementing routine LLIN distribution. Routine LLINs distribution was carried out in GF (13) and PMI (11) supported states through the health facilities in accordance with WHO recommendation of continuous distribution of LLINs to all pregnant women attending antenatal care (ANC) and all infants attending the Expanded Programme on Immunization (EPI) services. Within the review period, a total of 16.3 million LLINs were distributed through routine-based health facility system. Also, LLIN distribution was integrated with the bi-annual maternal new-born child health (MNCH) weeks in some states in the country. Significant increase in LLIN coverage and use has been achieved over the past six years in these groups.

**Table 17. Routine Distribution of LLINs**

<b>Routine Distribution of LLINs by Year in Nigeria</b>			
<b>Year</b>	<b>PW</b>	<b>Children</b>	<b>Total LLINs</b>
2014	1,300,246	948,117	<b>2,248,363</b>
2015	1,055,696	722,890	<b>1,778,586</b>
2016	1,642,353	1,346,180	<b>2,988,533</b>
2017	1,697,728	1,496,078	<b>3,193,806</b>
2018	1,742,019	1,399,713	<b>3,141,732</b>
2019 (Jan-Sep)	1,619,365	1,378,522	<b>2,997,887</b>
Total	9,057,407	7,291,500	<b>16,348,907</b>

(Source: DHIS database)

## Progress on IRS and LSM Implementation

IRS is a key vector control intervention for its ability to rapidly cut transmission. Implementation of IRS was planned to be phased and targeted to cover 45% of households in the country by 2020. However, NDHS 2013 reported a low IRS coverage of 1.7%<sup>28</sup>. The main class of insecticide used for vector control in the country is Pyrethroids.

In the period under review, IRS was piloted in six States over a one and half month period in 2016. The Federal Government provided funds for its piloting in six selected states, one per geo-political zone of the country (Table 18). These states were selected on the basis of previous historic perspectives of IRS implementation, availability of capacity and malaria prevalence. The baseline data showed the presence of *Anopheles gambiae* and other species of the vector in the communities.

The community members and IRS beneficiaries accepted the operations while the personnel used were experienced and well-motivated. Policy makers at the State and LGA levels supported the process and provided enabling environments for successful implementation of the IRS operations in their respective states. The PPP strategy could be a possible method for sustainable IRS implementation in Nigeria if well planned and implemented.

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<sup>28</sup> NDHS, 2013

**Table 18. Summary data for IRS in selected communities in six states in Nigeria 2016**

S/N	State	LGA / Community	Households Targeted	Households visited	No of structures covered	No. of Rooms sprayed	Total People Protected
1	Anambra	Awka North / Mgbakwu	N/A	6,500	6,218	19,106	32,800
2	Bauchi	Danbam/ Danbam A & Danbam B	N/A	4,314	4,537	12,037	28,243
3	Jigawa	Auyo/Auyo-Gamsarka &Gatafa	N/A	2,706	6,590	9,219	21,130
4	Lagos	Kosofe / Agiliti	N/A	6,110	6,110	7,944	7218
5	Nasarawa	N/Eggon / Alogani, Kagbo & Ogbagi/ Agungi	N/A	6,700	7,304	21,912	40,670
6	Rivers	Ikwerre / Isiokpo	N/A	7,220	6,860	21,028	36,100
	<b>Total</b>		<b>N/A</b>	<b>19,837</b>	<b>30,759</b>	<b>70,218</b>	<b>130,061</b>

### Larval Source Management (LSM)

This is the management of aquatic habitats (water bodies) that are potential larval habitats for mosquitoes, in order to prevent the completion of development of the immature stages and emergence of the adult mosquitoes is referred to as Larval Source Management. There are four types of LSM: 1) Environmental modification 2) Environmental manipulation 3) Larviciding and 4) Biological control. The NMSP proposes to implement LSM in line with WHO recommendation as a complementary strategy to IRS and as a means of reducing the malaria vector density.

The LSM is planned to be complementary intervention to LLINs and IRS on the NMSP 2014-2020, however, in the review period LSM activities have not been conducted. Same review period, a zero draft of LSM implementation framework was developed in collaboration with partners. The focus of this framework is to provide guidance to implementers and managers on LSM with emphasis on community involvement.

LSM has only been sparsely carried out in Lagos and Rivers States in 2014 -2015, with very low coverage, despite ambitious plans and high political will to implement this strategy in the country.

### Progress towards Innovative Strategies for Malaria Control

The MSP proposed use of innovative strategies for malaria vector control in the Country. NMEP has piloted a number of new products such as bracket, window/door nets and insecticide paints. Between the periods covered by the MSP, NMEP with support from some principal investigators piloted two products - Mozzi range of vector control products was piloted in Lagos in 2016, while Ines Fly Insecticide Paint was pilot in 2 LGAs of Nasarawa State. The results of these pilots require further analysis and concurrence of the IVM sub-committee of TWG-Malaria to allow NMEP adopt the strategy.

## **Enablers and constrainers**

### **Enablers**

- Availability of Malaria/ITN Policy and the national mass LLINs campaign and continuous distribution guidelines
- Effective IVM coordination and support to the IVM Branch of NMEP through the IVM Sub-Committee and the ITN/IRS/LSM Expert Groups.
- Adoption of ICT4D technology during mass campaign of LLINs to improved efficiency, accountability and fraud mitigation.
- Documentation of best practices and lessons to guide future campaigns and implementation of other LLIN activities.
- Decentralization of mass campaign and routine distribution to sub-national levels and increasing involvement of states in taking ownership, such as providing warehousing, funding flag-off events for mass distribution, etc.
- Private sector presence of private such as Pest Control Association of Nigeria (PECAN) and motivated community.

### **Constrainers**

The implementation of malaria vector control is limited by the following:

- Inadequate Federal and State Governments funding for LLINs procurement and distribution as well as complete neglect of complimentary strategies of IRS and LSM.
- Poor utilization of Malaria commodities especially LLINs
- Insecurity and communal clashes across regions in Nigeria
- Overdependence of donor and donor fatigue
- Vector resistance to insecticides used for vector control is emerging in Nigeria.
- Inadequacy of data capturing for continuous LLINs distribution indicator in the DHIS 2.0
- Limited numbers of sentinel sites across Nigeria

## **5.1.2 Conclusions and recommendations**

### **Conclusions**

- There is steady increase of national average of household owning at least one ITN from 50% in 2013 to 61% in 2018; almost all the states in the North West region of Nigeria have achieved the national target of 80% household ownership of ITNs within the review period. However, household ownership of ITNs decreases with increasing wealth from 73% in the lowest wealth quintile to 48% in the highest quintile in 2018
- Although the target of 80% LLINs use by 2020 is yet to be achieved, the use of ITNs among children under age 5 has increased over the past 7 years, from 16% in 2013 to 52% in 2018. Similarly. The use of ITNs by pregnant women has also increased from 17% in 2013 to 58% in 2018.

- Funding for LLINs distribution are largely donor driven with inadequate Federal and State governments commitment. Some states without donor support have not been able to conduct LLIN distribution in the past 7 years (see Table 16 above).
- Within the period covered by this MPR, a total of 127.9 million LLINs were distributed through 45 campaigns in 32 states. In addition, 16.3 million LLINs were distributed through the routine system. LLINs durability monitoring shows an estimated median of 5.3 years in Zamfara and 3.2 years in Oyo State, the difference attributable to the difference in net use environment and net handling.
- Investment in IRS by government and Partners during the review period was abysmally low with a paltry 1.7% of households reached in the last 5 years. Larva Source Management was not operationalized beyond the LSM Framework development and the establishment of the Expert Group.

## **Recommendations**

- The political leadership at Federal, State and LGA levels should show greater commitment through increase domestic financing of Malaria Vector Control Strategies.
- FMOH-NMEP and Partners should institutionalise a quantification process that will support continuous distribution of LLINs through channels beyond ANC and Immunisation activities.
- The ICT based monitoring system - ICT4D should be scaled up to improve efficiency and transparency during LLIN campaigns
- The system of reverse logistic should be reviewed to allow left over nets move into the continuous distribution systems,
- Deployment of New Nets with dual active ingredients (dual AI) should be considered due to widespread pyrethroid resistance across all the eco-zones and should be guided by data (insecticide resistance studies).
- FMOH and Partners should support the local regulatory authorities in their efforts to strengthen market vigilance by issuing visual aids on how to recognize known counterfeit products and also minimize leakage of nets.
- Engage and support private sector investment in LLINs, Insecticides and Larvicides production and marketing in Nigeria
- Scale up routine entomological surveillance and insecticide resistance monitoring across different ecological zones of Nigeria; and review and implement the rotational use of insecticides and products as part of the insecticide resistance management plan to curtail the spread of resistance to commonly used insecticide.
- NMEP and Partners should create/adopt innovative interventions targeting outdoor transmission of malaria parasite i.e. piloting the use of spatial repellents
- Include additional indicators for monitoring IRS and LSM activities in the subsequent MSP
  - Proportion of population protected with IRS out of those targeted in the last 12 months before the survey
  - The proportion of larval habitats covered with LSM out of those targeted in the last 12 months before the survey.
- The following entomology indicators are suggested to be included in the next MSP:

- Percentage composition of vector species
- Parity rate
- Human biting rate (bites/person/night)
- Percentage of mosquitoes having fed on humans (s out of all meals (human blood index)
- Sporozoite infection rate
- Entomological Inoculation Rate
- Resistance status and mechanism of resistance and where possible intensity resistance should be included.

## 5.2 Level of attainment of chemoprevention outcome targets

### 5.2.1 Findings

#### Chemoprevention (CP) outcome indicators and targets

**Intermittent Preventive Treatment (IPTp)** strategy was adopted by Nigeria in 2014 in response to WHO recommendations on interventions for the effective control of malaria during pregnancy (WHO, 2013). The key interventions provided by this guideline include *administration of Sulphadoxine-pyrimethamine (SP) under direct supervision of skilled service providers*, distribution of long-lasting insecticidal nets (LLINs), and appropriate case management through prompt diagnosis and effective treatment with recommended medicines.

The **outcome indicator** for the prevention of malaria in pregnancy in the NMSP 2014 – 2020 is: “Proportion of pregnant women who received at least three doses of SP for intermittent preventive treatment during antenatal care visits”.

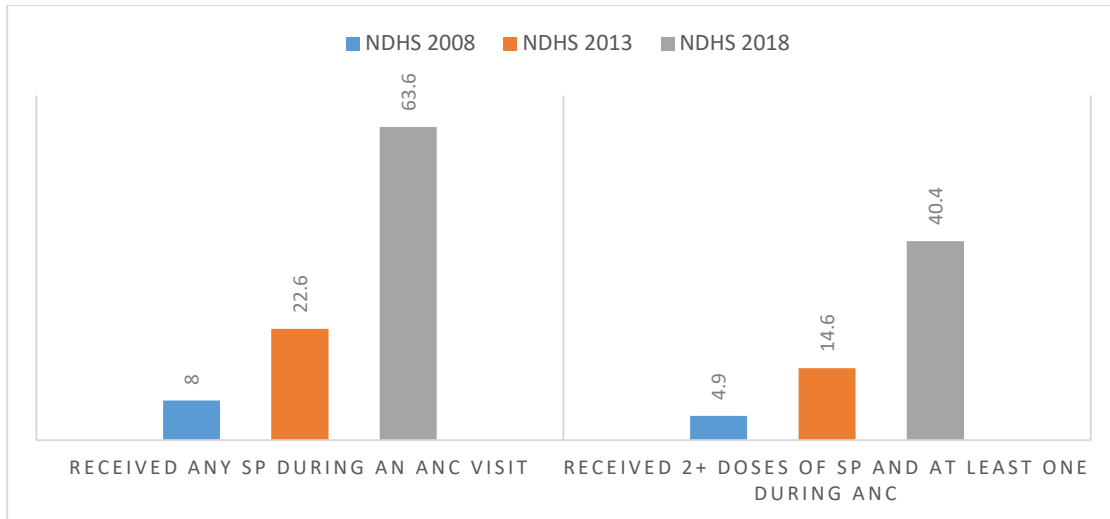
**Table 19: Achievement of IPTp-3 during ANC against set targets**

Indicators (% of PW who received IPTp during ANC visits (P&P HF's))	Baseline	2014	2015	2016	2017	2018	2019	2020	Source
<b>Target</b>		35%	55%	75%	80%	90%	95%	100%	MIS/HMIS
<b>Achievement</b>		5.8% (NDHS, 2013)				16.6% (NDHS, 2018)			NDHS

The indicator for MIP is appropriately phrased as it tends to specifically monitor yearly progress and evaluates IPTp uptake among pregnant women assessing antenatal care at health facilities.

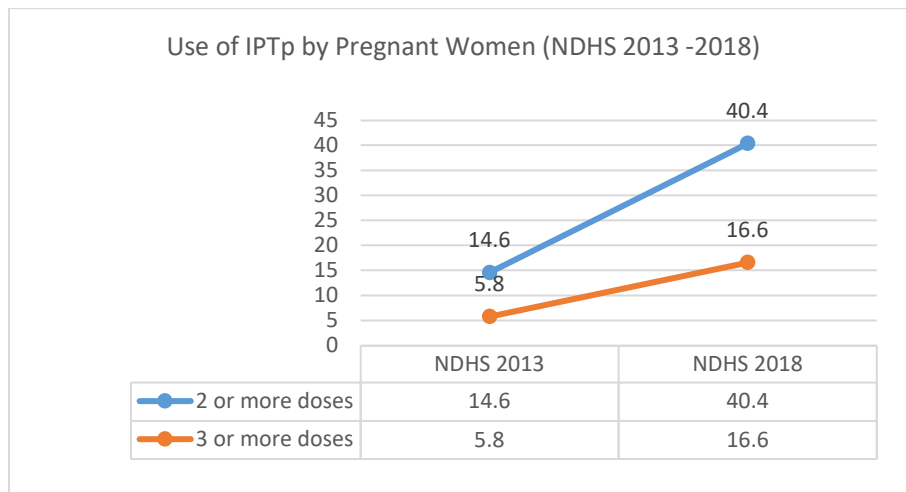
The proportion of pregnant women that received at least one dose of SP during pregnancy is higher than those who received two or more doses possible due to delay in attending ANC or attrition from ANC, please see fig. 23 below

**Fig 23. Percentage of pregnant women receiving two doses of SP and at least one dose during ANC**



The NDHS 2018 reports further shows an improvement in the uptake of IPTp over the last five years (2013 – 2018). The proportion of pregnant women who received **two or more doses** of SP as reported by NDHS 2018 (40.4%) is significantly higher than the figure reported by NDHS 2013 (14.6%), see Fig 24 below. Curiously though, the proportion of pregnant women accessing **three or more doses** of SP as documented by NDHS 2018 (16.6%) is lower than the NMIS 2015 report value of 19.0%. **However, the 2018 achievement of 40.4% for pregnant women taken two or more doses of SP falls short of the expectations of the NMSP 2014 – 2020 target of 100% uptake.**

**Figure 24: Use of IPTp 2 by Pregnant women**



**Seasonal Malaria Chemoprevention (SMC)** is defined as *“the intermittent administration of full treatment courses of an antimalarial medicine during the malaria season to prevent malarial illness, with the objective of maintaining therapeutic antimalarial drug concentrations in the blood throughout the period of greatest malarial risk.”*

The MSP 2014 – 2020, recommended the development of an implementation framework for areas with high seasonal Malaria transmission, specifically in the 9 northern states of Bauchi, Borno,

Jigawa, Kano, Katsina, Kebbi, Sokoto, Yobe and Zamfara that fall within the Sahel belt region of the country, with intervention targeting about twelve million under-five children.

Implementation of SMC intervention commenced in Nigeria between 2013 and 2014 through a pilot project designed and implemented by Malaria Consortium in four LGAs of Katsina State (Baure, Dutsi, Mashi and Mai'adua). With seed funding from Dangote Foundation and BMGF, CHAI and Malaria Consortium expanded the scope of SMC intervention respectively to more communities in Kano and Katsina States respectively in 2015, reaching over 300,000 children 3-59 months of age. MSF also commenced pilot SMC activity in Yobe State, which was however truncated prematurely due to heightened security challenges. Additional funding from UNITAID (2015), Malaria Consortium Philanthropic Fund MC-PF (2018) and GF-ATM (2019) facilitated expansion of SMC implementation to Sokoto, Zamfara, Jigawa, Katsina and Yobe States over a three-year period (2015 – 2019), reaching 10,073,132 eligible children. WHO mobilized further resources to support the SMoH of Borno, Adamawa and Yobe States to implemented community driven SMC interventions in the states (2017 – 2019) with an estimated 2,253,793 eligible children reached. Other partners (MSF, INTERSOS) mobilized resources from other sources including Global funds to support SMC in conflict areas of Borno State, covering eight LGAs and cumulatively accounting for 235,023 under five children reached (2018 – 2019). The cumulative number of children reached in the areas where SMC has been implemented in the region over the period 2015 – 2019 is **12,583,379**, with a total of **48,329,983** SMC treatments provided. The areas of coverage within these states are a total of 101 LGAs.

In line with the MTR recommendations, a Technical Working Group (TWG) was constituted with the Case Management sub-committee to provide advisory technical support and coordinate implementation and resource mobilization for SMC implementation in Nigeria. ACCESS-SMC also carried out efficacy studies within the implementation sites and found high efficacy levels for SPAQ. Over the years, SMC implementation has been improved substantially. Among other delivery strategies, door-to-door delivery has been found to be the most cost effective, achieving highest coverage. The blisters now come in sweetened and dispersible tablets.

### **Outcome Indicators and Targets**

Indicators for evaluating SMC outcome were not identified in the NMSP 2014 – 2020. This was probably so, as the implementation guideline and policy framework for SMC roll out were not concluded prior to the development of the MSP.

### **Enablers and constrainers**

Enablers:

1. Availability of trained workforce and willing community stakeholders both at the national and state levels to effectively drive the MIP and SMC strategies of national malaria programme.
2. Availability of the national guidelines, training manuals, pools of national/state level trainers and evaluation tools to ensure adequate competence and skills transfer.
3. Adaptation of the MIP policy and guidelines in the curricular for the in-service training of midwives by the Nursing and Midwifery Council of Nigeria.

4. Established last mile commodity distribution channels that could ensure that IPTp when provided, could reach the beneficiaries even those at remote health facilities anywhere in the country.

#### Constrainers

1. **Funding deficiencies and commodities stock outs:** Inadequate domestic funding of the health sector and Malaria and over dependence on development assistance.
2. **Late onset of ANC booking:** Majority of pregnant women present late for their first ANC visit (as reported in HMIS), thereby limiting the number of times they may access IPTp before the delivery of their babies.
3. **Paucity of data from private sector partners:** There are limited data captured from private healthcare providers in the national HMIS database. As large proportion of the population assess healthcare from these category of healthcare providers, hence, these significant proportion of the population are not represented on the national database.
4. **Local access burden, challenging terrain and nomadic settlements:** the process for making SMC intervention reach the designated beneficiaries are enormous. Monthly cycles of mass drug distributions, totalling 4 cycles in a round is indeed a lot of hard work for the malaria programme and implementing partners, requiring extensive commitment of time and resources.
5. **Dosing challenge:** the administration of SMC drugs over a 3-day period could prove a major hindrance to compliance, especially as we rely on caregiver to administer the 2nd and 3rd doses.
6. **Security challenges:** the region where SMC is being implemented in the country is exposed to ongoing armed conflicts making it difficult for the intervention to reach the intended beneficiaries most whom have fled their homes as a result. Health workers involved in providing services at community levels are exposed high levels of insecurity including kidnapping, and armed robbery.
7. **Challenges of multiple uncoordinated interventions at the community level:** Multiple parallel and uncoordinated community level programmes could weaken the community structures if there are not conscious efforts to integrate and streamline interventions at the community levels.
8. **Bottlenecks in obtaining waivers:** As majority of the drugs used for implementation of SMC are sourced from donors who procure them outside the country, logistic challenges with transportation of these drugs from the source includes challenges with custom clearance. Delayed clearance at customs constitutes a major impediment to the availability of these drugs for free distribution to the beneficiary populations during scheduled campaigns.



## 5.2.2 Conclusions and recommendations

### Conclusions

1. The objective of the NMSP, 2014 -2020 to achieve 100% uptake of IPTp for pregnant women attending ANC by 2018 through to 2020 was not achieved. The achievement of 40.4% of pregnant women reported to have taken two or more doses of SP falls short of the target of the MSP.
2. The objective of the NMSP, 2014 -2020 to achieve two million targets for eligible children was surpassed. As at 2019, over 12 million eligible children benefitted from SMC intervention in Nigeria.

### Recommendations

1. NMEP should collaborate with the Department of Family Health and the NPHCDA to promote full integration of IPTp into ANC and other strategies of these agencies to improve IPTp uptake among pregnant women.
2. The NMEP should as a matter of necessity, establish a department for Private Sector Engagement with the responsibility of ensuring full participation of all private healthcare providers in malaria programming.
3. Update ANC registers to include columns for recording of IPTp3 to ensure data collection for monitoring of this indicator.
4. SMC strategy, implementation arrangement and specific indicators (“the percentage under 5 children treated in each cycle, and the percentage that received four treatments”) should be included in the next MSP, the MIS and other national surveys (NDHS, MICS) to track outcome of interventions.
5. Improve engagement and involvement of the private sector to mobilize more resources to drive SMC implementation.
6. Decentralization of operations: to ensure drugs are adequately available at the hard to reach communities in time for distribution during the cycle, the drugs distribution channels should be made to be as close to the communities as possible. Use of PHCs storage as focal points for drug distribution is key.
7. To reduce the huge logistic considerations in moving SMC drugs, close to the beneficiaries, it is recommended that one singular procurement and distribution of drugs be carried out each year to cover the four rounds.
8. Sustainability of SMC intervention can be enhanced through integration with iCCM and nutrition programmes. This is not only cost efficient but could also provide opportunities to reach more children and increase potentials for adherence.

## 5.3 Level of attainment of case management outcome targets

### 5.3.1 Findings

#### Policy and Strategic Guidance

The implementation of case management activities which centre on diagnosis and treatment of malaria cases is guided by the National Guidelines on Diagnosis and Treatment of Malaria and the Malaria Strategic Plan of the NMEP. The National Guidelines on Diagnosis and Treatment of malaria was reviewed in 2005, 2010, 2011 and 2015.

The National Antimalarial Treatment Policy was developed in 2005 to adopt the use of Artemisinin based Combination Therapies for the treatment of uncomplicated malaria; Artemether-Lumefantrine and Artesunate-Amodiaquine were adopted as the medicine of choice and alternate medicine respectively. The medicines come in age specific and colour-coded packs in line with the country's specifications.

Severe malaria infections are treated with Injection Artesunate. Rectal Artesunate is recommended as Pre-referral treatment where the use of parenteral treatment is not feasible.

### **Outcome Targets and Indicators – Diagnostic**

#### **Targets**

- 100% of suspected malaria cases are confirmed by RDT/Microscopy in the public sector by 2018
- At least 80% of suspected malaria cases are confirmed by RDT/microscopy in the private sector and the community by 2018 and 100% by 2020.
- 100% of all health facilities have capabilities for malaria diagnostics (microscopy and/or RDT)

#### **Indicators**

- Proportion of persons (U5 and Above 5) with suspected malaria receiving a parasitological test (RDT and/or microscopy)
- Proportion of all persons (U5 and above 5) testing positive with a parasitological test (RDT and/or microscopy)
- % of health facilities with malaria diagnostics capabilities (microscopy and/or rapid diagnostic testing) – (in the Performance Framework)

### **Outcome Targets and Indicators – Treatment**

#### **Targets**

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

#### **Indicators**

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

### **Progress towards MSP CM outcome indicators - Diagnostic**

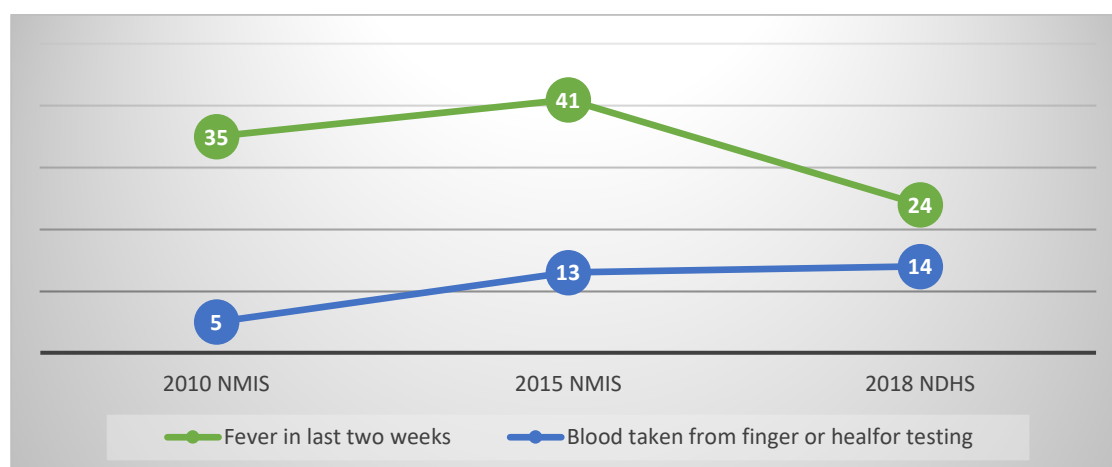
The MPR observed a conflict in the second outcome indicator for Malaria diagnosis in the body of the NMSP, 2014 -2020 and the Performance Framework (PF) of the same plan. While indicator 2 of the NMSP seeks to measure the proportion of all persons testing positive to microscopy and/or RDT, the indicator 2 of the PF seeks to measure the proportion of health facilities with malaria diagnostic capabilities.

The MPR, 2019 therefore attempts to look at the progress made across the indicators highlighted in the PF because of their appropriateness to Malaria diagnostics.

**Table 20: Proportion of persons with suspected Malaria tested with RDT or microscopy**

Objective 2	Indicator (Impact)	2012	2013	2014	2015	2016	2017	2018	2019	2020
<i>To test all care-seeking persons with suspected malaria using RDT or microscopy by 2020</i>	% of persons with suspected malaria receiving a diagnostic test (RDT and/or microscopy)	22		40%	50%	60%	70%	80%	90%	100%
	Achievement (Source: MIS and NDHS)		11.1%		12.6%			13.8%		
	% of health facilities with malaria diagnostics capabilities (microscopy and/or rapid diagnostic testing)	TBD		50%	60%	70%	80%	90%	100%	100%
	Achievement (Source: HMIS)			100%	100%	100%	100%	100%	100%	100%

**Fig. 25: Trends in the diagnosis of children with fever (NMIS 2010, 2015, NDHS 2018)**



### Progress towards MSP CM outcome indicators - Treatment

Whereas there was increase in the percentage of children aged less than 5 years who received ACTs in 2018, there was a general drop in the number of cases that received any antimalarial treatment for malaria (Table 2).

**Table 21: Progress toward milestone targets**

Objective 3	Indicator	2010	2012	2013	2014	2015	2016	2018	2020
<i>Treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020</i>	% of persons testing positive that receive antimalarial treatment (in public and private health facilities) according to national guidelines		42%		55%	70%	85%	100%	100%
	Achieved	12%		18%		38%		52%	
	% of Children younger than 5 years of age with fever in the last 2 weeks who received any antimalarial treatment	49%			60%	70%	80%	100%	100%
	Achieved	49%		33%		66%		43%	

In order to rapidly scale up the use of Artemisinin based Combination Therapies (ACTs) as well as improve its access at all level, the National Malaria Programme, through the National Foods and Drug Administration and Control (NAFDAC) deregulated Artemether-Lumefantrine (AL) and Artesunate+Amodiaquine (AA) from their status of “Prescription only” at adoption to Over the Counter (OTC) medicines. With this approval, AL and AA could be handled by non-medical personnel, used freely at home and also be advertised by the producers and importers.

Advocacy to the Department of Customs and Excise as well as the Federal Ministry of Finance by Programme also led to the removal of taxes and tariffs from ACTs and other antimalarial commodities. National manufacturers of antimalarial products were also encouraged to produce ACTs locally through several meetings conducted with the Pharmaceutical Manufacturers Group of Manufacturers Association of Nigeria (PMG of MAN).

Support from Development Partners including the GF, WB, PMI, UK-DFID and Chinese Government provided opportunity for an increased supply of antimalarial medicines and commodities. The introduction of Affordable Medicines Facility – malaria (AMFm), a strategy designed to provide quality antimalarial medicines for the private sector at highly subsidized price also became operational. The AMFm, spanning a period of six years beginning from 2011, and later transformed to become Private Sector Co-payment Mechanism (PSCM) provided about 450 million high quality ACTs through the private sector and also led to improved coverage in rural settings across the country while it lasted (Joda et al., 2015).

### **Use of ACTs for the treatment of Uncomplicated Malaria**

The use of ACTs for the treatment of uncomplicated malaria has progressively increased from **12% in 2010 to 52% in 2018** (see table 21 above). Although the use of ACTs has increased, its use within 24 hours of onset of symptoms is still very low; only 26% of the 12% and 15.3% of the 18% who used ACTs for the treatment of uncomplicated malaria in 2010 and 2013 respectively, took it within 24 hours of onset of symptoms. The use of ACTs within 24 hours of onset of symptoms were not assessed in the 2015 and 2018 NMIS and NDHS respectively.

### **Availability of ACTs in the Private Sector**

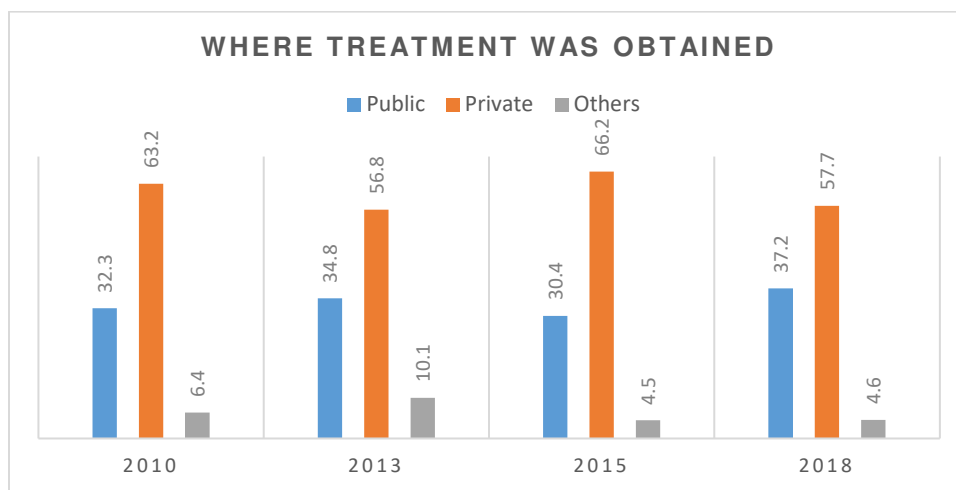
Recent survey on Price and Availability of Antimalarials, Essential medicines and RDTs by the NMEP under the Affordable Medicine Facility for Malaria (AMFm) in July, 2018 showed a national availability of the different antimalarial medicines in the private sector. In the study, Artemether-Lumefantrine and Artesunate-Amodiaquine were 67 and 27% respectively (FMoH, 2018). This

survey shows the positive impact of the deployment of highly subsidized ACTs to the private sector.

### Where treatment is obtained

Different surveys have consistently shown clients' preference for the private sector despite the fact that antimalarial medicines are provided at no cost in the public sector. Further analysis has also shown that the Proprietary and Patent Medicine Vendors which represents an informal service delivery point at the community level are the most patronized in the private sector. Conversely, the Community Oriented Resource Persons or Role Model Care which is an informal service delivery point for the public sector is the least patronized (Figure 26).

**Figure 26: Where treatments are obtained**



### Severe malaria

The goal of the 2014 - 2020 Strategic Plan is to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero. This it hopes to achieve by ensuring that from 2017 through 2020, all individuals (100%) with confirmed malaria either in the public or private sector, receives effective antimalarial treatments.

The NMEP forecast show that 0.3% of children having uncomplicated malaria may develop severe malaria through 2014 – 2020, but there is no data on patients developing severe malaria and the outcome of their treatments to substantiate this.

***It is however pertinent to note that 7.5% and 3.6% of children under 5 with fever in the two weeks preceding NDHS, 2018 took Injection Artesunate and Rectal Artesunate respectively. It is not stated if this was used to manage severe Malaria***

### Efficacy Tests/Trials of ACTs and Injection Artesunate

An efficacy study for AL, AA and Dihydroartemisinin-Piperazine (DHP), using the WHO 42-day protocol in eight sites (Neni, Anambra and Ogwa, Imo for South-east, Otusegha, Bayelsa for South-south, Ilorin, Kwara for North-central, Bodinga, Sokoto and Kura, Kano for North-west, Numan, Adamawa for North-east and Ibadan, Oyo for South-west in 2014 – 2015 showed PCR-corrected efficacy of 97.4% in the three molecules (Ebenebe et al., 2018).

In 2018, efficacy study was conducted in three sites; Agbani, Enugu in South-east, Barkin Ladi, Plateau in North-central and Kura, Kano in North-west. The study showed a PCR-corrected efficacy of 100% and 97.8% for AA in Kano and Plateau states respectively whereas the PCR-corrected ACPR values for AL in Enugu, Kano and Plateau states were 98.9%, 97.9% and 97.8% respectively. Efficacy for DHP (PCR-corrected) was 100% (FMoH, 2018).

### **Pharmacovigilance: Safety Profile of Antimalarial Medicines**

Prior to the adoption of ACTs in Nigeria, there was limited knowledge of their safety. Strong collaboration between the National Malaria Elimination Programme and the Pharmacovigilance Unit of the National Agency for Food Administration and Control (NAFDAC) has ensured that all adverse events associated with the use of the medicines are tracked and documented.

An observational prospective Cohort Event Monitoring (CEM) studies to determine the safety profile of the medicines among the Nigerian population in 2009 - 2010. Twenty-four sites were used across the geo-epidemiological zones in the country with over 10,000 patients recruited in the study. The outcome of the study showed that the medicines were safe (Bassi et al, 2014). However, there has been large scale documentation of body weakness and hypotonia with the use of Artesunate-Amodiaquine (Bassi et al., 2016, 2017). These adverse effects have led to large scale rejection of AA by individuals and state malaria programmes. The initial reaction of the national programme in view of these developments, the proportionate ratio of supply of antimalarial medicines from Global Fund to the country was put at ratio 75:25 for AL, and further to 90:10. Evidence obtained from randomized control studies on safety of Dihydroartemisinin-Piperaquine (DHP) has demonstrated a high safety profile (Naing et al., 2013; Adjei et al., 2016).

### **Enablers and constrainers**

#### **Enablers – Diagnosis & Treatment**

- There are existing Policy and Guidelines which promotes parasite-based diagnosis and treatment for all suspected cases of malaria.
- RDTs and ACTs supplied by government, several partners and other non-governmental sources are obtained at no cost in the public
- Permission have been granted by Pharmacists Council of Nigeria (PCN), official regulator of Patent and Proprietary Medicine Vendors to conduct RDTs as Point of Care test upon training.
- There are Drug Efficacy Monitoring Sentinel Sites and Malaria Parasite Sentinel Surveillance Centres to conduct efficacy studies as well as carry out surveillance on nationally deployed antimalarial medicines
- Both AA and AL are now produced locally and are available as OTC medicines in most pharmacies and Patent medicine stores.
- Vibrant private sectors with high patronage of PPMVs provides a good opportunity to improve access; there are over 130,000 registered and well distributed PPMVs in Nigeria.

#### **Constrainers – Diagnosis and Treatment**

- Limited public awareness on test-treat policy – little or no ACSM materials have been developed to support the roll out of the parasite-based diagnosis policy.

- Weak malaria microscopy methodology and skills with limited capacity of the laboratories to provide high quality malaria diagnosis where patients with persistent fever and negative RDTs would be referred.
- Functional microscopes and microscopist are absent in many secondary and tertiary health facilities
- Weak health systems in terms of logistic management of health commodities and health information management.
- Providers attitude to RDT results and CAT use.
- Inadequate domestic funding for Malaria leading to inadequate supplies of RDTs and medicines for the diagnosis and treatment of uncomplicated malaria.

### 5.3.2 Conclusions and recommendations

#### • Conclusions

- The targets set for Malaria diagnosis and treatment in NMSP, 2014 – 2020 were not met despite the significant support received from the donor partners. This might not be unconnected to inadequate funding of Malaria and the broader health system by government at all levels as indicated in the earlier chapters of this report.

#### **Recommendations**

- Harmonize training modules to ensure standardization of malaria diagnosis and treatment trainings for all health care providers including the PPMVs and other private sector providers.
- The National Guidelines on Diagnosis and Treatment should be reviewed based on the reports of Therapeutic Efficacy Test on the efficacy of AL, side effects of AA and the efficacy of Dihydroartemisinin-Piperaquine (this may replace AA as alternate treatment).
- Malaria data reporting should delineate treatment of severe from those of uncomplicated malaria.
- Drug efficacy studies should be conducted more frequently e.g., biennially as recommended by WHO and should be expanded to include molecular analysis of artemisinin resistant markers
- Develop strategy for private sector engagement to improve access to affordable diagnostic and treatment services

## 5.4 Level of attainment of procurement supply management outcome targets

### 5.4.1 Findings

#### **PSM Mechanisms and Process**

NMEP's pursuit of universal access to prompt malaria diagnosis, effective treatment and universal coverage with preventive interventions made it to place a premium on an efficient PSM system for the provision of medicines and other malaria-related health products. The core mandate of the PSM Branch is to ensure timely availability of appropriate antimalaria medicines and health

products required for prevention and treatment of malaria in Nigeria wherever they are needed which is in line with objective 5 of the National Malaria Strategic Plan 2014 – 2020.

Various strategies outlined in NMEP AOPs between 2014 and 2020, under PSM were set with the purpose of achieving these objectives. A close look at the budgeting and actual budgetary provision throughout the years shows a huge funding gap which can only lead to partial or complete stock outs and rationing of malaria health products in the supply pipeline across the states. The dwindling funding support from partners and inadequate domestic financing could trigger a reverse progression in PSM performance.

There is currently a coordination framework at both national and state levels between the NMEP and the NPSCMP. This is fully functional at national and with varying degrees of operation at the different states. The PSM of NMEP carries out the coordination and technical oversight functions which focuses on activities related to malaria health product pipeline with the involvement of all relevant stakeholders. Even though there is improved coordination of PSM activities across national and sub-national levels the current capacity of PSM nationally and at state level is inadequate. *Two partners are supporting some states (24 states) while more than 30 % of the states are unsupported. Despite the support to the 24 states there is inadequate supply of malaria medicines and commodities particularly across the Primary Health Centers. Limiting the number of states receiving donors support directly limits treatment of malaria in Nigeria wherever they are needed.*

### **Supply Chain system for Malaria Program**

The National Supply Chain system for malaria program is coordinated by the Procurement and Supply Chain Management (PSM) branch of NMEP, which coordinates the forecast and quantification of malaria health product needs of the country. The procurement of malaria health products by Government and donors/implementing partners, is based on the national quantification outcome and donor commitment to the specific State(s) being supported. The gaps between the forecast and the donor commitment for each State is filled by the Government of Nigeria (GoN). The malaria supply chain has three (3) storage levels: National warehouses (Lagos and Abuja), Axial or Zonal warehouses (Lagos -South West; Gombe-North East; Sokoto-North West; Abuja-North central; Cross River-South south and Anambra-South East). All malaria health products imported into the country go through the national warehouses in Abuja and Lagos. Thereafter, the products are long-hauled based on state-aggregated needs to the respective zonal warehouses. The health products need for each health facility obtained from the Bimonthly facility Stock Report (BFSSR) generated at the facility-level are aggregated by the State LMCU. The aggregated needs are used to generate the Last Mile delivery (LMD) Plan for each health facility. The LMD plan is reviewed by the program at the national level and sent back to LMCU for approval by the relevant authority. The approved LMD plan is sent to the axial warehouse for Last Mile delivery to the health facilities. At the HF, the health products are received and the Proof of Delivery (POD) signed off confirming receipt of quantities issued from the axial warehouses. Each health facility has LMIS tools for reporting and recording transaction. The Bimonthly facility Stock report is used to generate logistics report at the health facility every two (2) months. The report is collected by the LGA LMCU and transmitted to the state LMCU for entering into the National Health Logistics Management Information System (NHLMIS) to generate the malaria logistics dashboard and the LMD plan. The LMD plan drives the bimonthly re-supply of malaria health products to the facilities.



The MPR observed during the engagement with the State Malaria Programmes that Last Mile Distribution is being subjected to varying degree of controversial practices including dumping and proxy delivery. This will require independent verification by NMEP and Partners

The presence of partners has impacted positively on the malaria supply chain in the area of technical assistance in quantification exercises, Logistics management Information System (LMIS) tools development, capacity building on SCM at national and sub-national levels.

### **Forecasting and Quantification**

Quantification is done usually for the county while Donors/Partners procure for their supported states based on the outcome of the quantification. The quantification exercise is led by NMEP in collaboration with SMEP, Donors and other partners. The outcome comprises of malaria health products required for both prevention and treatment plans. Malaria health products procured centrally by Donors are distributed to Health facilities in supported States on a bimonthly basis.

Efforts at achieving efficient, coordinated and integrated forecasting and quantification procedures have been initiated by the NPSCMP through the development of a supply chain policy. The PSM sub-committee in NMEP oversees the forecasting and quantification of malaria commodities. It meets monthly and supports the management of the supply chain.

### **Storage, Distribution and Inventory management**

PSM's second, third and seventh priority strategies focused on development of efficient storage, distribution and inventory control systems for antimalarial medicines and commodities. There have been consistent ongoing efforts to integrate vertical programme-driven, fragmented supply chain systems in Nigeria. The NPSCMP established the National Warehousing Advisory Committee (NWAC) to provide oversight to the Nigeria's warehousing system and manage private sector contracts of third-party logistics providers. Six Zonal warehouses (Abuja, Lagos, Anambra, 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 increased 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.

NMEP, PSM designed the Malaria Commodity Logistics System (MCLS) now called Malaria Health Products Logistics Management System (MHPLMS) to provide 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). The system is generally functioning but challenges exist in states not currently supported by partners. The MHPLMS is designed for bi-monthly reporting—from health facility to LGA to State and to National.

### **Quality Assurance of Malaria.**

Significant work in the area of Quality Assurance took place within the period under review producing guidelines, protocols and several policies for QA and QC of both malarial medicines, RDTs and other malarial commodities. There is no evidence on record in NMEP showing batch to batch testing of RDT at the point of entry or routine twice yearly sampling (post market

surveillance) of these. Generally, the twice-yearly routine sampling is slow or it may not be happening.

NAFDAC conducts Post marketing surveillance to ensure malaria medicines and other commodities remain efficacious at points of use. In a QA report on Laboratories and Regulatory systems NAFDAC was said to be weak in RDT testing. NMEP and partners should support the scale up of quality-assurance for malaria medicines and RDT and ensure proper documentation is available from such tests and make sure priority is given to increasing diagnostic testing rates and adherence to test results.

## PSM outcome indicators and targets

There are three PSM outcome indicator:

- % of health facilities reporting stock-outs of RDTs lasting more than 1 week at any time during the past 3 months
- % of health facilities with stock-out of ACTs lasting more than 1 week at any time during the past 3 months
- % of product batches tested in previous year that met national and International Control Standards

The first indicator is considered appropriate and smart. The second indicator needs further clarification because there are up to sixteen different antimalarial medicines. The indicator needs to be more definite and define a representative number of tracer medicines out of the lot and not any one or two of the lot. Furthermore, the DHIS did not capture this indicator and the LMIS captured a different indicator, “% of Health facilities reporting **no** stock out”.

The last indicator “% of product batches tested in previous year that met national and International Control Standards” - this indicator needs to be more definite on the exact testing referred to. Currently, NAFDAC, ISO 17025 carries out two streams of tests. The first, in country, is routine for all products related to medicines, food, cosmetics, etc., that passes through Nigerian borders. The second is routine market surveillance sampling that is conducted biannually across all the supply chain.

## Progress towards MSP PSM outcome indicators

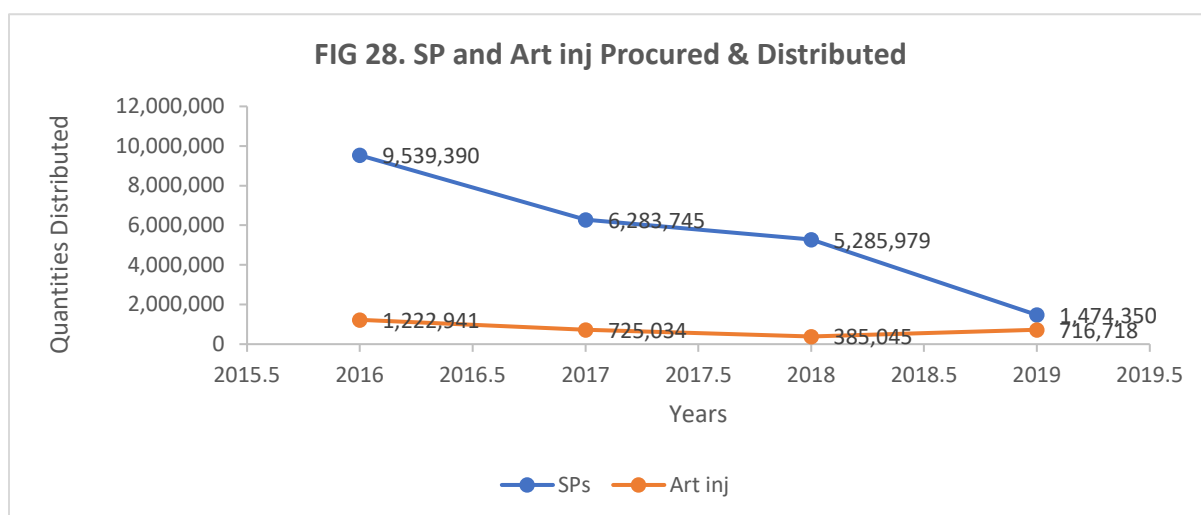
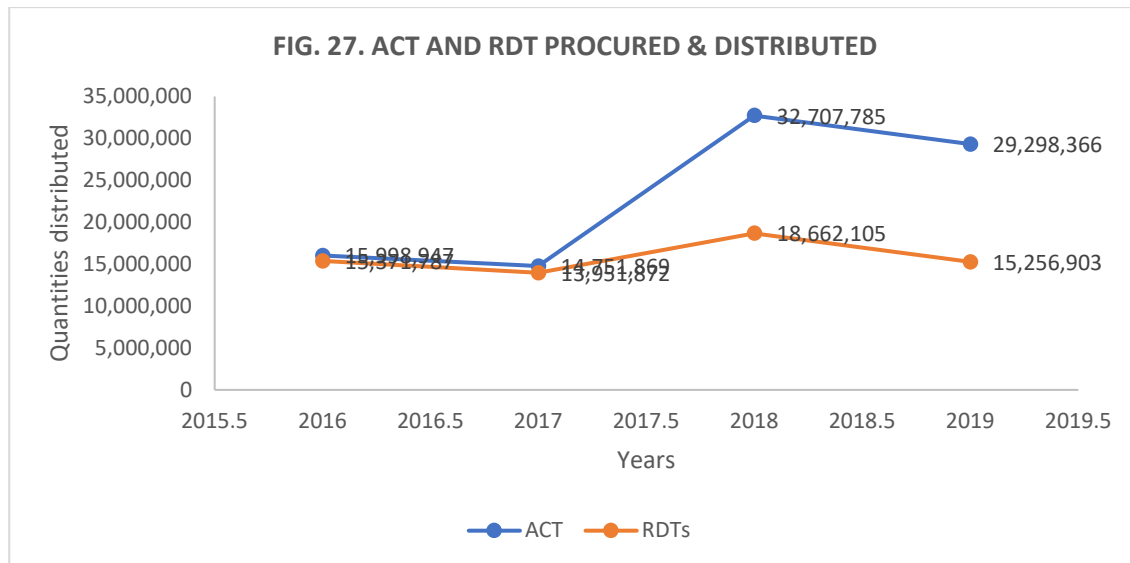
**Table 22: MSP Indicator, baseline, targets and actuals**

Indicators	Years													Source
	2013	2014		2015		2016		2017		2018		2019		
	Baseline	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual	LMIS data
<b>Indicator 1</b>	9.1 (DHIS)	40	NA	<35	NA	<30	3.5	<25	9.1	<20	10 %	<10	<40%	LMIS data
<b>Indicator 2</b>	9.1 (DHIS)	40	NA	<35	NA	<30	8 AL1	<25	13.6 AL1	<20	10 %	< 10	<40%	LMIS data

							13 AL4		21.8, AL4					
Indicator 3	100	80	100	80	100	80		90 %		90	100	90	100	

### Trends of commodities (RDT, antimalarials and LLINs) stockouts

The outlay in procurement of malarial medicines and other malarial products dwindled within the period under review. From the quantities procured and distributed nationally for the public sector depicted in Fig. 27 & Fig. 28 below, it is clear that funding decreased from year to year.



## **Enablers and constrainers**

### **Enablers**

- Coordination of PSM Stakeholders through the National Products Supply Chain Management Program (NPSMCP) and the PSM Sub-committees of Malaria TWG.
- Availability of Policies and Guidelines e.g. MSP, National quality assurance policy (NQAP), National supply Chain policy (NSCP), national PSM Framework, etc.
- There is QA/QC process in place by NAFDAC for routine random sampling of Malarial medicines across all the supply chain.
- Four WHO certified Laboratories including ANDi Laboratory in UNILAG for RDT testing
- Decentralization of PSM functions to sub-national levels through establishment and operationalisation of State Logistics Management Coordinating Unit (LMCUs)
- Availability of Pharma-grade warehouses e.g., Abuja and Lagos – Premier Medical warehouses a.k.a warehouse in a box (WiB) and Zonal warehouse

### **Constrainers**

- Poor storage conditions particularly at sub-national level
- Decreased inflow of funds from GON and Partners for malaria programming, and for PSM activities especially in unsupported states
- Weak data generation and management in LHMIS platform and poor development of the Operational Research component for the PSM branch
- Security challenges across the country especially in the North-east zone.
- Poor coordination and funding for routine sampling of Malaria commodities for QA activities across the supply chain
- AMFm discontinuation and transition into co-payment mechanism reduced the affordability of malarial medicines in the private sector.
- Lack of tools and skills/capacity at sub-national levels for both LMIS, service and consumption data limiting application of consumption data in forecasting.
- Limited availability of health workers, and deployment appropriate staff mix in the rural health facilities.
- Absence of Standard Operating Procedure for quantification of Malaria Health Products

## **5.4.2 Conclusions and recommendations**

### **Conclusions**

NMEP's PSM has made a giant stride in scoring 51 % in overall performance across all strategic priorities but a lot more need to be in place for optimal output from the unit. A knowledge management base at the unit will do a lot of good. The PSM services other thematic areas and keeping complete data is very important. The poor availability of data to evaluate stock out rate of antimalarial medicines and all information to assess the quality assurance/quality control of the health products tested remained a concern.

Consumption-based forecast was not generated to triangulate with the morbidity forecast due to dearth of consumption data. There is need to improve availability and quality of consumption data so that consumption-based forecast would be included in subsequent forecast review exercises.

This would support best practices which encourages the use of various methods to generate forecast scenarios for reconciliation.

## Recommendations

1. All necessary mechanisms must be deployed by NMEP to encourage increased Federal and State Government commitment to malaria programme through increased funding allocation and mobilization to cover all health facilities in the States.
2. Strengthen PSM structure at NMEP to ensure timely availability of LMIS data for all antimalarial medicines nationally.
3. Sustain collaboration with NAFDAC to establish systems for Routine SC sampling of Malaria Commodities.
4. Sustain the strengthening of the collaboration with the LMIS/LMCU workstream of the National Products Supply Chain Management Program (NPSCMP).
5. The PSM outcome indicator for evaluating the % stock out rate of SP and a few other ACTs should be included in the MSP to reduce the orphan look of a single indicator for all antimalarial Medicine.
6. Only stock out rates of the tracer malaria commodities in the MSP should be aligned to what is in the NPSCMP.
7. Strengthen systems for Domiciling All inventory from Various Partners at NMEP for easy Access.
8. Evolving an Appropriate Accountability framework to track Malaria Commodity Supply Chain Performance
9. PSM should have a performance framework to assess/monitor performance of partners based on the agreed areas of support.
10. % of product batches tested (API) in previous year that met national and International Control Standards
11. *This new indicator should be added to PSM: % of product batches that fail tests at the port of entry and during the biannual routine sampling*

## 5.5 Level of attainment of social and behaviour change communication outcome targets

A total of 54 ACSM activities (52% implementation performance rating) of 80 activities planned between 2014 and 2019 were implemented. Activities relating to scaling up demand and enhancing political will contributed more than 75% to the implementation performance. Activities relating to maintaining high knowledge of malaria prevention and treatment practices, scaling-up facilities-based dissemination of appropriate information, and strengthening ACSM Coordination at all levels received sub-optimal performance.

### 5.5.1 Findings

#### SBCC outcome indicators and targets

The objective of social and behaviour change communication in the NMSP 2014 -2020 seeks “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”. Objective-level implementation rate was put at **60%**. This rate is considered low, going by the scoring system used for this MPR.

Advocacy, Communication and Social Mobilization (ACSM) is an integral branch of NMEP, the trios having a shared goal necessary for sustaining the gains of Malaria control efforts. These gains would include improved knowledge on malaria; changing attitudes toward malaria prevention and treatment measures; changing norms in which malaria is regarded as 'ordinary'; and adaptation of new ideas and health behaviour to local cultures.

Five core strategies were adopted to achieve the ACSM Objective. These are:

- Strategy 1: Maintain high knowledge of malaria prevention and treatment practices
- Strategy 2: Scale-up demand for malaria prevention and management services
- Strategy 3: Enhance political will and enabling environment for malaria control/elimination activities
- Strategy 4: Scale-up facilities-based dissemination of appropriate information for malaria prevention and management practices.
- Strategy 5: Strengthen ACSM Coordination at all Levels

### **The SBCC policy**

The present Strategic Framework and Implementation Guidelines for Advocacy, Communication and Social Mobilisation Programmes (Malaria ACSM Guidelines) was developed in 2014. It offers the opportunity to promote positive changes in Malaria programming in Nigeria, by providing detailed overview of designing strategic malaria communication plans.

ACSM outcome Indicators in the NMSP 2014-2020 are:

1. Proportion of the population who recall seeing or hearing malaria messages during the last 6months.
2. Proportion of persons with fever who go to a healthcare giver/provider for diagnosis and treatment within 24hours.
3. Number of targeted BCC activities carried out in a year.
4. Number of advocacy visits to opinion leaders and other targeted audience.

For the purpose of enriching the quality of this MPR, two additional but cross-cutting outcome indicators for Malaria ACSM were explored, they include:

5. Proportion of targeted population utilizing correct malaria prevention and control interventions
6. Proportion of people in the targeted population reached through BCC

### **ACSM Targets**

- To reach 100 percent of Nigerians 5 years and older with sustained information, education and communication about prevention and management of malaria by 2020.
- To advocate to at least 80 percent of targeted political leaders, policy-makers and the private sector leaders for adequate, timely and sustained funding of malaria control activities by 2020.
- To ensure that at least 80 percent of individuals visiting health facilities receive information for malaria prevention and management by 2020.
- To set up functional ACSM core group in all the states and the FCT by 2016.
- To ensure that 80 percent of pregnant women and children under 5 years use LLINs by 2018.

The listed 4 ACSM outcome indicators for the NMSP 2014-2020 had no baseline figures. Only 2 of the 4 indicators were appropriately stated as outcome, while the last 2 indicators listed above are output indicators. The indicators were not appropriately phrased for outcomes and not equally addressing ACSM targets. It is also noteworthy that the ACSM indicators stated in the NMSP, 2014-2020 do not match the ones stated in the Performance Framework of the same document. Programme targets were clearly spelt out in the 2014 Malaria ACSM Guidelines, unlike the outcome indicators.

### Progress towards MSP SBCC outcome indicators

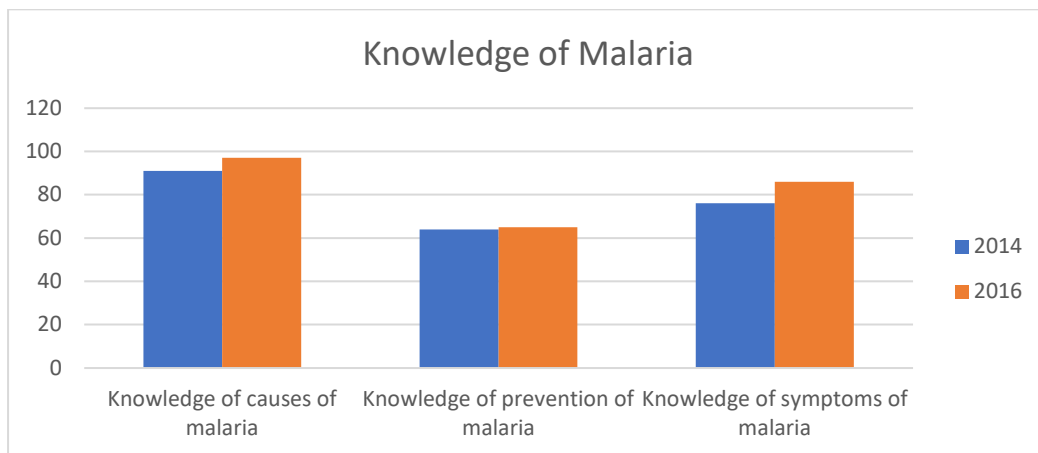
Outcome indicators:

- *Proportion of the population who recall seeing or hearing malaria messages during the last 6 months.*
- *% of women aged 15 -49 years with knowledge of the preventive measures for malaria*

Basic knowledge about Malaria was 87% in 2015 (MIS), this figure was a drop when compared with a knowledge of 92% recorded in 2010 (MIS). Knowledge of ways to avoid malaria was 97%, a few percentages from MSP target of 100% for 2015 for the outcome indicator - “% of women aged 15 -49 years with knowledge of the preventive measures for malaria”. However, on the knowledge of specific ways for pregnant women to avoid getting malaria, none of the preventive measures mentioned by respondents was close to the target of 100% (multiple responses). The preventive way with the highest percentage (53.8%) was the *sleep inside mosquito net*, followed by *sleep inside ITN/LLIN* - 29.9% (MIS, 2015) and use of SP as a part of antenatal care (ANC) was 21%.

SFH evaluation report of Global Fund Malaria Social Mobilization activities in the 6 Geopolitical Zones (Kano, Anambra, Bauchi, Benue, Edo and Ondo) in December 2014 and 2016. Figure 29 below provides more details on the specific knowledge of malaria – *knowledge that malaria can be caused by mosquito bites; that malaria can be prevented by sleeping under an ITN/LLIN and fever as a symptom of malaria.*

**Figure 29: Trends in knowledge of ways to avoid malaria (SFH Report, 2016)**

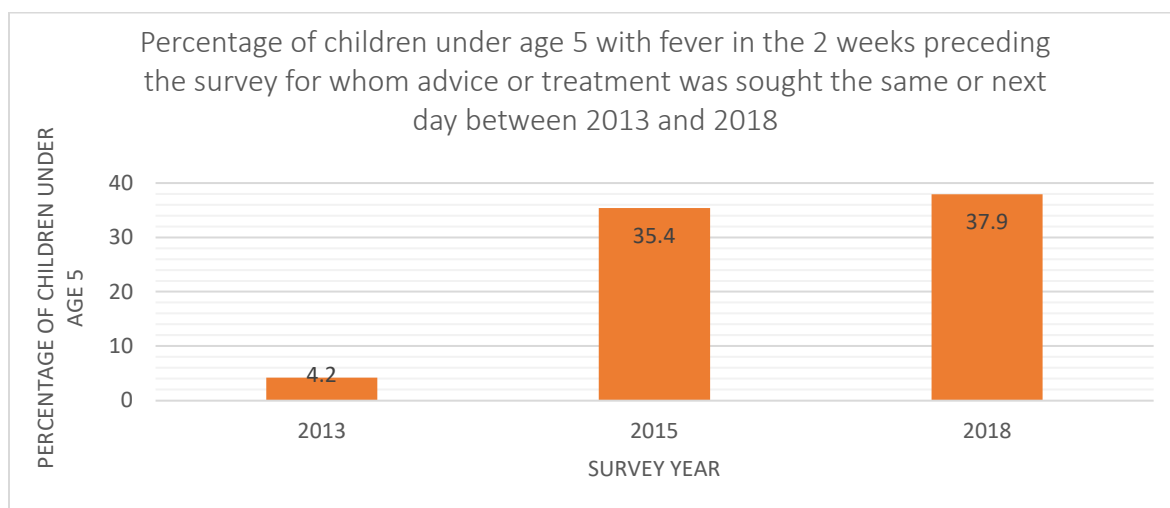


**Outcome Indicator:**

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

Percentage of children under age 5 with fever in the 2 weeks preceding the survey for whom advice or treatment was sought the same or next day was 4.2% in 2013 (NDHS) and rose to 37.9% in 2018 (NDHS), 35.4% in 2015 (MIS). shows a steep rise and an improvement in the health-seeking behaviour towards prompt diagnosis and treatment for malaria between 2013 and 2018.

**Figure 30: Trend of health-seeking behaviour towards prompt diagnosis and treatment for malaria between 2013 and 2018.**



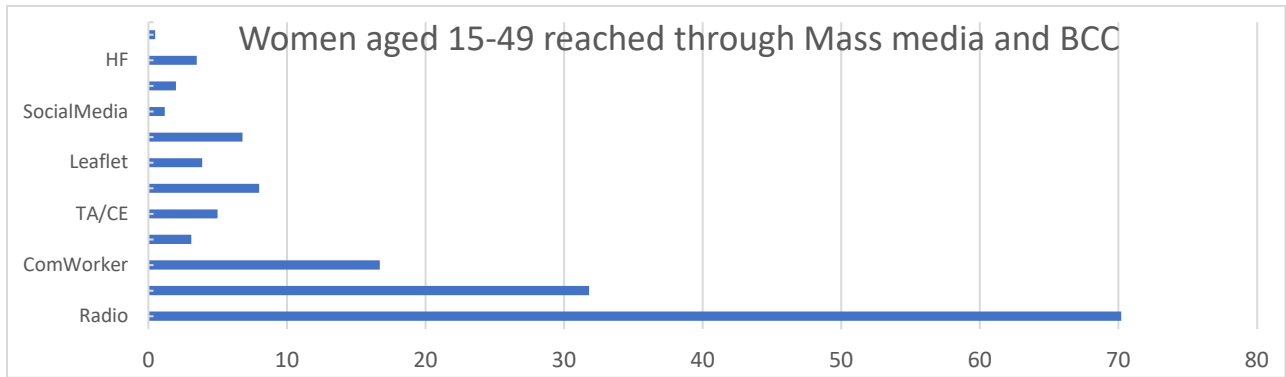
**Outcome Indicator:**

- *% women aged 15-49 reached with mass media activities about malaria prevention and control in the four weeks preceding the survey*
- *Proportion of people in the targeted population reached through BCC*

According to MIS 2015, the Percentage of women aged 15-49 reached with malaria messages through Television and Radio (mass media) were 70.2% and 31.8 % respectively. Community workers (16%); Bill-boards/Posters/T-shirt (8%); Relative/Friend/Neighbour/School (6.8%); town announcer/community events (5%); Health Centre/Hospital (3.5%); Leaflets/Factsheets (3.9%) and Mosque /Church (3.1%) were also mentioned, among other BCC channels, as sources of malaria information.



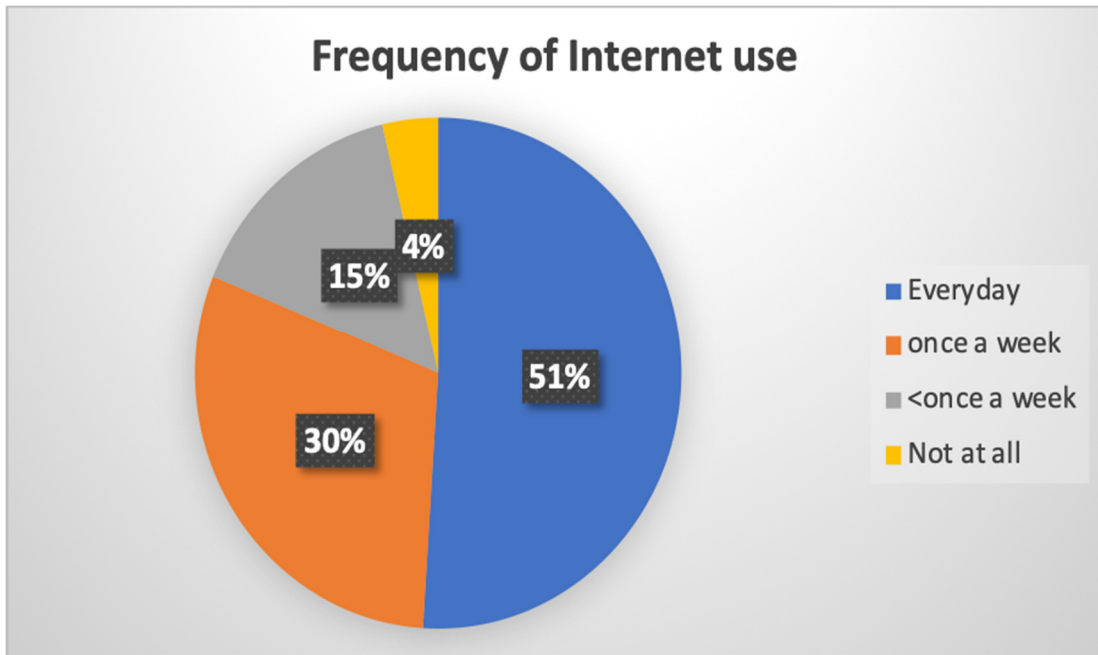
**Figure 31: Proportion of women aged 15-49 reached through Mass media and BCC**



Source: MIS, 2015

Majority (51%) of the respondents reported using internet daily. This reveals the importance of inclusion of digital/modern media in channels of communication (Figure 32). Interestingly, Borno had the highest percentage (64%) for daily users.

**Figure 32: Use of Internet**



Source: MIS, 2015

## **Enablers and constrainers**

### **Enablers**

- Functional ACSM Sub-committee of the Malaria TWG and donor support
- National Malaria ACSM Guidelines (developed in collaboration with key stakeholders) provides strategic direction for all stakeholders.
- Availability of Reporting forms – Monitoring and Evaluation
- Opportunities of leveraging on /activities integration with other units – *latching on Case Management branch and LLINs campaign*

### **Constrainers**

- Inadequate functional ACSM drivers with limited capacities at sub-national level, especially at health/educational/religious facilities
- Limited capacity for monitoring and evaluation of ACSM interventions, with little evidence to demonstrate impact and prioritise activities/indicators
- Weak Private Sector Engagement and oversight function on partners' ACSM interventions
- Lowly prioritization of ACSM activities by both governments and partners leading to Inadequate funding of ACSM SBCC activities at all levels
- Inability of survey report (NDHS 2018) to measure impact using the identified outcome indicators in the National Malaria ACSM Guidelines.

## **5.5.2 Conclusions and recommendations**

### **Conclusion**

There were high levels of awareness of effectiveness of IPTp, ACTs as well as the need to have malaria tests conducted before drug administration. However, actual uptake of interventions was still low for same and ITN. These suggest the need for a shift in messaging to encourage uptake while sustaining high level of awareness. Three key reasons were highlighted for non-utilization of net: 'Net not needed'; 'no mosquitoes' especially in the SW & NE zones; and 'it was too hot'. The use of insecticide-treated nets (ITNs) is considered to be one of the most effective measures to prevent malaria, it will be good if the methods engaged in deploying this strategy be evaluated to achieve the expected objectives of the strategy.

In a similar manner, malaria risk perception varies in different localities, among various age groups, and between males and females. This calls for appropriate audience segmentation and targeting of messages.

### **Recommendations**

- Revise the National Malaria ACSM strategy and manuals for guidance, design and implementation at all levels and various settings and make them audience centric.
- Equip ACSM drivers at all levels with necessary skills.
- Stratification of ACSM interventions based on an epidemiological analysis to ensure deployment of relevant and appropriate ACSM strategies based on local priorities and context.
- Reach the people persistently and repeatedly with key messages
- Develop/review ACSM indicators and recommend for inclusion in the next MSP and the DHIS

- ACSM indicators in the Malaria ACSM Guidelines and NMSP should be reviewed and synchronized. They should be captured in NMSP, M&E Plan and surveys.
- Leverage on the vast and evolving landscape of the country's digital technology
- Strengthen Private Sector engagement strategy – NMEP should reach out to the private sector and design effective multi- constituency collaboration activities.
- Bolster the ACSM sub-Committee to improve on its coordination and oversight function

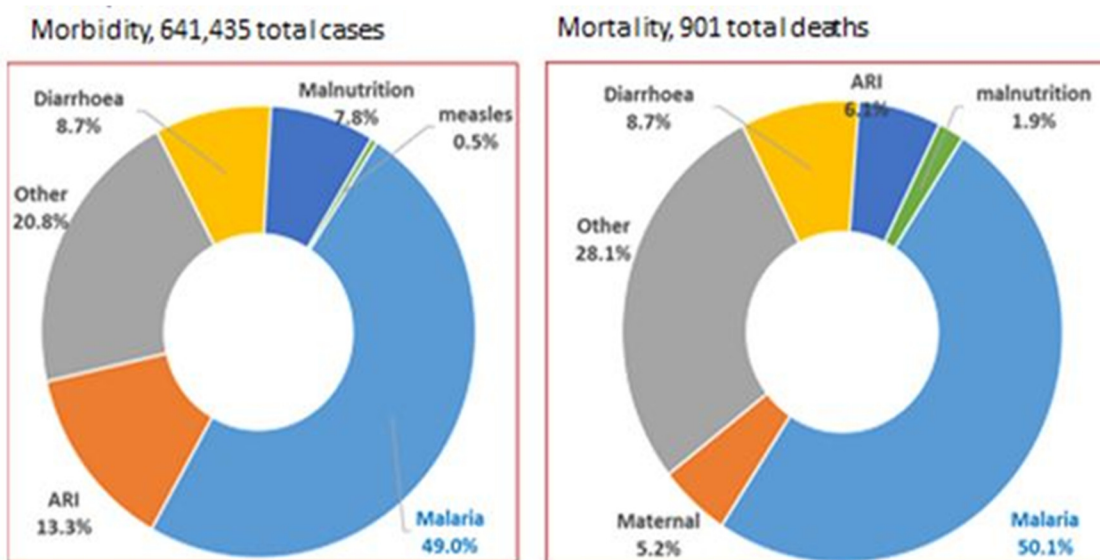
## 5.6 Level of attainment of Humanitarian Emergency or epidemic preparedness and response (EPR) outcome targets

### 5.6.1 Findings

#### Background

In the context of a major humanitarian emergency, malaria constitutes a major public health issue, contributing to significant morbidity and mortality. Nigeria has had and is still going through humanitarian emergencies in certain parts of the country. Since 2009, nearly 15 million people have been affected by the Boko Haram insurgency, and the resulting military operations in North-East Nigeria. Humanitarian Emergencies have altered the morbidity and mortality information in affected parts of Nigeria when compared to national averages as indicated in the figure below.

**Figure33: Contribution of Malaria to morbidity and mortality in North East Nigeria (Source: IDSR/ EWARS, WHO Nigeria, May 2017)**



#### EPR outcome indicators and targets

There is no Malaria EPR or Humanitarian Emergency Policy in Nigeria and no outcome indicators or Targets in the NMSP, 2014 -2020 under review.

## **Progress towards MSP EPR outcome indicators**

Not measurable under this MPR as there were no documented indicators, baselines and targets in the NMSP under review.

However, it is important to note that while the NMSP, 2014- 2020 did not reflect the intention of national stakeholders on Malaria in Humanitarian Emergency, several stakeholders including the Department of Special Duties of FMoH, relevant State Governments and Implementing Partners carried out tons of activities related to this strategic priority.

A detailed thematic report documenting key findings and recommendations on the above will be shared with the MPR Secretariat to guide the development of the next NMSP, some of the lessons from on-going activities are shared below.

### **Lessons Learnt**

- The discourse on Malaria in humanitarian and complex emergencies occupied only a tiny section in the 2014-2020 strategic plan. To date, there has been little commitment by the Governments at all levels and their partners to funding malaria in humanitarian conditions.
- For priority programme areas to be seen as effective in achieving its goal of ‘A Malaria-Free Nigeria’, it is imperative to have sound strategic framework for understanding the epidemiology, best choice of preventive and control options of malaria in humanitarian and complex emergencies.
- The need for a functional malaria Humanitarian Emergency strategy, outcome/target indicators, guidelines, and dedicated funding built into the next strategic plan.
- A Malaria Emergency Preparedness Plan of Action developed by the support of Partners should guide implementation and reporting
- Partnership with the National meteorological services for short- and medium-term forecasting in order to support evidence-based decisions.

### **Enablers and constrainers**

Not applicable under this MPR. The enablers and constrainers of activities outside the NMSP, 2014 – 2020 are indicated in other reports shared with the MPR secretariat.

## **5.6.2 Conclusions and Recommendations**

### **Conclusion**

The non-inclusion of Malaria in Humanitarian Emergency in the NMSP will not allow for a review of the uncoordinated action by other MDAs of government. NMEP proactivity in this area in suggested moving forward.

### **Recommendation**

- The next NMSP should adequately reflect the burden, the gap, the interventions, measurable indicators and the resourcing of Malaria in Humanitarian Emergency.

- NMEP and SMEP should work more collaboratively with National Emergency Management Agency (NEMA) and the State Emergency Management Agency (SEMA) to put Malaria Prevention and Treatment on the priority lists of these agencies
- Review of existing national emergency response documents by the Malaria TWG to determine where malaria response can be better positioned and appoint a senior officer in the Program Management Branch as Focal Person for emergencies in addition to current portfolio.
- NMEP and Partners should develop a concise guideline detailing implementation of clear malaria prevention and case management strategies in emergencies – including where and how malaria commodities may be obtained.
- Development of advocacy plan through stakeholders' analysis and ranking to identify most relevant agency/partners to work with to achieve rapid and sustained response to the malaria situation in North-East and other affected regions of Nigeria.
- Partner with research institutions to carry out operations research. Research will include defined areas and population at risk and pre-defined cost-effective control options, drugs and insecticides to be used, etc.
- Build the capacity of individuals in NMEP, SMEP, NEMA, SEMA, IPs and other Emergency Management Teams in Mapping, Forecasting, Early Detection, Surveillance/Notification and adequate Reporting in complex emergencies.

## 5.7 Level of attainment of SMEOR outcome targets

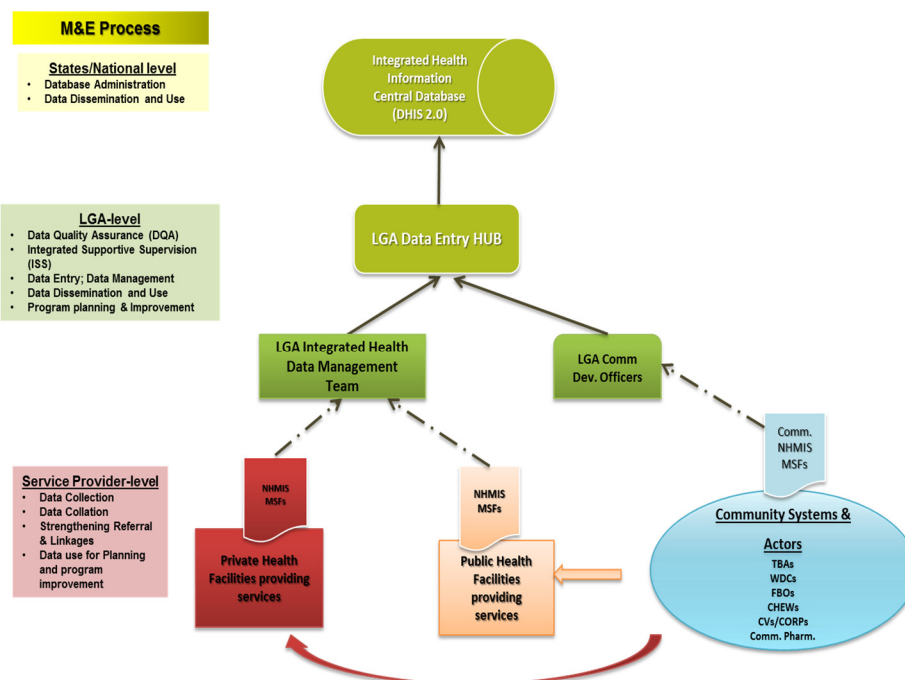
### 5.7.1 Findings

#### SMEOR outcome indicators and targets

The SMEOR policy/system consist of the National Malaria Operations Research Agenda, the NMEP M&E Plan, Standard Operating Procedures for Data Management, Guidelines for Supportive Supervisory visit and Data Quality Assurance (DQA) and M&E Training manuals. The SMEOR branches of NMEP is responsible for coordination of Surveillance, M&E and Operations Research.

At State level, there are dedicated malaria M&E officers who are responsible for the SMEOR activities. The state malaria M&E officers also work with the state HMIS officers in the Department of Planning Research and Statistics (DPRS). At the Local Government Area (LGA) level, the LGA malaria focal persons and the LGA M&E officers are responsible for malaria data quality.

The National Health Management Information System (NHMIS) harmonized all the health management information system (HMIS), it introduced District Health Information System (DHIS) in 2014. The DHIS has been fully rolled out nation-wide across all LGAs where facility-level (***largely public sector***) data, including malaria programme data, are entered by the LGA M&E officers. The data flow from the health facility level to national level is depicted in the figure 10.



A critical review of the outcome indicators revealed that they were appropriately phrased (table 4). Although, there is an indicator for completeness, there is none for the timeliness of data reporting. However, not all the indicators have baseline values and yearly targets were not set for the use of mobile technology probably because of unavailability of data. The unavailability of data was most probably because the DHIS, which serves as the source of routine data, was not rolled out until 2014.

**Table 23: SMEOR outcome indicators and targets**

Outcome indicator	Baseline value (%)	Target (%)						
		2014	2015	2016	2017	2018	2019	2020
% of health facilities using the revised data collection tools	NA	70	75	80	85	90	100	100
% of LGAs reporting malaria data through the DHIS	NA	70	80	90	100	100	100	100
% Completeness of facility reporting into the NHMIS	44 (2012)	60	70	80	90	90	90	90

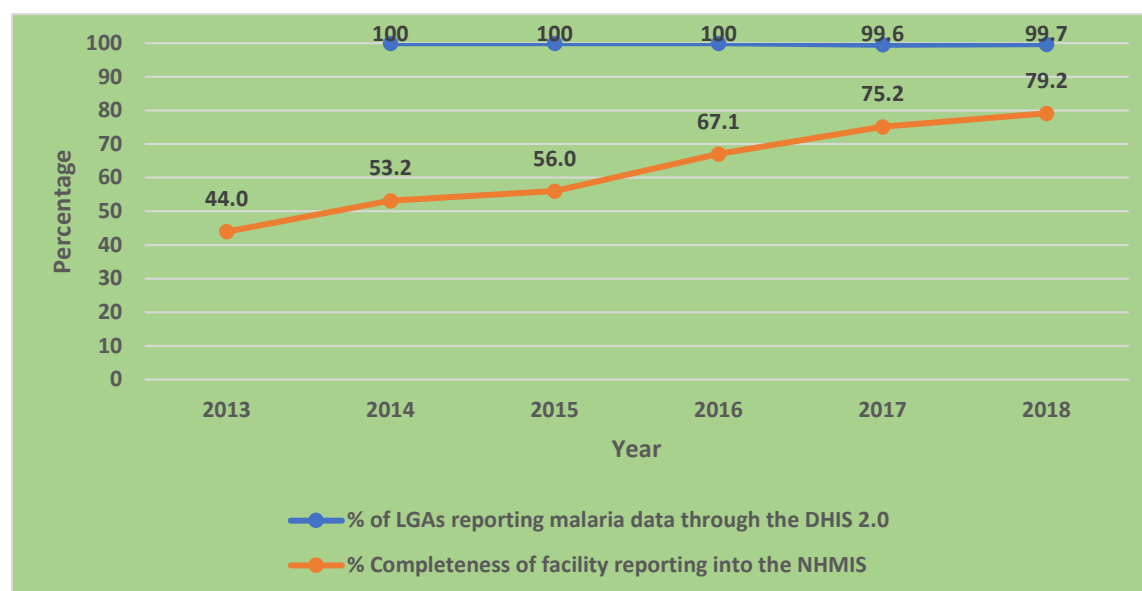
Source: HMIS; NA = Not available

### Progress towards MSP SMEOR outcome indicators

The timeliness and completeness of reporting steadily increased over five years as shown in figure 11. Virtually all the LGAs in the country are currently reporting malaria data through the DHIS 2.0. This was said to have been made possible because of the computers and internet

connection that have been made available to all the LGA M&E officers, at initial stage of DHIS rollout in 2014 even to those that are in remote and hard to reach areas. However, there are still some terrains with poor internet access which necessitate the need for M&E officers to leave their locations and travel to areas where they easily access internet. Effort is still being made to deploy IT based direct data reporting from health facility into the DHIS 2.0. Previous report revealed that only Lagos and Kaduna States had adopted the use of mobile data capturing device for reporting into the DHIS.<sup>29</sup>

**Figure 35: The SMEOR outcome indicators (Data source: DHIS 2.0)**



State level comparison of the change in the % completeness of facility reporting into the NHMIS between 2014 and 2018 revealed that only three states (Rivers, Plateau and Borno) had above 50% improvement, while only Enugu State had negative change (see Appendix X).

### **Surveillance, Survey and Operations Research**

Elimination of malaria can efficiently occur if there are effective mechanisms to generate evidence through surveillance, survey and operations research. Surveillance, survey and operations research offer great opportunity to monitor progress, success, challenges and evidence for future programming towards actualizing the ultimate goal of malaria elimination.

Nigeria conducted nationally representative, population-based household surveys in the period under review. These surveys include Nigeria Malaria Indicator Survey (NMIS) 2015, Nigeria Multiple Indicator Cluster Survey (NMICS) 2016/2017 and Nigeria Demographic and Health Survey (NDHS) 2018. Unlike the NDHS and NMIS that have similar methodology and same malaria indicators conducted by ICF International with National Population Commission and National Malaria Elimination Programme as Co-Implementers, the NMICS has slightly different methodology and malaria indicators.

These surveys have provided opportunity for monitoring progress in coverage, burden of malaria, pattern and characteristics of malaria endemicity, and interventions. Equally important, NMIS is

<sup>29</sup> NMEP MTR 2017

carried out at a period that corresponds to high malaria transmission season unlike NDHS that can be carried out at various times during the year.

Also, NMEP conducted two Rapid Impact Assessments (RIA) of the impact of antimalarial interventions on malaria incidence and mortality in Nigeria firstly for the period covering 2003 to 2013 in 2014/2015, and the second RIA was in 2019, covering the period of 2015 and 2018.

The most recent of this survey which is NDHS 2018 has the following key results:

- About 61% of households owned at least one insecticide-treated nets (ITN)
- About 65% of the de facto population in households with at least one ITN slept under an ITN the night before the survey.
- About 8% of children age 6-59 months have hemoglobin level below 8 g/dl.
- Malaria prevalence for children age 6-59 months was 23% using microscopy.
- About 82% of men and 96% of women believe in the effectiveness of malaria medicine.

Four national population-based surveys (NMIS 2010, NDHS 2013, NMIS 2015 and NDHS 2018) were used to assess trend with regards to progress of some key indicators as shown in the table below.

**Table 24: NMSP 2015-2020 Performance Framework**

Goal/ Objectives	Indicators (Impact/ Outcome)	Baseline (Year)	Achieved 2018	Remarks
<b>The Goal of this Strategic Plan is to reduce malaria burden to pre-elimination levels and bring malaria-related mortality to zero</b>	All cause under-5 mortality rate per 1000 live births	157 (2008)	132	Not achieved
	% Children aged 6–59 months with hemoglobin measurement of <8g/dl)	13% (MIS 2010)	8%	Although not achieved but it is close to target
	Malaria Parasite Prevalence in children U5 (Slide)	42% (MIS 2010)	23.0%	Not achieved
<b>Objective 1: To provide at least 80% of targeted population appropriate</b>	% of households with at least 1 LLINs for two persons	14.2% (2010)	29.8%	Not achieved
	% of under-5 Children who slept under an LLIN the previous night	28.7% (2010)	52.2%	Not achieved



<b>Goal/ Objectives</b>	<b>Indicators (Impact/ Outcome)</b>	<b>Baseline (Year)</b>	<b>Achieved 2018</b>	<b>Remarks</b>
<b><i>preventive measures by 2020</i></b>	% of household residents who slept under an LLIN the previous night	49% (2010)	43.2%	Not achieved
	% of pregnant women who slept under an LLIN the previous night	65% (2010)	58.0%	Not achieved
<b>Objective 3:</b>  <b><i>To treat all individuals with confirmed malaria seen in private or public facilities with effective anti-malarial drug by 2020</i></b>	% of Children younger than 5 years of age with fever in the last 2 weeks who received any antimalarial treatment	49% (2010)	52%	Not achieved
<b>Objective 4:</b>  <b><i>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</i></b>	% women aged 15-49 reached with mass media activities about malaria prevention and control in the four weeks preceding the survey	30% (2010)	N/A	
	% of women aged 15 -49 years with knowledge of the preventive measures for malaria	92% (2010)	N/A	

### **OR Prioritisation**

NMEP in collaboration with its partners organized six OR meetings/workshops in 2010, 2012, 2013, 2014, 2017 and 2019 with the following strategic outcomes achieved:

- 1) Development of a National OR Agenda for malaria
- 2) Development and revision of a prioritised list of harmonised OR questions for relevant stakeholders especially the Universities, Research institutions and developmental partners
- 3) Identification of investigators and institutions working on malaria research, and enlisting them in a national malaria OR database at NMEP.
- 4) Identification of Funding Partner(s) for the different prioritised OR questions

- 5) Development of implementation timeline for the prioritised OR questions
- 6) Platform for dissemination of research findings to all stakeholders

**The process of development of the National Malaria Operations Research Agenda (NMORA)** was done in 2016 by NMEP in collaboration with all malaria stakeholders, including technical and development partners, research institutions, the academia and non-governmental organizations. The inauguration of Malaria OR Expert Group (MOREG) was done in 2016 while the launch of OR Agenda took place in 2017. MOREG has a mandate to support the prioritization and implementation of research questions. It is chaired by a University Professor and co-chaired by WHO & Secretariat- NMEP.

### **Objectives of the NMORA**

1. To identify priority areas for malaria research needs and gaps in Nigeria according to the NMEP goals and objectives as stated in the strategic plan.
2. To promote the conduct of malaria research in response to the priority needs and identified gaps in Nigeria.
3. To initiate and promote multidisciplinary collaboration in the conduct of comprehensive malaria research.
4. To enable the facilitation of the coordination of malaria research conducted by various stakeholders.
5. To improve and strengthen capacity building for the conduct of malaria research in Nigeria.
6. To facilitate the translation of malaria research findings into policy and practice towards malaria elimination in Nigeria.
7. To facilitate the mobilisation of scarce resources for the conduct of locally relevant and prioritised malaria research.

Unfortunately, implementation of the NMORA has been slow due to ***inadequate funding and non-buy-in of partners into some of the malaria research questions***. Most of the prioritised OR questions set by NMEP and its partners were not implemented during the period under review. Only 12% (4 out of 33) of the prioritised questions in the NMORA have been answered between 2014 to 2019 as reported to NMEP. In addition, MOREG has not been optimally functional since its inauguration in 2017.

### **Explain enabling and constraining factors**

#### **Enablers**

1. Robust coordination platforms of SMEOR activities through sub-committee, Data Management Expert Group (DMEG) and Malaria Operations Research Expert Group (MOREG). Funding and technical support from partners
2. Strengthened collaboration with DPRS and other MDAs on the HMIS and monthly HMIS/DHIS data analysis and feedback to states

3. Use of ICT for improving data quality and establishment of Nigeria Malaria Data Repository to improve data use for decision making.
4. Development of Malaria Specific Module for direct reporting from secondary and tertiary health facilities in collaboration with DPRS. Development of database for malaria researchers in the country
5. Strong collaboration with academia and research institutions in conduct of surveys and operations research.
6. Availability of more malaria data from non-routine sources such as Malaria Parasite Sentinel Surveillance (MPSS), Therapeutic Efficacy Study (TES), Entomological Surveillance and Durability Monitoring of LLIN.

### **Constrainers**

1. Poor government funding of SMEOR activities at all levels including Inadequate funding and delayed conduct of DQA and iMSV to the states, especially in the 13 non-partners supported states.
2. Irregular training and inadequate staff (including attritions) for data management at all levels especially at sub-national levels.
3. Delay in roll out of the revised 2019 NHMIS data capturing tools.
4. Inability to access some health facilities due to insecurity, political instability and hard to reach terrain in some parts of the country Inadequate capacity for OR at the sub-national level.
5. MPSS has not been optimally functional. There has been low reporting rate of malaria surveillance sites
6. Low uptake in the implementation of OR questions by partner and inadequate publication visibility

## **5.7.2 Conclusions and recommendations**

### **• Conclusions**

1. There has been steady increase in the completeness of reporting over five years with virtually all the LGAs in the country currently reporting malaria data through the DHIS 2.0. However, the data quality issue still poses problems regarding the usefulness of the stream of data from the DHIS.
2. Not much progress has been made on the adoption and adaptation of use of IT for direct data reporting on DHIS. Only Lagos and Kaduna States piloted the use of mobile data capturing device for reporting into the DHIS.
3. There have been variations in the completeness of reporting between states and within states at different times.
4. To enhance private sector reporting, State and Federal Governments should make evidence of regular reporting to DHIS a requirement for licenses renewal for the formal private HFs

## Recommendations

1. In order to resolve the issue of data quality, the NMEP should work with DPRS to ensure that the capacities of M&E officers at all levels are commensurate with the tasks and facilitate capacity building of persons with appropriate specifications on data collection, retrieval, analysis and reporting and that HFs are directly reporting into DHIS.
2. The NMEP and partners should ensure HFs direct reporting into DHIS for data reporting is prioritized in the next MSP.
3. Strengthening of capacity for SMEOR activities at all levels and interventions at the subnational levels should be tailored to the needs of each state and its LGAs
4. NMEP should strengthen the ongoing effort to capture data reporting from formal private health facilities on the DHIS through working with private HF regulatory authorities. NMEP should ride on the existing platforms (DQA, IMSV and others) to orientate health personnel at sub-national level on data demand and use for decisions.
5. Advocacy should be conducted to relevant MDAs and organs of government on the issues of inadequate staffing, attrition and high turnover across all levels which impacts negatively on data quality.
6. . Plan regular data validation meetings for HFs that are yet to start electronic data capture. In places where electronic data capture is done, plan to visit 30% of HFs to ensure regular supervision and mentoring.
7. States and Federal Government should make evidence of regular reporting to DHIS a requirement for licenses renewal for formal private HFs. Training and Provision of access for their direct data entry unto the DHIS should be prioritized.
8. Allocate increase funding for OR.
9. Improve quality of care and reporting from the Malaria Parasite Sentinel Surveillance sites (MPSS).
10. Encourage use of repository in data control platforms to review data and make decisions.

## 5.8 Functionality of programme management support system

The overall mandate of the NMEP's program management branch is stated in the objective 7 of the NMSP which seeks to "*Strengthen governance and coordination of all stakeholders for effective program implementation towards an "a" rating by 2018 on a standardized scorecard*"

To achieve this, the Program Management domain of the plan was designed to address core management functions such as, coordination, planning, human resource management and resource mobilization through partnerships,

### 5.8.1 Findings

#### Availability of policies and guidance

There are several policies and guidelines that shape the strategic direction towards Malaria Control/Elimination in Nigeria. They include:

### *1. Economic Recovery and Growth Plan (ERGP)*

The national focus for health is generally guided by the Government of Nigeria's (GoN's) overall vision for health care as articulated in the Economic Recovery and Growth Plan (ERGP), 2017-2020 aimed at reviving the Nigeria economy from the past recession and putting it back on the path of steady growth.

### *2. National Health Policy*

The current National Health Policy was launched in 2016 and its primary goal is to ensure the provision of a comprehensive health care package that is based on Primary Health Care (PHC) system. The policy describes the structure, strategy and priorities for health care delivery in Nigeria including control of endemic diseases.

### *3. The second National Strategic Health Development Plan (NSHDP2)*

The NSHDP2 provides the strategic priorities for investment by Governments (Federal and Sub-national) over a five-year period. It also provides a template for operational planning and implementation monitoring that ensures alignment of stakeholders' interests.

### *4. National Malaria Policy*

The national malaria policy is the overarching policy that defines the Country's priorities and guides the selection of strategies and interventions for malaria control. The current policy was developed in February 2015.

### *5. National Malaria Program Coordination Framework*

National Malaria Coordination Framework defines mechanisms for partner and internal program coordination at national and sub national level. It was developed in 2009.

### *6. Intervention Specific Policies Guidelines and Frameworks*

The NMEP has several intervention specific policies and implementation guidelines. These are often modified/updated in line with global policies. Dissemination and adaptation of these documents at sub national level remains a challenge.

## **Appropriateness of programme structure/ management systems**

NMEP is appropriately positioned as a division under the Department of Public Health of the Federal Ministry of Health, and this is the same for the SMEP at the state level. The NMEP is headed by a National Coordinator who reports to the Honourable Minister through the Director of Public Health (DPH) and the Permanent Secretary. The State Programme is headed by a State Malaria Programme Manager who reports to the State Commissioners also through the Director of Public Health and the Permanent Secretary.

Key linkages within the MoH include the Department of Planning Research and Statistics (DPRS) on data related issues and the NHMIS, Department of Food Drugs and Pharmaceutical Services, for supply chain management and the Department of Family Health for RMNCH interventions (iCCM, SMC, IPTp etc). the programme also collaborates with other MDAs e.g. HIV/AIDS, Tuberculosis and Neglected Tropical Diseases (NTDs)

## **NMEP/SMEP governance and coordination**

NMEP has six technical branches and a finance/IT unit (see figure above). Each technical branch is further divided into sub-units to allow responsibility sharing based on core competences and to facilitate performance management. Each head of branch reports directly to the National Coordinator and the relationship between the directors and other members of staff is largely based on civil service rules. Responsibilities are given based on seniority in the civil service rather than competencies. Deployment, re-deployments, promotion and disciplining of staff are done outside the control of the National Coordinator.

NMEP receives significant technical, financial and material supports from the Malaria Technical Working Group (TWG) which is a sub-group of the ATM Task Force under the office of the Honourable Minister. The Malaria-TWG consists of the NC, the branch heads, other key officers of the Programme, RBM Partners, Private sector stakeholders and other relevant stakeholders. The sub-committees of the Malaria TWG also support each branch of NMEP

The SMEPs in some states do not have the level of departmentalization as the national program. They have fewer Malaria programme specific personnel and often share staff with other departments. However, the state teams often include the following officers, M&E, IVM, Case Management, health education officer for ACSM and with the creation of the LMCU under the NSCMP, a procurement or logistics management officer. These officers may have multiple role but they work under the supervision of the State Programme Manager for the implementation of malaria related interventions.

The State Malaria Programmes receive significant support from the Partners forum and other coordination platforms at the state level. The State RBM Partners supports the adaptation and domestication of national policies and guidelines.

The Local Government malaria control teams consists of the RBM officer (Malaria Focal Person), who oversees the implementation of interventions, M&E officer and a health education/social mobilization officer. As with the state program some of these officers, (particularly the M&E officers) serve multiple roles within the LGA and are not dedicated malaria program staff.

Generally, the internal coordination of the NMEP and SMEPs are governed by the civil service policies and procedures. The hierarchy within the civil service determines authority and decision-making process irrespective of position/responsibility within the programme. This is one of the major challenges of internal coordination and communication. For example, the NMEP organogram assumes that all branch heads are at the same level which is not the case and this constitutes significant challenge if a unit with leadership of a lower hierarchy in civil service is required to maintain oversight of another unit headed by one of higher level within the service.

*The MPR 2019 observed a major weakness in the internal coordination of NMEP; activities and reporting were done in silos and information are not shared in real time with relevant internal and external stakeholders. Internal coordination meetings do not hold regularly; the branches engage vertically with sub-national programmes and the RBM Partners.*

## **Partnership and donor coordination mechanisms**

In 2009, NMCP (now NMEP) and Partners developed and disseminated the Coordination Framework for Malaria Control in Nigeria. This Framework provides the general guide for internal

and external coordination of RBM in Nigeria at both Federal and the sub-national levels. The State Government were expected to domesticate the Framework based on the local realities.

The major malaria partner coordination platforms at the federal level is the TWG-Malaria which is a sub-component of the HIV/AIDS Tuberculosis Malaria Task Force (ATM). The ATM Task Force has TWG for HIV&AIDS and Tuberculosis. The Malaria-TWG) apart from providing broad support to FMoH and NMEP has six thematic area sub-committees that provides in-depth support to the technical areas of the Malaria Elimination Strategies.

The Malaria-TWG sub-committees have contributed significantly to the achievements recorded by NMEP in the implementation of the NMSP, 2014 – 2020. They have mobilised external and local resources for the implementation of key operations of Malaria stakeholders at federal and state levels.

The coordination arrangements at the state level is largely through the Partners forum and more specifically the Malaria Control Advisory Committees. Although most states have established Malaria Control Advisory Committees, it is uncertain the committees are fully functional.

### **Public Private Partnership**

During the period under review, NMEP enjoyed Private Partnership in several intervention areas including, Indoor Residual Spraying (IRS), Supply Chain Management (last mile delivery) and Malaria commodities (local production of LLINs and pharmaceutical products).

The private sector partners have also supported in the implementation of activities and coordinated advocacies during the World Malaria Day celebration on yearly basis. More recently, the NMEP is exploring strategies for stronger collaboration with corporate organizations and bodies such as the Nigeria branch of the Corporate Alliance for Malaria in Africa (CAMA) to support malaria elimination as part of their corporate social responsibility. The Nigeria Liquefied Natural Gas LTD, a member of CAMA, is currently supporting malaria control efforts in its catchment area.

The PPP Framework should be reviewed and operationalised. The private sector sub-committee constituted should also be strengthened to support the implementation of Malaria PPP initiatives.

### **Delivery of appropriate inputs, outputs or services**

Malaria programme implementation in the last 5 years has been guided by the strategic priorities of NMSP, 2014 – 2020. The development of annual Operational Plans at the Federal and State levels has provided a platform for the harmonization of government and donor resources (inputs) and achievement of service outputs in line with the objectives of the NMSP.

A unified planning and review process are relatively well established at the federal level. The AOP ensures that the Programme remains focused in its progress towards achieving the targets of the national strategic plan. The AOP also addresses gaps and helps the Programme maintain best practices and thus the planning process often begins with a review of the previous year's activities. The review assesses the proportion of planned activities implemented and identifies enhancers and inhibitors of implementation. The tool for the review has evolved over time but currently the programme has adopted the WHO technical and financial performance review tool for its AOP reviews.

Thematic Area		% of Total Budget		
		2017	2018	2020
1	IVM	1.42	24.1	1.1
2	CM	1.52	33.9	4.5
3	ACSM	0.64	7.9	1.1
4	PSM	95.56	14.1	88.9
5	M&E	0.16	14.4	3.6
6	PM	0.48	5.6	0.7

In 2019 the NMEP adopted the NSHDP operational planning template to ensure integration into the vision and objectives of FMoH National Strategic Health Development Plan 2018-2022 (NSHDP II). It is hoped that this will help institutionalize the process and improve program visibility and budgetary allocation.

Of great concern, is the skewed nature of the AOP budget in the last few years, with the least allocation going to the building of resilient health systems (table).

NMEP and partners support annual operational planning at state level and the states are also being trained to use the NSHDPII template. Findings show that AOP development is largely dependent on the presence of donor support and the implementation of such plans vary across states. Even when developed, state plans are not routinely submitted to the NMEP for harmonisation into a national plan.

This review observed the inadequacy of inputs particularly from governments at all levels which significantly affected the quantity and quality of the expected outputs that resulted in the inability to meet many of the milestones targets.

The M&E Plan and thematic areas implementation guidelines have been developed and fairly well disseminated usually during Programme Managers Review meetings and other national meetings.

## Programme Reviews

### *i. Annual Program Reviews (APR)*

NMEP through the Programme Management Branch has institutionalised the annual program review as an internal review of planned activities of NMEP and partners. The review provides an overview of the activities of the program over the course of the year and highlights key achievements and implementation challenges. It is however noted that majority of the key recommendations were not usually implemented.

### *ii. Program Managers Review Meeting*



The annual Program Managers Review Meeting is a forum where states report on progress made in malaria control including challenges and share of best practices. It is usually a three-day event and has in attendance national and state level stakeholders and partners. The forum also serves as a platform for information sharing on new policies, initiatives, dissemination of relevant documents and provides opportunity for capacity building for the state managers. Only four out of six planned reviews were conducted during the period under review.

### *iii. Mid-term Review of the NMSP (MTR)*

The midterm review of NMSP, 2014-2020 was conducted in 2017, it was observed during this MPR that the report was not widely disseminated and many of the key recommendations not implemented.

## **Enabling and Constraining Factors**

### **Enablers**

- Availability of relevant National Policies that prioritise access to universal health care.
- The management of NMEP and the Programme Management staff are committed and receptive to Partners' Technical Support.
- Very effective Malaria Technical Working Group, thematic area sub-committees and other coordination platforms at the federal level
- Emerging opportunities for collaboration with corporate private sector (CAMA)
- Regional partnership and Global support for country driven HBHI approach

### **Constrainers**

- Very weak internal coordination of NMEP and the hierarchical orientation of most of the senior staff based on civil service culture.
- Weak synergy with other Federal level MDAs (e.g., National Primary Health Care Development Agency) and linkage with sub-national programmes and stakeholders.
- Staff attritions and out-of-programme management of Human Resources.
- Uncoordinated approach to private sector engagement
- Man-made bureaucratic bottlenecks and implementation delays.

## **5.8.2 Conclusions and recommendations**

### **Conclusions**

The potential for scoring an A rating on a recommended score-card is high looking at the rich policy environment and the enormous support from in-country partners and regional/global technical assistance. However, the weak internal coordination at NMEP/SMEPs and the poor implementation of the recommendations of periodic reviews have affected the ability to achieve milestone targets. The conflicts between the civil service bureaucracy and the donor's requests for accountable processes often delay activities implementation and achievement of desired results.

Private sector engagement has been weak, the PPP Framework should be updated to reflect responsibility of relevant branches of NMEP and the Partners. The NMEP leadership should drive the engagement process and the coordination platform for PPP be institutionalized.

Human Resource management of NMEP and SMEP staff at national and sub-national levels including posting, transfer, discipline and reward is unlikely to support programmatic efficiency.

### **Recommendations**

1. The internal coordination of NMEP should be strengthened and the National Coordinator should take full responsibility for this.
2. Reports of periodic Plan/Programme Reviews should be well disseminated and recommendations dutifully implemented.
3. Horizontal coordination between NMEP, other departments of FMoH, other relevant Line Ministries and Federal Agencies should be strengthened for harmonisation of national resources and integration of services
4. Establish a well-coordinated platform for a robust Federal-State interface through the Programme Management and M&E Branches, involving other thematic areas branches to ensure that states continue to buy into and align with the vision and goals of the National Programme
5. Review the Coordination Framework to reflect the emerging realities of the Malaria Elimination Stakeholders and to improve sub-national level coordination arrangement that will support Universal Health Coverage
6. Establish electronic and other virtual communication channels to improve internal and sub-national coordination; and for information or document dissemination
7. Review the PPP Framework and operationalise an effective PPP coordination arrangement that will leverage on all domains of the private sector strengths.
8. Develop Program Management guidelines and frameworks to help define PM functions with indicators to track performance.
9. Advocate to FMoH and the Civil Service Commission on the Human Resource Management approach that will retain experienced and trained staff within the Programme
10. Establish or strengthen social accountability mechanism to promote citizens' engagement and improve public confidence in Malaria interventions.

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## ***Chapter 6: Programming Implications of the Lessons Learned Implementing the NMSP***

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### **6.1 Lessons learned implementing the MSP**

Substantial domestic financing and adequate capacity to implement planned activities are central to achievement of the goal and the strategic objectives of the MSP. Significant donor funding as observed in the period under review was helpful, it was however not enough to achieve any of the targets set across all the outcome level objectives of the NMSP, 2014 2020.

#### **Vector Control and Malaria in Pregnancy**

- The huge numbers of LLINs distributed in supported states did not translate to increase use in some states across Nigeria. Additional efforts are required to improve net use culture.
- Significant improvement in mass campaign programming, targeting and data management due to deployment of ICT4D at scale with improved efficiency and accountability.
- The low coverage of IPTp is attributable to poor access to ANC services and limited engagement of poor pregnant women with RMNCAH service. The Malaria control Programme should engage with the Family Health Department, NPHCDA and other entities with mandate for ANC services to leverage on their platforms.

#### **Seasonal Malaria Chemoprophylaxis**

- Piloting of SMC in selected states provided the basis for scale up across all the LGAs of eligible 4 states in a more cost-effective manner. Other community level intervention may leverage on the SMC methodology to reduce Malaria morbidity in high burden states.

#### **Case Management**

- Providers' behavior on RDT testing and rational use of ACT remains a big concern looking at the data generated from the facilities despite declining prevalence of Malaria. The need to ensure adherence to treatment guidelines at the facility level will improve efficient deployment of Malaria medicines.
- There was inadequate engagement and monitoring of Malaria treatment by the private care providers. There is need for a private sector implementation plan to provide guidance on training and mentorship, quality assurance for antimalarials and diagnostics, and monitoring of quality of care provided in the private sector.
- Implementation of iCCM faced significant challenges due to low domestic funding for non-malaria commodities, it is hoped that iCCM will be integrated with the CHIPS programme of the NPHCDA for implementation at the state and LGA level.

#### **PSM**

- The coordination of PSM Stakeholders through the National Products Supply Chain Management Program (NPSMCP) and the PSM Sub-committees of Malaria TWG led to better monitoring of Malaria products and improved visibility along the pipeline
- Continuous Quality Assurance and Quality Control process NAFDAC allowed for a reasonable maintenance of the integrity of most of the ACTs in public space.

- Decentralization of PSM functions to sub-national levels through establishment and operationalisation of State Logistics Management Coordinating Unit (LMCUs improved availability of Malaria products at the facility level.

## **SMEOR**

- Despite the steady increase in the completeness of reporting over five years with virtually all the LGAs in the country currently reporting malaria data through the DHIS 2.0, data quality and reporting from the private sector remain a major challenge. This makes HMIS information difficult to use as national data.
- The use of ICT in electronic reporting is low despite huge presence of IT infrastructure in Nigeria. NMEP and Partners needs to take immediate advantage of this.
- The role played by the private sector in delivery of Malaria care to majority of Nigerians has not reflected in documentations and reporting. The engagement process with this sector needs to be reviewed for necessary improvement.
- The quality of routine malaria data was low despite regular DQAs. There is need to assess the mechanism of the DQA for improvement

## **ACSM**

- The ACSM sub-committee of the TWG Malaria with the presence of technical experts from the Malaria Partners should provide better support on Malaria messaging to improve uptake of services
- Priority activities related to ACSM should be guided by the National Malaria ACSM Plan and Guideline. Donors support should be mobilised to support its implementation.
- There is need to strengthen advocacy at the federal and state levels for policy, resource mobilisation, and increased use of interventions.

## **Project Management**

- The weak internal coordination of NMEP and SMEPs and the hierarchical orientation of most of the senior staff based on civil service culture affected the number and the quality of activities implemented.
- Many of the strategic priorities of NMEP require a strong health system and integration into the activities of other departments and agencies who work in silos. Achieving targets set in MSP became a major challenge,
- Mobilising private sector resources requires higher level commitment and a well-coordinated strategy. Mandate allocation and expectation management should be a priority going forward.

## 6.2 Future strategic directions

The ambitious Goal of the National Strategic Malaria Strategic Plan, 2014 – 2020, targeting Malaria Elimination may not have been achieved, but Nigeria is making progress with significant a progressive and significant reduction in Malaria burden. The *Vision* is to have a **MALARIA FREE NIGERIA** is possible based on the following:

- A critical need to increase domestic financing of malaria programme activities at federal and state levels, with investments into areas the improve system resilience and promote sustainability of gains achieved.
- Building on current gains and functional health systems and processes
- Strengthen evidence base for operational and strategic decision making; The evidence base should drive strategic direction in terms of strategy mix of strategies especially at sub-national levels
- Significant capacity strengthening of the NMEP, along with defining structures and pathways for better internal coordination with relevant departments or agencies of the FMOH.
- Leveraging on domestic homegrown flagship initiatives aimed at improving universal access to care such as the Basic Healthcare Provision Fund (NHPF) through enhanced collaboration with NPHCDA/SPHCDA
- Urgent need to further strengthening of existing platforms for Federal-State interface and collaboration. The efficient functioning of these platforms would be especially critical to ensure improved leverage of capacities of SMOH and SMEPs.
- Harnessing and reorienting the programme to promote the participation of non-health sectors in the national response for malaria
- GoN Strategic catalytic investments to provide active participation of the private sector participation such as deliberate country investment and regulatory concessions toward the development of local institutional production capacities and transfer of technology
- To address local variations in the mix of capacity needs at the sub-national level, a review of the current structure and function of the NMEP at the federal levels is needed to ensure a progressive shift in focus to building capacity of states to adapt and implement national strategies to their context informed by best practice.
- Development of a holistic national TA plan incorporating all partner TA support rather than partner-specific plans.
- Prioritizing collaboration with the research community to urgently generate evidence (including exploring the use factors) to guide the deployment and uptake of appropriate intervention or mix of interventions as part of Integrated Vector Management in the immediate term and all subsequent operational research needs of the programme.

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## *References*

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## ***Annexes***

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Annex 1