



**USAID**  
FROM THE AMERICAN PEOPLE



## ENDLINE EVALUATION OF MALARIA ACTION PROGRAM FOR STATES IN NIGERIA

**July 2016**

This publication was produced at the request of the United States Agency for International Development. It was prepared independently by Wayne Stinson, Moses Onazi, Magnus Adiele, A. Joshua Olatunji, and Olusegun Oladejo.

Cover photo: Nigerian Mother and Child. Credit: Nigeria MAPS.

# Endline Evaluation of Malaria Action Program for States in Nigeria

**July 2016**

Evaluation Mechanism: AID-OAA-C-14-00067

## DISCLAIMER

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

This document (Report No. 159-16-001) is available online. Online documents can be found on [www.ghpro.dexisonline.com](http://www.ghpro.dexisonline.com). Documents are also made available through the Development Experience Clearinghouse (<http://dec.usaid.gov>). Additional information can be obtained from:

**Global Health Performance Cycle Improvement Project**

1331 Pennsylvania Avenue NW, Suite 300

Washington, DC 20004

Tel: (202) 625-9444

Fax: (202) 517-9181

[www.ghpro.dexisonline.com](http://www.ghpro.dexisonline.com)

This document was submitted by Dexis Consulting Group and The QED Group, LLC, to the United States Agency for International Development under USAID Contract No. AID-OAA-C-14-00067.

# CONTENTS

Acronyms .....	i
Executive Summary .....	III
1. Evaluation Purpose and Questions.....	1
2. Project Background .....	2
3. Evaluation Methods and Limitations .....	5
4. Findings .....	7
Question 1 .....	7
Question 2.....	11
Question 3 .....	14
Question 4.....	19
Question 5.....	22
Question 6.....	23
5. Conclusions .....	25
6. Recommendations.....	26
Annex I. Evaluation Statement of Work.....	29
Annex II. Evaluation Methods and Limitations .....	53
Annex III. Data Collection Instruments.....	57
Annex IV. Sources Of Information .....	64
Annex V. Disclosure of Any Conflicts of Interest.....	67
Annex VI. Statement of Differences.....	68
Annex VII. State Data on Case Management .....	69
Annex VIII. State Data on Malaria in Pregnancy .....	72
Annex IX. State Data on DHIS2 Reporting Rates.....	74
Annex X. LLIN Ownership and Use .....	76

## FIGURES

Figure 1. Map of Nigeria showing the nine states of MAPS project intervention .....	3
Figure 2. Proportion of first ANC visits receiving IPT1 .....	7
Figure 3. Proportion of ANC2 and later visits in which IPT2 was given.....	8
Figure 4. Proportion of fever cases tested in health facilities with microscopes or RDTs.....	9
Figure 5. Proportion of households with at least one insecticide-treated bed net (ITN).....	10
Figure 6. Proportion of ANC1 attendees receiving an LLIN .....	11
Figure 7. Proportion of children under 5 receiving LLIN at immunization .....	11
Figure 8. Proportion of health facilities reporting monthly HMIS data to DHIS.....	18
Figure 9. Proportion of the total population sleeping under LLINs, 2013 and 2015 .....	20
Figure 10. Proportion of LLIN owners sleeping under LLINs, 2013 and 2015 .....	20
Figure 11. Proportion of children under 5 using LLINs, nationally and in focus sates.....	21
Figure 12. Percentage of pregnant women who slept under LLIN the night before survey in four LGAs in Nasarawa .....	21
Figure 13. Malaria prevalence in 2010 and 2015, by region .....	24

## TABLES

Table 1. Proportion of public health facilities receiving MAPS support .....	2
Table 2. Matrix of data sources and evaluation questions.....	5
Table 3. LLINs distributed through mass, school, community, ANC and EPI channels in MAPS-supported states.....	9
Table 4. Number of persons trained, by year and skill area .....	17

## BOXES

Box 1. MAPS' support for NMEP.....	15
Box 2. MAPS' support for state planning and management.....	15
Box 3. Human capacity development and maintenance .....	16
Box 4. Data reporting and use .....	18
Box 5. Capacity-building activities to support behavior change.....	19
Box 6. Focus group respondents' opinions on ANC and IPTp .....	22

# ACRONYMS

ACSM	Advocacy, communication and social mobilization
ACT	Artemisinin-based combination therapy
ANC	Antenatal care
AOP	Annual operating plan
ARFH	Association for Reproductive and Family Health
BCC	Behavior change communication
CBO	Community-based organization
DFID	UK Department for International Development
DHIS	District Health Information System
EPI	Expanded Program on Immunization
FHI 360	Family Health International
GH Pro	Global Health Program Cycle Improvement Project
HC3	Health Communication Capacity Collaborative Project
HMIS	Health management information system
HPI	Health Partners International
IPT <sub>p</sub>	Intermittent preventive treatment in pregnancy
IR	Intermediate Result
ITN	Insecticide treated net
LGA	Local government area
LLIN	Long-lasting insecticidal net
MAPS	Malaria Action Program for States
NMCP/NMEP	National Malaria Control/Elimination Program
NNHS	National Nutrition and Health Survey 2015
PMI	U.S. President's Malaria Initiative
RBM	Roll Back Malaria
RDT	Rapid diagnostic test
SFH	Society for Family Health
SMEP	State Malaria Elimination Program
SMOH	State Ministry of Health

SMS	Short Message Services
SP	Sulfadoxine-pyrimethamine
SuNMAP	Support to National Malaria Control Program
USAID	United States Agency for International Development
WHO	World Health Organization

# EXECUTIVE SUMMARY

On October 15, 2010, USAID/Nigeria issued a five-year cooperative agreement (620-A-00-10-00017-00) to the Academy for Educational Development (AED)<sup>1</sup> to implement the Malaria Action Program for States (MAPS). Subrecipients were the Malaria Consortium and Health Partners International (HPI). This agreement was to achieve five intermediate results:

1. Increased access to malaria prevention interventions
2. Improved malaria diagnostic and treatment services
3. Increased awareness and knowledge of malaria prevention and treatment services
4. Improved capacity for malaria program management at state and local government area (LGA) levels
5. Strengthened management of malaria information systems at national, state, LGA and health facility levels

The total estimated cost was USD 79,908,667.

For this endline evaluation, USAID contracted with the Global Health Program Cycle Improvement Project (GH Pro) in January 2016 to achieve the following objectives:

1. To establish if MAPS interventions contributed to a reduction in malaria morbidity and mortality through increased coverage of intermittent preventive treatment in pregnancy (IPTp), reduced IPTp dropout rates, increased use of treated bed nets and increased testing with rapid diagnostic tests (RDTs) in focus states
2. To identify best practices, innovations and gaps in MAPS implementation approaches
3. To provide the national and state malaria elimination programs (NMEP/SMEP) insight into existing gaps in malaria programming to inform appropriate government responses for future malaria programming
4. To generate evidence and recommendations that would inform the design of a new President's Malaria Initiative (PMI) activity in Nigeria

The GH Pro evaluation team conducted interviews, visited field sites and analyzed documents from late January to early March 2016. This report documents and substantiates the evaluators' findings.

MAPS started very slowly, for reasons outside the project's control<sup>2</sup>; after activities were frozen in November 2010, they eventually resumed in April 2011 under the newly formed FHI 360. Work in Benue, Cross River, Ebonyi, Kogi, Nasarawa, Oyo and Zamfara began in FY11; Akwa-Ibom and Kebbi followed in FY14. These states had a combined population of 36 million people and, in most cases, had received prior program support from the Global Fund to Fight AIDS, Tuberculosis and Malaria or the World Bank. USAID approved a no-cost extension for the MAPS project until December 31, 2016.

MAPS aimed to increase state capacity by initially targeting high-volume facilities and encouraging them to train others through step-down trainings. The number of directly served facilities increased with time, from 116 in 2012 to 2,066 in 2015. The latter figure represented 22 percent of public facilities in the nine intervention states. (The project engaged the private sector as well, achieving greater success than might have been expected from providers not dependent on public funding.)

---

<sup>1</sup> AED was subsequently incorporated into a new organization, FHI 360.

<sup>2</sup> USAID suspended AED's work globally due to issues in another country.

The team concentrated on statewide results, for reasons explained in the full report, even though MAPS directly supported only a subset of facilities. The evaluation did not request analysis of commodity supplies, even though availability affected some of the reported outcomes.

The evaluation team developed a protocol for the evaluation, data collection tools, discussion and interview guides, and checklists for data collection. The team then implemented quantitative and qualitative components of the evaluation in line with the developed protocol and documented key findings including lessons learned, best practices and innovations in MAPS implementation in focus states.

The evaluation team visited four states: Benue, Akwa-Ibom, Zamfara and Oyo. Within each state, team members visited all three senatorial districts and randomly selected two facilities for in-depth study (24 LGAs and 77 facilities in total). Sixteen focus group discussions and 17 key informant interviews were conducted. Secondary data analyses, based on survey reports as well as the District Health Information System version 2.0 (DHIS2), covered all MAPS states, with comparisons to non-project states.

The evaluators were asked to address six evaluation questions; brief summary answers appear below.

### **To what extent have MAPS intervention approaches led to increased uptake of IPTp, malaria testing for fever cases and increased access to and use of long-lasting insecticidal nets (LLINs) in focus states?**

All related indicators increased in MAPS states more than elsewhere, demonstrating strong benefits from PMI inputs. MAPS' contribution was perhaps most evident in IPT, attributable to national policy work, training, and efforts to reserve available sulfadoxine-pyrimethamine (SP) for IPT and reduce its use for uncomplicated malaria. The gap between supported and unsupported states was even greater for parasitological testing, but this may be partly attributable to RDT shortages in non-PMI areas. MAPS also made substantial gains against presumptive (clinical) diagnosis and the use of artemisinin combination therapies (ACTs) for unconfirmed cases. LLIN coverage through both campaigns and continuous channels also increased, but not dramatically more than elsewhere and with irregular statewide patterns because of the periodic nature of campaign schedules.

### **What best practices, innovations, lessons learned and gaps can be identified from MAPS support in focus states that will inform a new project design?**

MAPS identified a number of best practices and lessons learned, and the project developed several innovations, some of which evolved into best practices that should inform future designs. One is to focus less on individual skill development and more on facility empowerment through onsite training, routine supervision and use of job aids. Annual operating plans (AOPs), malaria technical working groups and similar coordinating mechanisms proved to be an excellent tool for empowering SMEPs; they can also generate cost-sharing commitments. Quality assurance for diagnostics and for data is essential, both to ensure accuracy and to reinforce provider and client confidence.

### **How have MAPS' capacity-building activities and engagement with the NMEP/SMEPs improved the planning, coordination and implementation of malaria activities, including strengthening health management information systems (HMIS) at national and state levels?**

MAPS contributed substantially to national policy developments (especially for diagnosis and treatment, IPT, and LLIN distribution through campaign and continuous channels), with results that may have affected national as well as state malaria indicators. MAPS initiated or revived three state-level coordinating bodies: the malaria technical working group, the partners' forum, and state-LGA coordination meetings; it also supported LGA-level data validation meetings. SMEP staff quotas and skill levels increased under MAPS' stewardship. In spite of strong efforts, MAPS was only partly successful in building the degree of political ownership needed to sustain project activities with non-donor funds.

### **How have the behavior change communication (BCC) activities that were implemented translated into increased use of malaria control interventions at the community level and at service delivery points?**

The evaluation team saw little evidence of current or recent BCC efforts, but focus groups confirmed that attitudinal and behavioral change had occurred and that LLINs are being used. The *Key Indicators Report* for the 2015 Malaria Indicator Survey showed increased use of malaria control interventions in MAPS states, but no better than in non-MAPS states.

### **To what extent was gender integrated in the implementation of MAPS activities?**

MAPS did not focus on gender as a separate concern, but activities appear in general to have been appropriate for men and women. Successful efforts were made to engage husbands for increasing women's uptake of antenatal care and IPT services in conservative districts of northern Nigeria.

### **Did USAID get value for investment for MAPS?**

PMI investment through MAPS should be considered valuable if it has helped set Nigeria on the road to lasting malaria reductions through reinforcement of national leadership and development of sustainable systems and capacity. The recently released *Key Indicators Report* from the 2015 Malaria Indicator Survey documents a one-third reduction in malaria prevalence since 2010—a major achievement. (The evaluation team has been unable to compare national changes to changes within MAPS-supported states.) The evaluators conclude that MAPS achieved value for investment, although this must be sustained and further documented through subsequent surveys and analyses.

## **RECOMMENDATIONS**

1. PMI should continue to invest in malaria control in Nigeria and consider increased funding as national and state governments strengthen their commitments.
2. PMI and others should help committed Nigerian leaders to overcome malaria fatalism by concentrating resources where they are most likely to produce significant reductions.
3. Future project design should focus support on states that demonstrate local ownership and responsibility.
4. Capacity-development strategies for malaria control should strengthen facilities, institutions and systems, and downplay individual training.
5. PMI should require future malaria control partners to more explicitly consider gender factors for project design and implementation.

# I. EVALUATION PURPOSE AND QUESTIONS

The purpose of this endline evaluation of the Malaria Action Program for States (MAPS) was to assess the project's effectiveness in order to:

1. Establish if MAPS interventions contributed to a reduction in malaria morbidity and mortality through increased intermittent preventive treatment in pregnancy (IPTp) coverage, reduced IPTp dropout rates, increased use of treated bed nets and increased testing with rapid diagnostic tests (RDTs) in focus states
2. Identify best practices, innovations and gaps in MAPS' implementation approaches
3. Provide national and state malaria elimination programs insight into existing gaps in malaria programming to inform appropriate government responses for future malaria programming
4. Generate evidence and recommendations to inform the design of a new President's Malaria Initiative (PMI) activity in Nigeria

## Evaluation questions

The evaluators carefully considered the following questions, which are aligned with the project's components and objectives:

1. To what extent have MAPS' intervention approaches led to increased uptake of IPTp, malaria testing for fever cases and increased access to and use of long-lasting insecticidal nets (LLINs) in focus states?
2. What best practices, innovations, lessons learned and gaps can be identified from MAPS support in focus states that will inform a new project design?
3. How have MAPS' capacity-building activities and engagement with the National Malaria Control Program (NMCP) and state malaria programs improved the planning, coordination and implementation of malaria activities, including strengthening health management information systems (HMIS) at national and state levels?
4. How have the behavior change communication (BCC) activities that were implemented translated into increased use of malaria control interventions at the community level and at service delivery points?
5. To what extent was gender integrated in the implementation of MAPS activities?
6. Did USAID get value for its investment for MAPS?<sup>3</sup>

---

<sup>3</sup> Value here is defined as sustainable capacity, better management of malaria-related systems, significant policy, behavior changes and major reductions in malaria transmission.

## 2. PROJECT BACKGROUND

Nigeria is the most populous country in Africa, with the continent’s highest malaria burden and a decentralized health system that makes national strategy implementation difficult. The U.S President’s Malaria Initiative (PMI) has supported malaria control in Nigeria since 2011 but until recently had documented only limited changes in preventive behaviors, morbidity and mortality. The *Key Indicators Report* for the 2015 Malaria Indicator Survey documents significant reductions in seroprevalence across Nigeria, but without specific attribution to PMI-supported areas. MAPS was an effort to build sustainable capacity to reduce malaria transmission in nine states and within the National Malaria Elimination Program (NMEP).

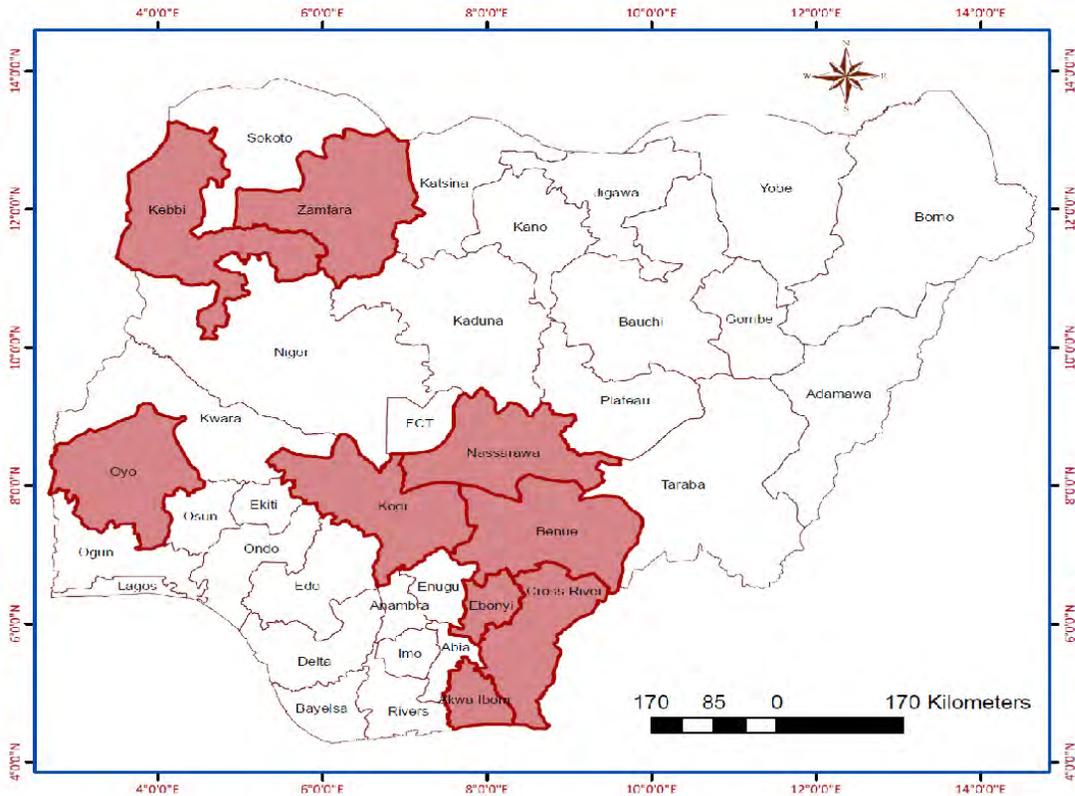
USAID awarded cooperative agreement 620-A-00-10-00017-00 for MAPS on October 15, 2010, with a total estimated cost of USD 79,908,667. The recipient at the time of award was the Academy for Educational Development (AED), which soon thereafter was suspended from USAID assistance for reasons unrelated to Nigeria. After an approximately six-month hiatus, responsibilities were transferred to the successor organization, FHI 360. The prime recipient further subcontracted with the Malaria Consortium and Health Partners International (HPI). Originally designed as a five-year project to end in 2015, MAPS was given a no-cost extension, with closeout now scheduled for December 2016.

MAPS started work in seven states (Benue, Cross River, Ebonyi, Kogi, Nasarawa, Oyo and Zamfara) in 2011 and 2012 and took on two additional states (Akwa-Ibom and Kebbi) in 2014 (Figure 1). From the beginning, the project strategy was to build state and local government area (LGA) capacity. USAID designated MAPS as a “flagship” project, in partnership with State Malaria Elimination Programs (SMEPs). To achieve this, it decided that training and other support should be targeted to a subset of high-volume facilities to serve as step-down platforms and implementation models. (This restricted selection was also due to commodity shortages.) As shown in Table 1, the nine states have a total of 9,115 public health facilities; in 2012, however, MAPS supported only 483 (5 percent), gradually increasing to 806 in 2013, 1,849 in FY14 and 2,066 (22 percent) in 2015. This evaluation focused on statewide results, even though some short-term outcomes might have been more easily observed within the smaller number of directly supported facilities.

**Table 1. Proportion of public health facilities receiving MAPS support**

State	Number of Public Health Facilities	Proportion of Public Health Facilities Supported			
		FY12	FY13	FY14	FY15
Akwa Ibom	587			64.7%	96.2%
Benue	1,380	12.9%	17.2%	17.2%	17.2%
Cross River	1,211	5.7%	11.8%	19.4%	19.4%
Ebonyi	625	8.0%	8.0%	26.2%	26.2%
Kebbi	786			20.9%	24.7%
Kogi	1,079		7.8%	15.3%	15.4%
Nasarawa	1,011		10.5%	19.3%	19.3%
Oyo	1,713	7.6%	7.6%	10.4%	10.5%
Zamfara	723	7.7%	7.7%	18.0%	18.0%
<b>TOTAL</b>	<b>9,115</b>	<b>5.3%</b>	<b>8.8%</b>	<b>17.7%</b>	<b>22.7%</b>

**Figure 1. Map of Nigeria showing the nine states of MAPS project intervention**



USAID established five intermediate results (IRs) for MAPS:

**IR1: Increased access to malaria prevention interventions**

MAPS focused on IPTp and nightly use of LLINs, especially by pregnant women and children under 5. IPTp was promoted by development of national guidelines (implementing World Health Organization (WHO) guidance), training, and ensuring availability of sulfadoxine-pyrimethamine (SP). LLINs were distributed periodically through universal coverage campaigns, as well as continuously through antenatal care (ANC) clinics, Expanded Program on Immunization (EPI) programs, schools and community-based distribution. Between 2013 and 2015, MAPS allocated 22 percent of activity budgets to IR1 (excluding operational costs).

**IR2: Improved malaria diagnostic and treatment services**

At a time when presumptive treatment was almost universal and use of ineffective drugs (chloroquine and SP) common, MAPS played a central role in assisting the NMEP to align national diagnostic and treatment guidelines with WHO recommendations. Working with the DELIVER Project, MAPS ensured adequate supplies of both RDTs and artemisinin-based combination therapy (ACT). The project trained more than 20,000 health workers in the new treatment guidelines and helped implement integrated supportive supervision. Work plans for 2013-2015 allocated 25 percent of activity budgets to IR2.

### **IR3: Increased awareness and knowledge of malaria prevention and treatment services**

MAPS built capacity and directly supported advocacy, communication and social motivation (ACSM),<sup>4</sup> but this responsibility was gradually transferred to the Health Communication Capacity Collaborative (HC3) starting in FY14.<sup>5</sup> Much ACSM work occurred during LLIN distribution and focused on proper use of nets. Messages were also addressed to health workers, encouraging diagnostic testing before treatment and IPTp during ANC visits. Beginning in FY12, MAPS made fixed-obligation grants to community-based organizations (CBOs), largely for promotion of appropriate preventive and treatment behavior. MAPS allocated 23 percent of activity budgets to IR3 between FY13 and FY15.

### **IR4: Improved capacity for malaria program management at state and LGA levels**

MAPS strengthened state capacity to plan, monitor and implement malaria programs. In each state, the project revived or established a quarterly malaria technical working group, a periodic malaria partners' forum and a bimonthly state-LGA coordination meeting. MAPS trained thousands of program staff and assisted states and a few LGAs to develop Annual Operating Plans (AOPs) for malaria, encouraging cost sharing by other donors and SMEPs. The project also promoted integrated supportive supervision. This IR provided much of the cohesion required to coordinate and monitor activities and give states oversight, if not full control, over malaria programming. Between FY13 and FY15, 18 percent of activity budgets were allocated to IR4; however, all activities were phased out in September 2015.

### **IR5: Strengthened management of malaria information system at national, state, LGA and health facility levels**

MAPS helped design the web-based District Health Information System, version 2 (DHIS2), and then trained and supported more than 3,000 health workers to ensure timely and accurate reporting. Much of this work has been hands-on, helping individual facilities compile monthly reports and organizing bimonthly meetings at the state level to review and correct reports. Between FY13 and FY15, 12 percent of activity budgets were allocated to IR5.

---

<sup>4</sup> ACSM adds advocacy to traditional BCC activities.

<sup>5</sup> BCC training stopped in FY14, but the team observed small-scale promotional efforts in FY16.

### 3. EVALUATION METHODS AND LIMITATIONS

A GH Pro evaluation team worked in Nigeria from late January to early March 2016 and used a range of quantitative and qualitative methods. For the quantitative study, the evaluators reviewed national surveys and analyzed data from DHIS2. The team also assessed 77 health facilities in urban and rural locations in four states. USAID identified states for the team to visit, based on geopolitical zone and when each state joined MAPS:

- Akwa-Ibom, in South South
- Nasarawa (originally), then Benue in North Central (the team dropped Nasarawa in favor of Benue because of strike action)
- Zamfara in North West
- Oyo in South West

Within each state, the evaluation team visited all three senatorial districts and randomly selected two facilities for more in-depth study (24 LGAs total). The qualitative component of the evaluation used focus group discussions among men and women of childbearing age and in-depth interviews with project implementers, partners, CBOs and staff of the NMEP and SMEPs. The evaluators conducted 17 key informant interviews and 16 focus group discussions at both state and national levels with different target audiences. Secondary data analyses covered all MAPS states, with comparisons to non-project states.

Table 2 presents the matrix of data sources and how they were used to address each evaluation question. The tools used to collect new data were piloted during the early stages of the data collection phase; the final versions are provided in Annex III. Translators assisted in Zamfara to ensure that participants’ views were not excluded because of language barriers. The team followed the USAID evaluation guidelines.<sup>6</sup>

**Table 2. Matrix of data sources and evaluation questions**

Data Sources	Evaluation Questions					
	Q1: IPTp, testing, LLINs	Q2: Best practices	Q3: Capacity building	Q4: Behavior change	Q5: Gender	Q6: Sustainable value
Project documents: AOPs and reports		x	x		x	x
Strategies						x
National surveys	x					
Routine data	x					
MAPS' formative assessments	x		x			
Key informant interviews		x	x	x	x	x
Focus group discussions		x		x	x	
Evaluation team’s health facility assessments	x			x		

<sup>6</sup> USAID Evaluation Policy, 2011

## LIMITATIONS

The data sources used are derived from different methodologies, sample sizes and scope. While some were facility-based, others were at the household level. These and other factors made it difficult to compare data, and the evaluators had to take care to ensure that trend analyses for project and facility indicators were compared with facility data and that population-based data were compared with data from community-based surveys. There were clear indications from state visits that DHIS data were sometimes of poor quality, and the rates of data reporting differed from state to state. However, with the improved capacity for the HMIS at national and state levels, coupled with ongoing data validation exercises, DHIS data could be relied on to some extent.<sup>7</sup> The lack of baseline and midterm review also made it challenging to clearly measure performance in project communities.

The quantitative analyses that follow are based on statewide data, even though MAPS directly supported only a minority of facilities. At one level, the evaluators compared before and after conditions within MAPS-supported states, and at another, the team compared trends within supported states with trends in the country as a whole. The 2015 Malaria Indicator Survey reports significant improvements in Nigeria during the MAPS implementation period, but MAPS might have been expected to do better than national averages.

The evaluators cannot attribute all changes in states to the MAPS project, because other implementers worked there as well, most notably SMEPs, the Society for Family Health (SFH, private sector), Association for Reproductive and Family Health (ARFH, public) and Institute of Human Virology, Nigeria. Results in both MAPS-supported states and elsewhere were largely dependent on commodity availability and supply chains and by BCC activities, supported by PMI (DELIVER, HC3) and others. The evaluators can measure change and compare states; but attribution is often less definitive.

---

<sup>7</sup> DHIS2 reporting increased greatly during the reporting period (see Annex IX) and was too low for analysis in 2012. For 2013-15, the evaluators used only proportional indicators with numerators and denominators that could be derived from within available reports, thus, less affected by the reporting rate. This probably created an upward bias in indicators reported below, since non-reporting facilities probably had weaker services than those that did report.

## 4. FINDINGS

The findings from the MAPS endline evaluation are organized according to the six evaluation questions.

### QUESTION I

**To what extent have MAPS' intervention approaches led to increased uptake of IPTp in pregnancy, malaria testing for fever cases and increased access to and use of LLIN in focus states?**

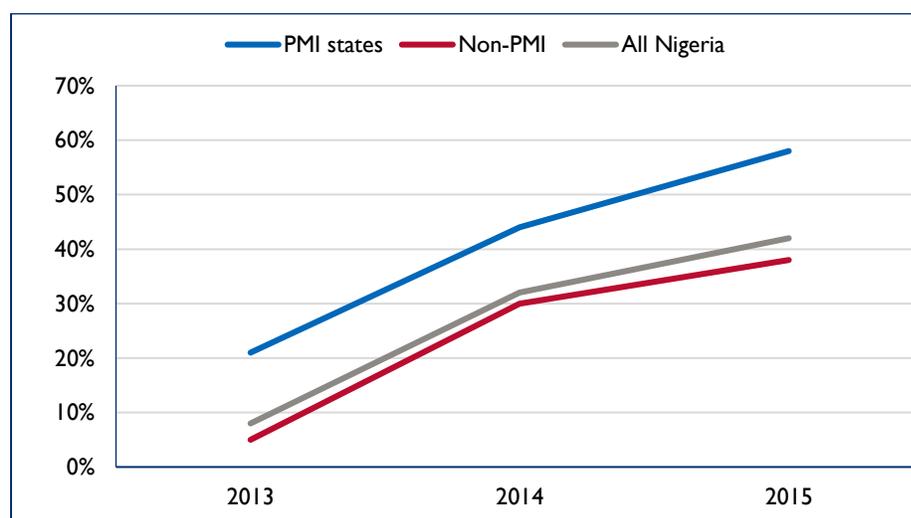
#### Uptake of IPTp in pregnancy

MAPS supported IPTp by:

- Providing technical assistance to the NMEP to update malaria-in-pregnancy guidelines, based on WHO recommendations
- Developing and implementing training curricula
- Training 6,730 ANC staff in the new guidelines
- Increasing SP availability within the antenatal clinic and facility, partly by reducing its inappropriate use for other conditions

These efforts seem to have paid off: DHIS2 data, presented in Figure 2 and in Annex VIII, indicate that 21 percent of ANC I attendees in MAPS states obtained IPT1 in 2013, compared with 8 percent in non-MAPS states.<sup>8</sup> Two years later, this indicator had risen to 58 percent in MAPS states compared to 38 percent in non-MAPS states. As shown in Figure 2, the two areas rose at roughly the same rate between 2013 and 2014, but MAPS data rose much more rapidly in 2014-2015. MAPS policy-development work may have contributed to national increases, but impact was even greater in the directly supported states.

**Figure 2. Proportion of first ANC visits receiving IPT I**

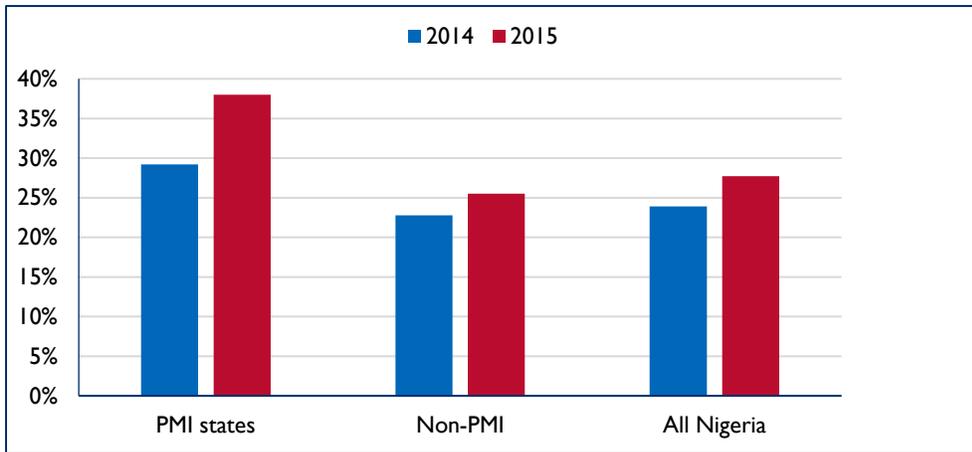


Source DHIS2

<sup>8</sup> Note that DHIS2 data reflect multiple actors within MAPS states and thus are not specifically attributable to the project. DHIS2 IPT data do not appear to be reliable for 2012.

The evaluators attempted similar analyses for IPT2 but lacked a precise denominator.<sup>9</sup> Results shown in Figure 3 indicate that MAPS states increased IPT2 uptake from 29 to 38 percent (nine percentage points) whereas non-MAPS states increased only from 23 to 26 percent (three points).

**Figure 3. Proportion of ANC2 and later visits in which IPT2 was given**



Source: DHIS2

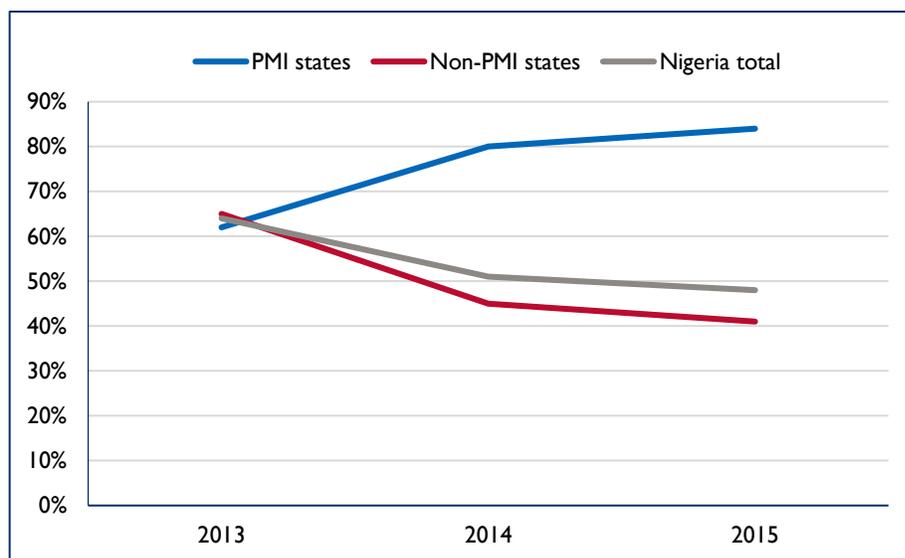
### Parasitological testing for fever cases

Prior to 2010, national policy allowed for presumptive treatment of malaria-like fevers, without parasitological testing. MAPS assisted the NMEP to update national treatment guidelines to align with WHO guidelines that require testing, and the project then trained state and health facility staff to implement the change. Working with DELIVER, the project ensured supplies of RDT test kits, and they supported external quality assurance to ensure that diagnoses were interpreted correctly. Even more than for IPTp, results were particularly apparent in MAPS-supported states.

DHIS2 data show that the proportion of fever cases tested for malaria increased from 62 to 84 percent in MAPS focus states between 2013 and 2015, while testing rates in non-MAPS states declined from 65 to 41 percent (Figure 4). Akwa-Ibom and Zamfara doubled testing rates, from 45 to 90 percent and 39 to 75 percent, respectively (Annex VII). All areas, of course, depended heavily on availability of test kits; for example, Benue rates fell from 89 percent to 72 percent because of reported shortages, according to key informant interviews.

<sup>9</sup> DHIS2 records first and total ANC visits but does not have a separate indicator for second ANC visits. The team calculated the number of ANC2+ visits by subtracting ANC1 from total ANC but could not determine the exact number of ANC2 visits. ANC2 data for 2013 appear to be invalid, so the evaluators calculated only 2014 and 2015 results.

**Figure 4. Proportion of fever cases tested in health facilities with microscopes or RDTs**



Source: DHIS2

### Increased ownership of LLINs

MAPS supported the distribution of LLINs, both nationally (through technical assistance to the NMEP to refine distribution procedures) and through direct support to states (with nets provided by PMI, the Global Fund and others). Distribution channels included mass campaigns, ANC and child welfare clinics, schools and community channels. According to project reports, MAPS supported distribution of more than 19 million PMI LLINs, 90 percent through mass distribution campaigns, with the balance through continuous distribution channels.

**Table 3. LLINs distributed through mass, school, community, ANC and EPI channels in MAPS-supported states**

MAPS States	Net Distribution					Total
	Mass	School	Community	ANC	EPI	
Akwa-Ibom				23,591	14,289	37,880
Benue	1,850,550		77,127	95,899	82,350	2,105,926
Cross River	1,727,493	3,200		83,816	74,767	1,889,276
Ebonyi	1,425,748		101,241	82,715	64,999	1,674,703
Kebbi	2,187,049			40,613	32,020	2,259,682
Kogi	1,364,844		33,326	74,010	66,634	1,538,814
Nasarawa	2,459,723		167,545	115,094	49,218	2,791,580
Oyo	2,347,783	123,454		141,228	97,953	2,710,418
Zamfara	3,844,359		72,356	183,061	18,046	4,117,822
<b>Total</b>	<b>17,207,549</b>	<b>126,654</b>	<b>451,595</b>	<b>840,027</b>	<b>500,276</b>	<b>19,126,101</b>

Source: Project reports

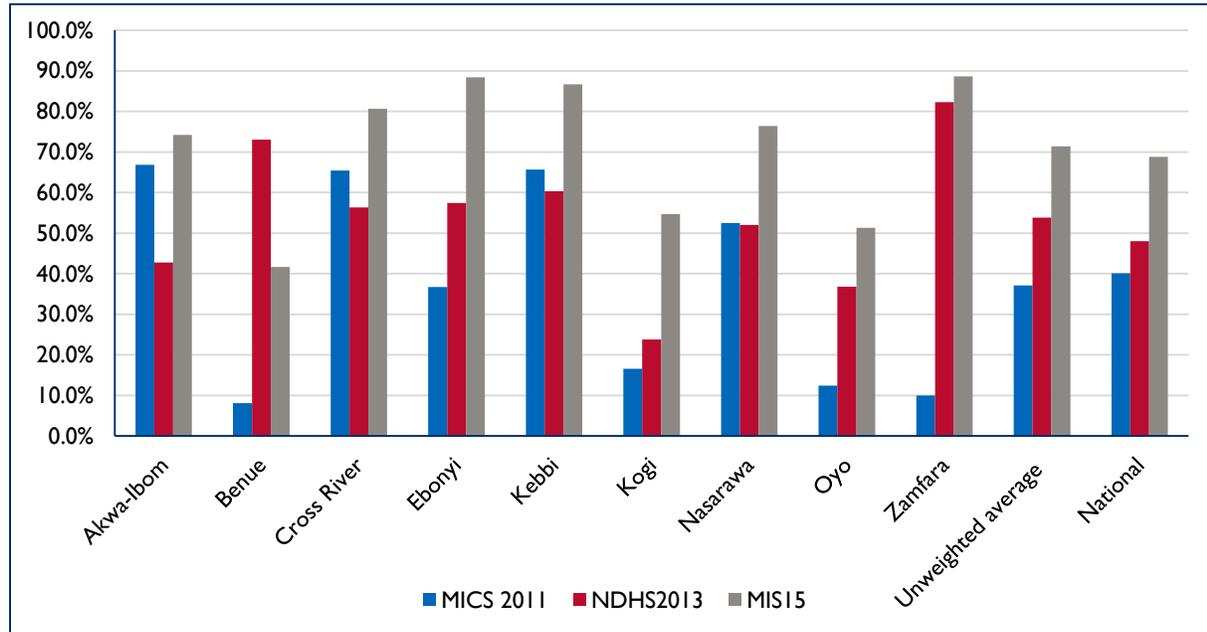
Mass campaigns occurred as follows:

- 2011: Benue, Cross River, Ebonyi and Zamfara
- 2012: Oyo (Wave I)

- 2013: Oyo (Wave 2) and Sokoto
- 2014: Akwa-Ibom and Nasarawa
- 2015: Cross River, Ebonyi, Kebbi and Zamfara

The timing of mass campaigns had significant effects on ownership levels in different years, as shown in Figure 5, below.

**Figure 5. Proportion of households with at least one insecticide-treated bed net (ITN)**



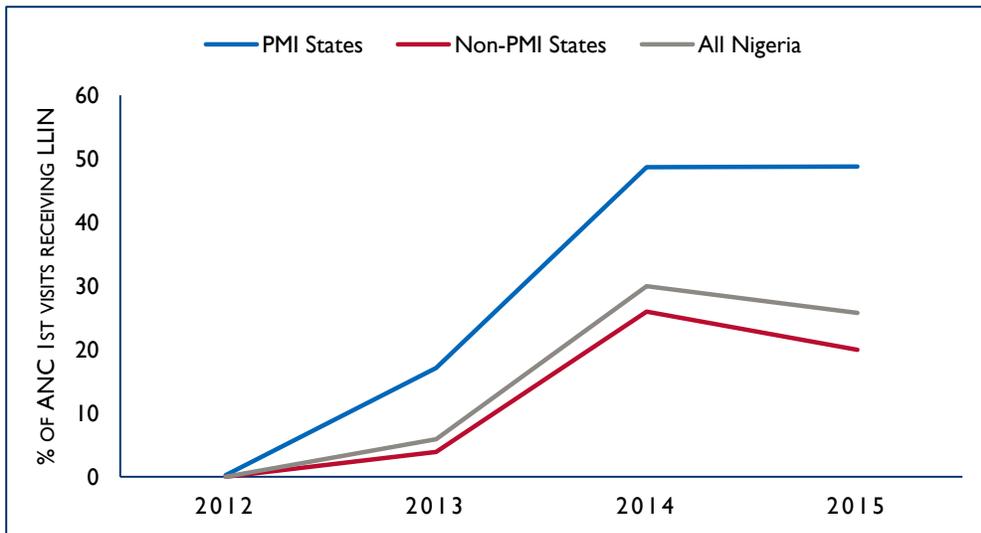
Sources: MICS, 2011; NDHS, 2013; National Nutrition and Health Survey (NNHS), 2015; SMART Survey, 2014

MIS data from 2010 and 2015 show that national ownership of at least one LLIN increased from 41 percent to 69 percent over the five years, while ownership in MAPS states increased from 37.1 to 71.4 percent (unweighted average of nine states),<sup>10</sup> a greater increase. Annex X shows analyses for two other indicators: the average number of nets per household, and the proportion of households with at least one net for every two residents (an indicator of universal coverage).

MAPS also supported continuous LLIN distribution in individual states. One continuous channel was through ANC clinics providing an LLIN during first IPTp visits. MAPS-supported states did significantly better than other states, as shown in Figure 6, but still well below the target of 100 percent.

<sup>10</sup> The averages for MAPS states are unweighted and thus indicative only.

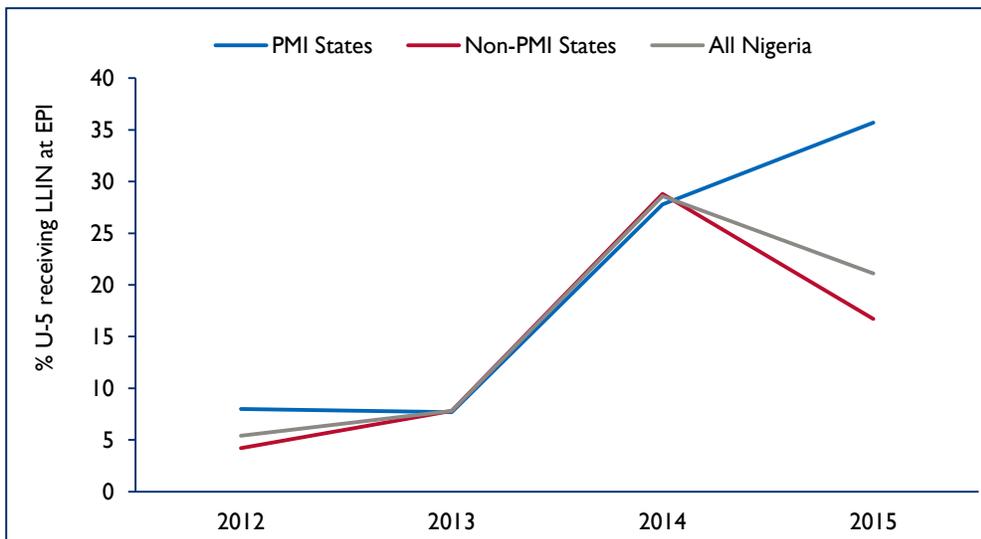
**Figure 6. Proportion of ANCI attendees receiving an LLIN**



Source: DHIS2

MAPS also supported continuous distribution through immunization clinics; results are shown in Figure 7. In this case, MAPS' distribution paralleled national averages through 2014 but then continued to rise through 2015, while national averages fell.

**Figure 7. Proportion of children under 5 receiving LLIN at immunization**



Source: DHIS2

Use of LLINs is discussed in Question 4.

## QUESTION 2

### **What best practices, innovations, lessons learned and gaps can be identified from MAPS support in focus states that will inform a new project design?**

The evaluation team defined best practices as tested processes, which should be followed in almost every location, whereas innovations are new approaches for solving local problems, which may or may not be implemented elsewhere. Best practices and lessons learned should be implemented in any new

activity, whereas innovations should be encouraged but not imposed. Gaps may be either local or national, but a new project design should encourage bidders to overcome them wherever they occur.

### Best practices

The evaluators identified a number of best practices from interviews, documents and their own judgments about value. Informants did not use the term “best practices” (and the evaluators did not accept the project’s labeling of best practices), but they did praise the activities described below:

- **Annual operational planning**, followed by quarterly reviews: This has proven to be an excellent way to bring all implementers together to discuss programmatic issues and progress, identify gaps and share burdens. The process is sustainable and replicable, with limited need for external funding, but it may benefit from outside technical perspectives. Many state governments have committed funds, either to finance the planning process or by accepting responsibility for implementation actions. However, informants said that actual release of committed government funds has been rare.
- **Enhanced coordination and communication**: On a routine basis, MAPS created or revived many coordination mechanisms to synchronize activities and fill gaps, providing cohesion to align activities and strengthen SMEP oversight. Review of meeting notes indicated that these were invaluable for aligning training, commodity delivery, BCC and community outreach. Mechanisms ranged from malaria technical working groups, to LGA-SMEP meetings, to partner forums—all of which might be considered essential for routine state oversight of malaria control activities. Costs are relatively low, making it more likely that any future PMI support can be limited to technical assistance.
- **Co-location of project offices**: While not essential, co-location of activities that must be coordinated reduces mistiming and increases efficiency. For MAPS and its follow-on project, this is essential for four activities: training, commodity supply, BCC, and DHIS validation. Some coordination may occur through partner participation in weekly staff meetings, as MAPS encouraged in at least some states, but even that degree of coordination may not facilitate true team building. The team assessed co-location as a best practice but agreed with informants who said that it does not solve all coordination problems and may not always be feasible.
- **Concentrating on facility capacity, not individual skills**: Facility capacity requires more than trained staff; it also requires dependable commodity supplies, job aids for providers, routine problem-solving practices, referral to higher-level services and technical support, BCC guidance for clients and a clinic ambience that attracts rather than repels clients. All of these need to come together for an effective, quality-assured service. For MAPS, this started as a lesson learned regarding training (see below), but it is gradually emerging as a best practice.
- **Data quality and data use must go hand-in-hand**: MAPS wisely chose to strengthen both data validation and data use at the same time, very quickly establishing a mutually reinforcing relationship between the two. The project supported monthly validation meetings to reinforce data quality and timeliness and raised data awareness by using DHIS2 reports for AOPs. The evaluators observed data charts posted in a few health facilities, but they were generally outdated. In some cases, MAPS cooperated with DELIVER to triangulate clinic registers and utilization records with physical inventories. Informants indicated that these were practices to be replicated, even though commodity triangulation appeared to be infrequent. By working intensively on data use as well as reporting, MAPS quickly transformed the cycle of bad data quality and non-use into one of high data quality and consequently frequent use.
- **Insistence on quality diagnoses**: Reduction of over-treatment and ACT wastage requires both universal testing and provider/patient confidence in results. MAPS supported external

quality assurance through routine process supervision and validation of diagnoses, and PMI continues to encourage it.

## Innovations

Some of what is described above emerged first as a lesson learned, then as a local problem-solving innovation, only later becoming what should be considered a best practice. The innovations described below may eventually become best practices:

- **Basket funding:** The MAPS project office in Zamfara continued a basket fund for health previously initiated by the DFID-supported PRRINN project. All LGAs in the state contribute to the fund, providing a pool for financing data validation meetings, partner forums and other needs. A separate basket fund dedicated solely to malaria activities has been proposed and accepted by all LGAs but not yet by the governor. When operational, this second fund will support all malaria service delivery in the state.
- **School malaria clubs:** The Oyo SMEP formed clubs to educate students on prevention, treatment and management of malaria. These students then educate peers, siblings and parents on correct malaria knowledge and practices. This approach is thought to be the most sustainable, with minimal external support needed.
- **Use of Short Messages Services (SMS) to generate demand for services:** A METROBUS survey reported that 18 percent of people surveyed had received bed net reminders through SMS in the past year, and 38 percent of those forwarded messages to friends and family members. AOPs indicate that nine states use SMS to strengthen the prescription practices of health care workers. This testifies to the value of reaching mobile audiences through personal phones and the great impact that mobile network operators have in creating malaria awareness in Nigeria.

## Lessons learned

- **Excessive reliance on staff training for capacity development may be ineffective and unsustainable:** By 2014, MAPS staff concluded that individual training conducted offsite was only partially effective, because of frequent transfers and retirement, and that henceforth training should occur within facilities. MAPS also supported on-the-job training and integrated supervision as a way to develop and maintain clinic-wide skills. A senior informant in Oyo argued that individual training should be dropped in favor of supervision, job aids and other methods to build capacity. Even when fully implemented, a simple policy change, such as testing before treating, may have limited effect if providers and patients lack confidence in results or lack an alternative when results are negative. Full implementation of an innovation requires alignment of all relevant inputs (not only training) to ensure that outmoded practices actually change.
- **Demonstrable impact may be needed to overcome malaria fatalism:** Public leaders and individual families in countries with high malaria may not understand that malaria can be reduced rapidly and permanently. In the current context, Nigerians seem reluctant to commit national resources to malaria control because of prevailing fatalism and feelings that the country is unique and cannot duplicate the successes of other countries. According to informants, some of those determining government budgets say that they expect that donors will meet essential needs. MAPS does not seem to have reduced this pessimism, except in Oyo and Zamfara (according to key informants), but the team hopes that the recent publication of MISI 5 key indicators will increase the public's confidence.

## Gaps

- **Point-of-service BCC:** The evaluators saw almost no BCC messages in the clinics visited, even though focus groups and survey data indicate that public attitudes about IPTp and use of LLINs are changing. Messages are particularly needed to remind practitioners and clients about malaria in pregnancy, to build confidence in RDTs, and to tell those with fever what they need to do to prevent further episodes. The evaluation team saw walls plastered with faded reminders of programs terminated long ago, but almost nothing about malaria.
- **Point-of-service job aids:** For reasons the evaluators did not understand, MAPS proposed job aids early on but then dropped them. Key informants agreed with team observations that simple clinic algorithms posted on walls would be more effective than rarely seen manuals in reinforcing new diagnosis and treatment practices, even among those not formally trained. Providers trained in older IPTp recommendations may benefit from posters emphasizing new policies.
- **Dissemination of results and processes:** Almost all documents reviewed for this evaluation were obtained from MAPS and USAID, not from public sources. A project of this magnitude, attacking a disease of global interest, needs full documentation: not only success stories but also discussion of how change did or did not occur. Dissemination within Nigeria may be particularly necessary because of MAPS' leading role in state coordination, IPTp promotion, and AOP and review. Professional discussion within Nigeria (not only at U.S.-based meetings) appears to have been inadequate.

## QUESTION 3

### **How have MAPS' capacity-building activities and engagement with NMEP and state malaria programs improved the planning, coordination and implementation of malaria activities, including strengthening HMIS at national and state levels?**

Capacity building is more than training; it is a continuing, long-term process, which requires the participation of all stakeholders to address an issue of concern. Generally, capacity building involves:

- Creation of an enabling environment with appropriate policy and legal frameworks
- Institutional development, including community participation (of women in particular)
- Human resources development and strengthening of management systems

In order to achieve a sustainable malaria control program at both the national, state and LGA levels, MAPS implemented a robust capacity-building component to address identified staffing gaps at both the NMEP and SMEP, inadequate national malaria guidelines and policies, and limited coordination and oversight of malaria control activities at state and LGA levels. The capacity-building strategy also addressed weak information on malaria at both national and state levels, as well as lack of data use for decision making and efficient management of malaria services in health facilities.

### **National capacity to manage malaria elimination programs**

In Nigeria, malaria control is the states' responsibility, but strategies, policies and guidelines are national and require overall leadership. MAPS supported the NMEP as summarized in Box 1, below.

## Box 1. MAPS' support for NMEP

### Strategies and guidelines

- National Malaria Strategic Plan 2014–2020
- National Guidelines for Diagnosis and Treatment of Malaria
- National Guidelines and Strategies for Malaria Prevention and Control During Pregnancy
- National Health Information Strategic Plan
- Strategic Framework for ACSM
- National Guideline for Continuous LLIN Distribution in Nigeria

### Operational guidelines and tools

- Parasite Surveillance Operational Guidelines
- Implementation guide for parasite-based diagnosis
- Procedures for continuous LLIN distribution
- District Health Information System 2.0

### Training manuals and curricula

- Malaria in pregnancy, including IPTp
- National Guidelines for Diagnosis and Treatment of Malaria
- LLIN distribution

These products were well received and represent important contributions to national capacity. NMEP staff reaffirmed their importance and praised MAPS' contribution, and a key informant at WHO said they bridged the gap between Geneva-based recommendations and field application. However, the evaluators did not assess NMEP's continuing capacity or the overall status of DHIS2 (see "Capacity to collect and use data," below).

## State and LGA capacity to manage malaria elimination

MAPS concentrated on states and LGAs, working with SMEPs and all LGAs (but with fewer than 20 percent of facilities prior to FY15). Box 2 summarizes state planning and management interventions (except DHIS2):

## Box 2. MAPS' support for state planning and management

### State leadership:

- SMEP staff development
- Annual operational planning
- Budget lines and "releases"
- Quarterly reviews

### Activity coordination:

- Malaria technical working group
- Partners forum
- LGA coordination meetings
- Malaria-in-pregnancy working group

MAPS achieved much in all of these areas, but impact on state leadership and resource allocation remained highly variable and subject to political changes:

- SMEP staff quotas increased or remained steady in every supported state, eventually meeting or exceeding national standards (six persons) everywhere except Nasarawa. However, only a third of all SMEP counterpart staff were female.
- Annual operational planning became an accepted priority in every state, with considerable technical capability built. Financial sustainability is largely assured, sometimes with other donor

funds, and technical quality is in place but requires reinforcement in some locations. At the LGA level, MAPS helped develop 107 activity plans.

- Benue, Kebbi and Zamfara states have newly created budget lines for malaria, although few funds have been released. The former SMEP coordinator in one state reported that political support for spending scarce funds would remain low as long as donors appeared likely to fill gaps.
- Most states have conducted quarterly progress reviews, but it is unclear if these will be sustained.
- MAPS revived and/or initiated coordination meetings, as described above, and review of meeting notes indicated that they were invaluable for integrating program and partner activities. Meetings continue in most places, but sustainability will depend on state commitment and leadership. Malaria-in-pregnancy working groups were formed only recently and will require local champions if they are to continue.

MAPS was only partly able to build state ownership and acceptance of responsibility for malaria control. The project advanced significantly in building state systems and capacity for strategic management, but political commitment remained elusive. The malaria program as a whole needs to overcome fatalism and a sense that malaria is someone else's problem; this may only be achieved when malaria data turn decisively downward and key constituencies (e.g., community leaders and employers) see the benefits of reduced morbidity and enhanced productivity. Program leaders in Zamfara and Oyo expressed confidence that trends were positive, and recently appointed coordinators in every visited state said the new government was committed, but the evaluators could not confirm these reports.

### **Capacity to train and maintain adequate human resources**

MAPS made major investments in human capacity development and achieved a great deal, but sustainability remained a moving target. Box 3, below, summarizes project inputs.

#### **Box 3. Human capacity development and maintenance**

##### Training:

- Developed curricula for diagnosis and treatment, malaria in pregnancy, severe malaria, program management, community outreach (BCC), school teachers, advocacy, DHIS2
- Trained tutors, primarily from state ministries of health
- Supported tutors to train 46,607 managers, health workers, community outreach agents, data collectors and others
- Replaced individual with facility-based training in FY15

##### Supervision and on-the-job training:

- Supported integrated supportive supervision
- Conducted on-the-job training
- Developed job aids to support service providers

MAPS supported training directly for the facilities for which it was responsible, but with the expectation that step-down training would occur for other facilities. Table 4 summarizes the numbers trained by type.

**Table 4. Number of persons trained, by year and skill area**

Types of trainings conducted	FY12	FY13	FY14	FY15	Total	Percent female
Malaria case management (facility staff)	3,256	3,663	2,266	1,524	10,709	62.6%
Malaria case management (community-based providers)	1,887	615	288		2,790	63.2%
Severe malaria			316	70	386	33.9%
RDTs	2,083	1,005	1,222	2,213	6,523	65.7%
Malaria microscopy	265	29	109	49	452	31.9%
Malaria in pregnancy, including IPTp (ANC health workers)	1,725	1,045	1,258	2,702	6,730	77.8%
Monitoring and evaluation tools	2,004	2,539	307	1,360	6,210	51.4%
DHIS	0	178	231	0	409	38.1%
Management of malaria control (health managers)	1,568	926	472	71	3,037	45.4%
Building capacity for effective program management			235		235	
LLIN distribution (health workers and community members)	217	856	3,231	1,478	5,782	26.7%
Advocacy skills	40	0	0	0	40	35.0%
Effective coverage and reporting malaria (journalists)	38	0	0	0	38	34.2%
Community-based malaria BCC	188	2,996	0	0	3,184	32.7%
Malaria prevention and control (school teachers)	82				82	13.4%
Total number of people (health workers, media and community workers) trained	13,353	13,852	9,935	9,467	46,607	55.2%

Source: MAPS Monthly Training Bulletin

Of the 46,607 people trained,<sup>11</sup> 45 percent were trained on case management and diagnosis, 14 percent on monitoring, evaluation and DHIS, 13 percent on IPTp, 12 percent on LLIN distribution, 7 percent on program management, and 7 percent on BCC and advocacy. Key informants in several states told the evaluators that step-down training did not occur, weakening the case for supporting only a limited proportion of facilities, and also that high turnover and retirements led to rapid dissipation of skills. In spite of the large numbers trained, AOPs (which cover both supported and unsupported facilities) show that major capacity gaps continue, at least in a few cases; for example, only 33 percent of those doing RDTs in Benue had been trained for this task (2015).

A lesson learned is that individual training, focused on only 20 percent of facilities, is not a sufficient strategy for building human resource capacity, especially at the scale of Nigerian states. Step-down training may not occur unless actively facilitated, and training may not immediately change provider behavior (to give malaria medication only for confirmed cases, for example). Presumably, it would be better to train entire facilities on site (as MAPS did in 2015), supervise frequently through integrated supportive supervision and facilitate easy access to guidelines and job aids. MAPS adopted these broader strategies in later project years (mainly 2015), but very few of the facilities visited by the evaluators had either job aids or readily available operational guidelines.

---

The averages for MAPS states are unweighted and thus indicative only.

## Capacity to collect and use data

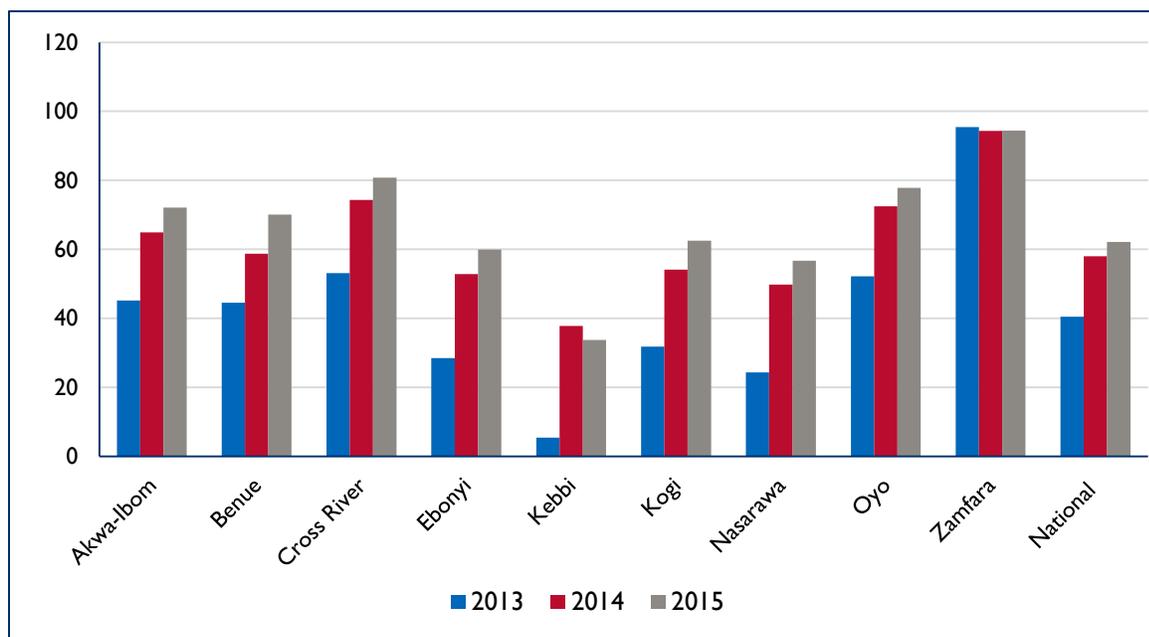
Health data reporting is critical for system strengthening, especially for the planning, monitoring and evaluation of services. The evaluation team observed that MAPS played a key role in the development and strengthening of the national HMIS through migration of the DHIS 1.4 into the web-based DHIS 2.0, which allows for real-time data entry and access from remote locations.

### Box 4. Data reporting and use

<p><u>Processes and forms</u></p> <ul style="list-style-type: none"> <li>• Provided technical support for transition from DHIS 1.4 to DHIS 2.0</li> <li>• Developed forms and procedures for reporting and aggregation</li> <li>• Trained 6,210 health workers, monitoring and evaluation officers and LGA malaria focal persons in data management</li> <li>• Trained 409 health workers on DHIS</li> </ul> <p><u>Data quality</u></p> <ul style="list-style-type: none"> <li>• Facilitated monthly data validation meetings between LGA focal persons and clinic staff</li> <li>• Developed guidelines and training manuals for data quality assessment</li> <li>• Developed and supported data quality assessments</li> </ul> <p><u>Use of data</u></p> <ul style="list-style-type: none"> <li>• Supported SMEPs to use data for annual operational planning</li> <li>• Raised data-awareness by posting data charts on clinic walls (not universally)</li> </ul>
--

Both completeness and timeliness of data reporting have improved remarkably, as Figure 8 shows:

**Figure 8. Proportion of health facilities reporting monthly HMIS data to DHIS**



Source: DHIS2 (Note that data were reported as proportions and could not be aggregated for MAPS and non-MAPS states.)

While national reporting rates improved between 2013 and 2015 (partly attributable to MAPS' work at the Department of Planning, Research and Statistics), improvements in at least some supported states were significantly greater than those in the country as a whole. Figure 10 presents the proportion of health facilities in MAPS-supported states reporting monthly HMIS data to DHIS: While rates improved in all states, those from Akwa-Ibom, Benue, Cross River, Oyo and Zamfara states surpassed national averages. The unweighted average of MAPS-supported states, moreover, increased more rapidly than

national figures. According to project data, 86 percent of supported facilities are now reporting on time. Remarkably, 48 percent of private health facilities are also reporting, an unusual achievement for a sector that in other countries often distances itself from government.

In summary, the evaluation team found that strengthening the DHIS2 improved reporting timeliness and completeness, likely due to capacity building and MAPS-supported validation exercises at LGAs. There is considerable evidence that data are now being used—at least for annual planning. The program appears to have achieved a mutually reinforcing relationship between data use and data quality.

### Capacity to implement behavior change activities

MAPS' responsibility for BCC capacity and activities was transferred to the HC3 project in FY15; trained staff largely remained in place, however, under new organizational auspices.

#### Box 5. Capacity-building activities to support behavior change

<p><u>Policies and guidelines</u></p> <ul style="list-style-type: none"><li>• Supported the Strategic Framework for ACSM</li><li>• Helped states develop ACSM plans</li></ul> <p><u>State coordination</u></p> <ul style="list-style-type: none"><li>• ACSM committees in every state</li></ul> <p><u>Training</u></p> <ul style="list-style-type: none"><li>• Trained 3,184 persons in community-based BCC</li><li>• Conducted advocacy training</li><li>• Conducted journalist training</li></ul> <p><u>Community-based organizations (31)</u></p> <ul style="list-style-type: none"><li>• Benue: 7</li><li>• Ebonyi: 4</li><li>• Cross River: 5</li><li>• Nasarawa: 3</li><li>• Oyo: 5</li><li>• Zamfara: 7</li></ul>
--

## QUESTION 4

**How have the BCC activities implemented translated into increased use of malaria control interventions at the community level (net use, testing before treating for malaria), and at service delivery points (delivery of IPTp by directly observed treatment, malaria test rates, compliance of health workers with test results)?**

As detailed under Question 1, all MAPS states have recorded increased uptake of malaria control interventions: use of LLINs by vulnerable populations, testing before treatment, IPTp, and compliance of healthcare workers with test results. However, this evaluation could not determine what proportion of these changes might be due to BCC.

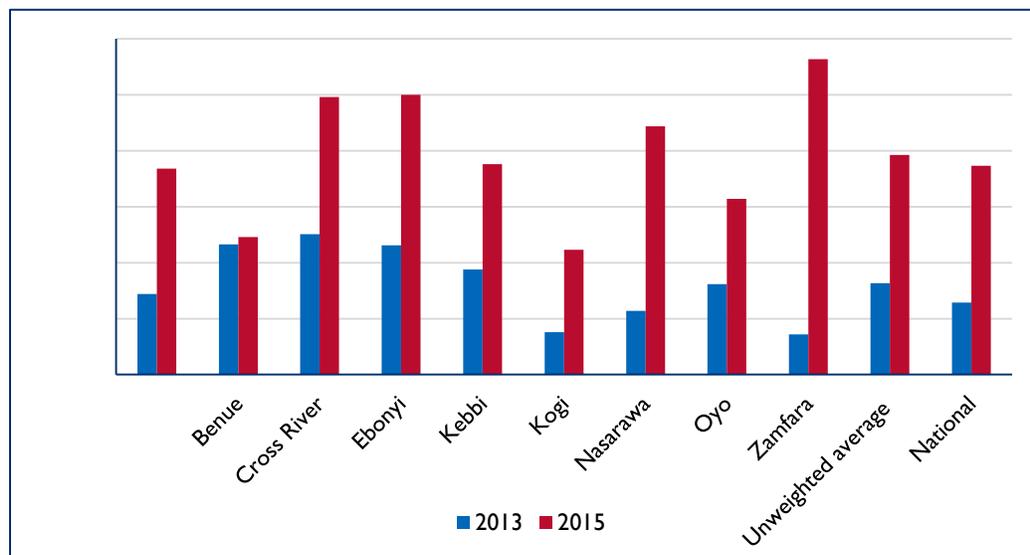
This evaluation focuses on three intended behavioral effects:

### Use of LLINs

LLIN use depends very heavily on supply as well as BCC, but the effects of motivational efforts can be seen particularly in the proportion of net owners who slept under them within two highly vulnerable groups: pregnant women and children under 5. Results indicated that LLIN ownership and use increased in the general population between 2013 and 2015 (see Question 1), but that in 2015 only about half of owners slept under one the night before the survey.

Figure 9 shows the proportion of the total population who slept under an LLIN the night before the survey; clearly there are increases everywhere (Zamfara being especially notable), but on average, MAPS-supported states did no better than others.

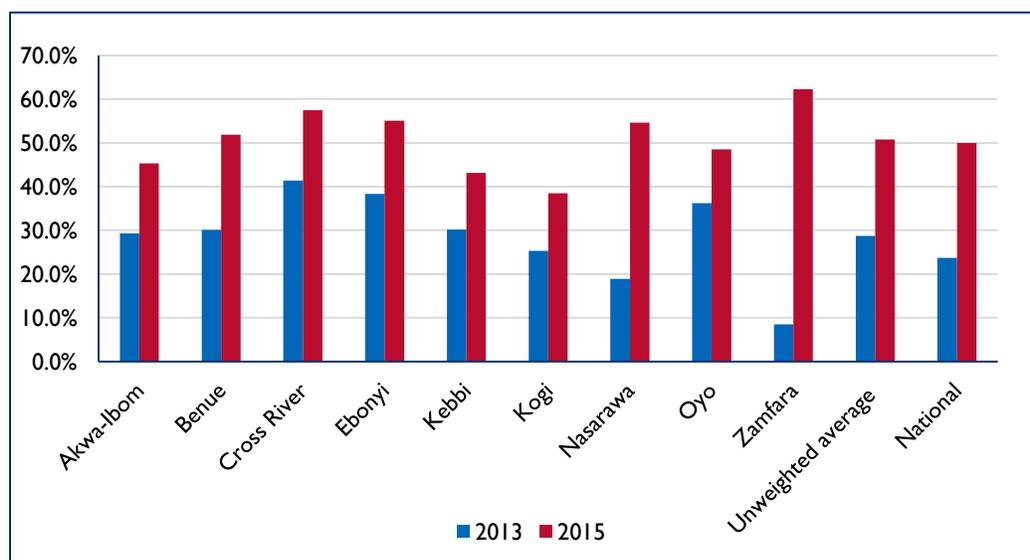
**Figure 9. Proportion of the total population sleeping under LLINs, 2013 and 2015**



Sources: NDHS 2013; Malaria Indicator Survey 2015 Key Indicators Report

This chart, however, mixes supply and demand factors. Considering only those who had access to a net, Figure 10 shows the proportion sleeping under them the night before the survey. Clearly, significant improvements occurred between 2013 and 2015, but only in Zamfara did more than 50 percent of those with access to LLINs actually use them. While some gap is normal and anticipated, the fact that so many of the available nets were not used represents a major failure in motivational outreach. MAPS states did slightly better (unweighted average) than national averages, but they showed less of a gain between the two years than did other parts of the country.

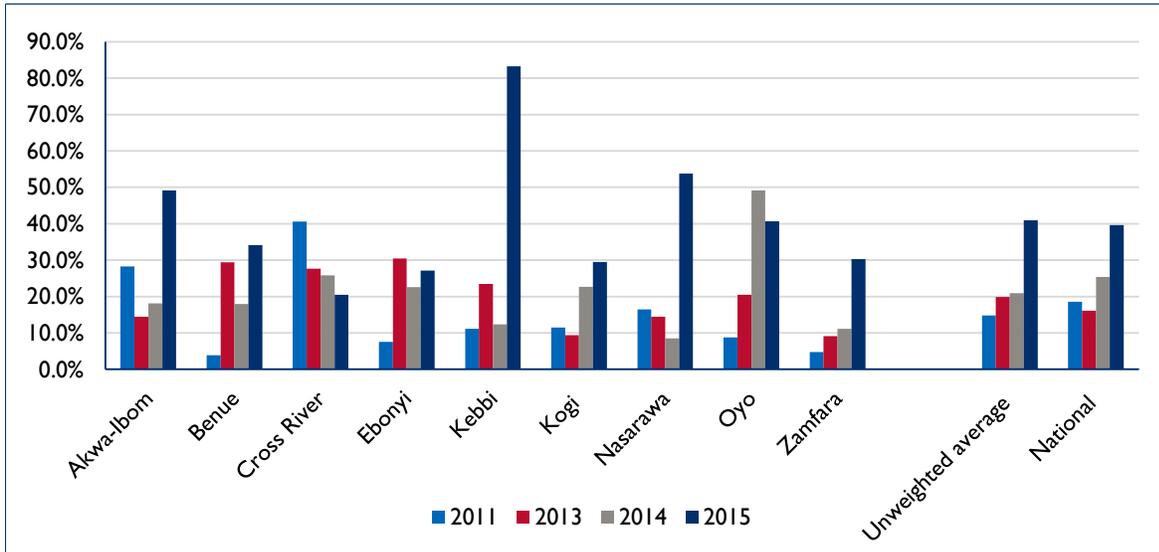
**Figure 10. Proportion of LLIN owners sleeping under LLINs, 2013 and 2015**



Sources: NDHS 2013; Malaria Indicator Survey 2015 Key Indicators Report

BCC should have a particularly strong effect on use of LLINs by the two most vulnerable demographic groups: children under 5 and pregnant women. Time series data on children (Figure 11 and Annex X) show a steady upward trend in most MAPS states (except for a sharp fall in Cross River) but similar trends nationally; MAPS clearly contributed to protection in this group, but not more so than occurred in other states.

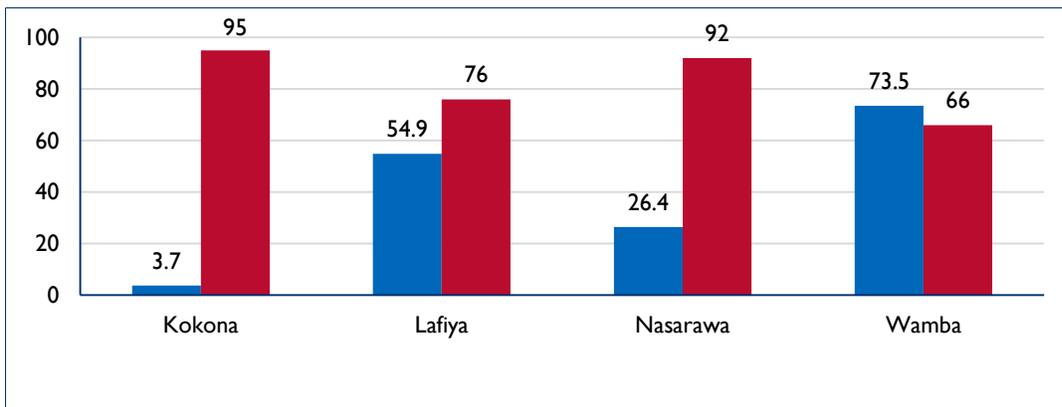
**Figure 11. Proportion of children under 5 using LLINs, nationally and in focus states**



Sources: MICS 2011; NDHS 2013; NNHS 2014; NNHS 2015

Similar trend lines are not yet available for pregnant women. However, one study in Nasarawa relates directly to project inputs. MAPS conducted a 10-month BCC intervention in 2014-2015 that included community dialogues, street rallies, engagement with religious and community leaders, engagement of CBOs, compound meetings and house-to-house visits. Although these activities covered the entire state, specific focus was given to the four LGAs with low rates for LLIN hanging and use (Figure 12). Three of four LGAs improved, one dramatically.

**Figure 12. Percentage of pregnant women who slept under LLIN the night before the survey in four LGAs in Nasarawa**



Source: MAPS report, FY15 Quarter 4

## Individuals reached with BCC messages on ANC and IPT

Focus groups with community residents indicated that in at least some places, men increasingly support their wives to attend ANC, while more women appear to appreciate the benefit of preventing malaria during pregnancy. Some of the opinions expressed are shown below.

### Box 6. Focus group respondents' opinions on ANC and IPTp

*"From this community, men now support their wives to get health services. They know that it is the right thing to do. I supported my wife and gave her money to go for ANC." (Furfuri community, Zamfara)*

*"When my wife was pregnant I advised her to register at health centre (HC) at the third month of pregnancy, at the HC, they examined her, tests were conducted, and card and drugs were issued to her." (Aperin Oniyere community, Oyo)*

*"The drugs they give us when we go for ANC have been very helpful. It helps us to deliver healthy plumpy babies. It helps us to be strong and healthy all through the pregnancy period. When we take those drugs our babies look healthier than those of our friends who do not go for ANC." (Furfuri community, Zamfara)*

*"We are comfortable with the drugs they give us during ANC and make us to take it in front of the nurses when we go for antenatal." (Otukpo community, Benue)*

## Effect of BCC and advocacy on fever testing rates and adherence to test results

Key informant interviews in several locations indicated poor provider trust in RDT results, as well as continued public demand for antimalarials. The evaluators saw little evidence of efforts to build public and provider confidence, although they may have occurred in other venues.

## QUESTION 5

### To what extent was gender integrated in the implementation of MAPS activities?

MAPS does not appear to have conducted an explicit gender analysis, as described in ADS 205; but it does appear to have been aware of potential gender issues in specific situations:

- BCC to reinforce women's priority use of LLINs during pregnancy
- BCC for husbands to encourage wives to attend ANC and obtain IPT
- Hiring of predominantly female community BCC workers for home visits

Selection of MAPS' numerous trainee candidates does not appear to have been gender-based, but MAPS did record gender per USAID requirements.

In considering whether MAPS should have addressed gender more explicitly rather than merely as a side concern for specific activities, the evaluators note several possible concerns:

- In some societies, males get first priority for use of free LLINs, even when the nets are targeted to women. MAPS advocacy messages emphasized the vulnerability of pregnant women, and the evaluators did not hear any evidence of problems with household sharing.

- Males in certain age groups may provide the largest reservoir of infectious but asymptomatic parasites, which can be just as dangerous to those with limited immunity as those with clinical symptoms. The evaluators saw no evidence of project efforts to reach these silent carriers (who are likely to be predominantly men).
- Universal coverage campaigns based on 1.8 users per net count men and women equally, but continuous distribution systems through ANC favor women. This is appropriate because of their heightened risks, but as the quote to the right illustrates, men not only develop malaria but also may serve as silent carriers and should be considered once those at greater risk are covered.
- MAPS recorded trainee data by gender, as required by USAID.

*“They should be counting the families very well for household bed net distribution; they sometimes leave some people out when they are distributing the nets. And again men were left out and they have children that their mothers have passed on, that is not good because they are affected by malaria too.”*  
(Focus group discussant)

Cultural barriers have previously been significant in Zamfara, but focus groups indicated that men are now more willing to let their wives attend IPTp and other services than they were before MAPS. A focus group respondent in Zamfara admitted that husbands previously did not allow wives to decide on health-related issues but that this has changed: “For me I always support my wife to seek help from the hospital when the need arises. Though before, it was a problem that husbands did not allow but now things are changing they allow.”

Similarly, discussions with men in Oyo revealed that pregnancy is a joint decision of husbands and wives. Men are said to be “Abiyamon,” meaning that during pregnancy and nursing of babies, men are deeply involved and that though women carry pregnancy, men feel the pain more emotionally than women.

## QUESTION 6

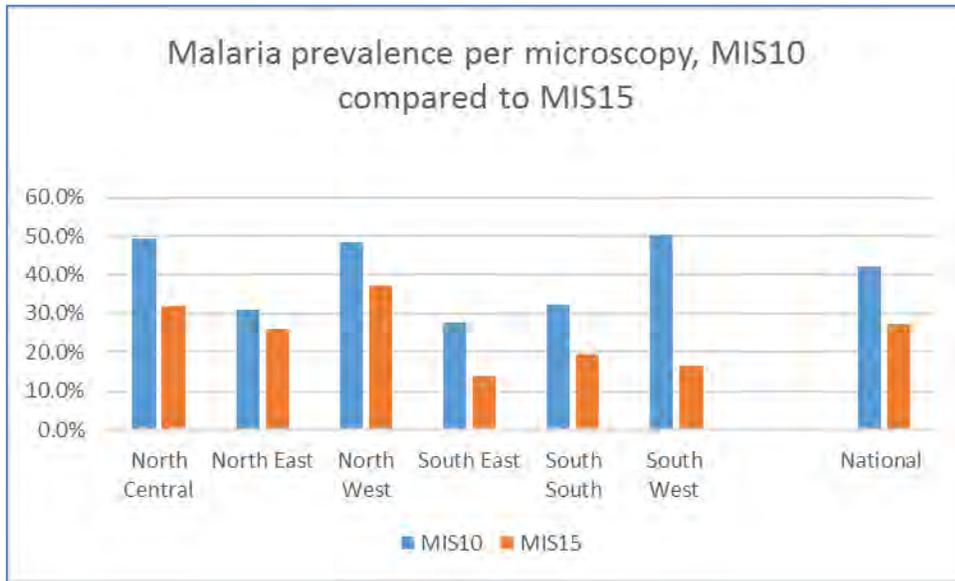
### Did USAID get value for its investment in MAPS?

PMI invested substantial funding in MAPS, not simply as a short-term effort, but as part of a longer-term strategy to make significant change in prevalence and to build systems and capacity for the long run. Nigeria has long suffered from what might be termed malaria fatalism, i.e., acceptance of deadly or debilitating conditions that have always existed and an expectation that nothing will change, regardless of personal or social efforts. Changing this fatalism would require reducing morbidity and mortality to an extent that political leaders and the public would notice and begin to understand how lasting malaria reduction might benefit them. The second objective of PMI investment was to increase and sustain Nigerian capacity to continue moving forward and gradually build downward momentum. The evaluators assessed whether MAPS fulfilled PMI’s expectations in this regard.<sup>12</sup>

The evaluation team asked key informants at many levels if they had detected any reductions in malaria transmission, and usually the answer was yes (most emphatically in Zamfara and Oyo); however, reliable population-based data are essential to document this and gain the attention of leadership. The *Key Indicators Report* of the Malaria Indicator Survey for 2015, which appeared after the evaluators left the field, provides more definitive evidence and is, indeed, encouraging. Using microscopy, malaria prevalence in 2015 was 27.4 percent compared to 42.0 percent in 2010, an approximately one-third reduction in just five years. (See Figure 13.)

<sup>12</sup> The evaluation team attempted to apply DFID’s ITAD framework (2010) to analyze value for money but could not do so because of lack of data. PMI, moreover, indicated that it did not expect this type of analysis.

**Figure 13. Malaria prevalence in 2010 and 2015, by region**



Source: *Malaria Indicator Survey 2010; Key Indicators Report 2015*

Can MAPS claim that the project contributed significantly to these reductions, even though it worked in 25 percent of states and many fewer than 25 percent of health facilities within those states? The evaluators conclude that PMI as a broader portfolio (including DELIVER for commodities and HC3 for BCC) can claim partial credit for recent malaria reductions, but that Nigerian state and national programs should claim the greatest credit for updating policies and improving worker performance, not only in the MAPS-supported states that the evaluation team studied, but perhaps elsewhere as well. All investments contributed in synergy, and MAPS can justly claim that it played a significant role.

According to the NMEP and WHO, MAPS played a very important part in codifying national strategies and implementation guidelines for case management, malaria in pregnancy, and both campaign and continuous distribution of LLINs. MAPS also contributed significantly to the DHIS2. These are invaluable national-level investments, even if only partially attributable to MAPS.

In nine states, PMI through MAPS invested heavily in SMEP management and coordination, human resources and data-based planning and evaluation. As discussed under Question 3, the evaluators found the first and last of these very worthwhile as long-term investments. Coordination and planning processes and capacity seem sufficiently established to continue with other donor and even state funding, although perhaps at a reduced level of efficacy, even without a follow-on to MAPS. Sustainable methods of generating and maintaining human resource capacity were more elusive, however, and may only be possible after more systematic changes in state and national policies that are beyond the reach of any single donor project. MAPS wisely shifted to a facility rather than individual capacitation strategy in 2015, but implementation methods are not fully developed, and there remain far more facilities than donors can support directly. Investments in human resources for health were worthwhile and not a failure, but mainly as part of a learning process that will have to continue.

The evaluators conclude that PMI's investment was worthwhile and contributed significantly to public health objectives.

## 5. CONCLUSIONS

The overall question of this evaluation relates to MAPS performance for the duration of the project: whether expected results were achieved and if those results are likely to set Nigeria on course for sustainable reductions in malaria. Additionally, the evaluation team looked at lessons learned that should influence future USAID project designs.

The evaluators conclude that MAPS overall (with crucial support from DELIVER) did achieve its objectives to strengthen malaria-in-pregnancy services, increase LLIN ownership and use, improve malaria diagnostics and case management, and strengthen information and program management systems. In some ways, given how weak these practices and systems were in 2010, it would have been hard not to make at least some progress against persistent weaknesses and perhaps even reduce malaria transmission. MAPS was severely handicapped by start-up difficulties (transition in agreement management and senior staff death), but it quickly recovered and made tangible contributions.

Overarching questions include whether MAPS' achievements were any better than other donor and Nigerian projects implemented in a similar time frame, and if they will be sustainable or—even better—provide the turning point for a national program that has long suffered from the fatalistic idea that malaria will always be here and that decentralized structures and systems are too weak to cope. On the first point, the evidence seems clear: MAPS-supported states exceeded national averages on IPT uptake, fever testing rates and treatment with appropriate medication. MAPS helped states strengthen their malaria elimination programs and manage coordinated planning, monitoring and review systems, some of which have now been taken over by state ministries of health. Some of MAPS' most important contributions have been in data-based processes, which might have been neglected in favor of short-term malaria reduction, but which MAPS wisely chose to emphasize as an investment in the future. These strengths may not have been enough to rapidly reduce malaria transmission or to strengthen malaria optimism, and they cannot be fully attributed to what is only part of the USAID/PMI strategy (commodity supply through a separate project being essential for most gains), but it was significant and underlines best practices for future directions.

MAPS thus faces two ultimate tests of its performance. One is whether the human and systems capacity that it has assiduously strengthened over the past five years will remain in place once the project has terminated. The second is whether future donor support for malaria control will become more effective because national and state leaders have taken greater charge of malaria control efforts (albeit with continued donor dependence for commodities and technical innovation). The evaluators are confident that significant human and systems capacity has been developed and will remain in place after MAPS itself is forgotten. This is particularly evident in state planning and coordination mechanisms, most of which have continued after MAPS withdrew in 2015, but it can also be seen in DHIS2, which seems close to the point where managers value data quality and timeliness and insist on their continuance. Sustainability may be less assured in human resources, partly because of broader civil service problems, but MAPS' belated strategy to capacitate facilities rather than individuals seems likely to help.

Prior to the release of MIS15, the evaluators were less optimistic about state political and financial commitment for malaria control, partly because of current economic conditions and the apparent absence of dramatic morale-boosting malaria reductions. The evaluation team was pleased to converse with a number of state technical leaders and commissioners who expressed strong resolve, but the team also heard concerns that resources budgeted for malaria have not been released and that democratically elected representatives seem doubtful that malaria is a Nigerian problem. The evaluators very much contest the latter feeling, because of its major effects on human welfare and economic growth (especially after the oil boom); but Nigerians have yet to fully appreciate the benefits of life without malaria.

## 6. RECOMMENDATIONS

The evaluation team believes strongly that continued USAID investment in Nigerian malaria control is essential in all of the technical areas that MAPS currently supports. It believes less strongly in the current state configuration and in the fragmentation of BCC, commodity support and capacity development into separately managed activities. Within current project components, the team recommends high priority for preventive interventions, DHIS and leadership development, as well as greater emphasis on institutional strengthening and less on individual human resource development. The evaluators encourage the mission to be on high alert for potential problems in project transition from MAPS to its successor, from integrated BCC to HC3 and from DELIVER to Procurement Supply Management. More specifically:

1. **PMI should continue to invest in malaria control in Nigeria and consider increased funding levels if the full MIS15 report (not yet available) further documents the major declines in seroprevalence shown in the Key Indicators Report.** The evaluators believe that MAPS has established some momentum at the level of program leadership, supply chain management (with DELIVER), DHIS and individual behavioral change. Comparisons between 2010 and 2015 data indicate that major prevalence declines may be underway. Donors should do whatever they can to help Nigeria transition from fatalism to optimism before momentum is lost, and they should communicate a continued requirement for Nigerian leadership to take increased responsibility and demonstrate ownership.
2. **PMI and others should help committed Nigerian leaders to overcome malaria fatalism by concentrating resources where they are most likely to produce significant reductions.** They should do so, however, in ways that build local ownership and minimize dependence on foreign resources (except for commodities). PMI should require separately managed commodity and BCC activities to follow the lead of the flagship project in implementing AOPs. This entails picking states carefully, giving them adequate, but not overbearing, commodity and technical support and rewarding demonstrable achievements with whatever additional support might increase momentum. The follow-on project should be explicitly responsible for statewide results, not only community-level results.
3. **Future project design should focus support on states that demonstrate local ownership and responsibility.** In cooperation with other donors and the NMEP, PMI should require those interested in assistance to demonstrate readiness. Criteria might include coordinated planning (AOPs), ability to use data for management and review, and cost-sharing using government (not just donor) funds. Strength in other health sectors (especially maternal and child health) should be a selection factor. Support for some states might be limited to commodities and directly supportive BCC, without technical assistance. Current states, if continued, should have a funding guarantee for no more than 18 months to avoid abrupt transitions, but should be terminated after 12-18 months unless any bid for additional assistance is considered competitive. States with other donor grants should be considered for PMI support only if this support makes existing activities more effective.
4. **USAID should avoid fragmentation of its own support, potentially caused by single-purpose projects and awkward transitions.** Malaria control is unlikely to be effective without seamless integration between systems development, commodity supply and BCC, yet USAID manages these three components separately without necessarily requiring full accountability to state programs. All three programs are also approaching or already in transition and may be under different USAID management teams—not in conflict, but perhaps not fully synergistic. USAID may require separate PMI implementing partners (for commodities,

BCC and SMEP support) to develop and seek approval for integrated state plans, to reduce the risk of uncoordinated implementation.

5. **Capacity-development strategies for malaria control should downplay individual training and concentrate on strengthening facilities, institutions and systems.** PMI should require continued innovation for human resource development and systems, rather than reliance on individuals. Support should be considered for Nigerian professional organizations and pre-service training to enhance sustainability. Continued investment in state coordination and DHIS2 appears essential.
6. **PMI should require future malaria control programs to more explicitly consider gender factors per ADS 205.** Women may have gender-related difficulty accessing crucial services for themselves and their children. Men may be silent carriers of malaria parasites and thus an increasing public health threat; programs correctly targeted to women and children in the past may need to be adapted to attract men accustomed to periodic but mild outbreaks of fever. Malaria is a highly infectious disease, carried from relatively immune individuals to infants and mothers, and gender-sensitive approaches may need to be elaborated to reach hidden carriers.



# ANNEX I. EVALUATION STATEMENT OF WORK

Assignment #: 159 [assigned by GH Pro]

## Global Health Program Cycle Improvement Project–GH Pro Contract No. AID-OAA-C-14-00067

### EVALUATION OR ANALYTIC ACTIVITY STATEMENT OF WORK (SOW)

Date of submission: September 16, 2015

Last update: January 4, 2016

### TITLE: **Endline Project Evaluation of Malaria Action Program for States (MAPS)**

#### Requester/Client

USAID Country or Regional Mission

Mission/Division: USAID Nigeria/Health Population and Nutrition (HPN)

#### Funding Account Source(s): (Click on box (es) to indicate source of payment for this assignment)

3.1.1 HIV

3.1.6 MCH

3.1.2 TB

3.1.7 FP/RH

3.1.3 Malaria

3.1.8 WSSH

3.1.4 PIOET

3.1.9 Nutrition

3.1.5 Other public health threats

3.2.0 Other (specify):

#### Cost Estimate: (Note: GH Pro will provide a final budget based on this SOW)

##### Performance Period

Expected Start Date (on or about): January 8, 2016

Anticipated End Date (on or about): May 31, 2016

##### Location(s) of Assignment: (Indicate where work will be performed)

The evaluation will be carried out in selected PMI states where MAPS project is implemented. The states selected are Zamfara, Oyo, Nasarawa, Benue and Akwa-Ibom in Nigeria. The states were selected based on the different year MAPS began implementation in the focus states.

#### Type of Analytic Activity (Check the box to indicate the type of analytic activity)

##### EVALUATION:

**Performance Evaluation** (Check timing of data collection)

Midterm

Endline

Other (specify):

*Performance evaluations focus on descriptive and normative questions: what a particular project or program has achieved (either at an intermediate point in execution or at the conclusion of an implementation period); how it is being implemented; how it is perceived and valued; whether expected results are occurring; and other questions that are pertinent to program design, management and operational decision making. Performance evaluations often incorporate before-after comparisons, but generally lack a rigorously defined counterfactual.*

**Impact Evaluation** (Check timing(s) of data collection)

Baseline

Midterm

Endline

Other (specify):

*Impact evaluations measure the change in a development outcome that is attributable to a defined intervention; impact evaluations are based on models of cause and effect and require a credible and rigorously defined counterfactual to control for factors other than the intervention that might account for the observed change. Impact evaluations in which comparisons are made between beneficiaries that are randomly assigned to either a treatment or a control group provides the strongest evidence of a relationship between the intervention under study and the outcome measured.*

## OTHER ANALYTIC ACTIVITIES

**Assessment**

Assessments are designed to examine country and/or sector context to inform project design, or as an informal review of projects.

**Costing and/or Economic Analysis**

Costing and Economic Analysis can identify, measure, value and cost an intervention or program. It can be an assessment or evaluation, with or without a comparative intervention/program.

**Other Analytic Activity (Specify)**

### PEPFAR EVALUATIONS (PEPFAR Evaluation Standards of Practice 2014)

**Note:** If PEPFAR funded, check the box for type of evaluation

**Process Evaluation** (Check timing of data collection)

Midterm

Endline

Other (specify): \_\_\_\_\_

Process Evaluation focuses on program or intervention implementation, including, but not limited to access to services, whether services reach the intended population, how services are delivered, client satisfaction and perceptions about needs and services, management practices. In addition, a process evaluation might provide an understanding of cultural, socio-political, legal, and economic context that affect implementation of the program or intervention. For example: Are activities delivered as intended, and are the right participants being reached? (PEPFAR Evaluation Standards of Practice 2014)

**Outcome Evaluation**

Outcome Evaluation determines if and by how much, intervention activities or services achieved their intended outcomes. It focuses on outputs and outcomes (including unintended effects) to judge program effectiveness, but may also assess program process to understand how outcomes are produced. It is possible to use statistical techniques in some instances when control or comparison groups are not available (e.g., for the evaluation of a national program). Example of question asked: To what extent are desired changes occurring due to the program, and who is benefiting? (PEPFAR Evaluation Standards of Practice 2014)

**Impact Evaluation** (Check timing(s) of data collection)

Baseline

Midterm

Endline

Other (specify):

Impact evaluations measure the change in an outcome that is attributable to a defined intervention by comparing actual impact to what would have happened in the absence of the intervention (the counterfactual scenario). IEs are based on models of cause and effect and require a rigorously defined counterfactual to control for factors other than the intervention that might account for the observed change. There are a range of accepted approaches to applying a counterfactual analysis, though IEs in which comparisons are made between beneficiaries that are randomly assigned to either an intervention or a control group provide the strongest evidence of a relationship between the intervention under study and the outcome measured to demonstrate impact.

**Economic Evaluation (PEPFAR)**

Economic Evaluations identifies, measures, values and compares the costs and outcomes of alternative interventions. Economic evaluation is a systematic and transparent framework for assessing efficiency focusing on the economic costs and outcomes of alternative programs or interventions. This framework is based on a comparative analysis of both the costs (resources consumed) and outcomes (health, clinical, economic) of programs or interventions. Main types of economic evaluation are cost-minimization analysis (CMA), cost-effectiveness analysis (CEA), cost-benefit analysis (CBA) and cost-utility analysis (CUA). Example of question asked: What is the cost-effectiveness of this intervention in improving patient outcomes as compared to other treatment models?

## BACKGROUND

Background of project/program/intervention:

### Country Background

Nigeria, the largest country in sub-Saharan Africa, has an estimated population of 172 million, with 95 percent of the population at risk for malaria, making Nigeria a country that suffers from high malaria mortality and morbidity rates. Malaria is thought to contribute to 30 percent of the mortality of children under 5 and 11 percent of the maternal mortality, making it the single largest cause of morbidity and mortality in Nigeria.

Prior to the MAPS project, USAID's support to the Nigerian malaria control program focused on promoting the manufacture and sales of mosquito bed nets in the private sector through the Net Mark Project. This activity, though thought to have recorded some successes, had limited impact on increasing the coverage of bed nets in Nigeria. In the past six years, the National Malaria Elimination Program (NMEP) within the Federal Ministry of Health received support from various donor partners, some of which include the Global Fund, World Bank and the Department for International Development (DFID), now the United Kingdom Agency for International Development (UK AID), as well as USAID. Despite these huge investments, little has been achieved due to the large population growth and weakened health systems with poor facilities to cater to the growing population. In addition, the inability to achieve positive behavioral changes toward malaria control at the population level still poses a key challenge to malaria elimination programs in Nigeria.

### **Malaria Action Program for States (MAPS)**

The MAPS project was designed to support three of the pillars of malaria control, which include:

- Prevention of malaria through the use of insecticide treated bed nets by the entire population, with higher priority given to children under 5 and pregnant women
- Prompt diagnosis and treatment of all malaria cases, particularly in children under 5 years and pregnant women
- Prevention of malaria in pregnancy through intermittent preventive treatment

The MAPS project was designed to roll out interventions based on the above listed pillars to selected focus states and to the NMEP in Nigeria. These objectives include:

Sub-Objective 1: Support integrated delivery and scale-up of proven malaria interventions.

This has four components:

- Expanding coverage and use of insecticide treated bed nets (ITNs), particularly among vulnerable groups (pregnant women and children under 5)
- Improved access to good quality artemisinin-based combination therapies (ACTs) at the community level to ensure prompt and appropriate treatment of malaria, particularly for children under 5 years
- Expand use of microscopy and rapid diagnostic tests (RDTs) in health facilities for diagnosis of malaria in all patients
- Provide consistent delivery of intermittent preventive treatment to pregnant women (IPTp) using sulfadoxine-pyrimethamine (SP) at antenatal care clinics

Sub-Objective 2: Strengthen capacity of the state ministry of health and local government area health personnel to provide oversight of malaria interventions.

Sub-Objective 3: Promote positive behaviors through information, education and communication (IEC) and behavior change communication (BCC) activities and interventions to facilitate community mobilization and individual acceptance of malaria control methods.

Sub-Objective 4: Improve capacity of the focus states and the NMEP to monitor and evaluate malaria interventions and to use data to guide programmatic decisions.

Details on MAPS activities will be included in the annex of the SOW. However, it is important to note that commodities were not procured or distributed by the MAPS project.

John Snow Inc./DELIVER project is the USAID contractor that was responsible for commodity forecasting, procurement and distribution for the PMI program implementation. While the MAPS

project implemented other aspects of capacity building, behavior change communication, quality assurance for health services in health facilities, JSI/DELIVER was responsible for all technical assistance on logistics and procurement, supply and management (PSM) operations for all malaria commodities.

Describe the theory of change of the project/program/intervention.

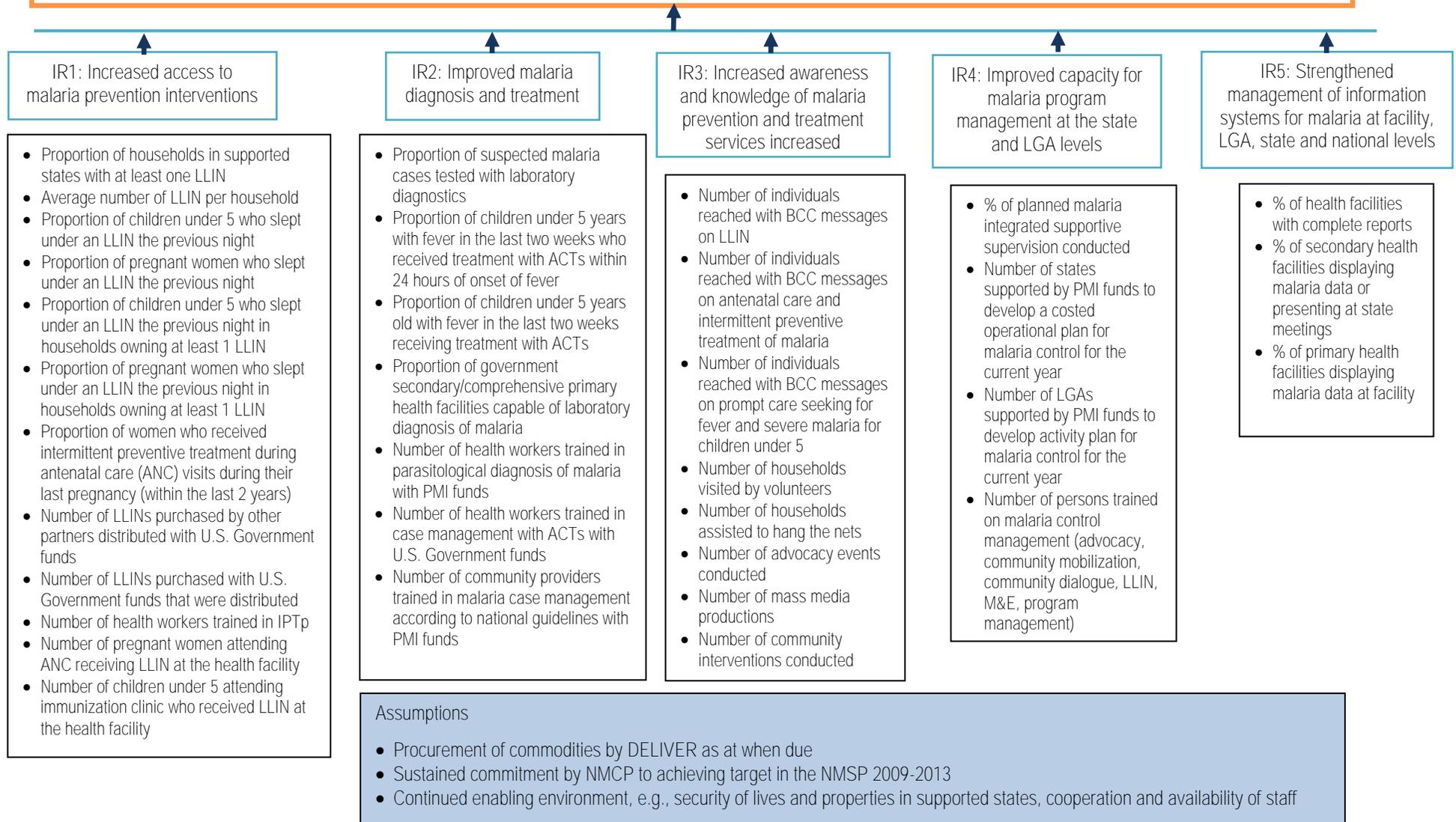
It is intended that, by the time the MAPS project ends, there will be broad coverage and use of high-impact malaria prevention and management interventions in focus states in Nigeria, measured by increased coverage for each of the key indicators for prevention and treatment of malaria.

It is expected that in focus states, communities and health facilities will have up-to-date attitudes and behaviors on the use of bed nets and prompt diagnosis and treatment of malaria infection, especially among vulnerable groups (women and children under 5). State and local government area (LGA) management capacity will be improved to better budget, plan, mobilize resources and manage their resources to provide high-quality service delivery for malaria prevention, diagnosis and treatment.

## Nigeria Malaria Action Program for States (MAPS) M&E Results Framework

USAID/PMI Goal: To reduce malaria-associated morbidity and mortality by 50 percent by 2015 as compared with the 2010 levels

**MAPS' Strategic Objective:** Increase coverage and use of life-saving malaria interventions in support for the Nigeria National Malaria Strategic Plan and the NMCP



<b>MAPS Project Key Activities</b>		
<b>Intermediate results</b>	<b>Key interventions</b>	<b>Coverage per states and/or community</b>
<b>Increased access to malaria prevention interventions</b>	<ul style="list-style-type: none"> <li>• Mass LLIN distribution campaign</li> <li>• Continuous LLIN distribution through health facilities (antenatal clinics and Expanded Program for Immunizations)</li> <li>• Train and mentor health workers (primary health centers and secondary health facilities) on prevention of malaria during pregnancy with IPT</li> </ul>	9 states All LGAs All health facilities
	<ul style="list-style-type: none"> <li>• Continuous LLIN distribution through community channel</li> </ul>	5 states: <ul style="list-style-type: none"> <li>• Benue: 67% of the wards</li> <li>• Ebonyi: 48% of the wards</li> <li>• Kogi: 70% of the wards</li> <li>• Zamfara: 89% of the wards</li> <li>• Nasarawa: 100% of the wards</li> </ul>
	<ul style="list-style-type: none"> <li>• Continuous LLIN distribution through school channel</li> </ul>	2 states: <ul style="list-style-type: none"> <li>• Cross River: 4 LGAs</li> <li>• Oyo: 10 LGAs</li> </ul>
<b>Improved malaria diagnosis and treatment</b>	<ul style="list-style-type: none"> <li>• Technical assistance to NMEP to develop, review and update standard operating procedures and operational guidelines for malaria diagnosis and treatment</li> <li>• Technical assistance to national coordination for implementation of Integrated Community Case Management of Childhood illness (iCCM)</li> </ul>	National level
	<ul style="list-style-type: none"> <li>• Train health care workers on parasite-based diagnosis (RDT) for both private and public health facilities</li> <li>• Train laboratory scientists in malaria microscopy</li> <li>• Train and mentor health workers (both in public and private/not-for-profit) on malaria case management according to national guidelines</li> </ul>	9 states, all LGAs, all health facilities
	<ul style="list-style-type: none"> <li>• Conduct external quality assurance for parasite-based diagnosis</li> <li>• Train and mentor health workers in selected secondary health facilities on severe malaria case management with injectable artesunate</li> </ul>	

<b>MAPS Project Key Activities</b>		
<b>Increased awareness and knowledge of malaria prevention and treatment services</b>	<ul style="list-style-type: none"> <li>• Advocacy to key stakeholders</li> <li>• Mass media communication through radio</li> <li>• Print media and materials: <ul style="list-style-type: none"> <li>○ Job aids for health workers</li> <li>○ School-based SBCC materials</li> <li>○ Job aids for community volunteers</li> </ul> </li> <li>• Community interventions: <ul style="list-style-type: none"> <li>○ House-to-house visits by trained volunteers</li> <li>○ Community meetings</li> <li>○ Community rallies and drama</li> </ul> </li> </ul>	<p>7 states (excluded Akwa-Ibom and Kebbi States);</p> <p>All LGAs in the 7 states, 80% of wards in each LGA (total of 996 wards)</p>
<b>Improved capacity for malaria program management at the state and LGA level</b>	<ul style="list-style-type: none"> <li>• Technical assistance to NMEP to strengthen coordination mechanisms</li> <li>• Technical assistance to develop, review and update malaria policies and plans</li> </ul>	National
	<ul style="list-style-type: none"> <li>• Improve capacity for coordination and harmonization of malaria control activities through strengthening of key coordination platform (mTWG, state-LGA meeting and partners forum)</li> <li>• Support the development of state Annual Operational Plans (AOPs) for malaria control</li> <li>• Build capacity to review state AOP implementation and use findings to inform planning and subsequent implementation</li> <li>• Strengthen capacity of states to utilize AOPs for resource mobilization; budget adoption and budget release for malaria control activities and track fund release by the state for malaria control activities</li> <li>• Train health managers at state, LGA and facility level on malaria program management</li> <li>• Support institutional strengthening</li> </ul>	9 states
	<ul style="list-style-type: none"> <li>• Institutionalized integrated supportive supervision and strengthening capacity of the state personnel to conduct supportive supervisory visits to secondary and primary health facilities as well as PHC departments</li> <li>• Supported the development of LGA work plan for malaria control</li> <li>• Build capacity to review LGA work plan implementation and utilize findings to inform planning and subsequent implementation</li> </ul>	7 states, (71 LGAs)
<b>Strengthened management information</b>	<ul style="list-style-type: none"> <li>• Support and strengthen Government of Nigeria HMIS through support to NMEP and Federal Ministry of Health DPRS</li> </ul>	National level

MAPS Project Key Activities		
systems for malaria at facility, LGA, state and national level	<ul style="list-style-type: none"> <li>• Support and strengthen HMIS at state and LGA levels</li> <li>• Improve quality of routine health data</li> <li>• Capacity building of Government of Nigeria staff through trainings and workshops on NHMIS, M&amp;E and data management</li> <li>• Routine monitoring and mentoring of supported health facilities</li> <li>• Strengthen demand, dissemination and use of health data</li> </ul>	9 states, all LGAs, 100% of health facilities (1,866)

What is the geographic coverage and/or the target groups for the project or program that is the subject of analysis?

#### Target areas and groups

The MAPS project at inception in 2011 focused on three states: Zamfara, Nasarawa and Cross River (four years of implementation). It expanded to four more states in 2012: Oyo, Ebonyi, Kogi and Benue (three years of implementation). It finally increased to nine states in 2014 by adding two more states: Akwa-Ibom and Kebbi (1.5 years of implementation).

These focus states were selected based on population needs, absence of World Bank and DFID and presence of an enabling environment with an attempt to have a regional balance of states between the northern and southern parts of Nigeria. In the first three years of the project, MAPS provided support in 4-8 health facilities in all LGAs of the focused states but has expanded to more health facilities in each state and LGA over the last two years.

Using the Nigeria Population Commission (NPC) census figures, MAPS provides malaria prevention, care services and behavior change communication to an estimated 52 million people in the nine supported states. The project focuses on several target populations; pregnant women, caregivers of children under 5, households including men, children in primary school, healthcare workers, federal, state and local government ministries of health staff, and influential community and religious leaders.

#### SCOPE OF WORK

A. **Purpose:** Why is this evaluation or analysis being conducted (purpose of analytic activity)? Provide the specific reason for this activity, linking it to future decisions to be made by USAID leadership, partner governments, and/or other key stakeholders.

The key PMI interventions of uptake and use of treated nets, uptake of SP during pregnancy, rapid diagnosis of malaria by testing all fevers cases that present in health facilities, rational use of ACT with positive RDT test applied in focused PMI countries equally applies through the MAPS project in Nigeria.

The purpose of this evaluation is to assess the effectiveness of MAPS' intervention in focus states, determining if its intervention has contributed in the reduction in malaria morbidity and mortality through increased IPTp coverage, reduced IPTp dropout rates and increased malaria testing with RDT in focused states. The evaluation will further seek to identify best practices, innovations and gaps in MAPS's implementation approaches and the findings will inform the design of a new PMI activity in Nigeria.

B. **Audience:** Who is the intended audience for this analysis? Who will use the results? If listing multiple audiences, indicate which are most important.

This evaluation is intended to inform the design of a new PMI-USAID-funded malaria control program in focus states. The primary audience and user of the evaluation findings is the Health, Population and Nutrition (HPN) team at the USAID Nigeria mission.

Secondary users will include:

- USAID Washington, which will support the Nigeria mission during the design of a new program
- The Government of Nigeria Federal Ministry of Health and National Malaria Elimination Program to better understand the needs of the focus states and how to tailor malaria control efforts for maximum impacts.
- Focus state governments (state ministries of health , malaria control programs)

**C. Applications and use:** How will the findings be used? What future decisions will be made based on these findings?

The evaluation findings will provide information to the HPN team as they design a new malaria focused program with similar objectives. The finding will also give the national and state government’s insight to gaps in malaria programming to inform an appropriate government response for future programming.

**D. Evaluation questions:** Evaluation questions should be: a) aligned with the evaluation purpose and the expected use of findings; b) clearly defined to produce needed evidence and results; and c) answerable given the time and budget constraints. Include any disaggregation (e.g., sex, geographic locale, age, etc.), they must be incorporated into the evaluation questions. **USAID policy suggests 3 to 5 evaluation questions.**

Evaluation Questions	
1.	To what extent has MAPS intervention approaches led to increased uptake of IPTp in pregnancy, malaria testing for fever cases, increased access and use of LLIN in focus states?
2.	What best practices, innovations, lessons learned and gaps can be identified from MAPS support in focus states that will inform a new project design?
3.	How have MAPS capacity-building activities and engagement with NMEP and state malaria programs improved the planning, coordination and implementation of malaria activities, including strengthening the Health Management Information Systems (HMIS) at national and state levels?
4.	How have the behavior change communication activities implemented translated into increased use of malaria control interventions at the community level (net use, testing before treating for malaria), and at service delivery points (delivery of IPTp by directly observed treatment, malaria test rates, compliance of health workers to test results)?
5.	To what extent was gender integrated in the implementation of MAPS activities?
6.	Did USAID get value for its investment for MAPS? <b>Note:</b> This question is not meant to generate a robust cost-benefit analysis, but is intended to give feedback to USAID regarding the value of funding provided to MAP. The Evaluation Team should discuss this question with USAID to get further insight of the feedback they are seeking.

Other Questions [OPTIONAL]

(Note: Use this space only if necessary. Too many questions leads to an ineffective evaluation.)

**E. Methods:** Check and describe the recommended methods for this analytic activity. Selection of methods should be aligned with the evaluation questions and fit within the time and resources allotted for this analytic activity. Also, include the sample or sampling frame in the description of each method selected.

■ **Document and Data Review** (list of documents recommended for review)

This desk review will be used to provide background information on MAPS, and will also provide data for analysis for this evaluation.

- Project reports: quarterly and annual reports, quality assurance/quality control reports, trip reports
- Malaria-related policies and guidelines: national malaria policy, malaria in pregnancy guideline, advocacy communication and social mobilization guideline, malaria case management guideline
- National Malaria Elimination Program strategic plans (2009–2013 and 2014–2020)
- The cooperative agreement award document
- National survey reports (NDHS 2003, 2008, 2013, 2010 Malaria Indicator Survey (MIS), Multiple Indicator Cluster Survey (MICS) 2011)
- USAID/Nigeria Health Population and Nutrition Results framework
- NMEP annual operational plans and annual reports
- Past DQA reports

■ **Secondary analysis of existing data** (*lists the data source and recommended analyses*)

Data Source ( <i>existing dataset</i> )	Description of data	Recommended analysis
District Health Information System (DHIS2)	Service statistics being reported through the national Health Management Information System (HMIS)	Uptake of malaria prevention, diagnosis and treatment services after MAPS projects began supporting the facilities
USAID Performance Reporting Systems (PRS)	USAID Database: the data reporting platform where USAID implementing partners report quarterly data to the mission.	Uptake of malaria prevention, diagnosis and treatment services after MAPS projects began supporting the facilities
Malaria Indicator Survey (MIS)	Further data analysis could be performed on MAPS focus states	Descriptive analysis on key performance indicators to demonstrate success of the MAPS project
Nigeria Demographic and Health Survey (NDHS)	Further data analysis could be performed on MAPS focus states	Descriptive analysis on key performance indicators to demonstrate success of the MAPS project

■ **Key Informant Interviews** (*list categories of key informants and purpose of inquiry*)

To obtain information on MAPS' performance, effectiveness, strengths, limitations and best practices among staff, partners, representatives of beneficiary organizations and key stakeholders, qualitative, in-depth interviews will be conducted among:

1. National Malaria Elimination Program staff
2. State Malaria Elimination Program staff in focus states
3. Staff of JSI DELIVER project
4. Development partners: DFID, World Bank, Bill and Melinda Gates Foundation
5. State ministries of health officials
6. Service Providers from MAPS supported facilities
7. LGA authorities and other relevant stakeholders identified in project documentation

■ **Focus Group Discussions** (*list categories of groups and purpose of inquiry*)

Men and women from selected households in MAPS focus states with children under age 5 years.

The purpose of this method would be to learn if beneficiaries and clients observe strengths or gaps in the quality of service delivery in MAPS supported health facilities and stimulate them to propose feasible solutions that can improve the quality of service delivery. Further investigation can include information on the participants' health-seeking behaviors and other household-level behaviors that affect malaria prevention and treatment.

■ **Group Interviews** (*list categories of groups and purpose of inquiry*)

*Optional:* Some of the key informant interviews can be clustered, as long as there are no power differentials, and all respondents feel comfortable in voicing their opinions within the group. (See list and description above under key informant interviews.) For example, health workers could be interviewed in a group.

■ **Client/Participant Satisfaction or Exit Interviews** (*list who is to be interviewed, and purpose of inquiry*)

Clients visiting health facilities will be surveyed as they exit the clinics to determine services provided and their perceptions of the quality of the services.

■ **Facility or Service Assessment/Survey** (*list type of facility or service of interest, and purpose of inquiry*)

Secondary and primary healthcare facilities will be surveyed to determine staffing, services provided, training of staffing, availability of key malaria commodities, and other relevant data.

**Cost Analysis** (*list costing factors of interest, and type of costing assessment, if known*)

**Verbal Autopsy** (*list the type of mortality being investigated (i.e., maternal deaths), any cause of death and the target population*)

■ **Survey** (*describe content of the survey and target responders, and purpose of inquiry*)

*Optional:* The evaluation team can recommend to collect standard data across a variety of respondents through a mini-survey. For those with internet access, the survey can utilize Survey Monkey, with a hard copy survey where a web-based survey is not feasible.

■ **Observations** (*list types of sites or activities to be observed, and purpose of inquiry*)

This can be done at facilities or in the community if needed to understand community-level activities, for instance, the community mobilization activities and interpersonal communication.

**Data Abstraction** (*list and describe files or documents that contain information of interest and purpose of inquiry*)

**Case Study** (*describe the case, and issue of interest to be explored*)

**Rapid Appraisal Methods** (ethnographic / participatory) (*list and describe methods, target participants, and purpose of inquiry*)

**Other** (list and describe other methods recommended for this evaluation, and purpose of inquiry)

--

**If impact evaluation –**

Is technical assistance needed to develop full protocol and/or IRB submission?

Yes                      No

List or describe case and counterfactual”

Case	Counterfactual

**HUMAN SUBJECT PROTECTION**

The analytic team must develop protocols to ensure privacy and confidentiality prior to any data collection. Primary data collection must include a consent process that contains the purpose of the evaluation, the risk and benefits to the respondents and community, the right to refuse to answer any question, and the right to refuse participation in the evaluation at any time without consequences. Only adults can consent as part of this evaluation. Minors cannot be respondents to any interview or survey, and cannot participate in a focus group discussion without going through an IRB. The only time minors can be observed as part of evaluation is as part of a large community-wide public event, when they are part of family and community attendance. During the process of this evaluation, if data are abstracted from existing documents that include unique identifiers, data can only be abstracted without this identifying information.

**ANALYTIC PLAN**

Describe how the quantitative and qualitative data will be analyzed. Include method or type of analyses, statistical tests, and what data are to be triangulated (if appropriate). For example, thematic analyses of qualitative interview data, or a descriptive analysis of quantitative survey data.

The evaluation team will develop an analysis plan and review with USAID/Nigeria for inputs. It is expected that the analysis plan will include analysis of qualitative data derived from key informant interviews and focus group discussions. For quantitative data, basic descriptive statistics and minimal level inferential statistics are expected. The evaluation team should consider starting with a desk review of all provided documents including those cited in the “sources of information” section. The mission also expects the evaluation team to present strong quantitative and qualitative analysis within data limitations, which clearly attempts to answer the evaluation questions stated earlier in this statement of work. It is anticipated that the evaluation team will conduct consultations with key stakeholders as needed through: background document review, interview with key informants such as USAID/Nigeria staff, MAPS key staff, state and national government stakeholders and other in-country stakeholders.

**ACTIVITIES**

List the expected activities, such as team planning meeting (TPM), briefings, verification workshop with IPs and stakeholders, etc. Activities and deliverables may overlap. Give as much detail as possible.

**Background reading**—Several documents are available for review for this analytic activity. These include JSI/Deliver’s MAPS proposal, work plans, M&E plans, quarterly progress reports and routine reports of project performance indicator data, as well as survey data reports (i.e., DHS, MIS and MICS). This desk review will provide background information for the evaluation team, and will also be used as data input and evidence for the evaluation.

**Team planning meeting (TPM)**—A four-day TPM will be held at the initiation of this assignment and before the data collection begins. The TPM will:

- Review and clarify any questions on the evaluation SOW

- Clarify team members' roles and responsibilities
- Establish a team atmosphere, share individual working styles, and agree on procedures for resolving differences of opinion
- Review and finalize evaluation questions
- Review and finalize the assignment timeline
- Develop data collection methods, instruments, tools and guidelines
- Review and clarify any logistical and administrative procedures for the assignment
- Develop a data collection plan
- Draft the evaluation work plan for USAID's approval
- Develop a preliminary draft outline of the team's report
- Assign drafting/writing responsibilities for the final report

**Briefing and debriefing meetings**—Throughout the evaluation, the team leader will provide briefings to USAID. The in-briefing and debriefing are likely to include all the evaluation team experts, but will be determined in consultation with the mission. These briefings are:

- **Evaluation launch**, a call/meeting among the USAID, GH Pro and the team leader to initiate the evaluation activity and review expectations. USAID will review the purpose, expectations and agenda of the assignment. GH Pro will introduce the team leader, and review the initial schedule and review other management issues.
- **In-briefing with USAID**, as part of the TPM. This briefing may be broken into two meetings: (a) at the beginning of the TPM, so the evaluation team and USAID can discuss expectations and intended plans; and (b) at the end of the TPM, when the evaluation team will present an outline and explanation of the design and tools of the evaluation. Also discussed at the in-briefing will be the format and content of the evaluation report(s). The time and place for this in-briefing will be determined between the team leader and USAID prior to the TPM.
- **In-briefing with MAPS** to review the evaluation plans and timeline, and for the project to give an overview of the project to the evaluation team.
- The team leader (TL) will brief the USAID **weekly** to discuss progress on the evaluation. As preliminary findings arise, the TL will share these during the routine briefing, and in an email.
- A **final debriefing** between the evaluation team and USAID will be held at the end of the evaluation to present preliminary findings to USAID. During this meeting, a summary of the data will be presented, along with high-level findings and draft recommendations. For the debriefing, the evaluation team will prepare a **PowerPoint Presentation** of the key findings, issues and recommendations. The evaluation team shall incorporate comments received from USAID during the debriefing in the evaluation report. (*Note: preliminary findings are not final and as more data sources are developed and analyzed these finding may change.*)
- **Stakeholders' debrief/workshop** will be held with MAPS staff and other stakeholders identified by USAID. This will occur following the final debriefing with the mission, and will not include any information that may be deemed sensitive by USAID.

**Fieldwork, site visits and data collection**—The evaluation team will conduct site visits for data collection. Selection of sites to be visited will be finalized during TPM in consultation with USAID. The evaluation team will outline and schedule key meetings and site visits prior to departing to the field.

**Evaluation/analytic report**—The evaluation/analytic team, under the leadership of the team leader, will develop a report with findings and recommendations (see analytic report below). Report writing and submission will include the following steps:

1. Team leader will submit draft evaluation report to GH Pro for review and formatting.
2. GH Pro will submit the draft report to USAID.

3. USAID will review the draft report in a timely manner, and send their comments and edits back to GH Pro.
4. GH Pro will share USAID’s comments and edits with the team leader, who will then do final edits, as needed, and resubmit to GH Pro.
5. GH Pro will review and reformat the final evaluation/analytic report, as needed, and resubmit to USAID for approval.
6. Once the evaluation report is approved, GH Pro will reformat it for 508 compliance and post it to the DEC.

The evaluation report **excludes** any **procurement-sensitive** and other sensitive but unclassified (**SBU**) information. This information will be submitted in a memo to USAID separately from the evaluation report.

### DELIVERABLES AND PRODUCTS

Select all deliverables and products required on this analytic activity. For those not listed, add rows as needed or enter them under “Other” in the table below. Provide timelines and deliverable deadlines for each.

Deliverable / Product	Timelines & Deadlines
<input checked="" type="checkbox"/> Launch briefing	January 12, 2015 (TBD)
<input checked="" type="checkbox"/> Work plan with timeline	February 1, 2016
<input checked="" type="checkbox"/> Analytic protocol with data collection tools	February 1, 2016
<input checked="" type="checkbox"/> In-briefing with mission	January 26-29, 2016
<input checked="" type="checkbox"/> In-briefing with MAPS	February 1, 2016
<input checked="" type="checkbox"/> Routine briefings	Weekly
<input checked="" type="checkbox"/> Data collection field visits	February 4–February 25, 2016
<input checked="" type="checkbox"/> Out-briefing with mission with PowerPoint presentation	March 3, 2016
<input checked="" type="checkbox"/> Findings review workshop with MAPS and other stakeholders with Power Point presentation	March 4, 2016
<input checked="" type="checkbox"/> Draft report	To GH Pro: March 21, 2016 To USAID: March 24, 2016
<input checked="" type="checkbox"/> Final report	April 15, 2016
<input checked="" type="checkbox"/> Raw data	April 15, 2016
<input type="checkbox"/> Dissemination activity	
<input checked="" type="checkbox"/> Report posted to the DEC	May 16, 2016
<input type="checkbox"/> Other (specify):	

### Estimated USAID review time

Average number of business days USAID will need to review deliverables requiring USAID review and/or approval? \_\_\_\_\_ 10 \_\_\_\_\_ Business days

### TEAM COMPOSITION, SKILLS AND LEVEL OF EFFORT (LOE)

**Evaluation team:** When planning this analytic activity, consider:

- Key staff should have methodological and/or technical expertise, regional or country experience, language skills, team leader experience and management skills, etc.
- Team leaders for evaluations must be an external expert with appropriate skills and experience.
- Additional team members can include research assistants, enumerators, translators, logisticians, etc.

- Evaluations require an evaluation specialist, who should have evaluation methodological expertise needed for this activity. Similarly, other analytic activities should have a specialist with appropriate methodological expertise.
- Note that all team members will be required to provide a signed statement attesting that they have no conflict of interest, or describing the conflicts of interest, if applicable.

**Team qualifications:** Please list technical areas of expertise required for this activity.

The evaluation team will consist of a two key staff (malaria specialist and evaluation specialist), of which one will be the team leader. Additionally, the team will include local evaluators and one logistics/program assistant. The team members should represent a balance of technical expertise related to evaluation, malaria programming, health services planning and programming, including:

- Supportive supervision
- Capacity building
- BCC
- Demand creation
- Etc.

The evaluation team members must have significant national/international health program experience. They should have some Nigeria country or African regional experience, along with comparative experience in malaria program delivery in developing countries.

All team members must be computer literate and have fluent professional-level English speaking writing and presentation skills. Each evaluation team member is expected to have an advanced degree in health management, health program, public health or a closely related field.

Demonstrable expertise in monitoring and evaluation, malaria services, community mobilization, behavior change communications and service delivery research are highly recommended. Team members must have substantial experience in conducting evaluations, reviews or assessments of health programs.

List the key staff needed for this analytic activity and their roles. You may wish to list desired qualifications for the team as a whole, or for the individual team members

**Key staff I: Evaluation team leader/malaria specialist:** This person will be selected from among the key staff, and will meet the requirements of both this and the other position. The team leader should have significant experience conducting project evaluations/analytics.

Roles and responsibilities: The team leader will be responsible for (1) providing team leadership, (2) managing the team's activities, (3) ensuring that all deliverables are met in a timely manner, (4) serving as a liaison between the USAID and the evaluation/analytic team and (5) leading briefings and presentations.

Qualifications:

- Minimum of 10 years of experience in public health, which includes experience in implementation of health activities in developing countries
- Demonstrated experience leading health sector project/program evaluation/analytics, utilizing both quantitative and qualitative methods
- Excellent skills in planning, facilitation and consensus building
- Excellent interpersonal skills, including experience successfully interacting with host government officials, civil society partners and other stakeholders
- Excellent skills in project management

- Excellent organizational skills and ability to keep to a timeline
- Good writing skills, with extensive report writing experience
- Proficient in written and spoken English
- Familiarity with USAID health project and program implementation
- Familiarity with USAID M&E policies and practices
  - Evaluation policy
  - Results frameworks
  - Performance monitoring plans

### **Key staff 2: Evaluation specialist**

**Roles and Responsibilities:** Serve as a member of the evaluation team, providing quality assurance on evaluation issues, including methods, development of data collection instruments, protocols for data collection, data management and data analysis. S/He will oversee the training of all engaged in data collection, ensuring highest level of reliability and validity of data being collected. S/He is the lead analyst, responsible for all data analysis, and will coordinate the analysis of all data, assuring all quantitative and qualitative data analyses are done to meet the needs for this evaluation. Additionally, s/he will be the technical lead on issues related to project performance monitoring systems. S/He will participate in all aspects of the evaluation, from planning, data collection, data analysis to report writing.

#### **Qualifications:**

- At least 10 years of experience in USAID M&E procedures and implementation
- At least 5 years managing M&E, including evaluations
- Experience in design and implementation of evaluations
- Strong knowledge, skills, and experience in qualitative and quantitative evaluation tools
- Experience implementing and coordinating others to implement surveys, key informant interviews, focus groups, observations and other evaluation methods that ensure reliability and validity of the data.
- Experience in data management
- Able to analyze quantitative data, which will be primarily descriptive statistics
- Able to analyze qualitative data
- Experience using analytic software
- Demonstrated experience using qualitative evaluation methodologies and triangulating with quantitative data
- Able to review, interpret and reanalyze as needed existing data pertinent to the evaluation
- Strong data interpretation and presentation skills
- An advanced degree in public health, evaluation, research or related field
- Proficient in English
- Good writing skills, including extensive report writing experience
- Familiarity with USAID health programs/project, including routine monitoring systems
- Familiarity with USAID M&E policies and practices
  - Evaluation policies
  - Results frameworks
  - Performance monitoring plans

**Other Staff:** Titles with roles and responsibilities (include number of individuals needed):

Local **evaluation logistics/program assistant** (one local consultant) will support the evaluation team with all logistics and administration to allow them to carry out this evaluation. The

logistics/program assistant will have a good command of English and local language(s). S/He will have knowledge of key actors in the health sector and their locations, including the Ministry of Health, donors and other stakeholders. To support the team, s/he will be able to efficiently liaise with hotel staff, arrange in-country transportation (ground and air), arrange meetings and workspace as needed and ensure business center support, e.g., copying, internet and printing. S/he will work under the guidance of the team leader to make preparations, arrange meetings and appointments. S/he will conduct programmatic administrative and support tasks as assigned and ensure the processes moves forward smoothly. S/He may also be asked to assist in translation of data collection tools and transcripts, if needed.

**Local evaluators** (two local consultants) will assist the evaluation team with data collection, analysis and data interpretation. They will have basic familiarity with health topics, as well as experience conducting surveys interviews and focus group discussion, both facilitating and note taking. Furthermore, they will assist in translation of data collection tools and transcripts, as needed. The local evaluators will have a good command of English and local language(s). They will also assist the team and the logistics coordinator, as needed. They will report to the team leader.

Will USAID participate as an active team member or designate other key stakeholders to as an active team member? This will require full time commitment during the evaluation or analytic activity.

Yes–If yes, specify who:

Significant involvement–If yes, specify who: **Ikenyei Uche** (USAID/Nigeria HPN M&E Specialist) is expected to have substantial involvement throughout the evaluation

No

**Staffing level of effort (LOE) matrix (optional):**

This optional LOE matrix will help you estimate the LOE needed to implement this analytic activity. If you are unsure, GH Pro can assist you to complete this table.

- a) For each column, replace the label "Position Title" with the actual position title of staff needed for this analytic activity.
- b) Immediately below each staff title enter the anticipated number of people for each titled position.
- c) Enter row labels for each activity, task and deliverable needed to implement this analytic activity.
- d) Then enter the LOE (estimated number of days) for each activity/task/deliverable corresponding to each titled position.
- e) At the bottom of the table total the LOE days for each consultant title in the ‘Sub-Total’ cell, then multiply the subtotals in each column by the number of individuals that will hold this title.

Level of effort in **days** for each evaluation/analytic team member: [Please note changes to some LOE days for team members below \(in blue\).](#)

Activity/Deliverable		Team Leader/Malaria Specialist	Evaluation Specialist	Local Evaluators	Logistics/Program Assistant
Number of persons →		1	1	2	1
1	Launch Briefing	1	.5		
2	Desk and data review, including initiating secondary data analyses	8	8	3	
3	Preparation for Team convening in-country				4
4	Travel to country	2	2		
5	Team Planning Meeting	4.5	4	4	4

6	In-brief with Mission	1	1	1	1
7	In-brief with project	0.5	0.5	0.5	0.5
8	Data Collection DQA Assurance Workshop ( <i>protocol orientation for all involved in data collection</i> )	2	2	2	
9	Prep / Logistics for Site Visits	0.5	0.5	0.5	2.5
10	Data collection / Site Visits (including travel to sites)	19	19	19	19
11	Data analysis	5	6.5	5	3
12	Debrief with Mission with prep	1	1	1	1
13	Stakeholder debrief workshop with prep	1	1	1	1
14	Depart country	2	2		
15	Draft report(s)	7	5	3	1
16	GH Pro Report QC Review & Formatting				
17	Submission of draft report(s) to Mission				
18	USAID Report Review				
19	Revise report(s) per USAID comments	3	2	2	
20	Finalize and submit report to USAID				
21	508 Compliance Review				
22	Upload Eval Report(s) to the DEC				
	<b>Total LOE per person</b>	<b>57.5</b>	<b>53</b>	<b>42</b>	<b>37</b>
	<b>Total LOE</b>	<b>57.5</b>	<b>53</b>	<b>84</b>	<b>37</b>

If overseas, is a 6-day workweek permitted  Yes  No

**Travel anticipated:** List international and local travel anticipated by what team members.

The evaluation team will conduct field visits to selected states: (1) Zamfara, (2) Oyo, (3) Nasarawa, (4) Benue and (5) Akwa-Ibom. USAID staff may accompany the evaluation team on field visits but will not participate in any activities where their presence might influence or bias the evaluation participants' responses.

**LOGISTICS**

**Note:** Most evaluation/analytic teams arrange their own work space, often in their hotels. However, if Facility Access is preferred, GH Pro can request it. GH Pro does not provide Security Clearances. Our consultants can obtain **Facility Access** only.

Check all that the consultant will need to perform this assignment, including USAID Facility Access, GH Pro workspace and travel (other than to and from post).

USAID Facility Access

Specify who will require Facility Access: Team of consultants: Evaluation Team

Electronic County Clearance (ECC) (International travelers only)

GH Pro workspace

Specify who will require workspace at GH Pro: \_\_\_\_\_  
 Travel-other than posting (specify): Nigeria: Abuja, (for consultants who do not reside here), and Zamfara, Oyo, Nasarawa, Benue and Akwa-Ibom for data collection

Other (specify): \_\_\_\_\_

## GH PRO ROLES AND RESPONSIBILITIES

GH Pro will coordinate and manage the evaluation team and provide quality assurance oversight, including:

- Review SOW and recommend revisions as needed
- Provide technical assistance on methodology, as needed
- Develop budget for analytic activity
- Recruit and hire the evaluation team, with USAID point of contact approval
- Arrange international travel and lodging for international consultants
- Request for country clearance and/or facility access (if needed)
- Review methods, work plan, analytic instruments, reports and other deliverables as part of the quality assurance oversight
- Report production—If the report is public, then coordination of draft and finalization steps, editing/formatting, and 508-compliance are required, in addition to submission to the Development Experience Clearing House (DEC) and posting on GH Pro website. If the report is internal, then copy editing/formatting for internal distribution.

## USAID ROLES AND RESPONSIBILITIES

Below is the standard list of USAID’s roles and responsibilities. Add other roles and responsibilities as appropriate.

<b>USAID Roles and Responsibilities</b>
<p><b>USAID</b> will provide overall technical leadership and direction for the analytic team throughout the assignment and will provide assistance with the following tasks:</p>
<p><b>Before field work</b></p> <ul style="list-style-type: none"><li>• <u>SOW</u><ul style="list-style-type: none"><li>○ Develop SOW.</li><li>○ Peer-review SOW.</li><li>○ Respond to queries about the SOW and/or the assignment at large.</li></ul></li><li>• <u>Consultant conflict of interest (COI)</u>: To avoid conflicts of interest or the appearance of a COI, review previous employers listed on the CV’s for proposed consultants and provide additional information regarding potential COI with the project contractors evaluated/assessed and information regarding their affiliates.</li><li>• <u>Documents</u>: Identify and prioritize background materials for the consultants and provide them to GH Pro, preferably in electronic form, at least one week prior to the inception of the assignment.</li><li>• <u>Local consultants</u>: Assist with identification of potential local consultants, including contact information.</li><li>• <u>Site visit preparations</u>: Provide a list of site visit locations, key contacts and suggested length of visit for use in planning in-country travel and accurate estimation of country travel line items costs.</li><li>• <u>Lodgings and travel</u>: Provide guidance on recommended secure hotels and methods of in-country travel (i.e., car rental companies and other means of transportation).</li></ul>
<p><b>During field work</b></p> <ul style="list-style-type: none"><li>• <u>Mission point of contact</u>: Throughout the in-country work, ensure constant availability of the point of contact person and provide technical leadership and direction for the team’s work.</li><li>• <u>Meeting space</u>: Provide guidance on the team’s selection of a meeting space for interviews and/or focus group discussions (i.e., USAID space if available, or other known office/hotel meeting space).</li><li>• <u>Meeting arrangements</u>: Assist the team in arranging and coordinating meetings with stakeholders.</li><li>• <u>Facilitate contact with implementing partners</u>: Introduce the analytic team to implementing partners and other stakeholders, and where applicable and appropriate, prepare and send out an introduction letter for team’s arrival and/or anticipated meetings.</li></ul>
<p><b>After Field Work</b></p> <ul style="list-style-type: none"><li>• <u>Timely reviews</u>: Provide timely review of draft/final reports and approval of deliverables.</li></ul>

## ANALYTIC REPORT

Provide any desired guidance or specifications for the final report. (See [How-To Note: Preparing Evaluation Reports](#))

The **evaluation/analytic final report** must follow USAID's *Criteria to Ensure the Quality of the Evaluation Report* (found in Appendix I of the [USAID Evaluation Policy](#)).

- a. The report must not exceed **30 pages** (excluding executive summary, table of contents, acronym list and annexes).
- b. The structure of the report should follow the evaluation report template, including branding found [here](#) or [here](#).
- c. Draft reports must be provided electronically, in English, to GH Pro, which will then submit it to USAID.
- d. For additional guidance, please see the *How-To Note: Preparing Evaluation Draft Reports* found [here](#).

**Reporting guidelines:** The draft report should be a comprehensive, analytical, evidence-based evaluation/analytic report. It should detail and describe results, effects, constraints and lessons learned and provide recommendations and identify key questions for future consideration. The report shall follow USAID branding procedures. ***The report will be edited/formatted and made 508-compliant as required by USAID for public reports and will be posted to the USAID/DEC.***

The findings from the evaluation/analytic will be presented in a draft report at a full briefing with USAID and at a follow-up meeting with key stakeholders. The report should use the following format:

- Executive summary: concisely state the most salient findings, conclusions, and recommendations (2 pages);
- Table of contents (1 page);
- Acronyms
- Evaluation/analytic purpose and evaluation/analytic questions (1-2 pages)
- Project [or program] background (2-3 pages)
- Evaluation/analytic methods and limitations (1-3 pages)
- Findings
- Conclusions
- Recommendations
- Annexes
  - Annex I: Evaluation/analytic statement of work
  - Annex II: Evaluation/analytic methods and limitations
  - Annex III: Data collection instruments
  - Annex IV: Sources of information
    - List of persons interviewed
    - Bibliography of documents reviewed
    - Databases
    - [etc.]
  - Annex V: Disclosure of any conflicts of interest
  - Annex VI: Statement of differences (if applicable)

The evaluation methodology and report will be compliant with the [USAID Evaluation Policy](#) and [Checklist for Assessing USAID Evaluation Reports](#)

-----

Recommendations for future directions will be included in a separate memo, as the evaluation report should exclude any potentially procurement-sensitive information. Therefore, future directions and other potentially procurement sensitive information, as well as other sensitive but unclassified (SBU) information will be submitted in a memo to USAID separately from the evaluation report.

-----

All data instruments, data sets (if appropriate), presentations, meeting notes and report for this evaluation/analysis will be provided to GH Pro and presented to USAID electronically to the program manager. All data will be in an unlocked, editable format.

## USAID CONTACTS

	<b>Primary Contact</b>	<b>Alternate Contact</b>
Name:	Ikenyei Uche Chukwuka	Dr. Abidemi Okechukwu
Title:	M&E Specialist	Malaria Program Manager
USAID Office/Mission	USAID/Nigeria HPN Unit	USAID/Nigeria HPN Unit
Email:	<a href="mailto:uikenyei@usaid.gov">uikenyei@usaid.gov</a>	<a href="mailto:aokechukwuku@usaid.gov">aokechukwuku@usaid.gov</a>
Telephone:	+23494619397	+23494619456
Cell Phone (optional)	+2348102484508	+2347085941996

List other contacts who will be supporting the Requesting Team with technical support, such as reviewing SOW and Report (such as USAID/W GH Pro management team staff)

	<b>Technical Support Contact 1</b>	<b>Technical Support Contact 2</b>
Name:	Diana Harper	
Title:	Senior Evaluation and Program Advisor	
USAID Office/Mission	Office of Policy, Planning and Programs, USAID Bureau for Global Health	
Email:	<a href="mailto:धारपर@usaid.gov">धारपर@usaid.gov</a>	
Telephone:	571-551-7086	
Cell Phone (optional)	571-228-3619	

## REFERENCE MATERIALS

Documents and materials needed and/or useful for consultant assignment, that are not listed above  
 USAID/Nigeria will need to provide these materials for desktop review ASAP once TDM is signed.



## Evaluation Design Matrix

This design matrix may be helpful for connecting your evaluation methods to questions. Often more than one method can be employed in an analytic activity to obtain evidence to address more than one question. A method should be listed by question when it will include specific inquiries and/or result in evidence needed to address this specific question.

### Evaluation Matrix

Evaluation Questions	Illustrative indicators or other assessment criteria	Data source/collection methods	Sampling/selection criteria	Data analysis method
1. To what extent have MAPS' intervention approaches led to increased uptake of IPTp in pregnancy, malaria testing for fever cases, increased access and use of LLIN in focus states?	Malaria test rate, IPTp uptake and IPTp2 drop-out rates, access and use of LLIN	<ol style="list-style-type: none"> <li>1. Program documents</li> <li>2. HMIS data/DHIS and USAID PRS</li> <li>3. Surveys</li> </ol>	Stratified state selection for secondary data analyses, purposive sampling of health facilities and communities	<ol style="list-style-type: none"> <li>1. Qualitative analytical approaches</li> <li>2. Descriptive statistics</li> </ol>
2. What best practices, innovations, lessons learned and gaps can be identified from MAPS support in focus states that will inform a new project design?		<ol style="list-style-type: none"> <li>1. Key informant interviews</li> <li>2. Focused group discussion</li> <li>3. Review of program documents</li> <li>4. HMIS data/DHIS and USAID PRS</li> <li>5. Exit interviews</li> </ol>	Purposive sampling	<ol style="list-style-type: none"> <li>1. Qualitative analytical approaches</li> <li>2. Descriptive statistics</li> </ol>
3. How have MAPS' capacity-building activities and engagement with NMEP and state malaria programs improved the planning, coordination and implementation of malaria activities, including strengthening the HMIS at national and state levels?	<ol style="list-style-type: none"> <li>1. Resource mobilization for malaria, state-level funding (budget and release) for malaria</li> <li>2. Annual operational plan and management</li> </ol>	<ol style="list-style-type: none"> <li>1. Key informant interviews</li> <li>2. Focused group discussion</li> <li>3. Review of program documents</li> <li>4. HMIS data/DHIS and USAID PRS</li> </ol>	Purposive sampling	<ol style="list-style-type: none"> <li>1. Qualitative analytical approaches</li> <li>2. Descriptive statistics</li> </ol>

Evaluation Questions	Illustrative indicators or other assessment criteria	Data source/collection methods	Sampling/selection criteria	Data analysis method
<p>4. How have the behavior change communication activities implemented translated into increased use of malaria control interventions at the community level (net use, testing before treating for malaria), and at service delivery points (delivery of IPTp by directly observed treatment, malaria test rates, compliance of health workers to test results)?</p>	<ol style="list-style-type: none"> <li>1. Net ownership and use</li> <li>2. Malaria test rates</li> <li>3. Delivery of IPTp by directly observed therapy,</li> <li>4. Compliance to test results</li> </ol>	<ol style="list-style-type: none"> <li>1. Key informant interviews</li> <li>2. Focused group discussion</li> <li>3. Exit interviews</li> <li>4. Review of program documents</li> </ol>		
<p>5. To what extent was gender integrated in the implementation of MAPS activities?</p>		<ol style="list-style-type: none"> <li>1. Key informant interviews</li> <li>2. Focused group discussion</li> <li>3. Exit interviews</li> <li>4. Review of program documents</li> <li>5. HMIS data/DHIS and USAID PRS</li> </ol>		

# ANNEX II. EVALUATION METHODS AND LIMITATIONS

## EVALUATION DESIGN

The endline evaluation of MAPS was conducted with a mixed method design using both quantitative and qualitative approaches. For the quantitative study, a cross-sectional descriptive survey was undertaken in health facilities in selected LGAs, while the qualitative component employed focus group discussion sessions among men and women of childbearing age and caregivers, as well as key informant interviews with project implementers, partners and other stakeholders. Table IIa, below, outlines the methods used to answer each of the evaluation questions, organized by project objective/component.

**Table IIa. Matrix of MAPS objectives, evaluation questions and proposed evaluation methods**

Objectives/Components	Evaluation questions	Evaluation method(s)
<p>Sub-objective 1: Support integrated delivery and scale-up of proven malaria interventions.</p> <p>Component 1: Expand coverage and use of ITNs, particularly among pregnant women and children under 5.</p> <p>Component 2: Improved access to good-quality ACTs at the community level to ensure prompt and appropriate treatment of malaria, particularly for children under 5.</p> <p>Component 3: Expand use of microscopy and RDTs in health facilities for diagnosis of malaria in all patients.</p> <p>Component 4: Provide consistent delivery of IPTp using SP at antenatal care clinics.</p>	<p>i. To what extent have MAPS intervention approaches led to increased uptake of IPTp, malaria testing for fever cases and increased access and use of LLIN in focus states?</p> <p>ii. To what extent was gender integrated in the implementation of MAPS activities?</p> <p>iii. Did USAID get value for investment for MAPS?</p>	<p>i. Desk review of monitoring and evaluation reports (monthly, quarterly, annual) and other related documents</p> <p>ii. Secondary analysis of DHIS and MICS 2011, NDHS 2013, SMART Survey 2014 and NNHS 2015 data</p> <p>iii. Health facility assessment</p> <p>iv. Key informant interviews with partners and MAPS staff</p> <p>v. Focus group discussions with men and women who have children under 5 in communities in MAPS states</p> <p>vi. Key informant interviews with the Federal Ministry of Health (Department of Planning, Research and Statistics), State Ministries of Health (SMOH) and LGA health managers</p>
<p>Sub-objective 2: Strengthen capacity of SMOH and LGA health personnel to provide oversight of malaria interventions.</p>	<p>What best practices, innovations, lessons learned and gaps can be identified from MAPS support in focus states that will inform a new project design?</p> <p>ii. Did USAID get value for the investment?</p>	<p>Key informant interviews with project staff, NMEP, Roll Back Malaria (RBM), JSI, SMOH, heads of PHCs supported by MAPS, LGA health department staff and stakeholders</p>
<p>Sub-objective 3: Promote positive behaviors through information, education and communication and BCC activities and interventions to facilitate community mobilization and individual acceptance of malaria control methods.</p>	<p>How have the implemented BCC activities translated into increased use of malaria control interventions at the community level and service delivery points?</p> <p>ii. Did USAID get value for the investment?</p>	<p>i. Focus group discussions with men, women and caregivers in the communities</p> <p>ii. Review of project documents and data</p> <p>iii. Health facility assessment</p>

Sub-objective 4: Improve capacity of the focus states and the NMEP to monitor and evaluate malaria interventions and to use data to guide programmatic decisions.	i. How have MAPS capacity-building activities and engagements with NMEP and state malaria programs improved the planning, coordination and implementation of malaria activities, including strengthening HMIS at national and state levels? ii. Did USAID get value for the investment?	i. Health facility survey ii. Key informant interviews with NMEP and RBM iii. Key informant interviews with Federal Ministry of Health and MAPS staff iv. Review of project documents
---	--	--

## STUDY LOCATION

The evaluation was conducted in four out of the nine intervention states: Akwa-Ibom, Benue, Oyo and Zamfara. Additionally, USAID and MAPS staff participated in key informant interviews in the Federal Capital Territory. While five states were initially proposed, the client suggested that four should be visited in order to achieve a very high quality of evaluation within the time frame allocated for the survey. The evaluation team replaced Nasarawa with Benue, because health workers in Nasarawa were on strike at the time of the evaluation. Benue state was selected because it was among the second set of states that were exposed to MAPS' intervention and it is contiguous to Nasarawa state. The selected states were exposed to MAPS' intervention at varying periods, as shown in Table 4. They were initially pre-selected by the client based on (1) the needs of the population and (2) nonexistent or weak presence of other partners at the time MAPS was being designed. In order to achieve spread and geographical representation in the selected states, two LGAs were randomly selected from each of the three Senatorial Zones. This yielded 24 LGAs (26 percent) out of a total of 91. At the LGA level, one<sup>13</sup> urban and one rural community were identified, from which health facilities were randomly selected (See Table IIb).

**Table IIb. Number of intervention and evaluation LGAs and exposure to MAPS intervention**

States	Total number of LGA	Evaluation LGA	Exposure to MAPS intervention
Akwa-Ibom	31	6	2 years
Benue	23	6	4 years
Oyo	33	6	3 years
Zamfara	14	6	4 years
<b>Total</b>	<b>91</b>	<b>24</b>	

## STUDY POPULATION

The study population included married men and women of childbearing age with children under age 5 in study communities. Other study participants included heads of health facilities, healthcare personnel and monitoring and evaluation officers in supported facilities, community volunteers, CBOs, project implementers from MAPS and JSI DELIVER projects, stakeholders such as USAID, World Bank, HC3, SFH, HPI, ARFH, Support to National Malaria Control Program (SuNMAP), NMEP, RBM staff in the states and LGA RBM focal persons, and relevant health teams in the states.

<sup>13</sup> Nigeria Population Commission definition would apply.

## SAMPLE SIZE

The number of focus group and key informant interview sessions conducted are presented in Table IIc. This was determined purposively, based on relevance, appropriateness for addressing evaluation questions and available time for the evaluation. A total of 17 key informant interviews were conducted at both state and national levels with different target audiences, and 16 focus group sessions were conducted among women, men and community volunteers in the states.

Most of the quantitative data for the evaluation were derived from secondary analysis of data from project documents, national surveys and databases. In addition, primary data were obtained from health facility assessments. A total of 77 health facilities were assessed out of 96 selected for the evaluation. The team was constrained by time, and some of the facilities were located in remote, hard-to-reach areas. The team interacted with a total of 275 people.

**Table IIc. Number of health facilities, key informant interviews and focus group discussions**

States	Total LGA	Evaluation LGA	Qualitative component					Quantitative Component
			Key informant interviews		Focus group discussions			Health Facility Survey
			NMEP, FMOH, SuNMAP, SFH, AFRH, HC3, JSI, World Bank	SFH, ARFH, RBM Manager, JSI	Men	Women	Community volunteers	
Federal Capital Territory	NA	NA	8	NA	NA	NA	NA	NA
Akwa-Ibom	31	6	NA	4	1	2	1	17
Benue	23	6	NA	4	1	2	1	18
Oyo	33	6	NA	4	1	2	1	19
Zamfara	14	6	NA	4	1	2	1	23
<b>Total</b>		<b>24</b>	<b>8</b>	<b>20</b>	<b>4</b>	<b>8</b>	<b>4</b>	<b>77</b>

## SAMPLING TECHNIQUE

The basic sampling unit in the facility survey is the health facility where the MAPS project intervened. For each state, a sampling frame was drawn, which categorized facilities by rural and urban location in LGAs. The health facilities were then selected randomly from the frames of supported facilities. A total of 96 health facilities were identified and selected; however, only 77 of these were assessed. Focus group discussions were conducted among beneficiaries and community volunteers in identified communities in the states.

## INSTRUMENTS AND MEASURES

Discussion and interview guides were developed, pre-tested and standardized and were used to guide all the discussions for the qualitative component of the survey. The guides focused on the effectiveness, strengths, limitations, gaps and best practices of the MAPS project.

For quantitative data collection, a structured, standardized and approved data collection template was designed and used for the health facility assessment.

### **DATA QUALITY ASSURANCE**

Experienced moderators facilitated all key informant interviews and focus group discussions in all study locations. The moderators tried to avoid leading questions and other pitfalls in obtaining credible information from informants.

### **DATA MANAGEMENT PLAN**

Text data from all locations were transcribed and organized in themes. Findings from qualitative information were used to provide contextual understanding of observed changes from quantitative evaluation components. The health facility data were organized in a MS Excel spreadsheet and read into IMB SPSS 22.0, where analysis was performed.

### **DATA ANALYSIS AND SYNTHESIS PLAN**

The evidence gleaned from the review of project documents and reports of national surveys and DHIS 2.0 were synthesized along with the primary evidence from the health facility survey and qualitative studies to provide a realistic evaluation of the MAPS project in the nine focus states.

### **REPORT WRITING PLAN**

The information from all the data sources was triangulated in a succinct report of findings. The format of presentation was in line with USAID guidelines and was revised in response to comments from GH Pro and USAID before the final report was produced.

# ANNEX III. DATA COLLECTION INSTRUMENTS

## Endline Evaluation of MAPS

### Key informant interview guide for partners/government/stakeholders

*(This guide is intended to assist the evaluation team to generate information among key partners, stakeholders, health facility managers and health managers at the federal and state ministries of health and LGA levels. The interviews focus on capacity building for leadership and program management for a better and sustainable malaria response at different levels. Knowledge, attitude and health-seeking practices in the community, especially as they relate to malaria, in addition to perceived changes, best practices and lessons learned, would be explored and discussed with interviewees.)*

**Introduction and ice breaker:** The interviewer will introduce the topic and appropriately explain the purpose for the interview.

1. Overview of the malaria program in the state: what was the malaria situation before MAPS' intervention?
2. What has MAPS done to improve the capacity of health service managers and providers to respond to the malaria problem in the state? Can this capacity be sustained after MAPS leaves?
3. What have been the major constraints in implementing the MAPS program in the state?
4. Has MAPS helped to address identified challenges facing malaria programming in the state?
5. In what ways has MAPS worked well with other stakeholders in the state to address malaria, and what did MAPS do differently in the state?
6. What are the key successes of the MAPS intervention in the state? Which of these are sustainable?
7. How can the malaria intervention program be improved upon in the state to achieve increased outcomes?
8. What can be done differently from what has been done so far?

## Endline Evaluation of MAPS

### Focus group discussion guide for men

*(This guide is intended to assist the evaluation team to generate information from men who are married/partners of women who have children under 5 years of age. The discussions focus on knowledge, attitude and health-seeking practices in the community, especially as they relate to malaria. Preventive and health-seeking behavior and gender issues will also be explored in the discussions.)*

**Introduction and ice breaker:** The moderator will introduce the topic and appropriately explain the purpose of the discussion.

Good day, Sir/Madam. My name is .....I am working for GH Pro/MAPS. We are conducting an endline evaluation of the MAPS program in Benue state. I will ask you some questions. You are not under any obligation to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

**Consent**–This question guide may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, please do not hesitate to ask me or another researcher. Please, should I proceed?

Yes..... No..... Signature of respondent.....Name/Phone number.....

**Awareness and diagnosis of malaria**

1. What is malaria? Have you ever had malaria? Can you share an experience with us?
2. Have any of your children suffered malaria in the last year?
3. If so, what did you do to address the situation? Probe for type of services received (If not mentioned, probe for test, type of test).
4. What are the possible reasons why some people do not like to go to the health facility to get treatment?

**Possible barriers to access**

5. How do you feel about your wife going to the health facility to get services when she is pregnant or when the child is sick? Who makes decision to go to the hospital: you or your wife?
6. Do men in this community support their wives to get health services from the health facility, especially when they are pregnant with child? Probe for reasons for or against. Has the situation improved or not? Since when?
7. Did you support her to access health services the last time she was pregnant? Explain the type of support provided.
8. Do you sleep under the bed net? Do you encourage your wife/child to sleep under the bed net? (Probe for what has changed in the last one or two years).

**Behavior Change Communication**

9. Have you ever received a message on how to prevent malaria? Where did you hear the message?
10. How has the message helped you/the people in your community to prevent malaria? Probe for health seeking behavior, use of LLIN, testing for malaria before treatment.
11. Can you suggest how health service delivery can be improved in the communities/health facilities?

**Endline Evaluation of MAPS  
Focus group discussion guide for women**

*(This guide is intended to assist the evaluation team to generate information from women who have children under 5 years of age and have probably attended one or more ANC sessions, or those who have not attended at all. The discussions will focus on knowledge, attitude and health-seeking practices in the community, especially as they relate to malaria. Preventive and health-seeking behavior and gender issues will be explored as well.)*

**Introduction and ice breaker:** The moderator will introduce the topic and appropriately explain the purpose of the discussion.

Good day Sir/Madam. My name is .....I am working for GH Pro/MAPS. We are conducting an endline evaluation of MAPS program in Benue state. I will ask you some questions. You are not under any obligation to decide today whether or not you will participate in the research. Before you decide, you can talk to anyone you feel comfortable with about the research.

**Consent**–There may be words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, please do not hesitate to ask me or another researcher. Please, should I proceed?

Yes..... No..... Signature of respondent.....Name/Phone number.....

### **Awareness and diagnosis of malaria**

1. Do you know of any organization supporting the health facility in your community to provide health services?
2. Kindly explain what you know about malaria. Have you ever fallen sick with malaria? Could you share an experience with us?
3. Have any of your children suffered malaria in the last year?
4. If so, what did you do to address the situation? What type of services did you receive? For those who went to health facility, probe for the services provided there, such as diagnosis, treatment and cost of services provided.

### **Prevention of malaria**

5. In your last pregnancy, did you go for ANC? How many times? (Probe for if she received support from her husband, type of support and to what level.)
6. Were you given any antimalarial (IPTp) when you went for ANC? Probe for ITN/LLIN given, and how much was paid for it.
7. Do you think these commodities are helpful for you (IPTp)/your baby (bed net)?
8. Did you use the antimalarial given to you? How many times did you use it?
9. Would it be correct to say that you and the other women in this community are comfortable with using antimalarial drugs during pregnancy? (Probe for when the feeling changed, if at all.)
10. How about the bed net, did you sleep under it when you were pregnant? How about now? Does your baby sleep under the bed net? (Probe for reasons for and against.)
11. Do people in your community like to go to the health facility when they have fever? (Probe for what they do and what has changed in the last one or two years.)
12. Do many people have the bed nets in this community? Do they and their children sleep under the bed nets? (Probe for reasons and what has changed in the last 1 or 2 years.)

### **Challenges and barriers to accessing services**

13. Describe an experience when you needed to be treated for malaria in the health facility. Probe for the next thing they did if there was no service. Has the situation changed?
14. What were some of the challenges you have encountered in trying to get service from the health facility in your community? Has the situation changed in the last one or two years?
15. Do you have any suggestions on how best to reduce the cases of malaria in your community?

## **Endline Evaluation of MAPS Health facility assessment survey tool**

Identification Number |\_|\_|\_|\_|\_|\_|\_|\_|

001 Name of Health Facility \_\_\_\_\_

002 City/Town \_\_\_\_\_

003 Local Government Area \_\_\_\_\_ Code |\_|

004 State \_\_\_\_\_ Code |\_|

005 Interviewers: Code |\_| Name \_\_\_\_\_

006 Date of Assessment visit: \_\_\_\_/February/2016.

007 Time of interview: Time interview started \_\_\_\_\_ Time interview ended \_\_\_\_\_

Checked by Supervisor: Code |\_| Name \_\_\_\_\_ Signature/Date \_\_\_\_\_

**Introduction:** My name is..... I am working for the GH Pro Project in the U.S.; we are here to assess this health facility as part of the endline evaluation of the Malaria Action Program for States (MAPS). Your objective and correct responses will help the research team to realize the purpose of this evaluation.

**Consent-**This form may contain words that you do not understand. Please ask me to stop as we go through the information and I will take time to explain. If you have questions later, please do not hesitate to ask me or another researcher. Please, should I proceed?

Yes..... No..... Signature of respondent.....Name/Phone number.....

**Section I. Facility information**

	Questions and filters	Coding categories	Skip
Q101	Type of health facility	Secondary health facility.....1 Primary health facility.....2 Health post.....3	
Q102	Location of health facility	Urban.....1 Rural.....2 Semi-urban.....3	
Q103	Approximate number of people using facility per month	_____	
Q104	Services available	OPD.....1 Surgery.....2 Maternity/Delivery services...3 Child welfare clinic.....4 ANC.....5 Laboratory.....6 Admission service.....7 Transfusion service.....8	
Q105	Are malaria services routinely available at this facility?	Yes.....1 No.....2	
Q106	Type of malaria diagnosis services routinely available at this facility	RDTs only.....1 Microscopy only.....2 RDTs & microscopy.....3	

**Section 2. Storage and stocks of malaria diagnostic malaria and medicines**

	Questions and filters	Coding categories	Skip
Q201	Does the facility have secure storage for its medicines and supplies, including malaria diagnostic commodities?	Yes.....1 No.....2	
Q202	Did this facility experience a stock-out lasting seven or more consecutive days during the last three months that prevented the facility from performing malaria diagnosis?	Yes.....1 No.....2	
Q203	Did this facility experience a stock-out lasting seven or more consecutive days during the last three months that prevented the facility from prescribing of an ACT?	Yes.....1 No.....2	

### Section 3. Documentation

	Questions and Filters	Coding categories	Skip
Q301	Who is responsible for collation of information in this facility?	Officer in charge.....1 Record officer .....2 Others.....3	
Q302	Monthly summary form:	Available, properly kept.....1 Available, improperly kept.....2 Unavailable.....3	

### Section 4. Case management and quality assurance

	Questions and Filters	Coding categories	Skip
Q401	Are the national guidelines for diagnosis of malaria available for health workers in the facility? (Sight it)	Yes.....1 No.....2 Unknown.....3	
Q402	Are the national guidelines for treatment of malaria available for health workers in the facility? (Sight it)	Yes.....1 No.....2 Unknown.....3	

### Section 5. Human resources, training and supervision

	Questions and Filters	Coding categories	Skip
Q501	What type of malaria training has been conducted for the personnel at this facility?		
Q502	When was/were the training(s) conducted?		
Q503	Where was/were the training(s) conducted?		
Q504	Has anyone who was trained on malaria case management left this facility?	Yes.....1 No.....2 Don't know.....3	
Q505	Is there any form of supervision in this health facility?	Yes.....1 No.....2	
Q506	How often is supervision conducted in this health facility by an external supervisor?		
Q507	Who provides the supervision?		
Q508	What happens during supervision?		
Q509	What has the supervisor done to support the health facility after past visits?		

Thank you.

**Informed Consent Process for Focus Groups**  
(to be read to the group by the moderator)

Title of Study: \_\_\_\_\_

Facilitator: \_\_\_\_\_

**Reason for the focus group discussion:** We would like to talk to you about taking part in discussion group(s) conducted by [GH Pro/MAPS] to [The discussions will focus on knowledge, attitude and health-seeking practices in the community, especially as they relate to malaria. Preventive and health-seeking behavior and gender issues will also be explored]. You are being asked to take part in a group that will have a trained leader. The groups will talk about [Malaria].

**Your part in the focus group discussion:**

- About [8/10] will take part in this focus group discussion [Akwa Ibom/Oyo/Benue/Zamfara states].
- If you agree to take part in the discussion, you will be in [8/10] groups lasting [45 minutes] each.
- Your participation is voluntary and there is no penalty for refusing to take part. Also, you may quit being in the groups at any time.

**Confidentiality:** No one except the group leaders and the other group members will know that you took part in the discussion(s). [When applicable: The groups will be tape-recorded with voices only. To protect confidentiality of participants, state what will be done with the audio tapes after being used for focus groups.] Note-takers will write down opinions and what the group thinks during the sessions. We will not record your name or any other personal things about you during the groups. We ask that participants not reveal outside the group information they may have heard in the group. Even though we will ask people in the group not to reveal anything about others, we cannot guarantee this. We will protect information about you and your taking part in this discussion to the best of our ability. If the results are published, your name will not be shown.

**Possible risks and benefits:** There is a small chance that what people talk about in the group will make you feel uncomfortable. There is also a small chance that others in the group may tell someone you were taking part or report what you said.

**Compensation:** [Your transport and meal allowances will be provided at the end of the discussions].

**Consent form to be signed by moderator**

1. Read and review the oral informed consent process for focus groups with each participant in a private setting.
2. Ask the following: “Are you willing to be in a focus group to talk about: \_\_\_\_\_?”
3. Read the oral informed consent process for focus groups to the group before the first session begins. Whenever possible, this reading before the group should be (voice) tape-recorded.

I have reviewed the consent form with the focus group participants, and they have fully agreed to be in this focus group. I further agree to keep confidential anything that is said in the discussion group.

\_\_\_\_\_  
Moderator’s name (print clearly)

\_\_\_\_\_  
Signature of Moderator

\_\_\_\_\_  
Date

## Informed Consent for Interviews

Title of study: \_\_\_\_\_

Principal investigator: \_\_\_\_\_

This *[interview]* is for a study that is being done by *[GH PRO/MAPS]*.

This study will gather information on *[The discussions would focus on knowledge, attitude and health-seeking practices in the community especially as it relates to malaria. Preventive and health-seeking behavior and gender issues would also be explored in the discussions]*.

The *[interview]* will include questions on *[malaria]*. It will take most people about *[45 minutes]* to answer the questions.

The names of people who agree to participate *[will not be recorded without their permission or whatever is the case]*.

Your participation is voluntary and there is no penalty for refusing to take part. *[When applicable: If you do not take part, it will not affect any health care that you would normally receive.]* You may refuse to answer any question in the interview or stop the interview at any time.

*[Give separate list of contact numbers to subjects when oral consent is used.]*

-----

I certify that the nature and purpose, the potential benefits, and possible risks associated with participating in this study have been explained to the volunteer.

\_\_\_\_\_  
Signature of Person Obtaining Consent

\_\_\_\_\_  
Date

# ANNEX IV. SOURCES OF INFORMATION

## DOCUMENTS REVIEWED AND DATABASE CONSULTED

Annual operating plans from all states (2015)

Department for International Development. 2011. *DFID's Approach to Value for Money (VfM)*.

District Health Information System 2. 2015. National Health Management Information System, Nigeria.

Federal Ministry of Health, National Malaria and Vector Control Division, Federal Republic of Nigeria. 2015. *National Guidelines for Diagnosis and Treatment of Malaria*. 3<sup>rd</sup> edition.

*Findings from MAPS Metrobus household survey 2015*.

Lippeveld, T., R. Sauerborn, and C. Bodart. 2000. *Design and Implementation of Health Information Systems*. Geneva: World Health Organization.

MAPS annual reports (2012, 2013, 2014)

——— baseline management assessments (2012, 2013, 2014)

——— community-based organization selection reports

———. *Monthly Training Bulletin*.

———. 2015. *Short Report: The role of MAPS in the fight to eliminate malaria in Nigeria*.

Minutes of Malaria Technical Working Groups (2012–2015)

National Bureau of Statistics, Federal Republic of Nigeria. 2014. *National Nutrition and Health Survey: Report on the Nutrition and Health Situation in Nigeria*. Abuja.

———. 2015. *National Nutrition and Health Survey: Report on the Nutrition and Health Situation in Nigeria*. Abuja.

National Bureau of Statistics, Federal Republic of Nigeria, and UNICEF. 2011. *Nigeria Multiple Indicator Cluster Survey 2011, Main Report*. Abuja.

National Population Commission, National Malaria Control Programme, Federal Republic of Nigeria; and MEASURE DHS. 2012. *Nigeria Malaria Indicator Survey 2010*. Calverton, MD: ICF International.

National Population Commission, Federal Republic of Nigeria, and ICF International. 2014. *Nigeria Demographic and Health Survey 2013*. Rockville, MD: ICF International.

President's Malaria Initiative. 2015. *Malaria Operational Plan FY 2015*.

SMART Survey 2014.

## KEY INFORMANT INTERVIEWS

### Abuja

- ARFH
- DELIVER
- HC3
- MAPS
- NMEP
- SFH

- SuNMAP
- USAID
- WHO

#### **Akwa-Ibom**

- DELIVER
- MAPS
- SFH
- SMEP

#### **Benue**

- DELIVER
- MAPS
- SMEP

#### **Oyo**

- DELIVER
- MAPS
- SFH
- SMEP

#### **Zamfara**

- Association of Civil Society Organizations on Malaria, Immunization and Nutrition
- ARFH-Expanded Social Marketing Project in Nigeria
- DELIVER
- MAPS
- SFH
- SMEP
- State Commissioner

## **FOCUS GROUP DISCUSSIONS**

#### **Akwa-Ibom**

- Men in Uyo
- Women in Uyo

#### **Benue**

- Women in Otukpo

#### **Oyo**

- Men in Egbeda LGA Ibadan
- Men in Oyo
- Women in Adogba Egbeda Ibadan
- Women in Oyo-Aperin Oniyere

### **Zamfara**

- Men in Furfuri
- Men in Gusau
- Women in Gusau
- Women in Furfuri

### **LGAs Visited**

#### **Akwa-Ibom**

- Abak
- Ikot Ekpene
- Uyo
- Uruan
- Eket
- Oron

#### **Benue**

- Makurdi
- Tarka
- Otukpo
- Obi
- Katsina-Ala
- Logo

#### **Oyo**

- Ibadan North East
- Ibadan South East
- Iseyin
- Kajola
- Oyo East
- Oyo West

#### **Zamfara**

- Gusau
- Bungudu
- Kaura Namoda
- Shinkafi
- Talatar Mafara
- Maradu

## **ANNEX V. DISCLOSURE OF ANY CONFLICTS OF INTEREST**

Team members report that they had no conflict of interest in performing this evaluation. Team leader Wayne Stinson had previously collected background information on Nigeria for a potential bidder on the MAPS follow-on project; however, this connection terminated the day before the GH Pro assignment began.

## **ANNEX VI. STATEMENT OF DIFFERENCES (IF APPLICABLE)**

All team members concurred in the findings and recommendations of this evaluation.

## ANNEX VII. STATE DATA ON CASE MANAGEMENT

### Proportion of fever cases tested

State	2013	2014	2015
Akwa-Ibom	45%	83%	90%
Benue	89%	81%	72%
Cross River	60%	69%	84%
Ebonyi	99%	98%	97%
Kebbi	60%	75%	71%
Kogi	86%	92%	90%
Nasarawa	106%	95%	98%
Oyo	45%	74%	78%
Zamfara	39%	66%	75%
PMI states	62%	80%	84%
Non-PMI states	65%	45%	41%
Nigeria total	64%	51%	48%

### Confirmed uncomplicated malaria

State	2013	2014	2015
Akwa-Ibom	102%	77%	76%
Benue	66%	66%	65%
Cross River	79%	68%	67%
Ebonyi	76%	80%	75%
Kebbi	96%	68%	76%
Kogi	72%	67%	71%
Nasarawa	63%	63%	62%
Oyo	82%	75%	72%
Zamfara	122%	75%	75%
PMI states	80%	72%	71%
Non-PMI states	91%	77%	73%
Nigeria total	86%	76%	72%

### Confirmed uncomplicated malaria given ACT

State	2013	2014	2015
Akwa-Ibom	148%	110%	100%
Benue	98%	98%	99%
Cross River	88%	98%	97%
Ebonyi	98%	97%	97%
Kebbi	95%	208%	422%
Kogi	98%	96%	99%
Nasarawa	92%	98%	103%
Oyo	95%	98%	99%
Zamfara	124%	96%	97%
PMI states	101%	99%	99%
Non-PMI states	108%	103%	93%
Nigeria total	105%	102%	95%

### Confirmed uncomplicated malaria given other antimalarials

State	2013	2014	2015
Akwa-Ibom	6%	2%	3%
Benue	14%	7%	5%
Cross River	19%	5%	3%
Ebonyi	2%	1%	1%
Kebbi	30%	18%	13%
Kogi	12%	10%	4%
Nasarawa	14%	7%	2%
Oyo	4%	1%	1%
Zamfara	34%	6%	5%
PMI states	13%	5%	3%
Non-PMI states	15%	10%	11%
Nigeria total	14%	9%	9%

### Clinical malaria

State	2013	2014	2015
Akwa-Ibom	108%	49%	23%
Benue	51%	24%	13%
Cross River	67%	38%	19%
Ebonyi	28%	9%	5%
Kebbi	109%	64%	34%
Kogi	46%	23%	10%
Nasarawa	46%	19%	7%
Oyo	66%	25%	21%
Zamfara	88%	29%	19%
PMI states	63%	30%	17%
Non-PMI states	84%	38%	29%
Nigeria total	74%	37%	27%

**Proportion of clinically diagnosed malaria given ACT**

<b>State</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>
Akwa-Ibom	79%	77%	82%
Benue	64%	74%	77%
Cross River	67%	81%	91%
Ebonyi	64%	75%	145%
Kebbi	51%	50%	57%
Kogi	73%	62%	77%
Nasarawa	62%	64%	63%
Oyo	87%	92%	97%
Zamfara	58%	59%	34%
PMI states	72%	71%	75%
Non-PMI states	58%	64%	60%
Nigeria total	64%	65%	62%

## ANNEX VIII. STATE DATA ON MALARIA IN PREGNANCY

Year	State	ANCI	IPT1	IPT1/ ANCI	NDHS/ SMART*	IPT2	Ratio IPT2/IPT1	ANC 2+	Ratio IPT2/ANC2+
2013	Akwa-Ibom State	23,065	3,118	14%	12%				
2014	Akwa-Ibom State	47,451	20,963	44%		15,752	0.751	63,730	0.247
2015	Akwa-Ibom State	64,567	39,120	61%	34%	26,812	0.685	73,945	0.363
2013	Benue State	62,082	10,857	17%	1%				
2014	Benue State	85,304	28,568	33%		17,181	0.601	38891	0.442
2015	Benue State	88,290	35,946	41%	25%	21,138	0.588	41,919	0.504
2013	Cross River State	52,475	16,458	31%	33%				
2014	Cross River State	59,546	32,296	54%		23,950	0.742	92406	0.259
2015	Cross River State	62,321	38,894	62%	51%	28,977	0.745	74,272	0.390
2013	Ebonyi State	26,665	4,421	17%	39%				
2014	Ebonyi State	66,052	29,514	45%		24,085	0.816	89025	0.271
2015	Ebonyi State	74,866	40,398	54%	55%	33,533	0.830	98,513	0.340
2013	Kebbi State	11,810	1,305	11%	5%				
2014	Kebbi State	75,774	17,180	23%		17,107	0.996	57789	0.296
2015	Kebbi State	74,808	31,029	41%	19%	24,425	0.787	61,366	0.398
2013	Kogi State	39,899	10,431	26%	33%				
2014	Kogi State	50,903	23,343	46%		17,455	0.748	42,094	0.415
2015	Kogi State	64,630	38,336	59%	29%	23,932	0.624	46,319	0.517

2013	Nasarawa State	43,126	11,450	27%	17%				
2014	Nasarawa State	85,469	36,935	43%		35,430	0.959	84,993	0.417
2015	Nasarawa State	93,758	51,153	55%	54%	43,298	0.846	107,123	0.404
2013	Oyo State	145,747	31,240	21%	11%				
2014	Oyo State	152,300	69,543	46%		53,982	0.776	307,394	0.176
2015	Oyo State	136,209	73,317	54%	20%	57,696	0.787	291,338	0.198
2013	Zamfara State	99,147	17,890	18%	10%				
2014	Zamfara State	134,595	75,769	56%		52,524	0.693	105,106	0.500
2015	Zamfara State	129,989	89,166	69%	17%	61,218	0.687	111,296	0.550
2013	Total PMI states	504,016	107,170	21%					
2014	Total PMI states	757,394	334,111	44%		257,466	0.771	881,428	0.292
2015	Total PMI states	747,688	437,359	58%		321,029	0.734	843,939	0.380
2013	Total non-PMI states	2,765,095	145,018	5%				0	
2014	Total non-PMI states	3,488,355	1,040,331	30%		975,480	0.938	4,278,358	0.228
2015	Total non-PMI states	3,190,036	1,210,573	38%		968,711	0.800	3,806,263	0.255
2013	National	3,269,111	252,188	8%	23%				
2014	National	4,245,749	1,374,442	32%		1,232,946	0.897	5,159,786	0.239
2015	National	3,937,724	1,647,932	42%	33%	1,289,740	0.783	4,650,202	0.277

\*Note that survey data are population-based, not clinic-based and should only be used for comparing trend lines.

## ANNEX IX. STATE DATA ON DHIS2 REPORTING RATES

DHIS 2.0 REPORTING RATE BY STATE			
Federal Government-NHMIS Monthly Summary (version 2013)			
(MAPS states highlighted in gray)			
Name	2013 (Percent)	2014 (Percent)	2015 (Percent)
Zamfara State	95.4	94.3	94.4
Jigawa State	88.1	90.9	89.5
Enugu State	82	83.7	89.4
Kano State	78.6	82.3	86.2
Sokoto State	73.6	81.4	84.3
Kaduna State	73.1	78.4	83.5
Katsina State	70.7	75.6	82.9
Gombe State	62.4	75.1	81
Cross River State	53.1	74.3	80.8
Lagos State	52.5	73.3	80
Oyo State	52.2	72.5	77.8
Yobe State	52.2	68.4	77.7
Ekiti State	47.8	67	77.6
Ondo State	46.1	66.2	73.6
Akwa-Ibom State	45.2	64.9	72.1
Rivers State	44.6	62.9	70.4
Benue State	44.5	58.7	70.1
Federal Capital Territory	43	57.4	66.2
Edo State	38.7	56.5	63.2
Ogun State	33.7	54.8	62.9
Kogi State	31.8	54.1	62.5
Niger State	29.3	53.4	61.1
Ebonyi State	28.5	52.8	59.9
Anambra state	24.6	51.7	58.5
Nasarawa State	24.3	49.8	56.7
Imo State	22.2	48.4	50.9
Bauchi State	21.2	45.7	45
Osun State	13.7	42.9	43.6
Plateau State	13.7	42	41.1
Bayelsa State	12.3	41.3	40.9
Abia State	6.1	39.8	35.1

Kebbi State	5.4	37.8	33.7
Kwara State	5.4	35.5	33.1
Adamawa State	3.9	28	32.4
Taraba State	2.2	26.9	31.9
Delta State	0.9	25.8	10.1
Borno State	0	0.7	0
Federal Government	40.5	58	62.1

## ANNEX X. LLIN OWNERSHIP AND USE

	Households with at least one LLIN			Average number of LLINs per household		Households with one LLIN for 2 persons		Percent who slept under ITN, in households with ITN			
	MICS 2011	NDHS 2013	MIS15	NDHS 2013	MIS15	NDHS 2013	MIS15	NDHS 2013	MIS15	NDHS 2013	MIS15
Akwa-Ibom	66.8%	42.8%	74.2%	0.8	2.2	19.2%	54.0%	14.4%	36.8%	29.3%	45.3%
Benue	8.1%	73.0%	41.7%	1.5	0.8	40.5%	15.6%	23.3%	24.6%	30.1%	51.9%
Cross River	65.4%	56.3%	80.6%	1	1.8	29.0%	54.7%	25.1%	49.6%	41.4%	57.5%
Ebonyi	36.7%	57.4%	88.4%	1.1	2.7	27.2%	62.7%	23.1%	50.0%	38.3%	55.1%
Kebbi	65.7%	60.3%	86.7%	1.2	1.6	20.5%	22.1%	18.8%	37.6%	30.2%	43.1%
Kogi	16.6%	23.8%	54.7%	0.4	1.0	11.6%	19.8%	7.6%	22.3%	25.3%	38.5%
Nasarawa	52.5%	52.0%	76.4%	1.1	2.0	21.4%	33.0%	11.4%	44.4%	18.9%	54.6%
Oyo	12.4%	36.8%	51.3%	0.6	1.0	16.2%	18.6%	16.2%	31.4%	36.2%	48.5%
Zamfara	10.0%	82.3%	88.6%	1.8	2.6	34.6%	47.3%	7.2%	56.4%	8.5%	62.3%
Unweighted average	37.1%	53.9%	71.4%	1.1	1.7	24.5%	36.4%	16.3%	39.2%	28.7%	50.8%
National	40.1%	48.0%	68.8%	1.0	1.6	22.1%	34.9%	12.9%	37.3%	23.7%	50.0%

### Proportion using LLINs: total population, owners

State	Total population		LLIN owners	
	2013	2015	2013	2015
Akwa-Ibom	29.3%	45.3%	14.4%	36.8%
Benue	30.1%	51.9%	23.3%	24.6%
Cross River	41.4%	57.5%	25.1%	49.6%
Ebonyi	38.3%	55.1%	23.1%	50.0%
Kebbi	30.2%	43.1%	18.8%	37.6%
Kogi	25.3%	38.5%	7.6%	22.3%
Nasarawa	18.9%	54.6%	11.4%	44.4%
Oyo	36.2%	48.5%	16.2%	31.4%
Zamfara	8.5%	62.3%	7.2%	56.4%
Unweighted average	28.7%	50.8%	16.3%	39.2%
National	<b>23.7%</b>	<b>50.0%</b>	<b>12.9%</b>	<b>37.3%</b>

### Proportion of Households Owning and Using LLINs

	NDHS2013			MIS15		
	Ownership	Use	Proportion of owners using	Ownership	Use	Proportion of owners using
Akwa-Ibom	42.8%	14.4%	29.3%	74.2%	36.8%	45.3%
Benue	73.0%	23.3%	30.1%	41.7%	24.6%	51.9%
Cross River	56.3%	25.1%	41.4%	80.6%	49.6%	57.5%
Ebonyi	57.4%	23.1%	38.3%	88.4%	50.0%	55.1%
Kebbi	60.3%	18.8%	30.2%	86.7%	37.6%	43.1%
Kogi	23.8%	7.6%	25.3%	54.7%	22.3%	38.5%
Nasarawa	52.0%	11.4%	18.9%	76.4%	44.4%	54.6%
Oyo	36.8%	16.2%	36.2%	51.3%	31.4%	48.5%
Zamfara	82.3%	7.2%	8.5%	88.6%	56.4%	62.3%
Unweighted average	53.9%	16.3%	28.7%	71.4%	39.2%	50.8%
National	48.0%	12.9%	23.7%	68.8%	37.3%	50.0%

For more information, please visit  
<http://www.ghtechproject.com/resources>

**Global Health Performance Cycle Improvement Project**

1331 Pennsylvania Avenue NW, Suite 300

Washington, DC 20006

Phone: (202) 625-9444

Fax: (202) 517-9181

[www.ghpro.dexisonline.com](http://www.ghpro.dexisonline.com)