Post Measles Campaign Coverage Survey
Main Survey Report

National Primary Healthcare Development Agency
in partnership with
National Bureau of Statistics and the World Health Organization

June 2018

Contents

Page

List of Figures

List of Tables

Preface

Chapter 1 is introductory and presents the background of the survey, its objectives, and a summary of the survey procedures, sample design and response rates. (Implementation details are in Appendix A).

Chapters 2 are intended to set the stage for the population and health chapters that follow. Chapter 2 describes the background characteristics of the household population, and their dwelling conditions. Chapter 3 contains tables describing eligible respondents by background characteristics.

Chapter 3 covers post measles campaign coverage disaggregated on various background parameters, reasons for non-vaccination and the prevalence of adverse effects following immunisation.

Chapter 4 This chapter characterises low coverage enumeration areas and explores factors associated with low coverage.

Abbreviations

AEFIs	Adverse Events Following Immunization
CAPI	Computer-Assisted Personal Interviewing
CI	Confidence Interval
CSPro	Census and Survey Processing System
deff	Design effect
EA	Enumeration Area
EPI	Expanded Programme on Immunisation
FCT	Federal Capital Territory
FMOH	Federal Ministry of Health
GAVI	Global Alliance for Vaccines & Immunization
GPS	Global Positioning System
GVAP	Global Vaccine Action Plan
LGA	Local Government Area
MVC	Measles Vaccination Campaign
NBS	National Bureau of Statistics
NICS	National Immunization Coverage Survey
NMTCC	National Measles Technical Coordinating Committee
NPHCDA	National Primary Health Care Development Agency
NPopC	National Population Commission
PMCCS	Post measles campaign coverage survey
RI	Routine Immunisation
SDGs	Sustainable Development Goals
SE	Standard error
SIA	Supplementary Immunization Activities
UNICEF	United Nations Children's Fund
WHO	World Health Organization

Foreword

Nigeria has made remarkable progress in the fight against vaccine preventable diseases (VPD) over the last fifty years. Nevertheless, epidemics caused by infectious diseases such as measles, yellow fever and meningitis occurred sporadically. Measles is one of the most infectious human diseases that can cause serious illness, lasting complications and death. With the introduction of highly effective, safe and comparatively low-priced measles vaccine in 1960s, individuals were protected from infection. The spread of the virus was curbed in populations that achieved and maintained high levels of immunity through herd protection. Immunization against measles directly contributes to the decrease of under-five child mortality and hence to the achievement of Sustainable Development Goals (SDG). In line with the national measles elimination strategic plan, the Measles Vaccination Campaign (MVC) targeting children aged 9 – 59 months was conducted in 36 states of Nigeria and the Federal Capital Territory (FCT) in phases following the geopolitical zones of the country. The order of conduct of the survey followed the order of the campaigns usually within a month after such campaigns. In order to assess the effectiveness of MVC, the NPHCDA commissioned the conduct of the Measles Vaccination Coverage Survey (MVCS) based on the World Health Organization Vaccination Coverage Cluster Surveys: reference Manual recommendations.

The survey determined the post measles vaccination campaign vaccination coverage in all states by age groups and sex; identified the subgroups of the population that were not vaccinated; identified the main reasons for non-vaccination; presented the proportion of notified Adverse Events Following Immunization (AEFI) in target populations vaccinated against measles and identified the strengths and weaknesses of MVC. This MVCS report presents a robust database for planning and managing subsequent integrated measles campaigns and other immunization campaigns in the future. The survey identified cases of zero doses of measles vaccination for the first time during such surveys. All underperforming Local Government Areas based on vaccination coverage were also documented as secondary analysis. Consequently, individual LGAs within poor performing states may be able to take actions to improve coverage at local levels.

It is hoped that this report and its recommendations will serve as a reference document to the immunization programme managers at the national, state and local government levels for use as a source of data/information to make informed decision for subsequent campaigns planning.

This report has been presented accompanied by an abridged version for quick reference apart from the executive summary. It is hoped that immunization managers, policy makers and other stakeholders would find it easy and friendly to use this report.

Dr Faisal Shuaib MBBS, MPH, DrPH
Executive Director/Chief Executive Officer
National Primary Health Care Development Agency

Executive summary

The National Post Measles Campaign Coverage Survey (PMCCS) was conducted following measles campaign targeting children aged 9 and 59 months in conducted in Nigeria between November 2017 and March 2018 in Nigeria. The survey was commissioned by the National Primary Healthcare Development Agency (NPHCDA) and implemented by the National Bureau of Statistics. Technical assistance was provided by the World Health Organization while funding was provided by

PMCCS provides information on the children receiving measles vaccination during the measles campaign. PMCCS was carried out from January to April 2018 and covered 6819 households with 10151 children aged between 9 and 59 months. The population sampled for the PMCCS is representative of children aged 9 to 59 months nationally and in all 36 states and FCT- Abuja.

Measles vaccination coverage

Eighty eight percent of all children who were eligible for measles vaccination during the campaign were vaccinated. Five states (Anambra, Ekiti, FCT-Abuja, Jigawa and Plateau) achieved an estimated coverage of 95 percent and above.

Proportion of children who received measles vaccination for the first time during the campaign

National close to 10 million children making 35 percent of all children aged between 9 and 59 months received measles vaccination for the first time ever during the measles campaign. As many as 59 percent of children aged 9 to 59 months living in Abuja, 67 percent of children aged 9 to 59 months living in Zamfara and 78 percent of children aged 9 to 59 months living in Katsina state.

Children with SIA cards

Only 59 percent of children who received measles vaccination during the campaign reported receiving a vaccination card during the campaign. The proportion of children who received a vaccination card was as low as 31 percent in Adamawa State and 35 percent in Kogi State.

Sources of information about the campaign

Nationally 3.9 percent of the respondents interviewed were not informed about the measles campaign. The proportion of respondents who were not informed ranged from .03 percent in Jigawa state to 11.5 % in Bauchi state. All respondents in Abuja knew about the measles campaign. Majority of the respondents were informed about the measles campaign through radio, mobilisers (criers), community health workers and village chiefs.

Reason for non-vaccination

Majority of the children were not vaccinated as a result of not being at home in the period of the vaccination campaign and also because the parents or primary caregivers were not aware of the vaccination campaign.

Information on previous vaccination status

Slightly over a half of eligible children had received measles vaccination before the campaign but only 16 percent of all eligible children had a card showing when the vaccination was given.

Acknowledgements

The National Primary Health Care Development Agency (NPHCDA) wishes to express gratitude to the development partners for their collaboration and support towards the conceptualization, development and implementation of the 2017 Measles Vaccination Coverage Survey (MVCS) in Nigeria. We thank the Bill and Melinda Gates Foundation (BMGF), GAVI (The Vaccine Alliance) and the Government of Nigeria for funding the survey and the World Health Organization (WHO) for providing technical and support. We also thank Centre for Disease Control and Prevention - National Stop Transmission of Polio (CDC-NSTOP) and United Nations Children's Fund (UNICEF) for their technical assistance particularly at the level of protocol development and scrutiny on the final report. We also wish to acknowledge support received from the Federal Ministry of Health and other MDAs.

NPHCDA acknowledges the efforts of government officials at the State level: The Commissioners of Health, Permanent Secretaries, CEO's of State Primary Health Care Development Agencies and State offices of the National Bureau of Statistics (NBS) for facilitating the conduct of the MVCS in their states The NBS provided technical assistance and managed the conduct of the MVCS, analysed the data and developed the report of this study with the specific assistance of WHO. The commitment of the national officers of the NPHCDA in seeing to the conclusion of the MVCS is worthy of special mention. The collaboration offered by the state Ministries of Health and PHC boards is deeply appreciated. Without this it would not have been possible to gain access to the clusters.

For all staff of the NPHCDA, your contributions are highly appreciated, and we remain indebted. Of particular significance is the direction and leadership provided by the Executive Director, NPHCDA who ensured total independence and non-interference with the evaluation process.

Finally, we are most grateful to the children and mothers across the country that patiently provided all the data presented in this report. It is our sincere desire that the outcome of the survey will contribute significantly towards improved immunization services for the ultimate benefit of the Nigerian child.

This report was written by Dr John Wagai.

Dr Eric Nwaze MBBS(UNN), MSc (UK), FMCPH(Nig), FRIPH(UK).
Consultant Special Grade 1 and Head of the Post Campaign Coverage Survey Committee.

CHAPTER 1

INTRODUCTION

1.1 Background

Measles is a highly contagious viral disease-causing severe illness, lifetime complications or death. A safe, effective and relatively inexpensive measles containing vaccine (MCV) is available for preventing infections. While there has been a gradual decline in measles infections and deaths globally, measles remains a leading cause of childhood illness and death in many countries. Efforts towards measles elimination has also been eroded by low routine immunisation coverage, vaccine refusal as a result of personal reasons or fear of vaccine adverse effects in a few countries.

Nigeria used to have a huge burden of measles cases with many outbreaks reported in the past few years in several parts of the country. By November 2017, there were 19,306 suspected measles cases with 108 laboratory confirmed cases and 109 deaths (case fatality rate 0.56%) in all 36 State and FCT compared to 23,417 suspected measles cases and 100 deaths (case fatality rate 0.43%) at the same period in 2016.

After the 2005/06 catch up campaign, Nigeria has been conducting national measles campaigns almost every 2 years as a key strategy for reaching measles elimination goal of <= 1 case per 1,000,000 populations by 2020. The target coverage for measles campaigns is at least 95% in all local government areas (LGAs) and at the national level. The most recent measles follow-up vaccination campaign in Nigeria dates from October to December 2017 and February/March 2018 for the Northern and Southern States respectively.

The 2016/17 MICS/NICS (National Immunization Coverage Survey) reported than only 42% of children aged 12 to 23 months had received measles vaccination. The low routine immunisation vaccine coverage results in a large number of unimmunized children at risk of measles outbreaks. Ongoing humanitarian crisis in several parts of the country has also compounded low routine immunisation coverage adding to the pool of children at risk.

Nigeria is a signatory to the Global Vaccine Action Plan (GVAP) 2012–2020 and the Measles & Rubella Initiative a global partnership aimed at ensuring no child dies of measles or is born with congenital rubella syndrome.

The main strategies to achieve measles elimination targets include:

i. Achieving and maintaining 95% measles vaccination coverage within each local government area (LGA) through routine immunization (RI) and supplementary immunization activities (SIA).
ii. Achieving and maintaining high quality vaccination surveillance system
iii. Developing and maintaining outbreak preparedness and response including case management.

In January 2017 a mass measles vaccination campaign was conducted targeting more than 4 million children (4 766 214) in conflict-affected states in north-eastern Nigeria including accessible areas of Borno, Adamawa and Yobe states as part of measles outbreak preparedness in these states.

Conducting national measles campaigns every 2 years is a key strategy for reaching measles elimination goal of 1 case per 1,000,000 populations by 2020. The frequency of measles supplementary immunisation activities (SIA) is however influenced by routine immunisation (RI) coverage for measles and would reduce if there was an increase in routine immunisation coverage. The target coverage for measles campaigns is 95% in all local government areas (LGAs) and at the national level. Consequently, the government of Nigeria and its partner agencies conducted a measles follow-up vaccination campaign from October to December 2017 and February/March 2018 for the Northern and Southern States respectively.

Good quality measles supplementary immunization activity is a prerequisite for the successful reduction of risk of measles outbreaks; therefore, a coverage survey was planned to be conducted within two weeks of conclusion of the measles campaign.

The Post Campaign Coverage Survey was fully funded by the Federal Government National Bureau of Statistics was selected as the implementing partner for the 2017/18 post measles campaign coverage survey. Technical assistance to this survey was provided by the World Health Organization (WHO), Centers for Disease Control, (CDC), Biostats Global Consulting, Bill & Melinda Gates Foundation (BMGF) and the National Primary Healthcare Development Agency (NPHCDA). A national multi-agency committee led by NPHCDA coordinated the work of the survey

1.2 Survey Objectives

The primary objective of the survey was to determine the coverage of measles vaccination in all states, the Federal Capital Territory, Abuja and nationally. Secondary objectives of the survey were:

1. To stratify SIA coverage estimates by age group (9–11 months, 12–59 months)
2. To stratify SIA coverage estimates by sex
3. To identify key communication channels that were effectively used for the campaign
4. To determine reasons for non-vaccination of eligible children during the campaign
5. To determine occurrence of adverse events following immunization (AEFI) during the campaign
6. To determine the proportion of children receiving the first dose of measles vaccine during the campaign (i.e., previously unvaccinated)

CHAPTER 2

SURVEY DESIGN

Introduction

The 2017/2018 Post measles campaign coverage survey (PMCCS) was a cross-sectional household-based survey conducted on a probability sample of 7,700 households in 1,100 enumeration areas across all the 36 states and the Federal Capital Territory in Abuja. The survey was to provide representative estimates across each of the 37 strata. Parents and caregivers of all children aged between 9 month and 59 months in the selected households were eligible to participate in the survey. PMCCS was conducted phases following the phased implementation of the 2017-18 measles SIA.

Assuming an expected coverage of 90%, half-width confidence interval around state-level estimates of 8% (i.e., 90% +/- 8% coverage estimate) with an alpha level (type I error) of 5%, the effective sample size (i.e., sample size per stratum under a simple random sampling assumption) was n = 101. This level of precision allowed for estimation of coverage with acceptable precision at state, zonal and national levels[1].

Target Number of Respondents per Cluster	Number of enumeration areas (clusters) per strata	Design Effect (deff) assuming Intracluster Correlation Coefficient = 1/6	Number of Households with Eligible Children aged 9 to 59 months randomly selected for coverage survey per enumeration area	Total number of households per state
6	30	1.8	7	210

Because some of the enumeration areas (EAs) have fewer households, smaller number of respondents per EA was chosen so that the desired sample size could be achieved in each enumeration area.

Sample frame

PMCCS was based on the National Population Commission (NPopC) master sampling frame based on the 2006 Nigeria Housing and Population Census. The sampling frame developed under the National Integrated Survey of Households (NISH2).

[1] World Health Organization vaccination coverage cluster surveys: reference manual. Geneva: World Health Organization; 2018 (WHO/IVB/18). Licence: CC BY-NC-SA 3.0 IGO, Annex B1

Areas of the country that are inaccessible due to security reasons were excluded from the sampling frame including specific Local Government Areas (LGAs) in Borno and Adamawa states. Interpretation of results from these areas should therefore be conducted in light of these exclusions.

Sample design and implementation

A stratified two stage – cluster sampling design was chosen for the 2017/18 PMCCS. Reporting strata were 36 state and FCT- Abuja.

The first stage selection involved the selection of EAs in each state and the FCT (Abuja) from the master sampling frame. A total of 30 EAs were selected from the sampling frame and with the selection probability of each EA was recorded for incorporation into household weights.

Following first stage sampling, household listing was conducted in the selected EAs to map all structures and boundaries and also identify households with children aged between 9 and 59 months eligible for second stage selection. Household listing was conducted between the 2nd and 9th of December 2017.

Second stage selection of households to be interviewed was conducted by the National Bureau of Statistics (NBS) using simple random sampling without replacement from the list of households with eligible children aged 9 to 59 months. Seven (7) households with eligible children were randomly selected from each of the 30 enumeration areas in every state.

Survey fieldwork implementation

Interviewers were selected from the states they were deployed in to ensure that the interviewers could speak languages in the state they were assigned to and were conversant with the local culture. Two levels of training were conducted for household listing and mapping. The first stage of training was a training of trainers conducted in Abuja while the second level of training was conducted in every state. The first level training consisted of resource persons and participants from NBS, NPHCDA, WHO, UNICEF and other relevant technical partners while the second level training targeted field workers who were to conduct mapping and listing activities in selected EAs.

A total of 600 personnel comprising of field team supervisors and enumerators were trained of whom 555 were selected to form the data collection teams. Training focused on the survey guidelines, identification of sampled enumeration areas and eligible households, determination of whether an eligible child had been vaccinated, ethics and informed consent, electronic data capture and transmission, and conducting quality control checks. In addition, supervisors were trained on managing survey logistics and on documenting and reporting survey progress. A post-training test was conducted to ensure that only those participants who were conversant with conducting the survey were included into the survey team.

North West zonal training was conducted between 17th and 19th January in Access Hotel in Kaduna. Training was conducted for all the states in North West zone apart from Sokoto which joined states in North Central zone. Data collection for the states trained commenced on 21st January 2018, 65 days after conclusion of campaign implementation in North West states. Training in the North East was

conducted between 22nd and 24th January in Gombe, while data collection was conducted between 26th January and 7th February 2018. There was a 39-day lag time between the end of campaign implementation and commencement of data collection in the North East zone states.
Training of enumerators for states from North Central zone was conducted between 10th and 12th March at Sawalino Hotel in Nasarawa state. The lag time between end of measles campaign implementation and commencement of data collection for states in North Central zone was 16 days, well within the one month that had initially been proposed.

Survey implementation dates			
Zone	State	Training	Data collection
NW	Jigawa, Kaduna, Kano, Katsina, Kebbi, Zamfara	17-19 January	21 January to 2 February
NE	Adamawa, Bauchi, Borno, Gombe, Taraba, Yobe, (Sokoto)	22-24 January	26 January to 7 February
NC	Benue, FCT, Nasarawa, Niger, Plateau	10-12 March	14 to 26 March
SS	Akwa Ibom, Bayelsa, Cross River, Delta, Edo, Rivers	5-7 April	9 to 21 April
SE	Abia, Anambra, Ebonyi, Enugu, Imo	11-13 April	15 to 27 April
SW	Ekiti, Lagos, Ogun, Ondo, Osun, Oyo, (Kogi, Kwara)	20-22 April	24 April to 6 May
Survey implementation in Sokoto was conducted with implementation in the North East zone whereas Sokoto geographically belongs to the North West zone while implementation in Kogi and Kwara was conducted with states in South West zone although Kogo and Kwara belong to North Central zone. NW = North West, NE = North East, NC = North Central, SS = South-South, SE = South East, SW = South West			

Data collection for Sokoto, which did not commence at the same time with other states in North West zone commenced 37 days after conclusion of the measles campaign. Training for states in the southern zones were planned to be conducted between 30th March and 1st April for states in South East zone, 10th to 12th April for states in South-South zone and between 20th and 2th April for states in South West zone. These dates were revised since the training dates would clash with the Easter weekend. Training for states in South East zone was conducted on between 11th and 13th April at Top Rank Galaxy Hotel in Enugu. Data collection for states in South East zone was conducted between 14th – 26th April 2018. The lag time between end of measles campaign implementation and commencement of data collection for states in North Central zone was between 16 and 19 days. South-South states zonal training was conducted between 30th March and 1st April 2018 at Uranus Hotel, Uyo, Akwa Ibom. Data collection for states in this zone was conducted between 3rd and 15th April 2018. Data collection in states within the South-South zone commenced 23 days after conclusion of measles campaign implementation. Training and data collection for states in South West zone was conducted alongside training and data collection for Kogi and Kwara states. The dates for training for states in South West were between 20th and 22nd April in Ibadan while data collection was conducted between 24th April and 6th May 2018.

Distribution of field survey staff by zone				
Zone	No. of states	No. of teams per state	Size of field team	Total per zone
NW	7	5	3	105
NE	6	5	3	90
NC	7	5	3	105
SW	6	5	3	75
SE	5	5	3	90
SS	6	5	3	90
Total	37	5	3	555

Data collection was conducted by 5 teams in every state with each team comprising of a supervisor and two enumerators. Each team canvased on average 6 enumeration areas in 14 days.

Questionnaire translation was not conducted as Nigeria being a multi-ethnic country has over 300 widely spoken languages and over 500 dialects. To overcome language barrier between interviewers and respondents, selection of enumerators was conducted so as to ensure diverse national representation of enumerators with knowledge of commonly spoken languages in every state. During training, the participants went through a process of verbally translating and back-translating the questionnaires, identifying translations for all technical terms used in the questionnaire and developing a locally applicable calendar of events for estimating age of respondents who did not know their dates of birth.

Survey quality assurance

There were three levels of quality assurance; Survey teams lead by the supervisors were responsible for quality of data collected. Data were collected on CAPI tablets with inbuilt range checks. Once an enumerator had finished data collection data were transferred to the supervisors CAPI tablet and reviewed the quality and completeness of the data before they were synchronized with the server. NBS state and zonal officers also ensured that the survey was conducted as per the survey guidelines and ensure that logistical support for the teams.

Monitoring by teams comprising of NPHCDA and NBS headquarters and state offices formed the second layer of quality assurance by conducting observations of interviews using checklists.

The third level of monitoring was conducted by monitoring data synchronized to the server and inconsistencies picked up were flagged up to the team supervisor who corrected them before teams left a specific EA.

Data Processing/Tabulation

Data collection was using Census and Survey Program (CSPro) software running on android computers. Range checks and skip patterns were predefined in the data entry program to ensure that only all valid responses were collected and there were responses to all applicable questions ensuring enhanced data quality and completeness of collected data. On completion of the household roster, only age-eligible respondents were presented to the interviewer for interviewing and information had to be collected on all selected respondents before a household completion status was generated by the CAPI software.

Once an interview was completed, data from an enumerators tablet was synchronized with the supervisors' tablet for primary data editing. The supervisor then transmitted the data to a centralized database once all eligible within an enumeration area had been interviewed.

Data cleaning and analysis was conducted using the supplementary immunisation activity (SIA) module of Vaccination Coverage Quality Indicators (VCQI) software running on Stata version 14 (StataCorp. 2015. *Stata Statistical Software: Release 14*. College Station, TX: StataCorp LP.). All results presented in the report are based on the weighted data to account for the survey sampling design and survey nonresponse.

Design weights were computed as the product of inverse probabilities of selection in the first and second stage. Next, the design weight was adjusted for household non-response and child non-response to get the sampling weights for households and for children, respectively. Non-response was adjusted at the sampling stratum level. After adjusting for non-response, the sampling weights were normalized and post stratified to get the final standard weights that appear in the data files. Post-stratification was conducted by multiplying the normalised weights with the estimated proportion of children aged 9 to 59 months in each stratum. The estimated number of children in each stratum was obtained from recently concluded microplanning activity. The assumed proportion of children aged 9 to 59 months by state is presented in table 1.6.

Bivariate analysis of post measles campaign vaccination coverage, reasons for non-vaccination, AEFI and routine immunisation measles vaccination coverage were presented by residence, gender and zones. Wilson's 95% confidence intervals and upper and lower confidence bounds have been computed throughout the report.

CHAPTER 3

CHARACTERISTICS OF SURVEY RESPONDENTS

This table presents information on the number of households selected and interviewed and the number of children aged 9 to 59 months identified and interviewed. It also provides the response rates for households and children. A more detailed percent distribution of the results of the household and individual interviews by state is presented in table 1 below.

Figure 1: Individual and household response rate [Nigeria, 2018]

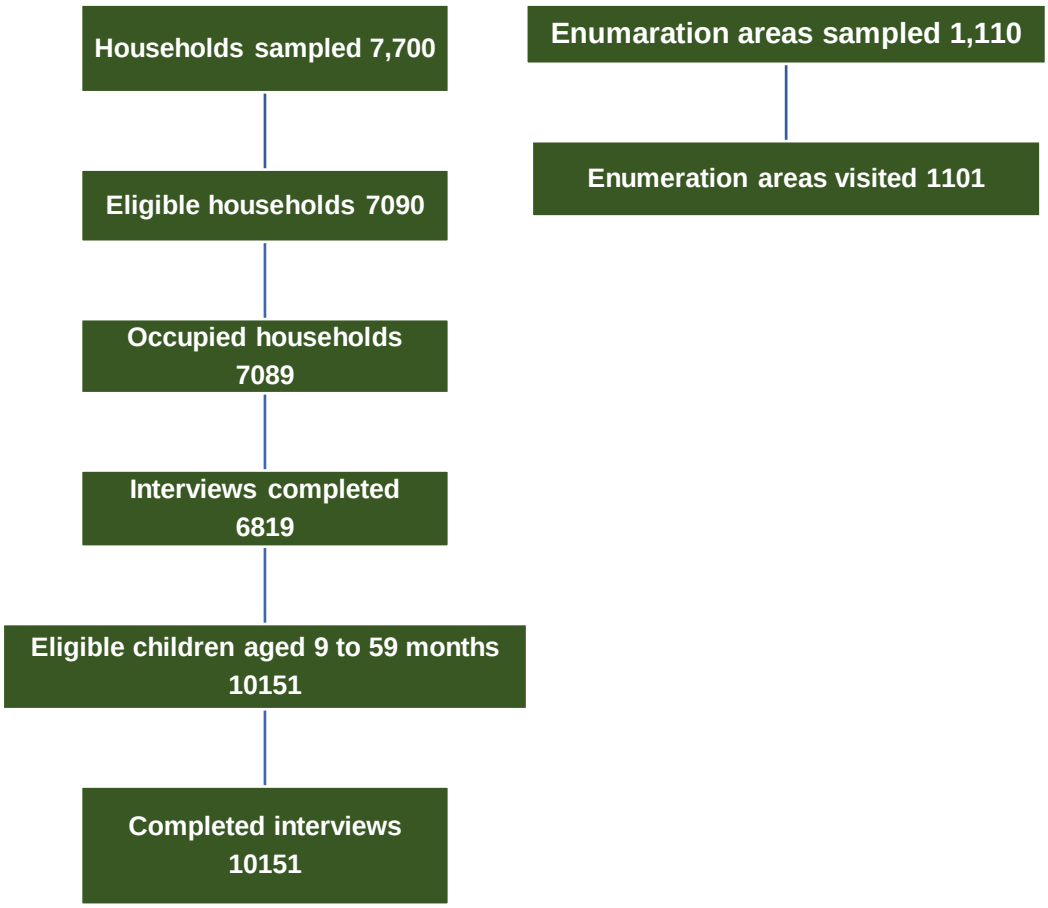


Table 1.1 shows that a total of 1110 enumeration areas were covered nationally. In Nasarawa, Plateau and Rivers states some of the EAs selected during the first phase selection did not have eligible children aged between 9 and 59 months at the time of the SIA. Three EAs were inaccessible in Nasarawa state and were not visited by the interviewing teams. Twenty six percent of all EAs chosen were in urban areas, whereas 74 percent of EAs were in rural areas nationally. Lagos state, Ekiti state and Abuja were leading in proportion of urban EAs with 93 percent, 87 percent and 73 percent of EAs being in urban areas respectively.

Table 1.1 Distribution of enumeration areas by state and urban- rural domain

State	Enumeration areas planned	Enumeration areas covered				
		Urban		Rural		Total
		%	N	%	N	
Nigeria	1110	25.7	283	74.3	818	1101
Abia	30	13.3	4	86.7	26	30
Adamawa	30	10.0	3	90.0	27	30
Akwa Ibom	30	3.3	1	96.7	29	30
Anambra	30	30.0	9	70.0	21	30
Bauchi	30	10.0	3	90.0	27	30
Bayelsa	30	10.0	3	90.0	27	30
Benue	30	10.0	3	90.0	27	30
Borno	30	16.7	5	83.3	25	30
Cross River	30	16.7	5	83.3	25	30
Delta	30	40.0	12	60.0	18	30
Ebonyi	30	3.3	1	96.7	29	30
Edo	30	40.0	12	60.0	18	30
Ekiti	30	86.7	26	13.3	4	30
Enugu	30	16.7	5	83.3	25	30
Gombe	30	13.3	4	86.7	26	30
Imo	30	3.3	1	96.7	29	30
Jigawa	30	6.7	2	93.3	28	30
Kaduna	30	23.3	7	76.7	23	30
Kano	30	0.0	-	100.0	30	30
Katsina	30	10.0	3	90.0	27	30
Kebbi	30	30.0	9	70.0	21	30
Kogi	30	41.4	12	58.6	17	29
Kwara	30	30.0	9	70.0	21	30
Lagos	30	93.3	28	6.7	2	30
Nasarawa	30	29.2	7	70.8	17	24
Niger	30	10.0	3	90.0	27	30
Ogun	30	50.0	15	50.0	15	30
Ondo	30	50.0	15	50.0	15	30
Osun	30	60.0	18	40.0	12	30
Oyo	30	53.3	16	46.7	14	30
Plateau	30	6.9	2	93.1	27	29
Rivers	30	3.4	1	96.6	28	29
Sokoto	30	10.0	3	90.0	27	30
Taraba	30	16.7	5	83.3	25	30
Yobe	30	20.0	6	80.0	24	30
Zamfara	30	10.0	3	90.0	27	30
FCT	30	73.3	22	26.7	8	30

Table 1.2 below shows the household response rate, distribution of selected, occupied and interviewed households. Nationally, the household response rate was 96.2 percent. The household response rate was generally higher in rural areas compared to urban areas with the response rate being 97.4 percent and 92.6 percent respectively. Notably, the household response rates in Lagos, Ebonyi, Oyo, Abuja and Abia were below 90 percent. Despite a planned sample size of 7 eligible households per EA, this planned sample was only achieved in 8 states. In a majority of the states, there were less than 7 households with eligible children available for selection to the survey and were all selected in the EA.

Table 1.2 Number of households, number of interviews, and response rates, according to residence, [Nigeria, 2018]

Category	Household response[1] rate (%)	Households selected	Households occupied	Households interviewed
Nigeria	96.2	7,090	7089	6819
Urban	92.6	1,791	1790	1658
Rural	97.4	5,299	5299	5161
Abia	89.8	186	186	167
Adamawa	100.0	208	208	208
Akwa Ibom	99.0	205	205	203
Anambra	95.0	179	179	170
Bauchi	100.0	210	210	210
Bayelsa	97.3	184	184	179
Benue	99.5	207	207	206
Borno	99.0	210	210	208
Cross River	91.1	179	179	163
Delta	97.8	180	180	176
Ebonyi	85.6	202	202	173
Edo	98.9	180	180	178
Ekiti	96.8	156	156	151
Enugu	94.5	163	163	154
Gombe	100.0	210	210	210
Imo	91.8	171	171	157
Jigawa	100.0	208	208	208
Kaduna	98.4	190	190	187
Kano	99.0	210	210	208
Katsina	99.0	210	210	208
Kebbi	98.1	210	210	206
Kogi	94.4	162	162	153
Kwara	98.8	166	166	164
Lagos	85.6	201	201	172
Nasarawa	98.2	166	165	162
Niger	99.0	207	207	205
Ogun	95.9	195	195	187
Ondo	93.6	204	204	191
Osun	93.4	152	152	142
Oyo	87.0	184	184	160
Plateau	100.0	193	193	193
Rivers	93.5	169	169	158
Sokoto	99.5	206	206	205
Taraba	97.1	206	206	200
Yobe	100.0	210	210	210
Zamfara	100.0	210	210	210
FCT-Abuja	88.1	201	201	177
North Central	96.8	1,302	1301	1260
North East	99.4	1,254	1254	1246
North West	99.2	1,444	1444	1432
South East	91.1	901	901	821
South South	96.4	1,097	1097	1057
South West	91.8	1,092	1092	1003

Household response rate = sum of weighted households interviewed / sum of weighted selected households

Table 1.3 below shows the response rate for eligible children, the weighted and unweighted number of eligible children and interviewed children nationally, by geopolitical zona and by state.

Table 1.3: Number of children 9 to 59 months, number of interviews, and response rates, according to residence, [Nigeria, 2018]

Category	Eligible children response rate (%)[2]	Number of eligible children aged 9 to 59 months	Number of children aged 9 to 59 months interviewed	Number of eligible children aged 9 to 59 months (weighted)	Number of children aged 9 to 59 months interviewed (weighted)
Nigeria	96.2	10151	10151	35,928,460	35,928,460
Urban	92.6	2244	2244	9,800,275	9,800,275
Rural	97.4	7907	7907	26,128,184	26,128,184
Abia	89.8	222	222	367,055	367,055
Adamawa	100	324	324	726,840	726,840
Akwa Ibom	99	277	277	778,965	778,965
Anambra	95	259	259	1,156,308	1,156,308
Bauchi	100	425	425	1,070,935	1,070,935
Bayelsa	97.3	251	251	328,723	328,723
Benue	99.5	288	288	708,035	708,035
Borno	99	311	311	1,201,034	1,201,034
Cross River	91.1	179	179	703,251	703,251
Delta	97.8	223	223	1,094,154	1,094,154
Ebonyi	85.6	244	244	648,529	648,529
Edo	98.9	231	231	384,935	384,935
Ekiti	96.8	194	194	232,856	232,856
Enugu	94.5	221	221	533,474	533,474
Gombe	100	339	339	624,187	624,187
Imo	91.8	215	215	1,109,637	1,109,637
Jigawa	100	394	394	1,310,598	1,310,598
Kaduna	98.4	289	289	1,498,330	1,498,330
Kano	99	323	323	2,554,456	2,554,456
Katsina	99	409	409	1,741,126	1,741,126
Kebbi	98.1	365	365	848,174	848,174
Kogi	94.4	214	214	652,532	652,532
Kwara	98.8	234	234	404,705	404,705
Lagos	85.6	216	216	3,643,984	3,643,984
Nasarawa	98.2	248	248	776,683	776,683
Niger	99	364	364	1,137,403	1,137,403
Ogun	95.9	236	236	687,745	687,745
Ondo	93.6	243	243	681,566	681,566
Osun	93.4	178	178	927,020	927,020
Oyo	87	204	204	1,115,505	1,115,505
Plateau	100	245	245	1,142,621	1,142,621
Rivers	93.5	173	173	1,073,684	1,073,684
Sokoto	99.5	295	295	1,069,694	1,069,694
Taraba	97.1	270	270	604,166	604,166
Yobe	100	391	391	811,242	811,242
Zamfara	100	398	398	667,548	667,548
FCT, Abuja	88.1	259	259	910,758	910,758
North Central	96.8	1852	1852	5,732,738	5,732,738
North East	99.4	2060	2060	5,038,404	5,038,404
North West	99.2	2473	2473	9,689,925	9,689,925
South East	91.1	1161	1161	3,815,003	3,815,003
South South	96.4	1334	1334	4,363,713	4,363,713
South West	91.8	1271	1271	7,288,676	7,288,676

2 Respondents interviewed/eligible respondents*Household response rate

Table 1.4: Household composition by age group, [Nigeria, 2018]						
	Male		Female		Total	
	Percent	unweighted count	Percent	unweighted count	Percent	unweighted count
Total	100	21194	100	22125	100	43,320
Age category						
0 To 4	26.9	5705	24.7	5463	25.8	11,168
5 To 9	17.4	3679	16.5	3657	16.9	7,334
10 To 14	11.8	2497	10.8	2396	11.3	4,891
15 To 19	7.3	1558	7.1	1560	7.2	3,119
20 To 24	3.7	784	7.1	1560	5.4	2,344
25 To 29	3.8	810	9.0	1993	6.5	2,807
30 To 34	5.5	1159	8.5	1883	7.0	3,041
35 To 39	6.1	1293	6.4	1412	6.2	2,703
40 To 44	6.0	1278	3.8	830	4.9	2,110
45 To 49	3.8	805	2.0	431	2.8	1,235
50 To 54	2.9	613	1.4	299	2.1	910
55 To 59	1.7	360	0.8	179	1.3	542
60 To 64	1.2	256	0.7	162	1.0	416
65 To 69	0.6	129	0.6	142	0.6	273
70 To 74	0.6	138	0.3	64	0.5	199
75 To 79	0.3	70	0.2	42	0.3	113
80+	0.3	61	0.2	53	0.3	117

Table 1.4 above shows the household composition by age group and gender. At the household level, female residents constituted 51.1 % of the total household population. Majority of the household occupants are young with the children aged up to 10 years comprising close to 40 % of the population in the households selected. Figure 2 below shows the age distribution of the composition of household members in the selected households. It is important to remember that only households with an eligible child aged 9 to 59 months at the time of the campaign were included into the survey and not all households.

Figure 2: Age distribution for members in households included for the survey [Nigeria, 2018] *Note that the survey only included households with children aged between 9 and 59 months.

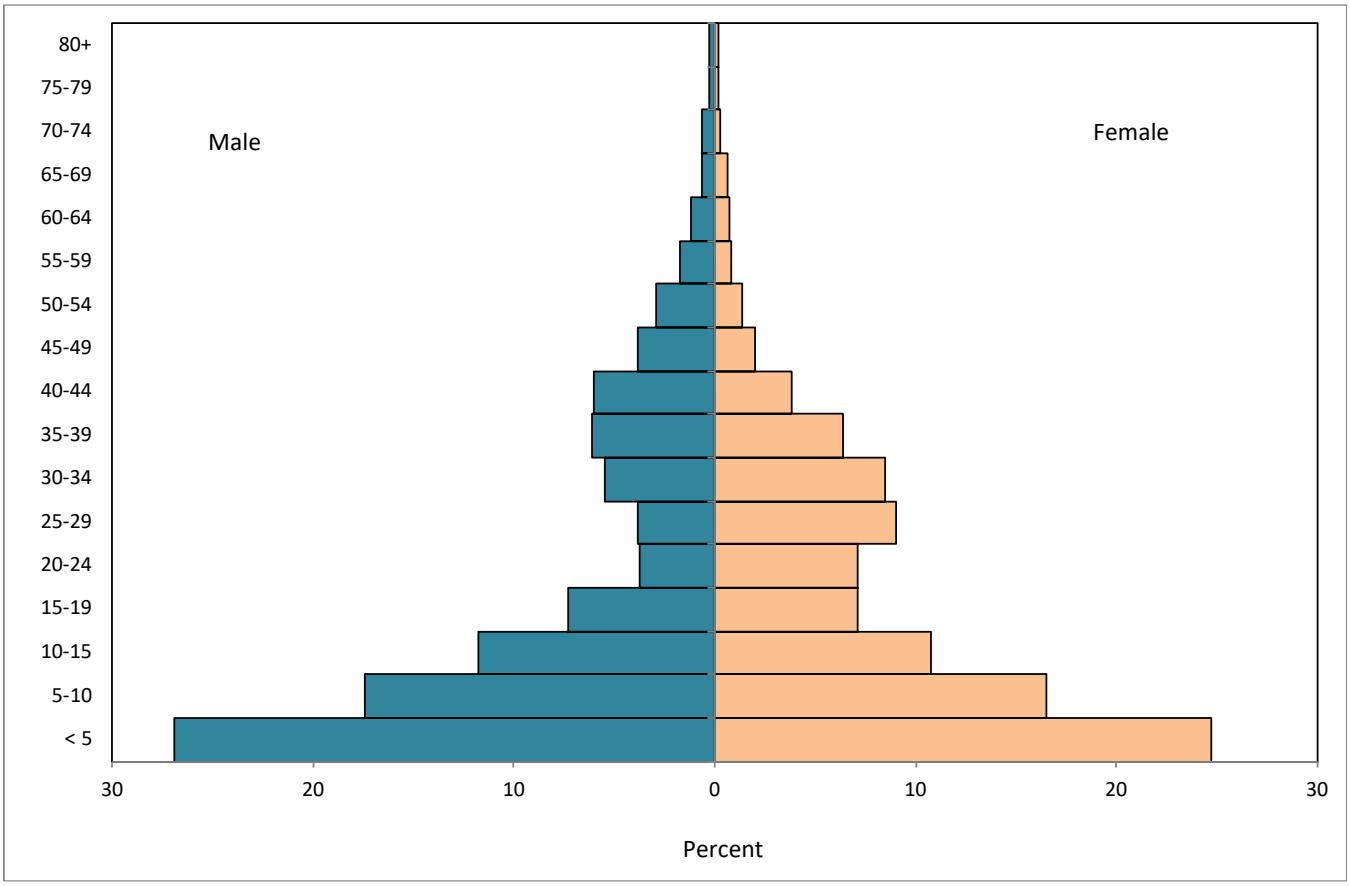


Table 1.5 shows the composition of the children aged 9 months to 59 months by gender and one-year age cohorts and the weighted and unweighted counts of children in this age group.

Table 1.5: Composition of respondents, [Nigeria, 2018]

	Male			Female			Total		
	Percent	unweighted count	weighted count	Percent	unweighted count	weighted count	Percent	unweighted count	weighted count
Total 9 To 59 Months	100	5,157	18,096,164	100	4,996	17,843,382	100	10153	35,939,548
Age category in months									
9 To 11	2.2	115	403,544	2.2	111	396,123	2.2	225	797,858
12 To 23	21.7	1,120	3,928,677	20.7	1036	3,698,933	21.2	2154	7,626,372
24 To 35	23.0	1,188	4,167,547	23.3	1165	4,159,292	23.2	2352	8,327,193
36 To 47	23.8	1,226	4,303,268	25.0	1249	4,460,846	24.4	2475	8,762,062
48 To 59	29.3	1,509	5,294,938	28.7	1436	5,128,188	29.0	2944	10,422,469

Table 1.6 below is a summary of the composition of the weighted sample by state and zone based on post-stratified weights. Lagos state and Kano had the highest weighted percentage at 10.1 percent and 7.1 percent respectively while Ekiti and Bayelsa had the lowest weighted composition at 0.6 percent and 0.9 percent of the total weighted sample respectively.

Table 1.6: Composition of weighted sample by state and zone [Nigeria, 2018]

	Weighted Percent	unweighted count	weighted count
Total	100	10153	35,939,548
Abia	1.0	222	366,583
Adamawa	2.0	324	725,979
Akwa Ibom	2.2	277	779,888
Anambra	3.2	259	1,157,253
Bauchi	3.0	425	1,070,999
Bayelsa	0.9	251	327,050
Benue	2.0	288	708,009
Borno	3.3	311	1,200,381
Cross River	2.0	179	704,415
Delta	3.0	223	1,092,562
Ebonyi	1.8	244	646,912
Edo	1.1	231	384,553
Ekiti	0.6	194	233,607
Enugu	1.5	221	531,905
Gombe	1.7	339	625,348
Imo	3.1	215	1,110,532
Jigawa	3.7	394	1,311,794
Kaduna	4.2	289	1,498,679
Kano	7.1	323	2,562,490
Katsina	4.8	409	1,739,474
Kebbi	2.4	365	848,173
Kogi	1.8	214	654,100
Kwara	1.1	234	406,117
Lagos	10.1	216	3,644,270
Nasarawa	2.2	248	776,294
Niger	3.2	364	1,135,690
Ogun	1.9	236	686,445
Ondo	1.9	243	682,851
Osun	2.6	178	927,240
Oyo	3.1	204	1,114,126
Plateau	3.2	245	1,142,878
Rivers	3.0	173	1,074,592
Sokoto	3.0	295	1,070,999
Taraba	1.7	270	603,784
Yobe	2.3	391	812,234
Zamfara	1.9	398	668,476
FCT, Abuja	2.5	259	909,271
North Central	15.9	1852	5,732,358
North East	14.0	2060	5,038,725
North West	27.0	2473	9,700,084
South East	10.6	1161	3,816,780
South South	12.1	1334	4,366,655
South West	20.3	1271	7,288,541

CHAPTER 4

MEASLES VACCINATION

Proportion of children at home during the campaign

The presentation of measles vaccination coverage information focuses on the age group 9 to 59 months who were the target age group for the measles campaign. Additionally, the source of information on vaccination, reasons for non-vaccination, adverse effects following vaccination and measles coverage from routine immunisation has been presented. Differences between campaign coverage for different subgroups and geopolitical zones have been presented.

Table 2.1a: Percentage of children who were at home when campaign happened, [Nigeria, 2018]

	Yes (%)	No (%)	N
NIGERIA	**97.1**	**2.9**	**10,153**
North Central	98.0	2.0	1,852
Benue	96.9	3.1	288
Kogi	98.6	1.4	214
Kwara	99.1	0.9	234
Nasarawa	96.8	3.2	248
Niger	97.8	2.2	364
Plateau	98.8	1.2	245
FCT Abuja	98.5	1.5	259
North East	95.7	4.3	2,060
Adamawa	97.8	2.2	324
Bauchi	93.9	6.1	425
Borno	94.2	5.8	311
Gombe	95.9	4.1	339
Taraba	96.7	3.3	270
Yobe	96.4	3.6	391
North West	97.2	2.8	2,474
Jigawa	98.2	1.8	394
Kaduna	97.6	2.4	289
Kano	93.5	6.5	324
Katsina	98.8	1.2	409
Kebbi	95.9	4.1	365
Sokoto	96.6	3.4	295
Zamfara	99.0	1.0	398
South East	98.1	1.9	1,161
Abia	98.2	1.8	222
Anambra	98.8	1.2	259
Ebonyi	97.5	2.5	244
Enugu	97.3	2.7	221
Imo	98.6	1.4	215
South South	97.6	2.4	1,335
Akwa Ibom	96.4	3.6	278
Bayelsa	97.6	2.4	251
Cross River	98.3	1.7	179
Delta	100.0	0.0	223
Edo	97.4	2.6	231
Rivers	96.0	4.0	173
South West	96.5	3.5	1,271
Ekiti	97.9	2.1	194
Lagos	98.6	1.4	216
Ogun	96.6	3.4	236
Ondo	95.1	4.9	243
Osun	92.7	7.3	178
Oyo	98.0	2.0	204

Note: This measure is an unweighted summary of proportions from the survey sample. Denominator (N) is the total number of respondents.

Measles vaccination were administered to all children aged 9 months to 59 months who were present during period of the measles campaign. Tables 2.1a and 2.1b show the percentage of children who present during the period of the campaign by state, zone and by selected background characteristics. Nationally, 97.1 percent of children aged 9 to 59 months were present when the measles campaign was conducted. Percentage of eligible children present during the campaign ranges from 93.5 percent in Kano to 100 percent in Delta. There were no marked differences observed in the percentage of eligible children present by selected household characteristics.

Table 2.1b: Percentage of children who were at home when campaign happened, [Nigeria, 2018]

	Yes (%)	No (%)	N
NIGERIA	97.1	2.9	10,153
Sex of child			
Male	97.2	2.8	5157
Female	97.0	3.0	4996
Area			
Urban	96.8	3.2	2244
Rural	97.2	2.8	7909
Age group in months			
9 to 11 months	97.0	3.0	237
12 to 23 months	96.5	3.5	2176
24 to 35 months	97.5	2.5	2341
36 to 47 months	96.9	3.1	2425
48 to 59 months	97.5	2.5	2973

Note: This measure is an unweighted summary of proportions from the survey sample.
Denominator (N) is the total number of respondents.

Sources of information about the campaign

Social mobilization activities are an important component of any campaign as they serve to inform the community of an upcoming measles campaign and also gain acceptance to the campaign. During the 2017-2018 measles campaign, various communication media were used to inform and mobilize the community prior to the campaign. Tables 2.2a and 2.2b below show the primary sources of information about the measles campaign. Close to 4 percent of all respondents reported that they were not informed about the measles campaign. Bauchi and Abia states had the highest proportion of respondents reporting to be uninformed about the campaign at 11.5 percent and 11.3 percent respectively. Nationally, majority of the respondents obtained information about the campaign from community health workers, town criers, village chief, community mobilisers, religious leaders and radio. Only 0.1 percent and 0.7 percent of respondents reported having received information from the internet or from television respectively. There were clear differences in the proportion of respondents who reported to have received information about the campaign from television, radio, community mobilisers or the village chief in urban and in rural area.

Table 2.2a: Sources of information about the campaign, [Nigeria, 2018]

	Not informed (%)	Radio (%)	TV (%)	Internet (%)	Criers / mobilisers (%)	Community health workers (%)	School (%)	Family (%)	Neighbour or friend (%)	Village chief (%)	Religious leader (%)	Community mobiliser (%)	Other (specify below) (%)	N
NIGERIA	3.9	9.6	0.7	0.1	21.7	27.4	4.3	0.8	3.6	12.3	7.2	8.2	0.4	10,153
North Central	3.0	12.9	1.4	0.0	16.3	34.5	3.9	0.1	3.1	7.0	8.5	8.7	0.6	1,852
Benue	6.6	6.9	0.0	0.0	22.2	24.3	5.9	0.0	3.5	5.6	17.0	6.9	1.0	288
Kogi	4.7	27.1	0.0	0.0	24.3	28.5	2.3	0.0	1.9	8.4	1.4	1.4	0.0	214
Kwara	1.7	34.2	3.4	0.0	5.1	17.9	9.4	0.0	4.3	9.0	4.7	9.8	0.4	234
Nasarawa	2.4	16.9	1.2	0.0	9.7	38.3	1.6	0.4	4.0	4.4	2.8	18.1	0.0	248
Niger	4.1	0.5	0.8	0.0	19.8	61.3	0.5	0.0	1.1	5.2	0.8	5.5	0.3	364
Plateau	0.8	4.5	0.4	0.0	18.8	20.8	8.2	0.0	2.4	9.8	30.6	2.9	0.8	245
FCT Abuja	0.0	9.7	4.2	0.0	12.4	37.5	0.8	0.0	5.4	8.1	3.5	16.6	1.5	259
North East	4.8	7.3	0.2	0.1	14.5	33.0	0.6	0.4	2.5	19.8	5.9	10.6	0.3	2,060
Adamawa	1.9	4.6	0.3	0.0	17.9	52.2	0.9	0.0	0.0	9.0	10.5	2.8	0.0	324
Bauchi	11.5	6.1	0.0	0.2	30.4	6.6	0.0	0.7	4.0	22.8	5.2	12.5	0.0	425
Borno	3.2	13.2	0.6	0.3	4.8	42.1	1.0	1.3	7.1	11.9	1.3	11.9	1.3	311
Gombe	3.8	3.8	0.0	0.0	6.2	19.2	0.3	0.0	3.2	45.7	9.4	7.4	0.9	339
Taraba	1.9	2.2	0.7	0.0	17.8	43.0	0.7	0.4	0.0	11.9	8.9	12.6	0.0	270
Yobe	3.8	12.5	0.0	0.0	6.9	43.7	1.0	0.0	0.3	14.8	1.5	15.3	0.0	391
North West	3.1	9.3	0.0	0.0	30.2	15.2	0.6	1.0	2.6	24.8	4.7	8.2	0.3	2,474
Jigawa	0.3	6.3	0.3	0.0	45.9	14.2	0.0	0.0	0.5	17.5	0.5	13.2	1.3	394
Kaduna	2.8	5.2	0.0	0.0	27.7	28.0	0.7	3.8	9.0	7.3	11.8	3.5	0.3	289
Kano	5.9	10.8	0.0	0.0	25.0	11.4	0.6	0.0	3.4	35.5	3.4	3.7	0.3	324
Katsina	1.0	4.9	0.0	0.0	48.9	20.3	2.4	0.0	1.7	9.5	1.7	9.5	0.0	409
Kebbi	5.8	18.9	0.0	0.0	23.8	15.9	0.0	1.1	3.0	23.6	3.0	4.9	0.0	365
Sokoto	3.7	7.1	0.0	0.0	18.6	5.8	0.0	2.4	1.7	49.2	1.0	10.5	0.0	295
Zamfara	3.3	11.6	0.0	0.0	15.6	11.1	0.0	0.5	0.5	34.7	12.1	10.6	0.3	398

Note: This measure is an unweighted summary of proportions from the survey sample.
Denominator (N) is the total number of respondents.

Table 2.2a: Sources of information about the campaign- continuation, [Nigeria, 2018]

	Not informed (%)	Radio (%)	TV (%)	Internet (%)	Criers / mobilisers (%)	Community health workers (%)	School (%)	Family (%)	Neighbour or friend (%)	Village chief (%)	Religious leader (%)	Community mobiliser (%)	Other (specify below (%)	N N
NIGERIA	3.9	9.6	0.7	0.1	21.7	27.4	4.3	0.8	3.6	12.3	7.2	8.2	0.4	10,153
South East	3.7	6.7	0.4	0.0	19.3	27.0	11.2	1.5	3.0	0.9	16.6	9.6	0.1	1,161
Abia	11.3	5.9	0.5	0.0	13.5	25.2	14.4	0.0	3.2	0.0	16.2	9.5	0.5	222
Anambra	2.3	7.7	0.0	0.0	28.2	33.6	15.8	1.9	3.5	0.0	5.8	1.2	0.0	259
Ebonyi	1.2	9.8	0.0	0.0	17.2	21.7	5.7	1.2	1.2	0.0	23.8	18.0	0.0	244
Enugu	0.0	5.0	1.8	0.0	12.7	33.0	3.6	1.4	5.4	0.0	32.6	4.5	0.0	221
Imo	4.2	4.7	0.0	0.0	23.7	20.9	16.3	2.8	1.9	4.7	5.6	15.3	0.0	215
South South	3.8	6.3	1.3	0.3	37.3	25.2	4.4	1.4	4.7	3.4	6.8	4.7	0.3	1,335
Akwa Ibom	5.8	6.1	0.0	0.0	49.6	11.5	3.2	0.4	1.4	5.0	15.5	1.4	0.0	278
Bayelsa	1.2	8.8	1.2	0.0	49.8	20.7	2.4	0.4	4.8	0.8	1.6	8.0	0.4	251
Cross River	2.2	9.5	1.7	0.0	31.3	23.5	2.2	3.4	3.9	0.0	7.8	13.4	1.1	179
Delta	1.8	1.8	2.7	0.0	17.0	54.3	3.6	1.8	8.1	0.4	4.9	3.6	0.0	223
Edo	6.9	8.2	2.2	0.0	36.4	23.4	7.8	0.0	4.3	3.9	3.9	2.6	0.4	231
Rivers	4.6	2.9	0.0	2.3	32.9	20.8	8.1	4.0	6.9	11.0	5.8	0.6	0.0	173
South West	5.2	15.1	1.7	0.1	10.7	34.0	11.6	0.9	7.2	3.1	3.9	5.9	0.7	1,271
Ekiti	7.2	21.1	0.5	0.0	3.1	39.2	12.4	0.0	0.5	0.0	12.4	3.6	0.0	194
Lagos	1.4	6.0	3.2	0.5	10.6	31.9	19.9	0.5	16.2	0.5	0.9	4.6	3.7	216
Ogun	5.9	13.1	0.8	0.0	13.6	42.4	12.3	2.5	5.1	0.0	0.8	3.4	0.0	236
Ondo	4.1	11.1	2.9	0.0	23.5	31.7	2.1	0.0	4.1	9.5	4.1	7.0	0.0	243
Osun	3.9	35.4	2.2	0.0	7.9	19.7	5.6	1.1	11.8	3.9	2.8	5.6	0.0	178
Oyo	8.8	8.3	0.0	0.0	2.0	36.8	18.1	1.0	5.9	4.4	2.9	11.3	0.5	204

Note: This measure is an unweighted summary of proportions from the survey sample.
Denominator (N) is the total number of respondents.

Table 2.2b: Sources of information about the campaign by background characteristics, [Nigeria, 2018]

	Not informed	Radio	TV	Internet	Criers / mobilisers	Community health workers	School	Family	Neighbour or friend	Village chief	Religious leader	Community mobiliser	Other (specify below)	
	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	(%)	N
NIGERIA	3.9	9.6	0.7	0.1	21.7	27.4	4.3	0.8	3.6	12.3	7.2	8.2	0.4	10,153
Sex of child														
Male	3.8	9.4	0.6	0.0	21.8	27.5	4.0	0.8	3.6	12.7	7.1	8.3	0.3	5157
Female	3.9	9.7	0.9	0.1	21.7	27.2	4.6	0.7	3.5	11.8	7.2	8.1	0.5	4996
Area														
Urban	4.1	14.8	2.6	0.0	12.6	32.7	8.3	1.1	5.9	4.0	4.9	8.5	0.6	2244
Rural	3.8	8.1	0.2	0.1	24.3	25.9	3.2	0.7	2.9	14.6	7.8	8.1	0.3	7909
Age group														
9 to 11 months	4.6	11.0	0.8	0.0	21.9	24.9	2.1	1.3	3.0	14.3	7.2	8.9	0.0	237
12 to 23 months	4.8	9.7	0.5	0.1	22.6	27.2	2.1	0.6	3.7	11.7	7.4	9.1	0.4	2176
24 to 35 months	3.3	9.4	0.9	0.0	20.8	28.4	3.8	1.0	4.4	11.9	7.6	8.2	0.3	2341
36 to 47 months	4.0	8.9	0.7	0.1	22.1	27.2	5.2	0.7	3.6	12.8	6.8	7.2	0.7	2425
48 to 59 months	3.4	10.1	0.8	0.1	21.4	27.0	5.8	0.8	2.9	12.4	6.9	8.3	0.2	2973

Note: This measure is an unweighted summary of proportions from the survey sample.
Denominator (N) is the total number of respondents.

Main reason for non-vaccination

Parents or primary caregivers of children who were not vaccinated were asked to provide the main (single) reason why the child who had not been vaccinated did not receive measles vaccination during the 2017-2018 measles campaign. Tables 2.3a and 2.3b provide the reasons for non-vaccination by zone, state and by selected background characteristics. Majority of parents or primary caregivers of children who were not vaccinated reported that either the child was not available during the campaign or that they were not aware of the measles campaign.

Of the children who were not vaccinated, 21.6 % of respondents reported that eligible children were not vaccinated because they did not know about the campaign or they were absent during the period of the campaign. Ekiti and Yobe states had the highest proportion of respondents reporting that they were not aware about the campaign at 81.8 and 47.1 percent respectively while FCT-Abuja and Jigawa states had no respondent reporting to have missed vaccination of their child because of not being aware of the campaign.

Religious belief was the least cited reason for non-vaccination with only 0.3 percent of parents and caregivers of children who did not receive vaccination reporting that their child was not vaccinated due to religious beliefs.

Table 2.3a: Main reason for non-vaccination in the campaign by zone and state- continuation, [Nigeria, 2018]

	Did not Know about the campaign (%)	Confused with other vaccines (believes that child has already been vaccinated) (%)	Subject or parent or guardian were missing (%)	Fear of injection (%)	Lack of confidence in vaccine (%)	Fear of side effects (%)	Site of vaccination not known (%)	Site of vaccination too far (%)	Time of vaccination unsuitable (%)	Waited too long at vaccination site (%)	Missing vaccinator at the site (%)	Not authorised by head of household (%)	Religious beliefs (%)	Sick at time of vaccination (%)	Absent during time of campaign (%)	Too busy to take child (%)	Child ill (%)	Mother ill (%)	Child already received measles vaccine (%)	Other (specify) (%)	N
NIGERIA	21.6	3.1	2.1	3.7	3.3	3.9	1.5	1.3	3.3	1.7	5.0	4.5	0.3	5.4	21.6	4.5	1.0	0.3	2.6	9.2	1,166
North Central	28.5	6.0	1.3	3.3	1.3	1.3	2.0	0.0	1.3	2.0	7.3	0.0	0.7	3.3	18.5	3.3	0.0	0.0	0.7	19.2	151
Benue	19.6	0.0	0.0	4.3	2.2	2.2	2.2	0.0	0.0	4.3	21.7	0.0	2.2	0.0	10.9	0.0	0.0	0.0	2.2	28.3	46
Kogi	44.0	0.0	8.0	4.0	0.0	4.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	4.0	8.0	8.0	0.0	0.0	0.0	12.0	25
Kwara	10.0	50.0	0.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	10.0	10.0	0.0	0.0	0.0	0.0	10.0	10
Nasarawa	11.1	16.7	0.0	0.0	0.0	0.0	5.6	0.0	0.0	0.0	0.0	0.0	0.0	11.1	22.2	5.6	0.0	0.0	0.0	27.8	18
Niger	43.6	0.0	0.0	5.1	2.6	0.0	0.0	0.0	0.0	2.6	0.0	0.0	0.0	0.0	38.5	5.1	0.0	0.0	0.0	2.6	39
Plateau	37.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	12.5	0.0	0.0	0.0	0.0	37.5	8
FCT Abuja	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.0	5
North East	23.9	2.7	2.0	3.9	2.7	1.6	0.4	0.0	2.4	0.8	3.5	4.7	0.8	6.3	27.8	6.7	0.0	0.0	2.0	7.8	255
Adamawa	5.0	5.0	5.0	0.0	15.0	5.0	0.0	0.0	0.0	0.0	25.0	0.0	0.0	10.0	25.0	5.0	0.0	0.0	0.0	0.0	20
Bauchi	33.3	2.2	3.2	8.6	0.0	2.2	1.1	0.0	0.0	0.0	4.3	4.3	1.1	7.5	15.1	7.5	0.0	0.0	3.2	6.5	93
Borno	13.7	1.4	1.4	2.7	1.4	1.4	0.0	0.0	5.5	0.0	0.0	6.8	1.4	8.2	27.4	12.3	0.0	0.0	1.4	15.1	73
Gombe	5.3	15.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	10.5	0.0	10.5	0.0	0.0	52.6	0.0	0.0	0.0	0.0	5.3	19
Taraba	12.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	0.0	0.0	6.3	0.0	0.0	62.5	0.0	0.0	0.0	0.0	6.3	16
Yobe	47.1	0.0	0.0	0.0	8.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.9	35.3	0.0	0.0	0.0	2.9	2.9	34
North West	16.9	1.8	1.2	5.0	2.1	3.0	1.8	2.1	2.4	4.2	3.0	9.2	0.0	7.1	21.4	5.0	2.4	0.0	1.2	10.4	337
Jigawa	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	12.5	75.0	6.3	0.0	0.0	0.0	6.3	16
Kaduna	13.6	1.7	0.0	5.1	1.7	0.0	0.0	0.0	0.0	13.6	6.8	6.8	0.0	6.8	13.6	6.8	8.5	0.0	1.7	13.6	59
Kano	18.8	0.0	2.5	3.8	7.5	2.5	5.0	0.0	6.3	2.5	1.3	3.8	0.0	5.0	25.0	2.5	1.3	0.0	0.0	12.5	80
Katsina	9.4	3.1	0.0	0.0	0.0	6.3	0.0	0.0	6.3	3.1	15.6	0.0	0.0	9.4	18.8	3.1	3.1	0.0	6.3	15.6	32
Kebbi	30.2	3.2	0.0	1.6	0.0	0.0	1.6	1.6	1.6	1.6	0.0	25.4	0.0	3.2	23.8	3.2	0.0	0.0	0.0	3.2	63
Sokoto	5.3	2.6	0.0	2.6	0.0	5.3	0.0	5.3	0.0	5.3	0.0	15.8	0.0	2.6	13.2	13.2	2.6	0.0	2.6	23.7	38
Zamfara	20.4	2.0	4.1	18.4	0.0	8.2	2.0	8.2	0.0	0.0	0.0	4.1	0.0	16.3	12.2	4.1	0.0	0.0	0.0	0.0	49

Table 2.3a: Main reason for non-vaccination in the campaign by zone and state- continuation, [Nigeria, 2018]

	Did not Know about the campaign (%)	Confused with other vaccines (believes that child has already been vaccinated) (%)	Subject or parent or guardian were missing (%)	Fear of injection (%)	Lack of confidence in vaccine (%)	Fear of side effects (%)	Site of vaccination not known (%)	Site of vaccination too far (%)	Time of vaccination unsuitable (%)	Waited too long at vaccination site (%)	Missing vaccinator at the site (%)	Not authorised by head of household (%)	Religious beliefs (%)	Sick at time of vaccination (%)	Absent during time of campaign (%)	Too busy to take child (%)	Child ill (%)	Mother ill (%)	Child already received measles vaccine (%)	Other (specify) (%)	N
NIGERIA	21.6	3.1	2.1	3.7	3.3	3.9	1.5	1.3	3.3	1.7	5.0	4.5	0.3	5.4	21.6	4.5	1.0	0.3	2.6	9.2	1,166
South East	14.3	5.7	2.9	3.8	15.2	2.9	2.9	1.9	4.8	0.0	7.6	2.9	1.0	7.6	13.3	1.0	1.9	2.9	3.8	3.8	105
Abia	20.0	3.3	3.3	3.3	10.0	0.0	3.3	6.7	6.7	0.0	0.0	3.3	0.0	10.0	10.0	3.3	3.3	6.7	0.0	6.7	30
Anambra	30.8	0.0	0.0	0.0	15.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	23.1	0.0	0.0	0.0	23.1	0.0	13
Ebonyi	11.1	0.0	5.6	0.0	22.2	0.0	0.0	0.0	0.0	0.0	11.1	11.1	0.0	0.0	16.7	0.0	5.6	0.0	5.6	11.1	18
Enugu	0.0	13.6	0.0	0.0	27.3	9.1	9.1	0.0	4.5	0.0	9.1	0.0	0.0	9.1	18.2	0.0	0.0	0.0	0.0	0.0	22
Imo	13.6	9.1	4.5	13.6	4.5	4.5	0.0	0.0	9.1	0.0	18.2	0.0	4.5	9.1	4.5	0.0	0.0	4.5	0.0	0.0	22
South South	28.4	3.5	2.8	2.8	3.5	9.2	0.0	1.4	3.5	0.7	2.1	3.5	0.0	4.3	18.4	5.7	0.7	0.7	1.4	7.1	141
Akwa Ibom	27.5	10.0	0.0	0.0	0.0	0.0	0.0	5.0	0.0	2.5	5.0	2.5	0.0	5.0	22.5	10.0	2.5	0.0	5.0	2.5	40
Bayelsa	0.0	0.0	12.5	18.8	6.3	0.0	0.0	0.0	0.0	0.0	0.0	6.3	0.0	12.5	31.3	6.3	0.0	0.0	0.0	6.3	16
Cross River	29.4	0.0	5.9	0.0	5.9	5.9	0.0	0.0	17.6	0.0	0.0	0.0	0.0	0.0	5.9	0.0	0.0	0.0	0.0	29.4	17
Delta	15.4	0.0	0.0	0.0	7.7	30.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	7.7	15.4	15.4	0.0	0.0	0.0	7.7	13
Edo	42.9	0.0	3.6	3.6	7.1	3.6	0.0	0.0	7.1	0.0	0.0	7.1	0.0	0.0	17.9	3.6	0.0	0.0	0.0	3.6	28
Rivers	37.0	3.7	0.0	0.0	0.0	25.9	0.0	0.0	0.0	0.0	3.7	3.7	0.0	3.7	14.8	0.0	0.0	3.7	0.0	3.7	27
South West	20.3	1.7	3.4	1.7	1.1	7.3	2.8	2.3	7.3	0.0	9.6	1.1	0.0	2.3	23.2	2.3	0.6	0.0	7.9	5.1	177
Ekiti	81.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	9.1	0.0	0.0	0.0	9.1	0.0	11
Lagos	0.0	0.0	8.3	0.0	0.0	0.0	0.0	8.3	8.3	0.0	0.0	0.0	0.0	0.0	16.7	0.0	8.3	0.0	16.7	33.3	12
Ogun	15.0	3.3	8.3	0.0	0.0	11.7	5.0	0.0	8.3	0.0	8.3	1.7	0.0	5.0	16.7	3.3	0.0	0.0	11.7	1.7	60
Ondo	16.7	0.0	0.0	0.0	5.6	16.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.1	0.0	0.0	0.0	0.0	0.0	18
Osun	19.4	0.0	0.0	6.5	0.0	6.5	0.0	9.7	16.1	0.0	6.5	0.0	0.0	0.0	16.1	3.2	0.0	0.0	12.9	3.2	31
Oyo	20.0	2.2	0.0	2.2	2.2	2.2	4.4	0.0	4.4	0.0	22.2	2.2	0.0	2.2	26.7	2.2	0.0	0.0	0.0	6.7	45

Note: This measure is an unweighted summary of proportions from the survey sample.
Denominator (N) is the number of unvaccinated children

Table 2.3b: Main reason for non-vaccination in the campaign by background characteristics, [Nigeria, 2018]

	Did not Know about the campaign (%)	Confused with other vaccines (believes that child has already been vaccinated) (%)	Subject or parent or guardian were missing (%)	Fear of injection (%)	Lack of confidence in vaccine (%)	Fear of side effects (%)	Site of vaccination not known (%)	Site of vaccination too far (%)	Time of vaccination unsuitable (%)	Waited too long at vaccination site (%)	Missing vaccinator at the site (%)	Not authorised by head of household (%)	Religious beliefs (%)	Sick at time of vaccination (%)	Absent during time of campaign (%)	Too busy to take child (%)	Child ill (%)	Mother ill (%)	Child already received measles vaccine (%)	Other (specify) (%)	N
NIGERIA	21.6	3.1	2.1	3.7	3.3	3.9	1.5	1.3	3.3	1.7	5.0	4.5	0.3	5.4	21.6	4.5	1.0	0.3	2.6	9.2	1,166
Sex of child																					
Male	20.4	2.3	2.8	4.4	3.7	4.4	1.4	1.4	3.5	1.7	4.7	4.4	0.5	5.4	19.9	4.5	0.7	0.5	2.3	11.2	573
Female	22.8	3.9	1.3	3.0	3.0	3.4	1.7	1.2	3.2	1.7	5.2	4.7	0.2	5.4	23.3	4.4	1.3	0.2	2.9	7.3	593
Area																					
Urban	24.9	5.0	3.1	2.7	6.1	3.1	1.9	1.5	5.0	0.0	3.4	6.9	0.0	3.4	15.7	3.8	1.5	0.0	4.2	7.7	261
Rural	20.7	2.5	1.8	4.0	2.5	4.1	1.4	1.2	2.9	2.2	5.4	3.9	0.4	6.0	23.3	4.6	0.9	0.4	2.1	9.6	905
Age group																					
9 to 11 months	24.5	2.0	0.0	0.0	0.0	4.1	2.0	0.0	4.1	0.0	8.2	4.1	0.0	6.1	10.2	0.0	0.0	0.0	8.2	26.5	49
12 to 23 months	20.1	5.5	1.0	2.9	3.2	4.5	1.6	1.6	3.2	1.6	3.6	5.8	0.3	4.9	23.4	3.6	1.3	0.6	2.6	8.4	308
24 to 35 months	24.3	1.5	2.7	3.1	3.9	3.5	1.5	1.9	4.2	1.2	5.0	3.9	0.4	6.2	20.8	5.8	1.9	0.4	1.5	6.2	259
36 to 47 months	19.9	1.5	4.1	4.5	4.1	4.1	0.4	1.1	4.1	2.2	5.2	4.1	0.7	4.9	22.1	4.5	0.7	0.4	1.1	10.1	267
48 to 59 months	21.9	3.5	1.1	4.9	2.8	3.2	2.5	0.7	1.8	2.1	5.7	4.2	0.0	5.7	21.9	4.9	0.4	0.0	3.9	8.8	283

Note: This measure is an unweighted summary of proportions from the survey sample.
Denominator (N) is the number of unvaccinated children.

Children who had received measles vaccination before the campaign

Measles vaccination status before the campaign was sought from all respondents, including evidence that measles vaccine had been administered. Tables 2.4a and 2.4b below show proportion of children who received measles vaccination before the 2017-2018 measles campaign. Fifty five percent of all respondents had received measles vaccine before the campaign. Of all respondents' 16.3 percent had card to show they had received measles vaccine before the campaign while 38.8 percent reported that they had received measles vaccine before the campaign from recall.

Table 2.4a: Proportion of children aged 9 to 59 months who had received measles vaccine before the campaign, [Nigeria, 2018]

	Measles vaccination status before campaign				Received measles vaccine before campaign[1]			
	Yes, Date(s) on card (%)	Yes, Recall/History (%)	No (%)	Do Not Know (%)	Yes, by card or recall (%)	95% CI (%)	N	Weighted N
NIGERIA	16.3	38.8	41.9	3.1	55.0	(52.9, 57.2)	10,153	35,939,548
North Central	16.7	35.4	44.4	3.6	52.0	(46.8, 57.2)	1,852	5,732,739
Benue	9.8	29.7	56.8	3.7	39.5	(27.7, 52.6)	288	708,036
Kogi	9.8	45.8	30.8	13.7	55.5	(40.4, 69.7)	214	652,532
Kwara	17.9	48.7	28.6	4.8	66.6	(51.1, 79.2)	234	404,705
Nasarawa	18.9	42.5	36.3	2.3	61.4	(48.1, 73.1)	248	776,683
Niger	17.3	22.8	59.5	0.3	40.1	(25.5, 56.7)	364	1,137,403
Plateau	34.0	39.8	26.2	0.0	73.8	(65.2, 80.9)	245	1,142,621
FCT Abuja	8.9	28.2	59.7	3.1	37.1	(26.4, 49.3)	259	910,758
North East	17.0	37.3	43.8	1.8	54.3	(48.9, 59.7)	2,060	5,038,405
Adamawa	12.6	37.2	49.0	1.2	49.8	(36.0, 63.6)	324	726,840
Bauchi	20.6	14.7	63.8	0.8	35.4	(25.4, 46.9)	425	1,070,935
Borno	12.7	39.4	45.4	2.5	52.2	(39.6, 64.5)	311	1,201,034
Gombe	16.2	41.2	40.8	1.8	57.4	(42.2, 71.4)	339	624,187
Taraba	30.6	39.1	25.8	4.5	69.7	(56.6, 80.2)	270	604,166
Yobe	11.2	57.5	30.1	1.2	68.7	(56.5, 78.8)	391	811,242
North West	12.9	18.3	67.1	1.7	31.2	(27.2, 35.6)	2,474	9,698,450
Jigawa	19.4	16.7	60.3	3.6	36.0	(24.9, 48.9)	394	1,310,598
Kaduna	24.1	22.4	52.1	1.5	46.4	(33.8, 59.5)	289	1,498,330
Kano	19.1	18.6	61.3	1.0	37.7	(27.2, 49.5)	324	2,562,981
Katsina	2.2	13.5	83.8	0.5	15.7	(9.7, 24.3)	409	1,741,126
Kebbi	3.5	25.4	69.9	1.2	29.0	(16.9, 45.0)	365	848,174
Sokoto	17.9	22.5	55.8	3.8	40.4	(29.1, 52.7)	295	1,069,694
Zamfara	8.0	11.9	79.4	0.7	19.9	(12.7, 30.0)	398	667,548
South East	20.6	61.0	14.8	3.6	81.6	(76.9, 85.5)	1,161	3,815,003
Abia	16.1	55.7	22.3	5.9	71.9	(57.3, 83.0)	222	367,055
Anambra	18.0	72.4	7.5	2.1	90.4	(77.7, 96.2)	259	1,156,308
Ebonyi	22.1	51.7	22.4	3.7	73.8	(61.0, 83.6)	244	648,529
Enugu	19.7	68.0	9.6	2.7	87.7	(80.6, 92.4)	221	533,474
Imo	26.8	57.0	12.2	4.0	83.8	(75.4, 89.7)	215	1,109,637
South South	15.6	53.8	26.2	4.5	69.4	(64.9, 73.6)	1,335	4,366,276
Akwa Ibom	13.8	65.0	19.9	1.4	78.7	(68.7, 86.2)	278	781,527
Bayelsa	15.3	51.1	26.5	7.1	66.4	(55.3, 76.0)	251	328,723
Cross River	14.8	51.9	20.4	12.9	66.7	(50.1, 80.0)	179	703,251
Delta	20.9	46.5	30.4	2.3	67.4	(57.0, 76.3)	223	1,094,154
Edo	15.5	60.8	22.4	1.2	76.4	(64.8, 85.0)	231	384,935
Rivers	12.6	41.7	42.4	3.3	54.3	(41.8, 66.3)	173	1,073,684
South West	17.9	50.1	27.1	4.9	68.0	(62.6, 72.9)	1,271	7,288,676
Ekiti	18.5	62.4	16.9	2.2	80.9	(67.7, 89.6)	194	232,856
Lagos	22.5	46.7	23.0	7.9	69.1	(54.0, 81.1)	216	3,643,985
Ogun	15.1	46.3	36.3	2.3	61.4	(51.9, 70.2)	236	687,745
Ondo	19.1	37.4	36.8	6.6	56.5	(40.1, 71.6)	243	681,566
Osun	21.4	56.7	21.3	0.6	78.1	(65.3, 87.1)	178	927,020
Oyo	11.4	55.0	24.2	9.4	66.4	(52.6, 77.8)	204	1,115,505

Abbreviations: CI=Confidence Interval

1 Proportion of children who had received measles vaccine before the campaign from other sources such as routine immunisation

North West Zone had the lowest proportion of children who had received measles vaccine before the campaign at 31.2 percent while South East Zone had the highest proportion of children who had received measles vaccine before the campaign at 81.6 percent.

The proportion of children who received measles vaccine before the campaign range between 15.7 percent in Katsina state to 90.4 percent in Anambra state.

More children aged 9 months to 59 months had received measles vaccine before the 2017-2018 campaign in urban areas compared to rural areas at 64.1 percent and 52.6 percent respectively.

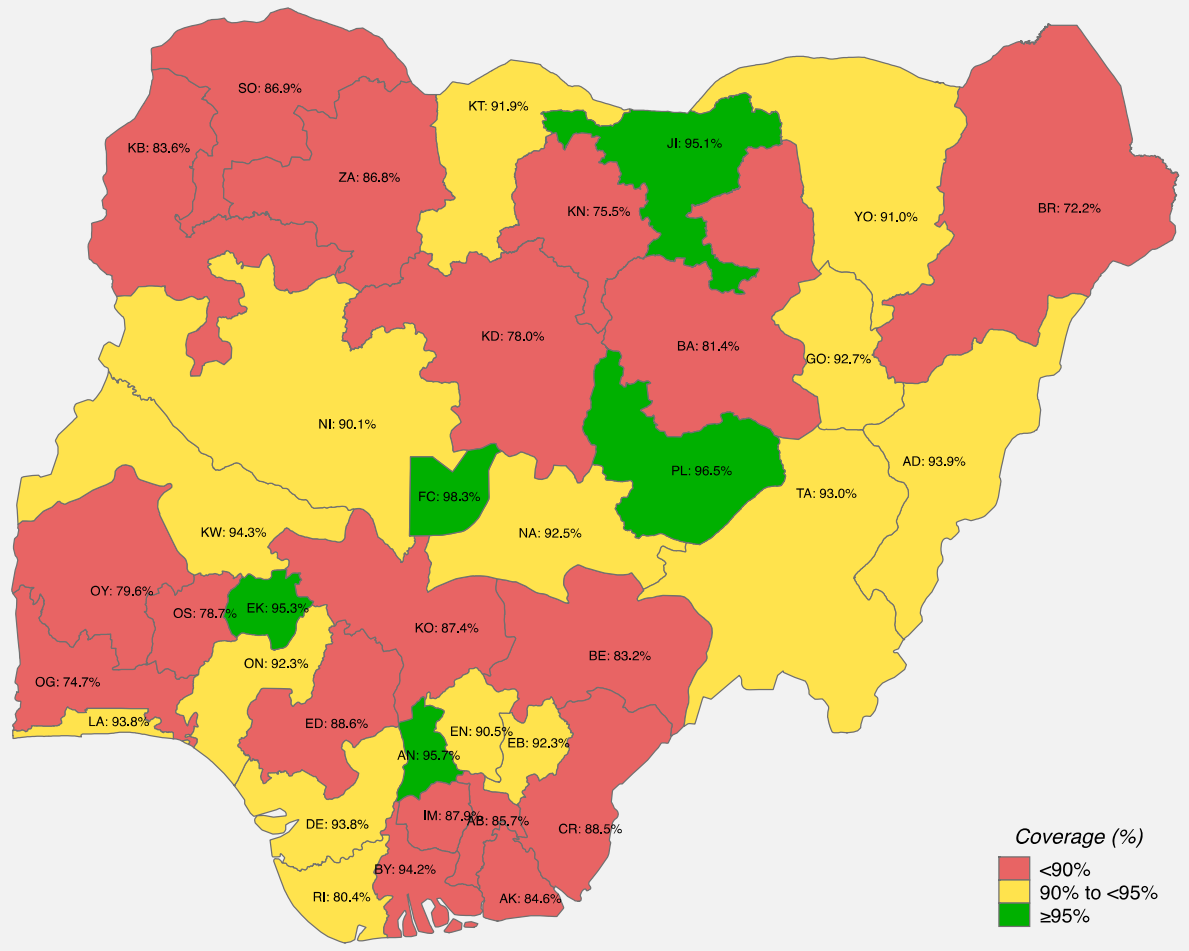
Table 2.4b: Proportion of children aged 9 to 59 months who had received measles vaccine before the campaign, [Nigeria, 2018]

	Measles vaccination status before campaign				Received measles vaccine before campaign[1]			
	Yes, Date(s) on card	Yes, Recall/History	No	Do Not Know	Yes, by card or recall	95% CI		Weighted
	(%)	(%)	(%)	(%)	(%)	(%)	N	N
NIGERIA	16.3	38.8	41.9	3.1	55.0	(52.9, 57.2)	10,153	35,939,548
Sex of child								
Male	18.1	37.3	41.3	3.3	55.4	(52.6, 58.1)	5157	18,096,164
Female	16.3	39.7	40.4	3.5	56.1	(53.3, 58.8)	4996	17,843,382
Area								
Urban	17.8	46.3	30.7	5.2	64.1	(58.2, 69.6)	2244	9,800,275
Rural	17.0	35.6	44.7	2.7	52.6	(49.8, 55.3)	7909	26,139,272
Age group								
9 to 11 months	18.4	27.3	52.4	1.9	45.7	(38.2, 53.4)	237	799,318
12 to 23 months	22.1	31.2	45.1	1.7	53.3	(50.0, 56.5)	2176	7,626,271
24 to 35 months	17.1	36.9	42.2	3.7	54.0	(50.6, 57.4)	2341	8,324,864
36 to 47 months	16.5	41.2	38.2	4.0	57.8	(54.3, 61.2)	2425	8,762,618
48 to 59 months	14.3	43.6	38.1	4.0	58.0	(54.9, 61.0)	2973	10,422,102

Abbreviations: CI=Confidence Interval
1 Proportion of children who had received measles vaccine before the campaign from other sources such as routine immunisation

Proportion of children 9 to 59 months vaccinated during the campaign

Figure 3: Map showing measles campaign coverage by state [Nigeria, 2018]



Information regarding children who received measles vaccination during the campaign was sought through use of card evidence, history and finger-mark. Tables 2.5a and 2.5b report the proportion of children who received measles vaccination during the campaign by state, zone and background characteristics and by the source of evidence of vaccination. Eighty eight percent of all children aged between 9 and 59 months received measles vaccination during the 2017-2018 measles campaign. Evidence of vaccination was 51.3 percent, 36.8 percent and 16.8 percent from card, history and finger-marking respectively.

2.5a: Proportion of children aged 9 months to 59 months who received measles vaccine during the measles campaign, [Nigeria, 2018]

	Vaccinated during SIA, by card	Vaccinated during SIA, by recall	Vaccinated during SIA, by finger-mark.	Vaccinated during SIA (card or recall or finger-mark)		Weighted	
	(%)	(%)	(%)	(%)	95% CI	N	N
NIGERIA	51.3	36.8	16.8	87.5	(86.2, 88.7)	10,153	35,939,548
North Central	53.1	38.4	13.7	91.6	(88.6, 93.9)	1,852	5,732,739
Benue	53	30.2	10.4	83.2	(70.5, 91.1)	288	708,036
Kogi	30.1	57.3	37.2	87.4	(75.7, 93.9)	214	652,532
Kwara	48.3	46	35.9	94.3	(85.5, 97.9)	234	404,705
Nasarawa	58.8	33.7	1.9	92.5	(84.6, 96.5)	248	776,683
Niger	54.5	35.6	1	90.1	(81.6, 94.9)	364	1,137,403
Plateau	68.9	27.5	19.8	96.5	(91.0, 98.7)	245	1,142,621
FCT Abuja	54.5	43.7	1.1	98.3	(95.6, 99.3)	259	910,758
North East	44.2	42.9	12.9	87.1	(84.3, 89.5)	2,060	5,038,405
Adamawa	27.1	66.8	0.9	93.9	(87.1, 97.2)	324	726,840
Bauchi	52.9	28.5	28.3	81.4	(73.6, 87.3)	425	1,070,935
Borno	32	40.3	4.1	72.2	(63.9, 79.3)	311	1,201,034
Gombe	54.5	38.2	29.8	92.7	(87.4, 95.9)	339	624,187
Taraba	58.3	34.7	2.9	93	(86.7, 96.4)	270	604,166
Yobe	39.8	51.2	3.9	91	(85.5, 94.5)	391	811,242
North West	55.6	30.3	7.4	85.9	(83.4, 88.2)	2,474	9,698,450
Jigawa	64.5	30.7	1.1	95.1	(90.5, 97.6)	394	1,310,598
Kaduna	52.4	25.6	6.6	78	(69.2, 84.9)	289	1,498,330
Kano	49	26.5	0.3	75.5	(66.8, 82.5)	324	2,562,981
Katsina	72.6	19.3	16.9	91.9	(85.9, 95.5)	409	1,741,126
Kebbi	60.1	23.6	5.3	83.6	(74.5, 89.9)	365	848,174
Sokoto	42.6	44.3	18.3	86.9	(80.4, 91.5)	295	1,069,694
Zamfara	42.4	44.4	3.9	86.8	(79.8, 91.6)	398	667,548
South East	48.7	42	21.3	90.6	(87.1, 93.2)	1,161	3,815,003
Abia	34.5	51.3	14.4	85.7	(77.6, 91.2)	222	367,055
Anambra	48.4	47.3	29.4	95.7	(90.6, 98.1)	259	1,156,308
Ebonyi	57.2	35.1	22.1	92.3	(85.2, 96.2)	244	648,529
Enugu	44.1	46.5	36.7	90.5	(81.4, 95.4)	221	533,474
Imo	57.5	30.4	3.3	87.9	(74.8, 94.7)	215	1,109,637
South South	54.3	34.4	33.4	88.7	(85.8, 91.1)	1,335	4,366,276
Akwa Ibom	47.5	37.1	15.5	84.6	(77.9, 89.6)	278	781,527
Bayelsa	66.9	27.2	43.9	94.2	(89.6, 96.8)	251	328,723
Cross River	39.5	49	35.5	88.5	(81.4, 93.1)	179	703,251
Delta	63.3	30.5	22.9	93.8	(87.5, 97.0)	223	1,094,154
Edo	54.8	33.7	34.4	88.6	(79.2, 94.0)	231	384,935
Rivers	49.8	30.6	58.4	80.4	(67.0, 89.2)	173	1,073,684
South West	51.1	34.6	25.1	85.7	(82.0, 88.8)	1,271	7,288,676
Ekiti	64.1	31.2	38.3	95.3	(81.8, 98.9)	194	232,856
Lagos	48.2	45.6	25.8	93.8	(90.6, 96.0)	216	3,643,985
Ogun	45.9	28.8	30.2	74.7	(64.3, 82.9)	236	687,745
Ondo	64.7	27.6	15.2	92.3	(84.8, 96.3)	243	681,566
Osun	39.9	38.9	33	78.7	(63.8, 88.6)	178	927,020
Oyo	41.2	38.3	9.2	79.6	(69.4, 87.0)	204	1,115,505

Abbreviations: CI=Confidence Interval
The results in this table are from weighted analysis and the CI calculation considers the sampling design & weights

- North Central and South East Zones had the highest proportion of children aged between 9 and 59 months who received measles vaccine during the campaign at 91.6 and 90.6 percent respectively while South West Zone had the lowest proportion of children receiving measles vaccination during the campaign at 85.7 percent.
- Five states out of 36 state and FCT-Abuja achieved more than the target 95 percent coverage during the campaign. These states were FCT-Abuja (98.3 percent), Plateau (96.5 percent), Anambra (95.7 percent), Ekiti (95.3 percent) and Jigawa (95.1 percent).
- Fourteen states achieved measles campaign coverage of between 90 and 95 percent.
- There was no difference in measles vaccination between boys and girls during the campaign or by urban and rural residence.
- Young children aged between 9 and 11 months had lower measles vaccination during the campaign than children in the older age groups.

Table 2.5b: Proportion of children aged 9 months to 59 months who received measles vaccine during the measles campaign, [Nigeria, 2018]

	Vaccinated during SIA, by card (%)	Vaccinated during SIA, by recall (%)	Vaccinated during SIA, by finger-mark (%)	Vaccinated during SIA (card or recall or finger-mark) (%)	95% CI	Weighted N	Weighted N
NIGERIA	51.2	36.3	16.8	87.5	(86.2, 88.7)	10,153	35,939,548
Sex of child							
Male	51.9	36.1	16.1	88	(86.5, 89.4)	5,157	18,096,164
Female	50.6	36.4	17.6	87	(85.4, 88.5)	4,996	17,843,382
Area							
Urban	47	42	20.9	89	(86.6, 91.0)	2,244	9,800,275
Rural	52.8	34.1	15.3	87	(85.3, 88.4)	7,909	26,139,272
Age group							
9 to 11 months	41.2	34.3	11.8	75.5	(67.2, 82.3)	237	799,318
12 to 23 months	52.8	31.5	16.8	84.3	(81.9, 86.4)	2,176	7,626,271
24 to 35 months	51.3	36.9	17	88.3	(86.2, 90.1)	2,341	8,324,864
36 to 47 months	51	37.2	17.6	88.2	(86.2, 90.0)	2,425	8,762,618
48 to 59 months	51.1	38.6	16.4	89.7	(87.8, 91.3)	2,973	10,422,102

Abbreviations: CI=Confidence Interval
The results in this table are from weighted analysis and the CI calculation considers the sampling design & weights

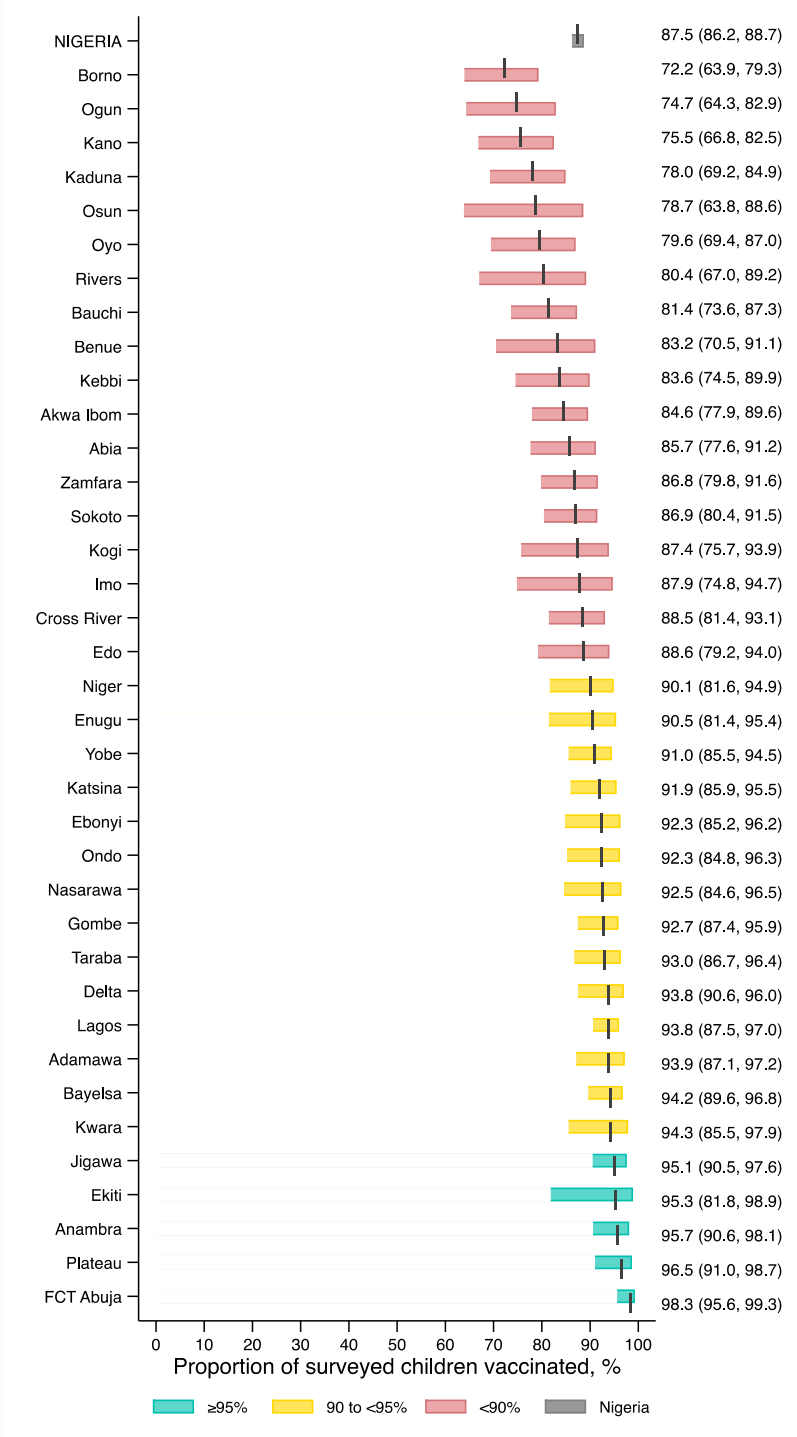
Table 2.5C below shows the proportion of children vaccinated during the measles campaign by whether they had received one or more measles vaccinations before the campaign. Of interest, over 12 million children (82.3 percent of 14,687,613) children who had previously not received measles vaccination were vaccinated during the campaign while 17.7 percent of children (approximately 2.6 million children) who had never received measles vaccination before the campaign remained unvaccinated after the campaign.

Table 2.5c: Proportion of children aged 9 months to 59 months who received measles vaccine during the measles campaign, [Nigeria, 2018]

	Vaccinated during SIA N = 8,884		Not vaccinated during SIA N = 1,269		N(raw)	N(weighted)
	%	95% CI	%	95% CI		
Total						
Nigeria	87.5	(86.2, 88.7)	12.5	(11.3, 13.8)	10,153	35,939,548
Received MCV before campaign						
Had received 1 or more doses of MCV before the campaign	91.6	(90.2, 92.8)	8.4	(7.2, 9.8)	5,569	20,029,850
Had never received MCV before the campaign	82.3	(80.0, 84.4)	17.7	(15.6, 20.0)	4,256	14,687,613
Unknown vaccination status	83.1	(75.4, 88.8)	16.9	(11.2, 24.6)	328	1,222,084

Abbreviations: CI=Confidence Interval
The results in this table are from weighted analysis and the CI calculation considers the sampling design & weights

Figure 4: Graph showing measles campaign coverage and 2-sided 95% confidence interval by state



All states were grouped into three categories based on the point estimates of the measles campaign coverage. The first category in green was for states that achieved 95% or more (green) coverage, the second category in yellow was for states that achieved between 90% and 94.9% (yellow) while the third category on red was for states that achieved coverage of below 90%. Point estimates were used for cut-off due to wide confidence intervals observed.

Proportion of children who received measles vaccination for the first time

For children who had not received measles vaccination during routine immunisation or during previous measles campaign, the 2017-2018 measles campaign provided measles vaccination to these children for the first time. Tables 2.6a and 2.6b shows the proportion and the 95% confidence intervals of children who received measles vaccination for the first time during the campaign. Over a third of all children (twelve million children) in Nigeria aged between 9 and 59 months received measles vaccination for the first time from the measles campaign.

Table 2.6a: Proportion of children aged 9 months to 59 months who received measles vaccine for the first time during the campaign

	SIA Provided Childs First Measles Dose (%)	95% CI	N	Weighted N
NIGERIA	34.8	(32.9, 36.9)	10,153	35,939,548
North Central	39.8	(34.7, 45.0)	1,852	5,732,739
Benue	46.3	(34.7, 58.4)	288	708,036
Kogi	24.7	(16.4, 35.5)	214	652,532
Kwara	27.4	(16.6, 41.7)	234	404,705
Nasarawa	33	(22.7, 45.3)	248	776,683
Niger	52.4	(36.9, 67.4)	364	1,137,403
Plateau	24.4	(17.5, 32.9)	245	1,142,621
FCT Abuja	58.9	(47.5, 69.5)	259	910,758
North East	34.8	(29.7, 40.3)	2,060	5,038,405
Adamawa	44.5	(32.0, 57.7)	324	726,840
Bauchi	48.3	(36.6, 60.2)	425	1,070,935
Borno	26.6	(17.3, 38.4)	311	1,201,034
Gombe	36	(24.0, 50.2)	339	624,187
Taraba	22.2	(14.2, 33.0)	270	604,166
Yobe	25.3	(16.7, 36.4)	391	811,242
North West	55	(50.9, 58.9)	2,474	9,698,450
Jigawa	56.7	(45.5, 67.2)	394	1,310,598
Kaduna	36.8	(26.5, 48.4)	289	1,498,330
Kano	39.1	(29.9, 49.1)	324	2,562,981
Katsina	77.6	(68.5, 84.7)	409	1,741,126
Kebbi	54.2	(42.3, 65.5)	365	848,174
Sokoto	43.8	(35.6, 52.3)	295	1,069,694
Zamfara	66.9	(57.0, 75.6)	398	667,548
South East	11.3	(8.6, 14.6)	1,161	3,815,003
Abia	12.7	(7.0, 22.0)	222	367,055
Anambra	7.1	(3.0, 15.8)	259	1,156,308
Ebonyi	17.4	(10.9, 26.6)	244	648,529
Enugu	8.4	(4.7, 14.5)	221	533,474
Imo	10.3	(5.4, 19.0)	215	1,109,637
South South	22.8	(19.4, 26.7)	1,335	4,366,276
Akwa Ibom	17	(10.6, 26.2)	278	781,527
Bayelsa	23.6	(17.1, 31.8)	251	328,723
Cross River	19.4	(10.8, 32.5)	179	703,251
Delta	28.5	(20.6, 38.0)	223	1,094,154
Edo	19.8	(13.3, 28.4)	231	384,935
Rivers	31.9	(21.3, 44.7)	173	1,073,684
South West	22.2	(17.9, 27.1)	1,271	7,288,676
Ekiti	15.7	(8.6, 26.9)	194	232,856
Lagos	23	(14.1, 35.2)	216	3,643,985
Ogun	26.2	(19.3, 34.5)	236	687,745
Ondo	33.9	(20.3, 50.8)	243	681,566
Osun	17.1	(8.8, 30.5)	178	927,020
Oyo	13.5	(8.9, 19.8)	204	1,115,505

Abbreviations: CI=Confidence Interval
Note: This measure is a population estimate that incorporates survey weights. The CI is calculated with software that take the complex survey design into account.

North West and North Central zones had the largest proportion of children receiving measles vaccine for the first time from the measles campaign at 55 percent and 39.8 percent respectively while South East zone had the lowest proportion of children receiving measles vaccine for the first time from the campaign at 11.3 percent.

Anambra and Enugu states had the lowest proportion of children aged between 9 and 59 months receiving measles vaccination for the first time from the campaign at 7.1 and 8.4 percent respectively, while Katsina, Zamfara, Jigawa, Kebbi, FCT-Abuja and Niger states have more than 50 percent of children aged between 9 and 59 months receiving measles vaccination for the first time during the campaign. In Katsina 77.6 percent of children aged between 9 and 59 months received measles vaccination for the first time from the campaign.

A higher proportion of children received measles vaccination for the first time in rural areas compared to urban areas at 36.2 percent and 26.8 percent respectively.

There was no marked difference in the proportion of children receiving measles vaccination for the first time by gender or by age group.

Table 2.6b: Proportion of children aged 9 months to 59 months who received measles vaccine for the first time during the campaign

	SIA Provided Childs First Measles Dose		N	Weighted N
	(%)	95% CI		
NIGERIA	34.8	(32.9, 36.9)	10,153	35,939,548
Sex of child				
Male	35.8	(33.6, 38.0)	5157	18,096,164
Female	33.8	(31.6, 36.1)	4996	17,843,382
Area				
Urban	27.1	(23.4, 31.0)	2244	9,800,275
Rural	37.1	(34.8, 39.6)	7909	26,139,272
Age group				
9 to 11 months	39.4	(32.7, 46.6)	237	799,318
12 to 23 months	36.9	(34.2, 39.6)	2,176	7,626,271
24 to 35 months	35.7	(33.1, 38.4)	2341	8,324,864
36 to 47 months	33.8	(31.2, 36.4)	2425	8,762,618
48 to 59 months	33.1	(30.6, 35.7)	2973	10,422,102

Abbreviations: CI=Confidence Interval

Note: This measure is a population estimate that incorporates survey weights. The CI is calculated with software that take the complex survey design into account.

Proportion of children 9 to 59 months with SIA cards

As part of vaccination documentation children aged between 9 and 59 months who received measles vaccination were given a SIA card. Nationally, close to 60 percent of all children received a vaccination card during the campaign and was seen during the survey. All children who received cards during the campaign presented the cards to be seen by enumerator at the time of the survey.

Table 2.7a: Proportion of vaccinated children aged between 9 and 59 months who received SIA card during the campaign.

	Vaccinated Respondent Received SIA Card - Seen (%)	Vaccinated Respondent Received SIA Card - Unseen (%)	Vaccinated Respondent Received SIA Card (%)	Number of Vaccinated Respondents
NIGERIA	58.5	0.0	58.5	8,951
North Central	57.7	0.0	57.7	1,696
Benue	60.4	0.0	60.4	240
Kogi	34.8	0.0	34.8	187
Kwara	51.8	0.0	51.8	224
Nasarawa	63.5	0.0	63.5	230
Niger	62.5	0.0	62.5	325
Plateau	68.4	0.0	68.4	237
FCT Abuja	55.7	0.0	55.7	253
North East	51.1	0.0	51.1	1,799
Adamawa	30.9	0.0	30.9	304
Bauchi	63.3	0.0	63.3	332
Borno	41.1	0.0	41.1	236
Gombe	59.4	0.0	59.4	320
Taraba	67.6	0.0	67.6	253
Yobe	44.6	0.0	44.6	354
North West	65.2	0.0	65.2	2,131
Jigawa	68.5	0.0	68.5	378
Kaduna	65.2	0.0	65.2	230
Kano	64.0	0.0	64.0	242
Katsina	82.4	0.0	82.4	376
Kebbi	68.7	0.0	68.7	300
Sokoto	48.2	0.0	48.2	257
Zamfara	53.2	0.0	53.2	348
South East	54.5	0.0	54.5	1,053
Abia	42.1	0.0	42.1	190
Anambra	52.0	0.0	52.0	246
Ebonyi	59.3	0.0	59.3	226
Enugu	53.0	0.0	53.0	198
Imo	65.8	0.0	65.8	193
South South	62.7	0.0	62.7	1,187
Akwa Ibom	56.7	0.0	56.7	238
Bayelsa	71.2	0.0	71.2	233
Cross River	50.3	0.0	50.3	159
Delta	66.7	0.0	66.7	210
Edo	64.5	0.0	64.5	203
Rivers	63.9	0.0	63.9	144
South West	58.5	0.0	58.5	1,085
Ekiti	66.7	0.0	66.7	183
Lagos	50.7	0.0	50.7	201
Ogun	60.7	0.0	60.7	173
Ondo	69.1	0.0	69.1	223
Osun	50.0	0.0	50.0	146
Oyo	49.7	0.0	49.7	159

Note: This measure is an unweighted summary of a proportion from the survey sample.

Table 2.7a shows that North West and South South zones had the largest proportion of children who received cards during the campaign at 65.2 and 62.7 percent respectively. Only slightly over a half of all vaccinated children in North East zone received SIA cards.

One in three vaccinated children in Adamawa and Kogi received SIA cards while four of every five vaccinated children in Katsina received vaccination cards.

There was no difference in the proportion of vaccinated children who received SIA cards by gender. A slightly higher proportion of vaccinated children received SIA cards in rural areas compared to urban areas.

Table 2.7b: Proportion of vaccinated children aged between 9 and 59 months who received SIA card during the campaign.

	Vaccinated Respondent Received SIA Card - Seen (%)	Vaccinated Respondent Received SIA Card - Unseen (%)	Vaccinated Respondent Received SIA Card (%)	Number of Vaccinated Respondents
NIGERIA	58.5	0	58.5	8,951
Sex of child				
Male	58.8	0	58.8	4567
Female	58.3	0	58.3	4384
Area				
Urban	55.0	0	55.0	1969
Rural	59.5	0	59.5	6982
Age group				
9 to 11 months	55.3	0	55.3	188
12 to 23 months	61.0	0	61.0	1861
24 to 35 months	58.6	0	58.6	2073
36 to 47 months	57.9	0	57.9	2150
48 to 59 months	57.5	0	57.5	2679

Life time measles containing vaccines including children who have never been vaccinated

Table 2.8a Lifetime measles containing vaccines doses, by state and background characteristics

	Unvaccinated (%)	Received 1 measles dose (%)	Received 2 or more measles doses (%)	N	Weighted N
NIGERIA	11.2	70.4	18.4	10,153	35,939,548
Sex of child					
Male	10.8	69.7	19.5	5,157	18,096,164
Female	11.6	71.1	17.3	4,996	17,843,382
Area					
Urban	8.6	74.0	17.4	2,244	9,800,275
Rural	12.1	69.1	18.8	7,909	26,139,272
Age group					
9 to 11 months	19.3	65.4	15.2	237	799,318
12 to 23 months	13.2	64.5	22.2	2,177	7,630,645
24 to 35 months	10.8	70.8	18.4	2,341	8,324,864
36 to 47 months	10.7	71.5	17.7	2,425	8,762,618
48 to 59 months	9.7	73.9	16.4	2,973	10,422,102
Zone					
North Central	7.0	74.0	19.0	1,852	5,732,739
North East	13.2	68.3	18.5	2,060	5,038,405
North West	15.2	66.6	18.2	2,474	9,698,450
South East	8.0	69.9	22.2	1,161	3,815,003
South South	10.6	75.1	14.3	1,335	4,366,276
South West	9.8	71.6	18.6	1,271	7,288,676

Abbreviations: CI=Confidence Interval; LCB=Lower Confidence Bound; UCB=Upper Confidence Bound; DEFF=Design Effect; ICC=Intracluster Correlation Coefficient
Note: This measure is a population estimate that incorporates survey weights.

Taking into consideration all measles vaccines received by children between 9 and 59 months be it from the measles campaign or routine immunisation, children were grouped into three categories based on the number of measles vaccinations they had ever received. The first category was for children who remained unvaccinated after the campaign, the second category were children who had only received one measles vaccinated while the third category was for children who had received two or more (2+) measles containing vaccinations.

Nationally, 11.2 percent of all children aged between 9 and 59 months remained unvaccinated following the campaign. More girls (11.6 percent) than boys (10.8 percent) had never received a single measles containing vaccine. A larger proportion of children living in rural areas (12.1 percent) had never received a single measles containing vaccine compared to the proportion of children living in urban areas. The proportion of children who had not received any measles containing vaccines decreased by age of the child with children aged 9 to 11 months having the largest proportion of children not immunised with a measles containing vaccine. North West zone had the largest proportion of children who had not received a measles containing vaccine while Kano, Borno and Ogun states were leading with the proportion of children who had never received a single measles containing vaccine at 24.5 percent, 23.5 percent and 21.5 percent of children in these states having not received a single measles containing vaccine respectively.

Table 2.8b Lifetime measles containing vaccines doses, by state and background characteristics- All children

	Unvaccinated (%)	Received 1measles dose (%)	Received 2 or more measles doses (%)	N	Weighted N
NIGERIA	11.2	70.4	18.4	10,153	35,939,548
State					
Abia	13.7	70.8	15.5	222	367,055
Adamawa	5.1	76.9	17.9	324	726,840
Akwa Ibom	11.7	77.8	10.5	278	781,527
Anambra	3.2	78.9	17.8	259	1,156,308
Bauchi	17.6	62	20.4	425	1,070,935
Bayelsa	5.4	78.3	16.3	251	328,723
Benue	15.5	75.3	9.2	288	708,036
Borno	23.5	66.2	10.3	311	1,201,034
Cross River	11.2	74.4	14.5	179	703,251
Delta	5.3	74.1	20.5	223	1,094,154
Ebonyi	6.9	65.7	27.4	244	648,529
Edo	9.4	74.9	15.6	231	384,935
Ekiti	3.8	74.3	21.9	194	232,856
Enugu	7	75.5	17.5	221	533,474
Gombe	6.8	70.3	22.8	339	624,187
Imo	12.1	59.8	28.1	215	1,109,637
Jigawa	4.3	74.9	20.8	394	1,310,598
Kaduna	19.7	56.9	23.3	289	1,498,330
Kano	24.5	55.7	19.8	324	2,562,981
Katsina	7.7	81.7	10.7	409	1,741,126
Kebbi	16.2	64.1	19.7	365	848,174
Kogi	10.3	75.7	14	214	652,532
Kwara	2.6	74.3	23.1	234	404,705
Lagos	4.8	73.6	21.6	216	3,643,985
Nasarawa	5.6	75.1	19.4	248	776,683
Niger	9.9	72.8	17.3	364	1,137,403
Ogun	21.5	66.6	11.9	236	687,745
Ondo	6.3	73.9	19.8	243	681,566
Osun	13.4	68.7	17.9	178	927,020
Oyo	19.6	68.5	11.9	204	1,115,505
Plateau	3.5	62.1	34.3	245	1,142,621
Rivers	16.6	73.9	9.5	173	1,073,684
Sokoto	12.7	69	18.3	295	1,069,694
Taraba	7	57.4	35.6	270	604,166
Yobe	8.7	78.7	12.6	391	811,242
Zamfara	12.9	74.4	12.7	398	667,548
FCT	1.7	87.1	11.2	259	910,758

Abbreviations: CI=Confidence Interval; LCB=Lower Confidence Bound; UCB=Upper Confidence Bound; DEFF=Design Effect; ICC=Intracluster Correlation Coefficient

Note: This measure is a population estimate that incorporates survey weights.

Tables 2.9 a to 2.9e below represent lifetime measles containing vaccines received by age cohorts of children aged 9 to 11 months (0 completed years), 12 to 23 months (1 completed year), 24 to 35 moths (2 completed years), 36 to 47 moths (3 completed years) and 48 to 59 months (4 completed years of life).

Table 2.9a: Lifetime measles containing vaccines doses for children with 0 completed years (9 to 11 months)

	Age 9 to 11 months; Unvaccinated (%)	Age 9 to 11 months; Received 1 measles dose (%)	Age 9 to 11 months; Received 2 or more measles doses %)	N
NIGERIA	19.3	65.4	15.2	237
Sex of child				
Male	15.1	71.4	13.5	125
Female	23.6	59.4	17.0	112
Area				
Urban	9.5	74.9	15.6	56
Rural	22.7	62.2	15.1	181
State				
Abia	26.1	58.7	15.2	4
Adamawa	27.3	72.7	0.0	8
Akwa Ibom	0.0	67.9	32.1	4
Anambra	21.9	56.2	21.9	4
Bauchi	20.1	65.2	14.6	6
Bayelsa	16.0	67.9	16.0	9
Benue	9.8	90.2	0.0	15
Borno	0.0	93.3	6.7	6
Cross River	0.0	80.7	19.3	5
Delta	21.4	48.6	30.0	5
Ebonyi	42.4	42.4	15.2	9
Edo	32.9	30.5	36.6	7
Ekiti	0.0	62.7	37.3	5
Enugu	0.0	91.6	8.4	6
Gombe	0.0	91.6	8.4	7
Imo	48.6	0.0	51.4	3
Jigawa	0.0	68.9	31.1	2
Kaduna	25.7	74.3	0.0	3
Kano	61.5	38.5	0.0	6
Katsina	40.6	0.0	59.4	4
Kebbi	39.2	60.8	0.0	6
Kogi	29.6	70.4	0.0	3
Kwara	0.0	76.9	23.1	7
Lagos	0.0	100.0	0.0	1
Nasarawa	0.0	66.1	33.9	8
Niger	16.3	62.8	20.9	16
Ogun	20.7	62.1	17.2	8
Ondo	0.0	77.4	22.6	3
Osun	24.1	75.9	0.0	4
Oyo	31.5	68.5	0.0	9
Plateau	17.4	70.3	12.3	8
Rivers	0.0	100.0	0.0	5
Sokoto	19.4	71.4	9.2	10
Taraba	18.3	28.0	53.7	5
Yobe	10.8	71.1	18.1	11
Zamfara	18.4	46.1	35.5	6
FCT	0.0	81.6	18.4	9

Table 2.9b: Lifetime measles containing vaccines doses for children with 1 completed years (12 to 23 months)				
	Age 12 to 23 months; Unvaccinated (%)	Age 12 to 23 months; Received 1 measles dose (%)	Age 12 to 23 months; Received 2 or more measles doses (%)	N
NIGERIA	13.2	64.5	22.2	2,177
Sex of child				
Male	12.5	62.3	25.2	1,125
Female	14.0	66.9	19.1	1,052
Area				
Urban	10.5	66.5	23.0	478
Rural	14.3	63.8	22.0	1,699
State				
Abia	17.9	59.0	23.1	55
Adamawa	7.0	60.0	32.9	66
Akwa Ibom	15.8	65.1	19.1	56
Anambra	2.7	74.4	22.9	64
Bauchi	19.5	63.9	16.6	83
Bayelsa	4.7	68.1	27.2	62
Benue	15.2	73.9	10.8	64
Borno	35.0	57.1	7.9	54
Cross River	7.7	78.4	13.9	27
Delta	5.4	70.4	24.2	51
Ebonyi	4.1	72.2	23.7	56
Edo	9.5	74.8	15.7	56
Ekiti	2.2	73.1	24.7	39
Enugu	7.0	59.6	33.3	44
Gombe	9.4	66.8	23.8	77
Imo	12.7	59.3	28.0	41
Jigawa	3.4	63.7	32.9	81
Kaduna	13.6	58.3	28.1	65
Kano	32.3	44.3	23.4	70
Katsina	10.1	79.5	10.4	86
Kebbi	18.8	65.8	15.4	78
Kogi	5.1	81.8	13.1	51
Kwara	6.6	71.1	22.3	51
Lagos	4.3	62.6	33.0	45
Nasarawa	8.9	66.0	25.1	57
Niger	10.5	67.8	21.7	80
Ogun	33.2	60.4	6.4	49
Ondo	5.8	64.8	29.4	42
Osun	18.7	57.0	24.3	39
Oyo	33.1	49.2	17.7	45
Plateau	1.9	65.2	32.9	56
Rivers	24.3	63.2	12.5	41
Sokoto	13.3	67.2	19.6	74
Taraba	10.9	56.7	32.4	57
Yobe	13.1	72.1	14.8	79
Zamfara	13.1	76.4	10.6	95
FCT	5.6	76.7	17.7	41

Table 2.9c: Lifetime measles containing vaccines doses for children with 2 completed years (24 to 35 months)				
	Age 24 to 35 months; Unvaccinated (%)	Age 24 to 35 months; Received 1 measles dose (%)	Age 24 to35 months; Received 2 or more measles doses (%)	N
NIGERIA	10.8	70.8	18.4	2,341
Sex of child				
Male	10.1	71.4	18.5	1,170
Female	11.5	70.2	18.3	1,171
Area				
Urban	8.4	73.0	18.6	535
Rural	11.7	70.0	18.3	1,806
State				
Abia	18.1	67.1	14.8	53
Adamawa	8.4	81.2	10.4	66
Akwa Ibom	12.6	73.9	13.6	62
Anambra	6.6	79.4	14.0	49
Bauchi	15.5	63.0	21.5	94
Bayelsa	2.4	80.5	17.0	57
Benue	14.9	70.3	14.9	62
Borno	17.6	69.3	13.1	76
Cross River	3.0	75.3	21.7	48
Delta	5.0	75.9	19.2	56
Ebonyi	5.4	61.2	33.4	64
Edo	8.9	74.3	16.8	56
Ekiti	5.8	76.3	17.9	56
Enugu	2.9	82.1	15.0	47
Gombe	7.8	62.5	29.7	75
Imo	17.9	58.9	23.2	63
Jigawa	3.2	77.8	19.0	94
Kaduna	23.6	54.2	22.2	58
Kano	20.6	62.6	16.8	77
Katsina	7.2	83.5	9.3	101
Kebbi	20.9	60.9	18.1	81
Kogi	8.6	73.8	17.6	45
Kwara	0.0	68.6	31.4	54
Lagos	8.4	68.0	23.5	52
Nasarawa	5.8	76.3	18.0	58
Niger	4.8	79.3	15.9	82
Ogun	14.3	72.6	13.1	62
Ondo	7.7	73.1	19.2	56
Osun	15.8	65.5	18.7	39
Oyo	13.7	81.5	4.8	39
Plateau	7.6	56.2	36.1	54
Rivers	15.3	78.2	6.5	47
Sokoto	8.7	69.3	22.1	62
Taraba	3.5	51.8	44.7	55
Yobe	5.8	78.9	15.3	94
Zamfara	17.0	74.5	8.5	78
FCT	0.0	88.0	12.0	69

Table 2.9d: Lifetime measles containing vaccines doses for children with 3 completed years (36 to 47 months)				
	Age 36 to 47 months; Unvaccinated (%)	Age 36 to 47 months; Received 1 measles dose (%)	Age 36 to 47 months; Received 2 or more measles doses (%)	N
NIGERIA	10.7	71.5	17.7	2,425
Sex of child				
Male	11.3	69.3	19.3	1,213
Female	10.2	73.7	16.1	1,212
Area				
Urban	8.9	75.6	15.5	534
Rural	11.5	69.9	18.6	1,891
State				
Abia	13.1	73.7	13.3	47
Adamawa	3.1	78.2	18.7	73
Akwa Ibom	10.4	86.6	3.0	71
Anambra	2.5	75.1	22.5	68
Bauchi	14.0	62.1	23.9	115
Bayelsa	3.3	87.0	9.8	55
Benue	19.8	72.4	7.8	70
Borno	25.8	61.9	12.3	73
Cross River	18.5	75.3	6.2	45
Delta	3.0	73.8	23.3	46
Ebonyi	3.3	72.6	24.0	57
Edo	9.1	76.1	14.8	48
Ekiti	0.0	81.3	18.7	37
Enugu	9.1	72.7	18.2	62
Gombe	7.5	72.5	20.0	81
Imo	2.0	45.0	53.0	34
Jigawa	2.6	82.1	15.3	100
Kaduna	20.7	49.0	30.3	62
Kano	25.2	55.2	19.6	80
Katsina	6.0	83.7	10.3	93
Kebbi	7.6	74.6	17.8	89
Kogi	9.8	77.5	12.7	60
Kwara	0.0	82.4	17.6	56
Lagos	5.1	76.4	18.6	65
Nasarawa	6.3	79.6	14.1	55
Niger	11.0	73.7	15.4	85
Ogun	16.0	70.8	13.3	50
Ondo	5.2	75.0	19.8	68
Osun	14.3	71.6	14.0	37
Oyo	22.6	60.7	16.8	51
Plateau	3.5	62.7	33.8	57
Rivers	12.9	82.6	4.4	43
Sokoto	17.8	68.6	13.5	74
Taraba	6.2	57.9	35.8	67
Yobe	9.5	81.7	8.8	100
Zamfara	18.2	69.2	12.6	98
FCT	2.2	87.9	9.9	53

Table 2.9e: Lifetime measles containing vaccines doses for children with 4 completed years (48 to 59 months)				
	Age 48 to 59 months; Unvaccinated (%)	Age 48 to 59 months; Received 1 measles dose (%)	Age 48 to 59 months; Received 2 or more measles doses (%)	N
NIGERIA	9.7	73.9	16.4	2,973
Sex of child				
Male	9.2	74.1	16.7	1,524
Female	10.2	73.7	16.1	1,449
Area				
Urban	6.9	79.1	14.1	641
Rural	10.7	72.1	17.2	2,332
State				
Abia	4.6	85.4	10.0	63
Adamawa	1.7	83.5	14.8	111
Akwa Ibom	10.1	82.5	7.4	85
Anambra	1.1	87.5	11.4	74
Bauchi	21.2	59.8	19.1	127
Bayelsa	9.3	78.1	12.6	68
Benue	13.4	80.1	6.5	77
Borno	21.8	69.8	8.4	102
Cross River	14.5	70.4	15.1	54
Delta	5.7	78.8	15.5	65
Ebonyi	9.7	61.3	28.9	58
Edo	7.7	79.2	13.1	64
Ekiti	5.8	69.6	24.5	57
Enugu	8.8	81.7	9.5	62
Gombe	4.1	75.2	20.8	99
Imo	9.6	70.4	20.0	74
Jigawa	7.2	75.2	17.6	117
Kaduna	20.9	62.3	16.8	101
Kano	18.5	60.3	21.1	91
Katsina	6.4	83.3	10.3	125
Kebbi	16.5	56.9	26.5	111
Kogi	16.2	69.9	13.9	55
Kwara	3.9	74.1	22.0	66
Lagos	1.3	83.7	15.0	53
Nasarawa	2.3	79.3	18.4	70
Niger	11.6	72.4	16.0	101
Ogun	24.6	62.5	12.9	67
Ondo	6.9	77.8	15.3	74
Osun	5.8	78.1	16.1	59
Oyo	10.2	80.4	9.4	60
Plateau	0.0	62.4	37.6	70
Rivers	15.9	66.6	17.5	37
Sokoto	9.7	70.6	19.7	75
Taraba	6.4	62.0	31.6	86
Yobe	6.9	81.6	11.4	107
Zamfara	5.4	78.5	16.1	121
FCT	0.9	91.9	7.2	87

CHAPTER 5

LOW COVERAGE ENUMERATION AREAS

Figure 5: Map showing coverage and location of enumeration areas nationally

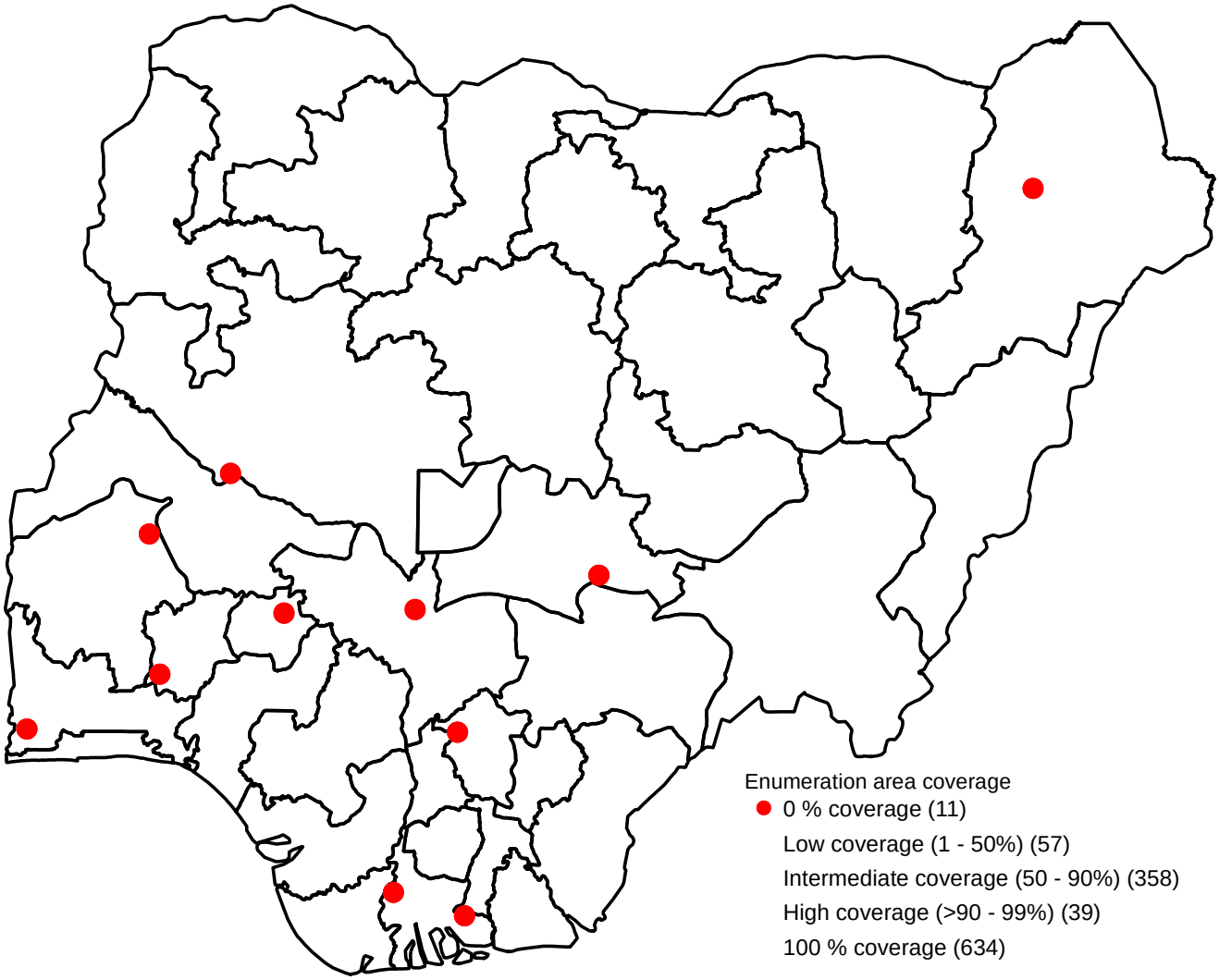


Table 3.1 below shows the coverage level by state. There were 11 enumeration areas where no eligible child was vaccinated and 57 enumeration areas where between 1 and 50 percent of children were vaccinated.

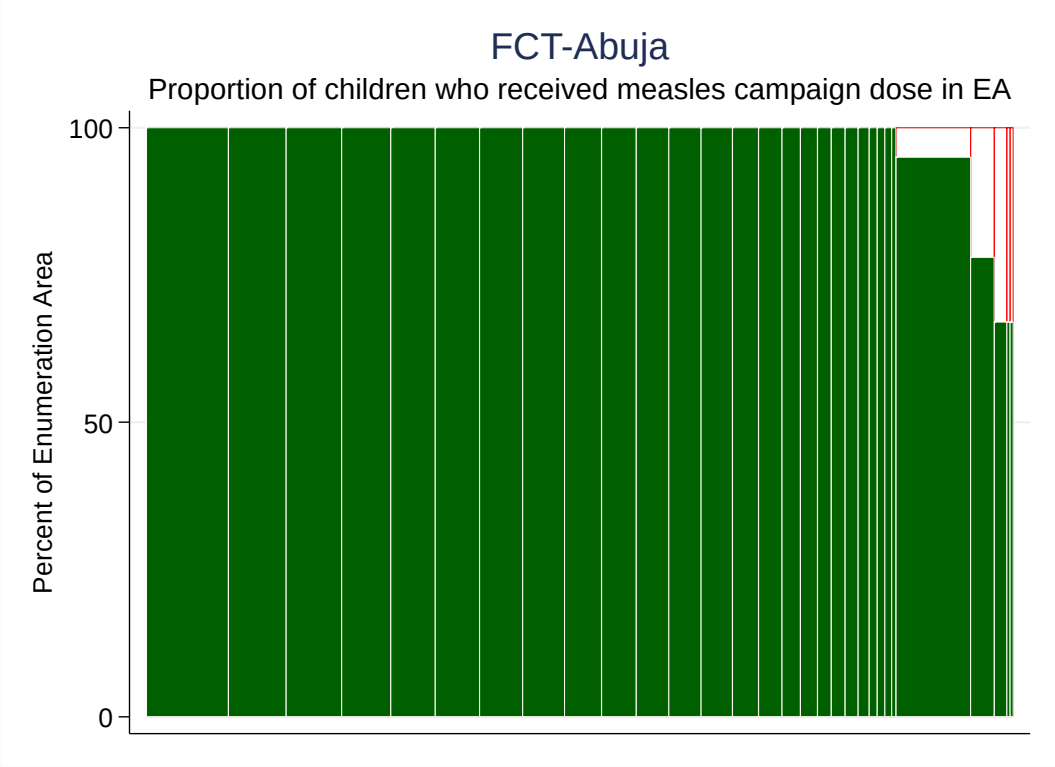
Table 3.1: Distribution of coverage category by enumeration areas

	0 % coverage		Low coverage (1 to 50%)		Intermediate coverage (50 to 90%)		High coverage (>90 to 99%)		100 % coverage		Total	
	%	EA	%	EA	%	EA	%	EA	%	EA	EA	Children
Nigeria	0.6	11	4.9	57	33.8	358	5.6	39	55.1	635	1100	10153
Abia			3.2	1	40.5	13	10.4	2	46.0	14	30	222
Adamawa					21.6	7			78.4	23	30	324
Akwa Ibom			2.9	1	48.6	14			48.6	15	30	278
Anambra			1.9	1	14.7	4	8.9	2	74.5	23	30	259
Bauchi			13.4	4	60.5	18			26.1	8	30	425
Bayelsa					38.7	11			61.3	19	30	251
Benue			9.7	2	34.7	10	3.8	1	51.7	17	30	288
Borno	2.3	1	3.9	1	64.6	21	14.5	3	14.8	4	30	311
Cross River			7.8	3	34.6	8			57.5	19	30	179
Delta					25.1	7			74.9	23	30	223
Ebonyi			4.1	2	23.0	6			72.9	21	29	244
Edo			11.3	4	22.5	6			66.2	20	30	231
Ekiti	4.6	1			7.7	2			87.6	27	30	194
Enugu	0.9	1	4.5	1	29.4	8	5.0	1	60.2	19	30	221
Gombe					29.8	10	4.1	1	66.1	19	30	339
Imo			5.6	1	37.7	11	5.1	1	51.6	17	30	215
Jigawa					19.5	6	9.6	2	70.8	22	30	394
Kaduna			8.0	2	52.9	14	8.6	2	30.5	12	30	289
Kano			15.7	4	62.3	19	10.5	2	11.4	5	30	324
Katsina					27.9	8	12.2	3	59.9	19	30	409
Kebbi			14.8	4	39.2	12	3.0	1	43.0	13	30	365
Kogi	3.7	1	4.7	2	28.0	6			63.5	20	29	214
Kwara					15.4	5	5.6	1	79.1	24	30	234
Lagos					41.7	12	5.6	1	52.8	17	30	216
Nasarawa	2.0	1			20.6	5	15.7	3	61.7	15	24	248
Niger	3.3	1			25.0	8	18.7	4	53.0	17	30	364
Ogun	3.4	1	20.3	6	47.0	13			29.2	10	30	236
Ondo			2.5	1	25.5	8			72.0	21	30	243
Osun	2.3	1	10.1	3	42.1	12			45.5	14	30	178
Oyo	3.4	1	15.2	5	43.1	11			38.2	13	30	204
Plateau					9.8	3	9.0	2	81.2	24	29	245
Rivers	2.3	2	12.7	4	34.7	8			50.3	15	29	173
Sokoto			2.7	1	44.4	15	13.2	2	39.7	12	30	295
Taraba					26.3	10	4.8	1	68.9	19	30	270
Yobe			2.0	1	43.0	13			55.0	16	30	391
Zamfara			8.0	3	31.7	10	11.6	3	48.7	14	30	398
FCT					6.9	4	8.5	1	84.6	25	30	259

% coverage based on the number of children

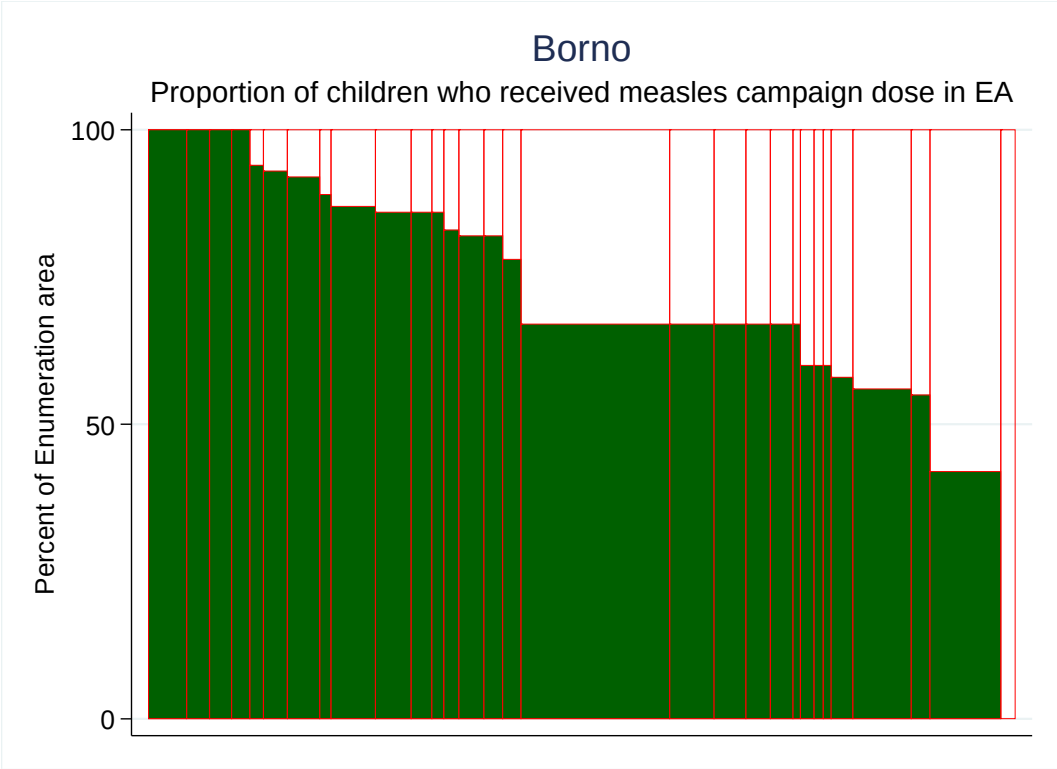
Organ pipe plots for demonstrating coverage with an enumeration area

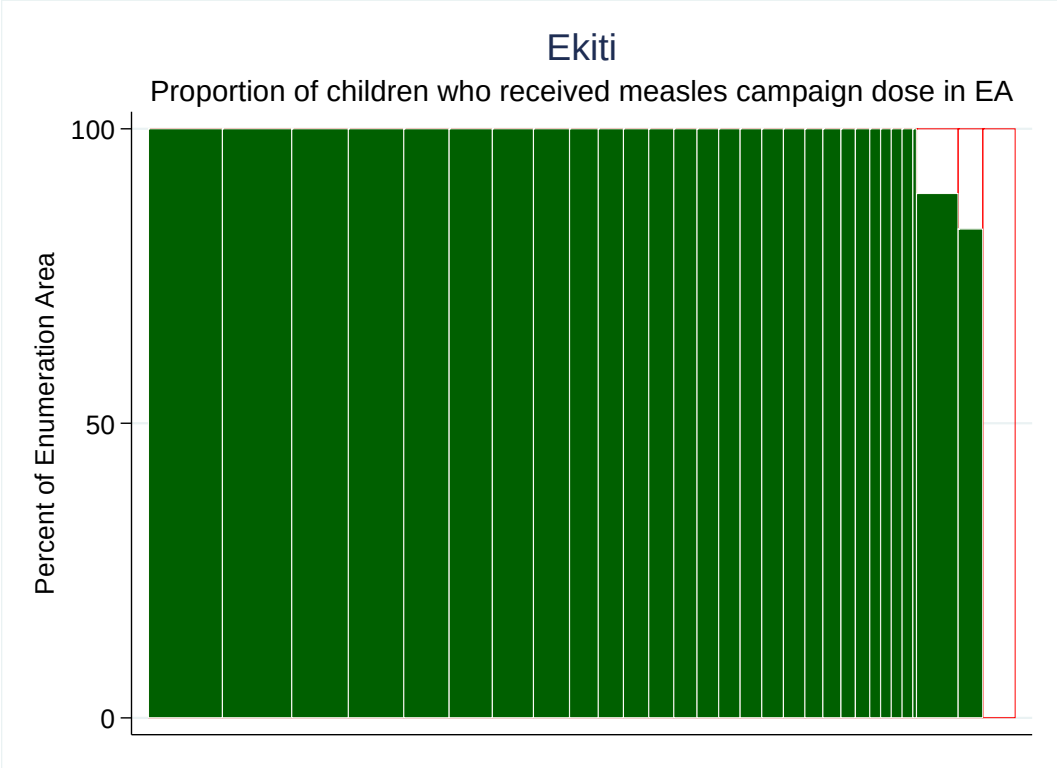
Organ pipe plots (OPPs) can be used for demonstrating coverage at the enumeration area (cluster) level. OPPs consist of a series of vertical bars, the coloured portion of the bar represents proportion of the surveyed respondents in the enumeration area who were found to be vaccinated. The width of each bar is proportional to the sum of survey weights and are sorted left to right in descending order of enumeration area level coverage. Below is an organ pipe plot for FCT- Abuja which had the highest post measles campaign vaccination coverage showing nearly all bars fully coloured (100 percent coverage at the enumeration area) and five enumeration areas not attaining 100 percent coverage.

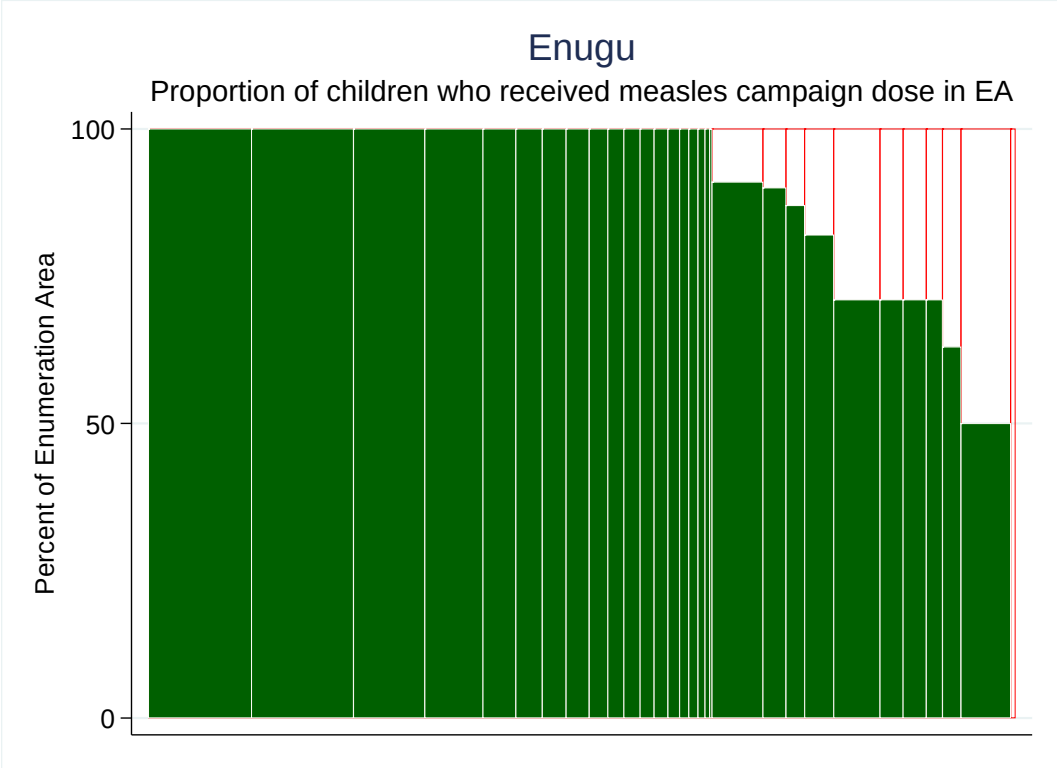


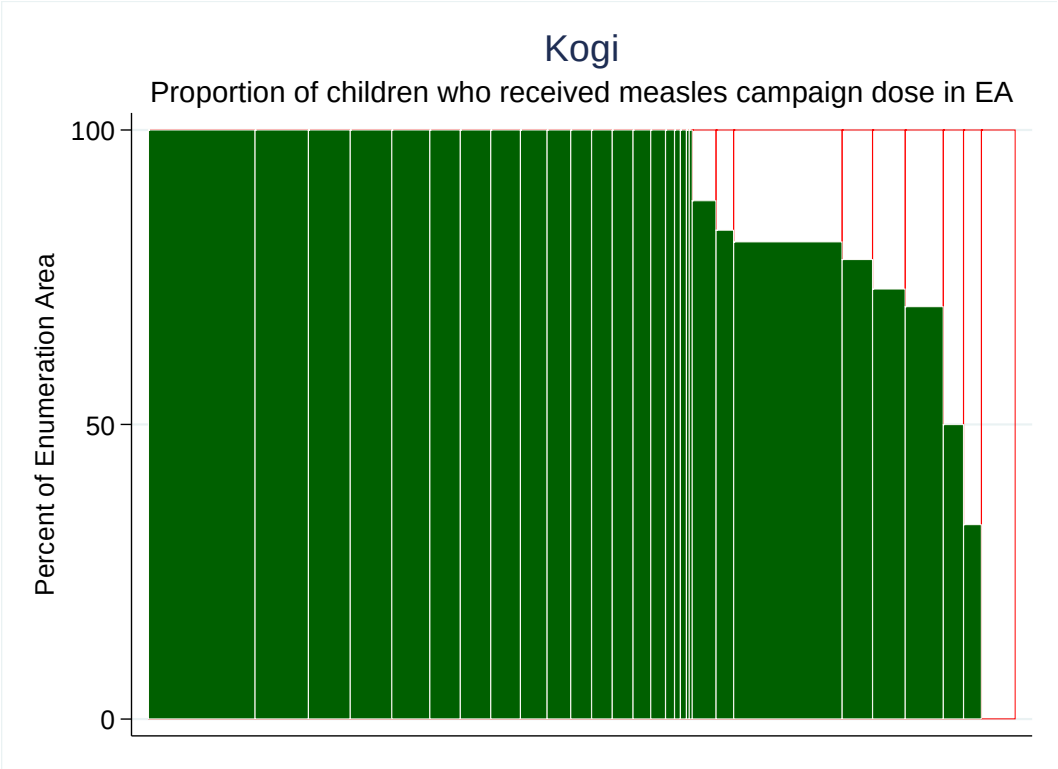
Below is a sample of organ pipe plots for states with low coverage enumeration areas including enumeration areas where no child was vaccinated.

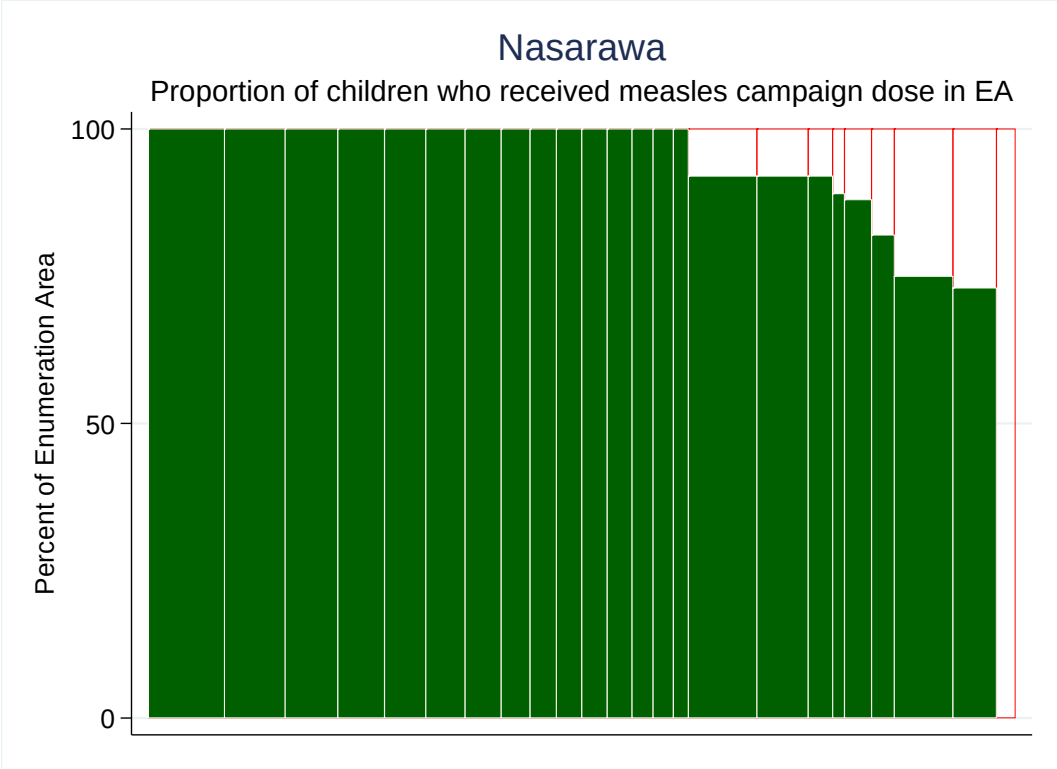
Sample organ pipe plots for states with low coverage enumeration areas

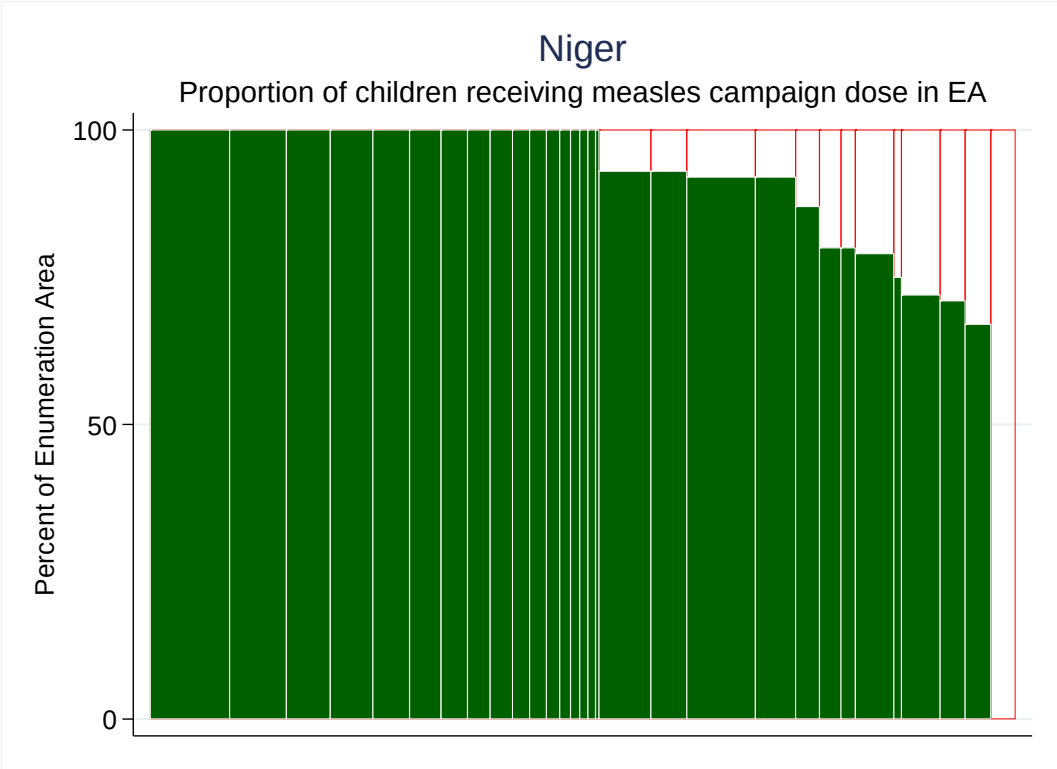


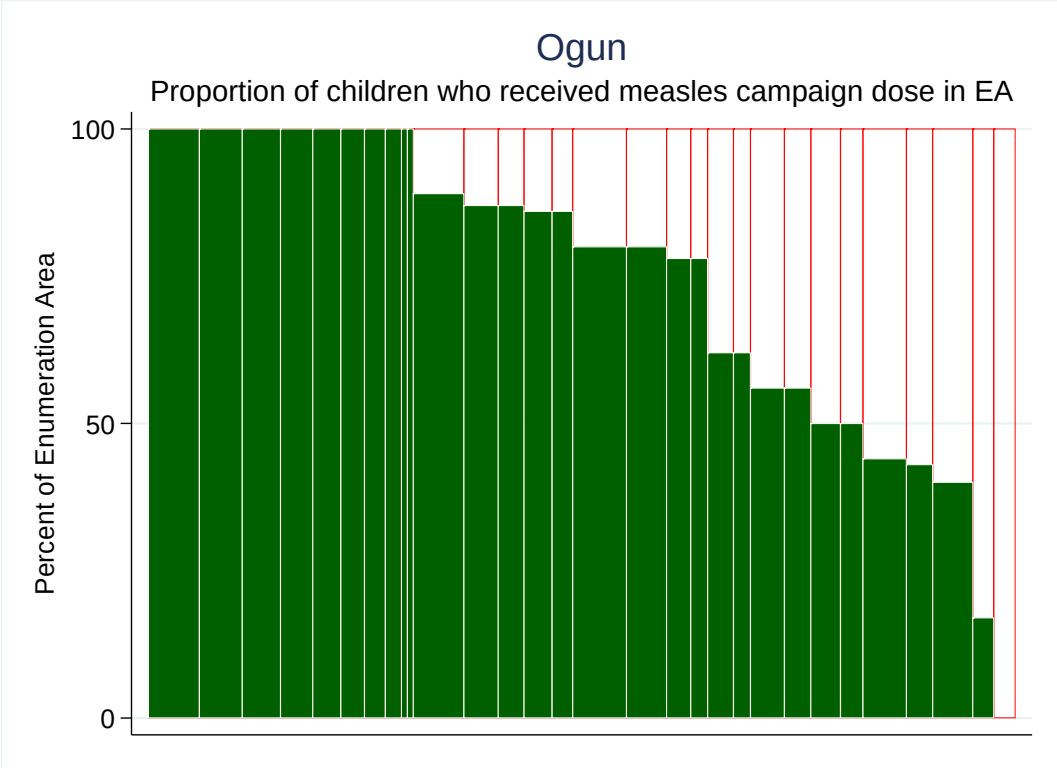


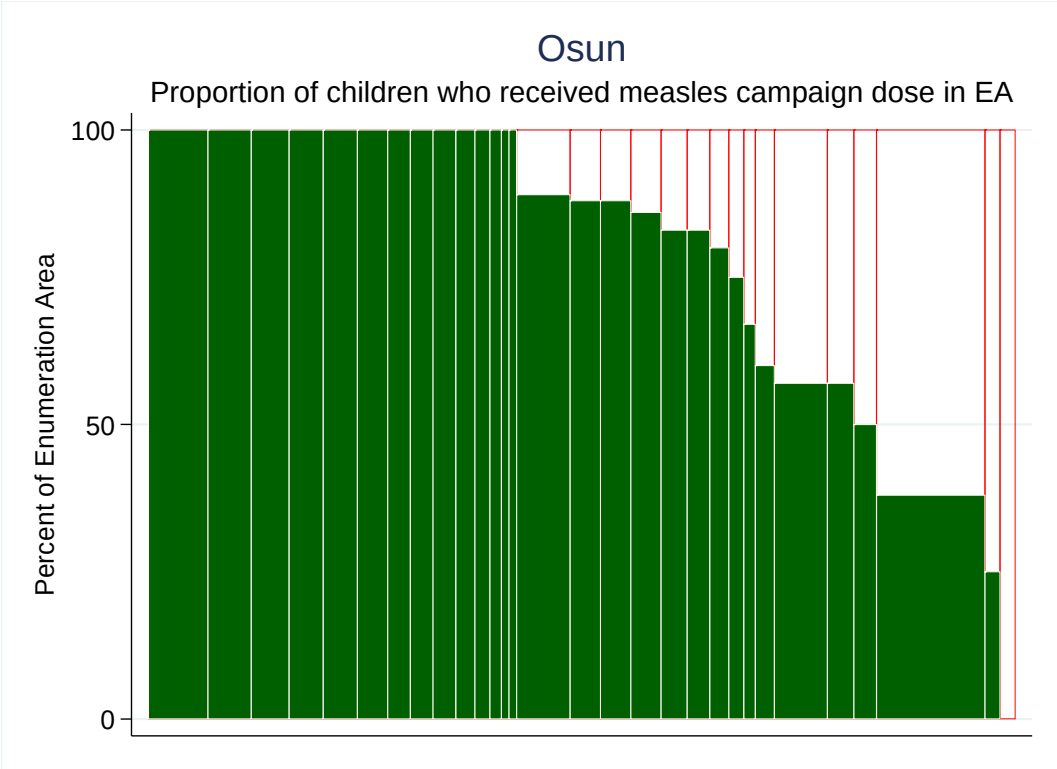

Enugu
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0

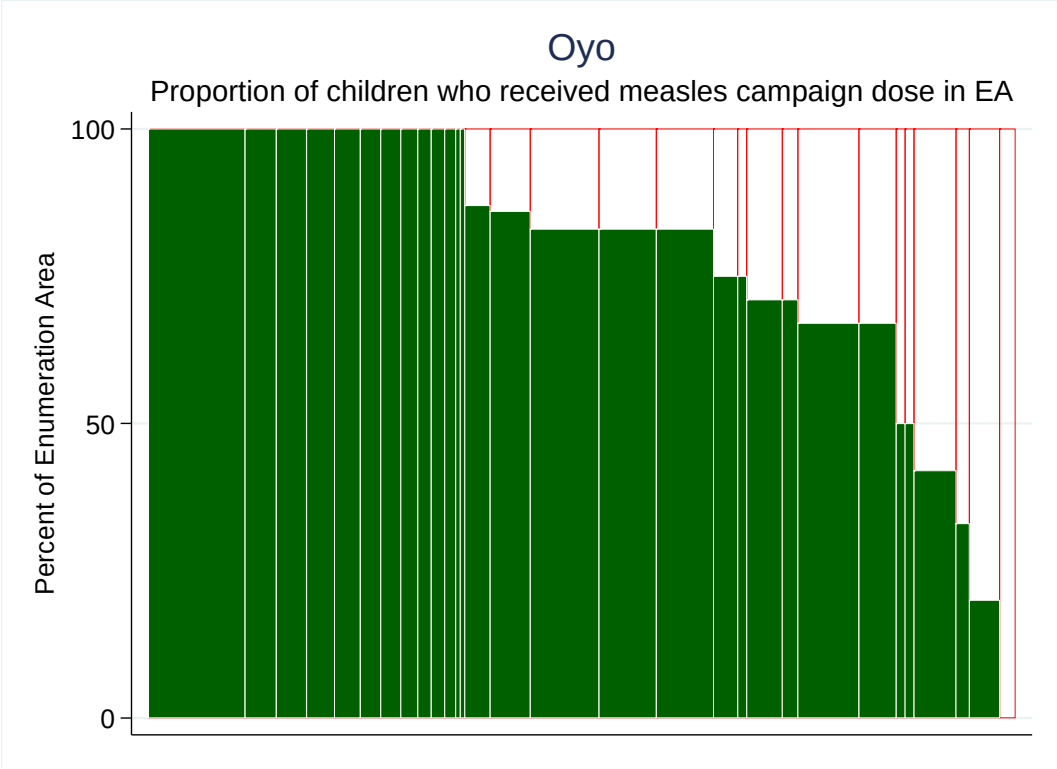

Kogi
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0


Nasarawa
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0


Niger
Proportion of children receiving measles campaign dose in EA
Percent of Enumeration Area
100
50
0


Ogun
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0


Osun
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0


Oyo
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0

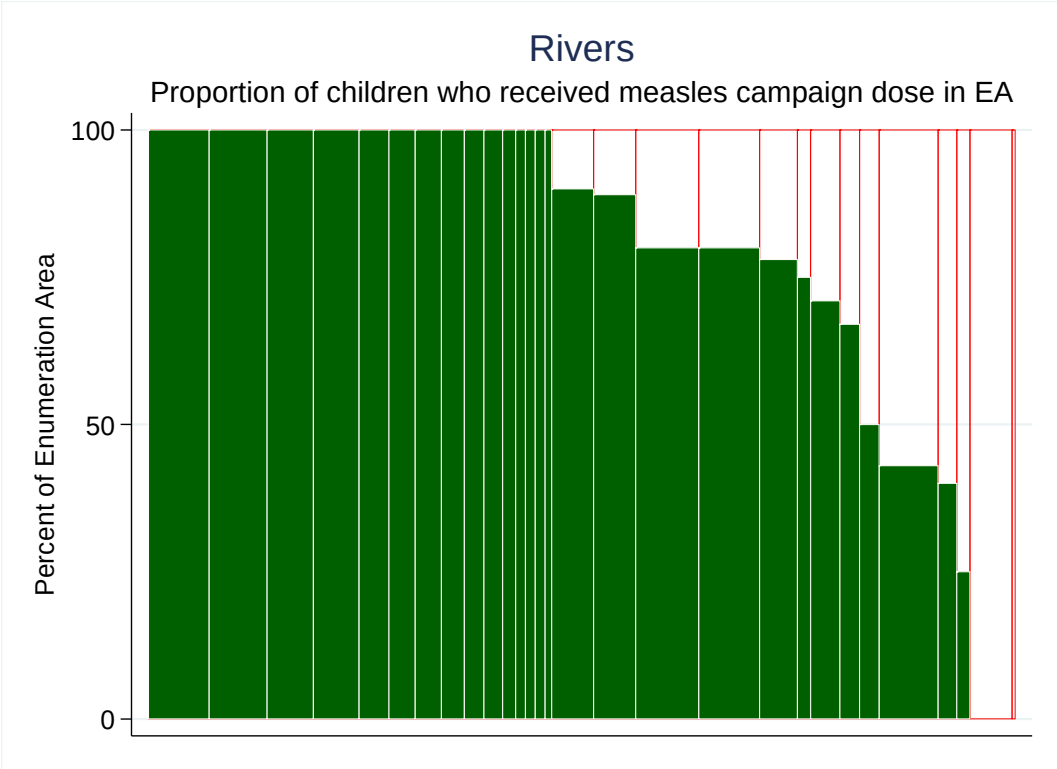

Rivers
Proportion of children who received measles campaign dose in EA
Percent of Enumeration Area
100
50
0

Table 3.2: Primary reasons for non-vaccination by state in enumeration areas with zero or low coverage			
State	Reason 1	Reason 2	Reason 3
Abia	Lack of confidence in vaccine	Other (specify)	Did not Know about the campaign
Akwa Ibom	Confused with other vaccines (believes that child has already been vaccinated)	Child already received measles vaccine	Did not Know about the campaign
Anambra	Did not Know about the campaign		
Bauchi	Did not Know about the campaign	Missing vaccinator at the site	Other (specify)
Benue	Other (specify)	Did not Know about the campaign	Missing vaccinator at the site
Borno	Other (specify)	Absent during time of campaign	Too busy to take child
Cross River	Other (specify)	Did not Know about the campaign	Absent during time of campaign
Ebonyi	Missing vaccinator at the site	Did not Know about the campaign	Child ill
Edo	Did not Know about the campaign	Absent during time of campaign	Lack of confidence in vaccine
Ekiti	Did not Know about the campaign		
Enugu	Lack of confidence in vaccine	Absent during time of campaign	
Imo	Missing vaccinator at the site	Fear of injection	
Kaduna	Absent during time of campaign	Not authorised by head of household	Lack of confidence in vaccine
Kano	Absent during time of campaign	Other (specify)	Did not Know about the campaign
Kebbi	Did not Know about the campaign	Absent during time of campaign	Not authorised by head of household
Kogi	Did not Know about the campaign	Too busy to take child	Other (specify)
Nasarawa	Other (specify)		
Niger	Did not Know about the campaign		
Ogun	Absent during time of campaign	Child already received measles vaccine	Fear of side effects
Ondo	Did not Know about the campaign	Absent during time of campaign	
Osun	Did not Know about the campaign	Child already received measles vaccine	Site of vaccination too far
Oyo	Missing vaccinator at the site	Absent during time of campaign	Other (specify)
Rivers	Did not Know about the campaign	Fear of side effects	Absent during time of campaign
Sokoto	Too busy to take child	Waited too long at vaccination site	Other (specify)
Yobe	Absent during time of campaign	Did not Know about the campaign	
Zamfara	Site of vaccination too far	Fear of injection	Fear of side effects

Table 3.2 After isolating the states with zero coverage EAs and low coverage enumeration areas, the table presents the three most frequent reasons for non-vaccination in those enumeration areas. In some state only one or two reasons are provided for non-vaccination. The reasons "Did not know about the campaign", "Absent during time of campaign" and "Other" were the most common reasons provided for non-vaccination. These reasons are important as the are amenable to effective advocacy and community mobilisation. The absence during the time of campaign may be corrected by microplanning and ensuring that children who missed out on the initial round of campaign are vaccinated at a later date.

CHAPTER 6

ADVERSE EFFECTS FOLLOWING IMMUNISATION

Following vaccination children can develop reactions due to the antigen administered or due to the process of vaccine administration or a combination of both processes. Sometimes adverse effects observed can be incidental events not related to the vaccine or the vaccination process. Following the measles campaign, parents and caregivers to children who received the measles vaccination were asked to report adverse effects observed in children.

Tables 4.1a and 4.1b report the adverse effect following vaccination with measles vaccine during the campaign. These tables have been split into three parts so as to fit within the pages. Nationally, 19.1percent of parents or primary caregivers of children aged 9 to 59 months reported that their children had experienced some form of adverse effect or the other. Generalised rash appearing between 7 and 10 days was the most common adverse effect experienced by 8.8 percent of all respondents. Pain at the injection site and low fever, joint or muscle pain were the other commonly reported adverse effects following vaccination reported by 8.8 and 2.2 percent of respondents respectively.

Table 4.1a: Adverse effects following the vaccination (AEFI) by region (North Central, North East and North West). part 1 of 2

	Did the child develop a reaction in the months following the vaccination? (%)	Fever between 7 and 12 days following vaccination? (%)	General rash between 7 and 10 days following vaccination? (%)	Pain at the site of injection? (%)	Problems with hearing or vision? (%)	Extreme drowsiness, fainting? (%)	Fussiness, irritability, crying for an hour or longer? (%)	Early bruising or bleeding, unusual weakness? (%)	Difficulty in breathing or swallowing? (%)	Itching, especially of feet or hands? (%)	Hives (other itching or irrigation)? (%)	Seizure (black-out or convulsions); or High fever (within a few hours or a few d (%)	Pain or tiredness of eyes, swelling, or a lump where the shot was given?	Headache (severe or continuing)? (%)	Confusion or dizziness? (%)	low fever; joint or muscle pain? (%)	Other (specify) (%)	N	Weighted N
NIGERIA	**19.1**	**8.8**	**1.2**	**7.0**	**0.1**	**0.1**	**0.6**	**0.1**	**0.1**	**0.9**	**0.1**	**0.4**	**0.3**	**0.5**	**0.1**	**2.2**	**0.6**	**10,153**	**35,939,548**
North Central	20.8	7.3	0.7	13.0	0.4	0.0	0.5	0.2	0.2	1.1	0.1	0.3	0.8	0.8	0.1	1.3	0.1	1,852	5,732,739
Benue	11.8	9.8	0.1	1.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.4	288	708,036
Kogi	12.0	6.1	1.5	1.4	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	1.8	0.4	214	652,532
Kwara	35.1	8.6	1.2	26.9	0.0	0.0	0.9	1.0	1.2	11.3	0.0	0.0	0.0	0.6	0.0	0.3	0.0	234	404,705
Nasarawa	7.4	5.1	0.5	1.3	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.3	0.0	0.0	0.0	0.0	0.0	248	776,683
Niger	45.4	17.2	0.8	34.5	0.2	0.0	0.2	0.0	0.0	0.0	0.0	1.5	3.5	3.6	0.4	2.4	0.0	364	1,137,403
Plateau	5.4	1.3	0.4	2.8	0.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	245	1,142,621
FCT Abuja	27.6	2.8	0.5	19.7	1.0	0.0	1.9	0.5	0.4	1.6	0.9	0.0	0.0	0.0	0.0	3.7	0.0	259	910,758
North East	20.3	11.0	1.1	7.8	0.2	0.3	0.8	0.1	0.3	1.8	0.1	0.5	0.2	1.0	0.1	2.0	0.6	2,060	5,038,405
Adamawa	23.4	18.1	0.6	11.0	0.0	0.0	1.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	324	726,840
Bauchi	21.1	8.7	1.0	6.7	0.0	0.2	0.4	0.0	0.3	1.3	0.0	0.0	0.0	0.4	0.4	2.3	0.1	425	1,070,935
Borno	18.5	8.8	1.1	8.5	0.0	0.0	1.4	0.0	0.0	1.4	0.0	0.6	0.5	0.9	0.0	3.4	1.4	311	1,201,034
Gombe	15.9	5.4	0.4	6.2	0.7	0.0	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	0.0	0.0	1.8	339	624,187
Taraba	28.3	22.0	1.7	11.4	1.1	1.2	1.9	0.2	1.5	4.4	0.0	0.3	0.3	2.3	0.0	0.3	0.3	270	604,166
Yobe	16.6	6.8	1.7	3.9	0.0	0.4	0.3	0.3	0.5	1.7	0.5	1.9	0.0	2.9	0.2	3.9	0.0	391	811,242
North West	22.4	13.3	0.5	5.4	0.1	0.1	0.2	0.1	0.0	0.1	0.0	0.4	0.1	0.3	0.0	3.6	0.2	2,474	9,698,450
Jigawa	15.7	12.8	0.5	4.0	0.0	0.0	0.5	0.4	0.0	0.2	0.0	0.0	0.0	0.2	0.0	0.4	0.0	394	1,310,598
Kaduna	16.7	12.4	0.5	5.5	0.3	0.0	0.5	0.0	0.0	0.3	0.0	0.0	0.0	1.0	0.0	0.6	0.0	289	1,498,330
Kano	15.1	6.6	0.3	3.1	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.7	0.1	324	2,562,981
Katsina	23.2	9.4	0.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	7.3	0.0	409	1,741,126
Kebbi	38.4	33.0	1.2	3.2	0.4	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	365	848,174
Sokoto	31.8	15.8	0.4	5.3	0.0	0.4	0.0	0.0	0.0	0.0	0.0	2.2	0.8	0.4	0.0	8.1	1.2	295	1,069,694
Zamfara	38.3	22.4	1.4	17.7	0.0	0.0	0.4	0.3	0.0	0.8	0.0	0.0	0.3	0.6	0.0	0.0	0.0	398	667,548

Note: This measure is a population estimate that incorporates survey weights. The CI is calculated with software that take the complex survey design into account.

Table 4.1a: Adverse effects following the vaccination (AEFI) by region (South-South, South East and South West). part 2 of 2

	Did the child develop a reaction in the months following the vaccination? (%)	Fever between 7 and 12 days following vaccination? (%)	General rash between 7 and 10 days following vaccination? (%)	Pain at the site of injection? (%)	Problems with hearing or vision? (%)	Extreme drowsiness, fainting? (%)	Fussiness, irritability, crying for an hour or longer? (%)	Early bruising or bleeding, unusual weakness? (%)	Difficulty in breathing or swallowing? (%)	Itching, especially of feet or hands? (%)	Hives (other itching or irrigation)? (%)	Seizure (black-out or convulsions); or High fever (within a few hours or a few d (%)	Pain or tiredness of eyes, swelling, or a lump where the shot was given? (%)	Headache (severe or continuing)? (%)	Confusion or dizziness? (%)	low fever; joint or muscle pain? (%)	Other (specify) (%)	N	Weighted N
NIGERIA	**19.1**	**8.8**	**1.2**	**7.0**	**0.1**	**0.1**	**0.6**	**0.1**	**0.1**	**0.9**	**0.1**	**0.4**	**0.3**	**0.5**	**0.1**	**2.2**	**0.6**	**10,153**	**35,939,548**
South East	14.9	5.7	0.8	7.5	0.1	0.0	0.2	0.2	0.0	0.2	0.1	0.0	0.1	0.2	0.0	0.6	0.0	1,161	3,815,003
Abia	13.7	7.4	0.9	2.9	0.3	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.9	0.0	222	367,055
Anambra	8.6	4.4	1.6	3.0	0.0	0.0	0.0	0.0	0.0	0.3	0.5	0.0	0.0	0.0	0.0	0.6	0.0	259	1,156,308
Ebonyi	15.5	1.0	0.0	12.6	0.3	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.5	1.2	0.3	0.3	0.0	244	648,529
Enugu	7.4	1.8	0.8	1.6	0.4	0.0	0.0	0.0	0.0	0.6	0.0	0.3	0.0	0.0	0.0	1.9	0.0	221	533,474
Imo	25.1	11.0	0.5	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	215	1,109,637
South South	19.6	6.6	2.2	6.4	0.0	0.0	1.7	0.0	0.0	0.6	0.1	0.1	0.7	0.6	0.1	2.5	0.4	1,335	4,366,276
Akwa Ibom	20.9	11.2	4.8	0.8	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.6	0.0	4.9	0.0	278	781,527
Bayelsa	17.2	3.7	2.1	3.9	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.7	0.0	0.0	0.0	4.0	3.1	251	328,723
Cross River	15.7	8.1	1.2	3.6	0.0	0.0	0.0	0.0	0.0	1.4	0.0	0.4	0.0	0.3	0.0	3.2	0.0	179	703,251
Delta	20.0	2.4	3.2	8.0	0.0	0.0	6.8	0.0	0.0	0.3	0.3	0.0	2.5	0.0	0.0	1.3	0.0	223	1,094,154
Edo	32.4	13.3	2.1	14.6	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0	0.3	0.3	0.9	0.9	1.9	231	384,935
Rivers	16.8	5.0	0.0	8.6	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	1.7	0.0	1.5	0.0	173	1,073,684
South West	14.4	5.3	2.3	4.0	0.1	0.1	0.5	0.0	0.0	1.6	0.4	0.6	0.4	0.5	0.1	1.9	1.9	1,271	7,288,676
Ekiti	11.5	1.2	3.8	2.6	0.4	0.0	0.0	0.0	0.0	0.4	0.0	0.8	0.0	1.8	0.0	0.4	0.8	194	232,856
Lagos	12.4	4.1	3.5	0.9	0.0	0.0	0.0	0.0	0.0	0.3	0.3	1.2	0.3	0.7	0.0	2.0	3.3	216	3,643,985
Ogun	10.0	1.1	1.4	3.4	0.6	0.0	0.0	0.0	0.0	1.6	1.6	0.0	0.6	0.0	0.4	2.7	1.1	236	687,745
Ondo	30.9	15.2	3.0	13.0	0.0	0.9	2.2	0.0	0.0	7.6	0.4	0.0	0.9	0.6	0.5	1.0	0.9	243	681,566
Osun	18.7	4.6	0.0	11.2	0.0	0.0	0.5	0.0	0.0	1.6	0.0	0.0	0.0	0.0	0.0	2.3	0.0	178	927,020
Oyo	10.3	7.6	0.4	2.9	0.0	0.0	1.4	0.3	0.0	2.3	0.0	0.0	0.6	0.6	0.4	1.8	0.6	204	1,115,505

Note: This measure is a population estimate that incorporates survey weights. The CI is calculated with software that take the complex survey design into account.

Table 4.1b: Adverse effects following the vaccination (AEFI) by selected background characteristics.

	Did the child develop a reaction in the months following the vaccination? (%)	Fever between 7 and 12 days following vaccination? (%)	General rash between 7 and 10 days following vaccination? (%)	Pain at the site of injection? (%)	Problems with hearing or vision? (%)	Extreme drowsiness, fainting? (%)	Fussiness, irritability, crying for an hour or longer? (%)	Early bruising or bleeding, unusual weakness? (%)	Difficulty in breathing or swallowing? (%)	Itching, especially of feet or hands? (%)	Hives (other itching or irrigation)? (%)	Seizure (black-out or convulsions); or High fever (within a few hours or a few d (%)	Pain or tiredness of eyes, swelling, or a lump where the shot was given? (%)	Headache (severe or continuing)? (%)	Confusion or dizziness? (%)	low fever; joint or muscle pain? (%)	Other (specify) (%)	N	Weighted N
NIGERIA	**19.1**	**8.8**	**1.2**	**7**	**0.1**	**0.1**	**0.6**	**0.1**	**0.1**	**0.9**	**0.1**	**0.4**	**0.3**	**0.5**	**0.1**	**2.2**	**0.6**	**10,153**	**35,939,548**
Sex of child																			
Male	20.1	8.9	1.4	7.6	0.2	0.1	0.6	0.1	0.1	1.1	0.1	0.5	0.4	0.5	0.0	2.3	0.9	5157	18,096,164
Female	18.0	8.6	1.1	6.4	0.1	0.0	0.6	0.1	0.0	0.7	0.1	0.2	0.3	0.6	0.1	2.2	0.3	4996	17,843,382
Area																			
Urban	14.8	6.1	2.1	5.2	0.1	0.0	0.7	0.0	0.1	1.0	0.3	0.4	0.5	0.3	0.1	1.5	0.4	2244	9,800,275
Rural	20.7	9.8	0.9	7.7	0.2	0.1	0.6	0.1	0.1	0.8	0.1	0.4	0.3	0.6	0.1	2.5	0.7	7909	26,139,272
Age group																			
9 to 11 months	19.5	7.8	1.6	8.7	0.0	0.0	0.0	0.0	0.0	0.7	0.5	0.5	0.5	1.4	0.0	2.5	0.0	237	799,318
12 to 23 months	20.4	9.3	1.2	7.4	0.0	0.0	0.7	0.1	0.0	0.7	0.2	0.2	0.3	0.3	0.2	2.3	0.8	2177	7,630,645
24 to 35 months	18.7	8.9	0.8	6.6	0.1	0.1	0.8	0.1	0.1	1.5	0.2	0.6	0.6	0.5	0.0	2.6	0.8	2341	8,324,864
36 to 47 months	18.9	9.0	2.0	7.0	0.2	0.1	0.5	0.1	0.1	1.0	0.1	0.4	0.2	0.9	0.0	1.9	0.3	2425	8,762,618
48 to 59 months	18.5	8.2	0.8	7.0	0.2	0.1	0.5	0.1	0.1	0.4	0.1	0.3	0.3	0.4	0.1	2.1	0.6	2973	10,422,102

Note: This measure is a population estimate that incorporates survey weights. The CI is calculated with software that take the complex survey design into account.

APPENDIX A

Standard Errors and Design Effects

Proportion of children aged 9 months to 59 months who received measles vaccine during the measles campaign									
	Vaccinated during SIA (%)	95% CI (%)	StdErr	95% LCB (%)	95% UCB (%)	DEFF	ICC	N	Weighted N
NIGERIA	87.5	(86.2, 88.7)	0.6	86.4	88.5	3.9	0.4	10,153	35,939,548
North Central	91.6	(88.6, 93.9)	1.3	89.1	93.6	4.3	0.4076	1,852	5,732,739
Benue	83.2	(70.5, 91.1)	5.3	72.8	90.1	5.8	0.5575	288	708,036
Kogi	87.4	(75.7, 93.9)	4.6	77.9	93.2	4.1	0.4892	214	652,532
Kwara	94.3	(85.5, 97.9)	2.9	87.3	97.5	3.7	0.4018	234	404,705
Nasarawa	92.5	(84.6, 96.5)	2.9	86.1	96.0	3.1	0.2213	248	776,683
Niger	90.1	(81.6, 94.9)	3.3	83.3	94.3	4.5	0.3159	364	1,137,403
Plateau	96.5	(91.0, 98.7)	1.8	92.1	98.4	2.3	0.1756	245	1,142,621
FCT Abuja	98.3	(95.6, 99.3)	0.9	96.2	99.2	1.1	0.0196	259	910,758
North East	87.1	(84.3, 89.5)	1.3	84.7	89.1	3.3	0.2173	2,060	5,038,405
Adamawa	93.9	(87.1, 97.2)	2.5	88.5	96.9	3.5	0.2517	324	726,840
Bauchi	81.4	(73.6, 87.3)	3.5	75.0	86.5	3.4	0.1850	425	1,070,935
Borno	72.2	(63.9, 79.3)	4.0	65.3	78.3	2.5	0.1559	311	1,201,034
Gombe	92.7	(87.4, 95.9)	2.1	88.4	95.5	2.3	0.1254	339	624,187
Taraba	93.0	(86.7, 96.4)	2.4	88.0	96.0	2.4	0.1716	270	604,166
Yobe	91.0	(85.5, 94.5)	2.3	86.5	94.0	2.5	0.1221	391	811,242
North West	85.9	(83.4, 88.2)	1.2	83.8	87.8	3.1	0.1917	2,474	9,698,450
Jigawa	95.1	(90.5, 97.6)	1.7	91.4	97.3	2.6	0.1302	394	1,310,598
Kaduna	78.0	(69.2, 84.9)	4.0	70.7	83.9	2.7	0.2012	289	1,498,330
Kano	75.5	(66.8, 82.5)	4.1	68.3	81.5	2.9	0.1913	324	2,562,981
Katsina	91.9	(85.9, 95.5)	2.4	87.0	95.0	3.2	0.1711	409	1,741,126
Kebbi	83.6	(74.5, 89.9)	4.0	76.2	89.1	4.2	0.2829	365	848,174
Sokoto	86.9	(80.4, 91.5)	2.8	81.6	90.9	2.1	0.1201	295	1,069,694
Zamfara	86.8	(79.8, 91.6)	3.0	81.1	91.0	3.1	0.1753	398	667,548
South East	90.6	(87.1, 93.2)	1.6	87.7	92.9	3.3	0.3401	1,161	3,815,003
Abia	85.7	(77.6, 91.2)	3.5	79.1	90.5	2.2	0.1831	222	367,055
Anambra	95.7	(90.6, 98.1)	1.8	91.7	97.8	2.0	0.1312	259	1,156,308
Ebonyi	92.3	(85.2, 96.2)	2.7	86.6	95.7	2.6	0.2094	244	648,529
Enugu	90.5	(81.4, 95.4)	3.5	83.2	94.9	3.1	0.3357	221	533,474
Imo	87.9	(74.8, 94.7)	5.0	77.3	93.9	5.1	0.6591	215	1,109,637
South South	88.7	(85.8, 91.1)	1.3	86.3	90.7	2.4	0.2161	1,335	4,366,276
Akwa Ibom	84.6	(77.9, 89.6)	3.0	79.1	88.9	1.9	0.1110	278	781,527
Bayelsa	94.2	(89.6, 96.8)	1.8	90.5	96.5	1.5	0.0639	251	328,723
Cross River	88.5	(81.4, 93.1)	3.0	82.7	92.5	1.6	0.1124	179	703,251
Delta	93.8	(87.5, 97.0)	2.3	88.7	96.7	2.1	0.1710	223	1,094,154
Edo	88.6	(79.2, 94.0)	3.7	81.0	93.4	3.2	0.3217	231	384,935
Rivers	80.4	(67.0, 89.2)	5.8	69.4	88.1	3.6	0.5303	173	1,073,684
South West	85.7	(82.0, 88.8)	1.7	82.6	88.4	3.1	0.3534	1,271	7,288,676
Ekiti	95.3	(81.8, 98.9)	3.8	84.7	98.6	6.1	0.9318	194	232,856
Lagos	93.8	(90.6, 96.0)	1.4	91.2	95.7	0.7	0.0488	216	3,643,985
Ogun	74.7	(64.3, 82.9)	4.8	66.1	81.8	2.9	0.2777	236	687,745
Ondo	92.3	(84.8, 96.3)	2.9	86.3	95.9	2.8	0.2521	243	681,566
Osun	78.7	(63.8, 88.6)	6.5	66.4	87.3	4.4	0.6925	178	927,020
Oyo	79.6	(69.4, 87.0)	4.6	71.1	86.0	2.6	0.2734	204	1,115,505

Abbreviation: StdErr = Standard error

Proportion of children aged 9 months to 59 months who received measles vaccine during the measles campaign									
	Vaccinated during SIA (%)	95% CI (%)	StdErr	95% LCB (%)	95% UCB (%)	DEFF	ICC	N	Weighted N
NIGERIA	87.5	(86.2, 88.7)	0.6	86.4	88.5	3.9	0.4	10,153	35,939,548
Sex of child									
Male	88.0	(86.5, 89.4)	0.7	86.7	89.1	2.6	0.4	5157	18,096,164
Female	87.0	(85.4, 88.5)	0.8	85.7	88.3	2.8	0.5	4996	17,843,382
Area									
Urban	89.0	(86.6, 91.0)	1.1	87.0	90.7	3.0	1.8	2244	9,800,275
Rural	87.0	(85.3, 88.4)	0.8	85.6	88.2	4.4	0.5	7909	26,139,272
Age group									
9 to 11 months	75.5	(67.2, 82.3)	3.9	68.7	81.3	1.9	-1.2	237	799,318
12 to 23 months	84.3	(81.9, 86.4)	1.1	82.3	86.1	2.2	1.2	2176	7,626,271
24 to 35 months	88.3	(86.2, 90.1)	1.0	86.5	89.8	2.3	1.1	2341	8,324,864
36 to 47 months	88.2	(86.2, 90.0)	1.0	86.5	89.7	2.2	1.0	2425	8,762,618
48 to 59 months	89.7	(87.8, 91.3)	0.9	88.2	91.0	2.4	0.8	2973	10,422,102

APPENDIX B

QUESTIONNAIRE

List of household members

NATIONAL PRIMARY HEALTH CARE DEVELOPMENT AGENCY POST MEASLES SUPPLEMENTARY IMMUNISATION ACTIVITY SURVEY, NIGERIA 2017

HOUSEHOLD INFORMATION PANEL	HM
HM01. State ID number: ___ ___	**HM02.** State name: _____
HM03. Cluster number: ___ ____ ___ ____	**HM11**. Household ID number: ____
HM05. Interviewer ID: ___ ____ ____	**HM07.** Supervisor ID: ___ ____ ____
HM06. Interviewer name: _____	**HM08**. Supervisor name: _____
SIA15. Latitude ___ ___. ___ ___ ___ ___	**SIA16**. Longitude ___ ___. ___ ___ ___ ___

WE ARE FROM NATIONAL BUREAU OF STATISTICS. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT CHILDREN AND HOUSEHOLD. THE INTERVIEW WILL TAKE ABOUT ***30*** MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.

HM13. MAY, I START NOW? YES ----1

NO-----2 DISCUSS WITH SUPERVISOR BEFORE ENDING INTERVIEW

HOUSEHOLD ROSTER: COMPLETE FOR ALL MEMBERS IN THE HOUSEHOLDS

HM21 SN	**HM22** NAME OF HOUSEHOLD MEMBER	**HM23** RELATIONSHIP OF HOUSEHOLD MEMBER TO HOUSEHOLD HEAD	**HM24** SEX OF CHILD 1 MALE 2 FEMALE	**HM25** DID THE HOUSEHOLD MEMBER SLEEP HERE LAST NIGHT?	**HM26** DATE OF BIRTH (DD, MM, YYYY)	**HM27** AGE AT TIME OF CAMPAIGN – NOVEMBER 2017 (COMPLETED YEARS)	**HM28** AGE AT TIME OF CAMPAIGN – NOVEMBER 2017 (COMPLETED MONTHS FOR ALL CHILDREN LESS THAN 6 YEARS)	**HM29** DID THE CHILD LIVE HERE DURING THE CAMPAIGN? (COMPLETE ONLY FOR CHILDREN 9–59 MONTHS)	**HM30** CHECK ELIGIBLE FOR POST-CAMPAIGN SURVEY? (9–59 MONTHS)
1		0 1	1 2	Y N	___/___/____			Y N	Y N
2		___ ___	1 2	Y N	___/___/____			Y N	Y N
3		___ ___	1 2	Y N	___/___/____			Y N	Y N
4		___ ___	1 2	Y N	___/___/____			Y N	Y N
5		___ ___	1 2	Y N	___/___/____			Y N	Y N
6		___ ___	1 2	Y N	___/___/____			Y N	Y N
7		___ ___	1 2	Y N	___/___/____			Y N	Y N

** Codes for HM23: Relationship to head of household:*	01 Head 02 Spouse / Partner 03 Son / Daughter	04 Son-In-Law / Daughter-In-Law 05 Grandchild 06 Parent	07 Parent-In-Law 08 Brother / Sister 09 Brother-In-Law / Sister-In-Law	10 Uncle / Aunt 11 Niece / Nephew 12 Other relative	13 Adopted / Foster/ Stepchild 96 Other (Not related)	98 Don't know

NATIONAL PRIMARY HEALTH CARE DEVELOPMENT AGENCY POST MEASLES SUPPLEMENTARY IMMUNISATION ACTIVITY SURVEY, NIGERIA 2017

CHILDREN 9 – 59 MONTHS INFORMATION PANEL	SIA
This questionnaire is to be administered to all mothers or caregivers (see List of Household Member) who care for a child that lives with them and is within the age of 9 months – 59 months (5 years) (see List of Household Members) ***A separate questionnaire should be used for each eligible child in the household.***	
SIA01. State ID number: ___ ___	**SIA02.** State name: _____
SIA03. Cluster number: ___ ____ ___ ____	**SIA11**. Household ID number: ____
SIA05. Interviewer ID: ___ ____ ____	**SIA07.** Supervisor ID: ___ ____ ____
SIA06. Interviewer name: _____	**SIA08**. Supervisor name: _____
SIA12. Child listing number (HM21): ____ ____	**SIA12a**. Child name (HM23): _____
SIA09. Day/Month/Year of interview: ___ ___ /___ ___ / ___ ___ ___ ___ SIA09_d / SIA09_m / SIA09_y	**SIA10.** Start time of interview Hour and minutes __ __: __ __

Visit/Attempt 1	Visit/Attempt 2	Visit/Attempt 3
SIA92. Date ____ **(D)** ____ **(M)** ____ **(Y)** *HM13_d HM13_m HM13_y* **SIA93. Disposition Code**	**SIA94. Date** ____ **(D)** ____ **(M)** ____ **(Y)** *HM15_d HM15_m HM15_y* **SIA95. Disposition Code**	**SIA96. Date** ____ **(D)** ____ **(M)** ____ **(Y)** *HM17_d HM17_m HM17_y* **SIA97. Disposition Code**
Return later; no one home (fill in # of eligible respondents if you learn it from a neighbour) 1	Return later; no one home (fill in # of eligible respondents if you learn it from a neighbour) 1	Return later; no one home (fill in # of eligible respondents if you learn it from a neighbour) 1
Come back later; interview started but could not complete 2	Come back later; interview started but could not complete 2	Come back later; interview started but could not complete 2
Refused; someone is home but refused to participate 3	Refused; someone is home but refused to participate 3	Refused; someone is home but refused to participate 3

Complete; collected all necessary information .....4 *If response is not 4, plan to make a second visit*	Complete; collected all necessary information .....4 *If response is not 4, plan to make a third visit*	Complete; collected all necessary information .....4 *If response is not 4, select 1 and move to next household*

Repeat greeting if not already read to this respondent: WE ARE FROM NATIONAL BUREAU OF STATISTICS. WE ARE CONDUCTING A SURVEY ABOUT THE SITUATION OF CHILDREN, FAMILIES AND HOUSEHOLDS. I WOULD LIKE TO TALK TO YOU ABOUT (*child's name from UF3*)'S. THE INTERVIEW WILL TAKE ABOUT ***20*** MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS. MAY, I START NOW?	*If greeting at the beginning of the household questionnaire has already been read to this person, then read the following:* NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT (*child's name from household listing*)'S RECEIPT OF VACCINATION DURING THE RECENT MEASLES VACCINATION CAMPAIGN. THIS INTERVIEW WILL TAKE ABOUT ***20*** MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND ANONYMOUS.

DEMOGRAPHIC INFORMATION		**AG**
D1.NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE DEVELOPMENT AND HEALTH OF (*name*). ON WHAT DAY, MONTH AND YEAR WAS (*name*) BORN? *Probe:* WHAT IS HIS/HER BIRTHDAY? *If the mother/caretaker knows the exact birth date, also enter the day; otherwise, circle 98 for day.* *Month and year must be recorded.*	Date of birth Day .....__ __ DK day .....98 Month.....__ __ Year ..... 201 __	
D2. HOW OLD IS (*name*)? *Probe*: HOW OLD WAS (*name*) AT HIS/HER LAST BIRTHDAY? *Record age in completed months.* *Record '0' if less than 1 month.* *Compare and correct AG1 and/or AG2 if inconsistent.*	Age (in completed months) .....____ *If age is <9 months or ≥60 months go to next child, otherwise end interview*	

IMMUNIZATION		IM
SIA17. WAS THE CHILD LIVING HERE DURING THE CAMPAIGN? (MEASLES VACCINATION CAMPAIGN IN NOVEMBER/DECEMBER 2017)?	Yes ..... 1 No 2	
SIA18. WHAT WAS THE PRIMARY SOURCE OF INFORMATION ABOUT THE OCCURRENCE OF THE CAMPAIGN? *(Ask the question first, after the person has answered, go through the list of answers to select the primary source.)*	Not informed ..... 1 Radio ..... 2 Television ..... 3 Internet ..... 4 Criers ..... 5 Community health workers ..... 6 School ..... 7 Family ..... 8 Neighbour, friend ..... 9 Village chief ..... 10 Religious leader ..... 11 Community mobilisers ..... 12 Other (*specify below*) _____66	66 => SIA19
SIA19. IF OTHER IN 18, PLEASE SPECIFY	_____	
SIA20. DID THE CHILD RECEIVE THE MEASLES VACCINE DURING THE RECENT CAMPAIGN (MEASLES VACCINATION CAMPAIGN IN NOVEMBER/DECEMBER 2017)?	Yes ..... 1 No ..... 3 Don't know 9	1 => SIA21 3 => SIA25 9 =>SIA27
SIA21. DID THE CHILD RECEIVE A VACCINATION CARD AFTER RECEIVING THE MEASLES VACCINE DURING THE RECENT CAMPAIGN?	Yes, card seen ..... 1 Yes, card not seen ..... 2 No card ..... 3 Don't know 9	
SIA22. WAS THE FINGER OF THE CHILD MARKED WITH A PEN AFTER RECEIVING THE MEASLES VACCINE DURING THE CAMPAIGN?	Yes, mark seen on the child ..... 1 Yes, child not available to check ..... 2 No ..... 3 Don't know 9	
SIA23. DID THE CHILD DEVELOP A REACTION AFTER THE VACCINATION?	Yes ..... 1 No 2	01⇨SIA24 02⇨SIA25

SIA24. IF YES, WHAT WAS THE PROBLEM(S)?	Fever between 7 and 12 days following vaccination? ..... A General rash between 7 and 10 days following vaccination? ..... B Pain at the site of injection? ..... C Problems with hearing or vision? ..... D Extreme drowsiness, fainting? ..... E Fussiness, irritability, crying for an hour or longer? ..... F Early bruising or bleeding, unusual weakness? .G Difficulty in breathing or swallowing? ..... H Itching, especially of feet or hands? ..... I Hives (other itching or irrigation)? ..... J Seizure (black-out or convulsions); or High fever (within a few hours or a few days after the vaccine)? ..... K Pain or tiredness of eyes, swelling, or a lump where the shot was given? ..... L Headache (severe or continuing)? ..... M Confusion or dizziness? ..... N low fever; joint or muscle pain? ..... O Other (*specify*) ..... P	P => SIA24A
SIA24A. IF 'OTHER' TO SIA24, SPECIFY	_____	

SIA25. IF THE CHILD DID NOT RECEIVE THE MEASLES VACCINE DURING THE CAMPAIGN, WHY? *(Ask the question first, after the person has answered, go through the list of answers to find the main reason for non-vaccination.)*	Didn't Know about the campaign .....01 Confused with other vaccines (believes that child has already been vaccinated) ..... 02 Subject or parent / guardian were missing ..... 03 Fear of injection..... 04 Lack of confidence in vaccine ..... 05 Fear of side effects..... 06 Site of vaccination not known..... 07 Site of vaccination too far ..... 08 Time of vaccination unsuitable ..... 09 Waited too long at vaccination site..... 10 Missing vaccinator at the site ..... 11 Not authorised by head of household..... 12 Religious beliefs ..... 13 Sick at time of vaccination..... 14 Absent during time of campaign..... 15 Too busy to take child ..... 16 Child ill..... 17 Mother ill..... 18 Child already received measles vaccine ..... 19 Other (*specify*) 66	T => SIA26
SIA26. IF 'OTHER' TO SIA25, PLEASE SPECIFY	_____	

SIA27. BEFORE THE CAMPAIGN, HAD THE CHILD ALREADY RECEIVED THE MEASLES VACCINE?	Yes, dates on card ..... 1 Yes, recall /history ..... 2 No ..... 3 Don't know 9	§
SIA27A: REQUEST TO BE SHOWN VACCINATION CARD FOR (NAME)	Yes, card seen ..... 1 No, card not seen 2	1 => SIA28 2 => SIA35
SIA28. IF THE HOME-BASED VACCINATION RECORD (ROUTINE) IS AVAILABLE, RECORD THE DATES OF VACCINATION: 1ST MEASLES VACCINATION [WRITE 44 IN THE DD FIELD IF THE VACCINATION IS MARKED ON THE CARD, BUT THERE IS NOT A CLEAR DATE]	___ ___ /___ ___ / 201___ (DD / MM / YYYY)	
SIA35. *Record the end time.*	*HOUR AND MINUTES*.....__ __: __ __	