

**Nigeria  
Demographic  
and Health  
Survey  
2008**

**Preliminary Report**

**National Population Commission  
Federal Republic of Nigeria**

**MEASURE DHS, ICF Macro  
Calverton, Maryland, USA**



The 2008 Nigeria Demographic and Health Survey (2008 NDHS) was implemented by the National Population Commission (NPC), and fielded from June to October 2008. ICF Macro provided technical assistance as well as funding to the project through the MEASURE DHS programme, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide. Funding for the NDHS was provided by the United States Agency for International Development (USAID). Funding for the household listing and additional field work support was provided by the United Nations Population Fund (UNFPA).

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Information about the DHS programme may be obtained from the MEASURE DHS Project, ICF Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, USA; Telephone: 301-572-0200, Fax: 301-572-0999, E-mail: [reports@macrointernational.com](mailto:reports@macrointernational.com), Internet: <http://www.measuredhs.com>.



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## **Demographic and Health Survey**

### **2008**



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National Population Commission  
Federal Republic of Nigeria  
Abuja, Nigeria

MEASURE DHS  
ICF Macro  
Calverton, Maryland, USA

May 2009



**USAID**  
FROM THE AMERICAN PEOPLE



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## ACRONYMS

ANC	Antenatal Care
ARI	Acute Respiratory Infections
CDC	Centres for Disease Control and Prevention
CPR	Contraceptive Prevalence Rate
GPS	Global Positioning System
IPT	Intermittent Preventive Treatment
ITN	Insecticide Treated Net
LAM	Lactational Amenorrhoea Method
PAHO	Pan-American Health Organisation
NCHS	National Centre for Health Statistics
NPC	National Population Commission
NDHS	Nigeria Demographic and Health Survey
ORT	Oral Rehydration Therapy
TFR	Total Fertility Rate
UNAIDS	Joint United Nations Programmes on HIV and AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
UNU	United Nations University
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

## PREFACE

The conduct of the 2008 Nigeria Demographic and Health Survey (2008 NDHS) is in furtherance of the National Population Commission's (NPC) responsibility of collecting, collating, analysing, and disseminating population census and survey data at all levels that contribute to policy formulation and coordination of population activities in the country.

I am delighted to present the preliminary report for the 2008 NDHS. The survey is the latest in the periodic Demographic and Health Survey (DHS) series, which started in Nigeria at the national level in 1990. The 2008 NDHS is a national sample survey designed to provide up-to-date information on background characteristics of the respondents; fertility levels; nuptiality; sexual activity; fertility preferences; awareness and the use of family planning methods; breastfeeding practices; nutritional status of mothers and young children; early childhood mortality and maternal mortality; maternal and child health; and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections. The target groups were women age 15-49 years and men age 15-59 years in randomly selected households across Nigeria. Information about children age 0-5 years was also collected, including weight and height.


While the survey is expanded in scope and sample size, the 2008 NDHS is a follow-up to the 1990, 1999, and 2003 NDHS surveys and provides updated estimates of basic demographic and health indicators covered in the earlier surveys. The 2008 NDHS is the first DHS to include the collection of information on violence against women. In addition to presenting national estimates, the report provides estimates of key indicators for rural and urban areas in Nigeria, the six geo-political zones, and for the first time, the thirty-six states and the Federal Capital Territory (FCT).

The unprecedented success of the 2008 NDHS was made possible by the contributions from a number of organisations and individuals. I wish to acknowledge the support of the United States Agency for International Development in Nigeria (USAID/Nigeria) for funding the survey and to Akintola Williams Deloitte for providing accounting and disbursement services that allowed for the timely and efficient transfer of project funds throughout all components of the survey. Similarly, I wish to acknowledge the United Nations Population Fund (UNFPA) for funding the household listing exercise and additional field support. The support and collaboration witnessed by the 2008 NDHS from government, non-governmental, international development organisations, and other major stakeholders is hereby acknowledged. Special mention is given to the Federal Ministry of Health and its agencies, the National Bureau of Statistics, and the United Nations Children's Fund (UNICEF) for their support.

I would like to thank the NPC Federal Commissioners for their support during the implementation period for providing excellent leadership and advocacy support. The unflinching support and technical assistance provided by Dr. Wokoma D.C. Wokoma (Director-General), Dr. Emmanuel Enu Attah (Director, Planning and Research), and all other Directors are hereby acknowledged.

On behalf of the Commission, I gratefully acknowledge the tireless dedication of the core 2008 NDHS team for their outstanding and enthusiastic management of all the technical, administrative, and logistical phases of the survey. The survey could not have been conducted without the leadership of Mr. Sani Ali Gar (Project Director) and Mr. Inuwa Bakari Jalingo (Project Coordinator). Similarly, I wish to express appreciation to ICF Macro for its technical assistance in all stages of the survey. The commitment of the ICF Macro Country Manager, Ms. Adrienne Cox, is greatly appreciated. Ms. Sherrell Goggin (Data Processing Specialist) handled data processing of the 2008 NDHS with great expertise. I wish to commend the efforts of Dr. Alfredo Aliaga (Sampling Specialist), who provided technical support during the sample selection exercise. Dr. Pav Govindasamy (Regional Coordinator) also deserves our deep appreciation for her contributions.

Special gratitude goes to the Supervisors, Editors, Interviewers, Quality Control Interviewers, Drivers, and the Data Processing team for their tireless efforts. Finally, a special gratitude goes to all the respondents for their cooperation, patience, and generosity in providing the required information throughout the survey. Without their cooperation, this survey would not have been a success.

A handwritten signature in black ink, appearing to read 'Samu'ila Danko Makama', with a long horizontal flourish extending to the right.

**Chief Samu'ila Danko Makama, CON  
Chairman  
National Population Commission**



## **I. INTRODUCTION**

The 2008 Nigeria Demographic and Health Survey (2008 NDHS) was fielded by the National Population Commission from June to October 2008 on a nationally representative sample of more than 36,000 households. All women age 15-49 in these households and all men age 15-59 in a subsample of half of the households were individually interviewed.

While significantly expanded in content, the 2008 NDHS is a follow-up to the 1990, 1999, and 2003 NDHS surveys and provides updated estimates of basic demographic and health indicators covered in these earlier surveys. In addition, the 2008 NDHS includes the collection of information on violence against women. Although previous surveys collected data at the national and zonal levels, the 2008 NDHS is the first NDHS survey to collect data on key indicators the six geo-political zones, and for the first time, the thirty-six states and the Federal Capital Territory (FCT).

This preliminary report presents a first look at selected results of the 2008 NDHS. A comprehensive analysis of the data will be in a final report, which will be published during the last quarter of 2009. While considered provisional, the results presented here are not expected to differ significantly from the final report results.

The primary objectives of the 2008 NDHS project are to provide up-to-date information on fertility levels; nuptiality; sexual activity; fertility preferences; awareness and use of family planning methods; breastfeeding practices; nutritional status of mothers and young children; early childhood mortality and maternal mortality; maternal and child health; and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections.

## II. SURVEY IMPLEMENTATION

### A. Sample Design

The sample for the 2008 NDHS was designed to provide population and health indicator estimates at the national, zonal, and state levels. The sample design allowed for specific indicators, such as contraceptive use, to be calculated for each of the 6 zones and 37 states (36 plus the Federal Capital Territory, Abuja). The sampling frame used for the 2008 NDHS was the 2006 Population and Housing Census of the Federal Republic of Nigeria conducted in 2006, provided by the National Population Commission (NPC).

Administratively, Nigeria is divided into states. Each state is subdivided into local government areas (LGAs), and each LGA is divided into localities. In addition to these administrative units, during the 2006 Population Census, each locality was subdivided into convenient areas called census enumeration areas (EAs). The primary sampling unit (PSU), referred to as a cluster for the 2008 NDHS, is defined on the basis of EAs from the 2006 EA census frame. The 2008 NDHS sample was selected using a stratified two-stage cluster design consisting of 888 clusters, 286 in the urban and 602 in the rural areas<sup>1</sup>. A representative sample of 36,800 households was selected for the 2008 NDHS survey, with a minimum target of 950 completed interviews per state. In each state, the number of households was distributed proportionately among its urban and rural areas.

A complete listing of households and a mapping exercise were carried out for each cluster in April-May 2008, with the resulting lists of households serving as the sampling frame for the selection of households in the second stage. All private households were listed. The NPC listing enumerators were trained to use Global Positioning System (GPS) receivers to take the coordinates of the 2008 NDHS sample clusters.

In the second stage of the selection, an average of 41 households was selected in every cluster, by equal probability systematic sampling. All women age 15-49 who were either permanent residents of the households in the 2008 NDHS sample or visitors present in the households on the night before the survey were eligible to be interviewed. In a subsample of half of the households, all men age 15-59 who were either permanent residents of the households in the 2008 NDHS sample or visitors present in the households on the night before the survey were eligible to be interviewed. In addition, a subsample of one eligible woman in each household was randomly selected to be asked additional questions about domestic violence.

### B. Questionnaires

Three questionnaires were used for the 2008 NDHS. They are the Household Questionnaire, the Women's Questionnaire, and the Men's Questionnaire. These questionnaires were adapted to reflect the population and health issues relevant to Nigeria at a series of meetings with various stakeholders from government ministries and agencies, non-governmental organisations, and international donors. In addition to English, the questionnaires were translated into three major Nigerian languages: Hausa, Igbo, and Yoruba.

The Household Questionnaire was used to list all the usual members and visitors of selected households. Some basic information was collected on the characteristics of each person listed, including his or her age, sex, education, and relationship to the head of the household. For children under age 18, survival status of the parents was determined. If a child in the household had a parent who was sick for more than three consecutive months in the 12 months preceding the survey or a parent who had died, additional questions related to support for orphans and vulnerable children were asked. Additionally, if an adult in the household was sick for more than three consecutive months in the 12 months preceding the survey or an adult in the household died, questions were asked related to support for sick people or people who have died. The data on the age

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<sup>1</sup> The final survey sample included 886 clusters instead of 888 clusters. During fieldwork, access was not obtained in one cluster due to flooding, and in another cluster due to inter-communal disturbances.

and sex of household members obtained in the Household Questionnaire was used to identify women and men who were eligible for the individual interview. Additionally, the Household Questionnaire collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, ownership of various durable goods, and ownership and use of mosquito nets to assess the coverage of malaria prevention programmes. The Household Questionnaire was also used to record height and weight measurements for children age 0-59 months and women 15-49 years of age.

The Women's Questionnaire was used to collect information from all women age 15-49. These women were asked questions on the following main topics:

- Background characteristics (education, residential history, media exposure, etc.)
- Birth history and childhood mortality
- Knowledge and use of family planning methods
- Fertility preferences
- Antenatal, delivery, and postnatal care
- Breastfeeding and infant feeding practices
- Vaccinations and childhood illnesses
- Marriage and sexual activity
- Women's work and husband's background characteristics
- Women's and children's nutritional status
- Malaria prevention and treatment
- Awareness and behaviour regarding AIDS and other sexually transmitted infections (STIs)
- Adult mortality including maternal mortality
- Domestic violence

The Men's Questionnaire was administered to all men age 15-59 in every second household in the 2008 NDHS sample. The Men's Questionnaire collected much of the same information found in the Women's Questionnaire, but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health or nutrition.

### **C. Pretest Activities**

The training for the pretest took place March 3-12, 2008. Thirty-two interviewers (15 females and 17 males) were trained to administer the questionnaires and take anthropometric measurements. The pretest training for the interviewers and supervisors consisted of a project overview and survey objectives, techniques of interviewing, field procedures, a detailed description of all sections of the household and individual questionnaires, and two days of field practice. The trainers and resource persons included professionals from NPC and ICF Macro.

The pretest was conducted in 6 states by 6 teams March 15-22, 2008. The teams were divided according to languages. There were 2 Hausa-speaking teams in the North East and North West zones, 2 English-speaking teams in the South South and North Central zones, 1 Yoruba-speaking team in the South West, and 1 Igbo-speaking team in the South East. The supervisors and editors were drawn from amongst the NPC core technical team. The teams covered 6 zones (one state in each zone) and aimed at completing 25 urban and 25 rural households per state. At the end of fieldwork, a debriefing session was held March 24-25, 2008 in Kaduna with all staff involved in the pretest, and the questionnaires were amended based on the pretest findings.

#### **D. Training of Field Staff**

NPC recruited and trained 368 people for the fieldwork to serve as zonal coordinators, supervisors, field editors, female and male interviewers, reserve interviewers, and quality control interviewers. Training of field staff for the main survey was conducted during a three-week period in May-June 2008. The training course consisted of instruction regarding interviewing techniques and field procedures, a detailed review of items on the questionnaires, instruction and practice in weighing and measuring children, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the 2008 NDHS sample points. During this period, field editors, team supervisors, and quality control interviewers were provided with additional training in methods of field editing, data quality control procedures, and fieldwork coordination. Thirty-seven supervisors, 37 editors, 152 female interviewers and 74 male interviewers were selected to make up 37 data collection teams for the 2008 NDHS. Thirty-seven people were selected to be quality control interviewers.

#### **E. Fieldwork**

Thirty-seven interviewing teams carried out data collection for the 2008 NDHS. Each team consisted of 1 supervisor (team leader), 1 field editor, 4 female interviewers, 2 male interviewers, and 2 drivers. Nineteen senior staff members from NPC, designated as zonal coordinators, coordinated and supervised fieldwork activities. Data collection took place over a four-month period, from July to October 2008.

#### **F. Data Processing**

All questionnaires for the 2008 NDHS were returned to the NPC headquarters office in Abuja for data processing, which consisted of office editing, coding of open-ended questions, data entry, and editing computer-identified errors. The data were processed by a team of 30 data entry operators, 3 data coders, 4 data entry supervisors, and 8 secondary editors. Data entry and editing were accomplished using the CSPro software. The processing of data was initiated in July 2008 and completed in February 2009.

### III. RESULTS

#### A. Response Rates

The household and individual response rates for the 2008 NDHS are shown in Table 1. For the sample, a total of 36,298 households were selected and of these 34,644 were occupied. Of the 34,644 households found, 34,070 were successfully interviewed, yielding a response rate of 98 percent. There is no significant difference between rural and urban areas in terms of response rates.

In the interviewed households, a total of 34,596 women were identified to be eligible for the individual interview, and 97 percent of them were successfully interviewed. For men, 16,722 were identified as eligible, and 93 percent of them were successfully interviewed.

Higher response rates were recorded for both eligible men and women in the 2008 NDHS than in the 2003 NDHS (93 percent for men and 97 percent for women versus 91 percent for men and 95 percent for women, respectively).

**Table 1 Results of the household and individual interviews**

Number of households, number of interviews, and response rates, according to residence, Nigeria 2008

Result	Residence		Total
	Urban	Rural	
<b>Household interviews</b>			
Households selected	11,810	24,488	36,298
Households occupied	11,342	23,302	34,644
Households interviewed	11,099	22,971	34,070
Household response rate	97.9	98.6	98.3
<b>Individual interviews: women</b>			
Number of eligible women	11,298	23,298	34,596
Number of eligible women interviewed	10,892	22,493	33,385
Eligible women response rate	96.4	96.5	96.5
<b>Individual interviews: men</b>			
Number of eligible men	5,860	10,862	16,722
Number of eligible men interviewed	5,377	10,109	15,486
Eligible men response rate	91.8	93.1	92.6

#### B. Characteristics of the Respondents

Table 2 shows the distribution of women age 15-49 and men age 15-59 by background characteristics. The table shows declining proportions of women and men with advancing age, indicating that Nigeria's age structure is broad based, i.e., a young age structure. A similar trend was observed in the 2003 NDHS.

Currently married women constitute more than two-thirds of all interviewed women, and more than half of men are currently married. The proportion of men who have never been married is higher than that of women, 42 percent against 25 percent. Men tend to defer marriage until older ages when compared with women.

Table 2 also shows that the majority of women (63 percent) and men (61 percent) live in rural areas. About one-quarter of respondents are from the North West geopolitical zone and about one-fifth live in South West, while the rest of the respondents are distributed among the remaining four zones.

Although the majority of respondents have had some education, the level of educational attainment varies by sex (64 percent of women and 79 percent of men have education). Again, although the attainment of secondary education ranks highest among other levels for both sexes, more men than women have a secondary education (43 and 36 percent, respectively) or more than a secondary education (14 and 9 percent, respectively). More than one-third of women (36 percent) and one-fifth of men (21 percent) are uneducated.

The distribution of respondents by religion shows that more than half of all respondents are Christians (54 percent of women and 53 percent of men), while 44 percent of women and 45 percent of men are Muslims. Nigeria's three major ethnic groups (Hausa, Igbo, and Yoruba) constitute 56 percent of women and men, with Hausa having the largest proportion (22 percent of women and 23 percent of men).

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**Table 2 Background characteristics of respondents**

Percent distribution of women and men by background characteristics, Nigeria 2008

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
<b>Age</b>						
15-19	19.4	6,493	6,591	16.3	2,532	2,571
20-24	18.4	6,132	6,102	15.4	2,378	2,399
25-29	18.9	6,308	6,301	15.9	2,459	2,446
30-34	13.9	4,633	4,558	13.3	2,058	2,051
35-39	11.7	3,918	3,885	11.6	1,794	1,773
40-44	9.1	3,034	3,047	9.1	1,413	1,417
45-49	8.6	2,868	2,901	7.6	1,174	1,181
50-54	na	na	na	6.2	960	941
55-59	na	na	na	4.6	718	707
<b>Marital status</b>						
Never married	25.2	8,397	8,021	42.3	6,556	6,427
Married	69.1	23,062	23,479	53.7	8,312	8,436
Living together	1.5	516	475	2.0	306	327
Divorced/separated	1.9	651	646	1.4	222	210
Widowed	2.3	759	763	0.6	90	86
Missing	0.0	1	1	0.0	0	0
<b>Residence</b>						
Urban	36.8	12,274	10,889	38.9	6,020	5,374
Rural	63.2	21,091	22,475	61.1	9,456	10,103
<b>Zone</b>						
North Central	14.2	4,748	6,366	14.5	2,247	3,023
North East	12.8	4,262	6,217	11.9	1,848	2,734
North West	24.0	8,022	7,297	23.9	3,706	3,358
South East	12.3	4,091	3,667	10.8	1,668	1,427
South South	16.4	5,473	4,813	17.3	2,685	2,380
South West	20.3	6,789	5,025	21.5	3,332	2,564
<b>State of residence</b>						
Sokoto	2.5	822	945	2.2	338	394
Zamfara	2.2	733	867	2.0	303	322
Katsina	4.1	1,372	1,182	3.9	596	511
Jigawa	2.9	959	1,019	2.4	377	402
Yobe	1.6	537	979	1.4	222	404
Borno	2.7	912	990	2.5	386	438
Adamawa	2.3	764	1,018	2.1	330	460
Combe	1.4	465	1,005	1.4	216	475
Bauchi	3.0	998	1,008	3.1	476	485
Kano	6.2	2,070	1,237	6.3	976	604
Kaduna	4.0	1,333	1,081	4.9	764	658
Kebbi	2.2	732	966	2.3	351	467
Niger	2.5	827	945	2.6	397	439
Abuja	1.1	369	852	1.2	187	452
Nasarawa	1.4	458	953	1.5	228	448
Plateau	2.3	777	1,016	2.2	343	449
Taraba	1.8	587	1,217	1.4	218	472
Benue	2.9	972	985	2.8	433	430
Kogi	2.4	792	878	2.5	393	434
Kwara	1.7	553	737	1.7	265	371
Oyo	3.6	1,205	680	3.6	563	336
Osun	2.8	922	926	2.8	441	467
Ekiti	1.7	556	743	1.9	293	404
Ondo	2.4	791	782	2.4	377	388
Edo	2.3	770	846	2.4	373	412
Anambra	3.1	1,042	648	3.0	462	290
Enugu	2.3	780	708	1.6	245	203
Ebonyi	1.8	586	964	1.3	203	333
Cross River	2.2	735	773	2.1	328	332
Akwa Ibom	2.8	938	819	2.9	445	403
Abia	2.3	775	736	2.3	358	323
Imo	2.7	908	611	2.6	400	278
Rivers	4.5	1,490	767	5.3	824	437
Bayelsa	1.4	468	845	1.6	241	452
Delta	3.2	1,071	763	3.1	473	344
Lagos	7.3	2,446	1,252	8.6	1,331	714
Ogun	2.6	870	642	2.1	328	255

Continued...

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
<b>Education</b>						
No education	35.8	11,942	13,242	21.2	3,290	3,656
Primary	19.7	6,566	6,591	21.3	3,293	3,253
Secondary	35.7	11,904	10,905	43.3	6,705	6,490
More than secondary	8.9	2,974	2,647	14.2	2,198	2,087
<b>Religion</b>						
Christian	53.6	17,907	17,171	52.8	8,175	7,907
Islam	44.4	14,826	15,449	45.2	7,000	7,254
Other	1.4	481	588	1.7	266	279
Missing	0.5	171	177	0.3	46	46
<b>Ethnic group</b>						
Ekoi	1.7	555	583	1.5	229	232
Fulani	6.1	2,020	2,460	5.5	848	1,073
Hausa	22.3	7,431	7,086	22.9	3,548	3,376
Ibibio	2.5	819	693	2.5	381	324
Igala	1.4	476	529	1.6	248	277
Igbo	15.9	5,295	4,583	14.7	2,281	1,933
Ijaw/Izon	3.5	1,169	1,184	4.4	685	672
Kanuri/Beriberi	2.0	674	836	1.8	285	361
Tiv	2.4	801	896	2.4	379	415
Yoruba	17.7	5,924	4,861	18.4	2,855	2,427
Others	24.2	8,083	9,522	24.0	3,722	4,370
Total	100.0	33,385	33,385	100.0	15,486	15,486

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.  
na = Not applicable

### C. Fertility

To generate data on fertility, the birth history of each woman interviewed was recorded for the 2008 NDHS. All women who were interviewed were asked to report the total number of sons and daughters to whom they had ever given birth in their lifetime. To ensure all information was reported, women were asked separately about children still living at home, those living elsewhere, and those who had died. A complete birth history was then obtained, including information on sex, date of birth and survival status of each child and the age at death for dead children.

Table 3 shows age-specific fertility rates for women by five-year age groups and the current fertility for the three-year period preceding the 2008 NDHS. Age-specific and total fertility rates were calculated directly from the birth history data. The sum of age-specific fertility rates (known as the total fertility rate, or TFR) is a summary measure of the level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the current observed age-specific rates. If fertility were to remain constant at current levels, a Nigerian woman would bear an average of 5.7 children in her lifetime. The phenomenon of rural-urban variation in fertility also holds true as the table equally indicates that women in rural areas will give birth to more than one more child during their reproductive years than urban women (6.4 and 4.6, respectively).

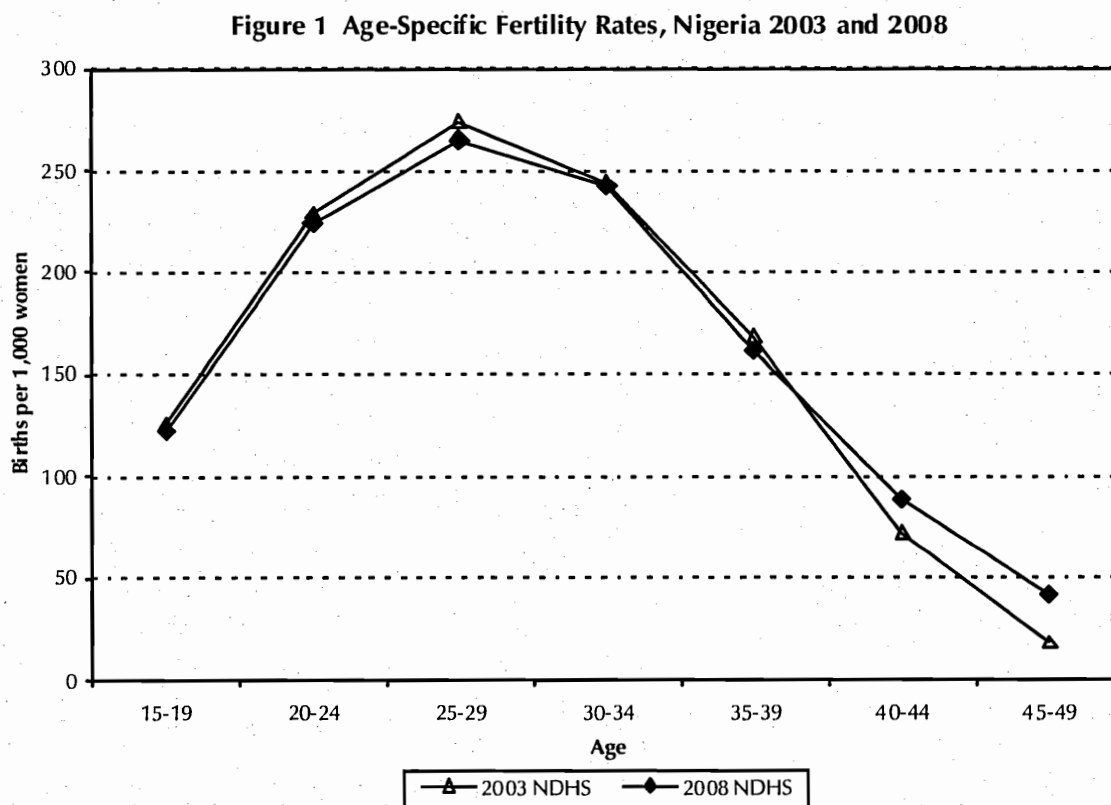
Table 3 Current fertility

Age-specific and cumulative fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by urban-rural residence, Nigeria 2008

Age group	Residence		Total
	Urban	Rural	
15-19	64	153	122
20-24	174	256	224
25-29	240	281	265
30-34	223	254	242
35-39	127	179	161
40-44	64	102	88
45-49	28	49	42
TFR	4.6	6.4	5.7
GFR	158.0	216.0	194.0
CBR	36.2	42.9	40.6

Note: Rates for age group 45-49 may be slightly biased due to truncation.  
TFR: Total fertility rate for ages 15-49, expressed per woman  
GFR: General fertility rate (births divided by the number of women age 15-44), expressed per 1,000 women  
CBR: Crude birth rate, expressed per 1,000 population

The 2008 NDHS TFR is on par with that of the 2003 NDHS (5.7). This is also consistent with the TFR for the 1990 NDHS, which was estimated at 6.0 (FOS and IRD/Macro, 1992). Age-specific fertility rates for the 2003 NDHS and 2008 NDHS are shown in Figure 1. The rates are similar, peaking in the 25-29 age group. Figure 1 also shows that, while fertility declined modestly within the age range 15-39, it increased in the oldest age groups, particularly age group 45-49.



#### D. Family Planning

Family planning refers to a conscious effort by a couple to limit or space the number of children they want to have through the use of contraceptive methods. Information on knowledge and use of family planning methods was obtained from female respondents by asking them to mention any ways or methods by which a couple could delay or avoid pregnancy. For each method known, the respondent was asked if she had ever used it. Respondents who reported ever use of family planning were asked whether they or their partners were using a method at the time of the survey.

Contraceptive methods are classified as modern or traditional methods. Modern methods include female sterilisation, male sterilisation, the pill, intra-uterine device (IUD), injectables, implants, male condom, female condom, and lactational amenorrhoea method (LAM). Methods such as rhythm (periodic abstinence), withdrawal, and folk methods are grouped as traditional.

Table 4 reveals that the contraceptive prevalence rate (CPR) is 15 percent among currently married women using any method of contraception. The data reveal an increase in CPR from 13 percent in the NDHS 2003. Among women using contraception, twice as many use a modern method of contraception (10 percent) when compared with use of traditional methods (5 percent). With respect to specific modern methods, injectables (3 percent), male condoms, and the pill (2 percent each) are the most widely used methods. The CPR increases with age, rising from 3 percent for the 15-19 age group, peaking at 20 percent for the 35-39 age group, and thereafter declining.

Table 4 further shows that family planning use is affected by place of residence, age, zone, education, and the number of living children a woman has. Urban women are almost three times as likely as their rural counterparts to use a contraceptive method (26 percent compared with 9 percent, respectively). With respect to zones, CPR for any method ranges from a high of 32 percent in South West to only 3 percent in North West. This pattern of usage is also observed in the CPR for modern methods. Remarkable variations in CPR exist among the states. Contraceptive use is lowest in Jigawa and Katsina (less than 1 percent) and highest in Lagos (50 percent). A similar pattern is observed for modern methods—their use ranges from a low of less than 1 percent in Jigawa and Katsina to a high of 28 percent in Lagos. It must be noted that in the states of Anambra and Imo, a higher proportion of women are using traditional methods (18 and 14 percent, respectively) compared with modern methods (17 percent and 9 percent, respectively).

Educational attainment is positively associated with an increase in CPR. Four percent of women without education currently use family planning, compared with 37 percent of women with more than a secondary education.

Contraceptive use increases with increasing number of living children a woman has. Three percent of women who have no children are currently using family planning, compared with 13 percent of women with 1-2 children. The CPR peaks at 19 percent for women with 3-4 children before declining to 16 percent for those with more than 5 children. This pattern is true for modern and traditional methods.

Table 4 Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to background characteristics, Nigeria 2008

Background characteristic	Modern method									Traditional method					Total	Number of women
	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Male condom	LAM	Other modern methods <sup>1</sup>	Any traditional method	Periodic abstinence	Withdrawal	Other folk method	Not currently using		
<b>Age</b>																
15-19	3.0	2.4	0.0	0.2	0.0	0.2	1.2	0.8	0.0	0.6	0.1	0.3	0.2	97.0	100.0	1,863
20-24	10.1	7.0	0.0	1.7	0.3	0.8	2.6	1.6	0.0	3.1	1.0	1.3	0.7	89.9	100.0	3,658
25-29	14.6	9.6	0.1	1.6	0.3	2.1	3.2	2.2	0.1	5.1	1.8	2.3	1.0	85.4	100.0	5,111
30-34	18.5	12.2	0.2	2.0	0.9	3.7	3.2	2.2	0.1	6.4	2.6	3.0	0.8	81.5	100.0	4,172
35-39	20.0	13.4	0.5	2.5	1.6	4.1	2.8	1.7	0.1	6.7	3.1	2.8	0.8	80.0	100.0	3,581
40-44	18.9	11.6	1.0	1.8	2.3	4.3	1.3	0.8	0.0	7.3	4.0	1.8	1.5	81.1	100.0	2,712
45-49	10.6	7.7	1.3	1.1	2.0	1.7	1.2	0.3	0.1	2.9	1.4	0.7	0.8	89.4	100.0	2,481
<b>Residence</b>																
Urban	26.3	17.1	0.4	3.3	2.2	3.8	4.9	2.1	0.2	9.2	3.7	4.1	1.4	73.7	100.0	7,495
Rural	9.1	6.2	0.4	0.9	0.4	2.0	1.3	1.3	0.0	2.9	1.3	1.0	0.6	90.9	100.0	16,069
<b>Zone</b>																
North Central	13.0	10.5	1.2	1.4	0.8	3.9	1.9	1.2	0.2	2.5	1.2	0.7	0.6	87.0	100.0	3,320
North East	4.0	3.5	0.2	0.6	0.0	0.9	0.2	1.5	0.0	0.5	0.1	0.1	0.3	96.0	100.0	3,585
North West	2.8	2.5	0.1	0.6	0.2	1.1	0.1	0.4	0.0	0.3	0.2	0.0	0.1	97.2	100.0	7,189
South East	23.4	11.8	0.6	1.6	1.4	2.0	4.6	1.4	0.3	11.6	5.8	5.5	0.2	76.6	100.0	2,139
South South	26.2	15.5	0.6	2.6	0.7	4.2	4.4	2.9	0.2	10.7	5.3	3.5	1.9	73.8	100.0	2,978
South West	31.7	21.0	0.2	4.0	3.1	4.5	6.1	3.0	0.0	10.7	3.5	4.8	2.3	68.3	100.0	4,366
<b>State of residence</b>																
Sokoto	2.1	1.9	0.1	0.2	0.0	0.3	0.1	1.1	0.0	0.1	0.0	0.0	0.1	97.9	100.0	759
Zamfara	2.5	2.1	0.1	0.2	0.0	0.5	0.0	1.2	0.0	0.4	0.0	0.0	0.4	97.5	100.0	691
Katsina	0.8	0.7	0.0	0.4	0.0	0.3	0.0	0.0	0.0	0.1	0.0	0.0	0.1	99.2	100.0	1,336
Jigawa	0.2	0.2	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	99.8	100.0	910
Yobe	1.9	1.7	0.0	0.2	0.0	0.4	0.0	1.1	0.0	0.2	0.0	0.0	0.2	98.1	100.0	481
Borno	6.5	6.4	0.1	0.2	0.0	0.0	0.2	5.8	0.0	0.1	0.1	0.0	0.0	93.5	100.0	800
Adamawa	2.8	2.3	0.4	0.4	0.0	0.7	0.7	0.1	0.0	0.5	0.1	0.1	0.3	97.2	100.0	566
Gombe	5.6	4.5	0.4	1.0	0.0	3.0	0.0	0.0	0.1	1.1	0.1	0.4	0.6	94.4	100.0	403
Bauchi	2.7	2.0	0.2	0.9	0.0	0.9	0.0	0.1	0.0	0.7	0.1	0.0	0.5	97.3	100.0	942
Kano	2.3	2.1	0.0	0.5	0.5	0.6	0.0	0.5	0.1	0.2	0.1	0.1	0.0	97.7	100.0	1,804
Kaduna	9.6	8.4	0.4	2.0	0.9	4.8	0.3	0.1	0.0	1.2	1.0	0.0	0.2	90.4	100.0	1,023
Kebbi	1.9	1.8	0.0	0.8	0.0	0.9	0.1	0.0	0.0	0.1	0.0	0.0	0.1	98.1	100.0	666
Niger	4.6	4.4	0.1	0.6	0.6	1.8	0.6	0.6	0.0	0.2	0.0	0.2	0.0	95.4	100.0	730
Abuja	28.0	20.8	0.6	2.4	3.7	5.9	7.6	0.4	0.2	7.2	4.2	2.2	0.9	72.0	100.0	229
Nasarawa	12.0	11.4	0.6	1.8	0.4	8.1	0.1	0.3	0.0	0.6	0.2	0.1	0.3	88.0	100.0	321
Plateau	11.1	10.4	0.4	1.9	0.5	6.8	0.6	0.0	0.2	0.8	0.3	0.3	0.2	88.9	100.0	521
Taraba	5.0	3.9	0.4	0.6	0.3	1.9	0.6	0.1	0.0	1.1	0.4	0.1	0.5	95.0	100.0	393
Benue	14.2	12.5	4.3	1.6	0.5	1.4	2.1	2.6	0.0	1.7	0.6	0.6	0.5	85.8	100.0	626
Kogi	9.7	6.9	1.0	0.6	0.4	2.9	1.0	0.8	0.4	2.9	1.7	0.8	0.4	90.3	100.0	473

Continued...



Table 4—Continued

Background characteristic	Modern method									Traditional method				Total	Number of women	
	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Male condom	LAM	Other modern methods <sup>1</sup>	Any traditional method	Periodic abstinence	Withdrawal	Other folk method			Not currently using
<b>State of residence (continued)</b>																
Kwara	24.6	16.5	0.2	2.2	0.9	4.1	4.9	3.7	0.5	8.1	3.9	1.6	2.5	75.4	100.0	420
Oyo	21.9	18.1	0.0	2.9	2.5	7.1	3.5	1.9	0.0	3.9	1.0	1.2	1.8	78.1	100.0	922
Osun	38.0	26.8	0.0	2.8	5.9	7.0	11.1	0.0	0.0	11.2	4.6	4.1	2.5	62.0	100.0	541
Ekiti	17.3	15.1	0.5	3.2	2.5	3.1	4.7	1.1	0.0	2.3	0.7	1.4	0.2	82.7	100.0	333
Ondo	21.2	15.3	0.2	3.0	3.6	3.4	2.0	3.1	0.0	5.8	2.2	2.4	1.3	78.8	100.0	496
Edo	31.6	19.0	0.6	3.8	0.6	4.3	2.8	7.0	0.0	12.5	9.8	1.2	1.6	68.4	100.0	459
Anambra	34.4	16.5	0.5	2.2	2.6	2.5	5.8	2.0	0.9	17.9	6.8	10.8	0.3	65.6	100.0	578
Enugu	21.1	11.3	0.0	2.2	0.0	1.2	7.3	0.3	0.3	9.9	4.7	4.6	0.6	78.9	100.0	361
Ebonyi	6.1	3.4	0.0	0.2	0.0	0.9	0.8	1.6	0.0	2.7	1.4	1.3	0.0	93.9	100.0	318
Cross River	20.3	16.3	0.2	3.0	0.5	7.0	4.4	0.5	0.7	4.0	1.2	2.8	0.0	79.7	100.0	409
Akwa Ibom	32.7	18.3	0.8	2.8	1.4	5.8	5.4	2.1	0.0	14.5	10.0	2.8	1.7	67.3	100.0	489
Abia	23.9	15.6	2.1	2.1	2.4	3.2	4.8	1.1	0.0	8.2	3.5	4.5	0.3	76.1	100.0	397
Imo	22.7	8.8	0.3	0.7	1.1	1.6	3.6	1.5	0.0	13.9	10.4	3.5	0.0	77.3	100.0	484
Rivers	27.2	14.1	1.1	2.6	1.1	2.1	5.5	1.6	0.3	13.0	3.6	6.0	3.4	72.8	100.0	745
Bayelsa	10.1	7.5	0.4	2.8	0.2	1.5	1.7	0.9	0.0	2.6	0.6	1.5	0.4	89.9	100.0	257
Delta	26.6	15.1	0.0	1.4	0.0	4.5	4.7	4.5	0.0	11.5	5.0	4.2	2.3	73.4	100.0	618
Lagos	49.6	27.5	0.4	6.5	3.5	2.5	8.3	6.3	0.0	22.1	7.0	10.8	4.3	50.4	100.0	1,469
Ogun	13.9	12.6	0.2	1.6	0.9	4.9	4.7	0.2	0.0	1.3	0.4	0.7	0.2	86.1	100.0	606
<b>Education</b>																
No education	3.6	2.6	0.2	0.4	0.2	0.6	0.2	0.9	0.0	1.0	0.3	0.3	0.4	96.4	100.0	11,120
Primary	17.2	12.0	0.5	2.2	1.0	4.0	2.0	2.2	0.0	5.2	2.0	2.0	1.2	82.8	100.0	5,143
Secondary	27.4	17.4	0.4	3.1	1.6	4.4	5.5	2.3	0.2	9.9	4.2	4.3	1.5	72.6	100.0	5,621
More than secondary	36.6	23.5	1.0	3.7	4.0	4.9	8.3	1.2	0.4	13.0	7.1	5.2	0.7	63.4	100.0	1,693
<b>Living children</b>																
0	3.3	2.0	0.0	0.2	0.0	0.2	1.6	0.0	0.0	1.3	0.7	0.3	0.2	96.7	100.0	2,402
1-2	13.0	8.3	0.1	1.4	0.4	1.2	3.7	1.5	0.1	4.7	1.6	2.2	0.8	87.0	100.0	7,414
3-4	18.8	12.5	0.4	2.3	1.6	3.6	2.4	2.1	0.1	6.3	2.7	2.5	1.1	81.2	100.0	7,181
5+	15.9	11.0	0.9	1.8	1.4	3.9	1.3	1.6	0.1	4.9	2.4	1.7	0.8	84.1	100.0	6,581
Total 2008	14.6	9.7	0.4	1.7	1.0	2.6	2.4	1.6	0.1	4.9	2.1	2.0	0.9	85.4	100.0	23,578
Total 2003	12.6	8.2	0.2	1.8	0.7	2.0	1.9	1.4	0.2	4.3	2.1	1.3	1.0	87.4	100.0	5,336
Total 1999	15.3	8.6	0.3	2.4	2.0	2.4	1.2	na	0.3	5.8	5.6	1.2	0.9	84.7	100.0	5,757
Total 1990	6.0	3.5	0.3	1.2	0.8	0.7	0.4	na	0.1	2.5	1.4	0.5	0.6	94.0	100.0	6,880

Note: If more than one method is used, only the most effective method is considered in this tabulation.

LAM = Lactational amenorrhoea method.

<sup>1</sup> Other modern methods include implants, female condom, diaphragm, and foam/jelly.

## E. Fertility Preferences

Information on fertility preferences is used to assess the potential demand for family planning services for the purpose of spacing or limiting childbearing. To elicit information on fertility preferences, several questions were asked of women (pregnant or not) on whether they want to have another child and, if so, how soon.

Table 5 shows 29 percent of women want to have another child soon and 32 percent want to have another child later (2 or more years). Nineteen percent of women want no more children. When comparing the 2008 data to the 2003 NDHS data, a greater percentage of women wanted to have another child soon (37 percent) in 2003 than in 2008. Similarly, the proportion of women who want to have a child later has decreased slightly from 34 percent in 2003 to 32 percent in 2008.

Fertility preference is closely related to the number of living children. More than three-quarters of women with no living children (76 percent) want another child soon compared with more than one-tenth (13 percent) of those with six or more children. The more children a woman has, the higher the likelihood that she does not want another child.

Table 5 Fertility preferences by number of living children								
Percent distribution of currently married women by desire for children, according to number of living children, Nigeria 2008								
Desire for children	Number of living children <sup>1</sup>							Total
	0	1	2	3	4	5	6+	
Have another soon <sup>2</sup>	75.9	37.0	34.4	28.9	22.1	16.5	13.0	29.1
Have another later <sup>3</sup>	6.4	47.3	44.0	39.8	30.9	25.4	16.5	32.2
Have another, undecided when	5.2	5.3	6.3	5.7	5.5	3.8	3.7	5.1
Undecided	8.5	6.6	7.8	10.0	12.8	13.0	15.8	10.8
Want no more	0.6	2.0	4.9	12.7	25.2	36.8	45.1	19.3
Sterilised <sup>4</sup>	0.0	0.0	0.1	0.2	0.6	0.7	0.9	0.4
Declare infecund	2.8	1.3	1.7	2.1	2.4	3.0	4.5	2.5
Missing	0.8	0.6	0.8	0.6	0.5	0.8	0.5	0.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	1,650	3,675	3,911	3,900	3,517	2,688	4,238	23,578

<sup>1</sup> Includes current pregnancy

<sup>2</sup> Wants next birth within 2 years

<sup>3</sup> Wants to delay next birth for 2 or more years

<sup>4</sup> Includes both male and female sterilisation

## F. Maternal Care

Proper care during pregnancy and delivery is important for the health of both the mother and the baby, and is the fifth Millennium Development Goal (MDG). In the 2008 NDHS, women who had given birth in the five years preceding the survey were asked a number of questions about maternal care. Mothers were asked whether they had received tetanus toxoid injections while pregnant and whether they had obtained antenatal care during the pregnancy for their most recent live birth in the last five years. For each live birth over the same period, the mothers were also asked what type of assistance they received at the time of delivery. Table 6 summarises information on the coverage of these maternal health services.

### *Antenatal Care*

Antenatal care (ANC) from a trained provider is important in order to monitor the pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy and delivery. According to the 2008 NDHS results, 58 percent of women who gave birth in the five years preceding the survey received antenatal care from a trained health professional at least once. By age, ANC coverage is highest among women age 20-34 (61 percent). Urban women are almost twice as likely as rural women to have received ANC from a health

professional (85 and 46 percent, respectively). Eighty-seven percent of mothers received antenatal care from a health professional in the South West and South East zones, compared with 31 percent of mothers in the North West. Among the states, the percentage of mothers who received antenatal care from a health professional ranges from a high of 98 percent in Anambra to a low of 12 percent in Kebbi. The higher the mother's educational status, the more likely she is to receive ANC services from a health professional. For example, 31 percent of mothers with no education received ANC services from a health professional, compared with 97 percent of mothers with more than a secondary education.

### ***Tetanus Toxoid***

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus (a major cause of early infant death in many developing countries), which may occur because of failure to observe hygienic procedures during delivery. Table 6 indicates that 48 percent of last births were protected against neonatal tetanus. Protection against neonatal tetanus is highest for births of mothers in the 20-34 age group (51 percent), urban mothers (72 percent), mothers in South East (81 percent), and mothers with more than secondary education (88 percent). Among the states, births of mothers in Anambra maintain the highest protection against neonatal tetanus (93 percent), while those in Sokoto have the lowest protection nationwide (7 percent).

### ***Delivery Care***

Access to proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother and/or baby (Van Lerberghe and De Brouwere, 2001; WHO, 2006). Table 6 shows that 58 percent of mothers reported that they received antenatal care from a health professional for their last birth. For all live births in the past five years, only 39 percent reported that their births were delivered by a health professional. An even lower proportion, 35 percent, delivered in a health facility.

Sixty-seven percent of births to urban mothers were attended to by a health professional and 60 percent were delivered in a health facility, compared with 27 and 24 percent, respectively, of births to rural women. Mothers residing in the South East zone are the most likely to be attended to at delivery by a health professional (82 percent) and the most likely to deliver in a health facility (74 percent). Wide variation exists among the states for both the proportion of mothers that were attended by a health professional during delivery and for delivery in health facility.

Mothers' educational status has a significant impact on assisted delivery by a health professional and whether the birth was delivered at a health facility. For example, only 12 percent of deliveries to mothers with no education were attended to by a health professional and 10 percent occurred in a health facility, compared with 94 percent of births to mothers with more than a secondary education that were delivered by a health professional and 90 percent that occurred in a health facility.

**Table 6 Maternal care indicators**

Percentage of women who had a live birth in the five years preceding the survey who received antenatal care from a health professional for the last live birth and whose last live birth was protected against neonatal tetanus, and among all live births in the five years before the survey, percentage delivered by a health professional and percentage delivered in a health facility, by background characteristics, Nigeria 2008

Background characteristic	Percentage with antenatal care from a health professional <sup>1</sup>	Percentage whose last live birth was protected against neonatal tetanus <sup>2</sup>	Number of women	Percentage delivered by a health professional	Percentage delivered in a health facility	Number of births
<b>Mother's age at birth</b>						
<20	42.9	30.7	2,369	24.5	21.8	4,166
20-34	61.4	51.1	12,006	42.7	38.4	19,643
35+	55.1	46.9	3,260	35.6	32.4	4,292
<b>Residence</b>						
Urban	84.5	71.5	5,417	66.6	60.4	8,442
Rural	45.9	37.0	12,210	27.0	24.1	19,647
<b>Zone</b>						
North Central	65.1	48.3	2,525	42.7	41.0	3,830
North East	43.0	29.8	2,751	15.5	12.8	4,575
North West	31.1	19.9	5,372	9.8	8.4	8,779
South East	87.0	80.5	1,603	81.8	73.9	2,730
South South	69.8	68.1	2,310	55.8	48.1	3,667
South West	87.1	78.8	3,075	76.5	70.0	4,519
<b>State of residence</b>						
Sokoto	13.8	6.8	599	5.1	4.4	983
Zamfara	13.1	9.8	514	7.7	6.5	815
Katsina	14.4	10.6	942	4.7	4.2	1,569
Jigawa	20.1	10.3	667	5.1	4.5	1,052
Yobe	36.0	25.0	362	9.3	6.1	618
Borno	32.6	22.8	604	13.2	11.8	1,049
Adamawa	61.2	42.2	443	14.6	10.7	729
Gombe	44.5	40.7	327	18.3	17.2	526
Bauchi	44.9	23.8	705	15.7	13.0	1,172
Kano	49.8	30.6	1,428	12.7	11.1	2,430
Kaduna	62.1	41.3	780	21.8	18.4	1,222
Kebbi	12.3	11.7	442	6.2	4.8	708
Niger	36.6	28.8	566	17.2	15.9	927
Abuja	89.2	68.7	169	64.3	54.2	254
Nasarawa	72.6	35.3	224	33.8	32.9	320
Plateau	84.1	65.5	421	30.7	30.2	607
Taraba	39.3	33.7	309	25.9	21.1	482
Benue	63.2	44.3	526	52.3	50.9	832
Kogi	81.6	66.8	324	75.8	77.3	478
Kwara	58.1	45.9	296	53.2	48.8	412
Oyo	87.6	73.6	669	76.4	67.1	978
Osun	93.6	92.8	354	89.2	85.1	484
Ekiti	93.4	90.4	250	81.2	75.2	374
Ondo	70.1	63.4	359	50.5	46.9	528
Edo	90.5	74.4	355	79.9	76.2	568
Anambra	97.7	93.4	422	95.2	87.8	781
Enugu	68.1	65.5	285	65.5	53.6	444
Ebonyi	75.7	57.0	261	46.3	40.7	432
Cross River	68.0	61.9	376	44.2	38.5	549
Akwa Ibom	66.8	64.1	367	44.0	36.9	590
Abia	89.1	86.4	279	87.1	74.4	472
Imo	96.3	89.8	355	98.0	94.3	602
Rivers	66.6	75.0	565	63.6	47.9	937
Bayelsa	35.0	49.7	211	21.6	18.4	341
Delta	78.1	71.6	436	61.5	57.2	682
Lagos	87.6	82.6	986	82.8	76.9	1,454
Ogun	89.9	72.8	457	71.8	63.8	703
<b>Education</b>						
No education	30.8	20.7	8,017	11.5	9.7	13,071
Primary	68.9	57.7	4,012	44.2	39.0	6,521
Secondary	86.0	76.8	4,557	73.4	66.7	6,997
More than secondary	97.4	88.2	1,050	93.9	89.8	1,511
Total	57.7	47.6	17,635	38.9	35.0	28,100

<sup>1</sup> Doctor, nurse, midwife, or auxiliary midwife

<sup>2</sup> Includes mothers with two injections during the pregnancy of the last live birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last live birth), or four or more injections (the last within ten years of the last live birth), or five or more injections prior to the last live birth

## **G. Child Health and Nutrition**

The 2008 NDHS collected data on a number of key child health indicators, including childhood mortality rates, immunisation of young children, infant feeding practices, and treatment practices when a child is ill.

### ***Vaccination of Children***

According to the World Health Organisation, a child is considered fully vaccinated if he or she has received a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus (DPT); at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life. The 2008 NDHS collected information on the coverage for these vaccinations among all children born in the five years preceding the survey. In Nigeria, BCG vaccine should be given at birth, DPT and polio vaccines should be given at approximately 4, 8, and 12 weeks of age, and there is also a dose of polio vaccine that should be given at birth (polio 0). Measles vaccine should be given at or soon after the child reaches nine months of age. It is also recommended that children receive the complete schedule of vaccinations before their first birthday and that the vaccinations be recorded on a health card given to the parents or guardians.

In the 2008 NDHS, information on vaccination coverage was obtained in two ways—from health cards and from mothers' verbal reports. All mothers were asked to show the interviewer the health cards where immunisation dates are recorded for all children born since January 2003. If the cards were available, the interviewer then recorded from the cards the dates of each vaccination received into the questionnaire. If a child never received a health card, the mother was unable to show the card to the interviewer, or a vaccination was not recorded on the health card, the child's vaccination information was based on the mother's recall. Questions were asked for each vaccine type. She was asked to recall whether the child had received BCG, polio, DPT, and measles vaccinations. If she indicated that the child had received the polio or DPT vaccines, she was asked about the number of doses that the child received. The mother was then asked whether the child had received other vaccinations that were not recorded on the card, and if so, they too were noted on the questionnaire. The results presented here are based on both health card information and, for those children without a card, information provided by the mother.

Table 7 pertains to children age 12-23 months, the age by which they should have received all vaccinations. Overall, 23 percent of children ages 12-23 months are fully vaccinated. Vaccination coverage has nearly doubled from the estimate in the 2003 NDHS (13 percent). Nationally, only about one-quarter of children had a health card. At least half of Nigerian children received vaccinations for BCG (50 percent), DPT 1 (52 percent), polio 1 (68 percent), and polio 2 (57 percent). However, the percentage of children who go on to receive DPT 3 and polio 3 is lower, 35 and 39 percent, respectively. Overall, 29 percent of children in Nigeria have not received any vaccinations.

Children in urban areas are more than twice as likely as rural children to be fully vaccinated; 38 percent compared with 16 percent, respectively. The children with full vaccination coverage range from a high of 43 percent for South West and South East to a low of 6 percent for North West. There are substantial variations among states in vaccination coverage; the percentage of children that are fully vaccinated ranges from less than 1 percent in Katsina and Jigawa to 58 percent in Ondo and 59 percent in Osun.

Mother's level of education plays a major role in whether children are immunised; 61 percent of children whose mothers have more than a secondary education are fully immunised, compared with 7 percent of children whose mothers have no education.



Table 7 Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card seen, by background characteristics, Nigeria 2008

Background characteristic	BCG	DPT 1	DPT 2	DPT 3	Polio 0 <sup>1</sup>	Polio 1	Polio 2	Polio 3	Measles	All <sup>2</sup>	No vaccination	Percentage with a vaccination card	Number of children
<b>Sex</b>													
Male	49.1	51.4	44.3	35.6	36.6	66.7	56.4	38.7	41.5	22.6	29.7	26.2	2,448
Female	50.2	52.7	45.1	35.3	36.7	68.9	58.0	38.7	41.4	22.8	28.1	26.1	2,497
<b>Residence</b>													
Urban	72.7	72.4	65.5	56.3	57.7	78.3	69.3	52.3	60.0	38.4	17.3	39.6	1,520
Rural	39.4	43.0	35.4	26.2	27.3	63.1	51.8	32.6	33.2	15.7	34.1	20.2	3,425
<b>Zone</b>													
North Central	62.4	63.9	54.5	43.4	42.0	72.7	59.9	40.5	51.8	25.9	23.4	31.2	640
North East	27.2	30.5	18.9	12.4	17.7	61.4	45.6	28.6	24.8	7.6	33.9	15.1	780
North West	19.1	23.9	17.4	9.1	11.2	48.6	38.5	24.3	19.5	6.0	48.7	5.8	1,545
South East	79.1	79.3	74.8	66.9	68.1	80.6	75.4	52.5	63.9	42.9	17.4	46.1	504
South South	75.3	74.5	65.6	54.2	56.4	86.7	74.9	53.6	55.5	36.0	10.5	46.4	663
South West	80.3	81.7	77.8	66.5	63.4	83.2	76.0	53.4	65.5	42.8	12.9	42.5	814
<b>State of residence</b>													
Sokoto	4.5	5.5	4.5	2.0	1.5	34.8	29.4	10.9	3.5	1.0	64.7	1.0	175
Zamfara	15.9	23.9	19.2	8.8	3.0	47.2	37.5	22.8	14.1	5.4	52.2	1.1	145
Katsina	7.8	8.6	4.7	1.7	6.9	39.7	30.2	19.8	8.2	0.9	58.6	4.3	269
Jigawa	8.6	11.7	5.4	0.0	6.8	43.4	35.4	25.1	8.3	0.0	54.2	2.9	188
Yobe	15.0	19.3	10.2	9.1	14.7	36.3	25.0	18.0	25.0	4.0	57.2	18.7	101
Borno	17.9	17.0	7.1	2.5	11.5	38.5	24.8	13.4	12.5	1.5	56.9	8.0	179
Adamawa	43.8	52.5	40.7	30.2	32.7	78.4	66.7	46.3	41.4	19.1	16.7	28.4	122
Gombe	42.4	48.6	37.4	28.2	26.7	69.7	58.6	35.5	37.0	15.5	25.8	23.0	97
Bauchi	17.7	16.4	4.7	1.0	7.9	68.6	43.3	27.4	14.9	1.0	27.3	6.7	194
Kano	23.3	24.6	16.1	7.6	11.8	39.9	27.6	15.7	17.8	5.5	54.1	5.5	394
Kaduna	46.8	60.5	49.1	32.7	29.3	86.6	72.3	50.8	56.9	21.4	10.9	17.3	247
Kebbi	15.1	26.5	19.9	7.2	12.7	48.8	42.2	28.3	21.1	4.8	50.6	4.2	126
Niger	37.5	38.7	28.9	20.9	22.8	55.2	44.9	25.8	33.2	12.3	41.7	17.2	142
Abuja	84.7	87.2	82.0	75.9	66.4	90.5	86.0	65.2	73.5	55.4	7.6	54.6	48
Nasarawa	50.1	53.6	45.7	30.1	38.5	57.0	39.8	31.0	38.6	16.1	39.5	24.9	54
Plateau	78.2	79.5	74.7	56.8	51.4	82.3	69.1	44.2	64.4	31.2	13.0	43.6	111
Taraba	40.9	51.8	33.6	19.6	24.7	88.6	73.4	42.0	35.2	14.1	7.7	16.6	88
Benue	59.9	60.5	46.9	36.8	35.2	74.0	58.9	43.8	43.3	18.8	18.8	33.9	137
Kogi	76.4	78.6	65.2	55.0	53.9	83.2	64.0	46.1	69.6	39.3	13.5	24.7	80
Kwara	70.8	71.8	65.2	55.2	52.0	78.4	70.7	41.9	60.9	30.9	21.6	31.0	68
Oyo	70.6	79.4	74.4	60.7	49.5	89.0	78.9	42.7	59.4	30.6	8.9	38.3	176
Osun	95.3	95.3	95.3	85.6	85.7	89.1	87.9	68.4	84.4	58.7	4.7	56.2	82
Ekiti	97.1	96.2	94.3	88.5	75.1	97.1	94.3	70.2	85.7	57.7	1.9	42.3	78
Ondo	75.3	71.9	66.3	54.3	43.4	74.1	68.6	48.8	64.4	37.0	22.6	29.9	92
Edo	88.8	87.9	79.5	61.8	62.8	91.7	79.7	54.6	74.0	38.8	3.7	44.3	98
Anambra	84.7	88.6	82.4	76.3	68.5	87.5	83.3	63.2	71.0	51.9	10.4	47.8	158
Enugu	66.2	63.8	59.2	50.0	61.6	70.8	59.2	35.3	53.6	28.4	28.1	41.1	96
Ebonyi	79.4	76.9	71.8	60.1	66.8	74.2	72.6	56.8	60.8	50.0	19.0	58.4	72
Cross River	75.8	76.7	74.8	64.6	57.1	84.2	77.6	51.5	63.6	42.1	15.8	54.3	102
Akwa Ibom	68.0	72.4	63.7	51.5	50.6	90.2	82.6	59.1	50.2	32.4	8.7	42.0	103
Abia	76.2	74.7	70.3	59.8	70.3	77.7	71.8	52.3	61.2	38.9	20.8	46.4	71
Imo	83.9	83.9	82.6	77.0	72.8	85.2	82.6	49.5	66.2	40.3	14.8	40.0	109
Rivers	71.7	68.9	58.5	51.8	59.3	87.8	71.6	54.6	48.9	36.5	11.3	45.0	204
Bayelsa	65.3	53.1	37.8	27.6	37.8	73.5	59.2	34.7	30.6	20.4	18.4	37.8	54
Delta	81.5	83.9	74.3	58.1	59.8	85.9	75.1	57.4	61.3	38.4	7.7	52.5	102
Lagos	84.6	86.1	83.2	73.6	75.1	83.1	77.2	60.9	69.2	52.8	11.7	52.8	263
Ogun	67.8	64.4	57.6	42.0	51.0	68.8	55.4	35.3	41.9	23.1	26.7	26.5	122
<b>Education</b>													
No education	20.2	24.4	17.6	10.7	11.7	50.0	38.4	24.0	19.0	6.5	47.4	8.6	2,248
Primary	58.2	61.0	50.1	37.7	39.9	73.5	62.5	38.7	47.4	23.1	21.8	29.8	1,107
Secondary	83.6	83.1	76.4	65.4	66.0	88.5	78.9	56.9	65.7	41.4	8.2	45.7	1,283
More than secondary	92.6	92.5	90.7	83.4	85.2	91.3	85.8	69.8	82.9	61.2	5.3	59.6	307
<b>Total</b>	49.7	52.0	44.7	35.4	36.7	67.8	57.2	38.7	41.4	22.7	28.9	26.1	4,945

<sup>1</sup> Polio 0 is the polio vaccination given at birth.

<sup>2</sup> BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

### ***Childhood Acute Respiratory Infection, Fever, and Diarrhoea***

Acute respiratory infection (ARI), fever, and dehydration from diarrhoea are important contributing causes of childhood morbidity and mortality in developing countries (WHO, 2003). Prompt medical attention when a child has the symptoms of these illnesses is, therefore, crucial in reducing child deaths. In the 2008 NDHS, for each child under five years of age, mothers were asked if the child had experienced an episode of diarrhoea, a cough accompanied by short, rapid breathing (symptoms of ARI), or fever in the two weeks preceding the survey. Information was also collected on the percentage of episodes in which mothers sought treatment for their children. It should be noted that the morbidity data collected are subjective in the sense that they are based on the mother's perception of illnesses without validation by medical personnel.

According to the data presented in Table 8, treatment from a health facility or provider was sought for about one-third of the children with symptoms of ARI (32 percent) or fever (36 percent). A similar proportion of children with diarrhoea (32 percent) were taken to a health facility or health provider for treatment. It is worth noting that a similar percentage of children with diarrhoea (31 percent) received some sort of oral rehydration therapy (ORT). ORT includes solution prepared from packets of oral rehydration salts (ORS), pre-packaged ORS liquids, and recommended home fluids (RHF). Children of urban mothers and those residing in North Central and South West zones are more likely to be taken to a health facility or health provider when they are sick with symptoms of ARI, when they have fever or diarrhoea than other children. The likelihood of a child to be taken to a health facility or health provider for treatment when he or she is sick with any of the three conditions increases with increasing level of mother's education. For example, 27 percent of children of uneducated mothers who were sick with diarrhoea were taken to a health facility or provider for treatment, compared with 47 percent of children whose mothers had more than secondary education. Similar patterns were observed in the proportion of children with diarrhoea who were given ORS or any ORT by background characteristics. For example, children with diarrhoea whose mothers have post-secondary education are much more likely to be given ORS (53 percent) or some type of ORT (61 percent) than children with diarrhoea whose mothers have no education (20 and 23 percent, respectively).

**Table 8 Treatment for acute respiratory infection, fever, and diarrhoea**

Among children under five years who were sick with a cough accompanied by short, rapid breathing or with difficulty breathing due to chest, congestion (symptoms of acute respiratory infection-ARI) or with fever, in the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, and among children under five years who were sick with diarrhoea during the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, percentage given a solution made from oral rehydration salt (ORS) packets or given pre-packaged ORS liquids, and percentage given any oral rehydration therapy (ORT) by background characteristics, Nigeria 2008

Background characteristic	Children with symptoms of ARI		Children with fever		Children with diarrhoea			Number with diarrhoea
	Percentage for whom treatment was sought from a health facility/provider <sup>1</sup>	Number with ARI	Percentage for whom treatment was sought from a health facility/provider <sup>1</sup>	Number with fever	Percentage for whom treatment was sought from a health facility/provider <sup>1</sup>	Percentage given solution from ORS packet <sup>2</sup>	Percentage given any ORT <sup>3</sup>	
<b>Age in months</b>								
<6	33.4	61	30.0	268	24.5	20.8	28.0	196
6-11	33.8	93	36.8	553	34.5	30.1	37.2	424
12-23	33.5	190	36.7	1,054	34.0	28.1	33.2	805
24-35	30.3	142	36.0	826	34.5	24.5	28.7	469
36-47	25.2	118	33.1	688	25.5	18.6	24.1	380
48-59	34.5	86	36.5	579	32.3	25.6	32.6	257
<b>Sex</b>								
Male	28.6	348	35.2	2,075	31.7	25.0	31.0	1,336
Female	34.5	342	35.7	1,893	32.3	26.1	31.5	1,194
<b>Residence</b>								
Urban	37.7	161	42.3	1,010	41.1	41.6	46.5	609
Rural	29.7	529	33.1	2,958	29.1	20.5	26.4	1,921
<b>Zone</b>								
North Central	56.8	47	46.6	331	38.4	33.5	43.2	193
North East	24.4	299	29.1	872	27.6	17.6	20.7	831
North West	46.5	143	40.2	1,189	32.6	25.2	28.4	998
South East	33.0	43	28.3	555	33.6	32.9	51.4	120
South South	14.6	115	28.5	682	25.2	23.7	29.3	127
South West	48.2	43	49.9	340	41.4	43.7	58.0	261
<b>State of residence</b>								
Sokoto	*	6	30.4	80	33.8	9.8	12.0	116
Zamfara	*	9	27.8	119	23.2	24.4	24.4	74
Katsina	35.3	59	43.2	266	28.6	21.9	24.8	244
Jigawa	*	8	42.4	128	34.9	26.1	29.7	75
Yobe	32.4	29	32.5	73	28.6	26.9	27.5	103
Borno	18.4	168	18.1	206	17.1	14.0	15.3	210
Adamawa	(31.2)	24	34.7	74	37.8	18.9	31.1	56
Gombe	(26.6)	15	35.1	65	32.3	17.4	22.6	72
Bauchi	33.8	50	31.2	369	29.2	16.8	19.5	324
Kano	*	32	39.1	433	31.6	28.7	30.1	351
Kaduna	*	10	42.4	110	40.9	36.9	48.4	85
Kebbi	*	18	67.1	53	51.4	31.9	41.7	55
Niger	*	8	46.5	90	35.5	33.3	41.3	76
Abuja	*	0	(65.0)	12	*	*	*	3
Nasarawa	*	10	56.1	28	(48.3)	(42.5)	(42.5)	21
Plateau	*	7	(59.1)	30	*	*	*	13
Taraba	(31.5)	14	34.9	86	37.1	18.0	22.8	67
Benue	*	21	42.3	123	36.9	26.2	40.5	54
Kogi	*	2	*	20	*	*	*	13
Kwara	*	0	(45.0)	27	*	*	*	13
Oyo	*	11	(48.3)	58	*	*	*	39
Osun	*	4	(62.2)	42	*	*	*	23
Ekiti	*	1	60.9	52	(54.6)	(45.3)	(64.2)	31
Ondo	*	3	(43.3)	38	(27.1)	(33.8)	(46.6)	33
Edo	*	2	35.1	73	*	*	*	14
Anambra	*	9	29.7	80	*	*	*	22
Enugu	*	9	30.6	108	(30.0)	(15.1)	(29.7)	30
Ebonyi	*	9	12.7	116	17.1	24.4	59.0	32
Cross River	*	13	35.6	102	(30.5)	(30.7)	(30.7)	34
Akwa Ibom	*	13	30.4	107	*	*	*	22
Abia	*	6	30.3	115	*	*	*	19
Imo	*	9	37.2	137	*	*	*	17
Rivers	(12.6)	62	26.9	254	*	*	*	33
Bayelsa	*	4	22.7	54	*	*	*	9
Delta	*	21	20.6	92	*	*	*	15
Lagos	*	8	48.0	101	(39.8)	(51.4)	(62.9)	84
Ogun	*	16	(38.9)	49	(36.5)	(41.8)	(57.9)	52
<b>Education</b>								
No education	29.7	386	32.8	1,846	27.1	19.5	23.4	1,565
Primary	27.9	155	32.1	893	36.5	30.7	38.7	519
Secondary	39.0	131	39.3	1,022	43.3	38.4	47.9	376
More than secondary	*	18	54.6	207	46.7	52.9	61.3	71
<b>Total</b>	<b>31.6</b>	<b>690</b>	<b>35.5</b>	<b>3,968</b>	<b>32.0</b>	<b>25.5</b>	<b>31.2</b>	<b>2,530</b>

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure is based on fewer than 25 unweighted cases and has been suppressed.

<sup>1</sup> Excludes pharmacy, chemist/PMS, shop, and traditional practitioner

<sup>2</sup> Includes ORS from packets and pre-packaged ORS liquids

<sup>3</sup> Includes ORS from packets, pre-packaged ORS liquids, and recommended home fluid

## Infant and Young Child Feeding Practices

Breastfeeding is sufficient and beneficial for infant nutrition in the first 6 months of life. Breastfeeding also helps the uterus retract, hence reducing the mother's postpartum blood loss. Supplementing breast milk before the child is 4 months of age is discouraged because it may inhibit breastfeeding and expose the newborn infant to illness. At a later stage of the baby's development, breast milk should be supplemented by other liquids and eventually by solid or mushy food to provide adequate nourishment (PAHO, 2002).

The 2008 NDHS collected data on infant and young child feeding (IYCF) practices for all children born in the five years preceding the survey. As shown in Table 9, only 13 percent of children under 6 months of age are exclusively breastfed. In addition to breast milk, 34 percent of infants age 0-5 months are given plain water only, while 10 percent are given non-milk liquids and juice and 6 percent are given milk other than breastmilk. Furthermore, 35 percent of infants age 0-5 months are given complementary foods. By age 6-9 months, 75 percent of infants are given complementary foods. Sixteen percent of infants age 0-5 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

Table 9 Breastfeeding status by age

Among youngest children under three years living with their mother, percent distribution by breastfeeding status and the percentage currently breastfeeding; and among all children under three years, percentage using a bottle with a nipple, according to age in months, Nigeria 2008

Age in months	Breastfeeding and consuming:							Percentage currently breastfeeding	Number of youngest children under three years	Percentage using a bottle with a nipple <sup>1</sup>	Number of all children under three years
	Not breast-feeding	Exclusively breastfed	Plain water only	Non-milk liquids/ juice	Other milk	Complementary food	Total				
<2	2.9	20.1	39.2	12.4	5.5	19.9	100.0	97.1	741	12.5	748
2-3	3.1	14.2	34.0	10.7	5.9	32.1	100.0	96.9	1,011	16.6	1,024
4-5	3.1	7.2	29.1	7.9	5.1	47.6	100.0	96.9	1,083	16.7	1,102
6-7	3.2	3.3	17.1	4.8	3.3	68.3	100.0	96.8	1,015	12.8	1,032
8-9	5.9	1.3	5.3	2.4	1.7	83.3	100.0	94.1	909	16.3	939
10-11	9.4	0.9	3.2	1.4	1.1	84.1	100.0	90.6	861	11.1	884
12-15	14.6	0.6	2.3	1.2	0.8	80.5	100.0	85.4	1,995	8.9	2,041
16-19	38.8	0.2	1.1	0.5	0.4	59.0	100.0	61.2	1,559	6.4	1,637
20-23	67.7	0.3	0.6	0.5	0.1	30.7	100.0	32.3	1,099	5.8	1,267
24-27	89.0	0.1	0.0	0.1	0.0	10.8	100.0	11.0	1,547	2.7	1,947
28-31	92.1	0.1	0.1	0.0	0.1	7.6	100.0	7.9	1,082	2.7	1,584
32-35	95.3	0.3	0.5	0.0	0.0	4.0	100.0	4.7	575	3.1	1,103
0-3	3.0	16.7	36.2	11.4	5.8	26.9	100.0	97.0	1,752	14.9	1,773
0-5	3.0	13.1	33.5	10.1	5.5	34.8	100.0	97.0	2,835	15.6	2,874
6-9	4.5	2.4	11.5	3.7	2.5	75.4	100.0	95.5	1,924	14.5	1,971
12-15	14.6	0.6	2.3	1.2	0.8	80.5	100.0	85.4	1,995	8.9	2,041
12-23	35.3	0.4	1.5	0.8	0.5	61.6	100.0	64.7	4,653	7.3	4,945
20-23	67.7	0.3	0.6	0.5	0.1	30.7	100.0	32.3	1,099	5.8	1,267

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children classified as breastfeeding and consuming plain water only consume no supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, water-based liquids/juice, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and water-based liquids and who do not receive complementary foods are classified in the water-based liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

<sup>1</sup> Based on all children under three years

## Nutritional Status of Children

Anthropometric indicators for young children were collected in the 2008 NDHS to provide outcome measures of nutritional status. As recommended by the World Health Organisation, evaluation of nutritional status in this report is based on the comparison of these three indices for the population of children in the survey with those reported for a reference population of well-nourished children (WHO, 2006). The indices are expressed

as standard deviation units from the median for the reference group. Children who fall below minus two standard deviations (-2 SD) from the median of the reference population are regarded as moderately malnourished, while those who fall below minus three standard deviations (-3 SD) from the median of the reference population are considered severely malnourished. Marked differences, especially with regard to height-for-age and weight-for-age, are often seen between different subgroups of children within a country.

Table 10 shows nutritional status for children under five years of age, according to three anthropometric indices by background characteristics. Height-for-age is the measure of linear growth. A child who is below minus 2 standard deviations from the reference mean for height-for-age is considered short for his or her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition. The percentage of children in Nigeria who are stunted (below -2 SD) is 41 percent. In the 2008 NDHS survey, a higher proportion of males (43 percent) than females (38 percent) are stunted. In rural areas, 45 percent of children are stunted, versus 31 percent of children in urban areas. About half of children in North West and North East are stunted (53 and 49 percent, respectively). Looking at states, stunting is highest among children in Kebbi (64 percent) and lowest among children in Anambra (12 percent). Stunting decreases significantly with increasing level of mother's education, from a high of 51 percent among children of uneducated mothers to a low 20 percent among children of mothers with more than a secondary education.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference mean for weight-for-height is considered too thin for his or her height, or wasted, a condition reflecting acute or recent nutritional deficit. Overall, 14 percent of the children in Nigeria are wasted, and half of them severely wasted. There is little difference by sex; however, variations exist by urban-rural residence. Fifteen percent of children in rural areas are wasted, compared with 11 percent in urban areas. North East and North West have the largest percentages of wasting among children (22 and 20 percent, respectively). The lowest proportion of children who are wasted is found in Rivers, Ekiti, and Plateau states (5 percent each), while the highest is found in Bauchi (41 percent). Wasting decreases steadily with increasing mother's education; it is highest among children of uneducated mothers (20 percent) and lowest among children of mothers with more than a secondary education (6 percent).

Weight-for-age is a composite index of weight-for-height and height-for-age, and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). A child can be underweight for his or her age because he or she is stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. Twenty-three percent of all children in Nigeria are underweight; almost 1 in 10 of these children are severely underweight. Again, there is little difference by sex, but greater variance by residence. Twenty-seven percent of rural children are underweight, compared with 16 percent of urban children. Similar to the other two indices, North East and North West have the largest percentage of children who are underweight (35 percent each). The percentage of children of uneducated mothers who are underweight is more than four times that of children whose mothers have more than secondary education (34 and 8 percent, respectively). In addition, the impact of weaning can be seen in younger children: data on all three indices show that the nutritional status of children deteriorates after 6 months of age, when children are being weaned.

A line has been added in Table 10 to show the 2008 NDHS national totals according to the NCHS/CDC/WHO standard classification. The data by background characteristics are not presented in this report. A comparison of the 2003 NDHS nutritional status data with the 2008 NDHS data using the previous NCHS/CDC/WHO standard classification shows that there has been little change in anthropometric measures among children.



Table 10 Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Nigeria 2008

Background characteristic	Height-for-age (stunting)		Weight-for-height (wasting)		Weight-for-age (underweight)		Number of children
	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	
<b>Age in months</b>							
<6	9.9	21.3	9.9	17.5	5.2	13.7	1,911
6-8	14.3	26.7	9.2	19.5	9.6	22.5	1,142
9-11	16.8	30.9	7.4	17.9	10.1	23.2	1,026
12-17	26.2	45.6	8.4	17.1	11.7	26.2	2,160
18-23	30.0	49.6	7.2	14.7	10.3	25.6	1,610
24-35	30.1	48.0	6.5	12.8	11.0	26.0	3,767
36-47	23.0	42.0	5.7	11.2	7.8	21.6	4,288
48-59	21.3	41.6	5.7	11.5	8.0	23.9	3,992
<b>Sex</b>							
Male	24.8	43.0	7.4	14.4	9.9	24.5	9,861
Female	20.9	38.4	6.5	13.4	8.1	21.7	10,035
<b>Residence</b>							
Urban	15.2	31.0	5.4	11.1	5.0	15.8	6,462
Rural	26.5	45.3	7.7	15.2	10.9	26.6	13,425
<b>Zone</b>							
North Central	25.2	43.8	5.2	9.3	6.5	19.5	2,800
North East	29.2	48.6	11.4	22.2	15.2	34.5	3,097
North West	33.5	52.6	10.6	19.9	14.9	35.1	5,488
South East	9.0	21.7	3.4	8.6	3.3	10.0	1,947
South South	14.2	31.1	2.9	7.5	3.9	12.8	2,769
South West	13.8	31.2	4.2	9.3	4.0	13.3	3,795
<b>State of residence</b>							
Sokoto	32.1	53.6	11.3	24.4	19.1	45.8	743
Zamfara	33.2	54.0	4.9	11.3	5.5	18.3	417
Katsina	39.2	58.4	10.2	20.3	15.1	37.7	897
Jigawa	34.3	53.4	17.5	34.4	25.5	51.1	694
Yobe	34.5	54.0	9.2	20.9	15.3	39.4	407
Borno	30.2	49.2	4.0	13.4	12.1	28.1	723
Adamawa	26.7	42.4	11.8	21.4	12.1	30.7	536
Gombe	34.8	52.3	8.1	17.2	11.6	28.4	312
Bauchi	28.7	51.0	25.5	41.4	28.6	52.2	725
Kano	28.9	46.3	10.9	17.1	13.0	30.7	1,491
Kaduna	33.0	51.8	4.7	9.4	6.4	21.8	968
Kebbi	43.6	63.5	21.0	35.1	31.1	54.2	277
Niger	27.4	46.6	13.0	19.9	12.3	32.7	514
Abuja	15.0	30.2	4.2	9.0	2.3	11.1	208
Nasarawa	25.4	44.1	3.2	5.6	5.7	16.6	248
Plateau	37.4	58.8	2.6	5.4	5.5	17.8	431
Taraba	22.1	43.0	3.3	9.3	3.4	18.2	395
Benue	17.4	37.1	2.5	5.5	4.2	13.2	729
Kogi	20.6	35.8	3.9	6.8	3.4	15.2	342
Kwara	34.4	51.4	5.6	12.2	10.1	26.9	327
Oyo	19.0	37.2	5.6	11.7	7.8	17.1	841
Osun	13.3	31.2	5.6	12.4	3.0	13.3	428
Ekiti	13.3	32.9	2.1	4.8	1.4	8.8	314
Ondo	16.0	32.0	3.2	6.0	3.0	11.3	426
Edo	19.8	37.5	3.0	8.2	3.0	10.9	283
Anambra	4.5	12.4	2.0	6.3	2.9	8.1	565
Enugu	10.5	20.0	7.6	16.5	3.3	6.6	214
Ebonyi	13.5	32.4	2.4	8.4	5.4	15.6	361
Cross River	16.8	31.5	1.7	6.2	4.3	15.9	483
Akwa Ibom	11.9	27.7	6.7	14.1	6.5	16.6	460
Abia	11.0	24.1	4.8	8.5	2.5	11.0	348
Imo	8.8	23.5	3.0	7.9	2.9	8.8	460
Rivers	11.1	28.9	1.7	4.8	2.9	10.6	762
Bayelsa	14.5	28.7	3.3	7.4	2.3	8.0	272
Delta	15.2	34.8	2.1	6.2	4.1	13.4	509
Lagos	7.8	21.0	4.1	9.8	1.8	10.1	1,187
Ogun	17.4	41.5	3.2	7.3	5.5	18.2	598

Continued...

Table 10—Continued

Background characteristic	Height-for-age (stunting)		Weight-for-height (wasting)		Weight-for-age (underweight)		Number of children
	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	Percentage below -3 SD	Percentage below -2 SD <sup>1</sup>	
<b>Education</b>							
No education	31.6	51.1	10.6	20.1	14.8	34.2	7,992
Primary	21.4	40.3	5.1	11.2	6.6	19.4	4,578
Secondary	13.3	28.8	4.1	8.4	3.6	12.3	5,004
More than secondary	8.3	19.6	2.5	5.8	1.7	7.6	1,105
<b>Mother's status</b>							
Mother interviewed	22.8	40.6	7.0	13.9	9.0	23.2	18,286
Mother not interviewed, but in household <sup>2</sup>	20.6	39.7	6.4	13.1	9.5	20.1	393
Mother not interviewed, not in household <sup>3</sup>	23.1	40.9	6.1	13.5	9.2	22.3	1,202
Missing	44.8	51.5	10.6	10.6	13.1	37.4	16
Total 2008 WHO standard	22.8	40.6	7.0	13.9	9.0	23.1	19,896
Total 2008 NCHS/CDC/WHO standard <sup>4</sup>	19.6	36.8	3.9	12.4	9.0	27.1	19,993

Note: Table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are NOT comparable to those based on the previously used NCHS/CDC/WHO standards.

Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.

<sup>1</sup> Includes children who are below -3 standard deviations (SD) from the International Reference Population median

<sup>2</sup> For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

<sup>3</sup> Includes children whose mothers are deceased

<sup>4</sup> This line has been added in the table to show the measure according to the NCHS/CDC/WHO standard classification, which was also used in the 2003 NDHS. The data by background characteristics are not presented in this report; however, the totals are presented for comparison with the 2003 NDHS data.

## H. Early Childhood Mortality

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP, 2007). Estimates of childhood mortality are based on information collected in the birth history section of the questionnaire administered to individual women. The section begins with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live with the mother, the number who live elsewhere, and the number who have died). Table 11 presents estimates for three successive five-year periods prior to the 2008 NDHS. The rates are estimated directly from the birth history information on the child's birth date, survivorship status, and the age at death for children who died. This information is used to directly estimate the following five mortality rates:

<b>Neonatal mortality:</b>	the probability of dying within the first month of life
<b>Post-neonatal mortality:</b>	the difference between infant and neonatal mortality
<b>Infant mortality:</b>	the probability of dying before the first birthday
<b>Child mortality:</b>	the probability of dying between the first and fifth birthday
<b>Under-five mortality:</b>	the probability of dying between birth and the fifth birthday

All rates are expressed per 1,000 live births, except for child mortality, which is expressed per 1,000 children surviving to 12 months of age.

Table 11 presents infant and child mortality estimates based on the data from the 2008 NDHS for the five years immediately preceding the survey (2004-2008). The infant mortality rate is 75 deaths per 1,000 live births. The estimate of child mortality (age 12 months to 4 years) is 88 deaths per 1,000 live births, while the

overall under-five mortality rate for the same period is 157 deaths per 1,000 live births. Trends in infant mortality over the fifteen-year period prior to the survey can also be examined in Table 11.

A comparison of mortality estimates obtained from the 2008 NDHS with the estimates from the 2003 NDHS for the 0-4 years preceding the survey shows that the rates have decreased for all categories. The largest decrease is seen in the under-five mortality, from 201 in the 2003 NDHS to 157 deaths per 1,000 live births in the 2008 NDHS. Detailed analysis will be included in the final report.

Table 11 Early childhood mortality rates					
Neonatal, post-neonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Nigeria 2008					
Years preceding the survey	Neonatal mortality (NN)	Post-neonatal mortality <sup>1</sup> (PNN)	Infant mortality ( <sub>1</sub> q <sub>0</sub> )	Child mortality ( <sub>4</sub> q <sub>1</sub> )	Under-five mortality ( <sub>5</sub> q <sub>0</sub> )
0-4	40	35	75	88	157
5-9	52	47	99	97	187
10-14	49	48	97	113	199

<sup>1</sup> Computed as the difference between the infant and neonatal mortality rates

## I. Malaria

Malaria is one of the leading causes of death in developing countries (WHO, 2008). The 2008 NDHS collected data on measures to prevent malaria, including the use of mosquito nets among women and children, and prophylactic use of antimalarial drugs.

### *Ownership of Mosquito Nets*

Table 12 shows that 17 percent of households nationwide own at least one mosquito net (any type), and 8 percent own more than one. Eight percent of households own at least one insecticide treated net (ITN), while 3 percent own more than one. More rural (19 percent) than urban (14 percent) households own a net; however, ownership of ITNs does not differ much by urban-rural residence (9 and 8 percent, respectively).

With regard to the zones, ownership of at least one mosquito net ranges from 11 percent in South West to 28 percent in North East. Ownership of at least one ITN ranges from 6 percent in South West to 10 percent in South South and South East zones.

Table 12 Ownership of mosquito nets					
Percentage of households with at least one and more than one mosquito net (treated or untreated), and percentage of households that have at least one and more than one Insecticide Treated Net (ITN), by background characteristics, Nigeria 2008					
Background characteristic	Number of nets in household		Number of ITNs in household		Number of households
	At least one	More than one	At least one	More than one	
<b>Residence</b>					
Urban	14.0	5.1	8.6	2.6	12,443
Rural	18.6	9.0	7.6	2.7	21,627
<b>Zone</b>					
North Central	15.9	6.9	7.4	2.4	4,568
North East	27.8	15.7	7.1	3.2	3,730
North West	21.0	10.9	7.9	3.4	7,178
South East	13.4	5.0	9.8	3.4	4,527
South South	17.2	6.5	10.3	3.0	5,966
South West	10.8	3.6	6.0	1.4	8,100
Total	16.9	7.6	8.0	2.7	34,070

### ***Use of Mosquito Nets***

Table 13 shows that a total of 12 percent of children under five slept under a mosquito net the night before the survey. Thirteen percent of children under five years in rural areas slept under a mosquito net the night before the survey, compared with 11 percent in urban areas. In urban areas, 7 percent of children under five years were reported to have slept under an ITN the night before the survey, compared with 5 percent in rural areas. Overall, 12 percent of pregnant women age 15-49 slept under a mosquito net the night before the survey, 13 percent in rural areas and 9 percent in urban areas. Five percent of pregnant women in both urban and rural areas slept under an ITN the night before the survey.

### ***Malaria Treatment during Pregnancy***

The 2008 NDHS also collected data on malaria treatment during pregnancy. WHO recommendations to prevent malaria during pregnancy include intermittent preventive treatment (IPT) with at least two doses of an effective antimalarial drug, such as sulfadoxine-pyrimethamine (SP), during routine antenatal clinic visits (WHO, 2008). Table 13 shows that almost half (45 percent) of women in urban areas took antimalarial drugs for malaria prevention during the last pregnancy in the five years preceding the survey, compared with 29 percent of women in rural areas. Ten percent of women in urban areas received IPT during an antenatal visit, compared with 5 percent of women in rural areas.

### ***Treatment of Children with Fever***

Table 13 shows that among children under five years of age with fever in the two weeks preceding the survey, more children in urban areas took antimalarial drugs than children in rural areas (42 and 30 percent, respectively). Among children with fever, 20 percent in urban areas and 14 percent in rural areas took antimalarial drugs the same or next day after developing a fever.

Table 13 Malaria indicators

Possession and use of mosquito nets, preventive malaria treatment during pregnancy, and treatment of children with fever using antimalarial drugs, by urban-rural residence, Nigeria 2008

Malaria indicators	Urban		Rural		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
<b>Mosquito nets</b>						
Percentage of household with at least one mosquito net (treated or untreated)	14.0	12,443	18.6	21,627	16.9	34,070
Percentage of household with at least one Insecticide Treated Net (ITN) <sup>1</sup>	8.6	12,443	7.6	21,627	8.0	34,070
Percentage of children under 5 who slept under a mosquito net the night before the survey	10.5	8,023	12.7	17,761	12.0	25,783
Percentage of children under 5 who slept under an Insecticide Treated Net (ITN) the night before the interview <sup>1</sup>	6.5	8,023	5.0	17,761	5.5	25,783
Percentage of pregnant women age 15-49 who slept under a mosquito net the night before the interview	8.9	1,071	13.2	2,327	11.9	3,397
Percentage of pregnant women age 15-49 who slept under an Insecticide Treated Net (ITN) the night before the interview <sup>1</sup>	4.7	1,071	4.9	2,327	4.8	3,397
<b>Preventive malaria treatment during pregnancy</b>						
Percentage of last birth in the 5 years preceding the survey for which the mother took antimalarial drugs for prevention during the pregnancy	44.8	5,424	28.5	12,210	33.5	17,635
Percentage of last birth in the 5 years preceding the survey for which the mother got Intermittent Preventive Treatment (IPT) during an antenatal visit <sup>2</sup>	10.2	5,424	4.9	12,210	6.5	17,635
<b>Treatment of fever</b>						
Among children under age 5 with fever in the two weeks preceding the survey, percentage who took antimalarial drugs	42.4	1,011	30.2	2,956	33.3	3,968
Among children under age 5 with fever in the two weeks preceding the survey, percentage who took antimalarial drugs the same day/next day after developing fever	19.9	1,011	13.7	2,956	15.3	3,968

<sup>1</sup> An Insecticide Treated Net (ITN) is a permanent net that does not require any treatment, a pretreated net obtained within the last 12 months, or a net that has been soaked with insecticide within the past 12 months.

<sup>2</sup> Intermittent Preventive Treatment (IPT) is preventive treatment with at least two doses of SP/Fansidar/Amalar/Maloxine during antenatal visit.

## J. HIV/AIDS Awareness, Knowledge, and Behaviour

The 2008 NDHS included a series of questions that addressed respondents' knowledge about HIV and AIDS, their awareness of modes of HIV transmission, and behaviours that can prevent the spread of HIV.

Table 14 shows that HIV awareness is high in Nigeria: 88 percent of women and 93 percent of men have heard of AIDS. Awareness varies by background characteristics. Women and men who have never been married and have had sex are most likely to have heard of AIDS (97 and 98 percent, respectively), while women currently in union (86 percent) and men who have never been married and have not had sex (89 percent) are least likely to have heard of AIDS.

Among urban women and men, HIV awareness is almost universal (95 and 98 percent, respectively), while awareness among rural women and men is somewhat lower (84 and 91 percent, respectively). When comparing results among zones, awareness is lowest among women in North Central (76 percent) and men in North East (88 percent) and highest among women in South East (97 percent) and men in South West (98 percent).

HIV awareness varies greatly by state. Among women, awareness ranges from 41 percent among women in Niger to 99 percent or more in Abia, Imo, and Anambra. Among men, awareness ranges from 30 percent in Yobe to 99 percent or more in Adamawa, Gombe, Plateau, Ekiti, Anambra, Cross River, Imo, Bayelsa, and Lagos. HIV awareness increases with increasing educational attainment among women and men. About 8 in 10 women and men with no education have heard of HIV, contrasted with almost all women and men with more than secondary education.

Table 14 Knowledge of HIV or AIDS				
Percentage of women and men who have heard of HIV or AIDS, by background characteristics, Nigeria 2008				
Background characteristic	Women		Men	
	Has heard of HIV or AIDS	Number	Has heard of HIV or AIDS	Number
<b>Age</b>				
15-24	87.1	12,625	91.4	4,910
15-19	85.3	6,493	88.3	2,532
20-24	89.1	6,132	94.8	2,378
25-29	89.8	6,308	94.6	2,459
30-39	89.4	8,551	94.7	3,852
40-49	87.2	5,902	94.4	2,587
<b>Marital status</b>				
Never married	92.9	8,397	93.4	6,548
Ever had sex	96.5	3,717	98.0	3,183
Never had sex	90.0	4,680	89.0	3,365
Married or living together	86.4	23,578	93.6	7,018
Divorced/separated/widowed	91.3	1,409	92.1	241
<b>Residence</b>				
Urban	95.2	12,274	97.6	5,448
Rural	84.2	21,091	90.8	8,352
<b>Zone</b>				
North Central	75.9	4,748	90.7	2,065
North East	81.4	4,262	87.8	1,645
North West	87.8	8,022	90.9	3,237
South East	97.1	4,091	96.4	1,448
South South	92.0	5,473	96.1	2,437
South West	93.4	6,789	97.8	2,977

Continued...

Table 14—Continued

Background characteristic	Women		Men	
	Has heard of HIV or AIDS	Number	Has heard of HIV or AIDS	Number
<b>State of residence</b>				
Sokoto	78.4	822	66.6	303
Zamfara	69.6	733	89.0	271
Katsina	83.9	1,372	96.9	496
Jigawa	96.8	959	96.7	316
Yobe	52.1	537	30.1	192
Borno	83.8	912	85.4	332
Adamawa	85.7	764	98.6	302
Gombe	73.2	465	99.6	200
Bauchi	89.1	998	98.2	421
Kano	94.2	2,070	96.4	853
Kaduna	97.0	1,333	96.5	700
Kebbi	76.6	732	72.0	298
Niger	41.4	827	78.5	359
Abuja	88.3	369	95.6	170
Nasarawa	71.8	458	93.7	211
Plateau	81.8	777	99.1	323
Taraba	92.3	587	97.6	198
Benue	97.8	972	97.3	407
Kogi	88.2	792	96.2	360
Kwara	58.1	553	71.5	235
Oyo	93.3	1,205	97.0	502
Osun	95.3	922	97.3	390
Ekiti	95.7	556	99.4	261
Ondo	84.2	791	93.2	339
Edo	85.1	770	95.4	336
Anambra	99.5	1,042	99.2	402
Enugu	93.7	780	87.4	229
Ebonyi	91.6	586	96.1	174
Cross River	95.2	735	99.3	291
Akwa Ibom	98.3	938	94.2	413
Abia	98.9	775	96.8	311
Imo	99.0	908	98.7	332
Rivers	92.1	1,490	96.0	743
Bayelsa	90.4	468	99.5	225
Delta	89.6	1,071	94.6	429
Lagos	98.0	2,446	99.7	1,200
Ogun	85.2	870	95.5	284
<b>Education</b>				
No education	76.6	11,942	80.7	2,597
Primary	90.2	6,566	92.4	2,761
Secondary	96.0	11,904	97.1	6,470
More than secondary	99.3	2,974	99.7	1,979
Total 15-49	88.2	33,385	93.2	15,312
Men 50-59	na	na	94.2	174
Total 15-59	na	na	93.2	15,486

na=Not applicable



Table 15 shows that half of women and almost three-quarters of men (53 and 71 percent, respectively) know that consistent use of condoms is a means of preventing the spread of HIV. Sixty-eight percent of women and 83 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. Sixty-five percent of women and 78 percent of men know that abstaining from sexual intercourse can reduce the chance of being infected with HIV.

Currently married women and those who are unmarried and have never had sex are least likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduces the risk of HIV transmission (46 percent each). Women who have never been married but have had sex are most likely to know that using condoms reduces the risk of HIV transmission (63 percent). Among men, those who are unmarried and have never had sex are least likely to be aware that using condoms and limiting sexually intercourse to one uninfected partner reduces the risk of HIV transmission (61 percent). On the other hand, men who have never been married but have had sex are most likely to be aware of these prevention methods (77 percent).

Overall, women in urban areas are more likely to be knowledgeable about HIV prevention methods than their counterparts in rural areas. The same pattern is observed for men, with the exception of one prevention method—abstaining from sexual intercourse. For this method, the urban-rural differentials are small, with rural men slightly more aware that abstaining from sexual intercourse reduces the risk of HIV transmission (78 percent for rural men versus 77 percent for urban men). Knowledge varies by zone, with knowledge highest in South South and South East zones. Substantial differentials are observed in knowledge of prevention methods by state. Higher educational attainment is positively associated with increased awareness of HIV prevention methods.

Table 15 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of HIV infection by using condoms every time they have sexual intercourse, by having one uninfected sex partner who has no other partners, and by abstaining from sexual intercourse, by background characteristics, Nigeria 2008

Background characteristic	Women					Men				
	Using condoms <sup>1</sup>	Limiting sexual intercourse to one uninfected partner <sup>2</sup>	Using condoms and limiting sexual intercourse to one uninfected partner <sup>1,2</sup>	Abstaining from sexual intercourse	Number	Using condoms <sup>1</sup>	Limiting sexual intercourse to one uninfected partner <sup>2</sup>	Using condoms and limiting sexual intercourse to one uninfected partner <sup>1,2</sup>	Abstaining from sexual intercourse	Number
<b>Age</b>										
15-24	52.0	66.3	46.6	64.4	12,625	69.7	80.2	65.9	75.1	4,910
15-19	48.3	63.2	42.9	61.6	6,493	64.6	75.5	60.6	71.9	2,532
20-24	55.9	69.5	50.6	67.3	6,132	75.0	85.3	71.5	78.5	2,378
25-29	57.1	70.3	52.2	65.9	6,308	77.3	84.7	72.9	78.9	2,459
30-39	54.9	70.3	50.0	67.0	8,551	74.5	85.2	70.8	80.0	3,852
40-49	48.0	65.5	43.5	63.6	5,902	69.5	83.5	66.2	78.8	2,587
<b>Marital status</b>										
Never married	60.1	71.5	53.9	67.6	8,397	73.2	82.0	69.0	76.8	6,548
Ever had sex	70.0	77.6	63.2	69.7	3,717	81.5	87.2	76.9	78.4	3,183
Never had sex	52.3	66.7	46.4	66.0	4,680	65.3	77.2	61.4	75.3	3,365
Married or living together	50.2	66.4	45.6	64.1	23,578	71.7	84.1	68.4	79.1	7,018
Divorced/separated/widowed	57.1	72.3	52.8	69.8	1,409	69.7	79.1	63.5	71.2	241
<b>Residence</b>										
Urban	63.4	74.8	57.2	69.0	12,274	77.1	86.7	72.7	77.2	5,448
Rural	46.9	63.9	42.6	63.0	21,091	69.3	80.6	65.8	78.2	8,352
<b>Zone</b>										
North Central	48.3	62.1	45.4	55.7	4,748	74.3	80.5	69.6	74.2	2,065
North East	38.6	62.3	34.7	70.1	4,262	71.7	82.1	68.6	82.5	1,645
North West	46.4	66.2	43.0	66.8	8,022	65.5	80.3	63.0	81.8	3,237
South East	60.9	77.8	55.1	78.7	4,091	76.0	87.6	72.4	83.0	1,448
South South	64.6	73.2	59.8	70.2	5,473	77.6	88.6	74.9	83.1	2,437
South West	58.9	67.3	50.2	54.7	6,789	72.8	81.5	66.9	66.7	2,977

Continued...

Table 15—Continued

Background characteristic	Women					Men				
	Using condoms <sup>1</sup>	Limiting sexual intercourse to one uninfected partner <sup>2</sup>	Using condoms and limiting sexual intercourse to one uninfected partner <sup>1,2</sup>	Abstaining from sexual intercourse	Number	Using condoms <sup>1</sup>	Limiting sexual intercourse to one uninfected partner <sup>2</sup>	Using condoms and limiting sexual intercourse to one uninfected partner <sup>1,2</sup>	Abstaining from sexual intercourse	Number
<b>State of residence</b>										
Sokoto	38.8	59.4	37.1	56.5	822	45.0	59.2	41.9	53.5	303
Zamfara	29.2	61.3	28.4	67.1	733	47.0	70.6	39.0	63.9	271
Katsina	25.7	68.5	24.6	59.3	1,372	58.6	79.8	55.5	85.6	496
Jigawa	34.6	59.1	26.0	50.9	959	37.9	63.0	34.1	81.9	316
Yobe	21.9	36.1	20.2	40.5	537	26.1	11.4	9.9	29.5	192
Borno	31.4	47.1	23.7	65.7	912	61.1	78.5	59.2	69.1	332
Adamawa	57.3	80.8	55.5	82.3	764	82.1	93.1	80.2	93.1	302
Gombe	52.5	56.0	43.5	59.4	465	76.7	97.1	76.0	97.0	200
Bauchi	26.4	65.7	24.2	74.8	998	81.7	95.6	80.5	97.7	421
Kano	52.9	61.2	47.3	76.1	2,070	85.9	94.7	85.2	93.3	853
Kaduna	75.1	84.7	74.2	81.7	1,333	90.4	93.1	88.8	93.5	700
Kebbi	56.1	63.9	52.5	60.0	732	27.3	59.1	24.7	60.4	298
Niger	28.1	33.9	26.3	34.7	827	56.1	66.9	53.3	66.1	359
Abuja	80.0	87.0	79.4	85.1	369	88.9	92.8	87.3	85.1	170
Nasarawa	52.9	61.2	49.6	59.1	458	84.6	91.3	82.4	81.9	211
Plateau	52.0	76.7	50.8	68.6	777	89.1	99.1	89.1	97.4	323
Taraba	50.4	85.2	49.0	88.9	587	91.5	96.2	91.1	93.3	198
Benue	55.6	83.9	53.3	69.8	972	74.3	78.7	64.1	66.6	407
Kogi	51.6	59.2	44.1	51.4	792	84.4	87.4	80.4	84.7	360
Kwara	30.4	33.6	28.4	28.4	553	46.4	49.4	36.3	36.8	235
Oyo	52.5	60.0	42.5	45.2	1,205	76.6	85.3	71.2	84.2	502
Osun	80.0	85.4	75.6	68.8	922	87.1	93.7	85.2	51.7	390
Ekiti	62.9	64.5	48.8	72.6	556	73.9	70.3	64.7	75.3	261
Ondo	52.5	55.4	44.2	39.1	791	70.1	81.2	66.9	65.4	339
Edo	63.4	77.0	61.2	73.6	770	87.1	92.2	85.5	88.2	336
Anambra	73.0	92.3	70.2	87.5	1,042	84.4	96.4	83.2	84.8	402
Enugu	40.2	49.9	29.3	51.3	780	72.6	79.4	68.3	77.9	229
Ebonyi	53.5	71.0	45.6	68.4	586	74.1	87.9	70.2	88.0	174
Cross River	88.9	93.3	87.7	77.0	735	87.1	95.9	85.4	84.1	291
Akwa Ibom	75.9	88.6	71.7	91.3	938	71.0	87.0	68.6	74.6	413
Abia	82.8	94.3	80.7	91.0	775	81.5	87.9	75.5	84.7	311
Imo	50.7	75.5	44.2	88.1	908	64.0	82.2	60.2	79.9	332
Rivers	55.7	66.1	48.9	62.7	1,490	75.5	85.0	72.1	87.3	743
Bayelsa	71.7	73.3	68.9	69.6	468	90.5	96.4	88.8	82.4	225
Delta	48.3	53.0	40.5	55.2	1,071	66.8	84.4	63.0	79.5	429
Lagos	53.7	66.1	43.9	53.7	2,446	65.4	77.5	58.1	61.5	1,200
Ogun	63.1	74.2	57.9	58.5	870	79.5	85.0	72.7	72.4	284
<b>Education</b>										
No education	34.4	55.3	31.0	56.6	11,942	51.9	68.8	49.3	69.6	2,597
Primary	55.3	70.0	50.3	67.3	6,566	67.8	81.3	64.5	78.9	2,761
Secondary	65.4	76.1	59.1	71.1	11,904	79.0	86.9	74.6	80.1	6,470
More than secondary	72.6	81.2	66.7	71.6	2,974	83.7	91.3	80.0	79.8	1,979
Total 15-49	53.0	67.9	48.0	65.2	33,385	71.1	82.5	67.4	77.5	15,312
Men 50-59	na	na	na	na	na	77.2	86.9	74.9	77.4	174
Total 15-59	na	na	na	na	na	71.2	82.6	67.5	77.5	15,486

na = Not applicable

<sup>1</sup> Using condoms every time they have sexual intercourse<sup>2</sup> Partner who has no other partners

Respondents were also asked detailed questions about their sexual behaviour, including the number of partners they had in the 12 months preceding the survey, and whether they had had sex with someone who was neither a spouse nor a cohabiting partner. Women and men were also asked about condom use. The results are shown in Table 16.1 for women and Table 16.2 for men.

Younger women age 15-24 are more than twice as likely as their older counterparts to have two or more sexual partners and to have had higher-risk sex in the past 12 months. Likewise, younger women age 15-29 who engaged in higher-risk sex are more likely to have used a condom at the last high-risk encounter. Six percent of never-married women and 7 percent of divorced, separated, or widowed women report having two or more sexual partners, while less than 1 percent of married women report having two or more partners. Almost all never-married women (96 percent) and more than 7 in 10 divorced, separated, or widowed women (61 percent) have had sexual relations with a non-cohabiting partner in the past 12 months. Never-married women (37 percent) are about three times more likely to have used a condom at their last high-risk intercourse than married (12 percent) or divorced/separated/widowed (13 percent) women.

Urban women are slightly more likely than rural women to have had two or more partners in the past 12 months (2 and 1 percent, respectively). Likewise, urban women are about twice as likely as rural women to have had higher-risk intercourse than their rural counterparts (19 and 10 percent, respectively). Finally, women in urban areas are substantially more likely to have used a condom at last higher-risk intercourse than women in rural areas (42 and 25 percent, respectively).

Women in the North Central and South South zones are the most likely to have had two or more partners (3 percent for both), and women in South South (33 percent) are the most likely to have had higher-risk intercourse. However, condom use at last higher-risk sex is more common for women in South East (41 percent) and South West (40 percent). High-risk behaviour varies greatly by state.

Higher-risk sexual behaviour among women increases with level of education. Condom use at last higher-risk intercourse is also positively associated with increased educational attainment.

**Table 16.1 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Women**

Among women age 15-49 who had sexual intercourse in the past 12 months, the percentage who had intercourse with more than one partner and the percentage who had higher-risk sexual intercourse in the past 12 months, and among those having higher-risk intercourse in the past 12 months, percentage reporting that a condom was used at last higher-risk intercourse, and mean number of sexual partners during her lifetime for women who ever had sexual intercourse, by background characteristics, Nigeria 2008

Background characteristic	Among women who had sexual intercourse in the past 12 months			Among women who had higher-risk intercourse in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Percentage who had higher-risk intercourse in the past 12 months <sup>1</sup>	Number	Percentage who reported using a condom at last higher-risk intercourse <sup>1</sup>	Number
<b>Age</b>					
15-24	2.1	28.9	7,467	35.5	2,154
15-19	2.3	33.3	2,708	28.6	903
20-24	2.0	26.3	4,759	40.5	1,251
25-29	1.6	11.9	5,501	38.4	657
30-39	0.9	4.8	7,604	25.9	362
40-49	0.7	3.5	4,877	3.9	171
<b>Marital status</b>					
Never married	5.9	95.8	2,981	36.9	2,856
Married/living together	0.6	0.6	21,885	11.8	136
Divorced/separated/widowed	7.2	60.7	581	13.3	353
<b>Residence</b>					
Urban	1.7	18.8	8,825	41.9	1,662
Rural	1.2	10.1	16,611	25.0	1,683
<b>Zone</b>					
North Central	2.5	12.8	3,287	25.8	420
North East	0.8	3.7	3,598	19.1	131
North West	0.3	0.8	7,054	23.8	54
South East	1.7	21.9	2,446	40.7	535
South South	3.0	32.7	4,166	30.9	1,361
South West	1.0	17.2	4,897	39.5	844

Continued...

Table 16.1—Continued

Background characteristic	Among women who had sexual intercourse in the past 12 months			Among women who had higher-risk intercourse in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Percentage who had higher-risk intercourse in the past 12 months <sup>1</sup>	Number	Percentage who reported using a condom at last higher-risk intercourse <sup>1</sup>	Number
<b>State of residence</b>					
Sokoto	0.5	0.2	753	*	2
Zamfara	0.0	0.0	671	*	0
Katsina	0.2	0.1	1,272	*	1
Jigawa	0.5	0.0	911	*	0
Yobe	1.0	0.0	485	*	0
Borno	0.6	0.7	794	*	5
Adamawa	0.5	6.6	581	37.3	38
Gombe	0.1	2.9	381	*	11
Bauchi	0.5	0.3	918	*	3
Kano	0.1	0.1	1,792	*	2
Kaduna	0.9	4.9	1,010	(24.3)	50
Kebbi	0.1	0.0	646	*	0
Niger	0.9	1.7	611	*	11
Abuja	0.7	16.7	259	55.4	43
Nasarawa	1.4	12.2	344	10.5	42
Plateau	0.1	3.8	525	(19.4)	20
Taraba	2.5	16.8	438	7.6	74
Benue	9.2	26.4	690	15.2	183
Kogi	0.9	19.2	508	34.3	97
Kwara	0.4	7.0	349	(41.0)	24
Oyo	0.6	7.2	895	(24.9)	65
Osun	0.3	17.2	593	48.2	102
Ekiti	1.7	22.1	396	22.3	88
Ondo	0.2	20.8	587	32.3	122
Edo	1.3	20.3	545	29.4	111
Anambra	3.2	19.8	663	45.5	131
Enugu	1.5	22.9	379	49.5	87
Ebonyi	1.0	18.2	315	26.4	57
Cross River	2.0	31.2	535	43.5	167
Akwa Ibom	4.4	38.0	746	33.3	283
Abia	0.6	27.6	522	32.2	144
Imo	1.6	20.3	565	46.4	115
Rivers	4.2	37.9	1,142	25.3	433
Bayelsa	3.4	35.2	378	16.7	133
Delta	1.5	28.5	821	38.2	233
Lagos	1.5	21.1	1,806	50.3	381
Ogun	1.0	13.9	621	19.8	86
<b>Education</b>					
No education	0.5	1.2	10,530	4.2	126
Primary	1.5	8.0	5,097	13.0	406
Secondary	2.1	28.4	7,528	34.1	2,138
More than secondary	2.7	29.4	2,294	49.0	675
Total	1.4	13.1	25,448	33.4	3,345

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure is based on fewer than 25 unweighted cases and has been suppressed.

<sup>1</sup> Sexual intercourse with a person who is neither a spouse nor a cohabiting partner

For men, the patterns are similar; however, the differentials are smaller than those observed for women. Among men, the pattern for condom use at last high-risk intercourse by age is the opposite of that for women. Condom use at higher-risk intercourse increases with age and peaks at age 25-29, after which it decreases sharply. Overall, men in urban areas are more likely to have two or more sexual partners, to engage in higher-risk intercourse, and to use condoms at their last higher-risk sex than their rural counterparts.

Men in South South are more likely to have had two or more partners (26 percent) and to have had higher-risk sex (56 percent) than men in other zones, while men in North West are the least likely to report these behaviours (7 and 5 percent, respectively). Among men who had higher-risk sex, 66 percent in South East reported using a condom at their last high-risk intercourse, compared with 34 percent of men in North East.

As observed with women, men with more education are more likely to engage in higher-risk sexual behaviours than their counterparts with less education. Similarly, condom use at last higher-risk intercourse is positively associated with increased educational attainment.

**Table 16.2 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Men**

Among men age 15-49 who had sexual intercourse in the past 12 months, the percentage who had intercourse with more than one partner and the percentage who had higher-risk sexual intercourse in the past 12 months, and among those having higher-risk intercourse in the past 12 months, percentage reporting that a condom was used at last higher-risk intercourse, and mean number of sexual partners during his lifetime for men who ever had sexual intercourse, by background characteristics, Nigeria 2008

Background characteristic	Among men who had sexual intercourse in the past 12 months			Among men who had higher-risk intercourse in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Percentage who had higher-risk intercourse in the past 12 months <sup>1</sup>	Number	Percentage who reported using a condom at last higher-risk intercourse <sup>1</sup>	Number
<b>Age</b>					
15-24	17.2	78.7	1,674	49.5	1,317
15-19	14.5	94.0	422	36.6	396
20-24	18.2	73.6	1,252	55.0	921
25-29	17.3	46.3	1,833	60.5	849
30-39	13.1	20.1	3,482	57.2	701
40-49	13.8	8.4	2,373	46.5	200
<b>Marital status</b>					
Never married	22.0	96.2	2,522	56.0	2,427
Married/living together	12.0	8.1	6,689	47.8	540
Divorced/separated/widowed	22.8	66.4	151	42.4	100
<b>Residence</b>					
Urban	15.7	41.6	3,638	65.3	1,515
Rural	14.3	27.1	5,717	43.1	1,549
<b>Zone</b>					
North Central	19.0	36.0	1,345	39.4	484
North East	8.3	12.5	1,128	33.5	141
North West	7.1	4.8	1,971	51.4	94
South East	8.0	39.7	907	65.7	360
South South	25.8	56.4	1,774	49.3	1,000
South West	16.6	44.2	2,237	65.1	988

*Continued...*

Table 16.2—Continued

Background characteristic	Among men who had sexual intercourse in the past 12 months			Among men who had higher-risk intercourse in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Percentage who had higher-risk intercourse in the past 12 months <sup>1</sup>	Number	Percentage who reported using a condom at last higher-risk intercourse <sup>1</sup>	Number
<b>State of residence</b>					
Sokoto	4.2	2.3	183	*	4
Zamfara	0.0	1.0	187	*	2
Katsina	19.3	1.7	344	*	6
Jigawa	11.4	0.8	232	*	2
Yobe	0.4	0.4	131	*	1
Borno	5.1	9.2	243	(30.2)	22
Adamawa	9.8	28.9	191	41.6	55
Gombe	4.1	9.0	137	(24.6)	12
Bauchi	7.3	0.7	281	*	2
Kano	0.4	0.7	445	*	3
Kaduna	9.2	18.8	405	57.0	76
Kebbi	0.4	0.4	174	*	1
Niger	28.8	5.9	216	*	13
Abuja	2.7	24.9	101	42.4	25
Nasarawa	11.4	44.0	145	40.0	64
Plateau	5.6	24.2	180	45.7	44
Taraba	24.7	33.8	144	27.7	49
Benue	39.8	59.4	293	32.0	174
Kogi	17.6	51.7	257	39.4	133
Kwara	1.4	20.6	154	(57.0)	32
Oyo	19.1	38.6	400	50.8	154
Osun	6.3	37.3	266	69.6	99
Ekiti	2.1	47.1	202	52.8	95
Ondo	18.8	47.7	258	61.9	123
Edo	25.5	52.1	220	63.8	115
Anambra	0.6	33.1	276	63.0	91
Enugu	3.8	32.4	127	(59.5)	41
Ebonyi	6.0	37.4	100	46.5	37
Cross River	19.0	51.0	213	49.1	109
Akwa Ibom	18.3	51.7	307	52.6	159
Abia	18.8	50.8	218	71.1	111
Imo	10.3	42.7	185	73.3	79
Rivers	28.7	64.6	547	46.0	353
Bayelsa	28.1	60.2	178	30.3	107
Delta	32.0	51.1	309	56.0	158
Lagos	19.3	47.7	894	75.2	427
Ogun	23.6	41.2	217	54.3	89
<b>Education</b>					
No education	8.8	4.7	1,907	13.8	89
Primary	12.7	20.3	1,980	36.0	402
Secondary	17.8	48.7	3,932	52.8	1,914
More than secondary	17.5	42.9	1,542	74.3	662
Total 15-49	14.8	28.8	10,705	53.1	3,085
Men 50-59	22.3	58.1	119	64.6	69
Total 15-59	14.8	29.1	10,824	53.4	3,154

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates a figure is based on fewer than 25 unweighted cases and has been suppressed.

<sup>1</sup> Sexual intercourse with a person who is neither a spouse nor a cohabiting partner

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