Ghana

Demographic and Health Survey

2014

Key Indicators

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Ghana Statistical Service
Accra, Ghana

Ghana Health Service
Accra, Ghana

The DHS Program
ICF International
Rockville, Maryland, USA

April 2015

The 2014 Ghana Demographic and Health Survey (2014 GDHS) was implemented by the Ghana Statistical Service (GSS) in collaboration with the National Public Health and Reference Laboratory (NPHRL) and the Ghana Health Service (GHS). Financial support for the survey was provided by the U.S. Agency for International Development (USAID), the Global Fund, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the International Labour Organization (ILO), the Danish International Development Agency (DANIDA), and the government of Ghana. ICF International provided technical assistance through The DHS Program, a USAID-funded project offering support and technical assistance in the implementation of population and health surveys in countries worldwide.

Additional information about the 2014 GDHS may be obtained from the Ghana Statistical Service, P.O. Box 1098, Accra, Ghana; Telephone: 233-302-663-578; E-mail: info@statsghana.gov.gh.

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FOREWORD

This report highlights the key findings of the 2014 Ghana Demographic and Health Survey (GDHS), a nationally representative survey of 9,396 women age 15-49 and 4,388 men age 15-59 from 11,835 interviewed households. The primary purpose of the GDHS was to generate recent and reliable information on fertility, family planning, infant and child mortality, maternal and child health, and nutrition. In addition, the survey collected information on malaria treatment, prevention, and prevalence among children age 6-59 months; blood pressure among adults; anaemia among women and children; and HIV prevalence among adults. This information is essential for making informed policy decisions and for planning, monitoring, and evaluating programmes related to health in general, and reproductive health in particular, at both the national and regional levels.

The 2014 GDHS is the sixth in a series of population and health surveys conducted in Ghana as part of the global Demographic and Health Surveys (DHS) Program. The survey was implemented by the Ghana Statistical Service in collaboration with the National Public Health and Reference Laboratory and the Ghana Health Service. Financial support for the survey was provided by the U.S. Agency for International Development (USAID), the Global Fund, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the International Labour Organization (ILO), the Danish International Development Agency (DANIDA) and the government of Ghana. ICF International provided technical assistance through the DHS Program, a USAID-funded project offering support and technical assistance in the implementation of population and health surveys in countries worldwide.

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1 INTRODUCTION

The 2014 Ghana Demographic and Health Survey (GDHS) was implemented by the Ghana Statistical Service (GSS) in collaboration with the National Public Health and Reference Laboratory (NPHRL) and the Ghana Health Service (GHS). Financial support for the survey was provided by the U.S. Agency for International Development (USAID), the Global Fund, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), the International Labour Organization (ILO), the Danish International Development Agency (DANIDA), and the government of Ghana. ICF International provided technical assistance through the DHS Program, a USAID-funded project offering support and technical assistance in the implementation of population and health surveys in countries worldwide.

This key indicators report presents a first look at selected findings of the 2014 GDHS. A comprehensive analysis of the data will be presented in a final report to be published in late 2015.

SURVEY OBJECTIVES

The primary objective of the 2014 GDHS project is to provide up-to-date estimates of basic demographic and health indicators. Specifically, the GDHS collected information on fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutrition, childhood mortality, maternal and child health, awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs), and other health issues such as smoking, tuberculosis, and blood pressure. Also, in addition to anthropometry measurements for children and adults, the 2014 GDHS provides estimates of anaemia prevalence among children age 6-59 months and among eligible women, estimates of malaria among children age 6-59 months, and estimates of hypertension and HIV prevalence among adults. The survey provides updated estimates of basic demographic and health indicators covered in the 1988, 1993, 1998, 2003, and 2008 surveys.

The information collected through the GDHS is intended to assist policymakers and programme managers in evaluating and designing programmes and strategies for improving the health of Ghana's population.

2 SURVEY IMPLEMENTATION

2.1 SAMPLE DESIGN

The sampling frame used for the 2014 GDHS is an updated frame from the 2010 Ghana Population and Housing Census (PHC) provided by the Ghana Statistical Service (GSS, 2013). The sampling frame excluded nomadic and institutional populations such as persons in hotels, barracks, and prisons.

The 2014 GDHS followed a two-stage sample design and was intended to allow estimates of key indicators at the national level as well as for urban and rural areas and each of Ghana's 10 regions. The first stage involved selecting sample points (clusters) consisting of enumeration areas (EAs) delineated for the 2010 PHC. A total of 427 clusters were selected, 216 in urban areas and 211 in rural areas.

The second stage involved systematic sampling of households. A household listing operation was undertaken in all of the selected EAs in January-March 2014, and households to be included in the survey were randomly selected from these lists. About 30 households were selected from each sample point, for a total sample size of 12,831 households. Because of the approximately equal sample sizes in each region, the sample is not self-weighting at the national level, and weighting factors have been added to the data file so that the results will be proportional at the national level.

All women age 15-49 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed and eligible for blood pressure measurements.

In half of the households, all men age 15-59 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In addition, in the subsample of households selected for the male survey:

- blood pressure measurements were performed among eligible men who consented to being tested;
- children age 6-59 months were tested for anaemia and malaria with the parent's or guardian's consent;
- eligible women who consented were tested for anaemia;
- blood samples were collected for laboratory testing of HIV from eligible women and men who consented;
- height and weight information was collected from eligible women, men, and children age 0-59 months.

2.2 QUESTIONNAIRES

Three questionnaires were used for the 2014 GDHS: the Household Questionnaire, the Woman's Questionnaire, and the Man's Questionnaire. These questionnaires, based on the DHS Program's standard Demographic and Health Survey questionnaires, were adapted to reflect the population and health issues relevant to Ghana. Input was solicited from various stakeholders representing government ministries and agencies, nongovernmental organisations, and international donors. After the preparation of the definitive questionnaires in English, the questionnaires were translated into the major local languages, namely Akan, Ga, and Ewe.

The Household Questionnaire was used to list all the members of and visitors to selected households. Basic demographic information was collected on the characteristics of each person listed, including his or

her age, sex, marital status, education, and relationship to the head of the household. For children under age 18, parents' survival status was determined. The data on age and sex of household members obtained in the Household Questionnaire were used to identify women and men who were eligible for individual interviews. The Household Questionnaire also included questions on child education as well as information on the characteristics of the household's dwelling unit, such as source of water, type of toilet facilities, materials used for the floor of the dwelling unit, and ownership of various durable goods.

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

- Background characteristics (age, education, media exposure, etc.)
- Birth history and child 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 husbands' background characteristics
- Knowledge, awareness, and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs)
- Knowledge, attitudes, and behaviour related to other health issues (e.g., smoking, tuberculosis, and blood pressure)

In half of the selected households, the Man's Questionnaire was administered to all men age 15-59. The Man's Questionnaire collected much of the same information found in the Woman's Questionnaire but was shorter because it did not contain a detailed reproductive history or questions on maternal and child health.

2.3 Blood Pressure Measurement, Anthropometry, Anaemia Testing, and HIV Testing

In the half of the households selected for the male survey, the 2014 GDHS incorporated several "biomarkers": blood pressure measurement among men age 15-59, anthropometry, anaemia testing, and HIV testing. The survey protocol, including biomarker collection, was reviewed and approved by the Ghana Health Service Ethical Review Committee, Research and Development Division, Ghana Health Service; and the Institutional Review Board of ICF International.

Blood pressure. During the individual interview, three blood pressure measurements were taken from consenting women age 15-49 in all of the selected households and men age 15-59 in the subsample of households selected for the male survey (half of the households). Blood pressure was measured using the LIFE SOURCE® UA-767 Plus blood pressure monitor, a digital oscillometric device with automatic upper-arm inflation and automatic pressure release. Measurements were taken at intervals of 10 minutes or more. The average of the second and third measurements was used to classify the respondent with respect to hypertension, according to internationally recommended categories (World Health Organization [WHO], 1999). The results, as well as information about the symptoms of high blood pressure and ways in which it can be prevented, were provided to the respondent via the *Blood Pressure Reporting Form*.

Anthropometry. In the subsample of households selected for the male survey, height and weight measurements were recorded for children age 0-59 months, women age 15-49, and men age 15-59.

Anaemia testing. Blood specimens for anaemia testing were collected in half of the selected households (the subsample selected for the male survey) from women age 15-49 who voluntarily consented to be tested and from all children age 6-59 months for whom consent was obtained from their parents or the adult responsible for the children. Blood samples were drawn from a drop of blood taken from a finger prick (or a heel prick in the case of children age 6-11 months) and collected in a microcuvette. Haemoglobin analysis was carried out on-site using a battery-operated portable HemoCue analyser.

All households in which anthropometry and/or anaemia testing was conducted were given a brochure containing information on children's height and weight measurements as well as information on causes and prevention of anaemia. Children's haemoglobin test results were entered into a malaria and anaemia brochure and given to the parent or responsible adult. Finally, parents of children with haemoglobin levels below 7.0 g/dl, as well as non-pregnant women with haemoglobin levels below 7.0 g/dl and pregnant women with levels below 9.0 g/dl, were given an *Anaemia Referral Form* and instructed to seek immediate treatment at a nearby health facility.

Malaria testing. In half of the selected households, children age 6-59 months were also tested for malaria in the field using SD Bioline Malaria Ag P.f/Pan, a rapid diagnostic test (RDT). This high-sensitivity and high-specificity test detects malaria antigens from capillary blood samples. The children's RDT results were recorded in the *Malaria and Anaemia Brochure* and given to the parent or responsible adult. In accordance with Ghanaian national treatment guidelines, children who had positive test results and did not exhibit symptoms of severe malaria were provided with artemisinin combination therapy (ACT) (excluding children who were on ACT treatment at the time of the survey). Parents of children showing signs or symptoms of severe malaria were given a *Malaria Referral Form* and instructed to seek immediate treatment for their child at a nearby health facility.

In addition, blood was collected on glass slides from the same children who were tested with RDT and sent to the National Public Health and Reference Laboratory in Accra for malaria microscopy through reading of thick-smear slides.

HIV testing. In the subsample of households selected for the male survey, health technicians collected finger-prick blood specimens for laboratory testing of HIV from women age 15-49 and men age 15-59 who consented to be tested. The protocol for blood specimen collection and analysis was based on the anonymous linked protocol developed for the DHS Program. This protocol allows for merging of HIV test results with the sociodemographic data collected in the individual questionnaires after removal of all information that could potentially identify an individual.

Health technicians explained the procedure, the confidentiality of the data, and the fact that the test results would not be made available to the respondent. If a respondent consented to HIV testing, three to five blood spots from the finger prick were collected on a filter paper card to which a barcode label unique to the respondent was affixed. A duplicate label was attached to the biomarker section of the Household Questionnaire. A third copy of the same barcode was affixed to the Dried Blood Spot Transmittal Sheet to track the blood samples from the field to the laboratory.

Respondents were asked whether they would consent to having the laboratory store their blood sample for future unspecified testing. If respondents did not consent to additional testing using their sample, it was indicated on the biomarker section of the Household Questionnaire that they refused additional tests using their specimen, and the words "no additional testing" were written on the filter paper card. Each respondent, whether providing consent or not, was given an informational brochure on HIV and a list of nearby sites providing HIV counselling and testing services.

Blood samples were dried overnight and packaged for storage the following morning. Samples were periodically collected from the field and transported to the NPHRL. Once it arrived at the central laboratory, each blood sample was logged into the CSPro HIV Test Tracking System database, given a laboratory number, and stored at -20˚C until tested.

The HIV testing protocol stipulated that blood could be tested only after questionnaire data collection had been completed, data had been verified and cleaned, and all unique identifiers other than the anonymous barcode number had been removed from the data file. As of this report, HIV testing has not been completed.

The testing algorithm calls for testing all samples on the first assay test, the Vironostika® HIV Ag/Ab (Biomérieux) enzyme-linked immunoassay (ELISA). A negative result is recorded as negative. All positives are subjected to a second ELISA, the Enzygnost® HIV Integral II assay (Siemens). Positive samples on the second test are recorded as positive. If the first and second tests are discordant, the two ELISAs are repeated in parallel. If the results remain discordant, a third confirmatory blot assay, the Inno-Lia HIV I/II Score (Innogenetics, Ghent, Belgium), is used. The final result is recorded as positive if the Inno-Lia HIV I/II Score confirms it to be positive and negative if the Inno-Lia HIV I/II Score confirms it to be negative. If the Inno-Lia HIV I/II Score results are indeterminate, the sample is recorded as indeterminate.

After HIV testing has been completed, the HIV test results for the 2014 GDHS will be linked to the data from the individual interviews using the barcode. Data from the HIV results and linked demographic and health data will be published in the 2014 GDHS final report.

2.4 PRETEST

Ten women and five men participated in pretest training and field practice related to the GDHS survey protocol and instruments over a three-week period in June 2014. Most participants had taken part in the previous GDHS surveys. During the first week of training, five male health technicians hired through the National Public Health and Reference Laboratory in Accra were trained together with the interviewers on general interviewing techniques and how to conduct interviews using the Household Questionnaire. The biomarker portion of the training was conducted from 16 June to 21 June 2014. Seven health technicians (one woman and six men) received training in blood collection and biomarker testing and on how to measure height and weight in eligible children and adults.

The pretest participants later served as field supervisors or editors or as regional coordinators to facilitate data collection during the main fieldwork. Six trainers assigned by the GSS conducted training with support from ICF International. The participants discussed the questionnaires and made suggestions for modifications to all versions. Field practice took place over four days in both rural and urban locations. Interviewers and health technicians were divided into five teams (each consisting of two female interviewers, one male interviewer, and one health technician). During the pretest field practice, a total of 88 households, 77 women, and 34 men were interviewed in English, Akan, Ewe, and Ga. Following field practice, a debriefing session was held with the pretest field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise.

2.5 TRAINING OF FIELD STAFF

Training of the field staff took place over four weeks (4-30 August 2014) and involved 139 field data collectors (67 women and 72 men) and 55 health technicians (26 women and 29 men). Training was conducted at the Winneba Windy Lodge Hotel, located about an hour from Accra.

During the first week, all trainees were instructed in standard DHS procedures, including general interviewing techniques, conducting interviews at the household level, and blood pressure measurements. During the second week, health technicians began separate biomarker training while the other field staff (data collectors) continued with training on the Woman's and Man's Questionnaires, including a detailed

review of each question and mock interviews between participants in the classroom. All trainees were also given an overview of the 2014 GDHS biomarker collection protocol that summarised eligibility criteria for each biomarker, appropriate procedures for obtaining informed consent, and sample transportation logistics. In addition, nine data entry personnel (seven women and two men) attended the first two weeks of questionnaire training so that they would be familiar with the survey instruments at later stages when they received and entered the completed questionnaires. During the final week, ICF staff trained field editors in the Computer Assisted Field Editing (CAFE) system. Field supervisors were trained in the collection of global positioning system (GPS) data using the Garmin eTrex10 model.

Practice interviews with real respondents took place over the course of three days in August 2014 in areas outside the 2014 GDHS sample points.

Participants were evaluated through homework, in-class exercises, quizzes, and observations made during field practice. By the end of training, trainees had been selected and assigned to one of 25 teams. Fourteen interviewers and five health technicians were selected as reserve staff.

2.6 FIELDWORK

Data collection was carried out by 25 field teams, each consisting of one supervisor, one field editor, two female interviewers, one male interviewer, and two health technicians. Senior staff members from GSS and the GHS coordinated and monitored the fieldwork. Paper questionnaires were used for the interviews. After the interview, field editors entered the questionnaire data on laptops with passwords protecting the data files. Electronic data files were transferred to the central office every few days via the secured Internet File Streaming System (IFSS). Participants in fieldwork monitoring also included two survey technical specialists from the DHS Program.

Data collection took place over about 3.5 months, from early September to mid-December 2014.

2.7 DATA PROCESSING

In the 2014 GDHS, paper questionnaires were used for the interviews (as noted), and the CAFE system was used by the field editor to enter the data in the field. All electronic data files were transferred from the field (via IFSS) to the GSS central office in Accra, where they were stored on a password-protected computer.

The data processing operation included 100 percent verification of information and secondary editing, which involved resolution of computer-identified inconsistencies. The data processing activities at the central office were led by senior staff from GSS and one more staff member who participated in the main fieldwork training. Data processing was accomplished using CSPro software. Data entry and editing were initiated in September 2014 and completed in February 2015.

3 KEY FINDINGS

3.1 RESPONSE RATES

Table 1 shows response rates for the 2014 GDHS. A total of 12,831 households were selected for the sample, of which 12,010 were occupied. Of the occupied households, 11,835 were successfully interviewed, yielding a response rate of 99 percent, the same rate as in the 2008 GDHS (GSS, GHS, and ICF Macro, 2009).

In the interviewed households, 9,656 eligible women were identified for individual interviews; interviews were completed with 9,396 women, yielding a response rate of 97 percent. In the subsample of households selected for the male survey, 4,609 eligible men were identified and 4,388 were successfully interviewed, yielding a response rate of 95 percent. The lower response rate for men was likely due to their more frequent and longer absences from the household.

Table 1 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Ghana 2014

	Residence		
Result	Urban	Rural	Total
Household interviews			
Households selected	6,668	6,163	12,831
Households occupied	6,242	5,768	12,010
Households interviewed	6,114	5,721	11,835
Household response rate[1]	97.9	99.2	98.5
Interviews with women age 15-49			
Number of eligible women	4,873	4,783	9,656
Number of eligible women interviewed	4,716	4,680	9,396
Eligible women response rate[2]	96.8	97.8	97.3
Interviews with men age 15-59			
Number of eligible men	2,265	2,344	4,609
Number of eligible men interviewed	2,124	2,264	4,388
Eligible men response rate[2]	93.8	96.6	95.2

[1] Households interviewed/households occupied
[2] Respondents interviewed/eligible respondents

3.2 CHARACTERISTICS OF RESPONDENTS

Table 2 shows the weighted and unweighted numbers and the weighted percent distributions of women and men age 15-49 interviewed in the 2014 GDHS, by background characteristics. More than half of respondents age 15-49 (52 percent of women and 53 percent of men) are under age 30, reflecting the young age structure of the population.

The vast majority of respondents are Christian. More than four in ten women (41 percent) and three in ten men (32 percent) are Pentecostal/Charismatic, and 39 percent of women and 42 percent of men are Catholic, Anglican, Methodist, Presbyterian, or other Christian. Fifteen percent of women and 18 percent of men are Moslem. As expected, the Akans are the largest ethnic group, with about half of respondents belonging to this group, followed by the Mole-Dagbanis, which account for 15 percent each of women and men, and the Ewes, which account for 14 percent of women and 13 percent of men.

One-third of women (33 percent) and nearly half of men (48 percent) have never been married. Women are more often married or living together with a partner (i.e., in union) than men (57 percent versus 48 percent). Women are also more likely than men to be divorced or separated (8 percent versus 4 percent) or to be widowed (3 percent versus less than 1 percent).

More than half of women (56 percent) and men (55 percent) live in urban areas, an increase from the figures of 49 percent and 46 percent, respectively, reported in the 2008 GDHS survey. By region, the largest proportion of women and men reside in Greater Accra (20 percent and 22 percent, respectively), and the smallest proportion reside in the Upper West region (2 percent each).

Table 2 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Ghana 2014

	Women			Men		
Background characteristic	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	17.3	1,625	1,756	22.1	855	889
20-24	17.2	1,613	1,571	15.2	588	620
25-29	17.1	1,604	1,564	15.2	589	577
30-34	14.6	1,372	1,343	14.3	552	497
35-39	13.8	1,295	1,260	12.2	473	472
40-44	11.0	1,030	1,032	11.8	456	442
45-49	9.1	857	870	9.2	355	358
Religion						
Catholic	10.0	944	1,341	10.7	416	538
Anglican	1.0	90	72	0.7	27	25
Methodist	6.6	624	547	6.4	246	193
Presbyterian	6.4	598	513	6.0	232	207
Pentecostal/Charismatic	41.1	3,859	3,457	31.5	1,217	1,025
Other Christian	15.1	1,416	1,239	18.0	695	614
Islam	15.2	1,423	1,726	17.6	680	823
Traditional/spiritualist	2.0	188	226	3.3	128	210
No religion	2.7	251	273	5.9	227	218
Other	0.0	2	1	0.0	1	2
Ethnic group						
Akan	50.1	4,705	3,876	49.2	1,905	1,557
Ga/Dangme	7.7	728	519	8.3	323	228
Ewe	13.5	1,266	1,118	13.3	514	450
Guan	2.3	216	256	2.1	79	102
Mole-Dagbani	14.8	1,388	2,270	14.7	568	932
Grusi	2.9	271	415	2.6	101	176
Gurma	5.8	545	658	5.8	226	266
Mande	0.9	85	110	1.2	47	55
Other	2.0	191	173	2.7	106	89
Marital status						
Never married	32.9	3,094	3,041	47.8	1,851	1,854
Married	42.2	3,968	4,243	38.3	1,480	1,527
Living together	14.4	1,353	1,213	9.5	366	309
Divorced/separated	7.7	728	630	4.1	159	146
Widowed	2.7	253	269	0.3	13	19
Residence						
Urban	55.5	5,215	4,716	55.4	2,142	1,897
Rural	44.5	4,181	4,680	44.6	1,726	1,958
Region						
Western	11.0	1,038	1,027	11.6	447	447
Central	10.0	937	941	9.8	380	363
Greater Accra	20.2	1,898	999	21.5	831	422
Volta	7.7	720	795	7.6	295	312
Eastern	9.3	878	907	9.4	362	377
Ashanti	19.1	1,798	1,040	17.6	680	390
Brong Ahafo	8.2	769	1,005	8.3	320	422
Northern	8.4	786	1,042	8.2	316	431
Upper East	3.8	358	914	3.8	146	382
Upper West	2.3	215	726	2.3	91	309
Education						
No education	19.1	1,792	2,281	9.4	362	502
Primary	17.8	1,672	1,747	14.0	543	636
Middle/JSS	41.1	3,862	3,528	42.0	1,626	1,512
Secondary+	22.0	2,070	1,840	34.5	1,336	1,205
Wealth quintile						
Lowest	16.1	1,513	2,326	16.3	629	977
Second	17.4	1,636	1,776	17.0	659	735
Middle	20.8	1,958	1,899	20.0	773	738
Fourth	22.3	2,093	1,763	21.9	845	718
Highest	23.4	2,196	1,632	24.9	962	687
Total 15-49	100.0	9,396	9,396	100.0	3,869	3,855
50-59	na	na	na	na	519	533
Total 15-59	na	na	na	na	4,388	4,388

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

In general, most men and women have some formal education. However, 19 percent of women and 9 percent of men have never attended school (this is a decrease from the figures of 21 percent and 13 percent, respectively, reported in the 2008 GDHS survey). Men tend to be more educated than women: 35 percent of men have a secondary education or higher, as compared with 22 percent of women.

3.3 FERTILITY

To generate data on fertility, all women who were interviewed were asked to report the total number of sons and daughters to whom they had ever given birth. To ensure that 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 the sex, date of birth, and survival status of each child; age at death for children who had died was also recorded.

Table 3 Current fertility

Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence, Ghana 2014

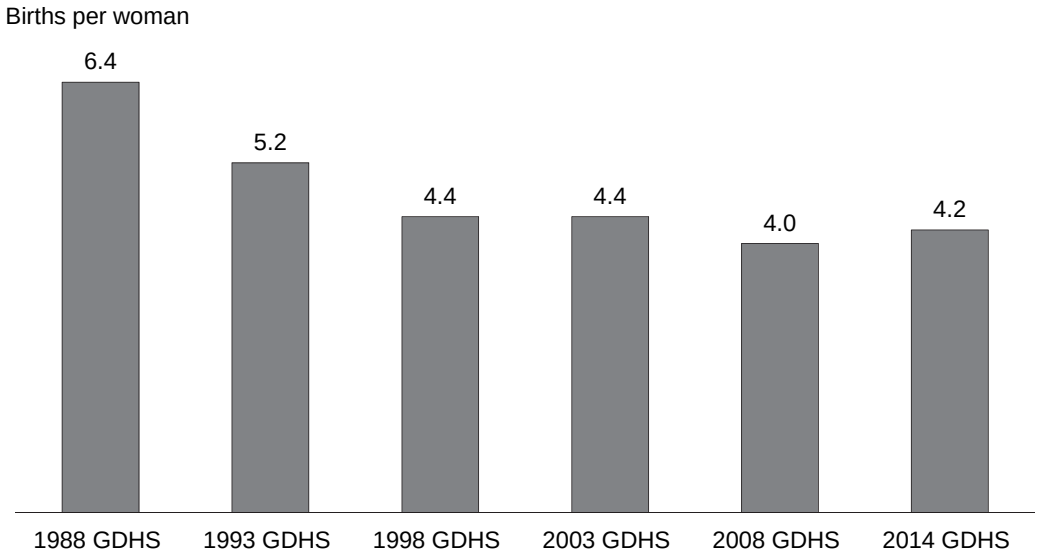
	Residence		
Age group	Urban	Rural	Total
15-19	54	101	76
20-24	116	220	161
25-29	179	232	201
30-34	181	220	197
35-39	108	168	135
40-44	35	72	52
45-49	11	23	17
TFR (15-49)	3.4	5.2	4.2
GFR	119	174	143
CBR	27.9	33.5	30.6

Notes: Age-specific fertility rates are per 1,000 women. Rates for the 45-49 age group may be slightly biased due to truncation. Rates are for the period 1-36 months prior to the interview.
TFR = Total fertility rate, expressed per woman
GFR = General fertility rate, expressed per 1,000 women age 15-44
CBR = Crude birth rate, expressed per 1,000 population

Table 3 shows age-specific fertility rates among women by five-year age groups for the three-year period preceding the survey. 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 woman from Ghana would bear an average of 4.2 children in her lifetime. Table 3 shows that the TFR for rural areas (5.2 births) is considerably higher than the rate for urban areas (3.4 births). Urban-rural differences in childbearing rates are evident for all age groups, and the absolute difference is especially large in the 20-24 age group.

The 2014 GDHS results indicate that there has been a slight increase in the TFR over the past six years, from 4.0 to 4.2 (Figure 1). This is in contrast to the marked decline in fertility observed between the mid-1980s and the 1990s. As shown in Figure 1, the TFR declined from a high of 6.4 births per woman in 1988 to 5.2 births in 1993, 4.4 in 1998 and 2003, and 4.0 in 2008 before increasing slightly to 4.2 in 2014.

Figure 1 **Trends in total fertility rate, 1988-2014**



Note: Rates are per 1,000 women and refer to the **three-year period** preceding the survey.

3.4 TEENAGE PREGNANCY AND MOTHERHOOD

The issue of adolescent fertility is important on both health and social grounds. Children born to very young mothers are at increased risk of sickness and death. Teenage mothers are more likely to experience adverse pregnancy outcomes and are more constrained in their ability to pursue educational opportunities than young women who delay childbearing.

Table 4 shows the percent distribution of women age 15-19 who have given birth or were pregnant with their first child at the time of the survey, according to background characteristics. Overall, 14 percent of women age 15-19 have begun childbearing: 11 percent have had a live birth and 3 percent were pregnant at the time of the interview. The proportion of teenagers who have begun childbearing rises rapidly with age, from 1 percent at age 15 to 31 percent at age 19. Teenagers residing in rural areas (17 percent), those living in the Brong Ahafo, Central, and Volta regions (21-22 percent), those with no education (23 percent), and those in the second wealth quintile (21 percent) tend to start childbearing earlier than other teenagers.

Table 4 Teenage pregnancy and motherhood

Percentage of women age 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, by background characteristics, Ghana 2014

Background characteristic	Percentage of women age 15-19 who: Have had a live birth	Are pregnant with first child	Percentage who have begun childbearing	Number of women
Age				
15	1.0	0.9	1.9	380
16	6.3	0.7	7.0	359
17	8.0	3.1	11.0	272
18	14.0	5.7	19.7	327
19	31.4	4.7	36.1	287
Residence				
Urban	9.0	2.5	11.5	822
Rural	13.7	3.2	16.9	803
Region				
Western	10.1	2.6	12.7	197
Central	14.4	7.0	21.3	153
Greater Accra	5.6	2.6	8.3	248
Volta	18.0	4.1	22.1	122
Eastern	15.0	1.8	16.8	151
Ashanti	10.2	1.7	11.9	307
Brong Ahafo	17.5	3.8	21.3	167
Northern	7.9	2.2	10.1	146
Upper East	8.0	1.7	9.7	89
Upper West	9.3	0.6	9.9	47
Education				
No education	19.8	3.4	23.2	69
Primary	15.7	3.3	19.0	368
Middle/JSS	11.0	3.0	14.0	906
Secondary+	4.5	1.6	6.2	282
Wealth quintile				
Lowest	12.2	2.9	15.1	342
Second	17.3	3.7	21.1	351
Middle	12.3	3.4	15.6	320
Fourth	9.5	2.7	12.2	305
Highest	4.2	1.5	5.7	307
Total	11.3	2.9	14.2	1,625

3.5 FERTILITY PREFERENCES

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

Table 5 shows that 19 percent of women want to have another child soon (within the next two years) and 31 percent want to have another child later (in two or more years). Thirty-five percent of women want no more children, and 2 percent are sterilised.

Fertility preferences are closely related to number of living children. Seven in ten women with no living children (71 percent) want a child soon, as compared with only 4 percent of women with six or more children. In general, 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 age 15-49 by desire for children, according to number of living children, Ghana 2014

	Number of living children[1]							
Desire for children	0	1	2	3	4	5	6+	Total
Have another soon[2]	71.0	34.6	19.6	14.6	10.9	6.8	4.2	18.9
Have another later[3]	7.1	53.3	51.3	33.6	21.1	16.1	9.4	31.3
Have another, undecided when	4.2	1.1	3.2	0.7	0.1	0.2	0.2	1.3
Undecided	6.6	5.6	7.6	13.9	7.4	7.4	4.3	8.0
Want no more	6.5	1.7	14.5	33.0	53.1	63.8	72.8	35.2
Sterilised[4]	0.0	0.2	0.6	2.2	2.4	2.5	4.8	1.9
Declared infecund	4.5	3.4	3.2	2.0	5.0	3.1	4.2	3.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	306	755	1,093	1,014	840	612	702	5,321

[1] The number of living children includes current pregnancy.
[2] Wants next birth within 2 years
[3] Wants to delay next birth for 2 or more years
[4] Includes both female and male sterilisation

3.6 FAMILY PLANNING

Family planning refers to a conscious effort by a couple to limit or space the number of children they have through the use of contraceptive methods. Information about use of contraceptive methods was collected from female respondents by asking them if they or their partner 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, intrauterine device (IUD), implants, injectables, the pill, male condoms and female condoms, and lactational amenorrhoea method (LAM). Methods such as rhythm, withdrawal, and folk methods are grouped as traditional. Table 6 shows levels of and key differentials in current use of contraceptive methods as reported by currently married women and sexually active unmarried women.

More than one in four currently married women (27 percent) are using some method of contraception. Modern methods are more commonly used than are traditional methods; 22 percent of married women use modern methods, while only 5 percent use traditional methods. Among the modern methods, injectables (8 percent) are most widely used, followed by the pill and implants (5 percent each).

Table 6 also shows differentials in use of contraceptive methods by selected background characteristics. The prevalence of contraceptive use is lowest among currently married women in the youngest (15-19) and oldest (45-49) age groups (19 percent and 18 percent, respectively). Similar proportions of urban and rural married women use contraceptives (26 percent and 27 percent, respectively). By region, the contraceptive prevalence rate (CPR) among married women is highest in Volta (32 percent) and lowest in the Northern region (11 percent).

Use of contraceptive methods increases with increasing education. For example, 19 percent of married women with no education are using a method of contraception, as compared with 34 percent of married women with a secondary education or higher. Use also tends to increase with number of living children, from 21 percent among married women with no children to 30 percent among those with three or four children, after which it declines slightly to 27 percent among those with five or more children.

Use of any method of contraception and of any modern method has increased somewhat over the last six years, from 24 percent and 17 percent, respectively, in 2008 to 27 percent and 22 percent in 2014.

Among sexually active unmarried women, 45 percent are currently using a contraceptive method (32 percent are using a modern method, and 13 percent are using a traditional method). Male condoms, the pill, and rhythm (8 percent each) are the most commonly used methods among sexually active unmarried women, followed by injectables (7 percent), implants (5 percent), and withdrawal (5 percent).

Table 6 Current use of contraception by background characteristics

Percent distribution of currently married women and sexually active unmarried women age 15-49 by contraceptive method currently used, according to background characteristics, Ghana 2014

Background characteristic	Any method	Any modern method	Modern method: Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	LAM	Other	Any traditional method	Traditional method: Rhythm	Withdrawal	Other	Not currently using	Total	Number of women
CURRENTLY MARRIED WOMEN																	
Age																	
15-19	18.6	16.7	0.0	1.3	0.0	6.7	6.1	2.5	0.0	0.0	1.9	0.0	1.9	0.0	81.4	100.0	104
20-24	29.6	24.8	0.0	4.9	0.2	12.4	5.0	1.4	0.0	0.7	4.8	3.9	0.8	0.1	70.4	100.0	606
25-29	31.3	27.5	0.1	5.8	0.5	11.2	7.2	1.4	0.8	0.5	3.8	2.6	1.2	0.1	68.7	100.0	1,062
30-34	27.6	23.0	0.6	5.4	0.4	7.1	6.9	1.9	0.1	0.3	4.6	2.9	1.4	0.4	72.4	100.0	1,078
35-39	26.1	21.0	2.7	4.2	1.5	7.5	4.1	0.9	0.0	0.1	5.1	3.9	1.0	0.2	73.9	100.0	1,040
40-44	25.2	19.4	4.2	4.4	1.3	6.0	3.1	0.5	0.0	0.0	5.8	4.1	1.3	0.4	74.8	100.0	821
45-49	18.3	15.7	5.0	3.0	0.4	3.0	3.7	0.3	0.0	0.3	2.6	2.1	0.5	0.1	81.7	100.0	611
Residence																	
Urban	26.3	20.3	2.1	4.1	0.9	5.8	5.0	1.7	0.1	0.5	6.1	4.4	1.4	0.3	73.7	100.0	2,726
Rural	27.0	24.2	1.6	5.3	0.6	10.2	5.4	0.6	0.2	0.1	2.8	1.9	0.7	0.2	73.0	100.0	2,596
Region																	
Western	27.1	23.3	2.7	5.2	0.4	7.1	6.1	1.8	0.0	0.0	3.8	2.6	1.1	0.0	72.9	100.0	547
Central	31.1	27.5	4.0	6.5	1.7	5.6	7.3	1.1	1.2	0.0	3.6	2.4	0.6	0.6	68.9	100.0	532
Greater Accra	28.7	19.4	1.3	3.5	1.0	4.8	5.9	2.0	0.1	0.7	9.3	6.2	2.7	0.3	71.3	100.0	1,005
Volta	32.2	29.5	0.8	6.7	0.0	14.5	4.8	2.2	0.0	0.2	2.8	1.3	1.1	0.4	67.8	100.0	405
Eastern	29.4	25.6	2.8	5.0	1.4	9.2	5.8	0.9	0.0	0.4	3.8	2.9	0.6	0.3	70.6	100.0	500
Ashanti	26.4	20.8	2.1	5.4	0.8	6.0	5.1	0.5	0.2	0.7	5.6	4.4	1.2	0.0	73.6	100.0	969
Brong Ahafo	30.1	26.2	2.2	5.4	0.8	11.3	5.5	1.1	0.0	0.0	3.9	3.2	0.2	0.4	69.9	100.0	439
Northern	11.2	10.8	0.3	2.2	0.0	6.9	1.3	0.1	0.0	0.0	0.4	0.1	0.2	0.1	88.8	100.0	561
Upper East	23.7	23.3	0.0	1.9	0.2	15.2	5.0	1.1	0.0	0.0	0.4	0.4	0.0	0.0	76.3	100.0	218
Upper West	25.2	24.8	1.0	3.7	0.0	15.4	4.5	0.2	0.0	0.1	0.4	0.3	0.1	0.0	74.8	100.0	146
Education																	
No education	18.6	17.4	1.9	3.1	0.2	7.8	3.8	0.2	0.1	0.2	1.1	0.5	0.5	0.1	81.4	100.0	1,478
Primary	28.9	26.8	1.7	6.3	0.8	9.6	7.8	0.6	0.0	0.1	2.0	1.6	0.2	0.2	71.1	100.0	979
Middle/JSS	28.5	22.8	1.9	5.4	0.5	7.8	5.3	1.1	0.3	0.4	5.7	4.3	1.0	0.3	71.5	100.0	2,063
Secondary+	34.3	23.7	1.9	3.7	2.4	6.6	4.3	3.7	0.3	0.6	10.6	7.0	3.4	0.2	65.7	100.0	801
Wealth quintile																	
Lowest	22.2	21.4	1.2	4.3	0.3	10.9	4.2	0.4	0.0	0.0	0.9	0.3	0.3	0.2	77.8	100.0	1,013
Second	27.1	24.8	2.5	5.0	0.6	9.8	6.1	0.5	0.0	0.3	2.3	1.4	0.7	0.2	72.9	100.0	977
Middle	26.3	23.6	1.2	6.1	0.3	8.4	6.7	0.9	0.0	0.0	2.7	1.7	0.7	0.2	73.7	100.0	1,001
Fourth	28.7	22.1	1.9	4.4	0.7	7.5	5.2	1.1	0.7	0.3	6.7	5.0	1.4	0.3	71.3	100.0	1,084
Highest	28.5	19.8	2.5	3.8	1.7	4.1	4.0	2.6	0.2	0.8	8.7	6.5	2.0	0.2	71.5	100.0	1,246
Number of living children																	
0	20.5	13.6	0.0	1.7	0.0	2.5	4.4	3.6	0.0	0.9	6.9	4.4	2.1	0.3	79.5	100.0	375
1-2	24.6	20.1	0.4	4.5	0.2	8.3	4.0	1.6	0.4	0.5	4.5	3.2	1.2	0.1	75.4	100.0	1,900
3-4	30.1	24.8	2.4	5.7	1.4	8.6	5.6	0.9	0.1	0.2	5.3	4.0	1.0	0.3	69.9	100.0	1,792
5+	26.7	24.2	3.9	4.4	0.9	8.2	6.6	0.2	0.0	0.0	2.5	1.5	0.7	0.3	73.3	100.0	1,255
Total	26.7	22.2	1.9	4.7	0.8	8.0	5.2	1.2	0.2	0.3	4.5	3.2	1.1	0.2	73.3	100.0	5,321
SEXUALLY ACTIVE UNMARRIED WOMEN																	
Residence																	
Urban	41.9	28.3	0.1	8.5	0.6	4.4	3.7	7.3	0.0	3.2	13.6	8.4	4.6	0.6	58.1	100.0	427
Rural	48.1	36.6	2.0	7.8	0.0	10.4	7.2	8.9	0.0	0.3	11.5	6.7	4.5	0.4	51.9	100.0	302
Total	44.5	31.7	0.9	8.2	0.4	6.9	5.1	7.9	0.0	2.0	12.8	7.7	4.5	0.5	55.5	100.0	729

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

3.7 NEED AND DEMAND FOR FAMILY PLANNING

The proportion of women who want to stop childbearing or who want to space their next birth is a crude measure of the extent of the need for family planning, given that not all of these women are exposed to the risk of pregnancy and some may already be using contraception. This section discusses the extent of need and the potential demand for family planning services. Women who want to postpone their next birth for two or more years or who want to stop childbearing altogether but are not using a contraceptive method are said to have an unmet need for family planning. Pregnant women are considered to have an unmet need for spacing or limiting if their pregnancy was mistimed or unwanted. Similarly, amenorrhoeic women are categorised as having an unmet need if their last birth was mistimed or unwanted. Women who are currently using a family planning method are said to have a met need for family planning. Total demand for family planning services comprises those who fall in the met need and unmet need categories.

Table 7 presents data on unmet need, met need, and total demand for family planning among currently married women and sexually active unmarried women. Figure 2 presents trends in unmet need, modern contraceptive use, and percentage of total demand satisfied with modern methods among currently married women. These indicators help evaluate the extent to which family planning programmes in Ghana meet the demand for services.

Table 7 shows that 30 percent of currently married women have an unmet need for family planning services. Twenty-seven percent of married women are currently using a contraceptive method. Therefore, less than six in ten currently married women (57 percent) have a demand for family planning. At present, only 47 percent of the potential demand for family planning is being met. Thus, if all married women who have an unmet need for family planning were to use family planning methods, the CPR would increase from 27 percent to 57 percent.

Among unmarried sexually active women, 42 percent have an unmet need for family planning and 45 percent are currently using a contraceptive method. The total demand for family planning among unmarried sexually active women is 87 percent, and only 51 percent of the potential demand for family planning is currently being satisfied. If all of the unmarried sexually active women who have an unmet need for family planning were to use contraceptive methods, the CPR would increase from 45 percent to 87 percent.

The definition of unmet need for family planning has been revised so that data on levels of unmet need are comparable over time and across surveys. The unmet need estimates in Figure 2 for the 1993, 1998, 2003, and 2008 GDHS surveys have been recalculated using the revised definition of unmet need but differ only slightly from the numbers published in the previous final reports. Figure 2 shows that unmet need, percentage of demand satisfied, and modern contraceptive use among currently married women have fluctuated over the past two decades. Despite the fluctuations, when comparing results from the 1993 and the 2014 GDHS surveys, unmet need has decreased from 37 percent to 30 percent between the two surveys, while modern contraceptive use and percentage of demand satisfied have increased from 10 percent to 22 percent and from 18 percent to 30 percent, respectively, over the same period.

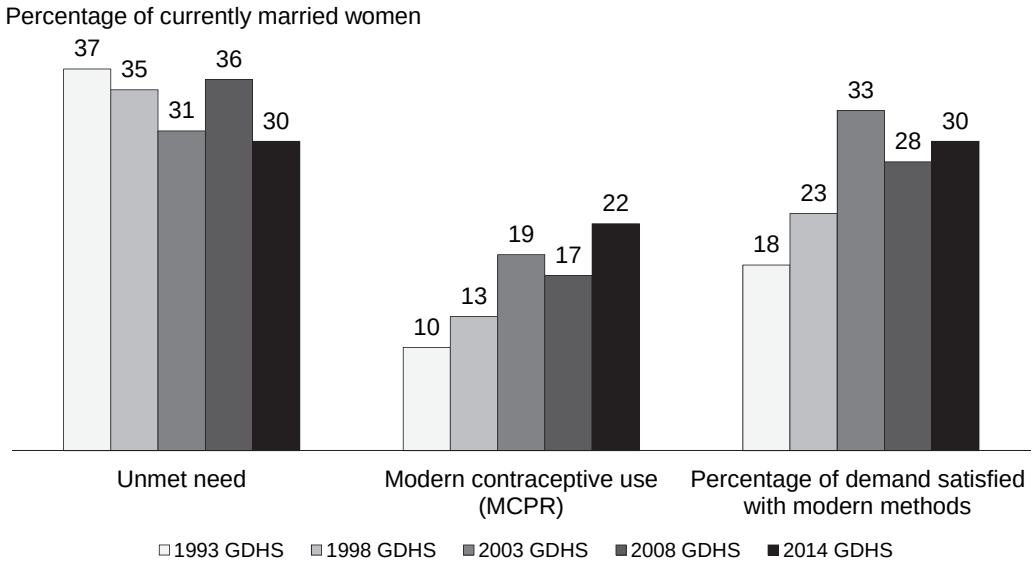
Table 7 Need and demand for family planning among currently married women and sexually active unmarried women

Percentage of currently married women and sexually active unmarried women age 15-49 with met need for family planning, percentage with met need who are using modern methods, percentage with unmet need for family planning, percentage with demand for family planning, percentage of the demand for contraception that is satisfied, and percentage of the demand for contraception that is satisfied by modern methods, by background characteristics, Ghana 2014

Background characteristic	Met need for family planning (currently using)		Unmet need	Total demand for family planning[3]	Percentage of demand satisfied[1]		Number of women
	All methods	Modern methods[2]			All methods	Modern methods[2]	
CURRENTLY MARRIED WOMEN							
Age							
15-19	18.6	16.7	50.7	69.3	26.8	24.1	104
20-24	29.6	24.8	34.0	63.6	46.5	38.9	606
25-29	31.3	27.5	30.8	62.2	50.4	44.2	1,062
30-34	27.6	23.0	29.5	57.1	48.3	40.3	1,078
35-39	26.1	21.0	35.3	61.4	42.6	34.2	1,040
40-44	25.2	19.4	28.5	53.7	47.0	36.2	821
45-49	18.3	15.7	14.2	32.5	56.4	48.3	611
Residence							
Urban	26.3	20.3	28.5	54.8	48.0	37.0	2,726
Rural	27.0	24.2	31.4	58.4	46.3	41.4	2,596
Region							
Western	27.1	23.3	27.4	54.5	49.7	42.8	547
Central	31.1	27.5	29.4	60.4	51.4	45.4	532
Greater Accra	28.7	19.4	28.3	57.1	50.4	34.1	1,005
Volta	32.2	29.5	36.3	68.5	47.0	43.0	405
Eastern	29.4	25.6	35.1	64.5	45.5	39.7	500
Ashanti	26.4	20.8	31.8	58.2	45.4	35.8	969
Brong Ahafo	30.1	26.2	26.5	56.7	53.2	46.3	439
Northern	11.2	10.8	27.8	39.0	28.8	27.8	561
Upper East	23.7	23.3	26.5	50.2	47.3	46.5	218
Upper West	25.2	24.8	27.5	52.7	47.9	47.0	146
Education							
No education	29.3	18.6	17.4	47.8	38.8	36.4	1,478
Primary	31.9	28.9	26.8	60.7	47.5	44.2	979
Middle/JSS	31.7	28.5	22.8	60.2	47.4	37.9	2,063
Secondary+	24.1	34.3	23.7	58.4	58.8	40.5	801
Wealth quintile							
Lowest	22.2	21.4	31.2	53.5	41.6	40.0	1,013
Second	27.1	24.8	32.1	59.2	45.8	41.9	977
Middle	26.3	23.6	32.6	58.8	44.6	40.1	1,001
Fourth	28.7	22.1	30.1	58.8	48.9	37.5	1,084
Highest	28.5	19.8	24.8	53.3	53.5	37.1	1,246
Total	26.7	22.2	29.9	56.6	47.2	39.2	5,321
SEXUALLY ACTIVE UNMARRIED WOMEN							
Residence							
Urban	41.9	28.3	42.9	84.8	49.4	33.3	427
Rural	48.1	36.6	41.4	89.5	53.8	40.9	302
Total	44.5	31.7	42.2	86.7	51.3	36.6	729

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al., 2012.
[1] Percentage of demand satisfied is met need divided by total demand.
[2] Modern methods include female sterilisation, male sterilisation, IUD, implants, injectables, pill, male condom, female condom, foam/jelly, emergency contraception, and lactational amenorrhoea method (LAM).
[3] Total demand is the sum of unmet need and met need.

Figure 2 **Trends in unmet need, modern contraceptive use, and percentage of demand satisfied with modern methods, 1993-2014**



Note: Data on unmet need not available for the 1988 GDHS survey. The unmet need estimates for the 1993, 1998, 2003, and 2008 GDHS surveys have been recalculated using the revised definition of unmet need (Bradley et al., 2012).

3.8 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 women, which includes questions about women's aggregate childbearing experience (i.e., the number of sons and daughters who live with their mother, the number who live elsewhere, and the number who have died). Table 8 presents estimates for three successive five-year periods prior to the 2014 GDHS. The rates are estimated directly from the information in the birth history on a child's birth date, survivorship status, and age at death for children who died. This information is used to directly estimate the following five mortality rates:

Neonatal mortality: the probability of dying within the first month of life
Postneonatal mortality: the difference between infant and neonatal mortality
Infant mortality: the probability of dying before the first birthday
Child mortality: the probability of dying between the first and the fifth birthday
Under-5 mortality: 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 age 12 months.

Table 8 Early childhood mortality rates

Neonatal, postneonatal, infant, child, and under-5 mortality rates for five-year periods preceding the survey, Ghana 2014

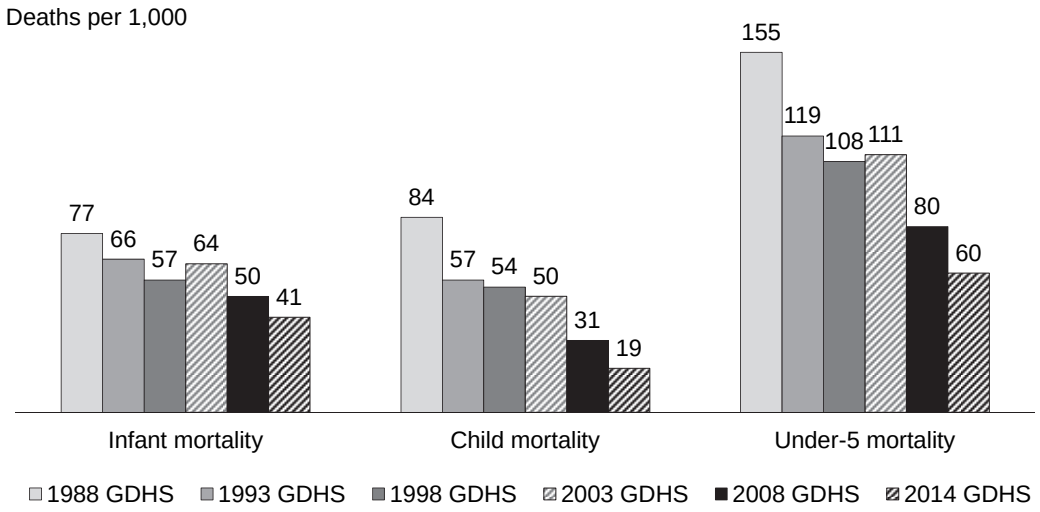
	Mortality rates				
Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
0-4	29	13	41	19	60
5-9	33	21	54	28	81
10-14	30	22	52	37	87

[1] Computed as the difference between the infant and neonatal mortality rates

As shown in Table 8, during the five years immediately preceding the survey, the infant mortality rate was 41 deaths per 1,000 live births, the child mortality rate was 19 deaths per 1,000 children surviving to age 12 months, and the overall under-5 mortality rate was 60 deaths per 1,000 live births. Sixty-eight percent of all deaths among children under age 5 in Ghana take place before a child's first birthday, with 48 percent occurring during the first month of life.

The 2014 GDHS documents a pattern of decreasing under-5 mortality during the 15 years prior to the survey. Results from the six GDHS surveys conducted between 1988 and 2014 show a decline in childhood mortality over the past two and a half decades (Figure 3). This decline is especially pronounced over the past decade. For example, the infant mortality rate declined from 64 per 1,000 for the five-year period preceding the 2003 GDHS to 41 per 1,000 during the same period prior to the 2014 GDHS. Similarly, the under-5 mortality rate decreased from 111 per 1,000 for the five-year period preceding the 2003 GDHS to 60 per 1,000 during the same period prior to the 2014 GDHS.

Figure 3 **Trends in childhood mortality, 1988-2014**



3.9 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 2014 GDHS, 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 obtained antenatal care during the pregnancy for their most recent live birth in the five years preceding the survey and whether they had received tetanus toxoid injections while pregnant. For each live birth over the same period, mothers were also asked what type of assistance they received at the time of delivery. Finally, women who had a live birth in the two years before the survey were asked if they received a postnatal checkup within two days of delivery. Table 9 summarises information on the coverage of these maternal health services.

Table 9 Maternal care indicators

Among women age 15-49 who had a live birth in the five years preceding the survey, percentage who received antenatal care from a skilled provider for the last live birth, percentage with four or more ANC visits, and percentage whose last live birth was protected against neonatal tetanus; among all live births in the five years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility; and among women age 15-49 who had a live birth in the two years preceding the survey, percentage who received a postnatal checkup in the first two days after giving birth, by background characteristics, Ghana 2014

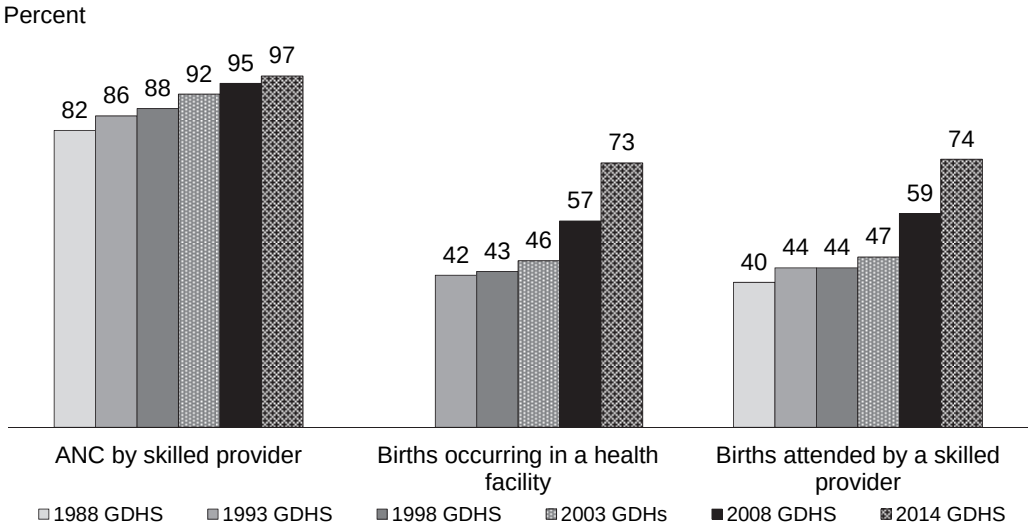
	Women who had a live birth in the five years preceding the survey				Live births in the five years preceding the survey			Women who had a live birth in the two years preceding the survey	
Background characteristic	Percentage with antenatal care from a skilled provider[1]	Percentage with 4+ ANC visits	Percentage whose last live birth was protected against neonatal tetanus[2]	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births	Percentage of women who had a postnatal checkup in the first two days after birth	Number of women
Mother's age at birth									
<20	97.8	80.8	66.0	389	72.1	71.3	573	76.2	222
20-34	97.6	88.5	78.7	2,856	74.6	74.0	4,042	79.3	1,668
35-49	96.3	86.0	80.9	897	71.2	70.4	1,080	75.0	460
Residence									
Urban	98.8	93.0	80.8	1,979	90.9	90.9	2,635	87.1	1,071
Rural	96.0	82.0	75.4	2,163	58.9	57.7	3,060	70.7	1,279
Region									
Western	99.3	92.1	82.0	427	75.3	74.0	574	79.8	228
Central	98.0	91.1	84.0	455	72.0	70.3	622	79.1	265
Greater Accra	98.5	91.4	78.2	674	92.1	92.5	880	93.1	341
Volta	93.9	77.3	80.8	315	66.3	65.3	436	67.2	182
Eastern	96.6	77.4	68.8	389	67.2	67.7	532	70.5	214
Ashanti	98.8	93.5	81.8	738	86.3	85.6	1,065	86.3	419
Brong Ahafo	98.9	90.3	83.7	374	79.0	78.3	497	80.1	221
Northern	92.0	73.0	69.0	480	36.4	35.4	709	57.2	315
Upper East	98.4	93.0	68.0	178	84.6	84.1	227	87.8	99
Upper West	98.3	91.3	70.9	111	63.7	63.4	152	74.5	66
Mother's education									
No education	94.1	79.2	72.4	1,079	52.3	51.7	1,561	65.2	635
Primary	95.9	82.3	73.3	812	68.8	68.2	1,141	74.1	443
Middle/JSS	99.2	91.3	80.7	1,640	83.3	82.8	2,208	84.7	935
Secondary+	99.9	97.1	86.6	611	96.2	95.0	785	89.9	337
Wealth quintile									
Lowest	94.0	76.4	68.1	868	46.9	46.0	1,255	63.1	532
Second	95.6	81.9	76.7	840	60.0	59.6	1,209	71.0	496
Middle	98.2	86.8	78.9	830	77.7	76.4	1,113	79.2	459
Fourth	99.4	94.3	80.0	811	94.0	93.8	1,058	91.2	457
Highest	99.7	98.1	87.2	792	96.5	96.2	1,060	90.9	406
Total	97.3	87.3	78.0	4,142	73.7	73.1	5,695	78.2	2,350

[1] Skilled provider includes doctor, nurse, nurse/midwife, or community health officer.
[2] Includes mothers with two injections during the pregnancy of their 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 10 years of the last live birth), or five or more injections at any time prior to the last live birth

3.9.1 Antenatal Care

Antenatal care (ANC) from a skilled provider is important to monitor pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy, at delivery, and during the postnatal period (within 42 days after delivery). The 2014 GDHS results show that 97 percent of women who gave birth in the five years preceding the survey received antenatal care from a skilled provider at least once for their last birth. Almost nine in ten women (87 percent) had four or more ANC visits. Urban women are slightly more likely than rural women to have received ANC from a skilled provider (99 percent and 96 percent, respectively) and notably more likely to have had four or more ANC visits (93 percent and 82 percent, respectively). As shown in Figure 4, the percentage of women receiving antenatal care from a skilled provider has increased steadily over the past two and a half decades, from 82 percent in 1988 to 97 percent in 2014.

Figure 4 **Trends in maternal health care, 1988-2014**



Note: Data for the 1988, 1993, and 1998 surveys refer to births, whereas data for antenatal care for the 2003, 2008, and 2014 surveys refer to women who had a live birth. The reference period is five years preceding the survey except for 1993, which refers to the three years preceding the survey. In the 2008 and 2014 surveys, a skilled provider includes a community health officer, while in all previous surveys a community health officer was not included. For the 1988 survey, data for births that occurred in a health facility are missing.

3.9.2 Tetanus Toxoid

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, a major cause of early infant death in many developing countries, often due to failure to observe hygienic procedures during delivery. Table 9 shows that 78 percent of women received sufficient doses of tetanus toxoid to protect their last birth against neonatal tetanus. The percentage of women whose last birth was protected from tetanus increases with age, from 66 percent among those less than age 20 to 81 percent among those age 35-49. In addition, the percentage is higher among women living in urban than rural areas (81 percent versus 75 percent), and it ranges from 68 percent in the Upper East region to 84 percent in the Central and Brong Ahafo regions. The percentage of women whose last live birth was protected against tetanus increases with increasing education and wealth. Over the past six years, there has been an increase in the proportion of women whose last live birth was protected against tetanus (from 72 percent to 78 percent).

3.9.3 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). Seventy-four percent of women reported that their last live birth in the five years preceding the survey was delivered by a skilled provider (Table 9). Seventy-three percent of births were delivered in a health facility. The proportion of live births delivered by a skilled provider and the proportion delivered in a health facility have increased steadily and substantially since the 1988 GDHS survey (Figure 4).

Ninety-one percent of births to urban mothers were assisted by a skilled provider and 91 percent were delivered in a health facility, as compared with 59 percent and 58 percent, respectively, of births to rural women. The proportions of women who were assisted by a skilled provider and delivered in a health facility were highest in the Greater Accra region (92 percent and 93 percent, respectively) and lowest in the Northern region (36 percent and 35 percent, respectively).

Mothers' educational status is highly correlated with whether their delivery is assisted by a skilled provider and whether the birth is delivered in a health facility. For example, 52 percent of births to mothers with no education were assisted by a skilled provider and 52 percent were delivered in a health facility, as

compared with 96 percent and 95 percent, respectively, of births to mothers with more than a secondary education. A similar relationship was observed with wealth.

3.9.4 Postnatal Care for the Mother

A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery. Thus, prompt postnatal care (PNC) for both the mother and the child is important to treat any complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child. Safe motherhood programmes recommend that all women receive a check of their health within two days after delivery.

To assess the extent of postnatal care utilisation, respondents were asked, for their last birth in the two years preceding the survey, whether they had received a checkup after delivery and the timing of the first checkup. As shown in Table 9, 78 percent of women reported having received a PNC checkup in the first two days after birth. The proportion of women receiving a postnatal checkup within two days of delivery is higher in urban than rural areas (87 percent versus 71 percent). Women in the Northern region are least likely to have received a PNC checkup in the first two days after birth (57 percent), and women in the Greater Accra region are most likely to have received a checkup (93 percent). Overall, the percentage of women receiving a postnatal checkup within two days of delivery increases with increasing education and wealth.

3.10 CHILD HEALTH AND NUTRITION

The 2014 GDHS collected data on a number of key child health indicators, including vaccinations of young children, nutritional status as assessed by anthropometry, infant feeding practices, and treatment practices when a child is ill.

3.10.1 Vaccination of Children

Historically, in DHS surveys, a child is considered to have received all basic vaccinations if he or she has received a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus; 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 2014 GDHS collected information on the coverage of these vaccinations among all children born in the five years preceding the survey. Currently DPT is not given to infants in Ghana as a stand-alone vaccine. Instead, it has been combined with other antigens that protect against hepatitis B and *Haemophilus influenzae* type b, and this vaccine (DPT-HepB-Hib) is known as the pentavalent vaccine. As such, the 2014 GDHS reports on pentavalent vaccine coverage as opposed to DPT coverage.

Ghana has established a schedule for the administration of all basic childhood vaccines. BCG should be given shortly after birth. Polio vaccine should be given at birth and at approximately age 6, 10, and 14 weeks. Pentavalent vaccine should also be given at approximately age 6, 10, and 14 weeks. The first dose of measles vaccine and yellow fever vaccine should be given at or soon after the child reaches age 9 months. The Ministry of Health introduced two new vaccines, the pneumococcal and retrovirus vaccines, which protect children from pneumonia and diarrhoea. The rotavirus vaccine is given at age 6 and 10 weeks. The pneumococcal vaccine is administered as an injection to infants in three doses at age 6, 10, and 14 weeks. It is also recommended that the vaccinations be recorded on a card that is given to the parents or guardians.

In the 2014 GDHS, information on vaccination coverage was obtained in two ways—from vaccination cards and from mothers' verbal reports. All mothers were asked to show the interviewer the vaccination card on which vaccination dates are recorded for all children born since January 2009. If the card was available, the interviewer then recorded from the card the dates of each vaccination received. In cases in which the vaccination card indicated the child had not received all vaccinations, 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 recorded. If there was no vaccination card, or if the mother was unable to show the card to the

interviewer, the child's vaccination information was based on the mother's recall. The mother was asked to recall whether the child had received BCG, polio, pentavalent, pneumococcal, rotavirus, yellow fever, and measles vaccines. If she indicated that the child had received the polio, pneumococcal, rotavirus, or pentavalent vaccines, she was asked about the number of doses that the child received. The results presented here are based on both vaccination card information and, for those children without a card, information provided by the mother.

Table 10 pertains to children age 12-23 months, the age by which children should have received all basic vaccinations. Eighty-eight percent of these children have a vaccination card that was seen by the interviewer. Overall, 77 percent of children have received all basic vaccinations (BCG, measles, and three doses each of pentavalent and polio vaccine). This percentage is similar to that reported in the 2008 GDHS (79 percent). Only 2 percent of children in Ghana have not received any vaccinations; in the 2008 GDHS, by comparison, 1 percent of children were reported to have not received any vaccinations.

With respect to specific vaccines, 97 percent of children have received BCG, 97 percent have received the first dose of pentavalent, and 97 percent have received polio 1. Coverage for the pentavalent and polio vaccinations declines with subsequent doses; only 89 percent of children received the recommended three doses of pentavalent (DPT-HepB-Hib) and 84 percent received three doses of polio. Coverage of the first dose of measles vaccine is 89 percent, similar to that reported in the 2008 GDHS (90 percent).

Table 10 also shows coverage of additional vaccines, including pneumococcal vaccine (three doses), rotavirus (two doses), and yellow fever. The data show that 93 percent of children age 12-23 months have received the first dose of pneumococcal vaccine and 84 percent have received the third dose. Ninety-two percent of children age 12-23 months have received the first dose of the rotavirus vaccine, while 88 percent have received the second dose. Eighty-eight percent of children age 12-23 have been vaccinated against yellow fever, this percentage is similar to that reported in the 2008 GDHS (89 percent).

Basic vaccination coverage does not differ by the sex of the child or urban-rural residence. However, large differences are observed at the region level; the percentage of children with full vaccination coverage ranges from a high of 91 percent in the Upper West region to a low of 69 percent each in the Western and Northern regions. Full vaccination coverage generally increases with increasing education. However, there are no variations by wealth.

3.10.2 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 2014 GDHS, for each child under age 5, mothers were asked if the child had experienced an episode of diarrhoea; a cough accompanied by short, rapid breathing or difficulty breathing as a result of a chest-related problem (symptoms of ARI); or a fever in the two weeks preceding the survey. Respondents were also asked if advice or treatment was sought from a health facility or a provider when the child was ill. Overall, 4 percent of children under age 5 showed symptoms of ARI, 14 percent had a fever, and 12 percent experienced diarrhoea in the two weeks preceding the survey (data not shown). It should be noted that the morbidity data collected are subjective because they are based on a mother's perception of illnesses without validation by medical personnel.

Table 10 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, Ghana 2014

Background characteristic	BCG	Pentavalent[1]			Polio[2]				Measles	All basic vaccinations[3]	Pneumococcal			Rotavirus		Yellow fever	No vaccinations	Percentage with a vaccination card	Number of children
		1	2	3	0	1	2	3			1	2	3	1	2				
Sex																			
Male	96.3	95.9	94.7	86.8	77.0	96.5	93.0	83.4	88.2	78.1	92.3	90.1	81.7	91.1	87.5	86.8	1.9	88.5	564
Female	97.2	97.3	96.2	90.3	80.6	97.7	94.0	84.7	90.3	76.6	94.3	92.5	86.8	92.8	88.7	89.2	1.2	87.9	550
Residence																			
Urban	97.2	96.0	94.7	88.5	88.1	96.1	92.4	84.0	89.1	77.4	94.3	92.4	86.5	91.3	88.4	88.4	1.6	86.4	503
Rural	96.4	97.1	96.0	88.5	71.1	97.9	94.4	84.1	89.4	77.3	92.4	90.4	82.4	92.4	87.8	87.6	1.6	89.6	611
Region																			
Western	96.8	95.4	94.8	83.5	84.5	97.6	91.2	78.7	85.6	69.4	87.3	85.6	80.5	83.7	80.5	78.9	2.4	85.9	104
Central	95.9	98.4	98.4	89.5	81.4	98.4	95.4	77.2	90.2	70.9	94.6	92.7	84.6	94.9	91.6	87.2	1.6	82.1	133
Greater Accra	98.4	97.2	96.3	91.1	94.6	96.7	93.4	86.3	92.2	82.3	95.2	93.6	88.3	95.2	92.4	92.9	1.2	85.2	179
Volta	96.4	90.9	90.9	85.6	80.7	93.9	90.7	86.4	83.8	78.8	89.5	87.7	83.5	90.4	85.6	86.9	1.7	86.0	86
Eastern	94.5	94.7	92.5	89.8	70.7	97.9	95.7	90.0	86.9	79.5	94.4	91.0	88.3	90.1	86.8	89.6	2.1	92.8	103
Ashanti	98.1	99.1	95.7	92.5	77.4	97.3	93.1	84.8	95.1	78.9	94.5	93.1	83.6	90.3	85.0	93.6	0.0	90.3	180
Brong Ahafo	100.0	99.5	99.5	88.2	72.4	100.0	96.4	85.1	93.0	82.2	97.8	97.2	88.3	98.3	96.4	88.9	0.0	91.6	117
Northern	92.1	93.6	92.0	80.7	57.8	94.2	90.3	79.7	79.4	69.0	88.9	85.6	76.9	88.6	85.1	77.5	4.4	88.9	140
Upper East	97.9	98.7	97.9	93.3	92.9	97.1	94.2	90.7	92.1	85.0	95.0	92.0	78.6	93.6	82.6	93.5	1.3	92.1	43
Upper West	98.6	97.5	97.5	96.7	86.1	98.6	98.6	94.6	96.4	91.2	96.0	93.7	88.9	96.0	92.6	94.9	1.4	96.6	29
Education																			
No education	93.0	95.1	94.2	86.7	68.4	96.1	92.8	84.2	85.8	75.6	90.9	88.6	83.0	90.4	86.6	84.6	3.5	89.6	305
Primary	98.0	93.9	90.6	83.7	72.0	95.0	90.5	79.5	87.7	75.2	90.3	85.8	76.0	88.7	80.5	87.5	1.0	86.2	209
Middle/JSS	98.0	98.7	98.0	90.0	83.8	98.9	95.2	85.4	90.8	77.7	95.6	95.0	86.2	93.5	91.0	88.8	0.7	89.2	448
Secondary+	99.0	97.4	97.0	94.3	94.3	96.5	94.1	85.7	93.7	82.6	95.2	93.1	92.0	94.8	92.9	92.9	1.0	84.8	152
Wealth quintile																			
Lowest	95.7	95.8	95.1	87.4	63.7	96.9	94.2	85.1	86.6	77.5	91.6	88.7	80.7	91.5	86.8	85.1	2.7	91.5	249
Second	95.3	96.3	94.3	86.3	71.7	97.5	93.1	85.4	89.3	77.0	92.1	89.7	81.1	91.6	86.7	86.7	1.2	88.9	233
Middle	98.2	96.5	94.6	87.8	78.7	97.2	93.8	81.6	88.3	77.3	93.5	90.4	83.1	92.4	88.4	87.1	1.2	88.7	216
Fourth	96.9	96.4	95.2	90.1	89.1	97.2	93.1	83.9	90.2	77.2	92.7	92.7	87.8	92.3	88.7	92.2	1.9	85.5	223
Highest	98.0	98.5	98.5	91.7	95.1	96.6	93.2	83.9	92.7	77.7	97.2	96.0	89.6	91.9	90.5	89.2	0.6	85.4	192
Total	96.8	96.6	95.4	88.5	78.8	97.1	93.5	84.0	89.3	77.3	93.3	91.3	84.2	91.9	88.1	88.0	1.6	88.2	1,113

[1] Pentavalent is DPT-HepB-Hib.
[2] Polio 0 is the polio vaccination given at birth.
[3] BCG, measles, and three doses each of pentavalent/DPT-HepB-Hib and polio vaccine excluding polio vaccine given at birth

Table 11 shows that treatment from a health facility or provider was sought for 53 percent of children with ARI symptoms and 56 percent of those with a fever. Treatment was sought from a health facility or health provider for 45 percent of children with diarrhoea. Forty-nine percent of children with diarrhoea received a rehydration solution from an oral rehydration salt (ORS) packet, 7 percent were given zinc, and 6 percent of children received zinc and were also treated with rehydration solution from an ORS packet.

Table 11 Treatment for acute respiratory infection, fever, and diarrhoea

Among children under age 5 who had symptoms of acute respiratory infection (ARI) or had a fever in the two weeks preceding the survey, percentage for whom advice or treatment was sought from a health facility or provider, and among children under age 5 who had diarrhoea during the two weeks preceding the survey, percentage for whom advice or treatment was sought from a health facility or provider, percentage given a fluid made from oral rehydration salt (ORS) packets, percentage given zinc, and percentage given ORS and zinc, by background characteristics, Ghana 2014

	Children with symptoms of ARI[1]		Children with fever		Children with diarrhoea				
Background characteristic	Percentage for whom advice or treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom advice or treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom advice or treatment was sought from a health facility/ provider[2]	Percentage given fluid from ORS packet	Percentage given zinc	Percentage given any ORS and zinc	Number of children
Age in months									
<6	*	16	(59.1)	23	(20.5)	(16.6)	(0.0)	(0.0)	32
6-11	(46.9)	32	56.1	84	53.6	46.7	9.0	5.5	88
12-23	62.2	52	60.2	188	57.7	58.3	13.0	11.5	187
24-35	(60.3)	32	52.7	185	42.1	50.4	4.2	3.7	176
36-47	(55.8)	34	58.1	141	34.2	37.6	5.4	0.9	77
48-59	*	26	51.3	131	31.0	47.5	4.4	2.3	78
Sex									
Male	53.4	97	53.6	409	43.0	47.8	6.4	4.8	371
Female	51.8	97	58.7	342	47.4	49.7	8.8	6.6	267
Residence									
Urban	56.2	64	50.9	304	37.1	49.3	6.4	4.5	255
Rural	50.8	129	59.4	447	50.0	48.2	8.0	6.2	383
Region									
Western	(76.9)	27	77.8	61	(75.9)	(61.9)	(9.2)	(7.2)	38
Central	*	18	66.4	64	48.3	67.6	7.7	7.7	51
Greater Accra	*	27	(39.3)	91	(33.7)	(41.9)	(4.6)	(4.6)	63
Volta	*	17	54.7	58	(44.0)	(41.3)	(0.0)	(0.0)	29
Eastern	(54.7)	37	56.3	90	42.5	60.1	9.5	6.7	80
Ashanti	*	26	45.0	152	27.5	39.3	8.3	6.4	141
Brong Ahafo	*	11	62.4	67	49.6	39.7	8.2	4.6	82
Northern	(36.7)	24	50.3	106	52.0	48.7	5.0	2.9	107
Upper East	*	4	79.8	28	59.6	57.8	19.0	14.8	26
Upper West	*	2	75.8	36	67.0	50.8	3.0	3.0	22
Mother's education									
No education	40.7	51	57.5	236	51.4	47.0	8.0	6.5	212
Primary	(60.8)	43	51.8	153	40.9	50.7	8.6	7.1	123
Middle/JSS	54.4	79	54.3	273	42.1	48.7	7.1	4.4	244
Secondary+	*	19	63.8	90	41.3	49.8	3.7	3.7	59
Wealth quintile									
Lowest	(50.5)	27	54.5	180	53.9	46.7	8.0	6.0	166
Second	36.9	58	54.5	192	48.3	48.5	8.2	5.6	163
Middle	68.3	60	59.9	152	32.9	45.8	10.2	7.6	135
Fourth	*	30	59.8	109	43.6	53.6	4.7	4.0	103
Highest	*	18	51.7	118	40.2	51.7	2.5	2.5	71
Total	52.6	193	55.9	752	44.9	48.6	7.4	5.5	638

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Symptoms of ARI (cough accompanied by short, rapid breathing which was chest-related and/or by difficult breathing which was chest-related).
[2] Excludes pharmacy, shop, and traditional practitioner

3.10.3 Nutritional Status of Children

Anthropometric indicators for young children were collected in the 2014 GDHS to provide outcome measures of nutritional status. As recommended by WHO, evaluation of nutritional status in this report is based on a comparison of three indices for the children in this survey with indices reported for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group, 2006). The three indices (height-for-age, weight-for-height, and weight-for-age) 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 reference population median 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 12 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Ghana 2014

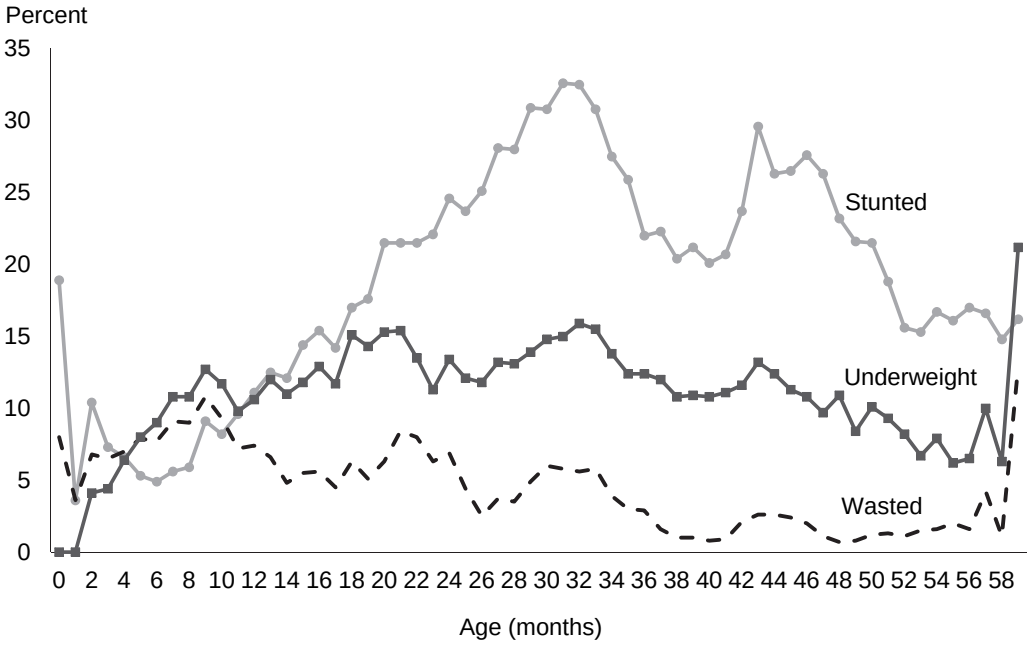
	Height-for-age[1]			Weight-for-height				Weight-for-age				
Background characteristic	Percentage below -3 SD	Percentage below -2 SD[2]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Number of children
Age in months												
<6	3.3	8.0	-0.1	1.4	6.9	3.7	-0.2	0.8	4.2	1.7	-0.3	301
6-8	1.4	5.9	-0.4	2.4	10.2	3.2	-0.4	2.9	13.1	2.1	-0.6	139
9-11	1.3	10.5	-0.5	1.9	10.6	1.9	-0.6	2.5	12.5	1.2	-0.7	142
12-17	3.7	12.7	-0.8	1.3	5.1	3.0	-0.5	2.1	11.3	2.8	-0.7	302
18-23	6.4	21.9	-1.1	0.5	8.1	3.3	-0.3	2.7	14.6	1.3	-0.8	287
24-35	6.6	28.2	-1.3	0.5	4.3	2.8	-0.2	2.3	13.8	1.3	-0.8	575
36-47	5.2	22.9	-1.1	0.1	1.4	3.1	-0.0	1.1	11.2	1.1	-0.7	573
48-59	5.5	17.7	-1.1	0.1	2.4	0.9	-0.3	0.9	8.9	0.0	-0.8	576
Sex												
Male	5.3	20.4	-1.0	0.8	4.3	3.6	-0.2	1.8	10.6	1.4	-0.7	1,514
Female	4.5	17.0	-0.9	0.5	5.1	1.6	-0.3	1.6	11.6	1.0	-0.7	1,382
Residence												
Urban	2.9	14.9	-0.8	0.5	3.7	3.1	-0.2	1.4	9.3	1.8	-0.6	1,384
Rural	6.8	22.3	-1.1	0.8	5.6	2.1	-0.3	1.9	12.6	0.7	-0.8	1,512
Region												
Western	5.5	17.7	-1.0	0.0	3.9	1.5	-0.3	1.9	10.6	1.1	-0.8	307
Central	8.6	22.0	-1.1	0.6	7.7	4.6	-0.2	2.3	13.9	1.0	-0.8	340
Greater Accra	1.5	10.4	-0.5	0.8	3.7	5.2	-0.0	0.4	8.7	3.3	-0.3	424
Volta	6.2	19.3	-1.0	0.0	2.5	4.2	-0.2	1.5	10.5	2.4	-0.7	215
Eastern	4.0	17.0	-0.9	0.6	3.2	1.6	-0.2	0.8	7.9	0.8	-0.6	273
Ashanti	2.3	16.1	-0.8	0.7	3.5	1.5	-0.2	1.6	9.4	0.9	-0.6	496
Brong Ahafo	2.6	17.2	-0.9	0.4	4.5	1.4	-0.3	0.7	5.9	0.5	-0.7	284
Northern	10.7	33.1	-1.4	1.6	6.3	1.3	-0.4	3.6	20.0	0.2	-1.1	360
Upper East	3.5	14.4	-0.9	1.0	9.4	1.4	-0.5	2.5	10.8	0.0	-0.9	118
Upper West	5.7	22.2	-1.0	1.4	4.4	2.8	-0.3	1.9	13.5	0.3	-0.8	78
Mother's education[3]												
No education	8.6	25.6	-1.2	0.9	5.2	2.6	-0.3	2.8	14.2	0.7	-0.9	780
Primary	5.3	19.8	-1.0	1.3	3.8	2.4	-0.2	1.0	11.6	0.5	-0.7	519
Middle/JSS	2.7	16.1	-0.9	0.5	4.5	2.5	-0.2	1.6	9.7	1.6	-0.7	1,027
Secondary+	1.3	3.6	-0.3	0.0	5.0	4.1	-0.1	0.4	4.6	2.4	-0.3	328
Mother's interview status												
Interviewed	4.8	18.0	-0.9	0.7	4.7	2.7	-0.2	1.7	10.8	1.2	-0.7	2,593
Not interviewed but in household	4.0	21.5	-1.1	0.0	1.9	2.4	-0.2	2.8	8.6	0.0	-0.8	62
Not interviewed, not in household[4]	6.8	26.5	-1.1	0.3	5.1	1.4	-0.2	1.6	14.3	1.2	-0.8	241
Wealth quintile												
Lowest	7.8	24.8	-1.2	1.1	6.2	1.5	-0.4	2.7	15.7	0.5	-1.0	660
Second	7.7	24.9	-1.2	0.9	3.7	3.2	-0.2	1.8	13.1	0.7	-0.8	605
Middle	4.3	18.5	-0.9	0.5	2.3	2.3	-0.2	1.0	7.2	0.8	-0.7	596
Fourth	2.2	14.0	-0.8	0.3	6.8	1.8	-0.3	1.3	11.5	1.4	-0.7	541
Highest	1.3	8.7	-0.4	0.4	4.4	4.6	-0.1	1.4	6.5	3.2	-0.3	494
Total	4.9	18.8	-0.9	0.7	4.7	2.6	-0.2	1.7	11.0	1.2	-0.7	2,895

Note: Table is based on children who stayed 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 1977 NCHS/CDC/WHO reference. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.
[1] Recumbent length is measured for children under age 2; standing height is measured for all other children.
[2] Includes children who are below -3 standard deviations (SD) from the WHO growth standards population median
[3] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.
[4] Includes children whose mothers are deceased

Height and weight measurements were obtained for 3,118 children under age 5 who were present in the GDHS sample households at the time of the survey. Table 12 and Figure 5 focus on the 97 percent of children for whom complete and credible anthropometric and age data were collected.

Table 12 shows nutritional status for children under age 5 according to the three anthropometric indices, by background characteristics. Height-for-age is a measure of linear growth. A child who is below minus two standard deviations from the reference median for height-for-age is considered short for his or her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition. Nineteen percent of Ghanaian children are stunted (below -2 SD) and 5 percent are severely stunted (below -3 SD), a decrease from the figures of 28 percent and 10 percent, respectively, reported in the 2008 GDHS survey. Stunting increases with age, peaking at 28 percent among children age 24-35 months. A slightly higher proportion of male (20 percent) than female (17 percent) children are stunted, and stunting is greater among children in rural areas (22 percent) than urban areas (15 percent). By region, stunting ranges from 10 percent in Greater Accra to 33 percent in the Northern region. Stunting is inversely correlated with education and wealth. For example, 25 percent of children in the lowest two wealth quintiles are stunted, as compared with 9 percent of children in the highest quintile.

Figure 5 **Nutritional status of children by age**



Note: *Stunting* reflects chronic malnutrition; *wasting* reflects acute malnutrition; *underweight* reflects chronic or acute malnutrition or a combination of both. Plotted values are smoothed by a five-month average.

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Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference median for weight-for-height is considered too thin for his or her height, or wasted, a condition reflecting acute or recent nutritional deficits. Overall, 5 percent of children are wasted and less than 1 percent are severely wasted, representing a decrease from the figures reported in 2008 (9 percent and 2 percent, respectively). Although differences by background characteristics are much smaller than those observed for stunting, wasting is highest among children age 6-11 months (10-11 percent) and those living in the Upper East region (9 percent). Three percent of children in Ghana are obese (above +2 SD).

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). Children can be underweight for their age because they are stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. The results show that 11 percent of all children are underweight and 2 percent are severely underweight, a decrease from the 2008 figures of 14 percent and 3 percent, respectively. The proportion of children who are underweight is greater in rural areas (13 percent) than urban areas (9 percent) and ranges from 6 percent in the Brong Ahafo region to 20 percent in the Northern region.

The proportion of underweight children is inversely associated with mother's level of education, decreasing from 14 percent of children whose mothers have no education to 5 percent of those whose mothers have a secondary education or higher.

Z-score means are calculated as summary statistics representing the nutritional status of children in a population. These mean scores describe the nutritional status of the entire population without the use of a cutoff. A mean Z-score of less than 0 (i.e., a negative value for stunting, wasting, or underweight) suggests that the distribution of an index has shifted downward and, on average, children in the population are less well-nourished than children in the WHO Multicentre Growth Reference Study. As shown in Table 12, the mean stunting, wasting, and underweight Z-scores for children under age 5 are -0.9, -0.2, and -0.7, respectively.

3.10.4 Infant and Young Child Feeding Practices

Breastfeeding is sufficient and beneficial for infant nutrition in the first six months of life. Breastfeeding immediately after birth also helps the uterus contract, hence reducing the mother's postpartum blood loss. Supplementing breast milk before the child is age 6 months is discouraged because it may inhibit breastfeeding and expose the 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 (Pan American Health Organization, 2002). The 2014 GDHS collected data on infant and young child feeding (IYCF) practices for all children born in the two years preceding the survey.

Table 13 shows breastfeeding practices by child's age.[1] The duration of breastfeeding in Ghana is long; 98 percent of children are still being breastfed at age 9-11 months and 50 percent at age 20-23 months. Although 99 percent of children under age 6 months are being breastfed, only about half (52 percent) are exclusively breastfed, as recommended. In addition to breast milk, 7 percent are given other milk, 18 percent are given water, 4 percent are given other liquids, and 19 percent are given solid or mushy food. Seventy-three percent of children age 6-8 months receive timely complementary foods, and four in ten (41 percent) children age 18-23 months have been weaned.

Bottle-feeding is not widespread in Ghana; only 4 percent of babies under 2 months are fed with a bottle with a nipple. This proportion increases from 5 percent at age 0-1 months to 17 percent at age 2-3 months, peaks at 29 percent at age 6-8 months, before beginning to decline.

The minimum acceptable diet indicator is used to assess the proportion of children age 6-23 months who meet minimum standards with respect to IYCF practices. Specifically, children age 6-23 months who have a minimum acceptable diet meet all three IYCF criteria below:

1. Breastfeeding, or if not breastfeeding must receive two or more feedings of commercial infant formula; fresh, tinned, or powdered animal milk; or yogurt.
2. Fed with foods from four or more of the following groups: a. infant formula, milk other than breast milk, and cheese or yogurt or other milk products; b. foods made from grains, roots, and tubers, including porridge and fortified baby food from grains; c. vitamin A-rich fruits and vegetables (and red palm oil); d. other fruits and vegetables; e. eggs; f. meat, poultry, fish, and shellfish (and organ meats); and g. legumes and nuts.

[1] When comparing the results of the 2014 GDHS with previous GDHS surveys, note that the 2014 table on breastfeeding status by age is restricted to the youngest children and all children under age 2 living with their mothers, instead of the youngest children and all children under age 3 living with their mothers as in the previous GDHS surveys.

3. Fed the minimum recommended number of times per day according to their age and breastfeeding status:

   a. For breastfed children, minimum meal frequency is receiving solid or semisolid food at least twice a day for infants age 6-8 months and at least three times a day for children age 9-23 months.

   b. For nonbreastfed children age 6-23 months, minimum meal frequency is receiving solid or semisolid food or milk feeds at least four times a day.

Table 13 Breastfeeding status by age

Percent distribution of youngest children under age 2 who are living with their mother by breastfeeding status and the percentage currently breastfeeding, and the percentage of all children under age 2 using a bottle with a nipple, according to age in months, Ghana 2014

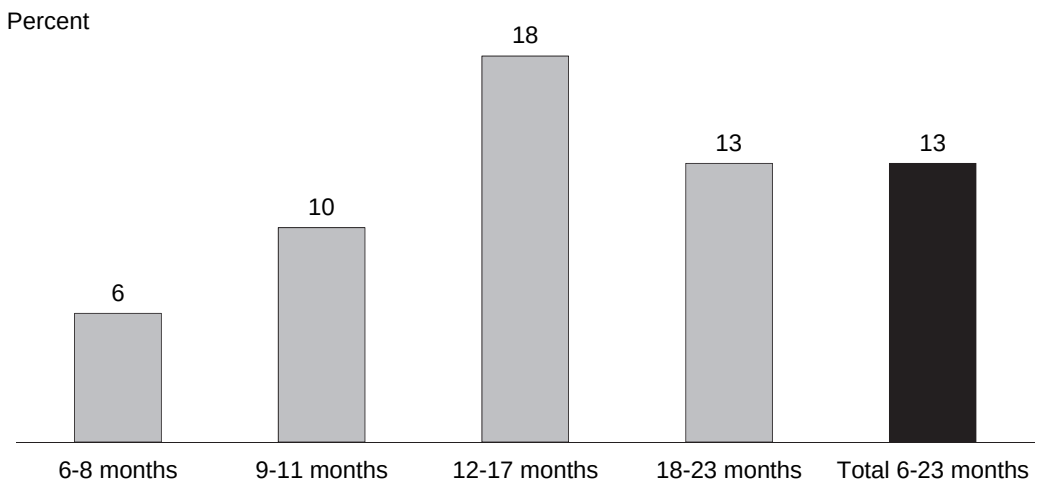
	Breastfeeding status										
Age in months	Not breast-feeding	Exclu-sively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids[1]	Breast-feeding and consuming other milk	Breast-feeding and consuming comple-mentary foods	Total	Percent-age currently breast-feeding	Number of youngest children under age 2 living with the mother	Percent-age using a bottle with a nipple	Number of all children under age 2
0-1	0.0	78.4	8.9	4.1	5.9	2.8	100.0	100.0	131	4.5	132
2-3	0.4	53.1	22.8	4.3	6.9	12.4	100.0	99.6	207	17.2	211
4-5	1.5	36.2	17.8	4.1	6.8	33.6	100.0	98.5	223	21.6	227
6-8	0.5	5.7	15.7	2.7	2.8	72.6	100.0	99.5	309	28.9	317
9-11	1.6	0.7	8.2	0.4	0.0	89.0	100.0	98.4	270	18.0	275
12-17	9.3	0.7	4.6	1.0	0.0	84.4	100.0	90.7	563	10.1	574
18-23	40.8	0.1	1.9	0.9	0.2	56.1	100.0	59.2	498	6.0	540
0-3	0.3	62.9	17.4	4.2	6.5	8.7	100.0	99.7	338	12.3	344
0-5	0.8	52.3	17.6	4.2	6.6	18.6	100.0	99.2	561	16.0	571
6-9	0.6	4.5	14.8	2.3	2.2	75.7	100.0	99.4	395	27.6	403
12-15	5.4	0.7	5.4	1.5	0.0	87.0	100.0	94.6	369	11.4	373
12-23	24.1	0.4	3.4	1.0	0.1	71.1	100.0	75.9	1,062	8.1	1,113
20-23	49.9	0.1	0.5	0.4	0.0	49.0	100.0	50.1	331	4.4	368

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfeeding, breastfeeding and consuming plain water, non-milk liquids, other milk, and complementary foods (solids and semisolids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus, children who receive breast milk and non-milk liquids and who do not receive other milk and who do not receive complementary foods are classified in the non-milk 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.

[1] Non-milk liquids include juice, juice drinks, clear broth, or other liquids.

Figure 6 shows the percentage of children being fed the minimum acceptable diet, by age. In total, only 13 percent of children age 6-23 months have met the criteria for a minimum acceptable diet.

Figure 6 **Minimum acceptable diet by age, in months**



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3.11 ANAEMIA PREVALENCE IN CHILDREN AND WOMEN

Anaemia is a condition that is marked by low levels of haemoglobin in the blood. Iron is a key component of haemoglobin, and iron deficiency is estimated to be responsible for half of all anaemia globally. Other causes of anaemia include hookworm and other helminths, other nutritional deficiencies, chronic infections, and genetic conditions. Anaemia is a serious concern for children because it can impair cognitive development, stunt growth, and increase morbidity from infectious diseases.

The 2014 GDHS included direct measurement of haemoglobin levels using the HemoCue system. This system consists of a battery-operated photometer and a disposable microcuvette coated with a dried reagent that serves as the blood collection device. For the test, a drop of capillary blood taken from a child's fingertip or heel is drawn into the microcuvette. The blood in the microcuvette is analysed using the photometer, which displays the haemoglobin concentration. Haemoglobin levels among women were measured using procedures similar to those used for children, except that capillary blood was collected exclusively from a finger prick. Haemoglobin levels were successfully measured for 97 percent of the children eligible for testing and 98 percent of the women eligible for testing.

Table 14 presents anaemia prevalence for children age 6-59 months and women age 15-49, by background characteristics. Haemoglobin levels were adjusted for altitude and, for women, smoking status. Children and pregnant women with haemoglobin levels below 11.0 g/dl and non-pregnant women with haemoglobin levels below 12.0 g/dl were defined as anaemic.

Table 14 Anaemia among children and women

Percentage of children age 6-59 months and women age 15-49 years classified as having anaemia, by background characteristics, Ghana 2014

Background characteristic	Any anaemia	Percentage with anaemia: Mild anaemia	Moderate anaemia	Severe anaemia	Number
CHILDREN					
Sex					
Male	65.5	27.0	36.1	2.4	1,355
Female	66.0	26.2	37.7	2.0	1,213
Age in months					
6-11	78.6	26.5	48.4	3.8	260
12-23	76.3	24.5	47.7	4.1	587
24-35	66.1	30.1	34.5	1.5	573
36-47	61.3	27.0	32.7	1.7	570
48-59	53.2	25.2	27.2	0.9	579
Residence					
Urban	57.3	27.2	29.0	1.1	1,239
Rural	73.6	26.1	44.2	3.3	1,329
Region					
Western	64.7	28.8	32.9	3.0	273
Central	70.2	24.6	43.7	1.9	304
Greater Accra	59.6	28.4	29.9	1.3	389
Volta	69.9	27.8	39.7	2.4	189
Eastern	66.1	28.7	36.7	0.8	238
Ashanti	53.7	24.8	27.1	1.8	432
Brong Ahafo	62.5	28.7	31.8	2.0	260
Northern	82.1	23.2	55.4	3.4	313
Upper East	73.8	30.7	40.5	2.6	105
Upper West	73.8	20.6	45.0	8.2	66
Wealth quintile					
Lowest	79.5	25.9	49.2	4.4	582
Second	74.7	26.6	45.3	2.8	543
Middle	64.0	21.0	40.5	2.4	518
Fourth	58.0	31.5	26.0	0.5	483
Highest	47.1	29.1	17.8	0.3	442
Total	65.7	26.7	36.9	2.2	2,568
WOMEN					
Residence					
Urban	41.2	31.6	9.2	0.4	2,612
Rural	43.9	33.0	10.5	0.4	2,032
Region					
Western	42.6	35.3	7.2	0.2	542
Central	46.7	35.3	11.2	0.1	461
Greater Accra	42.4	31.4	10.5	0.5	939
Volta	48.7	37.4	10.8	0.5	352
Eastern	38.9	27.9	10.7	0.3	413
Ashanti	40.5	31.0	9.2	0.3	843
Brong Ahafo	36.4	27.9	8.0	0.4	386
Northern	47.5	34.6	11.9	1.0	417
Upper East	39.6	31.2	8.3	0.0	181
Upper West	35.6	27.2	8.3	0.0	110
Wealth quintile					
Lowest	43.7	33.3	10.0	0.4	783
Second	49.3	34.9	14.3	0.1	801
Middle	46.0	35.4	9.8	0.8	984
Fourth	37.3	29.2	7.8	0.3	1,021
Highest	37.6	29.3	8.1	0.2	1,056
Total	42.4	32.2	9.8	0.4	4,644

Note: Table is based on children and women who stayed in the household the night before the interview. Prevalence of anaemia, based on haemoglobin levels, is adjusted for altitude (for children and women) and smoking (for women) using CDC formulas (CDC, 1998). Women and children with haemoglobin levels below 7.0 g/dl are classified as having severe anaemia, women and children with haemoglobin levels of 7.0-9.9 g/dl are classified as having moderate anaemia, and non-pregnant women with haemoglobin levels of 10.0-11.9 g/dl and children and pregnant women with haemoglobin levels of 10.0-10.9 g/dl are classified as having mild anaemia.

Overall, 66 percent of children suffered from some degree of anaemia: 27 percent were classified as mildly anaemic, 37 percent were moderately anaemic, and 2 percent were severely anaemic. The prevalence of anaemia decreases steadily with age, ranging from a high of 79 percent among

children age 6-11 months to a low of 53 percent among children age 48-59 months. Anaemia prevalence is higher in rural than urban areas (74 percent versus 57 percent) and ranges from a low of 54 percent in the Ashanti region to a high of 82 percent in the Northern region. The proportion of children who are anaemic decreases steadily with increasing wealth, from 80 percent among those in the lowest wealth quintile to 47 percent among those in the highest quintile. Anaemia prevalence among children has decreased from 78 percent in 2008 to 66 percent in 2014.

More than four in ten women age 15-49 (42 percent) are anaemic. The majority of these women are mildly anaemic (32 percent of all women); 10 percent are moderately anaemic, and less than 1 percent are severely anaemic. The proportion of women with any anaemia is slightly higher in rural than in urban areas (44 percent and 41 percent, respectively). Anaemia levels vary by region; women residing in Volta have the highest anaemia prevalence (49 percent), while those living in the Brong Ahafo and Upper West regions have the lowest prevalence (36 percent each). The prevalence of anaemia is lowest among women in the highest two wealth quintiles (37-38 percent). The prevalence of anaemia among women has decreased over the last six years, from 59 percent to 42 percent.

3.12 Ownership and Use of Mosquito Nets

3.12.1 Ownership of Mosquito Nets

The use of insecticide-treated mosquito nets is a primary health intervention designed to reduce malaria transmission in Ghana. An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment or (2) a net that has been soaked with insecticide within the past 12 months. Long-lasting insecticidal nets (LLINs) are a subset of ITNs. An LLIN is a factory-treated mosquito net made with netting material that has insecticide incorporated within or bound around the fibres. The current generation of LLINs lasts three to five years, after which the net should be replaced.

All households in the 2014 GDHS were asked whether they owned mosquito nets and if so, how many. Table 15 shows the percentage of households with at least one ITN, the average number of nets per household, and the percentage of households with at least one ITN for each two persons who stayed in the household the previous night, by background characteristics. Among all households in Ghana, 68 percent possess at least one ITN.

Ownership of an ITN differs markedly by residence; 61 percent of urban households own at least one ITN, as compared with 79 percent of rural households. Households in the Greater Accra region are least likely to own an ITN (53 percent), while households in Brong Ahafo are most likely to own one (81 percent). The percentage of households that own at least one ITN decreases substantially with increasing wealth, from 80 percent of households in the lowest quintile to 58 percent of households in the highest quintile.

The average number of ITNs per household in Ghana is 1.3.

Universal net coverage can be measured by assuming that each net is shared by two people in a household. Table 15 also shows the percentage of households with at least one mosquito net for every two persons who stayed in the household the night before the interview. Forty-five percent of households in Ghana had at least one ITN of any type for every two persons who stayed in the household the night before the survey. This percentage is highest among rural households (50 percent), households in Brong Ahafo (59 percent), and households in the second wealth quintile (51 percent).

Table 15 Household possession of insecticide-treated nets

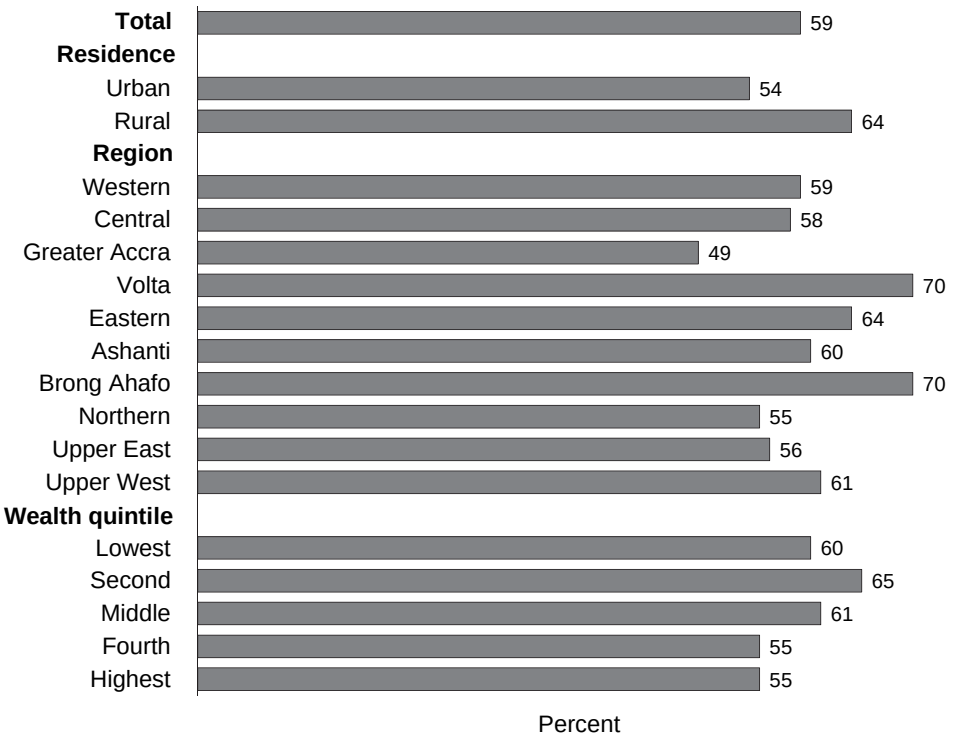
Percentage of households with at least one insecticide-treated net (ITN), average number of ITNs per household, and percentage of households with at least one ITN per two persons who stayed in the household last night, by background characteristics, Ghana 2014

Background characteristic	Percentage of households with at least one insecticide-treated net (ITN)[1]	Average number of insecticide-treated nets (ITNs)[1] per household	Number of households	Percentage of households with at least one insecticide-treated net (ITN)[1] for every two persons who stayed in the household last night (Universal Coverage)[2]	Number of households with at least one person who stayed in the household last night
Residence					
Urban	60.7	1.1	6,755	41.9	6,695
Rural	78.5	1.6	5,080	49.6	5,048
Region					
Western	67.4	1.2	1,298	44.8	1,293
Central	69.7	1.3	1,180	44.4	1,167
Greater Accra	52.8	1.0	2,457	35.1	2,431
Volta	76.3	1.6	1,015	55.2	1,008
Eastern	73.1	1.4	1,255	52.0	1,249
Ashanti	70.3	1.3	2,216	46.7	2,194
Brong Ahafo	80.8	1.6	1,028	59.0	1,021
Northern	71.3	1.7	742	37.5	740
Upper East	72.8	1.5	378	36.5	376
Upper West	77.4	1.5	265	42.6	263
Wealth quintile					
Lowest	79.6	1.8	1,603	42.7	1,601
Second	78.2	1.6	2,208	50.7	2,195
Middle	69.9	1.3	2,650	49.0	2,625
Fourth	62.2	1.1	2,680	42.3	2,653
Highest	58.2	1.1	2,693	41.4	2,669
Total	68.3	1.3	11,835	45.2	11,743

[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment or (2) a net that has been soaked with insecticide within the past 12 months.
[2] De facto household members

Figure 7 shows the percentage of the de facto population with access to an ITN. Overall, 59 percent of the household population has access to an ITN. Those living in rural areas (64 percent), those in the Volta and Brong Ahafo regions (70 percent each), and those in the second wealth quintile (65 percent) are most likely to use an ITN.

Figure 7 **Percentage of the de facto population with access to an ITN in the household**



3.12.2 Use of ITNs by Children and Pregnant Women

Community-level protection against malaria helps reduce the spread of the disease and offers an additional layer of protection against malaria for those who are most vulnerable: children under age 5 and pregnant women. This section describes use of mosquito nets among children and pregnant women.

Mosquito net coverage of the entire population is necessary to accomplish large reductions in the malaria burden. Although vulnerable groups (including children under age 5 and pregnant women) should still be prioritised, the communal benefits of wide-scale ITN use by older children and adults should be promoted and evaluated by national malaria control programs (Killeen et al., 2007).

As shown in Table 16, 47 percent of children under age 5 slept under an ITN the night before the survey, and 54 percent either slept under an ITN the night before the survey or slept within a dwelling that had been sprayed in the past 12 months. Children living in rural areas (56 percent) and the Volta region (66 percent) and those in the second wealth quintile (60 percent) are most likely to sleep under an ITN. Among households with at least one ITN, about six in ten children (59 percent) slept under an ITN the night before the survey.

Table 16 Use of insecticide-treated nets by children and pregnant women

Percentage of children under age 5 who, the night before the survey, slept under an insecticide-treated net (ITN) and slept under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; among children under age 5 in households with at least one ITN, percentage who slept under an ITN the night before the survey; percentage of pregnant women age 15-49 who, the night before the survey, slept under an ITN and slept under an ITN or in a dwelling in which the interior walls have been sprayed with IRS in the past 12 months; and among pregnant women age 15-49 in households with at least one ITN, percentage who slept under an ITN the night before the survey, by background characteristics, Ghana 2014

	Children under age 5 in all households			Children under age 5 in households with at least one ITN[1]		Pregnant women age 15-49 in all households			Pregnant women age 15-49 in households with at least one ITN[1]	
Background characteristic	Percentage who slept under an ITN[1] last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number of children	Percentage who slept under an ITN[1] last night	Number of children	Percentage who slept under an ITN[1] last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number of pregnant women	Percentage who slept under an ITN[1] last night	Number of pregnant women
Residence										
Urban	35.8	40.5	2,712	48.3	2,011	31.2	35.5	326	41.0	248
Rural	56.1	65.5	3,090	66.9	2,591	55.2	63.7	328	66.4	273
Region										
Western	48.1	52.9	583	60.8	461	41.9	46.6	71	55.0	54
Central	51.2	56.0	621	64.0	497	44.7	48.7	73	61.8	53
Greater Accra	25.9	26.3	906	37.2	630	17.8	18.9	125	(26.8)	84
Volta	66.3	66.3	464	75.1	410	(68.6)	(68.6)	43	(72.4)	41
Eastern	49.0	49.3	559	58.7	466	50.2	50.8	68	62.1	55
Ashanti	47.2	51.1	1,043	58.1	847	44.2	50.1	103	49.5	92
Brong Ahafo	60.8	61.6	524	71.8	444	67.8	67.8	59	74.6	53
Northern	43.2	67.5	709	57.6	531	49.6	65.6	69	60.7	56
Upper East	37.4	86.1	238	48.5	183	34.1	83.2	28	44.0	22
Upper West	54.5	69.1	154	63.2	133	(35.8)	(55.9)	14	(47.0)	11
Wealth quintile										
Lowest	54.8	71.4	1,302	67.4	1,060	58.4	74.8	115	68.3	99
Second	60.2	67.0	1,229	70.2	1,054	53.9	58.3	128	62.8	110
Middle	49.1	53.1	1,142	61.6	911	52.4	57.5	135	68.3	104
Fourth	34.6	38.3	1,089	47.9	787	26.2	30.2	118	35.0	88
Highest	30.1	33.4	1,039	39.5	791	28.5	32.0	157	37.2	120
Total	46.6	53.8	5,802	58.8	4,603	43.3	49.6	654	54.3	521

Note: Table is based on children who stayed in the household the night before the interview. Figures in parentheses are based on 25-49 unweighted cases.
[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment or (2) a net that has been soaked with insecticide within the past 12 months.
[2] Indoor residual spraying (IRS) is limited to spraying conducted by a government, private, or nongovernmental organisation.

About four in ten pregnant women (43 percent) slept under an ITN the night before the survey. In addition, half of pregnant women either slept under an ITN the night before the survey or slept in a dwelling that had been sprayed in the past 12 months. Among households with at least one ITN, more than half of pregnant women (54 percent) slept under an ITN the night before the survey.

3.12.3 Intermittent Preventive Treatment of Malaria in Pregnancy

In areas of high malaria transmission, by the time an individual reaches adulthood, she or he has acquired immunity that protects against severe disease. However, pregnant women—especially those pregnant for the first time—frequently regain their susceptibility to malaria. Although malaria in pregnant women may not manifest itself as either febrile illness or severe disease, it is frequently the cause of mild to severe anaemia. In addition, malaria during pregnancy can interfere with the maternal-foetal exchange that occurs at the placenta, leading to the delivery of low birth weight infants.

Women in the 2014 GDHS who had a live birth in the two years preceding the survey were asked whether they took any antimalarial medications during the pregnancy leading to their most recent birth and, if so, which ones. Women were also asked whether the drugs they took were received during a prenatal care visit. It should be noted that obtaining information about drugs can be difficult because some respondents may not know or remember the name or the type of drug that they received.

Table 17 shows that 83 percent of women with a live birth in the two years preceding the survey reported taking at least one dose of SP/Fansidar during an ANC visit; 68 percent reported taking two or more doses of SP/Fansidar, at least one of which was received during an ANC visit, and 39 percent reported taking three or more doses of SP/Fansidar, at least one of which was received during an ANC visit. A higher proportion of women in urban than rural areas received three or more doses of SP/Fansidar, with at least one dose received during an ANC visit (43 percent and 35 percent, respectively). This proportion is highest among women in the Brong Ahafo region (52 percent).

Table 17 Use of intermittent preventive treatment (IPTp) by women during pregnancy

Percentage of women age 15-49 with a live birth in the two years preceding the survey who, during the pregnancy preceding the last birth, received one or more doses of SP/Fansidar during an ANC visit; received two or more doses of SP/Fansidar, at least one of which was received during an ANC visit; or received three or more doses of SP/Fansidar, at least one of which was received during an ANC visit, by background characteristics, Ghana 2014

Background characteristic	Percentage who received 1 or more doses of SP/Fansidar[1] during an ANC visit	Percentage who received 2 or more doses of SP/Fansidar[1]	Percentage who received 3 or more doses of SP/Fansidar[1]	Number of women with a live birth in the two years preceding the survey
Residence				
Urban	83.0	68.7	43.0	1,031
Rural	82.0	66.4	34.7	1,232
Region				
Western	86.9	67.3	43.9	217
Central	85.9	68.9	31.9	258
Greater Accra	78.2	59.3	35.3	332
Volta	80.0	65.1	32.1	177
Eastern	78.5	64.2	42.0	206
Ashanti	82.2	73.2	40.0	397
Brong Ahafo	93.4	80.7	51.6	214
Northern	75.9	60.7	36.2	304
Upper East	84.0	67.7	30.7	95
Upper West	90.4	73.8	38.8	64
Wealth quintile				
Lowest	78.5	64.9	34.5	496
Second	83.7	70.4	40.3	504
Middle	83.2	64.2	34.5	456
Fourth	86.0	63.1	42.6	434
Highest	81.2	76.0	41.4	374
Total	82.5	67.5	38.5	2,264

[1] Received the specified number of doses of SP/Fansidar, at least one of which was received during an ANC visit

3.12.4 Prevalence, Diagnosis, and Prompt Treatment of Fever among Children

In moderately to highly endemic areas of malaria, acute clinical disease is almost always confined to young children who suffer high parasite densities. If untreated, this condition can progress very rapidly to severe malaria, which can result in death. The diagnosis of malaria is based on clinical criteria (clinical diagnosis) and supplemented by the detection of parasites in the blood (parasitological or confirmatory diagnosis). Fever is a major manifestation of malaria in young children, although it also accompanies other illnesses. In Ghana, artemisinin-based combination therapy (ACT) is the recommended first-line treatment for uncomplicated malaria.

In the 2014 GDHS, for each child under age 5, mothers were asked if the child had experienced an episode of fever in the two weeks preceding the survey and, if so, whether treatment and advice were sought. Information was also collected about the type and timing of the treatment given.

Table 18 shows the percentage of children under age 5 who had a fever in the two weeks preceding the survey. Also shown, among those children with a fever, are the percentage for whom advice or treatment was sought from a health facility, provider, or pharmacy; the percentage of such children who had a drop of

blood taken from a finger or heel prick (presumably for a malaria test); the percentage who took ACT or any antimalarial drugs; and the percentage who took drugs on the same or next day.

Table 18 Prevalence, diagnosis, and prompt treatment of children with fever

Percentage of children under age 5 with a fever in the two weeks preceding the survey; among children under age 5 with a fever, percentage for whom advice or treatment was sought, percentage who had blood taken from a finger or heel, percentage who took any artemisinin-based combination therapy (ACT), and percentage who took any ACT the same or next day following the onset of fever; and among children under age 5 with a fever who took any antimalarial drug, percentage who took any ACT, by background characteristics, Ghana 2014

	Children under age 5		Children under age 5 with fever					Children under age 5 with fever who took any antimalarial drug	
Background characteristic	Percentage with fever in the two weeks preceding the survey	Number of children	Percentage for whom advice or treatment was sought[1]	Percentage who had blood taken from a finger or heel for testing	Percentage who took any ACT	Percentage who took any ACT same or next day	Number of children	Percentage who took any ACT	Number of children
Residence									
Urban	12.0	2,525	77.1	29.0	34.6	26.6	304	75.0	141
Rural	15.4	2,905	78.1	38.0	40.2	26.0	447	80.2	224
Region									
Western	10.9	557	91.0	56.7	68.6	59.9	61	(85.8)	48
Central	10.8	590	82.1	47.3	40.7	32.7	64	(62.6)	42
Greater Accra	10.7	856	(76.3)	(21.6)	(27.7)	(19.8)	91	*	29
Volta	13.8	417	73.6	37.6	37.6	29.1	58	(82.6)	26
Eastern	17.8	506	72.8	40.1	35.6	25.9	90	(79.6)	40
Ashanti	15.3	995	70.1	15.8	36.9	23.7	153	(77.2)	73
Brong Ahafo	13.8	479	77.3	36.4	47.8	27.1	66	86.9	36
Northern	15.8	670	83.6	26.2	19.0	9.7	106	(57.5)	35
Upper East	12.8	218	84.0	67.1	36.8	33.4	28	(78.3)	13
Upper West	24.9	143	80.4	60.0	56.6	22.4	36	91.2	22
Wealth quintile									
Lowest	16.5	1,166	77.1	38.3	36.6	17.4	192	76.2	88
Second	14.2	1,178	78.5	36.4	38.9	24.8	168	82.5	81
Middle	15.0	1,095	79.7	41.5	41.3	36.3	165	79.6	91
Fourth	10.6	1,065	78.1	33.6	37.2	24.8	113	73.1	53
Highest	12.4	927	73.9	15.1	34.7	30.4	115	(77.3)	52
Total	13.8	5,431	77.7	34.3	37.9	26.2	752	78.2	365

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Excludes advice or treatment from a traditional practitioner

Fourteen percent of children under age 5 had a fever during the two weeks preceding the survey. The prevalence of fever differs little by sex and residence. Advice or treatment was sought for 78 percent of children with a fever, 34 percent had blood taken from a finger or heel for testing, and 38 percent took ACT. One in four children with fever (26 percent) took ACT the same day. Among children with a fever who took any antimalarial drug, 78 percent took ACT.

There are no major variations in seeking advice or treatment by various background characteristics. Children in rural areas are somewhat more likely than children in urban areas to have had blood taken from a finger or heel for testing or to have taken ACT. Children in the Ashanti region (16 percent) and those living in the households in the highest wealth quintile (15 percent) are least likely to have had blood taken from a finger or a heel, while children from the Northern region are least likely to receive any ACT (19 percent) or take any ACT the same or next day following the onset of fever (10 percent).

3.12.5 Prevalence of Low Haemoglobin in Children

One of the objectives of the 2014 GHDS was to assess the prevalence of anaemia among children age 6-59 months. Poor dietary intake of iron is only one of numerous causes of anaemia; malaria infection can also result in a person becoming anaemic. A haemoglobin concentration of less than 8.0 g/dl is considered low and may be an indication that an individual has malaria (Korenromp et al., 2004).

Table 19 Haemoglobin <8.0 g/dl in children

Percentage of children age 6-59 months with haemoglobin lower than 8.0 g/dl, by background characteristics, Ghana 2014

Background characteristic	Haemoglobin <8.0 g/dl	Number of children
Residence		
Urban	4.1	1,239
Rural	12.2	1,329
Region		
Western	7.9	273
Central	10.7	304
Greater Accra	4.2	389
Volta	8.4	189
Eastern	5.8	238
Ashanti	5.0	432
Brong Ahafo	6.4	260
Northern	18.2	313
Upper East	6.7	105
Upper West	16.5	66
Wealth quintile		
Lowest	15.6	582
Second	12.7	543
Middle	7.1	518
Fourth	3.2	483
Highest	0.3	442
Total	8.3	2,568

Overall, only 8 percent of children age 6-59 months have a haemoglobin level less than 8.0 g/dl (Table 19). Children in rural areas (12 percent), those residing in the Northern and Upper West regions (18 percent and 17 percent, respectively), and those in the lowest wealth quintile (16 percent) are most likely to have low haemoglobin levels.

3.12.6 Prevalence of Malaria in Children

Another objective of the 2014 GHDS was to test children age 6-59 months for malaria. Field health technicians collected capillary blood samples from children in this age group in half of the households surveyed. Testing for malaria was done in the field using a rapid diagnostic test (RDT). The SD Bioline Malaria Ag P.f/Pan is a high-sensitivity and high-specificity test that detects malaria antigens from capillary blood samples. Thick blood smear samples were prepared and sent to the National Public Health and Reference Laboratory to be read.

Overall, 97 percent of the 2,782 eligible children age 6-59 months had their blood tested for malaria with RDT and microscopy.

According to the 2014 GDHS, the prevalence of malaria in children age 6-59 months is 36 percent as measured by RDT or 27 percent as measured by analysis of blood smears via microscopy (Table 20). A possible reason for the higher malaria prevalence based on RDT than on microscopy is that the antigens may still be present in the child's blood after the parasites have disappeared. Malaria prevalence based on microscopy results is highest among children living in rural areas and in the Northern, Western, and Central regions, as well as those in the two lowest wealth quintiles.

A comparison of the 2014 GDHS results with those from the 2011 Ghana MICS survey shows that the prevalence of malaria among children as measured by RDT[2] has decreased from 48 percent to 36 percent, and the prevalence as measured by analysis of blood smears via microscopy has not changed since 2011 (28 percent in 2011 and 27 percent in 2014) (GSS, 2011).

[2] The 2011 Ghana MICS used the Care Start Combo rapid diagnostic test.

Table 20 Prevalence of malaria in children

Percentage of de facto children age 6-59 months classified as having malaria according to RDT and according to microscopy, by background characteristics, Ghana 2014

Background characteristic	Malaria prevalence according to RDT		Malaria prevalence according to microscopy	
	RDT positive	Number of children	Microscopy positive	Number of children
Residence				
Urban	16.8	1,232	15.0	1,233
Rural	54.6	1,325	37.7	1,326
Region				
Western	42.6	271	39.0	272
Central	48.7	303	37.9	304
Greater Accra	11.8	385	11.2	383
Volta	36.6	189	25.2	189
Eastern	40.3	238	29.5	237
Ashanti	20.6	432	16.6	432
Brong Ahafo	44.1	257	26.5	259
Northern	60.6	313	40.0	313
Upper East	22.7	105	11.7	105
Upper West	62.3	65	37.8	66
Wealth quintile				
Lowest	60.2	581	42.5	580
Second	55.8	542	39.5	542
Middle	37.6	517	23.6	515
Fourth	11.9	481	13.9	481
Highest	6.0	437	8.0	441
Total	36.4	2,557	26.7	2,559

3.13 HIV/AIDS AWARENESS, KNOWLEDGE, AND BEHAVIOUR

The 2014 GDHS included a series of questions that addressed respondents' knowledge of HIV prevention, their awareness of modes of HIV transmission, and behaviours that can prevent the spread of HIV.

Table 21 shows that 77 percent of women and 86 percent of men age 15-49 know that consistent use of condoms is a means of preventing the spread of HIV. Eighty-four percent of women and 92 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. The proportions of women and men who know that both using condoms and limiting sexual intercourse to one uninfected partner are means of preventing HIV are 70 percent and 82 percent, respectively.

The youngest respondents (age 15-19) are less knowledgeable about HIV prevention methods than older respondents. By marital status, women and men who have never been married and never had sex are least likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduce the risk of HIV transmission (61 percent and 73 percent, respectively). Respondents residing in urban areas, especially women, are more likely to be knowledgeable about HIV prevention methods than their rural counterparts. Furthermore, women in the Central region (83 percent) and men in the Greater Accra region (92 percent), respondents with more than a secondary education (79 percent of women and 87 percent of men), and respondents in the highest wealth quintile (77 percent of women and 87 percent of men) are more knowledgeable of HIV prevention methods than other respondents. Knowledge about HIV prevention methods fell below 50 percent among women in the Northern region (44 percent) compared with 82 percent of men in the same region.

Table 22 shows knowledge of HIV prevention among young people age 15-24. Knowledge of HIV prevention is defined as knowing that both condom use and limiting sexual intercourse to one uninfected partner are HIV prevention methods, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about HIV transmission: that HIV can be transmitted by supernatural means and that HIV can be transmitted by mosquito bites. Knowledge of how HIV is transmitted is crucial to enabling people to avoid HIV infection, and this is especially true for young people,

who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviours.

Table 21 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 getting the AIDS virus by using condoms every time they have sexual intercourse and by having one partner who is not infected and has no other partners, by background characteristics, Ghana 2014

	Percentage of women who say HIV can be prevented by:				Percentage of men who say HIV can be prevented by:			
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[2]	Number of men
Age								
15-24	74.9	82.0	67.7	3,238	82.2	88.4	76.8	1,443
15-19	71.9	80.9	64.6	1,625	80.3	85.3	73.8	855
20-24	78.0	83.1	70.8	1,613	85.0	92.9	81.2	588
25-29	78.6	84.9	71.9	1,604	86.9	92.4	82.7	589
30-39	78.0	85.9	72.7	2,667	87.3	95.4	83.9	1,026
40-49	75.7	84.0	68.7	1,887	89.4	94.7	87.1	811
Marital status								
Never married	76.9	83.5	69.7	3,094	83.1	89.6	78.2	1,851
Ever had sex	82.3	86.0	75.4	1,904	86.8	93.4	82.6	1,036
Never had sex	68.1	79.5	60.6	1,190	78.4	84.7	72.6	814
Married or living together	76.1	84.4	70.1	5,321	88.1	94.5	84.7	1,846
Divorced/separated/ widowed	78.4	83.9	70.9	981	89.8	94.9	87.7	172
Residence								
Urban	80.5	86.4	73.5	5,215	86.4	94.0	82.8	2,142
Rural	71.7	81.1	65.7	4,181	84.9	89.9	80.4	1,726
Region								
Western	72.6	85.1	67.9	1,038	91.2	92.7	87.1	447
Central	86.9	91.0	82.8	937	91.8	94.3	88.1	380
Greater Accra	84.6	88.5	79.2	1,898	94.1	97.2	92.1	831
Volta	76.4	81.9	67.4	720	84.6	90.0	80.3	295
Eastern	71.5	85.3	66.7	878	86.5	94.7	83.7	362
Ashanti	78.8	79.8	65.9	1,798	74.9	93.7	72.2	680
Brong Ahafo	84.6	92.4	81.4	769	84.2	80.4	72.6	320
Northern	48.7	66.9	44.6	786	83.2	90.7	81.5	316
Upper East	75.7	87.9	72.1	358	72.3	78.7	60.5	146
Upper West	56.9	73.0	50.5	215	75.8	88.6	69.8	91
Education								
No education	61.0	74.8	55.6	1,792	79.0	85.5	73.9	362
Primary	75.5	83.0	69.3	1,672	79.6	83.7	72.5	543
Middle/JSS	79.6	85.5	72.1	3,862	86.0	93.3	82.0	1,626
Secondary+	85.3	89.9	79.2	2,070	89.8	96.0	87.3	1,336
Wealth quintile								
Lowest	59.9	73.3	54.4	1,513	78.1	83.8	71.2	629
Second	74.6	82.9	67.7	1,636	85.5	89.3	80.6	659
Middle	78.5	85.3	71.7	1,958	89.8	93.7	85.8	773
Fourth	81.7	86.6	74.7	2,093	85.2	93.6	81.4	845
Highest	83.1	88.6	76.6	2,196	88.2	97.1	86.5	962
Total 15-49	76.6	84.0	70.0	9,396	85.8	92.2	81.7	3,869
50-59	na	na	na	na	82.6	93.7	78.9	519
Total 15-59	na	na	na	na	85.4	92.4	81.4	4,388

na = Not applicable
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners

Table 22 shows that 20 percent of young women and 27 percent of young men have knowledge of HIV prevention. Among both sexes, the proportion with comprehensive knowledge generally increases with age, educational attainment, and wealth. Urban young people are more likely than rural young people to have knowledge of HIV prevention. Knowledge of HIV prevention is highest among young women living in the Greater Accra region (33 percent), young men living in the Eastern region (39 percent), and among those with the highest levels of education and wealth.

Table 22 Knowledge about HIV prevention among young people

Percentage of young women and young men age 15-24 with knowledge about HIV prevention, by background characteristics, Ghana 2014

Background characteristic	Women age 15-24		Men age 15-24	
	Percentage with knowledge about HIV prevention[1]	Number of women	Percentage with knowledge about HIV prevention[1]	Number of men
Age				
15-19	18.1	1,625	24.5	855
15-17	17.3	1,011	24.2	508
18-19	19.5	614	25.1	347
20-24	21.8	1,613	31.1	588
20-22	22.2	962	30.6	364
23-24	21.1	650	32.0	224
Marital status				
Never married	21.8	2,442	28.2	1,369
Ever had sex	21.9	1,304	29.9	609
Never had sex	21.6	1,138	26.9	760
Ever married	14.4	796	8.3	74
Residence				
Urban	23.4	1,729	32.3	759
Rural	15.9	1,510	21.6	684
Region				
Western	11.5	386	31.7	168
Central	28.5	303	32.4	132
Greater Accra	33.0	582	33.3	274
Volta	19.5	239	17.9	115
Eastern	18.1	316	39.2	158
Ashanti	15.9	600	21.7	251
Brong Ahafo	16.6	298	14.7	126
Northern	12.7	282	20.4	115
Upper East	20.1	145	23.9	65
Upper West	10.0	85	27.8	39
Education				
No education	6.4	262	15.8	46
Primary	10.8	595	9.7	237
Middle/JSS	18.2	1,461	23.1	694
Secondary+	32.4	921	43.4	465
Wealth quintile				
Lowest	11.1	567	18.8	282
Second	16.1	607	19.1	276
Middle	19.0	725	27.0	305
Fourth	23.2	698	30.2	328
Highest	28.9	641	41.9	252
Total 15-24	19.9	3,238	27.2	1,443

[1] Knowledge about HIV prevention means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about transmission or prevention of HIV (that HIV can be transmitted by supernatural means and that HIV can be transmitted by mosquito bites).

Information on sexual behaviour is important in designing and monitoring intervention programmes to control the spread of HIV. The 2014 GDHS included questions on respondents' sexual partners during the 12 months preceding the survey and during their lifetime. Information was also collected on use of condoms at respondents' last sexual intercourse. These questions are sensitive, and it is recognised that some respondents may have been reluctant to provide information on recent sexual behaviour. Results are shown in Table 23.1 for women and Table 23.2 for men.

Overall, 1 percent of women reported that they had two or more partners in the past 12 months. Among women who had two or more partners in the past 12 months, 11 percent reported using a condom during their last sexual intercourse. The mean number of lifetime partners among all women who have ever had sexual intercourse is 2.3.

Fourteen percent of men age 15-49 reported that they had two or more partners in the past 12 months, and 19 percent of these men reported using a condom during their last sexual intercourse. The mean number of lifetime partners among all men who have ever had sexual intercourse is 7.3, more than three times the mean number for women.

Table 23.1 Multiple sexual partners in the past 12 months: Women

Among all women age 15-49, the percentage who had sexual intercourse with two or more sexual partners in the past 12 months; among those having two or more partners in the past 12 months, percentage reporting that a condom was used at last intercourse; and mean number of sexual partners during their lifetime for women who ever had sexual intercourse, by background characteristics, Ghana 2014

	All women		Women who had 2+ partners in the past 12 months		Women who ever had sexual intercourse[1]	
Background characteristic	Percentage who had 2+ partners in the past 12 months	Number of women	Percentage who reported using a condom during last sexual intercourse	Number of women	Mean number of sexual partners in lifetime	Number of women
Age						
15-24	2.2	3,238	14.9	71	1.9	2,099
15-19	2.0	1,625	(21.6)	32	1.6	694
20-24	2.4	1,613	(9.4)	39	2.0	1,405
25-29	1.5	1,604	*	24	2.3	1,554
30-39	0.6	2,667	*	17	2.4	2,657
40-49	0.4	1,887	*	8	2.5	1,881
Marital status						
Never married	2.5	3,094	13.9	77	2.2	1,900
Married/living together	0.4	5,321	*	20	2.2	5,314
Divorced/separated/ widowed	2.2	981	*	22	2.9	977
Residence						
Urban	1.5	5,215	10.7	77	2.5	4,499
Rural	1.0	4,181	(12.3)	42	2.1	3,692
Region						
Western	1.3	1,038	*	13	2.2	927
Central	1.6	937	*	15	2.3	843
Greater Accra	1.5	1,898	*	28	2.5	1,633
Volta	1.4	720	*	10	2.5	644
Eastern	0.7	878	*	6	2.4	780
Ashanti	1.4	1,798	*	26	2.4	1,530
Brong Ahafo	2.0	769	*	15	2.3	694
Northern	0.3	786	*	2	1.6	670
Upper East	0.7	358	*	3	1.6	296
Upper West	0.9	215	*	2	1.4	176
Education						
No education	0.3	1,792	*	5	1.9	1,742
Primary	1.4	1,672	*	23	2.4	1,449
Middle/JSS	1.3	3,862	(13.6)	51	2.4	3,271
Secondary+	1.9	2,070	(12.8)	39	2.3	1,729
Wealth quintile						
Lowest	0.6	1,513	*	10	1.7	1,296
Second	0.7	1,636	*	12	2.1	1,451
Middle	2.1	1,958	(3.1)	42	2.4	1,756
Fourth	1.3	2,093	*	27	2.4	1,817
Highest	1.3	2,196	(12.0)	29	2.5	1,872
Total	1.3	9,396	11.3	119	2.3	8,191

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Means are calculated excluding respondents who gave non-numeric responses.

Table 23.2 Multiple sexual partners in the past 12 months: Men

Among all men age 15-49, the percentage who had sexual intercourse with two or more sexual partners; among those having two or more partners in the past 12 months, percentage reporting that a condom was used at last intercourse; and mean number of sexual partners during their lifetime for men who ever had sexual intercourse, by background characteristics, Ghana 2014

	All men		Men who had 2+ partners in the past 12 months		Men who ever had sexual intercourse[1]	
Background characteristic	Percentage who had 2+ partners in the past 12 months	Number of men	Percentage who reported using a condom during last sexual inter-course	Number of men	Mean number of sexual partners in lifetime	Number of men
Age						
15-24	7.9	1,443	34.2	114	3.8	681
15-19	3.9	855	*	33	2.9	228
20-24	13.7	588	35.4	81	4.3	453
25-29	18.1	589	18.4	107	7.4	551
30-39	17.4	1,026	15.0	179	8.0	1,005
40-49	18.3	811	12.3	148	9.2	799
Marital status						
Never married	8.4	1,851	42.5	155	5.1	1,033
Married/living together	19.3	1,846	7.1	357	8.2	1,832
Divorced/separated/ widowed	20.9	172	*	36	10.4	172
Residence						
Urban	13.1	2,142	23.8	281	8.0	1,713
Rural	15.4	1,726	13.7	266	6.3	1,323
Region						
Western	20.3	447	17.3	91	9.6	358
Central	21.6	380	19.4	82	7.4	306
Greater Accra	18.6	831	28.8	155	8.5	691
Volta	13.5	295	(7.9)	40	6.1	231
Eastern	12.9	362	16.7	47	7.3	282
Ashanti	5.2	680	*	35	8.0	527
Brong Ahafo	10.9	320	(17.9)	35	6.1	255
Northern	13.3	316	2.1	42	3.0	231
Upper East	9.5	146	(18.8)	14	2.6	92
Upper West	8.2	91	(30.5)	7	4.3	64
Education						
No education	16.0	362	8.1	58	5.2	326
Primary	12.5	543	13.8	68	6.5	387
Middle/JSS	13.5	1,626	11.8	219	8.1	1,210
Secondary+	15.2	1,336	31.4	203	7.3	1,113
Wealth quintile						
Lowest	11.4	629	6.7	72	4.0	431
Second	11.7	659	20.4	77	6.2	489
Middle	17.3	773	14.9	134	7.5	638
Fourth	15.0	845	13.9	127	8.5	684
Highest	14.4	962	32.8	139	8.4	794
Total 15-49	14.2	3,869	18.9	548	7.3	3,036
50-59	17.3	519	7.7	90	10.3	510
Total 15-59	14.5	4,388	17.3	637	7.7	3,546

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Means are calculated excluding respondents who gave non-numeric responses.

3.14 COVERAGE OF HIV TESTING SERVICES

Knowledge of HIV status helps HIV-negative individuals make specific decisions to reduce risk and increase safer sex practices so that they can remain disease free. Among those who are HIV infected, knowledge of their status allows them to take action to protect their sexual partners, to access treatment, and to plan for the future.

To assess awareness and coverage of HIV testing services, GDHS respondents were asked whether they had ever been tested for HIV. If they said that they had, they were asked whether they had received the results of their last test and where they had been tested. If they had never been tested, they were asked whether they knew a place where they could go to be tested.

Tables 24.1 and 24.2 show that a large majority of respondents age 15-49 (79 percent of women and 80 percent of men) knew of a place where they could get an HIV test. Younger respondents (age 15-19) were less likely than those age 20-49 to know a place where they could go to be tested. Never-married respondents who had never had sex were less likely than others to know a place to get an HIV test. Knowledge of a place to get an HIV test is higher among urban respondents and those living in the Greater Accra region and increases substantially with increasing education and wealth.

Table 24.1 Coverage of prior HIV testing: Women

Percentage of women age 15-49 who know where to get an HIV test, percent distribution of women age 15-49 by testing status and by whether they received the results of the last test, percentage ever tested, and percentage who were tested in the past 12 months and received the results of the last test, according to background characteristics, Ghana 2014

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women by testing status and by whether they received the results of the last test			Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of women
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]				
Age								
15-24	72.3	26.4	4.9	68.7	100.0	31.4	9.9	3,238
15-19	61.1	11.2	2.5	86.3	100.0	13.8	4.5	1,625
20-24	83.5	41.8	7.3	50.9	100.0	49.1	15.3	1,613
25-29	86.1	58.3	7.1	34.6	100.0	65.5	19.4	1,604
30-39	84.3	58.1	7.1	34.8	100.0	65.3	17.0	2,667
40-49	74.5	35.9	3.6	60.5	100.0	39.5	6.8	1,887
Marital status								
Never married	74.2	23.8	3.0	73.1	100.0	27.0	8.2	3,094
Ever had sex	81.1	33.8	4.4	61.8	100.0	38.4	12.3	1,904
Never had sex	63.1	7.8	0.9	91.2	100.0	8.8	1.8	1,190
Married or living together	80.7	53.4	7.3	39.3	100.0	60.8	16.4	5,321
Divorced/separated/ widowed	80.1	44.6	4.6	50.8	100.0	49.2	8.6	981
Residence								
Urban	86.0	50.4	4.3	45.2	100.0	54.9	15.3	5,215
Rural	69.1	33.2	7.2	59.6	100.0	40.5	10.0	4,181
Region								
Western	73.6	41.3	4.8	53.9	100.0	46.2	12.4	1,038
Central	85.0	45.6	5.7	48.8	100.0	51.3	13.6	937
Greater Accra	92.0	52.8	4.1	43.1	100.0	57.0	14.8	1,898
Volta	77.0	39.7	3.9	56.5	100.0	43.5	13.2	720
Eastern	76.2	42.5	7.7	49.8	100.0	50.2	15.6	878
Ashanti	79.0	43.9	6.3	49.7	100.0	50.5	12.4	1,798
Brong Ahafo	77.0	44.4	4.9	50.6	100.0	49.4	12.0	769
Northern	52.2	21.2	9.0	69.9	100.0	30.1	7.8	786
Upper East	71.8	35.0	4.9	60.1	100.0	40.0	11.0	358
Upper West	78.0	37.1	5.0	57.9	100.0	42.2	12.1	215
Education								
No education	62.9	31.6	7.6	60.8	100.0	39.3	8.9	1,792
Primary	68.7	36.0	6.0	58.0	100.0	42.1	9.3	1,672
Middle/JSS	81.5	44.0	5.7	50.3	100.0	49.8	13.3	3,862
Secondary+	94.2	55.6	3.4	41.0	100.0	59.1	18.5	2,070
Wealth quintile								
Lowest	57.2	23.2	7.8	69.0	100.0	31.2	6.7	1,513
Second	70.1	34.1	8.0	57.9	100.0	42.1	10.3	1,636
Middle	77.7	39.2	6.0	54.8	100.0	45.2	12.1	1,958
Fourth	86.2	50.8	4.3	44.9	100.0	55.1	14.6	2,093
Highest	92.7	58.3	3.3	38.5	100.0	61.7	18.1	2,196
Total	78.5	42.8	5.6	51.6	100.0	48.5	12.9	9,396

[1] Includes “don’t know/missing”

Tables 24.1 and 24.2 also show coverage of HIV testing services. Among respondents age 15-49, a larger proportion of men (78 percent) than women (52 percent) had never been tested. Most of those who had been tested said that they had received the results of the last test they took. Overall, 43 percent of women and 20 percent of men had ever been tested and had received the results of their last test. Among women, the likelihood of having ever had an HIV test and receiving the results was highest in the 25-39 age group (58 percent); among men, it was highest in the 30-39 age group (29 percent). Urban residents (50 percent of women and 26 percent of men) were much more likely than rural residents (33 percent of women and 13

percent of men) to have been tested and to have received the results. By region, HIV testing coverage is highest in Greater Accra (53 percent of women and 29 percent of men). Among both women and men, HIV testing coverage increases markedly with increasing education and wealth.

Thirteen percent of women and 6 percent of men age 15-49 had been tested in the 12-month period preceding the survey and had been told the results of the last test they took.

Table 24.2 Coverage of prior HIV testing: Men

Percentage of men age 15-49 who know where to get an HIV test, percent distribution of men age 15-49 by testing status and by whether they received the results of the last test, percentage ever tested, and percentage who were tested in the past 12 months and received the results of the last test, according to background characteristics, Ghana 2014

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of men by testing status and by whether they received the results of the last test			Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of men
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]				
Age								
15-24	74.0	8.6	1.9	89.5	100.0	10.6	2.5	1,443
15-19	66.9	4.3	1.4	94.3	100.0	5.7	1.3	855
20-24	84.3	14.7	2.7	82.6	100.0	17.6	4.3	588
25-29	81.6	24.8	3.2	71.9	100.0	28.1	8.3	589
30-39	84.3	28.7	2.0	69.3	100.0	30.7	9.1	1,026
40-49	83.7	27.0	1.9	71.1	100.0	29.0	6.9	811
Marital status								
Never married	75.6	14.4	2.0	83.7	100.0	16.4	4.5	1,851
Ever had sex	81.7	19.0	2.8	78.2	100.0	21.9	6.4	1,036
Never had sex	67.8	8.5	0.9	90.6	100.0	9.4	2.0	814
Married or living together	83.6	25.3	2.5	72.2	100.0	27.9	7.5	1,846
Divorced/separated/ widowed	86.6	28.9	0.3	70.8	100.0	29.2	7.8	172
Residence								
Urban	84.9	26.0	2.0	72.0	100.0	28.0	7.6	2,142
Rural	73.8	13.1	2.3	84.5	100.0	15.5	4.1	1,726
Region								
Western	82.7	18.2	2.9	78.9	100.0	21.1	5.3	447
Central	85.2	18.4	4.0	77.7	100.0	22.5	4.1	380
Greater Accra	92.6	29.3	1.5	69.3	100.0	30.7	8.5	831
Volta	82.7	18.6	2.9	78.4	100.0	21.6	5.6	295
Eastern	73.5	23.7	3.9	72.4	100.0	28.0	7.8	362
Ashanti	74.7	18.1	0.9	81.0	100.0	19.0	5.5	680
Brong Ahafo	80.2	13.4	0.8	85.8	100.0	14.2	3.8	320
Northern	65.3	12.5	1.6	85.9	100.0	14.1	4.0	316
Upper East	63.2	19.0	1.8	79.2	100.0	20.8	8.9	146
Upper West	60.0	16.6	3.0	80.4	100.0	19.6	4.4	91
Education								
No education	56.4	8.6	1.6	89.8	100.0	10.2	2.7	362
Primary	64.8	10.5	1.2	88.3	100.0	11.7	3.2	543
Middle/JSS	79.6	12.8	1.7	85.4	100.0	14.6	3.4	1,626
Secondary+	92.9	36.4	3.2	60.4	100.0	39.7	11.4	1,336
Wealth quintile								
Lowest	59.3	9.9	1.3	88.8	100.0	11.2	2.3	629
Second	74.8	9.6	2.7	87.7	100.0	12.4	4.3	659
Middle	82.3	15.2	1.9	82.9	100.0	17.1	4.0	773
Fourth	82.0	21.0	3.2	75.8	100.0	24.2	7.0	845
Highest	93.2	37.8	1.6	60.7	100.0	39.5	10.6	962
Total 15-49	79.9	20.3	2.1	77.6	100.0	22.4	6.1	3,869
50-59	78.6	22.0	2.3	75.7	100.0	24.3	5.5	519
Total 15-59	79.8	20.5	2.2	77.4	100.0	22.7	6.0	4,388

[1] Includes “don’t know/missing”

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