

Ghana

Multiple Indicator Cluster Survey

with an Enhanced Malaria Module and Biomarker
2011



Government
of Ghana



Ghana Statistical
Service



Ghana Health
Service



United Nations
Children's Fund



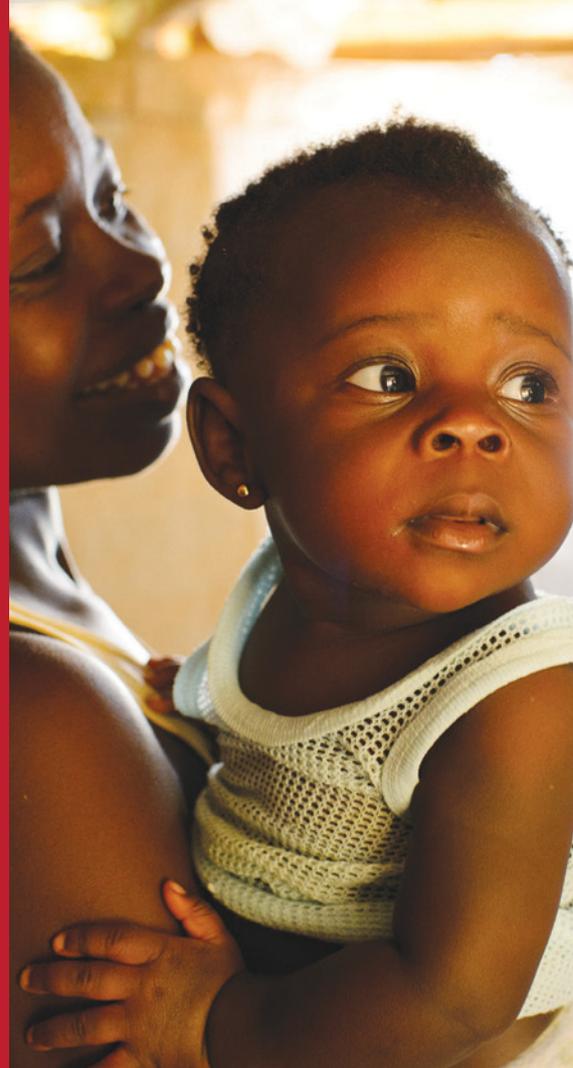
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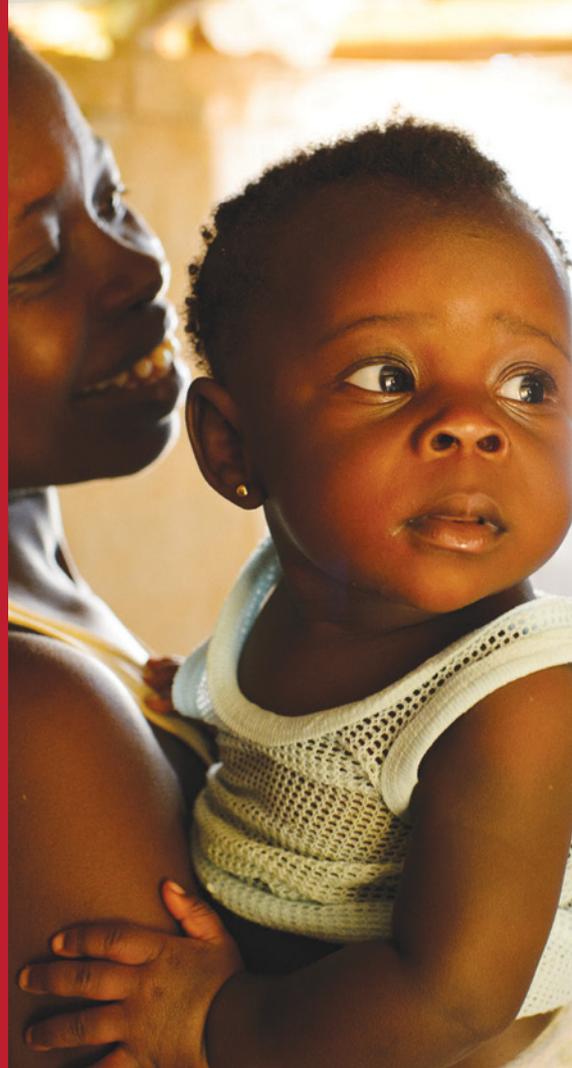
USAID



FINAL REPORT

The logo for the Multiple Indicator Cluster Survey (MICS), featuring three blue vertical bars of increasing height followed by the word "MICS" in a bold, blue, sans-serif font.

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MONITORING THE SITUATION OF CHILDREN AND WOMEN IN GHANA

GHANA STATISTICAL SERVICE

Multiple Indicator Cluster Survey with an enhanced Malaria Module and Biomarker
2011

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MICS is an international household survey programme developed by UNICEF. The Ghana MICS was conducted as part of the fourth global round of MICS surveys (MICS4). MICS provides up-to-date information on the situation of children and women and measures key indicators that allow countries to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments. Additional information on the global MICS project may be obtained from www.childinfo.org.

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A number of organizations and individuals contributed to the development and implementation of this survey with their professional knowledge, personal enthusiasm and commitment to ensure a better life for all children and women in Ghana.

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Dr. Philomena Nyarko

Ag. Government Statistician

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ACT	Artemisinin Combination Therapy
AIDS	Acquired Immune Deficiency Syndrome
AMFm	Affordable Medicines Facility for Malaria
ANC	Antenatal Care
BCG	Bacillus-Cereus-Geuerin (Tuberculosis)
CDC	Centers for Disease Control and Prevention
CSPro	Census and Survey Processing System
DHS	Demographic and Health Survey
DPT	Diphtheria Pertussis Tetanus
ECCD	Early Childhood Care and Development
ECDI	Early Child Development Index
eMTCT	elimination of mother-to-child transmission of HIV
EPI	Expanded Programme on Immunization
FGM/C	Female genital mutilation/cutting
GAR	Gross Attendance Ratio
GHS	Ghana Health Service
GPI	Gender Parity Index
GPRS	Ghana Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
HIV	Human Immunodeficiency Virus
HSMTDP	Health Sector Medium-term Development Plan
ICT	Information and Communications Technology
IDD	Iodine Deficiency Disorders
IRS	Indoor Residual Spraying
IPTp	Intermittent Preventative Treatment by women during Pregnancy
ITN	Insecticide Treated Net
IUD	Intrauterine Device
JMP	Joint Monitoring Programme
JSS	Junior Secondary School
LAM	Lactational Amenorrhea Method
LLIN	Long-Lasting Insecticidal Net
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MoH	Ministry of Health
NAR	Net Attendance Rate
NHIS	National Health Insurance Scheme
NHRC	Navrongo Health Research Centre
NMCP	National Malaria Control Programme
NMR	Neonatal Mortality Rate
ORT	Oral rehydration treatment
PMI	President's Malaria Initiative
PNC	Post-natal Care
PNMR	Post-neonatal Mortality Rate

ppm	Parts Per Million
RDT	Rapid Diagnostic Test
SPSS	Statistical Package for Social Sciences
TFR	Total Fertility Rate
UNAIDS	United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VIP	Ventilated Improved Pit
WFFC	World Fit For Children
WHO	World Health Organization

Multiple Indicator Cluster Surveys (MICS) and Millennium Development Goals (MDG)
Indicators, Ghana, 2011

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
CHILD MORTALITY				
Child Mortality	1.1	4.1	Under-five mortality rate	82.0 percent
	1.2	4.2	Infant mortality rate	53.0 percent
	1.3		Neonatal mortality rate	32.0 percent
	1.4		Post-neonatal mortality rate	21.0 percent
	1.5		Child mortality rate	31.0 percent
NUTRITION				
Nutritional status		1.8	Underweight prevalence	
	2.1a		Moderate and Severe (- 2 SD)	13.4 percent
	2.1b		Severe (- 3 SD)	2.6 percent
			Stunting prevalence	
	2.2a		Moderate and Severe (- 2 SD)	22.7 percent
	2.2b		Severe (- 3 SD)	6.8 percent
			Wasting prevalence	
	2.3a		Moderate and Severe (- 2 SD)	6.2 percent
	2.3b		Severe (- 3 SD)	1.4 percent
	Breastfeeding and infant feeding	2.4		Children ever breastfed
2.5			Early initiation of breastfeeding	45.9 percent
2.6			Exclusive breastfeeding under 6 months	45.7 percent
2.7			Continued breastfeeding at 1 year	90.7 percent
2.8			Continued breastfeeding at 2 years	37.4 percent
2.9			Predominant breastfeeding under 6 months	71.0 percent
2.10			Duration of breastfeeding	20.5 months
2.11			Bottle feeding	13.7 percent
2.12			Introduction of solid, semi-solid or soft foods	74.8 percent
2.13			Minimum meal frequency	57.3 percent
2.14		Age-appropriate breastfeeding	63.9 percent	
2.15		Milk feeding frequency for non-breastfed children	13.2 percent	
Salt iodization	2.16		Iodized salt consumption	34.5 percent
Vitamin A	2.17		Vitamin A supplementation (children under age 5)	73.7 percent
Low birth weight	2.18		Low-birth weight infants	10.7 percent
	2.19		Infants weighed at birth	54.0 percent
CHILD HEALTH				
Vaccinations	3.1		Tuberculosis immunization coverage	97.8 percent
	3.2		Polio immunization coverage	90.7 percent
	3.3		Immunization coverage for diphtheria, pertussis and tetanus (DPT)	92.1 percent
	3.4	4.3	Measles immunization coverage	88.5 percent
	3.5		Hepatitis B immunization coverage	92.1 percent
	3.6		Yellow fever immunization coverage	88.3 percent
Tetanus toxoid	3.7		Neonatal tetanus protection	70.3 percent
Care of illness	3.8		Oral rehydration therapy with continued feeding	43.9 percent
	3.9		Care seeking for suspected pneumonia	41.3 percent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
	3.10		Antibiotic treatment of suspected pneumonia	55.7 percent
Solid fuel use	3.11		Solid fuels	81.2 percent
WATER AND SANITATION				
Water and sanitation	4.1	7.8	Use of improved drinking water sources	79.3 percent
	4.2		Water treatment	17.2 percent
	4.3	7.9	Use of improved sanitation facilities	15.0 percent
	4.4		Safe disposal of child's faeces	36.0 percent
	4.5		Place for hand washing	50.0 Percent
	4.6		Availability of soap	63.6 Percent
REPRODUCTIVE HEALTH				
Contraception and unmet need	5.1	5.4	Adolescent birth rate	60 per 1,000
	5.2		Early childbearing	16.2 percent
	5.3	5.3	Contraceptive prevalence rate	34.7 percent
	5.4	5.6	Unmet needs	26.4 percent
Maternal and newborns health		5.5	Antenatal care coverage	
	5.5a		At least once by skilled personnel	96.4 percent
	5.5b	5.2	At least four times by any provider	86.6 percent
	5.6		Content of antenatal care	88.8 percent
	5.7		Skilled attendant at delivery	68.4 percent
	5.8		Institutional deliveries	67.4 percent
Post-Natal checks	5.9		Caesarean section	11.4 Percent
			Post-natal health checks for newborns	83.3 percent
			Post-natal health checks for mothers	82.5 percent
		Post-partum stay in health facility	73.8 percent	
CHILD DEVELOPMENT				
Child development	6.1		Support for learning	39.8 percent
	6.2		Father's support for learning	29.6 percent
	6.3		Learning materials: children's books	6.2 percent
	6.4		Learning materials: playthings	41.1 percent
	6.5		Inadequate care	20.7 percent
	6.6		Early child development index	73.7 percent
	6.7		Attendance to early childhood education	68.2 percent
EDUCATION				
Literacy and education	7.1	2.3	Literacy rate among young women	61.4 percent
			Literacy among young men	71.3 percent
	7.2		School readiness	80.3 percent
	7.3		Net intake rate in primary education	31.8 percent
Literacy and education	7.4	2.1	Primary school net attendance rate (adjusted)	73.0 percent
	7.5		Secondary school net attendance rate (adjusted)	41.6 percent
	7.6	2.2	Children reaching last grade of primary	95.4 percent
	7.7		Primary completion rate	89.9 percent
	7.8		Transition rate to secondary school	75.0 percent
	7.9		Gender parity index (primary school)	1.02 ratio
	7.10		Gender parity index (secondary school)	1.10 ratio

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
CHILD PROTECTION				
Birth registration	8.1		Birth registration	62.5 percent
Child Discipline	8.5		Violent discipline	93.6 percent
Early marriage and polygyny	8.6		Marriage before age 15	5.8 percent
	8.7		Marriage before age 18	27.0 percent
	8.8		Young women age 15-19 currently married or in union	7.0 percent
	8.9		Polygyny	18.3 percent
			Spousal age difference	
	8.10a		Women age 15-19	16.4 percent
	8.10b		Women age 20-24	19.1 percent
Female genital mutilation/cutting	8.11		Approval for female genital mutilation/cutting (FGM/C)	1.5 percent
	8.12		Prevalence of female genital mutilation/cutting (FGM/C) among women	3.8 percent
	8.13		Prevalence of female genital mutilation/cutting (FGM/C) among girls	0.4 percent
Domestic violence	8.14		Attitudes towards domestic violence for women	59.8 percent
			Attitude towards domestic violence for men	35.9 percent
Orphan			Prevalence of children with at least one parent dead	7.7 percent
			Children's living arrangements	17.1 percent
HIV/AIDS, SEXUAL BEHAVIOUR				
HIV/AIDS knowledge and attitudes	9.1		Comprehensive knowledge about HIV prevention for women	33.8 percent
			Comprehensive knowledge about HIV prevention for men	39.1 percent
	9.2	6.3	Comprehensive knowledge about HIV prevention among young women	36.8 percent
			Comprehensive knowledge about HIV prevention among young men	38.6 percent
	9.3		Knowledge of mother-to-child transmission of HIV for women	57.2 percent
			Knowledge of mother-to-child transmission of HIV for men	57.3 percent
	9.4		Accepting attitude towards people living with HIV for women	6.3 percent
			Accepting attitude towards people living with HIV for men	15.2 percent
	9.5		Women who know where to be tested for HIV	74.0 percent
			Men who know where to be tested for HIV	73.1 percent
	9.6		Women who have been tested for HIV and know the results	16.8 percent
			Men who have been tested for HIV and know the results	10.0 percent
	9.7		Sexually active young women who have been tested for	
			HIV and know the results	17.3 percent
			Sexually active young men who have been tested for	
		HIV and know the results	8.4 percent	

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
HIV/AIDS knowledge and attitudes	9.8		HIV counselling during antenatal care	58.9 percent
	9.9		HIV testing during antenatal care	54.6 percent
Sexual behaviour	9.10		Young women who have never had sex	52.3 percent
			Young men who have never had sex	61.3 percent
	9.11		Sex before age 15 among young women	9.7 percent
			Sex before age 15 among young men	4.9 percent
	9.12		Age-mixing among sexual partners for women	12.1 percent
			Age-mixing among sexual partners for men	0.0 percent
	9.13		Sex with multiple partners for women	1.9 percent
			Sex with multiple partners for men	13.8 percent
	9.14		Condom use during sex with multiple partners	
			Women	23.1 percent
			Men	12.7 percent
	9.15		Sex with multiple partners for young people	
			Women	3.3 percent
			Men	6.3 percent
			Condom use during sex with multiple partners for young people	
			Women	27.2 percent
			Men	39.3 percent
			Sex with non-regular partners	
			Women	56.4 percent
			Men	88.0 percent
9.16	6.2		Condom use with non-regular partners	
			Women	40.9 percent
			Men	52.8 percent
MALARIA AND BIOMARKER				
	3.12		Household availability of insecticide-treated nets (ITNs)	48.9 percent
	3.14		Children under age 5 sleeping under any mosquito net	41.6 percent
	3.13		Indoor residual spraying against mosquitoes and availability of ITNs	51.3
	3.15	6.7	Children under age 5 sleeping under insecticide-treated nets (ITNs)	39.0 percent
	3.16		Malaria diagnostics usage	15.9 percent
	3.17		Antimalarial treatment of children under 5 the same or next day	34.9 percent
	3.18	6.8	Antimalarial treatment of children under age 5	52.6 percent
	3.19		Pregnant women sleeping under insecticide-treated nets (ITNs)	32.6 percent
	3.20		Intermittent preventive treatment for malaria	64.6 percent
			Prevalence of malaria in children under- five	
			Rapid diagnostic test (RDT)	48.0 Percent
			Microscopy	28.0 Percent
			Anaemia	7.4 percent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value	
NATIONAL HEALTH INSURANCE SCHEME (NHIS)					
Membership			Registration with NHIS		
			Women	68.8 percent	
			Men	55.9 percent	
Card validity			Children	53.8 percent	
			NHIS valid cards seen		
			Women	40.3 percent	
			Men	34.4 percent	
			Children	51.0 percent	
ACCESS TO MASS MEDIA AND ICT					
Access to mass media	MT.1		Young women with exposure to newspaper, radio and TV at least once a week	8.3 percent	
			Young men with exposure to newspaper, radio and TV at least once a week	16.8 percent	
			Young women who used a computer during the last 12 months	25.1 percent	
Use of computers	MT.2		Young men who used a computer during the last 12 months	39.2 percent	
		MT.3		Young women who used the internet during the last 12 months	14.7 percent
				Young women who used the internet during the last 12 months	28.8 percent



The Ghana Multiple Indicator Cluster Survey (MICS) 2011, the fourth of its kind, is a nationally representative sample survey of households, women aged 15-49 years, children aged 0-5 years and men aged 15-59 years. In addition to applying the customized version of the MICS4 Questionnaires, an enhanced Malaria Module and Biomarker (for Anaemia and parasitemia in children aged 6-59 months) was included.

The Survey was carried out in 2011 by the Ghana Statistical Service with financial and technical support from UNICEF, USAID/CDC, UNFPA, the Japanese Government, and the Ministry of Health/National Malaria Control Programme. ICF/MACRO and the Navrongo Research Centre provided technical support particularly for the malaria module and biomarker component. The results pertain to September-December 2011, when the field work was conducted.

Household Characteristics

Of the 12,150 households selected for the sample, 11,970 were contacted for interviews. Of these, 11,925 were interviewed, giving a response rate of about 100 percent. In the households interviewed, 10,963 women aged 15-49 years were identified. Of these, 10,627 were duly interviewed, producing a response rate of 97 per cent. Concerning children under the age of 5 years, 7,626 were identified, for whom responses were obtained from their mother or caregiver in 7,550 complete interviews, giving a response rate of 99 percent. For the male survey, 3,511 men aged 15-59 years were identified, and 3,321 successfully interviewed, yielding a response rate of 95 percent.

Overall, the survey found that 31 percent of households in Ghana are headed by women. Children less than 15 years constitute 42 percent of the total population. Furthermore, 33 percent of households in urban areas, and 44 percent of households in rural areas have at least one child aged less than five years. The mean household size is 3.5 in urban areas, and 4.3 in rural areas. The most common household size is 2-3 household members (30 percent), followed by 4-5 household members with 27 percent.

Characteristics of Respondents

The MICS 2011 data show that for both sexes, the largest population age-group is 15-24 years. For women 34 percent are in this category, while for men it is 31 percent. In addition, 3 in 5 women and about half of men are currently married/in union, while 30 percent of women and 40 percent of men have never been married/in union.

In Ghana, 70 percent of women have given birth at least once, and 24 percent gave birth in the last two years. Nearly half of the men (46%) and women (47%) live in rural areas; while for children, about 57 percent live in rural areas compared to 44 percent in urban areas. With respect to educational level, 21 percent of women and 13 percent of men have no education; 19 percent of women and 13 percent of men have only primary education; 41 percent of women and 45 percent of men have middle/JSS education; and 19 percent of women and 30 percent of men have secondary or higher levels of education.

For children under five, Ghana has roughly the same proportion of girls and boys but there are more children in rural areas than in urban areas (57% against 44%) and they are also slightly more likely to live in the poorest households: 23% of the children under age five live in the poorest households while 17% live in the richest.

Child Mortality

The Ghana MICS4 was conducted from Mid-September to Mid-December 2011 and childhood mortality rates were estimated using the direct method. The reference point (mid-point interval) for the childhood mortality for the most recent five year period is Mid-March 2009. The results estimate Ghana's under-five mortality rate at 82 deaths per 1,000 live births. This means that one in every 12 children dies before reaching his or her fifth birthday. The child mortality rate is estimated at 31 deaths per 1,000 children aged 1 year, while the infant mortality rate is estimated at 53 deaths per 1,000 live births. Post neonatal and neonatal mortality rates are estimated at 21 and 32 deaths per 1000 live births, respectively, for the same period.

Neonatal mortality rate represents 60 percent of the infant mortality rate in Ghana, meaning that 60 percent of deaths in infancy occur during the first 28 days of a child's life. This is consistent with the DHS 2008 findings.

Children living in rural areas experience higher levels of infant and under-five mortality (56 and 94 deaths per 1,000 live births respectively), compared to those living in urban areas (46 and 72 deaths per 1000 live births respectively).

Significant variations are also observed in wealth quintiles for infant and under-five mortality rates. The infant mortality rate is estimated at 61 deaths per 1000 live births for children from the poorest wealth quintile, and 38 deaths per 1000 live births for children in the richest wealth quintile; and the under-5 mortality rate is estimated at 106 deaths per 1,000 live births for children from the poorest households, compared to 52 deaths per 1,000 live births for children belonging to the richest households.

Nutrition Status

Almost one in seven children (13%) under the age of five years is moderately or severely underweight and 3 percent are classified as severely underweight. The results also reveal that nearly 1 in every 4 children (23%) is moderately or severely stunted, and 7 percent are severely stunted. Six percent of the children are moderately or severely wasted, and 1 percent can be considered severely wasted. Children whose mothers have secondary or higher education are less likely to be underweight (9%) and stunted (13%) compared to children whose mothers have no education (17% and 29%, respectively).

Breastfeeding and Infant and Young Child Feeding

Less than half (46%) of all children aged 0–6 months in Ghana are exclusively breastfed, a level considerably lower than that recommended by WHO/UNICEF. For children aged 0–35 months, the mean duration for any breastfeeding is 20.5 months, 2.7 months for exclusive breastfeeding, and 5.1 months for predominant breastfeeding. The MICS results also reveal that less than half (46%) of newborn children are breastfed within the recommended period (within one hour after birth); while 84 percent are breastfed in the first day of life. In addition, 74 percent of children aged 6–8 months are currently breastfed and receiving solid, semi-solid or soft foods, and 64 percent of children aged 6–23 months are appropriately breastfed.

The results also show that, for children aged 6–23 months currently breastfeeding, 57 percent are receiving solid, semi-solid and soft foods the recommended minimum number of times. For children 6–23 months

not currently breastfeeding, 58 percent are receiving solid, semi-solid and soft foods the recommended minimum number of times.

Fourteen percent of children aged 0–23 months and 20 percent of children aged 6–11 months are fed using a bottle with a nipple. Results also show that bottle feeding is generally an affluent household phenomenon, with children living in the Greater Accra region (35%), those living in urban areas (21%), those children whose mothers have secondary education (34%) and children from the wealthiest households (33%) being the most likely to be bottle-fed.

Salt Iodization

Salt used for household cooking was tested in the MICS in two ways: through the use of Rapid Salt Kits, and further testing in a lab using Titration. Use of Titration for iodine testing is considered most accurate. Results from the Rapid Salt Kits reveal that only 35 percent of households were using salt that was adequately iodated (≥ 15 ppm), while in 22 percent of households, salt had no iodine. Households in urban areas are more likely to use adequately iodated salt (45%), compared to households in rural areas (23%). Titration results show that 29 percent of households were using adequately iodated salt (≥ 15 ppm), thus, the Rapid Test Kits overestimated the proportion of adequately iodised salt by 6 percent.

Vitamin A Supplement

Approximately 3 out of 4 children (74%) aged 6–59 months received a high dose of Vitamin A supplement six months prior to the survey. At 58 percent, Ashanti region had the lowest Vitamin A supplementation coverage, while all other regions had Vitamin A supplementation of over 68 percent. Vitamin A supplementation coverage was highest in Upper East region and Brong Ahafo, both reporting 90 percent coverage, followed by Greater Accra at 84 percent.

Low Birth Weight

The data from the MICS 2011 show that 54 percent of newborns were weighed at birth. Children from Greater Accra region are most likely to be weighed at birth (82%), and those from Northern region the least likely to be weighed at birth (25%). Children from rural households, those from the poorest households and those whose mothers have no education are less likely to be weighed at birth. It is estimated that 11 percent of children born in Ghana weigh less than 2,500 grams.

Immunization

According to UNICEF and WHO guidelines, a child should receive a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against diphtheria, pertussis, and tetanus, three doses of polio vaccine, and a measles vaccination by the age of 12 months. In Ghana, the MICS results show that 77 percent of children aged 12–23 months are fully immunized before their first birthday. Furthermore, the coverage rate for all vaccination for children aged 12–23 months is 84 percent, while less than 1 percent of children have not received any vaccinations.

Approximately 98 percent of children aged 12–23 months received a BCG vaccination by their first birthday, 89 percent were immunized against measles by their first birthday, and 92 percent received 3 doses of DPT/HepB/INFL. Also, 91 percent of children aged 12–23 months had received 3 doses of polio, and 94 percent had been immunized against yellow fever.

Tetanus toxoid

Seventy percent of women who gave birth in the last two years are protected against tetanus. The majority of them (55%) are protected because they received at least two doses of tetanus toxoid injection during their most recent pregnancy, while 15 per cent of women are protected because they received at least two doses of the vaccine in the last three years. More women in urban areas received the 2 doses during their last pregnancy (61%), compared to their rural counterparts (50%). The Central region has the highest percentage of women who received at least 2 doses of tetanus vaccination during their last pregnancy (66%), while 4 regions have a coverage level of below 50 percent (Brong Ahafo 42%, Volta 45%, Upper East 46%, and Northern 47%).

Oral rehydration treatment

Thirteen percent of children under-five had diarrhoea in the two weeks prior to the survey. Around one third (35%) of children with diarrhoea were treated with ORS (fluid made with an ORS packet or pre-packaged ORS fluids), and 20 percent received recommended home-prepared fluids. More than half (59%) of children with diarrhea in the two weeks prior to the survey received oral rehydration treatment (ORT), meaning that they received either ORS, or the recommended home-prepared liquids, or increase of fluids. The rate of use of ORT is higher in urban areas (64%) than in rural areas (56%). However, 12 percent of children who had diarrhoea during the last two weeks preceding the survey were not given any treatment or drug, and the highest level was recorded in age-group of 0-11 months (19%). The data also show that 44 percent of children received ORT and, at the same time, feeding was continued, as recommended.

Care-seeking and antibiotic treatment of pneumonia

Only 3 percent of children aged 0–59 months were reported as presenting symptoms suggestive of pneumonia in the two weeks prior to the survey. Of the children with suspected pneumonia, only 41 percent were taken to an appropriate health provider. In addition, 56 percent of children with suspected pneumonia received antibiotics. Results also show that only 1 percent of mothers and caregivers of children age 0-59 months know the two danger signs of pneumonia – fast and difficult breathing.

Malaria and Anaemia

More than half of all households (51%) own at least one mosquito net, treated or untreated and 49 percent of all households have an insecticide treated net (ITN), the large majority of which (48%) have a long-lasting insecticidal net (LLIN). The average number of LLIN in households in Ghana is 1. About 1 in every 4 households in Ghana has at least one LLIN net for every two persons who stayed in the household the night prior to the survey. The availability of LLIN is higher in rural areas (60%), than in urban areas (38%). Regions where the LLIN hang-up campaign has already taken place are more likely to have higher LLIN coverage, than those regions where distribution has not taken place. For example, 85 percent of households in Volta region, and 79 percent of households in Eastern region own at least one LLIN. All districts in these regions had fully completed their distribution campaigns 3-12 months prior to the MICS data collection.

Almost 40 percent of children under-five in all households slept under an LLIN the night prior to the survey. The use of LLINs is more common in rural areas (46%) than in urban areas (29%). Almost two-thirds (63%) of children under-five in households with at least one ITN slept under an ITN, while 48 percent of persons in households with at least one ITN slept under an ITN. In total, 33 percent of pregnant women slept under an

ITN the night prior to the survey and among pregnant women aged 15-49 in households with at least one ITN, 58 percent slept under an ITN. For all household members, children and pregnant women, the use of ITNs is higher in rural areas than in urban areas. The MICS data also show that 42 percent of the ITNs were acquired during a public campaign. Also, only 5 percent of households had undergone indoor residual spraying (IRS) in the past 12 months.

The MICS data also reveal that nearly 1 in 5 children under-five (19%) had fever in the two weeks preceding the survey, and 53 percent of them took antimalarial drugs; just over a third of them (35%) took the antimalarial drugs the same or next day.

The national malaria microscopy-based prevalence was estimated at 28 percent among children aged 6-59 months. Large variations were observed: Greater Accra had the lowest prevalence rate at 4 percent compared to 51 percent in the Upper West region. The savannah zone has the highest prevalence with 44 percent compared to just 14 percent in the coastal zone. In urban areas the prevalence was 13 percent while rural areas recorded 39 percent. The prevalence for children whose mothers/caretakers have secondary school and higher was only 5 percent compared to 43 percent of children whose mothers/caretakers have no education. Malaria prevalence was estimated at 3 percent for children in the richest wealth quintile, and rose to 52 percent for children in the poorest wealth quintile.

Overall, 7 percent of children aged 6-59 months were anaemic. The Eastern region had the lowest prevalence rate of 2 percent compared to 19 percent in the Northern region. The savannah zone had the highest prevalence with 15 percent compared to 4 percent in the coastal zone. In urban areas the prevalence was 4 percent while the rural areas recorded 10 percent. The prevalence for children whose mothers/caretakers have secondary school and higher was only 2 percent compared to 13 percent of children whose mothers/caregivers have no education. In the richest households, anaemia prevalence was only 1 percent, compared to 16 percent in the poorest households.

Water and Sanitation

Nearly 80 percent of household members in Ghana are using improved sources of drinking water, which means that Ghana has already achieved the 2015 MDG 7 target of 78 percent of the population using improved drinking water. However, wide variations exist between areas of residence with 91 percent coverage in urban areas and only 69 percent in rural areas. Variations are also noted among regions: with 91 percent of household members in Ashanti using an improved source of drinking water, while only 62 percent of household population in Volta region do so.

The great majority of households (91%) do not use any method for treating water. Regarding households with unimproved sources of water, 17 percent of them treat their water using appropriate water treatment method before they drink it. Concerning access to water for those households without water on the premises, for about 44 percent of all households that use an improved drinking water source, it takes less than 30 minutes for the round trip to fetch water, while 9 percent of households spend 30 minutes or more.

In the majority of households (64%), the person who fetches water is an adult woman. Adult men collect water in only 19 percent of cases, while for the rest of the households, female or male children under age 15 collect water (11% and 6% respectively).

The MDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify households as using an unimproved sanitation facility if they are using otherwise acceptable sanitation facilities but sharing a facility between two or more households or using a public toilet facility. Taking into account this definition, only 15 percent of household members were using an improved and not shared sanitation facility. Nearly 1 out of 4 (23%) of households in Ghana practices open defecation or have no toilet facility, and this was more pronounced in rural areas (35%) than urban areas (10%).

Fertility

The adolescent birth rate and total fertility rate (TFR) are respectively 60 per 1000 live births and 4.3 children per woman. The average is 3.3 children per woman in urban areas and 5.5 children per woman in rural areas. Regional variations are also observed with the highest TFR (6.2) in Northern region compared to the lowest TFR (3.2) in Greater Accra. The TFR decreases with educational level and by wealth index quintiles. The lower TFR is observed among women with secondary or higher education (3.1) and in the richest quintile (2.9).

Ten percent of women aged 15-19 years had already given birth, 2 percent were pregnant with their first child, so, in total, 12 percent had begun childbearing. Furthermore, 1 percent has had a live birth before the age of 15 and about 16 percent of women aged 20-24 years have had a live birth before age 18.

Contraception use and unmet need

Only 1 in 3 women (35%) currently married or in union reported using any method of contraception: 24 percent of all women use modern methods and 11 percent use traditional methods. The most popular modern methods are the injectable (9%) and the pill (8%). There is a slight difference in contraceptive use depending on the area of residence, with 37 percent of users in urban areas against 32 percent in rural areas.

The unmet need for contraception refers to fecund women who are not using any method of contraception, but who wish to postpone the next birth (spacing) or who wish to stop childbearing altogether (limiting). Overall, 26 percent of women aged 15-49 years have an unmet need for contraception. Sixteen percent have an unmet need for spacing and 10 percent have an unmet need for limiting.

Antenatal care

Ninety-six percent of women aged 15-49 years who gave birth in the 2 years preceding the survey received at least one antenatal care (ANC) visit by skilled health personnel and 87 percent had 4 or more antenatal care visits. Eastern and Greater Accra regions recorded the highest proportions of pregnant women who attended 4 or more antenatal care visits – 93 percent and 92 percent respectively. The Northern region recorded the lowest proportion of pregnant women that had at least 4 antenatal care visits (75%). During their antenatal care, 89 percent of the women had blood pressure measured, a urine specimen taken and a blood test.

Assistance at delivery

Around two-thirds (68%) of women aged 15-49 years who gave birth in the last two years were assisted by skilled personnel during the delivery. This percentage is highest in Greater Accra Region at 90 percent and lowest in Northern Region at 37 percent. The data also show that 2 in 3 women (67%) delivered in health facilities, and 11 percent had a C-section. Deliveries by C-section are highest among women in the

Greater Accra region, where nearly 1 out of 4 women (23%) had a C-section. The Volta (15%), Ashanti (12%), Eastern (12%) and Central (11%) regions all have C-section rates of above 10 percent. Eighty-six percent of newborns and mothers received a post-natal health check.

Child Development

About 68 percent of children aged 36-59 months in Ghana were attending pre-school, with children in urban areas more likely to attend (81%) than children in rural areas (59%). For 40 percent of children under five, an adult in the household had engaged in activities that promote learning and school readiness during the three days prior to the survey. For about 30 percent of children, their father was involved in this type of activity. In contrast, 30 percent of children are not living with their biological father. Three or more children's books were available in only 6 percent of households for all children under-five. The data also show that 41 percent of children aged 0-59 months had 2 or more playthings in their homes. However, 1 in 5 children under-five years (21%) was left with inadequate care in the previous week. Finally, the early child development index score for children aged 36-59 months is 74.

Literacy and Education

Sixty-one percent of young women (aged 15-24 years) and 71 percent of young men (aged 15-24 years) are literate. In the richest wealth quintile, 85 percent and 93 percent of young women and men respectively are literate while in the poorest wealth quintile only 31 percent and 41 percent of young women and men are respectively literate.

Eighty percent of children attending first grade attended preschool in the previous year. Only 32 percent of children of primary school entry age entered grade 1, which means that a large proportion of children enter the education system late. Timely entry into school is greater in urban (39%) than in rural areas (26%). The Ghana MICS shows that there is a relationship between timely entry into grade 1 and the educational level of the mother and the household's economic situation.

The primary school net attendance rate (adjusted) is 73 percent. In urban areas, the net attendance rate (adjusted) is 80 percent compared to 68 percent in rural areas. The secondary school net attendance rate (adjusted) is 42 percent, which is 51 percent in urban areas compared to 34 percent in rural areas. In addition, 95 percent of children who enter grade 1 reach grade 6. The primary school completion rate is 90 percent while the transition rate to secondary school is 75 percent. The gender parity ratio for net attendance rate (adjusted) is 1.02 in primary school and 1.10 in secondary school.

Birth registration

The births of 63 percent of children under-five years have been registered with civil authorities. Seventy-two percent of children in urban areas are registered, compared to 55 percent of children in rural areas. Across regions, children in the Greater Accra region are more likely to be registered (77%), followed by children in the Upper West Region (72%), while those in the Western region are the least likely to be registered (49%). Among children whose births are registered, 58 percent have birth certificates. While birth registration is fully subsidized for children below 12 months, less than half (45%) of children in this age-group are registered, meaning that some parents are still not taking advantage of free registration.

Child Discipline

The Ghana MICS results show that 94 percent of children aged 2-14 years were subjected to some form of violent (physical and/or psychological) disciplinary method. Fourteen percent of children aged 2-14 years were subjected to severe physical punishment and 73 percent to minor punishment. Results also show that about 50 percent of respondents believe that a child needs to be physically punished to bring them up properly.

Early marriage, polygamy and spousal age difference

The MICS data show that the proportion of women aged 15-49 years married before the age of 15 and 18 are respectively 6 percent and 27 percent. Such marriages (before age 15) are higher in rural areas (8%) than in urban areas (4%). Women with higher education and from wealthiest households are less likely to get married before the age of 15 years. For men aged 15-59 years, only 1 percent was married before age 15, and 5 percent before age 18. By the age of 25, 72 percent of women are married or living with a man while at 30 years old, 87 percent of them are married or in union. By age 25, half of men are married or living with a partner while at 30 years old, 79 percent of them are married/in union.

The MICS 2011 also show that 18 percent of women aged 15-49 years are in polygynous marriages/unions while 9 percent of men aged 15-59 years are in polygynous marriages/unions. In addition, 16 percent of women aged 15-19 years, and 19 percent of women aged 20-24 years who are currently married/in union, have a spouse who is 10 or more years older than them.

Female Genital Mutilation/Cutting

Overall, 4 percent of women aged 15-49 years in Ghana have had any form of FGM/C. This practice was found to be most prevalent in Upper West (41%) and Upper East (28%) regions. Only 2 percent of women aged 15-49 years approve of FGM/C practice, while 94 percent of them believe that it should be discontinued. Among their daughters (0-14 years), FGM/C prevalence is less than 1 percent.

Domestic violence

The MICS 2011 results reveal that 60 percent of women think that a husband is justified in beating his wife for at least one of the following reasons: when the woman goes out without telling him, if she neglects the children, if she argues with him, if she refuses to have sex with him, if she burns the food, if she insults him, if she refuses to give him food, if she has another partner, if she steals and if she gossips. The highest proportion (84%) is recorded in Northern and Upper West regions, while the lowest proportion (40%) is found in the Greater Accra region. The acceptance of domestic violence is higher in rural areas (70%) than in urban areas (51%). Attitudes of acceptance decrease with women's educational levels. Overall, men are less likely than women to believe that domestic violence is justified: 36 percent of men agree that it is justifiable to beat their wives/partners for any of the given reasons.

Children's living arrangements and orphanhood

Overall, 57 percent of children aged 0-17 years in Ghana live with both their parents, but 17 percent are not living with a biological parent. Eight percent of children in Ghana are orphans of one or both parents, and about 1 percent of the children aged 0-17 years are double orphans. While about 17 percent live with their mother only, just 5 percent live with their father only. For children living with neither of their biological parents, 14 percent have both parents alive, 1 percent has only their father alive, 2 percent have only their

mother alive, and for about 1 percent both parents are dead. For children living with their mother only, 17 percent have their father alive, while for 3 percent of them their father is dead. For the 5 percent of all children aged 0-17 years living with only their father, their mothers are dead in almost one in five cases.

HIV/AIDS and Sexual Behaviour

The MICS 2011 shows that 98 percent of women and 99 percent of men have heard about AIDS, but only 34 percent of women aged 15-49 years and 39 percent of men aged 15-59 years have comprehensive knowledge of AIDS. Specifically, 42 percent of women and 47 percent of men reject the two most common misconceptions about AIDS and know that a healthy looking person can have the AIDS virus.

Ninety-eight percent of young women and men (aged 15-24 years) have heard of AIDS, while 37 percent of young women and 39 percent of young men have comprehensive knowledge of the disease. Forty-six percent of young women and 49 percent of young men reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus.

Ninety-one percent of both women and men know that HIV can be transmitted from mother to child, and 57 percent of both sexes know all three means of transmission of AIDS from mother to child. Only 6 percent of women 15-49 years and 15 percent of men 15-59 years express accepting attitudes toward people living with HIV/AIDS on all four indicators analysed in the MICS. For both sexes, a positive attitude towards people living with HIV/AIDS is strongly correlated with educational levels, household wealth, and area of residence. This is also true for knowledge of a place for HIV testing. At the national level, 74 percent of interviewed women and 73 percent of men know a place for HIV testing.

Among women aged 15-49 years who gave birth in the last 2 years, 59 percent received HIV counselling during antenatal care; and 55 percent were offered an HIV test and were tested for HIV during antenatal care, and received the results.

For young women and men who are sexually active, 75 percent of young women know where to get HIV testing, 43 percent have been tested, 20 percent were tested in the 12 months prior to the survey, and 17 percent were told their results. For men, nearly 70 percent of young men know where to get tested, 18 percent have been tested, 10 percent were tested in the 12 months prior to the survey, and about 8 percent were also told their results.

Women aged 15-24 years are twice as likely (10%) to have sex before the age of 15 compared to their male counterparts (5%). Twelve percent of young women (aged 15-24) had sex in the last 12 months with a man 10 years or older. On the other hand, virtually none of the young men in the sample had sex with a woman 10 years or older. The results also show that about 2 percent of women aged 15-49 years and 14 percent men aged 15-59 years had sex with more than one partner in last 12 months. Among those, 23 percent of women used a condom for higher risk sex, while 13 percent of men did so. For young women and men aged 15-24 years, the proportions of having sex with more than one partner in the last 12 months are respectively 3 percent and 6 percent, and among them, 27 percent of young women and 39 percent of the young men used a condom.

Access to Mass Media and ICT

About 8 percent of women aged 15-49 years and 17 percent of men aged 15-59 years are exposed to all three media (newspaper, radio and TV) at least once a week. For both sexes, radio is the most predominant media for 69 percent of women and 80 percent of men.

Twenty-five percent of young women and 39 percent of young men aged 15-24 years used a computer during the 12 months prior to the survey. There are some differences in the use of internet in the week preceding the survey between young women (11%) and young men (19%).

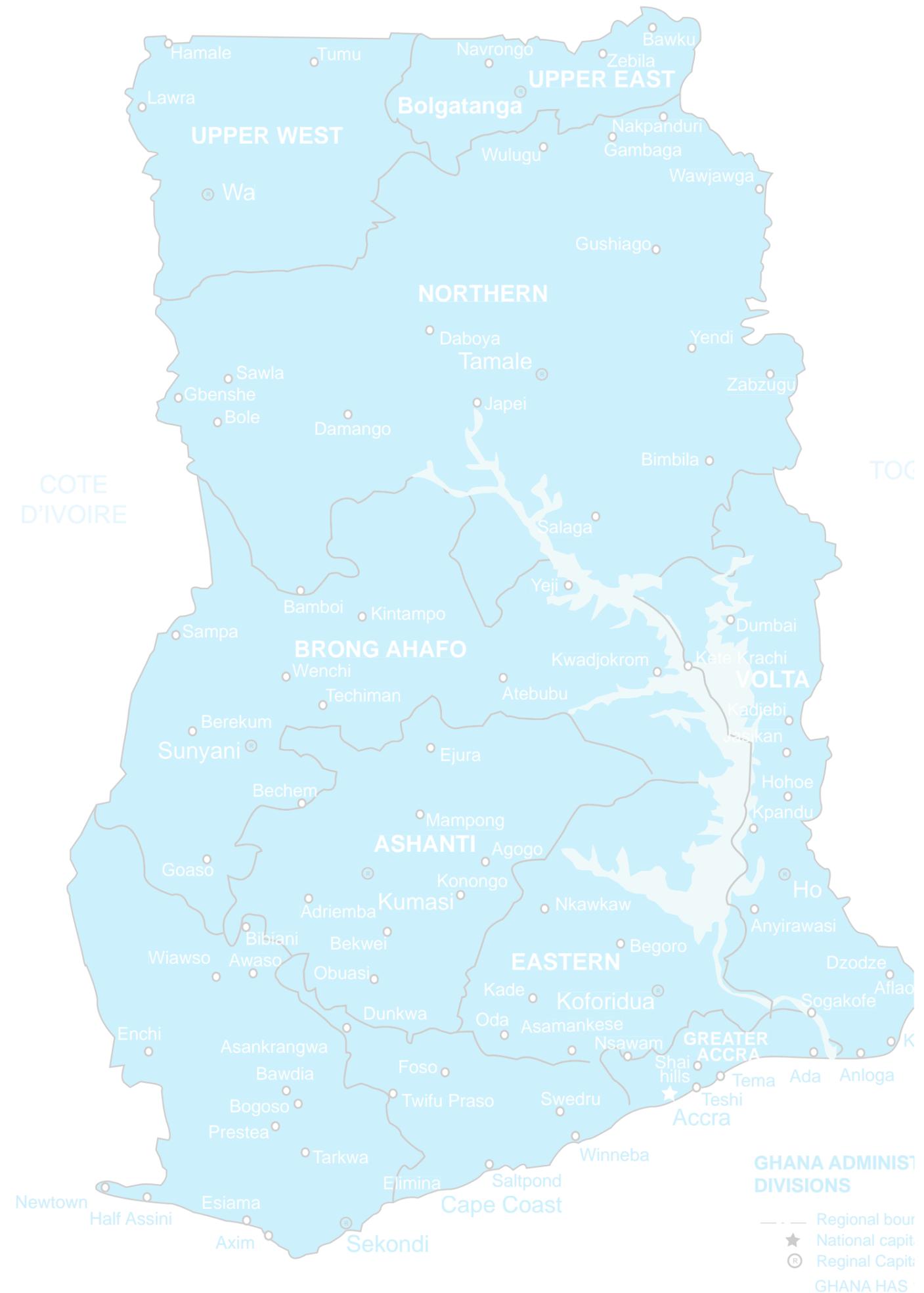
For both sexes, the exposure to all three media and the use of computer and internet are strongly correlated with educational level, wealth index quintiles and urban residence.

National Health Insurance

At the national level 69 percent of women aged 15-49 years, 56 percent of men aged 15-59 years and 54 percent of children under-five years have ever been registered with the National Health Insurance Scheme (NHIS). The proportions of valid cards seen are respectively 40 percent, 34 percent and 51 percent.

The achievement of membership was mainly done through the following two options: premium paid by a relative or friend (60% for both women and men), and premium paid by self (29% for women and 31% for men). Only 8% of women get free access to NHIS through the free Maternal Care Service.

For NHIS card holders, 42 percent of women aged 15-49 years and 39 percent of men aged 15-59 years think that NHIS provides a better quality service when they attend health care facilities, while 26 percent of the women and 22 percent of the men indicate that the quality of services provided was the same as that provided to non-NHIS card holders. Finally, 1 in 5 women and men indicate that the quality of services provided to NHIS card holders is worse while 10 percent of women and 18 percent of men have not used the health services since acquiring their NHIS cards.





Background

This report is based on the Ghana Multiple Indicator Cluster Survey, conducted in 2011 by the Ghana Statistical Service (GSS). The survey provides valuable information on the situation of children, women and men in Ghana, and was based, in large part, on the need to monitor progress towards goals and targets emanating from recent international agreements: The Millennium Declaration, adopted by all 191 United Nations Member States in September 2000, and the Plan of Action of A World Fit For Children, adopted by 189 Member States at the United Nations Special Session on Children in May 2002. Both of these commitments build upon promises made by the international community at the 1990 World Summit for Children.

A Commitment to Action: National and International Reporting Responsibilities

The governments that signed the Millennium Declaration and the World Fit for Children Declaration and Plan of Action also committed themselves to monitoring progress towards the goals and objectives they contained:

"We will monitor regularly at the national level and, where appropriate, at the regional level and assess progress towards the goals and targets of the present Plan of Action at the national, regional and global levels. Accordingly, we will strengthen our national statistical capacity to collect, analyse and disaggregate data, including by sex, age and other relevant factors that may lead to disparities, and support a wide range of child-focused research. We will enhance international cooperation to support statistical capacity-building efforts and build community capacity for monitoring, assessment and planning." (A World Fit for Children, paragraph 60).

"...We will conduct periodic reviews at the national and subnational levels of progress in order to address obstacles more effectively and accelerate actions..." (A World Fit for Children, paragraph 61)

The Plan of Action (paragraph 61) also calls for the specific involvement of UNICEF in the preparation of periodic progress reports:

"... As the world's lead agency for children, the United Nations Children's Fund is requested to continue to prepare and disseminate, in close collaboration with Governments, relevant funds, programmes and the specialized agencies of the United Nations system, and all other relevant actors, as appropriate, information on the progress made in the implementation of the Declaration and the Plan of Action."

Similarly, the Millennium Declaration (paragraph 31) calls for periodic reporting on progress:

"...We request the General Assembly to review on a regular basis the progress made in implementing the provisions of this Declaration, and ask the Secretary-General to issue periodic reports for consideration by the General Assembly and as a basis for further action."

In signing these international agreements, governments committed themselves to improving conditions for their children and to monitoring progress towards that end. UNICEF was assigned a supporting role in this task (see text box on previous page).

Over the past decades, the government of Ghana has embarked on various plans and strategies aiming at improving the living conditions of its citizenry- the Ghana Poverty Reduction Strategy (GPRS) in 2000, the Growth and Poverty Reduction Strategy (GPRS II) in 2006 and the Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013. Findings from the Multiple Indicator Cluster Survey (MICS 4) would provide up to date information for the formation of informed policies towards the achievement of the established goals.

All these policy frameworks require monitoring and assessment of progress. The fourth round of the Multiple Indicator Cluster Survey represents a large source of data for reporting on progress towards the aforementioned goals. The survey provides a rich foundation of comparative data for comprehensive progress reporting, especially regarding the situation of the most vulnerable children, including those from the poorest households, those living in deprived localities, etc. It also provides important information for the new UNICEF Country Programme 2012-2016 as well as the UNDAF 2011-2015.

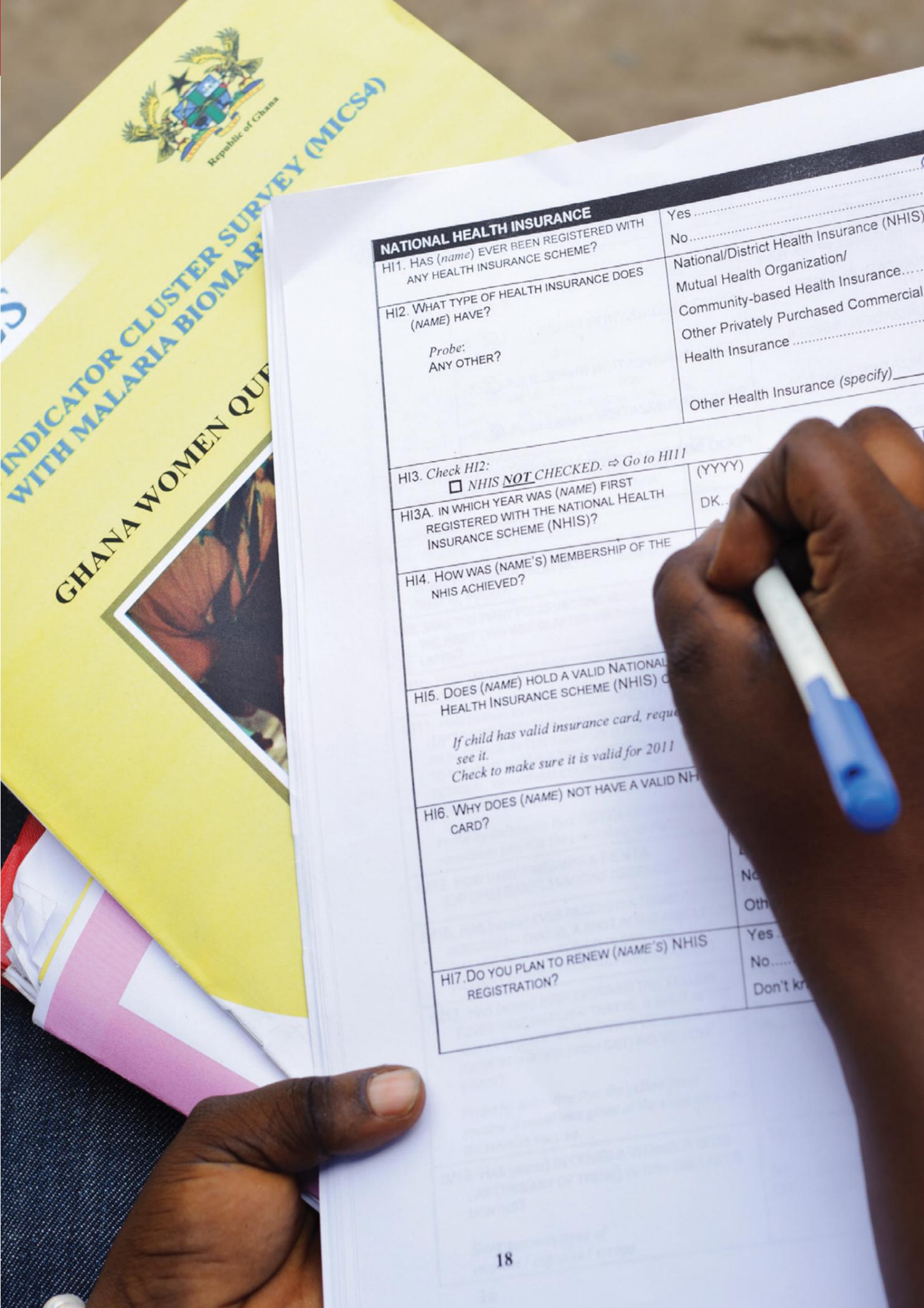
This final report presents the results of the indicators and topics covered in the survey.

Survey Objectives

The 2011 Ghana Multiple Indicator Cluster Survey has as its primary objectives the following:

- To provide more current information for assessing the situation of children, women and men, and reporting on country progress in achieving the GSGDA goals/targets and the MDGs, meet the reporting requirements of other local and international development declarations and agenda, and form the basis for future action;
- To provide much-needed data on practices used to treat malaria among children under-five and the use of specific anti-malarial medications, bednet coverage and use, coverage of Intermittent Preventive Treatment for pregnant women, treatment practices for childhood fever, and prevalence of malaria and anaemia among children aged 6-59 months;
- To present the current level of knowledge and behavioral indicators regarding HIV and AIDS in Ghana;
- To provide a mid-term snapshot on progress on key Health Sector Medium-term Development Plan (HSMTDP) 2010-2013 strategic objectives, and provide nationally and regionally representative data that can inform the development of the next Health Sector Medium-term Plan;
- To contribute to the improvement of data and monitoring systems in Ghana and to strengthen technical expertise in the design, implementation, and analysis of such systems; and
- To generate data on the situation of children, women and men, including the identification of vulnerable groups and of disparities, which will inform social inclusion and poverty reduction policies and interventions.





Sample Design

The sample for the Ghana Multiple Indicator Cluster Survey (MICS) was designed to provide estimates for a large number of indicators on the situation of children and women at the national level, for urban and rural areas, and for 10 regions: Western, Central, Greater Accra, Volta, Ashanti, Brong Ahafo, Northern, Eastern, Upper East and Upper West regions. The urban and rural areas within each region were identified as the main sampling strata and the sample was selected in two stages. Within each stratum, a specified number of census enumeration areas were selected systematically with probability proportional to size. Since the sampling frame (the 2000 Ghana Population Census) was up-to-date, a new listing of households was not conducted in all the sample enumeration areas prior to a systematic sample selection of 15 households in each selected cluster. The sample was stratified by region, urban and rural areas, and is not self-weighting since Central, Northern, Upper East and Upper West regions were over-sampled. For reporting national level results, sample weights are used. A more detailed description of the sample design can be found in Appendix A.

Questionnaires

Four sets of questionnaires were used in the survey: 1) a household questionnaire which was used to collect information on all de jure household members (usual residents), the household, and the dwelling; 2) a women’s questionnaire administered in each household to all women aged 15-49 years; 3) an under-5 questionnaire administered to mothers or caretakers for all children under 5 living in the household; and 4) a men’s questionnaire administered in each third household to all men aged 15-59 years. The contents of the questionnaires are indicated below:

The Household Questionnaire included the following modules:

- Household Listing Form
- Education
- Water and Sanitation
- Household Characteristics
- Insecticide Treated Nets
- Indoor Residual Spraying
- Child Labour
- Child Discipline
- Handwashing
- Salt Iodization

The Questionnaire for Individual Women was administered to all women aged 15-49 years living in the household, and included the following modules:

- Women’s Background
- Access to Mass Media and Use of Information/Communication Technology
- Child Mortality
- Desire for Last Birth
- Maternal and Newborn Health
- Post-natal Health Checks
- Illness Symptoms
- Contraception
- Unmet Need
- Female Genital Mutilation/Cutting

- Behaviour Change Communication on Malaria
- Attitudes Towards Domestic Violence
- Marriage/Union
- Sexual Behaviour
- HIV/AIDS
- National Health Insurance

The Questionnaire for Children Under-Five was administered to mothers or caretakers of children under - 5 years of age¹ living in the households. Normally, the questionnaire was administered to mothers of under-5 children; in cases where the mother was not listed in the household roster, a primary caretaker for the child was identified and interviewed. The questionnaire included the following modules:

- Age
- Birth Registration
- Early Childhood Development
- Breastfeeding
- Diet Diversity
- Care of Illness
- Malaria
- Immunization
- National Health Insurance
- Anthropometry
- Anaemia and Malaria Testing

The Questionnaire for Individual Men was administered to all men aged 15-59 years living in each third household, and included the following modules:

- Men's Background
- Access to Mass media and use of Information/Communication Technology
- Marriage/Union
- Attitude Towards Contraception
- Behaviour Change Communication on Malaria
- Attitudes Towards Domestic Violence
- Sexual Behaviour
- HIV/AIDS
- National Health Insurance

The questionnaires are based on the English version of the MICS4 model questionnaire². From the MICS4 model, the Ghana questionnaires were customized and pre-tested in two districts: Ga West district in Greater Accra region and Akwapim South district in Eastern region during the period 2 - 5 August 2011. Based on the results of the pre-test, modifications were made to the wording of the questionnaires. A copy of the Ghana MICS4 questionnaires is provided in Appendix F.

In addition to the administration of questionnaires, fieldwork teams tested the salt used for cooking in the households for iodine content, collected a sample in each male survey household for titration, observed

¹ The terms "children under 5", "children age 0-4 years", and "children aged 0-59 months" are used interchangeably in this report.

² The model MICS4 questionnaires can be found at www.childinfo.org

the place for handwashing and measured the weights and heights of children age under 5 years. Details and findings of these measurements are provided in the respective sections of the report.

Training and Fieldwork

Training for the fieldwork was conducted for 14 days, from 29 August to 11 September 2011. The data entry clerks attended the first week of interviewer training in order to get a better understanding of questionnaires and survey techniques. The training included lectures on interviewing techniques and the contents of the questionnaires, blood testing for malaria and anaemia, and mock interviews between trainees to gain practice in asking questions. All fieldworkers also trained in testing iodine in salt found in selected households as well as taking measurements of weight and height for children under 5 years.

The Ghana MICS4 2011 incorporated three "malaria biomarkers," namely: anaemia testing, malaria testing using rapid diagnostic tests (RDTs), and thick blood smear samples prepared on microscope slides. After obtaining informed consent from caregivers, blood samples were obtained from a heel- or finger-prick from children aged 6 to 59 months to perform on-the-spot anaemia and malaria tests, and to prepare thick blood smears that were later transported and read in the laboratory at NHRC to determine the presence of malaria parasites. The microscopy was used as the gold standard to obtain prevalence rates. The rapid diagnostic test was utilized primarily for ethical reasons, in order to identify and treat malaria in participating children while in the field.

The biomarker training was led by a DHS biomarker specialist with assistance from NHRC, NMCP and PMI staff. Towards the end of the training period, trainees spent several hours during 2 half-days in practicing interviews and blood testing in Sunyani East and Sunyani West areas.

The data were collected by 20 teams; each team was comprised of 3 interviewers, one driver, one editor, one measurer (health technician) and a supervisor. Fieldwork began on 15 September 2011 and concluded on 14 December 2011. The field monitoring, for quality assurance, was conducted by staff from ICF Macro, USAID, President Malaria Initiative (PMI), NHRC, UNICEF, GSS and NMCP.

As described above, each of the 20 field team in the 2011 Ghana MICS4 included a health technician, who was responsible for completing the anthropometry and biomarker portions of the Children Under-Five Questionnaire, and conducting the biomarker tests. In accordance with the Ghana MICS4 biomarker testing protocol pre-approved by the Ghana Health Service Institution Review Board, the health technicians were responsible for ensuring that informed consent was obtained from the children's caregivers; administering medications for uncomplicated malaria in the field when indicated; and providing medical referrals for clinically severe malaria, severe anaemia, and other conditions when indicated.

Data Processing

Data were entered using the CSPro software. The data were entered on 20 microcomputers and carried out by 20 data entry operators and 3 data entry supervisors. In order to ensure quality control, all questionnaires were double entered and internal consistency checks were performed. Procedures and standard programs developed under the global MICS4 programme and adapted to the Ghana questionnaire were used throughout. Data capture began in October 2011 and was completed in January 2012. Data were analysed using the Statistical Package for Social Sciences (SPSS) software program, Version 18, and the model syntax and tabulation plans developed by UNICEF were used for this purpose.

Sample Coverage and Response Rates

Of the 12,150 households selected for the sample, 11,970 were found to be occupied. Of these, 11,925 were successfully interviewed for a household response rate of about 100 percent. In the interviewed households, 10,963 women (aged 15-49 years) were identified. Of these, 10,627 were successfully interviewed, yielding a response rate of 97 percent within interviewed households. Also 7,626 children under age five were listed in the household questionnaire. Questionnaires were completed for 7,550 of these children, which corresponds to a response rate of 99 percent within interviewed households. In addition, a men's questionnaire was used in every third household of the selected sample. For the male survey, 3,511 men aged 15-59 years were identified. Of these, 3,321 were successfully interviewed, yielding a response rate of 94 percent within interviewed households for the male survey. The overall response rate for women (96 percent), for children under- 5 years (98%) and for men (94%) are calculated respectively in Table HH.1.

At the regional level, the response rates for household interviews, eligible women, eligible men and children were around 90 percent or higher. Apart from the Western region with men's overall response rate of 90 percent, all the remaining nine regions recorded response rates of over 92 percent. Also, Eastern region had an overall response rate of 99 percent for both men and women. Table HH.1 also shows that the response rates in the rural areas are higher than that of the urban areas. The under-5's response rates are similar across all regions and residence.



Vaccine	Date	Batch No.	Place Given
At birth	27/11	135/1415C	
1 st (6 weeks)	8/12/11	103520	HGC
2 nd (10 weeks)	5/1/11	113703	HGC
3 rd (14 weeks)	27/11	113703	HGC
1 st (6 weeks)	8/12/11	045152	NGC
2 nd (10 weeks)	5/1/11	P1638/148	HGC
3 rd (14 weeks)	27/11	P1638/148	NGC

DOSE	1 st (12 weeks)	2 nd (1 1/2 years)	3 rd (2 years)	4 th (2 1/2 years)	5 th (3 years)	6 th (3 1/2 years)	7 th (4 years)	8 th (4 1/2 years)	9 th (5 years)	10 th (5 years)
DATE										

Vaccine	Date	Day	Month	Year
BCG		27	05	2011
POLIO AT BIRTH		27	05	2011
POLIO 1		08	07	2011
POLIO 2		05	08	2011
POLIO 3		03	09	2011
PENTA1 (DPT/HEP/B/INFL1)		05	07	2011
PENTA2 (DPT/HEP/B/INFL2)		03	09	2011
PENTA3 (DPT/HEP/B/INFL3)		05	07	2011
MEASLES		02	08	2011
YELLOW FEVER				
VITAMIN A (1) (MOST RECENT)				
VITAMIN A (2) (2 nd MOST RECENT)				

Table HH.1: Results of household, women's, men's and under-5 interviews
 Number of households, women, men, and children under 5 by results of the household, women's, men's and under-5's interviews, and household, women's, men's and under-5's response rates, Ghana, 2011

Background Characteristics	Residence		Region										Total
	Urban	Rural	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West	
Households Sampled	4,635	7,515	780	2,010	1,005	780	780	1,005	780	2,010	1,500	1,500	12,150
Households Occupied	4,570	7,400	760	1,994	999	772	768	996	726	1,979	1,480	1,496	11,970
Households Interviewed	4,545	7,380	757	1,989	989	771	767	993	718	1,972	1,475	1,494	11,925
Household response rate	99.5	99.7	99.6	99.7	99.0	99.9	99.9	99.7	98.9	99.6	99.7	99.9	99.6
Women Eligible	4,183	6,780	675	1,595	862	605	601	829	690	2,025	1,456	1,625	10,963
Women Interviewed	4,056	6,571	640	1,571	829	593	596	813	658	1,938	1,412	1,577	10,627
Women's response rate	97.0	96.9	94.8	98.5	96.2	98.0	99.2	98.1	95.4	95.7	97.0	97.0	96.9
Women's overall response rate	96.4	96.7	94.4	98.2	95.2	97.9	99.0	97.8	94.3	95.4	96.7	96.9	96.6
Men Eligible	1,273	2,238	243	467	278	203	181	271	209	656	458	545	3,511
Men Interviewed	1,189	2,132	219	451	260	198	180	252	195	617	432	517	3,321
Men's response rate	93.4	95.3	90.1	96.6	93.5	97.5	99.4	93.0	93.3	94.1	94.3	94.9	94.6
Men's overall response rate	92.9	95.0	89.8	96.3	92.6	97.4	99.3	92.7	92.3	93.7	94.0	94.7	94.2
Children under 5 Eligible	2,145	5,481	421	1,009	400	402	346	476	410	2,008	997	1,157	7,626
Children under 5 Mother/Caretaker Interviewed	2,117	5,433	414	999	393	400	345	472	407	1,989	988	1,143	7,550
Under-5's response rate	98.7	99.1	98.3	99.0	98.3	99.5	99.7	99.2	99.3	99.1	99.1	98.8	99.0
Under-5's overall response rate	98.2	98.9	97.9	98.8	97.3	99.4	99.6	98.9	98.2	98.7	98.8	98.7	98.6

Characteristics of Households

The weighted age and sex distribution of the survey population is provided in Table HH.2. This distribution is also used to produce the population pyramid in Figure HH.1. In the 11,925 households successfully interviewed in the survey, 46,093 household members were listed. Of these, 22,353 were males and 23,739 were females. The estimated sex ratio is 94 compared to the 95 recorded in the MICS 2006.

With respect to children below 15 years (42%), the results are similar to those from the 1984 and 2000 censuses, which indicate that the proportion of children less than 15 years was higher than 40 percent: 45 percent in the 1984 census and 41 percent in the 2000 census. However, the results from Ghana 2010 census show a decline in the proportion of children less than 15 years, with only 35 percent of the population in that age group. The proportion of the aged (65 years and older) is 4 percent compared to 5 percent in the MICS 2011 results.

Data from the population censuses (1984 (49%), 2000 (47%) and 2010 (43%), and the MICS 2006 (45%)) indicate a consistent decline in the dependent population (aged 0-14 years and 65+). In contrast, MICS 2011 shows an increase

(47%) in the dependent population and therefore a decrease in the proportion of the active population (aged 15-65 years). The children under 18 years represent 48 percent of Ghanaian population, compared to 47 percent in MICS 2006 and 45 percent in Ghana census 2010. This reflects the fact that Ghanaian population has a young age structure.

Also some discrepancies are observed between data from the Ghana 2010 Population and Housing Census and those from MICS 2011 on age distribution for the age-groups from 0-4 years to 30-34 years. Although these discrepancies are not necessarily statistically significant, they need, however, to be investigated and documented.

Table HH.2: Household age distribution by sex
 Percent and frequency distribution of the household population by five-year age groups, dependency age groups, and by child (age 0-17 years) and adult populations (age 18 or more), by sex, Ghana, 2011

Background Characteristics	Males		Females		Total	
	Number	Percent	Number	Percent	Number	Percent
Age-group						
0-4	3,105	13.9	3,134	13.2	6,239	13.5
5-9	3,369	15.1	3,262	13.7	6,631	14.4
10-14	3,250	14.5	3,258	13.7	6,508	14.1
15-19	2,254	10.1	1,860	7.8	4,114	8.9
20-24	1,477	6.6	1,625	6.8	3,102	6.7
25-29	1,354	6.1	1,706	7.2	3,060	6.6
30-34	1,286	5.8	1,573	6.6	2,858	6.2
35-39	1,273	5.7	1,372	5.8	2,644	5.7
40-44	1,033	4.6	1,173	4.9	2,206	4.8
45-49	978	4.4	998	4.2	1,976	4.3
50-54	788	3.5	1,184	5.0	1,972	4.3
55-59	587	2.6	696	2.9	1,283	2.8
60-64	526	2.4	534	2.2	1,059	2.3
65-69	317	1.4	342	1.4	659	1.4
70-74	323	1.4	357	1.5	681	1.5
75-79	207	0.9	274	1.2	481	1.0
80-84	92	0.4	178	0.7	270	0.6
85+	131	0.6	204	0.9	335	0.7
Missing/DK	6	0.0	8	0.0	14	0.0
Dependency age groups						
0-14	9,723	43.5	9,655	40.7	19,378	42.0
15-64	11,554	51.7	12,721	53.6	24,275	52.7
65+	1,070	4.8	1,355	5.7	2,425	5.3
Missing/DK	6	0.0	8	0.0	14	0.0
Children and adult populations						
Children age 0-17 years	11,132	49.8	10,873	45.8	22,005	47.7
Adults age 18+ years	11,215	50.2	12,859	54.2	24,074	52.2
Missing/DK	6	0.0	8	0.0	14	0.0
Total	22,353	100.0	23,739	100.0	46,093	100.0

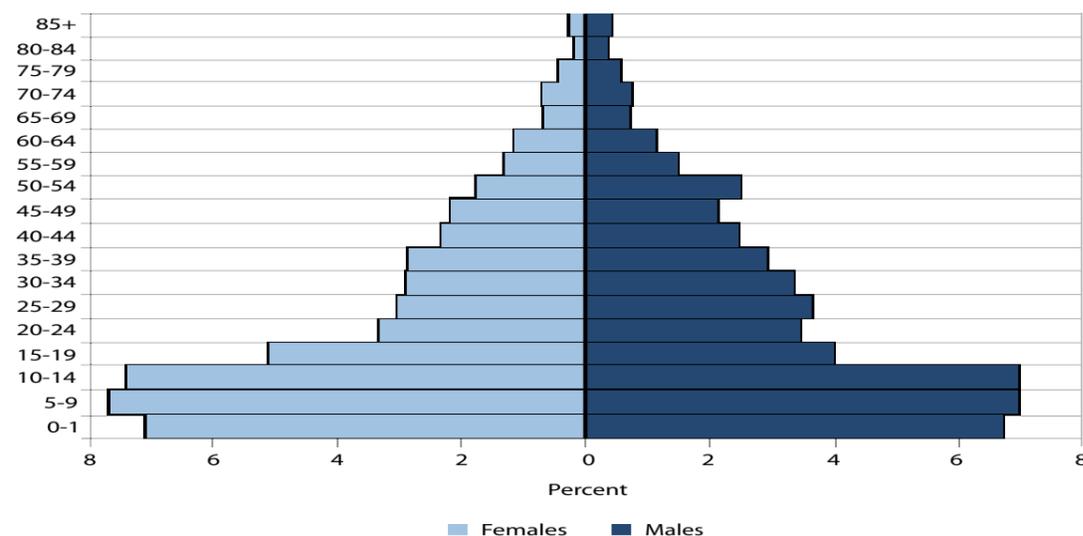
Figure HH.1 shows an excess of children aged 5-9 years compared to those aged 0-4 years. This was also the case for MICS 2006. It is probably due to a preference for reporting age 5 and therefore, under-reporting for age-group 0-4 years. The same situation (under-reporting) is observed for women aged 45-49 years compared to those aged 50-54 years). Another explanation is that the person providing the age of each household member (within the household questionnaire) might have “genuinely” rounded ages. Indeed data from the Ghana 2010 Population and Housing Census provide a different structure for age-groups 0-4 years and 5-9 years: for both sexes, the number of children aged 0-4 years exceeds that of children aged 5-9 years. Further indications on these irregularities can be seen in the single year age distribution in Table DQ.1 in Appendix D, Data Quality Tables.

Tables HH.3 to HH.5 provide basic information on the households, female respondents aged 15-49 years, children under-5 years and male respondents aged 15-59 years by presenting the unweighted, as well as the weighted numbers. Information on the basic characteristics of households, women, children under-5 and men interviewed in the survey is essential for the interpretation of findings presented later in the report. It also can provide an indication of the representativeness of the survey. The remaining tables in this report are presented only with weighted numbers. See Appendix A for more details about the weighting.

Table HH.3 provides basic background information on the households. Within the households, the sex of the household head, region, residence, number of household members, education of household head, respondents and children under 18 years, and ethnicity¹ of the household head are shown in the table. These background characteristics are used in subsequent tables in this report; the figures in the table are also intended to show the numbers of observations by major categories of analysis in the report.

Table HH.3 also shows the proportions of households with at least one child under 18 years, at least one child under 5 years, at least one eligible woman aged 15-49 years and at least one eligible man aged 15-59 years. The weighted and unweighted numbers of households are equal, since the sample weights were normalized (See Appendix A).

Figure HH.1: Age and sex distribution of household population. Ghana 2011



¹ This was determined by asking : To what ethnic group does the head of this household belong?

Generally, the head of household is considered as the key person because he/she ensures that the needs and well-being of the members are addressed in the household. In Ghana, the proportion of female heads of household is 31 percent while that of males is 69 percent. The proportion of the female heads of household is consistent with MICS 2006 (29%), and the 2000 Ghana Population and Housing Census (31%). However, there is a slight difference with the 2010 Ghana Population and Housing Census (35%). Ashanti and Greater Accra regions constitute about two-fifth of the entire household population in Ghana for both MICS 2011 and the 2010 Ghana Population and Housing Census.

The results also show that 20 percent of the population is more likely to live as a single-member household. The most common household size now is 2-3 household members (30%), followed by 4-5 household members (27%). On the other hand, the proportion of households with ten or more members declined from 10 percent in the 2000 Ghana Population Census, 4 percent in MICS 2006, 6 percent in Ghana population census 2010 to 3 percent in 2011. This trend suggests that the population is moving towards a smaller household size.

The education of the head of household has an impact on the welfare of the household members. The proportion of heads of households who have never attended any formal education declined from 39 percent in the 2000 population and housing census to 25 percent in MICS 2011. Furthermore, a higher proportion of the household heads have attended only basic education comprising Middle/JSS (39%) and Primary (13%). Only 23 percent of household heads attended secondary school or higher levels of education.

The weighted percent of households and respondents received in Table HH.3 was also compared to the data from MICS 2006 and the 2010 Ghana Population and Housing Census. Although not proven to be statistically significant, the main discrepancies observed are the following:

- The current share (6%) of Northern region is lower compared to that of MICS 2006 (11 %) and Ghana 2010 population census (10%);
- The current share (20%) of Greater Accra region is higher than what was recorded in MICS 2006 (17%) and 2010 Ghana population census (16%);
- The distribution of population by residence is 53 percent for urban areas and 47 percent for rural areas, compared to 56 percent and 44 percent respectively in the 2000 Ghana Population and Housing Census.

In terms of ethnicity, the results indicate that the Akan group (49%) constitutes the largest proportion of Ghanaian households, followed by Ewes (15%) and Mole Dagbanis (14%).

Table HH.3: Household composition			
Percent distribution of households by selected characteristics, Ghana, 2011			
Weighted percent	Number of households		
	Weighted	Unweighted	
Sex of household head			
Male	69.1	8234	8746
Female	30.9	3691	3179
Region			
Western	9.4	1116	757
Central	10.4	1236	1989
Greater Accra	19.5	2321	989
Volta	8.3	992	771
Eastern	12.9	1533	767
Ashanti	19.5	2321	993
Brong Ahafo	8.5	1011	718
Northern	6.1	727	1972
Upper East	3.5	414	1475
Upper West	2.1	253	1494
Residence			
Urban	53.3	6358	4545
Rural	46.7	5567	7380
Number of household members			
1	20.3	2424	1860
2	13.6	1617	1351
3	16.3	1946	1663
4	14.3	1708	1644
5	12.4	1479	1566
6	9.5	1135	1302
7	6.1	733	944
8	3.1	370	575
9	1.7	203	344
10+	2.6	310	676
Education of household head			
None	25.1	2997	4989
Primary	13.1	1560	1546
Middle/JSS	38.5	4590	3372
Secondary +	23.3	2775	2017
Missing/DK	.0	3	1
Ethnicity of household head			
Akan	48.6	5797	4191
Ga/Dangme	9.3	1111	569
Ewe	14.9	1779	1213
Guan	3.6	427	449
Gruma	3.5	420	659
Mole Dagbani	13.9	1658	3728
Grusi	2.8	331	641
Mande	1.1	136	190
Non-Ghanaian	1.6	193	186
Others	.6	73	99
Total	100.0	11925	11925

Table HH.3a shows that 38 percent of households have at least one child aged 0-4 years, 68 percent have at least one child aged 0-17 years, 67 percent have at least one woman aged 15-49 years, and 23 percent have at least one man aged 15-59 years. The mean household size at the national level is 3.9 persons.

Table HH.3a: Household composition			
Percent distribution of households by selected characteristics, Ghana, 2011			
Background Characteristics	Number of households		
	Weighted percent	Weighted	Unweighted
Households with at least: one child age 0-4 years	38.0	11925	11925
Households with at least: one child age 0-17 years	68.4	11925	11925
Households with at least: one woman age 15-49 years	67.2	11925	11925
Households with at least: one man age 15-59 years	22.5	11925	11925
Mean household size	3.9	11925	11925

The data in Table HH.3a were broken down by residence and Table HH.3b shows that households in urban areas have lower proportions of children (aged 0-4 and 0-17 years), males aged 15-59 years and are smaller (3.5 persons per household) compared to their rural counterparts (with 4.3 people per household). However, there are equal proportions of households with at least one woman aged 15-49 years in urban and rural areas (67%).

Table HH.3b: Household composition by residence						
Percent distribution of households by selected characteristics, Ghana, 2011						
Background Characteristics	Residence					
	Urban			Rural		
	Weighted percent	Weighted	Unweighted	Weighted percent	Weighted	Unweighted
Households with at least: one child age 0-4 years	33.1	6,358	4,545	43.6	5,567	7,380
Households with at least: one child age 0-17 years	63.5	6,358	4,545	74.1	5,567	7,380
Households with at least: one woman age 15-49 years	67.4	6,358	4,545	67.1	5,567	7,380
Households with at least: one man age 15-59 years	22.3	6,358	4,545	22.7	5,567	7,380
Mean household size	3.5	6,358	4,545	4.3	5,567	7,380

Characteristics of Female Respondents aged 15-49 years, Children Under-5 and Male respondents aged 15-59 years

Tables HH.4, HH.4M and HH.5 provide information on the background characteristics of female respondents aged 15-49 years, children under age 5 and male respondents aged 15-59 years. In all these tables, the total numbers of weighted and unweighted observations are equal, since sample weights have been normalized (standardized). In addition to providing useful information on the background characteristics of women and children, the tables are also intended to show the number of observations in each background category. These categories are used in the subsequent tabulations of this report.

Tables HH.4 and HH.4M provides background characteristics of female respondents aged 15-49 years and male respondents aged 15-59 years. The tables include information on the distribution of women and men according to region, residence, age, marital status, motherhood status, births in last the two years, education, wealth index quintiles and ethnicity.

The age distribution of the respondents shows that 1 in 3 females (34%) and males (31%) are in the 15-24 years age-group. For both sexes, the largest proportion is in the 15-19 years age-group, while the lowest are in the 45-49 years age-group for women and 54-59 years age-group for men. The data also show that 62 percent of women and 56 percent of men are currently married or are in union, while 30 percent and 40 percent respectively have never been married. Seventy percent of women have given birth at least once and 24 percent gave birth in the last two years.

The distribution of respondents by residence shows that 54 percent of women and 53 percent of men live in urban areas. Regionally, the distribution of respondents varies significantly. For example, for both sexes, one-fifth of respondents are from Greater Accra (20%) while Upper West region has the lowest proportion (3%).

The data show that 21 percent of women and 12 percent of men have no education. The proportions of women and men with basic education are respectively 60 percent and 57 percent. At the same time, 19 percent of women and 30 percent of men have secondary or higher education respectively. Twenty-five percent of women and 26 percent of men are in the richest wealth quintiles while 16 percent of women and men are in the poorest category.

The distribution of the respondents by ethnic groupings indicates that the Akans (46% for women and 43% for men) form the largest group, followed by Mole Dagbani (16% for women and 17% for men) and Ewes (14% percent for both men and women).

The discrepancies between the data from MICS 2011 and previous censuses and surveys identified in Table HH.3 are also found in Tables HH.4 and HH.4M. However, these seem not to be statistically significant.

Table HH.4: Women's background characteristics
Percent and frequency distribution of women age 15-49 years by selected characteristics, Ghana, 2011

Background Characteristics	Weighted percent	Number of women	
		Weighted	Unweighted
Region			
Western	9.6	1022	640
Central	9.8	1044	1571
Greater Accra	19.5	2074	829
Volta	7.7	821	593
Eastern	11.6	1237	596
Ashanti	18.7	1983	813
Brong Ahafo	9.5	1005	658
Northern	7.1	754	1938
Upper East	3.8	404	1412
Upper West	2.7	282	1577
Residence			
Urban	54.3	5770	4056
Rural	45.7	4857	6571
Age			
15-19	17.9	1899	2028
20-24	15.8	1674	1503
25-29	16.6	1768	1650
30-34	15.4	1638	1616
35-39	13.5	1431	1487
40-44	11.2	1195	1231
45-49	9.6	1023	1112
Marital/Union status			
Currently married/in union	61.9	6574	6926
Widowed	2.1	221	270
Divorced	3.3	354	254
Separated	3.0	323	278
Never married/in union	29.7	3156	2899
Motherhood status			
Ever gave birth	70.0	7434	7688
Never gave birth	30.0	3193	2939
Births in last two years			
Had a birth in last two years	23.8	2528	2872
Had no birth in last two years	76.2	8099	7755
Education			
None	20.9	2224	3945
Primary	19.1	2026	1932
Middle/JSS	40.7	4328	3327
Secondary +	19.3	2049	1423
Wealth index quintiles			
Poorest	15.6	1659	3860
Second	17.7	1877	2009
Middle	19.8	2101	1640
Fourth	22.1	2345	1616
Richest	24.9	2646	1502

Background Characteristics	Number of women		
	Weighted percent	Weighted	Unweighted
Ethnicity of household head			
Akan	46.3	4918	3316
Ga/Dangme	9.8	1040	513
Ewe	14.0	1485	959
Guan	3.6	380	406
Gruma	3.8	405	630
Mole Dagbani	16.0	1700	3714
Grusi	3.0	322	602
Mande	1.2	124	220
Non-Ghanaian	1.7	179	170
Others	.7	73	97

Background Characteristics	Number of women		
	Weighted percent	Weighted	Unweighted
Region			
Western	10.6	352	219
Central	8.9	296	451
Greater Accra	20.3	676	260
Volta	7.6	252	198
Eastern	10.8	358	180
Ashanti	19.2	638	252
Brong Ahafo	8.9	296	195
Northern	7.3	243	617
Upper East	3.6	120	432
Upper West	2.7	91	517
Residence			
Urban	52.6	1746	1189
Rural	47.4	1575	2132
Age of man			
15-19	19.8	657	767
20-24	11.4	379	393
25-29	13.7	456	411
30-34	13.3	442	363
35-39	10.9	363	371
40-44	8.7	288	303
45-49	9.4	313	293
50-54	6.7	221	215
55-59	6.1	204	205
Marital/Union status			
Currently married/in union	55.9	1856	1787
Widowed	.8	26	27
Divorced	1.6	54	47
Separated	2.2	72	53
Never married/in union	39.6	1314	1407

Background Characteristics	Number of women		
	Weighted percent	Weighted	Unweighted
Education			
None	12.5	417	808
Primary	12.5	416	549
Middle/JSS	44.6	1483	1229
Secondary +	30.3	1006	735
Wealth index quintiles			
Poorest	15.6	518	1217
Second	16.8	557	652
Middle	18.7	621	480
Fourth	23.4	779	524
Richest	25.5	847	448
Ethnicity of household head			
Akan	43.0	1428	970
Ga/Dangme	10.5	349	154
Ewe	13.8	459	331
Guan	4.1	135	128
Gruma	4.0	133	175
Mole Dagbani	16.9	562	1206
Grusi	3.6	121	193
Mande	1.6	53	63
Non-Ghanaian	1.9	62	66
Others	.5	18	35
Total	100.0	3321	3321

Some background characteristics of children under 5 are presented in Table HH.5. These include the distribution of children by sex, region, residence, age, mothers/caretakers education and household wealth index quintiles.

The results in Table HH.5 show that the proportions of girls (50%) and boys (50%) among children under 5 years were equal. The proportions of children are evenly divided in each of the 5 age- groups (one-fifth in each), and this is consistent with MICS 2006. The first age-group (0-11 months) has been split into two (<6 and 6-11 months) and these accounted for 11 percent and 10 percent respectively.

The proportion of children under five years living in the rural areas has decreased from 64 percent in MICS 2006 to 57 percent in MICS 2011. On the other hand, the proportion of children under five living in the urban areas has increased from 36 to 43 percent during this period. The largest proportion of children under five reside in the Ashanti region (19%) followed by the Greater Accra region (15%), while the smallest proportion is found in the Upper West region (3%).

About one third (33%) of mothers/caretakers of children under five have no education while 22 percent have only primary education. The results also show that 34 percent have attained middle/JSS education and only 12 percent of mothers/caretakers of these children have attained secondary or higher education. Furthermore, only 17 percent of children live in the richest households, while 43 percent come from households in the poorest (23%) and the second (20%) wealth index quintiles.

Table HH.5: Under-5's background characteristics
Percent and frequency distribution of children under five years of age by selected characteristics, Ghana, 2011

Background Characteristics	Weighted percent	Number of children	
		Weighted	Unweighted
Sex			
Male	49.8	3757	3859
Female	50.2	3793	3691
Region			
Western	10.0	758	414
Central	9.8	740	999
Greater Accra	15.1	1142	393
Volta	8.0	601	400
Eastern	11.0	827	345
Ashanti	18.7	1411	472
Brong Ahafo	8.9	671	407
Northern	11.3	852	1989
Upper East	4.3	325	988
Upper West	3.0	223	1143
Residence			
Urban	43.5	3283	2117
Rural	56.5	4267	5433
Age			
0-5	10.8	818	792
6-11	9.6	725	720
12-23	19.2	1453	1451
24-35	20.6	1553	1518
36-47	20.9	1576	1599
48-59	18.9	1426	1470
Mother's education			
None	32.5	2455	4081
Primary	21.6	1628	1363
Middle/JSS	34.1	2578	1565
Secondary +	11.8	889	541
Wealth index quintiles			
Poorest	22.9	1730	3528
Second	20.5	1551	1499
Middle	20.6	1559	1045
Fourth	18.5	1397	836
Richest	17.4	1313	642
Total	100.0	7550	7550

The results (percentage by age-group of total population) shown in Table HH.6 present some discrepancies compared to the data from the 2010 Ghana Population and Housing Census, especially for the first seven age-groups. This observation has already been made on Table HH.2.

Table HH.6: Household age distribution by sex and residence
Percent distribution of the household population by five-year age groups, by sex and residence, Ghana, 2011

Background Characteristics	Residence								Total		Ghana census 2010
	Urban				Rural				Number	Percent	
	Males		Females		Males		Females				
	Number	Percent	Percent								
Age											
0-4	1339	12.6	1372	11.8	1766	15.0	1763	14.6	6239	13.5	12.3
5-9	1418	13.4	1400	12.0	1951	16.6	1863	15.4	6631	14.4	11.1
10-14	1400	13.2	1557	13.3	1850	15.7	1702	14.1	6508	14.1	11.1
15-19	1008	9.5	952	8.2	1246	10.6	908	7.5	4114	8.9	10.9
20-24	835	7.9	937	8.0	641	5.5	688	5.7	3102	6.7	10.8
25-29	781	7.4	991	8.5	573	4.9	715	5.9	3060	6.6	9.5
30-34	768	7.2	852	7.3	517	4.4	721	6.0	2858	6.2	7.6
35-39	692	6.5	700	6.0	581	4.9	671	5.6	2644	5.7	6.2
40-44	505	4.8	641	5.5	528	4.5	532	4.4	2206	4.8	5.0
45-49	505	4.8	518	4.4	472	4.0	480	4.0	1976	4.3	3.9
50-54	392	3.7	571	4.9	396	3.4	613	5.1	1972	4.3	3.4
55-59	309	2.9	334	2.9	278	2.4	362	3.0	1283	2.8	2.2
60-64	233	2.2	236	2.0	293	2.5	298	2.5	1059	2.3	1.8
65-69	125	1.2	168	1.4	192	1.6	174	1.4	659	1.4	1.1
70-74	141	1.3	145	1.2	183	1.6	213	1.8	681	1.5	1.2
75-79	82	.8	119	1.0	126	1.1	155	1.3	481	1.0	0.7
80-84	23	.2	81	.7	69	.6	96	.8	270	.6	0.5
85+	46	.4	83	.7	85	.7	121	1.0	335	.7	0.6
Missing/DK	5	.0	3	.0	1	.0	6	.0	14	.0	0
Total	10607	100.0	11660	100.0	11747	100.0	12080	100.0	46093	100.0	100

Overall, 58 percent of households have 1 sleeping room, 26 percent have 2 sleeping rooms and 16 percent have 3 or more sleeping rooms (Table HH.7). At residence level, 63 percent of households in urban areas have 1 sleeping room compared to 52 percent in rural areas. In contrast, more households in rural areas have 2 sleeping rooms (28%) and 3 or more sleeping rooms (20%) compared to urban areas, which have 25 and 13 percent respectively.

Table HH.7: Housing characteristics
Percent and weighted number distribution of households by selected housing characteristics, by residence, Ghana, 2011

Background Characteristics	Residence				Total	
	Urban		Rural		Number	Percent
	Number	Percent	Number	Percent		
Sleeping Rooms						
1 room	3988	62.7	2904	52.2	6892	57.8
2 rooms	1565	24.6	1572	28.2	3137	26.3
3+ rooms	806	12.7	1090	19.6	1896	15.9
Total	6358	100.0	5567	100.0	11925	100.0



Among the overarching objectives of both the MDGs and the World Fit for Children (WFFC) is the need to reduce maternal and childhood mortality. Specifically, MDG 4 calls for a two-thirds reduction in the mortality rate for under-fives between 1990 and 2015. Monitoring progress towards this goal is an important but difficult objective. The Ghanaian government, through the Ghana Shared Growth and Development Agenda (GSGDA) and specifically through the Health Sector Medium Term Development Plan (HSMTDP), has developed strategies to reduce childhood mortality, and improve the overall wellbeing of all its citizens.

This chapter describes levels, trends, and differentials in early childhood mortality in Ghana. Early childhood mortality rates in general and infant (Summary of Vital Statistics, 2010) mortality rate (Miller and Goldman, 2011) in particular contribute to a better understanding of a country's socio-economic situation and is a major indicator of the quality of life of the population. The information in this chapter is disaggregated by geographic, socio-economic and demographic characteristics since they help to identify subgroups that are at high risk. Such analyses are thus useful for identifying promising directions for health programmes and for advancing child survival efforts.

Measuring childhood mortality may seem easy, but attempts using direct questions, such as "Has anyone in this household died in the last year?" give inaccurate results. Using direct measures of child mortality from birth histories is time consuming, more expensive, and requires greater attention to training and supervision. Alternatively, indirect methods developed to measure child mortality produce robust estimates that are comparable with the ones obtained from other sources. The Ghana MICS 2006 used the indirect estimation technique, known as the Brass method (United Nations, 1983). Indirect methods minimize the pitfalls of memory lapses, inexact or misinterpreted definitions, and poor interviewer performance. However, the indirect methods cannot provide the very important infant mortality rate breakdown (neonatal and postneonatal mortality rates) and the estimate of child mortality rate (4q1); it also does not provide the richness of data collected from female respondents' birth histories.

The Early childhood mortality rates presented in this chapter are computed directly from birth histories collected from the female respondents. Women in the age-group 15-49 years who had ever given birth were asked to provide a detailed history of all their live births in chronological order starting with the first live birth. All children born to the respondents, whether dead or alive, were listed by name, sex, birthday and if dead, the date of death. The data analysis on childhood mortality was limited to a period of 15 years prior to the survey, in order to minimize the effect of the pitfalls of memory lapses and also the truncated rates due to the failure to capture births from old women.

Childhood mortality rates measure the risk of dying from birth and before age five. The primary causes of childhood mortality change according to the child's age, and from biological and environmental factors; childhood mortality rates are, therefore, expressed by age segments and are conventionally defined as follows:

- Neonatal mortality rate (NMR): the probability of dying before the first month of life expressed per 1,000 live births;
- Post-neonatal mortality rate (PNMR): the probability of dying after the first month of life but before reaching the first birthday expressed per 1,000 live births, and calculated as the difference between the infant and neonatal mortality rates;
- Infant mortality rate (1q0): the probability of dying before the first birthday expressed per 1,000 live births;
- Child mortality rate (4q1): the probability of dying between age one and before the fifth birthday expressed per 1,000 children aged 1 year;
- Under-five mortality rate (5q0): the probability of dying before the fifth birthday expressed per 1,000 live births.

Assessment of Data Quality in childhood mortality

In any survey, the quality of early childhood mortality estimates depends on sampling and non-sampling errors. For MICS4, the sampling errors are dealt with in Appendix E. The non-sampling errors have to do with the completeness of data on child mortality and the accuracy of the information provided by mother on the date of birth for all live births, and date of death for deceased children. Typically, three types of non-sampling errors are known to affect the childhood mortality estimates: omission of births and deaths, displacement of dates of births and deaths, and misreporting of age at death.

Taking into consideration the different elements described above, some caution is necessary when interpreting the childhood mortality trends suggested by MICS 2011.

Different Data Quality Tables presented in Appendix E were reviewed and below are our main observations:

Table DQ.2: The focus of this table is the completion rate by age-group. The results show that the completion rate is very high: it goes from 96 percent to 98 percent for the 7 age-groups, with an overall rate of 97 percent for all women aged 15-49 years. However, the ratios of age-groups 15-19 years to 10-14 years and 50-54 years to 45-49 years are 0.57 and 1.19 respectively. This means that some eligible women aged 15-49 years were left out of the MICS4 women's sample.

Table DQ.3: This table shows the household population of children aged 0-7 years, children aged 0-4 years whose mothers/caretakers were interviewed, and the percentage of under-5 children whose mothers/caretakers were interviewed, by single ages. This table suggests that the ratio of the population aged 5 years to the population aged 4 years is 1.14. In other words, there is evidence of misreporting of age at birth for some children aged 4 years.

Table DQ.17: This table show the number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by year of birth, according to living, dead, and total children. The figures show some discrepancies in the following areas:

- Number of births: For 2011 and 2010, the number of births reported are lower compared to all previous years;
- Percent of dead children with complete birth date: From 1992 to 2009, the percentage of dead children with complete birth date is below 90%;
- Sex ratio at birth: huge variations are noticed for the sex ratio at birth. For all births, for example, the sex ratio at birth ranges from 89.5 in 1997 to 123.8 in 1993;
- Calendar year ratio: major variations are also noted. These range from 23.5 in 1992 to 115.0 in 2004 for all births.

Table DQ.18: This table provides information on the distribution of reported deaths under one month of age by age at death in days, and the percentage of neonatal deaths reported to have occurred at ages 0-6 days, by 5-year periods preceding the survey. For the four five-periods considered, the figures show some heaping at ages zero, one, three, seven, fourteen and 21 days.

Table DQ.19: The focus of this table is to examine the degree of heaping at ages one and 12 months as these are the cut-off points for specific childhood mortality rates. Although there is evidence of some heaping in the overall figures for the four five-year periods considered, the data do not suggest any heaping at these two cut-off points.

Although there is evidence of some typical data issues in different surveys (MICS and DHS) worldwide, there is no apparent major concern regarding the overall data quality in Ghana MICS 2011, and especially for the most recent period of 0-4 years preceding the survey.

Levels and Trends of Early Childhood Mortality

The Ghana MICS4 was conducted from mid-September to mid-December 2011 and early childhood mortality rates were estimated using the direct method. The reference point (mid-point interval) for the childhood mortality for the most recent five year period is mid-March 2009.

Table CM.1 provides child mortality rates computed using the 'direct' or 'birth history' method of estimation. The Ghana under-five mortality rate is estimated at 82 deaths per 1,000 live births for the most recent five-year period. This means that one in every 12 children dies before reaching their fifth birthday. Child mortality rate (4q1) is estimated at 31 deaths per 1,000 children aged 1 year, while Infant mortality rate is estimated at 53 deaths per 1,000 live births. Postneonatal and neonatal mortality rates are estimated at 21 and 32 deaths per 1000 live births, respectively, for the same period.

Table CM.1 also reveals that the proportion of infant deaths occurring during the first month of life is above 60 percent for the three 5-year periods, and these results are more detailed in Table DQ.19, Appendix E. Furthermore, this is consistent with other studies (MoH, 2007; USAID, 2002; DHS 2008, P.138), which indicate that in Ghana neonatal deaths are an important component of infant mortality, representing an estimated 60 percent of all infant deaths.

Table CM.1: Early childhood mortality rates
Neonatal, Postneonatal, Infant, child and under-five mortality rates by 5 year periods, Ghana, 2011

Years preceding the survey	Neonatal mortality rate (NMR) [1]	Post neonatal mortality rate (PNMR) [2]	Infant mortality rate (1q0) [3]	Child mortality rate (4q1) [4]	Under five mortality rate (5q0) [5]
0-4	32	21	53	31	82
5-9	32	19	50	39	87
10-14	36	22	58	47	102

As shown in Figure CM.1, under-five mortality rate declined from 102 deaths per 1,000 live births for the period 10-14 years before the survey to 87 deaths per 1,000 live births during the 5-9 years before the survey, and to 82 deaths per 1,000 live births for the 5-year period prior to the survey. For the 10-14 years before the survey, the infant mortality rate declined from 58 deaths per 1,000 live births to 50 deaths per 1,000 live births for the 5-9 years before the survey. The data further show that for the 0-4 years prior to the survey, the infant mortality rate was estimated at 53 deaths per 1,000 live births. For these 2 five-year periods prior to the survey, neonatal mortality rate remained stable at 32 deaths per 1,000 live births.

Figure CM. 1 Trends in Childhood Mortality Rates for MICS4, Ghana, 2011

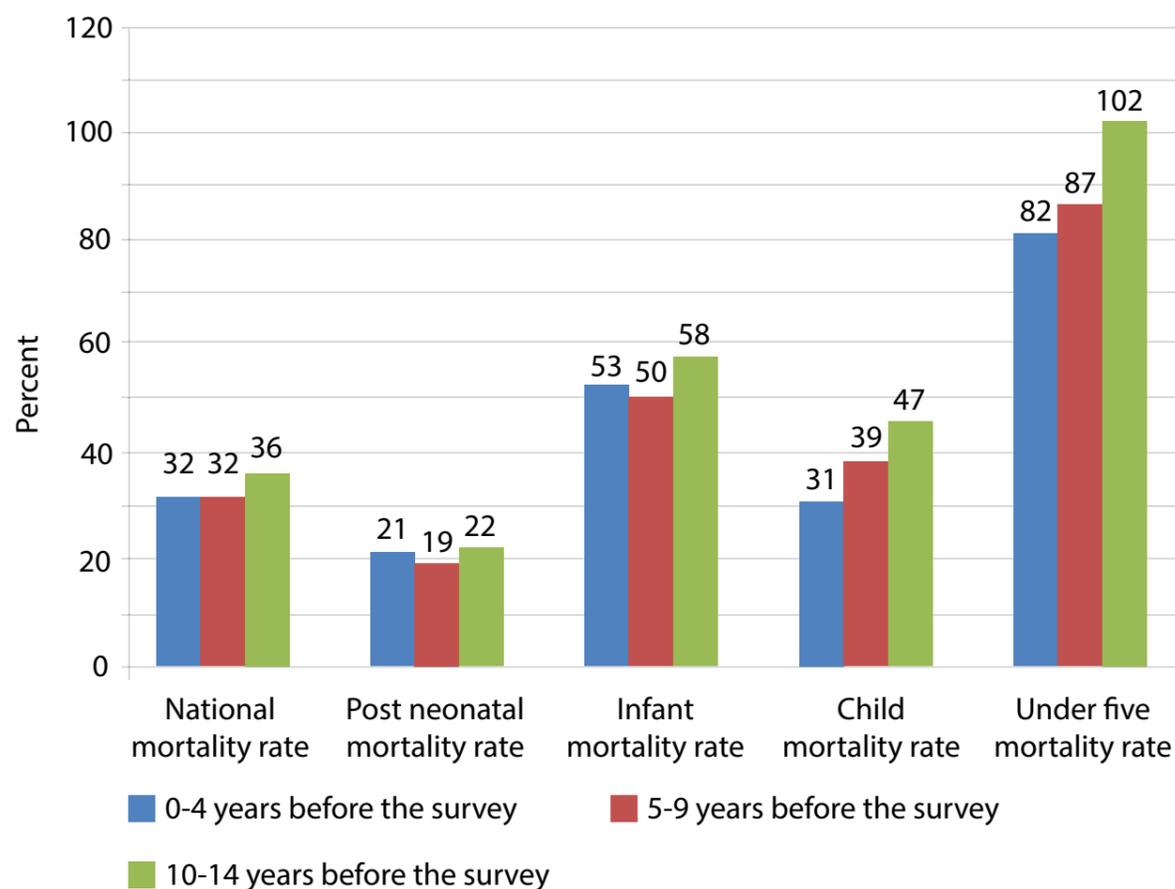
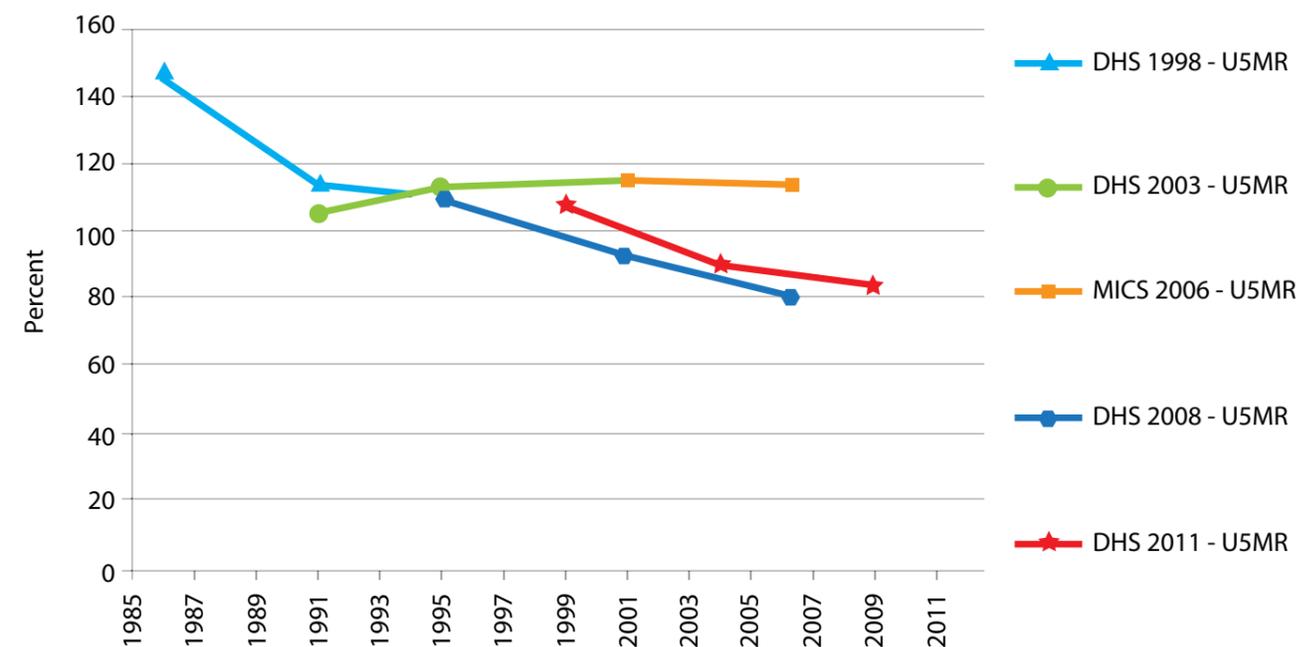


Figure CM. 2 Trends in Under-five mortality rates in Ghana, various data sources



The trend in childhood mortality rates over time can also be assessed by comparing the MICS 2011 data, together with the data from three previous DHS (1998, 2003 and 2008) and the MICS 2006. Figure CM.2 shows childhood mortality trends for the past 30 years using data from the five surveys.

Overall, Figure CM.2 reveals that in the past 30 years, under-five mortality rate has declined in Ghana, from 145 deaths per 1,000 live births in DHS 1998 to 82 deaths per 1,000 live births in MICS 2011.

The data from DHS 1998, DHS 2008 and MICS 2011 are in line with this trend of under-five mortality rate decline over the last 3 decades. However, those from DHS 2003 and MICS 2006 show stagnation of under-five mortality rate above 100 deaths per 1,000 live births during the period of 18 years (1988 to 2006).

The most recent under-five mortality rate estimated from MICS 2011 (82 deaths per 1,000 live births) is about 2 percent higher than the estimate from the Ghana Demographic and Health Survey (DHS 2008). This minor difference is likely to be as a result of sampling errors.

Early childhood mortality rates by region, residence and socio-economic characteristics

Table CM.2 provides estimates of childhood mortality by region, residence and other socio-economic characteristics. To minimize sampling errors associated with mortality estimates and to ensure a sufficient number of cases for statistical reliability, the mortality rates shown in Table CM.2 are calculated for a ten-year period (2001-2011) preceding the survey. Note that the longer reference period allows the inclusion of more cases in the calculation and makes it possible to obtain more precise estimates.

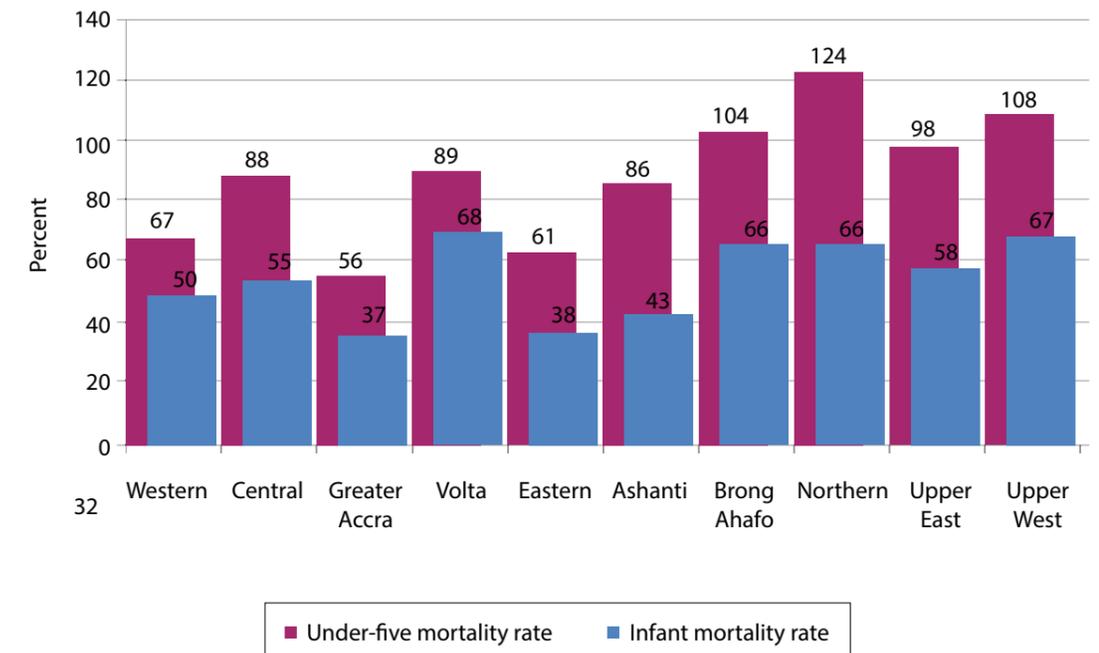
The data presented in Table CM.2 and Figure CM.3 reveal that under-5 mortality rate is lowest in the Greater Accra region (56 deaths per 1,000 live births), followed by Eastern region (61 deaths per 1,000 live births). Under-5 mortality rate is highest in the Northern region (124 deaths per 1,000 live births). Other regions with Under-5 mortality rate of over 100 deaths per 1,000 live births include Brong Ahafo (104 deaths per 1,000 live births), and Upper West (108 deaths per 1,000 live births). Also, Greater Accra (37 deaths per 1,000 live births) and Eastern region (38 deaths per 1,000 live births) have the lowest infant mortality rates. Regions with the highest infant mortality rates are Volta (68 deaths per 1000 live births), Upper West (67 deaths per 1000 live births), Northern and Brong Ahafo (both with 66 deaths per 1000 live births). The data also reveal that Volta (47 deaths per 1,000 live births), Brong Ahafo (44 deaths per 1000 live births) and Upper West (41 deaths per 1000 live births) have the highest neonatal mortality rates in Ghana, while Greater Accra (20 deaths per 1,000 live births) has the lowest.

Table CM.2: Early childhood mortality rates by background characteristics
Neonatal, post neonatal, Infant and Under-five mortality rates for the 10-year period preceding the survey by background characteristics, Ghana, 2011

Background Characteristics	Neonatal mortality rate (NMR) [1]	Post neonatal mortality rate (PNMR) [2]	Infant mortality rate (1q0) [3]	Child mortality rate (4q1) [4]	Under five mortality rate (5q0) [5]
Residence					
Urban	30	16	46	28	72
Rural	33	23	56	40	94
Region					
Western	27	24	50	17	67
Central	36	19	55	36	88
Greater Accra	20	17	37	19	56
Volta	47	21	68	22	89
Eastern	25	14	38	24	61
Ashanti	27	16	43	45	86
Brong Ahafo	44	21	66	41	104
Northern	39	27	66	63	124
Upper East	34	24	58	43	98
Upper West	41	26	67	44	108
Mother's/Caretaker's education					
None	28	26	54	45	97
Primary	36	18	54	31	83
Middle/JSS	34	16	50	28	76
Secondary +	(28)	(2)	(30)	(5)	(35)
Wealth index quintiles					
Poorest	35	25	61	48	106
Second	28	22	50	37	85
Middle	35	19	54	30	83
Fourth	37	15	52	36	86
Richest	24	14	38	15	52
Total	32	21	53	31	82

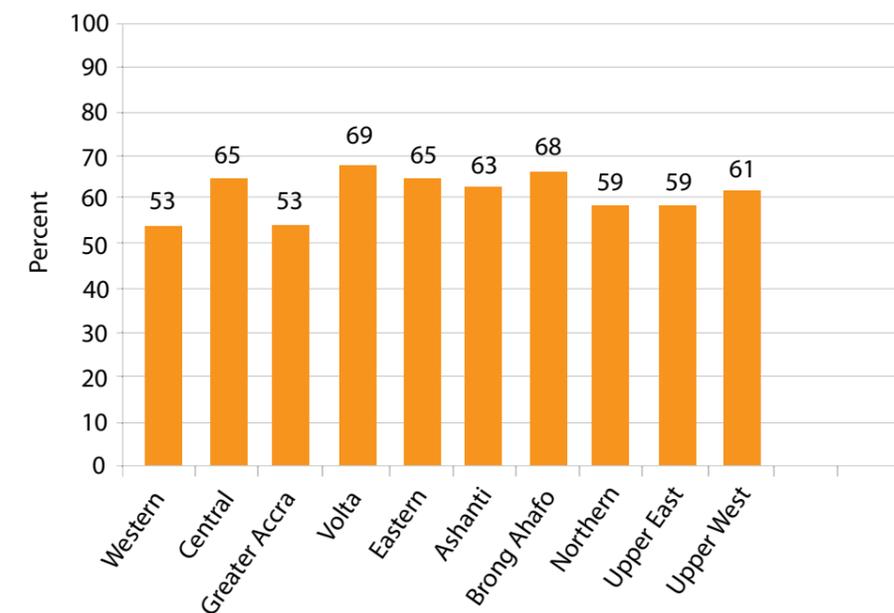
[1] MICS indicator 1.3
[2] MICS indicator 1.4
[3] MICS indicator 1.1; MDG indicator 4.1
[4] MICS indicator 1.5;
[5] MICS indicator 1.2, MDG indicator 4.2
Figures in parentheses '()' are based on 250-499 unweighted exposed persons.

Figure CM.3: Infant and Under-five mortality rates by region, Ghana, 2011



As child mortality drops across the world, due to commitment and action, evidence shows that reductions are predominantly made in deaths occurring past infancy and, increasingly, there is a demand for precision in and analysis of the period where most deaths occur (UNICEF and all., 2012). Figure CM.4 provides analysis of the contribution of neonatal mortality rate to the overall infant mortality rate by region. The analysis shows that the neonatal mortality rate represents more than 60 percent of infant mortality rate in 6 regions out of 10. This means that in those 6 regions (Volta, Brong Ahafo, Central, Eastern, Ashanti, and Upper West), over 60 percent of all infant deaths occur in the first month of life.

Figure CM.4: Percent contribution of Neonatal mortality rate to overall Infant mortality rate by Region, Ghana, 2011



Residence and Socio-economic Differentials in Childhood Mortality

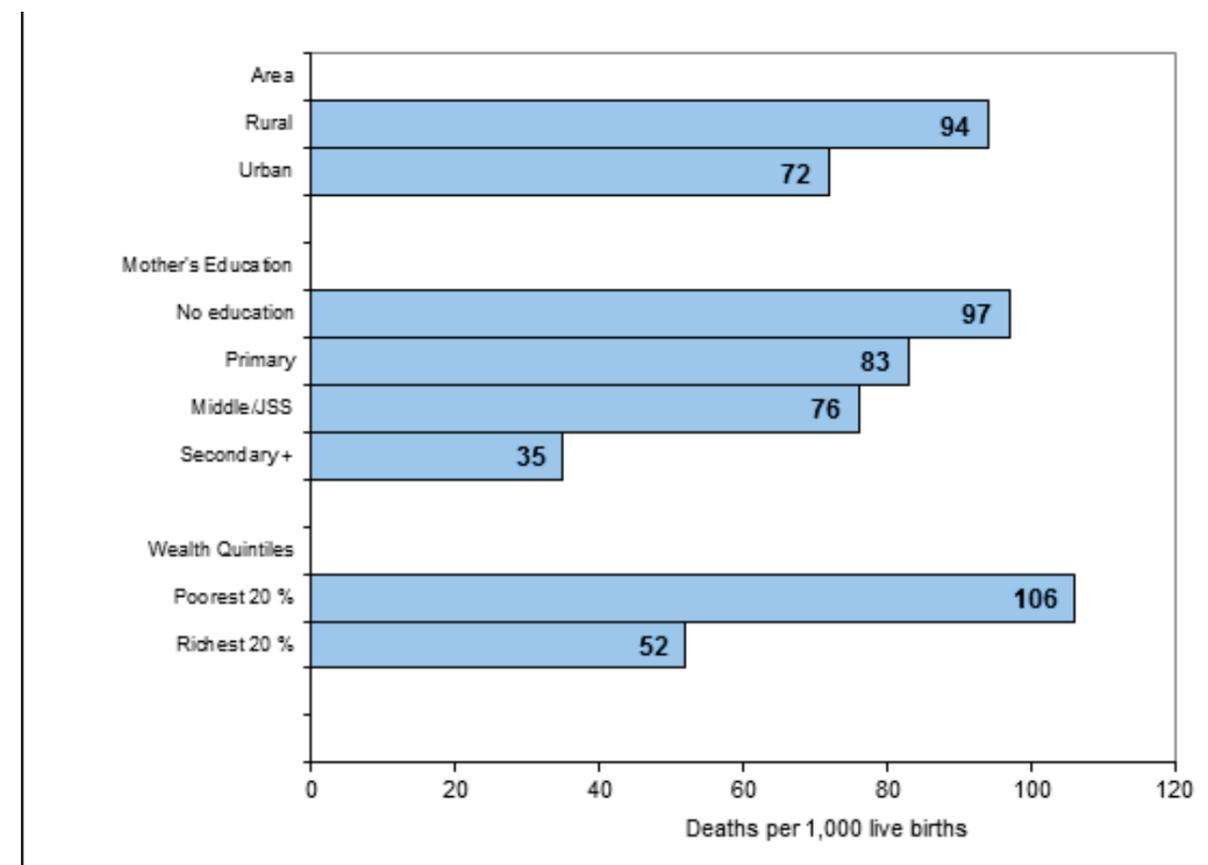
Table CM.2 also show differentials in childhood mortality rates by residence and two socio-economic variables: mother’s education and wealth quintiles. From the results, it is apparent that infant and child survival are associated with the residence and the socio-economic characteristics of mothers.

Generally, mortality in urban areas is consistently lower than in rural areas. Under-5 mortality is estimated at 72 deaths per 1,000 live births in urban areas, and 94 deaths per 1,000 live births in rural areas. For infant mortality, this is estimated at 46 deaths per 1,000 live births in urban areas, and 56 deaths per 1,000 live births in rural areas. The urban-rural difference is more pronounced for post neonatal mortality and child mortality rates.

Studies have demonstrated a strong relationship between a mother’s level of education and the survival of her child (Hobcraft, 1993), and this is fairly consistent for all childhood mortality indicators, except neonatal mortality rate. The results show that under-5 mortality rate is estimated at 97 deaths per 1000 live births for children whose mothers have no education and at 76 deaths per 1,000 live births for mothers with middle/JSS education. For children whose mothers have no education and/or primary education, infant mortality rate is estimated at 54 deaths per 1000 live births, and at 50 deaths per 1000 live births for children whose mothers have middle/JSS education. Due to the fewer exposures (250-499), analysis for children whose mothers have secondary or higher education has not been presented.

While childhood mortality tends to be differentiated among socio-economic groups, in the MICS 2011, significant variations are only noted for mortality of children in the poorest 20 percent of households, and the richest 20 percent of households. The MICS 2011 data reveal that children from the richest households have lower mortality rates, compared to children from the poorest households (Table CM.2 and Figure CM.5). For example, infant mortality is estimated at 61 per 1000 live deaths for children from the poorest wealth quintile, and 38 deaths per 1000 live deaths for children in the richest wealth quintile. This means that the children from the poorest wealth quintile are more (1.60 times) likely to die before their first birthday compared to those from the richest wealth quintile. Under-5 mortality is estimated at 106 deaths per 1,000 live births for children from the poorest households, compared to 52 deaths per 1,000 live births for children belonging to the wealthiest households. This means that the children from the poorest households are more than twice as likely to die before their fifth birthday as those from the richest households (Figure CM.5). However, for the other three wealth quintiles, an erratic pattern is observed, and in some cases, little differences are noted for all the childhood indicators. This is obviously due to sampling errors.

Figure CM.4: Under-5 mortality rates by residence and socio-economic characteristics, Ghana, 2011



Demographic Characteristics and Childhood Mortality

Demographic factors such as the sex of the child, age of the mother at birth, birth order, and length of the preceding birth interval, are strongly associated with the survival chances of young children. These factors include sex of the child, age of the mother at birth, birth order and length of the preceding birth interval. Table CM.3 and Figure CM.6 show the relationships between childhood mortality and these demographic variables. For all variables, childhood mortality rates estimates are calculated for a ten-year period before the survey to reduce sampling variability.

Childhood mortality rates are generally higher for males than females for all childhood mortality indicators (Figure CM.6). For example, under-five mortality rate is estimated at 94 deaths per 1,000 live births for boys, and 75 deaths per 1,000 live births for girls. This means that male children are 1.25 times more likely to die before the fifth birthday than females. Neonatal mortality rate is estimated at 37 deaths per 1000 live births for male children, and 27 deaths per 1000 live births for female children, which means that male children are 1.37 times more likely to die during the first month of life than their female counterparts.

Research has shown that births to young mothers and older mothers experience an elevated risk of mortality. Mother’s age at the time of child birth influences child survival in all periods as shown in Table CM.3 and Figure CM.6. For mothers aged below 20 years, infant mortality rate is estimated at 64 deaths per 1,000 live births, compared to 48 deaths per 1,000 live births for mothers aged 20-34 years. Infant mortality is also higher for children born to women aged 35-49 years (59 deaths per 1,000 live births). The under-five mortality rate is estimated at 105 deaths per 1,000 for women below the age of 20 years, 79 deaths per 1,000 live births for women aged 20-34 years, and 92 deaths per 1,000 live births for women aged 35-49 years.

First births and higher order births generally face an elevated risk of mortality. Data from the MICS 2011 confirm this pattern for the most part. Birth orders seven and higher experience the highest levels of childhood mortality, while mortality is lowest for second and third order births. For example, under-5 mortality rate is estimated at 114 deaths per 1,000 live births for birth order seven and higher, 75 deaths per 1,000 live births for birth orders 2-3, and 89 deaths per 1,000 live births for birth order 1 (Figure CM.6).

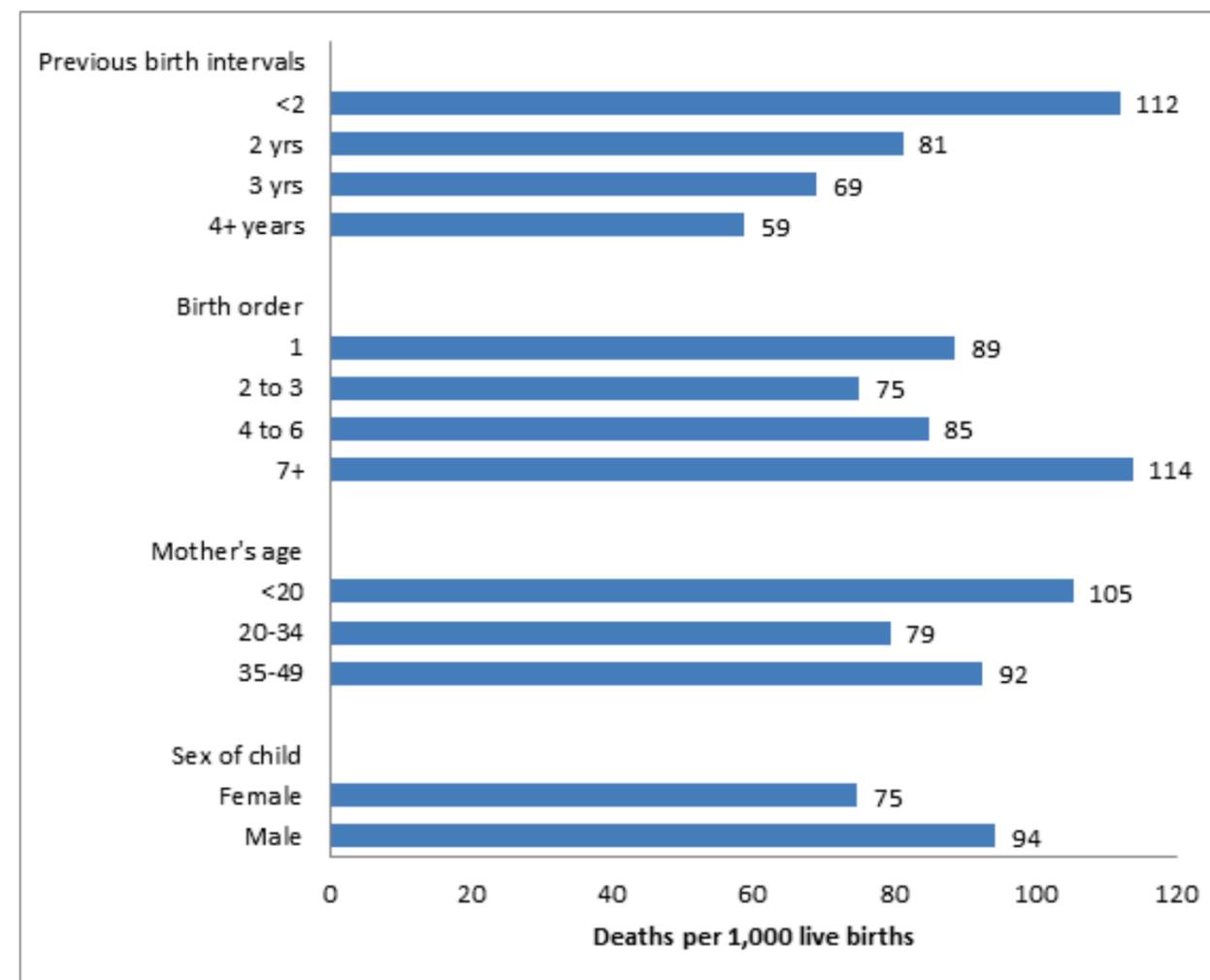
The birth interval also affects survival when there is an interval of less than two years between pregnancies, demonstrating the importance of spacing on child survival. This is fairly consistent in all childhood mortality indicators. For example, infant mortality rate for children born at less than a two-year interval is 75 deaths per 1,000 live births and 37 deaths per 1,000 live births when the birth interval is 3 years. This means that the children born at less than a two-year interval are more than twice likely to die before their first birthday compared to the ones born at 3 years interval. Under-five mortality rate is 112 deaths per 1,000 live births for birth intervals of less than 2 years and 69 deaths per 1,000 live births when a birth occurs 3 years after a previous birth. Children born at less than a two-year interval are more (1.6 times) likely to die before their fifth birthday compared to the ones born at 3 years interval.

Table CM.3: Early childhood mortality rates by demographic characteristics
Neonatal, post neonatal, Infant and Under-five mortality rates for the 10-year period preceding the survey by demographic characteristics, Ghana, 2011

Background Characteristics	Neonatal mortality rate (NMR) [1]	Post neonatal mortality rate (PNMR) [2]	Infant mortality rate(1q0) [3]	Child mortality rate (4q1) [4]	Under five mortality rate (5q0) [5]
Sex of child					
Male	37	21	58	39	94
Female	27	18	45	31	75
Mother's age					
<20	35	29	64	44	105
20-34	29	19	48	33	79
35-49	41	18	59	36	92
Birth order					
1	35	20	56	35	89
2-3	24	17	41	36	75
4-6	34	20	55	32	85
7+	48	28	76	41	114
Previous birth intervals					
<2	46	29	75	40	112
2 years	26	16	42	41	81
3 years	21	15	37	34	69
4+ years	25	13	38	21	59
Total	32	21	53	31	82

[1] MICS indicator 1.3
 [2] MICS indicator 1.4
 [3] MICS indicator 1.1; MDG indicator 4.1
 [4] MICS indicator 1.5;
 [5] MICS indicator 1.2, MDG indicator 4.2

Figure CM. 6: Under-5 mortality rates by demographic characteristics, Ghana, 2011





Nutritional Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for, they reach their growth potential.

Malnutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of the children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The Millennium Development target is to reduce by half the proportion of people who suffer from hunger between 1990 and 2015. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

In a well-nourished population, the distribution of height and weight for children under age five is similar to that of a reference population. Hence under-nourishment in a population can be gauged by comparing children's anthropometric measurements with that of a reference population. The reference population used in this report is based on new WHO growth standards¹. Each of the three nutritional status indicators can be expressed in standard deviation units (z-scores) from the median of the reference population.

Weight-for-age is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median of the reference population are considered moderately or severely underweight while those whose weight-for-age is more than three standard deviations below the median are classified as severely underweight.

Height-for-age is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median of the reference population are considered short for their age and are classified as moderately or severely stunted. Those whose height-for-age is more than three standard deviations below the median are classified as severely stunted. Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and recurrent or chronic illness.

Finally, children whose weight-for-height is more than two standard deviations below the median of the reference population are classified as moderately or severely wasted, while those who fall more than three standard deviations below the median are classified as severely wasted. Wasting is usually the result of a recent nutritional deficiency. The indicator may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence.

In Ghana MICS4, weights and heights of all children under 5 years of age were measured using anthropometric equipment recommended by UNICEF (www.childinfo.org). Findings in this section are based on the results of these measurements.

¹ http://www.who.int/childgrowth/standards/second_set/technical_report_2.pdf

Table NU.1 shows percentages of children classified into each of these categories, based on the anthropometric measurements that were taken during fieldwork. Additionally, the table includes the percentage of children who are overweight, which takes into account those children whose weight for height is above 2 standard deviations from the median of the reference population, and mean z-scores for all three anthropometric indicators.

Children whose full birth date (month and year) were not obtained, and children whose measurements are outside the plausible range are excluded from Table NU.1. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured, whichever is applicable. For example, if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting. Percentages of children by age and reasons for exclusion are shown in the Data Quality Tables DQ.6 and DQ.7 in Appendix D. Overall, 99 percent of children had both their weights and heights measured (Table DQ.6). Less than two percent did not have their weight measured. One percent of children did not have their months of birth recorded. However, there was no case of children with neither year nor month missing. Table DQ.7 shows that due to incomplete dates of birth, implausible measurements, and missing weight and/or height, 3 percent of children have been excluded from the calculations of the weight-for-height indicator.

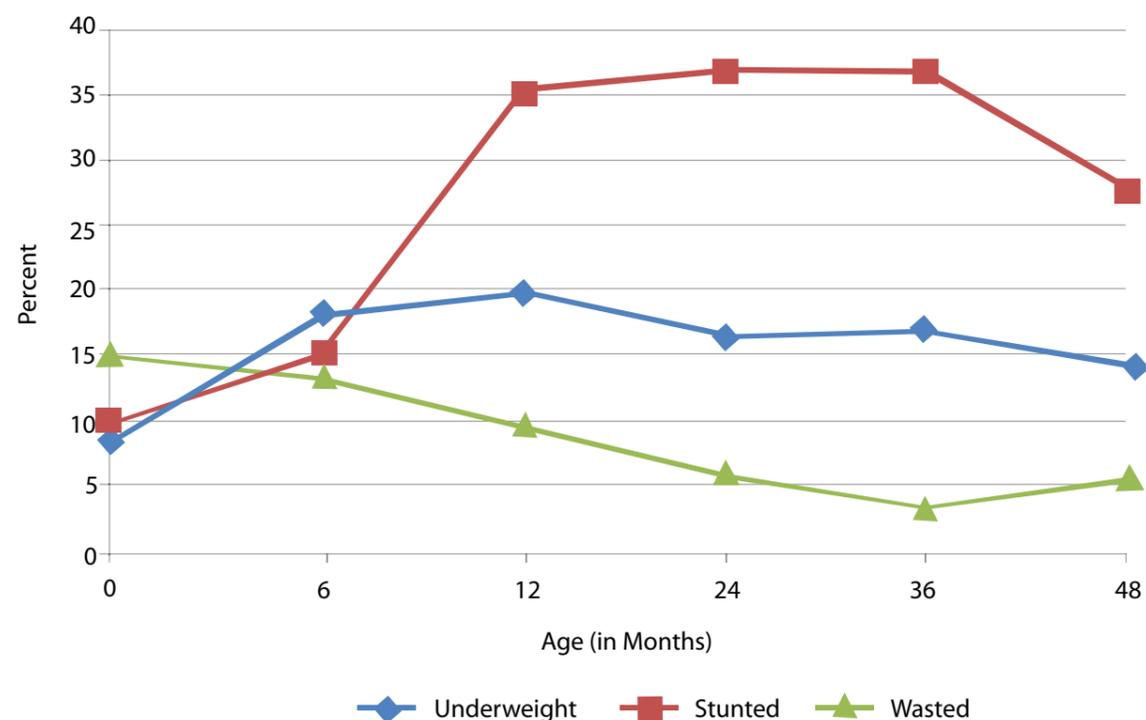
Thirteen percent of children under age five in Ghana are moderately or severely underweight and 3 percent are classified as severely underweight (Table NU.1). Twenty-three percent of the children are moderately or severely stunted or too short for their age, and 7 percent are severely stunted. Also, 6 percent of the children under five are moderately or severely wasted or too thin for their height, while 1 percent is severely wasted.

Children in Northern and Upper East regions are more likely to be underweight and stunted than children in other regions (see Table NU.1). In contrast, the percentage of wasting is highest in Upper West and Volta regions (9% for each region). Furthermore, the percentage of children who are underweight and stunted are higher in the rural than the urban area. Those children whose mothers have secondary or higher education are less likely to be underweight (9%) and stunted (13%) compared to children whose mothers have no education (17% and 29%, respectively). Boys appear more likely to be underweight (15%), stunted (25%), and wasted (7%) than girls (11%, 20% and 5% respectively). The age pattern shows that children aged 12-23 months are more likely to be underweight, in comparison to children who are younger and older; children aged 24-35 months are more likely to be stunted in comparison to children who are younger or older; and children aged 0-11 months are more likely to be wasted in comparison to children who are older (Figure NU.1). This pattern is expected for underweight and stunting as it is related to the ages at which many children cease to be breastfed and are exposed to contamination in water, food, and the environment.

Background Characteristics	Weight for age:	Weight for age:	Weight for age:	Weight for age:	Height for age:	Height for age:	Height for age:	Height for age:	Weight for height:				
	% below -2 sd [1]	% below -3 sd [2]	Mean Z-Score (SD)	Number of children	% below -2 sd [3]	% below -3 sd [4]	Mean Z-Score (SD)	Number of children	% below -2 sd [5]	% below -3 sd [6]	% above +2 sd	Mean Z-Score (SD)	Number of children
Sex													
Male	15.4	3.1	-9	3665	25.3	8.3	-1.1	3636	7.2	1.9	2.7	-4	3665
Female	11.3	2.1	-7	3710	20.3	5.3	-1.0	3703	5.2	.9	2.5	-3	3716
Residence													
Urban	10.5	1.6	-7	3196	18.1	4.2	-9	3194	5.7	1.5	2.4	-3	3191
Rural	15.5	3.4	-9	4178	26.3	8.8	-1.2	4145	6.6	1.4	2.8	-3	4190
Region													
Western	14.3	2.9	-8	718	22.6	7.0	-1.1	713	7.7	1.8	3.0	-3	722
Central	13.5	3.1	-9	727	23.1	7.3	-1.1	723	5.4	1.6	1.4	-3	727
Greater Accra	8.3	.7	-6	1110	13.7	3.7	-7	1110	3.1	.4	3.2	-3	1119
Volta	10.9	1.6	-8	590	22.2	6.7	-9	589	8.5	1.9	2.1	-5	597
Eastern	10.5	1.9	-7	816	21.3	4.4	-9	812	6.8	.7	2.4	-3	812
Ashanti	11.9	2.1	-7	1377	21.7	6.6	-1.0	1370	6.6	2.4	4.6	-2	1366
Brong Ahafo	11.8	1.7	-8	660	19.3	4.9	-1.1	655	3.2	.5	1.7	-2	662
Northern	24.2	6.2	-1.3	836	37.4	13.3	-1.7	834	8.1	1.7	1.1	-4	840
Upper East	20.0	4.9	-1.2	323	31.5	9.8	-1.5	318	7.2	1.2	1.6	-5	319
Upper West	15.0	3.4	-1.0	219	23.1	7.5	-1.1	215	9.2	1.8	2.0	-5	215
Age													
0-5	6.7	1.7	-2	800	7.8	1.9	.0	795	11.4	3.6	4.7	-4	795
6-11	15.8	2.1	-8	716	12.5	2.3	-4	714	11.3	1.9	2.1	-8	714
12-23	16.5	3.4	-9	1422	26.5	9.0	-1.2	1411	7.7	1.9	3.4	-4	1418
24-35	13.5	2.8	-9	1519	28.2	8.7	-1.3	1515	4.7	1.0	2.4	-2	1520
36-47	13.7	3.1	-9	1534	27.9	8.5	-1.3	1522	2.8	.4	2.0	-2	1531
48-59	12.2	1.8	-1.0	1384	21.3	5.7	-1.2	1382	4.6	1.0	1.7	-3	1403
Mother's education													
None	17.3	4.3	-1.0	2403	29.2	10.6	-1.3	2390	7.8	1.8	2.3	-4	2405
Primary	13.7	2.6	-8	1603	25.2	6.1	-1.2	1590	5.1	1.1	3.3	-3	1605
Middle/JSS	10.8	1.4	-7	2524	18.2	5.1	-9	2515	5.2	1.5	2.0	-3	2526
Secondary +	9.2	1.1	-5	845	13.2	2.7	-6	844	6.6	.7	3.9	-3	844
Wealth index quintile													
Poorest	20.0	4.9	-1.1	1687	33.2	12.5	-1.5	1670	7.6	1.3	2.6	-4	1694
Second	14.8	3.6	-9	1532	26.7	8.4	-1.2	1522	7.3	1.8	3.3	-3	1531
Middle	13.2	2.6	-9	1526	22.8	6.9	-1.1	1528	6.0	2.1	2.2	-3	1529
Fourth	10.3	.9	-7	1372	15.8	2.8	-8	1364	4.8	.9	.9	-4	1372
Richest	6.3	.3	-4	1258	11.6	1.5	-5	1256	4.8	.8	4.2	-2	1254
Total	13.4	2.6	-8	7375	22.7	6.8	-1.1	7338	6.2	1.4	2.6	-3	7381

[1] MICS indicator 2.1a and MDG indicator 1.8
 [2] MICS indicator 2.1b
 [3] MICS indicator 2.2a, [4] MICS indicator 2.2b
 [5] MICS indicator 2.3a, [6] MICS indicator 2.3b

Figure NU.1: Percentage of Children under-5 who are underweight, stunted and wasted Ghana, 2011



Marked differences are observed in all three indices with regard to the wealth status of households. For example, one in three (33%) children from the poorest households is stunted, compared to 12 percent of children from the richest households. Also, while 20 percent of children from the poorest wealth quintile are underweight, this reduces to 14 percent for children in the middle wealth quintile, and to 7 percent for children in the richest wealth quintile. Children from the poorest households are at least twice more likely to be underweight, stunted or wasted in comparison with children from the wealthiest households.

Overweight is not a big problem among children under five in Ghana. Overall, about 3 percent of the children were found to be overweight – these are the children whose weight for height is above 2 standard deviations from the median of the reference population (Table NU.1).

Breastfeeding and Infant and Young Child Feeding

Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers stop breastfeeding too soon and there are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition and is unsafe if clean water is not readily available.

WHO/UNICEF have the following feeding recommendations:

- Early initiation of breastfeeding within the first hour of birth;
- Exclusive breastfeeding for the first six months;
- Continued breastfeeding for two years or more;
- Safe, appropriate and adequate complementary foods beginning at 6 months; and
- Frequency of complementary feeding: 2 times per day for 6-8 month olds; 3 times per day for 9-11 month olds.

The indicators related to recommended child feeding practices are as follows:

- Early initiation of breastfeeding (within 1 hour of birth);
- Exclusive breastfeeding rate (< 6 months);
- Predominant breastfeeding (< 6 months);
- Continued breastfeeding rate (at 1 year and at 2 years);
- Duration of breastfeeding
- Age-appropriate breastfeeding (0-23 months)
- Introduction of solid, semi-solid and soft foods (6-8 months)
- Minimum meal frequency (6-23 months)
- Minimum diet diversity (6-23 months)
- Minimum acceptable diet (frequency and diet diversity)
- Milk feeding frequency for non-breastfeeding children (6-23 months)
- Bottle feeding (0-23 months)

Table NU.2 provides the proportion of children born in the last two years who were ever breastfed, those who were first breastfed within one hour and one day of birth, and those who received a prelacteal feed. Although a very important step in the management of lactation and establishment of a physical and emotional relationship between the baby and the mother, less than half (46%) of babies are breastfed for the first time within one hour of birth, while 84 percent of new-borns in Ghana start breastfeeding within one day of birth. Initiation of breastfeeding varies among regions. The proportion of infants that are breastfed within one hour of birth is higher in the Western and Upper West Regions at just over 60 percent, and lower in Greater Accra Region (29%). Greater Accra Region again has the lowest percentage of infants who started breastfeeding within one day of birth (68%). Ashanti, Upper East, Upper West and Eastern regions all have the highest proportion of newborns first breastfeeding within one day of birth (about 90%).

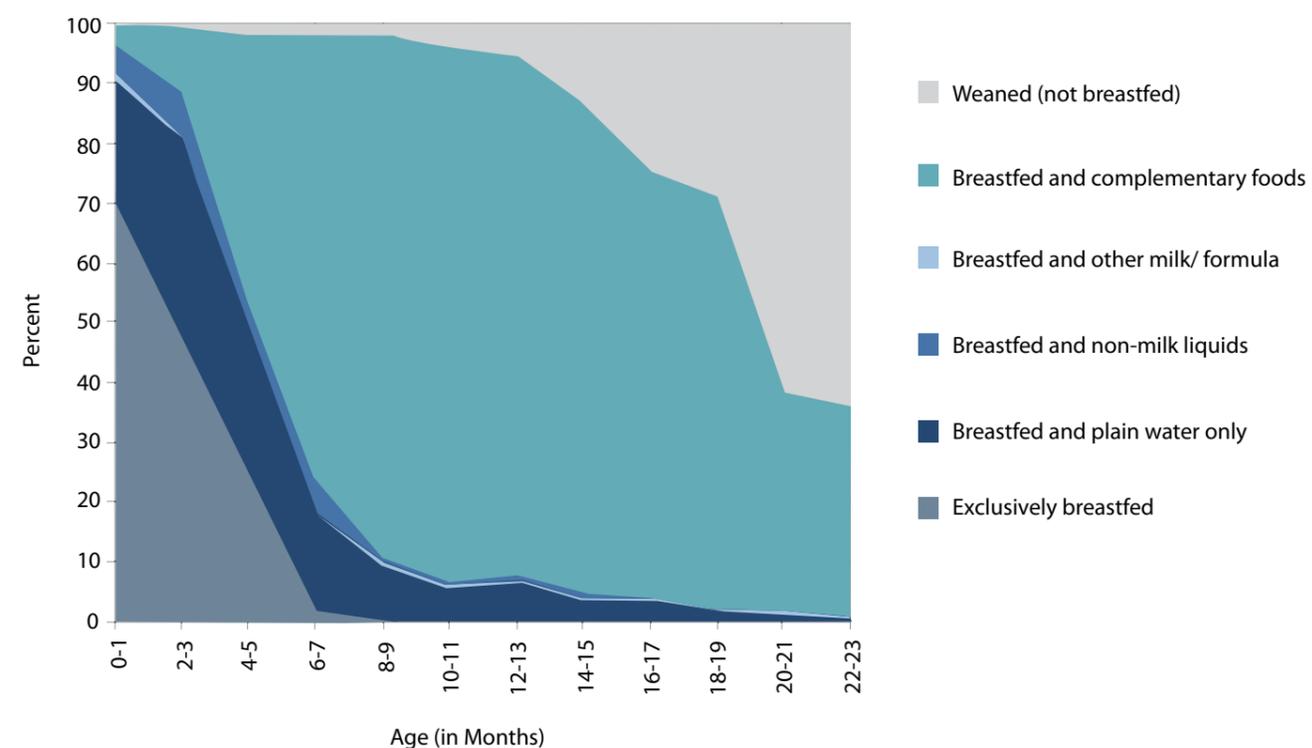
Little differences are observed by education background of the mothers with respect to breastfeeding their children within one hour or one day of birth. An irregular pattern is observed in initial breastfeeding and household wealth. For example, 50 percent of mothers in the second wealth quintile breastfed their infants within one hour of birth, compared to 43 percent of mothers in the poorest wealth quintile, and 42 percent of mothers in the richest wealth quintile. Similarly, mothers from the poorest and richest wealth quintiles are less likely to breastfeed their babies within one day of birth, compared to mothers from the other wealth categories. Also, infants delivered in a public sector health facility are more likely to be breastfed within one hour of birth (51%) and within one day of birth (87%) than infants delivered in a private sector health facility, at home, or other places.

Table NU.2: Initial breastfeeding Percentage of last-born children in the 2 years preceding the survey who were ever breastfed, percentage who were breastfed within one hour of birth and within one day of birth, and percentage who received a prelacteal feed, Ghana, 2011

Background Characteristics	Percentage ever breastfed [1]	Percentage who were first breastfed: Within one hour of birth [2]	Percentage who were first breastfed: Within one day of birth	Percentage who received a prelacteal feed	Number of last-born children in the two years preceding the survey
Region					
Western	99.5	61.9	89.3	20.5	270
Central	98.4	53.2	84.4	19	246
Greater Accra	99.6	28.6	67.9	26.6	397
Volta	99.2	41.7	89.7	4.9	189
Eastern	98.5	49.7	83.7	9.7	288
Ashanti	99	51.3	90.9	26	449
Brong Ahafo	97.5	36.3	78.2	22.4	227
Northern	98.5	39	84.2	14.6	283
Upper East	99.6	55.6	90.9	15	105
Upper West	98.4	61.1	90.9	6.8	75
Residence					
Urban	99.3	44.9	84.4	17.8	1068
Rural	98.5	46.6	83.2	19.4	1460
Months since last birth					
0-11 months	98.5	46.1	84	17.6	1077
12-23 months	99.3	48.7	85.7	17.3	907
Assistance at delivery					
Skilled attendant	99.2	48.3	85.6	15.8	1729
Traditional birth attendant	99.1	47.1	82.9	32.2	403
Other	98.9	33.5	79.6	16.7	314
Missing	90.8	35.5	64	22.9	83
Place of delivery					
Public sector health facility	99.2	50.7	86.6	13.9	1434
Private sector health facility	99.2	38.7	82.7	24.2	269
Home	99	40.3	80	25.3	793
Other/Missing	(76.2)	(29.1)	(56)	(29.5)	32
Mother's education					
None	98.6	44.9	83.4	17.7	733
Primary	99.5	45.8	82.3	17.6	565
Middle/JSS	98.4	46.7	85.2	18.7	886
Secondary +	99.6	45.8	82.7	23	344
Wealth index quintiles					
Poorest	99.4	42.5	80.7	16.8	560
Second	97.4	50.4	86.6	20.9	546
Middle	98.6	47.9	88.4	13.2	500
Fourth	99.5	45.4	83.7	19.5	455
Richest	99.6	43	78.9	23.9	467
Total	98.9	45.9	83.7	18.8	2528

[1] MICS indicator 2.4
 [2] MICS indicator 2.5
 Figures in parentheses '()' are based on 25-49 unweighted cases

Figure NU.2: Infant feeding patterns by age
Percentage distribution of children aged under 3 years by feeding pattern by age group, Ghana, 2011



In Table NU.3, breastfeeding status is based on the reports of mothers/caretakers of children's consumption of food and fluids in the 24 hours prior to the interview. Exclusively breastfed refers to infants who received only breast milk (and vitamins, mineral supplements, or medicine). The table shows exclusive breastfeeding of infants during the first six months of life, as well as continued breastfeeding of children at ages 12-15 and 20-23 months of age.

Background Characteristics	Children 0-5 months			Children 12-15 months		Children 20-23 months	
	Percent exclusively breastfed [1]	Percent predominantly breastfed [2]	Number of children	Percent breastfed (Continued breastfeeding at 1 year) [3]	Number of children	Percent breastfed (Continued breastfeeding at 2 years) [4]	Number of children
Sex							
Male	46.2	72.1	418	86.6	234	38.1	227
Female	45.1	69.8	400	94.1	288	36.7	205
Region							
Western	(46.8)	(76.7)	72	(98.5)	62	*	40
Central	39.5	66.7	73	89.8	40	35.1	57
Greater Accra	(21.1)	(38.1)	110	(75.0)	93	*	62
Volta	(49.1)	(80.3)	64	*	34	*	19
Eastern	(42.6)	(74.0)	107	*	42	*	46
Ashanti	39.0	61.9	172	(90.9)	108	(25.9)	81
Brong Ahafo	69.8	91.1	82	*	47	(41.4)	42
Northern	63.6	90.4	79	98.3	63	85.1	49
Upper East	(58.4)	(92.0)	35	95.5	19	76.6	22
Upper West	67.0	81.6	23	91.2	14	87.7	15
Residence							
Urban	48.9	68.5	344	85.9	242	20.5	177
Rural	43.3	72.7	473	94.9	280	49.3	255
Mother's education							
None	55.0	82.6	234	96.4	143	64.9	145
Primary	43.1	75.4	177	93.7	118	38.1	87
Middle/JSS	39.9	63.4	307	89.9	201	18.4	161
Secondary +	46.1	59.3	100	(74.5)	60	(13.2)	40
Wealth index quintile							
Poorest	53.7	80.4	169	96.5	109	78.9	97
Second	39.7	73.8	163	98.3	126	39.8	113
Middle	45.1	73.0	186	95.3	113	18.1	75
Fourth	41.7	62.8	135	91.0	80	28.6	84
Richest	47.2	62.8	164	(68.3)	94	(4.6)	64
Total	45.7	71.0	818	90.7	522	37.4	432
<small>[1] MICS indicator 2.6 [2] MICS indicator 2.9 [3] MICS indicator 2.7 [4] MICS indicator 2.8 An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.</small>							

Approximately 46 percent of children aged less than six months are exclusively breastfed, a level considerably lower than that recommended by the WHO/UNICEF. By age 12-15 months, 91 percent of children are still being breastfed, and by age 20-23 months, 37 percent are still breastfed. Little differences are observed in exclusive breastfeeding by sex of the child - 46 percent for boys and 45 percent for girls. In contrast, girls aged 12 - 15 months (94%) are more likely to continue breastfeeding at one year than boys (87%). Given the small number of children in the sample, it is not possible to have meaningful comparisons for all 10 regions.

In terms of area of residence, infants aged 0-5 months in urban area (49%) are more likely to be exclusively breastfed than their counterparts in rural areas (43%). The reverse is true for infants in the 12-15 months and 20-23 months age-groups, where children in the urban areas are less likely to receive continued breastfeeding at year one and two. In all age categories and breastfeeding status, breastfeeding decreases with the mother's educational level. For example, children 0-5 months whose mothers have no education are more likely to be exclusively breastfed (55%), compared to children whose mothers have secondary or higher education (46%). However, no conclusion can be made for continued breastfeeding at 2 years for children aged 20-23 months, due to the small number with secondary and higher education.

Figure NU.2 shows the detailed pattern of breastfeeding by the child's age in months. Even at the youngest ages, the majority of children are receiving liquids or foods other than breast milk. By the end of the sixth month, the percentage of children exclusively breastfed is below three percent. Only about 35 percent of children are receiving breast milk after 2 years.

As already shown in the Table NU.3, and contrary to the WHO/UNICEF recommendation, all children under 6 months in Ghana are not exclusively breastfed. The figure NU.2 indicates that the percentage of "Exclusively breastfed" decreases rapidly from 71 percent (aged 0-1 month) to 49 percent (age 2-3 months), 24 percent (age 4-5 months); and above the age of 6 months, less than 3 percent of the children are still "exclusively breastfed". For the age-groups 6-7 to 18-19 months, breastfeeding and complementary foods is the predominant infant feeding pattern, with percentages ranging between 69 percent and 89 percent. For age-groups 20-21 and 22-23 months, this proportion is halved due to the huge increase in the percentage of "weaned" children. The percentage of "weaned" increases with age and approximately 64 percent of the children are weaned before turning 2 years old.

Table NU.4 shows the median duration of breastfeeding by selected background characteristics. Among children 0-35 months, the median duration is 20.4 months for any breastfeeding, 2.2 months for exclusive breastfeeding, and 4.2 months for predominant breastfeeding. The median duration of breastfeeding varies among regions for children aged 0-35 months. Greater Accra region has the lowest median duration of breastfeeding for any breastfeeding (17.5 months), exclusive breastfeeding (1.1 months), and predominant breastfeeding (1.7 months). On the other hand, Upper West region has the highest median duration of breastfeeding for any breastfeeding (26.2 months), Brong Ahafo region has the highest median duration for exclusive breastfeeding (4.0 months), and Upper East region has the highest median duration for predominant breastfeeding (7.0 months).

In terms of area of residence, the median duration of any breastfeeding is higher for rural areas (21.6 months), than urban areas (18.6 months). Little variation is found between urban and rural areas in the median duration of exclusive breastfeeding and predominant breastfeeding. For all breastfeeding categories, the median duration of breastfeeding decreases with mother's education level: for example, for any breastfeeding, the median duration is 23.5 months for mothers with no education, compared to 18.0 months for mothers with middle/JSS and Secondary or higher education. For exclusive breastfeeding, the median duration is 2.9 months for mothers with no education, compared to 1.8 months for mothers with Middle/JSS or Secondary and higher education. The median duration decreases with wealth index quintile. The median duration of 25.7 months for any breastfeeding, 2.8 months for exclusive breastfeeding, and 5.7 months for predominant breastfeeding for the poorest wealth quintile is the highest compared to all other wealth quintile groups.

Table NU.4: Duration of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children age 0-35 months, Ghana, 2011

Background Characteristics	Median duration (in months) of			Number of children age 0-35 months
	Any breastfeeding [1]	Exclusive breastfeeding	Predominant breastfeeding	
Sex				
Male	20.3	2.3	4.3	2233
Female	20.5	2.1	4.2	2315
Region				
Western	20.8	2.3	4.0	447
Central	19.6	1.2	3.7	454
Greater Accra	17.4	1.1	1.7	673
Volta	22.1	2.5	5.4	338
Eastern	18.0	2.0	4.0	520
Ashanti	17.9	1.6	3.9	895
Brong Ahafo	21.1	4.0	6.4	411
Northern	25.1	3.5	6.8	491
Upper East	25.5	3.4	7.0	184
Upper West	26.2	3.8	5.9	135
Residence				
Urban	18.6	2.4	4.0	1978
Rural	21.6	2.1	4.5	2570
Mother's education				
None	23.5	2.9	5.8	1355
Primary	21.1	2.1	4.8	1007
Middle/JSS	18.0	1.8	3.5	1607
Secondary+	18.0	1.8	3.3	579
Wealth index quintile				
Poorest	25.7	2.8	5.7	1011
Second	20.7	1.6	4.4	917
Middle	19.6	2.3	4.8	936
Fourth	18.5	2.1	3.2	868
Richest	15.9	2.1	3.8	815
Median	20.4	2.2	4.2	4548
Mean for all children (0-35 months)	20.5	2.7	5.1	4548

[1] MICS indicator 2.10

The adequacy of breastfeeding in children aged 0-23 months is provided in Table NU.5. Different criteria of adequate feeding are used depending on the age of the child. For infants aged 0-5 months, exclusive breastfeeding is considered as adequate feeding, while infants aged 6-23 months are considered to be adequately fed if they are fed the minimum number of times according to age. For children aged 0-5 months, little differences are observed among male and female children. For children aged 6-23 months, 69 percent males and 73 percent females are currently breastfed and receiving solid, semi-solid or soft foods. Some regional variations are also observed. About 70 percent of children aged 0-5 months are being adequately fed in Brong Ahafo region, the highest proportion compared to about a fifth (21%) for Greater Accra, which has the lowest. Upper West has the highest proportion of children aged 6-23 months (86%) and children aged 0-23 months (81%) that can be considered adequately fed, compared to Greater Accra, which has the lowest at 60 percent of children aged 6-23 months and 51 percent of children aged 0-23 months that are adequately fed. With regard to other background characteristics of the mother, those with no education, and those with primary education are more likely to feed their children adequately compared to mothers with other levels of education. Consequently, only 71 percent of children aged 6-23 months and 64 percent of children aged 0-23 months can be said to be adequately fed.

Background Characteristics	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Percent exclusively breastfed [1]	Number of children	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Percent appropriately breastfed [2]	Number of children
Sex						
Male	46.2	418	69.0	1077	62.6	1495
Female	45.1	400	72.6	1100	65.3	1500
Region						
Western	(46.8)	72	77.3	243	70.3	315
Central	39.5	73	68.6	236	61.7	309
Greater Accra	(21.1)	110	60.3	367	51.3	477
Volta	(49.1)	64	77.3	157	69.1	220
Eastern	42.6	107	65.9	245	58.8	352
Ashanti	39.0	172	64.9	346	56.3	518
Brong Ahafo	69.8	82	73.5	177	72.3	259
Northern	63.6	79	80.6	256	76.6	334
Upper East	(58.4)	35	82.9	88	75.9	123
Upper West	67.0	23	85.9	64	80.8	87
Residence						
Urban	48.9	344	65.7	932	61.2	1276
Rural	43.3	473	74.6	1246	66.0	1719
Mother's education						
None	55.0	234	76.7	643	70.9	877
Primary	43.1	177	74.7	488	66.3	665
Middle/JSS	39.9	307	66.3	743	58.6	1050
Secondary +	46.1	100	63.0	303	58.8	403
Wealth index quintile						
Poorest	53.7	169	82.9	487	75.4	656
Second	39.7	163	72.0	486	63.9	649
Middle	45.1	186	72.5	406	63.9	592
Fourth	41.7	135	68.4	406	61.8	541
Richest	47.2	164	54.9	393	52.6	557
Total	45.7	818	70.8	2177	63.9	2995
[1] MICS indicator 2.6 [2] MICS indicator 2.14 Figures in parentheses (') are based on 25-49 unweighted cases.						

Adequate complementary feeding of children from 6 months to two years of age is particularly important for growth and development and the prevention of under-nutrition. Continued breastfeeding beyond six months should be accompanied by consumption of nutritionally adequate, safe and appropriate complementary foods that help meet nutritional requirements when breast milk is no longer sufficient. This requires that for breastfed children, two or more meals of solid, semi-solid or soft foods are needed if they are six to eight months old, and three or more meals if they are aged 9-23 months of age. For children aged 6-23 months and older who are not breastfed, four or more meals of solid, semi-solid or soft foods or milk feeds are needed.

Overall, 75 percent of all infants aged 6-8 months received solid, semi-solid, or soft foods (Table NU.6). Among currently breastfeeding infants, figure is 74 percent. Table NU.6 also shows that infants aged 6-8 months in urban areas (80%) are more likely to receive solid, semi-solid, or soft foods, compared to those in rural areas (71%).

Background Characteristics	Currently breastfeeding		Currently not breastfeeding		All	
	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods [1]	Number of children age 6-8 months
Sex						
Male	74.0	203	*	3	74.4	206
Female	74.6	192	*	5	75.3	197
Residence						
Urban	79.8	169	*	3	80.1	172
Rural	70.2	226	*	5	70.9	231
Total	74.3	395	100.0	8	74.8	403
[1] MICS indicator 2.12 An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.						

Table NU.7 presents the proportion of children aged 6-23 months who received semi-solid or soft foods the minimum number of times or more during the previous day according to breastfeeding status (see the note in Table NU.7 for a definition of minimum number of times for different age groups). Overall, more than half of the children aged 6-23 months (57%) were receiving solid, semi-solid and soft foods the minimum number of times. A slightly higher proportion of male children (59%) were enjoying the minimum meal frequency compared to female children (56%).

Among currently breastfed children aged 6-23 months, 57 percent were receiving solid, semi-solid and soft foods the minimum number of times and this proportion was higher among male children (59%) compared to females (56%). Among non-breastfeeding children, 58 percent received solid, semi-solid and soft foods or milk feeds 4 times or more.

Table NU.7: Minimum meal frequency

Percentage of children aged 6-23 months who received solid, semi-solid, or soft foods (and milk feeds for non-breastfeeding children) the minimum number of times or more during the previous day, according to breastfeeding status, Ghana, 2011

Background Characteristics	Currently breastfeeding		Currently not breastfeeding			All	
	Percent receiving solid, semi-solid and soft foods the minimum number of times	Number of children age 6-23 months	Percent receiving at least 2 milk feeds [1]	Percent receiving solid, semi-solid and soft foods or milk feeds 4 times or more	Number of children age 6-23 months	Percent with minimum meal frequency [2]	Number of children age 6-23 months
Sex							
Male	59.1	824	13.3	58.8	254	59.0	1077
Female	55.5	883	13.2	56.2	217	55.6	1100
Age							
6-8 months	59.4	395	64.5	*	8	59.5	403
9-11 months	53.2	313	62.9	*	9	54.5	322
12-17 months	54.7	668	19.5	61.1	112	55.7	780
18-23 months	63.6	331	8.6	55.1	342	59.3	673
Region							
Western	46.6	204	3.6	*	39	45.6	243
Central	62.4	173	6.1	57.4	63	61.1	236
Greater Accra	59.2	244	13.2	(59.2)	122	59.2	367
Volta	50.5	134	28.0	*	23	52.4	157
Eastern	55.5	175	10.5	(23.1)	70	46.2	245
Ashanti	73.6	242	22.0	(80.7)	104	75.8	346
Brong Ahafo	61.1	148	8.7	*	29	65.8	177
Northern	49.1	245	13.9	*	11	48.4	256
Upper East	47.7	81	.0	*	7	45.7	88
Upper West	61.0	60	14.5	*	4	60.2	64
Residence							
Urban	58.2	676	16.7	60.2	255	58.8	932
Rural	56.6	1030	9.2	54.5	216	56.3	1246
Mother's education							
None	55.0	563	7.9	50.0	81	54.4	643
Primary	52.8	401	2.7	43.4	87	51.1	488
Middle/JSS	59.2	525	15.5	63.9	218	60.6	743
Secondary +	66.4	218	23.2	(63.2)	85	65.5	303
Wealth index quintile							
Poorest	53.0	451	.0	45.3	36	52.4	487
Second	55.5	390	6.3	45.8	96	53.6	486
Middle	59.8	321	9.0	65.6	85	61.0	406
Fourth	58.2	297	21.9	64.0	109	59.7	406
Richest	63.3	247	17.1	59.0	146	61.7	393
Total	57.2	1707	13.2	57.6	471	57.3	2177

[1] MICS indicator 2.15

[2] MICS indicator 2.13

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

Infant and young child feeding (IYCF) practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival². Improving infant and young child feeding practices in children aged 6–23 months of age is therefore critical to improved nutrition, health and development of children. Additional to the minimum meal frequency for children aged 6-23 months, the national MICS also included questions on the minimum dietary diversity by asking mothers/caretakers of children aged 6-23 months, if the child had consumed any food items in the following 7 food groups, on the day or night preceding the survey:

- grains, roots and tubers
- legumes and nuts
- dairy products (milk, yogurt, cheese)
- flesh foods (meat, fish, poultry and liver/organ meats)
- eggs
- vitamin-A rich fruits and vegetables
- other fruits and vegetables

As per WHO/UNICEF guidelines on feeding practices for children aged 6-23 months, the cut-off of at least 4 of the 7 food groups above was selected because it is associated with better quality diets for both breastfed and non-breastfed children. Consumption of foods from at least 4 food groups on the previous day would also mean that many of the children had a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (grain, root or tuber). For the Ghana MICS survey, it should be noted that although the quantity of food consumed matters and influences nutrition status, due to measurement challenges, the survey only recorded whether or not the food items were consumed and not the amounts.

Table NU.8 presents the percentage of children aged 6-23 months who received at least 4 groups of food the day or night preceding the survey and the percentage of those who received at least four groups and at least the minimum times of feeding according to age. Table NU.8 reveals that for children aged 6-23 months currently breastfeeding, 46 percent consumed food items from at least 4 food groups, and 34 percent consumed food items from 4 or more food groups and were fed the minimum number of times. Consumption of food items from at least 4 food groups increases with age – from 17 percent for children aged 6-8 months, 46 percent for children aged 9-11 months, 57 percent for children aged 12-17 months, and nearly 60 percent for children aged 18-23 months. This age pattern is noteworthy, and although varied food items were available in the households, the younger infants (6-8 months) received much less varied diets compared to older children.

Overall, the results show that 31 percent of all children 6-23 months were fed according to the three IYCF practices the day and night prior to the survey, i.e. they received breast milk or milk product, they were fed the minimum number of times according to age, and they received at least four different food groups. Brong Ahafo (41%), Ashanti (39%), Upper West and Volta (38% each) had the highest percentages of children 6-23 months who were fed according to the three IYCF practices, while Northern and Western region had the lowest percentages (21% and 15% respectively).

² WHO, Indicators for assessing infant and young child feeding practices, Part 1, Definitions, Conclusions of a consensus meeting held 6-8 November 2007, and attended by: WHO, USAID, AED, FANTA, UCDAVIS, IFPRI and UNICEF

Table NU.8: Infant and young child feeding (IYCF) practices (based on 4 food groups)

Percentage of children aged 6-23 months who are fed according to the three IYCF feeding practices, by breastfeeding status, number of food groups consumed and number of times they were fed during the day and night preceding the survey, Ghana, 2011

Background Characteristics	Currently breastfeeding				All				
	4+ food groups	Minimum times or more	Both 4+ food groups and minimum times or more	Number of children age 6-23 months	Breast milk or milk product	4+ food groups	Minimum times or more	With all 3 IYCF practices	Number of children age 6-23 months
Sex									
Male	44.6	59.1	32.0	824	85.4	45.3	59.0	29.4	1077
Female	47.0	55.5	35.4	883	87.9	47.7	55.6	32.6	1100
Age (in months)									
6-8	16.6	59.4	14.9	395	99.3	16.3	59.5	14.6	403
9-11	46.3	53.2	34.0	313	99.9	46.2	54.5	34.2	322
12-17	56.5	54.7	39.5	668	93.3	55.6	55.7	37.9	780
18-23	58.9	63.6	44.5	331	65.0	54.3	59.3	31.4	673
Region									
Western	31.6	46.6	16.5	204	86.6	33.4	45.6	15.3	243
Central	52.6	62.4	40.9	173	80.9	51.7	61.1	35.7	236
Greater Accra	48.8	59.2	36.6	244	86.2	50.7	59.2	34.7	367
Volta	66.2	50.5	37.5	134	92.4	66.2	52.4	37.9	157
Eastern	38.0	55.5	29.0	175	81.4	36.3	46.2	23.1	245
Ashanti	48.7	73.6	44.7	242	82.2	49.3	75.8	38.5	346
Brong Ahafo	52.9	61.1	46.8	148	85.2	53.9	65.8	40.7	177
Northern	33.3	49.1	21.4	245	96.8	33.3	48.4	21.3	256
Upper East	53.3	47.7	34.1	81	92.1	54.0	45.7	31.6	88
Upper West	52.8	61.0	39.6	60	95.4	51.9	60.2	38.3	64
Residence									
Urban	47.3	58.2	35.8	676	87.3	49.8	58.8	34.8	932
Rural	44.9	56.6	32.4	1030	86.1	44.1	56.3	28.2	1246
Mother's education									
None	42.6	55.0	29.6	563	89.4	41.8	54.4	27.0	643
Primary	45.0	52.8	31.2	401	86.0	43.8	51.1	26.9	488
Middle/JSS	51.6	59.2	38.5	525	82.5	50.8	60.6	34.5	743
Secondary +	42.1	66.4	37.9	218	91.7	50.5	65.5	37.8	303
Wealth index quintile									
Poorest	44.7	53.0	30.1	451	93.4	46.0	52.4	28.6	487
Second	48.1	55.5	34.0	390	83.3	46.4	53.6	28.9	486
Middle	45.4	59.8	34.7	321	83.2	43.0	61.0	30.0	406
Fourth	42.7	58.2	30.8	297	85.5	45.0	59.7	30.5	406
Richest	48.9	63.3	42.4	247	87.1	52.7	61.7	38.4	393
Total	45.9	57.2	33.8	1707	86.6	46.5	57.3	31.0	2177

Children living in urban areas (35%) were also more likely than their rural counterparts (28%) to have been fed according to the three IYCF practices. Also, there is a direct relationship between the proportion of children who are fed according to the IYCF practices and mother's level of education. For example, only 27 percent of children whose mothers have no education or primary education are fed according to the IYCF practices. This increases to 35 percent for children whose mothers have middle/JSS education, and to 38 percent for children whose mothers have secondary or higher education. Although there is little or no difference in the first 4 wealth quintiles (about 30%), the frequency and diet diversity rates for children in the richest wealth quintile were much higher than the rest (38%). Another notable finding in this survey is the sharp drop in consumption of breastmilk or milk product from above 90% in infants aged 6-17 months to 65% in those aged 18-23 months. Milk is essential for child nutrition during the first 23 months. WHO and UNICEF recommend continued breastfeeding for two years and beyond. This sudden drop may be influenced by heaping observed at ages 12-17 months and 18-23 months.

The continued practice of bottle-feeding is a concern because of the possible contamination due to unsafe water and lack of hygiene in the preparation of the feed. Table NU.9 shows that 14 percent of children aged 0-23 months, and 20 percent of children aged 6-11 months are fed using a bottle with a nipple. The results also show that for children aged 0-23 months fed with a bottle with a nipple, the percentage is higher for female children (15%) than male children (12%). Bottle feeding is generally an affluent household phenomenon, and it is likely that mothers who resorted to bottle feeding are working women, who have to be away from their children for long hours. For example, children living in Greater Accra region (35%), those living in urban areas (21%), those children whose mothers have secondary education (34%) and children from the wealthiest households (33%) are more likely to be fed with a bottle with a nipple, than children from other backgrounds. The identification of reasons behind the current trends in bottle feeding would reinforce interventions to encourage breastfeeding and to reduce bottle feeding practices so that child morbidity and mortality can be reduced.

Table NU.9: Bottle feeding		
Percentage of children aged 0-23 months who were fed with a bottle with a nipple during the previous day, Ghana, 2011		
Background Characteristics	Percentage of children age 0-23 months fed with a bottle with a nipple [1]	Number of children age 0-23 months:
Sex		
Male	12.1	1495
Female	15.2	1500
Age		
0-5 months	18.6	818
6-11 months	20.4	725
12-23 months	7.5	1453
Region		
Western	5.8	315
Central	11.4	309
Greater Accra	35.4	477
Volta	8.2	220
Eastern	17.9	352
Ashanti	14.3	518
Brong Ahafo	4.1	259
Northern	3.5	334
Upper East	5.1	123
Upper West	3.1	87
Residence		
Urban	20.8	1276
Rural	8.4	1719
Mother's education		
None	4.6	877
Primary	10.8	665
Middle/JSS	15.1	1050
Secondary +	34.3	403
Wealth index quintiles		
Poorest	4.1	656
Second	7.1	649
Middle	11.2	592
Fourth	16.0	541
Richest	32.9	557
Total	13.7	2995
[1] MICS indicator 2.11		

Salt Iodization

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable mental retardation and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes cretinism. It also increases the risk of stillbirth and miscarriage in pregnant women. Iodine deficiency is most commonly and visibly associated with goitre. IDD takes its greatest toll in impaired mental growth and development, contributing in turn to poor school performance, reduced intellectual ability, and impaired work performance. The indicator is the percentage of households consuming adequately iodized salt (>15 parts per million).

The Universal Salt Iodisation (USI) regulations mandate salt for human and animal consumption to be iodized. In Ghana, non-iodized salt is banned from sale when it is intended for consumption and people found selling or using non-iodized salt are liable to arrest. Campaigns on iodized salt consumption have also been on-going for several years and iodized salt is readily accessible, at least, in all urban areas.

In the Ghana MICS 2011 testing for iodine content in salt used for cooking was done in two ways: using Rapid Test Kits (RTKs), and through Titration in a lab. In the case of titration, a sample of salt was collected in 5 out of 15 households in each cluster, and a titration test was carried out by the Department of Nutrition and Food Science, University of Ghana. The results of the two tests are highlighted below. Additionally, the results from titration were compared to those obtained through the Rapid Test Kits.

Rapid Test Kits results

In 89 percent of households, salt used for cooking was tested for iodine content by using salt test kits to test for the presence of potassium iodate. Table NU.10 shows that in 10 percent of households there was no salt available. In 35 percent of households, salt was found to be adequately iodated (i.e. 15+ ppm). Use of adequately iodized salt was lowest in Northern (15%), followed by Volta (18%), and Upper East (18%) regions, and was highest in Greater Accra (56%), followed by Brong Ahafo (45%) and Western (44%). Also, households in urban areas are more likely to use adequately iodated salt (45%), compared to households in rural areas (23%).

There is a marked variation by household wealth in terms of adequately iodized salt consumption. About 66 percent of the households in the richest wealth quintile use adequately iodated salt compared to 37 percent of households in the fourth wealth quintile, 24 percent for the households in middle wealth quintile, 19 percent households in the second wealth quintile, and 15 percent for households in the poorest wealth quintile. It is also interesting to note that more than one in five households (22%) use salt that was not iodized, and 34 percent used inadequately iodated salt (>0 and <15 ppm). Households in Volta (59%) and those in Northern (56%) are also more likely to use inadequately iodated salt, compared to households in the other regions.

Table NU.10: Iodized salt consumption
Percent distribution of households by consumption of iodized salt, Ghana, 2011

Background Characteristics	Percent of households in which salt was tested	Number of households	Percent of households with salt test result				Total	Number of households in which salt was tested or with no salt
			Percent of households with no salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]		
			Percent of households with no salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]		
Region								
Western	86.6	1116	12.8	14.5	28.6	44.0	100.0	1108
Central	88.4	1236	10.7	37.3	27.9	24.1	100.0	1225
Greater Accra	87.9	2321	11.5	12.5	19.9	56.1	100.0	2304
Volta	95.6	992	3.8	20.0	58.5	17.7	100.0	986
Eastern	89.4	1533	10.0	32.3	30.4	27.3	100.0	1523
Ashanti	88.8	2321	10.5	25.6	33.8	30.0	100.0	2304
Brong Ahafo	87.3	1011	12.3	10.2	32.2	45.3	100.0	1007
Northern	95.4	727	4.4	23.8	56.4	15.4	100.0	725
Upper East	88.2	414	5.3	29.2	47.3	18.2	100.0	386
Upper West	95.7	253	3.4	21.7	42.9	32.0	100.0	250
Residence								
Urban	87.7	6358	11.6	16.6	26.9	44.9	100.0	6303
Rural	91.4	5567	7.7	28.6	41.1	22.5	100.0	5516
Wealth index quintiles								
Poorest	94.8	1763	4.3	32.6	48.4	14.6	100.0	1746
Second	89.8	2244	9.4	29.5	42.2	18.9	100.0	2226
Middle	87.6	2450	11.6	28.0	36.9	23.5	100.0	2429
Fourth	86.3	2639	13.1	19.2	30.4	37.3	100.0	2620
Richest	90.3	2829	8.8	7.8	17.3	66.1	100.0	2799
Total	89.4	11925	9.8	22.2	33.5	34.5	100.0	11819

[1] MICS indicator 2.16

Salt Titration

Salt sample for analysis

Among the 11,925 households interviewed in the MICS 2011, 10 percent had no salt at the time of survey (Table NU.10). About 90 percent of households provided salt samples for iodine testing using the Rapid Test Kits. As indicated above, one-third of households in each cluster were requested to provide an additional salt sample for further iodine testing using the titration method. A total of 3,439 of these salt samples were delivered to the Department of Nutrition and Food Science, University of Ghana, for titrimetric analysis, and this was equivalent to one in three of all salt samples, which had earlier been tested using the Rapid Test Kits.

Some of these salt samples were insufficient in quantity (< 20 or <10gm) and could not be analysed, leaving 3,325 for the titrimetric analysis. After analysis, 62 of the results were identified as duplicates from some households where two different salt samples were collected at the time of survey. Since only one salt sample was to be analysed per household, these 62 extra results were dropped by random sampling, leaving a total of 3,263 samples for the titration analysis. This number is equivalent to 30 percent of the samples tested by

the Rapid Test Kits. The method of Sullivan et al³ was used for the titrimetry. The results of salt titration are not provided by any other background characteristics in this report (regional, area of residence, education of head of household and wealth index quintile). A stand-alone report will be prepared and this will provide more details of the results and comparisons between the two methods for iodine testing.

Table NU.11 provides results of salt iodine content using Titrimetry for Ghana. In line with Pieter's recommendation, non-iodised salt was that with 0-2 ppm⁴. Accordingly, results reveal that no salt was found to be totally devoid of iodine (i.e 0-2 ppm iodine). The results also reveal that 29 percent of households had adequately iodised salt (≥ 15 ppm), while the remaining 71 percent of households used inadequately iodated salt (<15 ppm).

Considering that the recommended level of salt iodisation at the factory in Ghana is 50 ppm, and the recommended cut-off for human consumption is ≥ 15 ppm, the optimum or desirable range of iodised salt concentration in Ghana is 15 -50 ppm. Table NU.11 shows that 20 percent of the titrated salt is in this range. However, 5 percent of the salt used for cooking had very high levels of iodine concentration (≥ 60 ppm), which points to excessive iodisation.

Table NU.11: Iodized salt consumption using Titration Method
Percent distribution of households by consumption of iodized salt, Ghana, 2011

	Percent of households in which salt was tested	Number of households	Percent of households with salt test result					Number of households in which salt was tested for iodine using Titration method	
			Percent of households with no salt	Salt with no iodine (0 ppm)	>0 and 15 ppm Inadequately iodized salt	≥15 ppm Adequately iodized salt	15 and 50 ppm Optimum iodized salt Concentration range for Ghana		>60 ppm Excessive Iodine.
Total	89.4	11,925	9.8	0.0	70.7	29.3	20.3	5.0	3,263

Results of the Rapid Test Kits with matching titration results were identified and extracted for comparison with the titration results (Table NU.12). The percent efficiency of the Rapid Test Kits in correctly identifying adequately iodised salts was examined by comparing its results with the titration results. The following results were compared between the two methods:

- % salt without iodine (0 ppm)
- % inadequately iodised salt (> 0 and < 15 ppm)
- % adequately iodised salt (≥ 15 ppm)

For salt without iodine, the Rapid Test Kits identified 25 percent of the salt samples as non-iodised, while the titration method found no salt samples as devoid of iodine.

The Rapid Test Kits reported 62 percent of salt as inadequately iodised (< 15 ppm) – in this case, 25 percent of salt without iodine (0 ppm), and 37 percent of inadequately iodated salt (>0 and <15 ppm) were combined to give 62 percent. The titration method, on the other hand, identified 71 percent of salt

3 UNICEF, PAMM, MI, ICCIDD, WHO. Sullivan KM et al., eds. Monitoring universal salt iodization programmes. Atlanta, PAMM, MI, ICCIDD, 1995.

4 Pieter LJ, Emmerentia S. (2010): Methods for determining Iodine in Urine and Salt. Best Practice & Research Clinical Endocrinology & Metabolism 24 (2010), 77-88

samples as inadequately iodised (>0 and <15 ppm). For households with salt, the Rapid Test Kits reported 38 percent of salt samples as adequately iodised (≥ 15 ppm), while titration reported 29 percent as adequately iodised⁵. Thus, the Rapid Test Kits reported approximately 9 percent more salts as adequately iodised in comparison to titration. This represents inadequately iodised salt erroneously reported as adequately iodised, and could paint the erroneous picture that more households are consuming adequately iodised salt.

Table NU.12: Iodized salt consumption
Percent distribution of households by consumption of iodized salt, comparison between Rapid Test Kits and Titration Method, Ghana, 2011

	Percent of households with salt for Analysis	Number of households	Percent of households with salt test result using Rapid Test Kit			Percent of households with salt test result using Titration Method			Number of households in which salt was tested for iodine using Titration method
			Salt with no iodine (0 ppm)	0 and 15 ppm Inadequately iodized salt	15+ PPM Adequately iodized salt	Salt with no iodine (0 ppm)	0 and 15 ppm Inadequately iodized salt	15+ PPM Adequately iodized salt	
Total	90.2	10,752	24.6	37.2	38.2	0.0	70.7	29.3	3,263

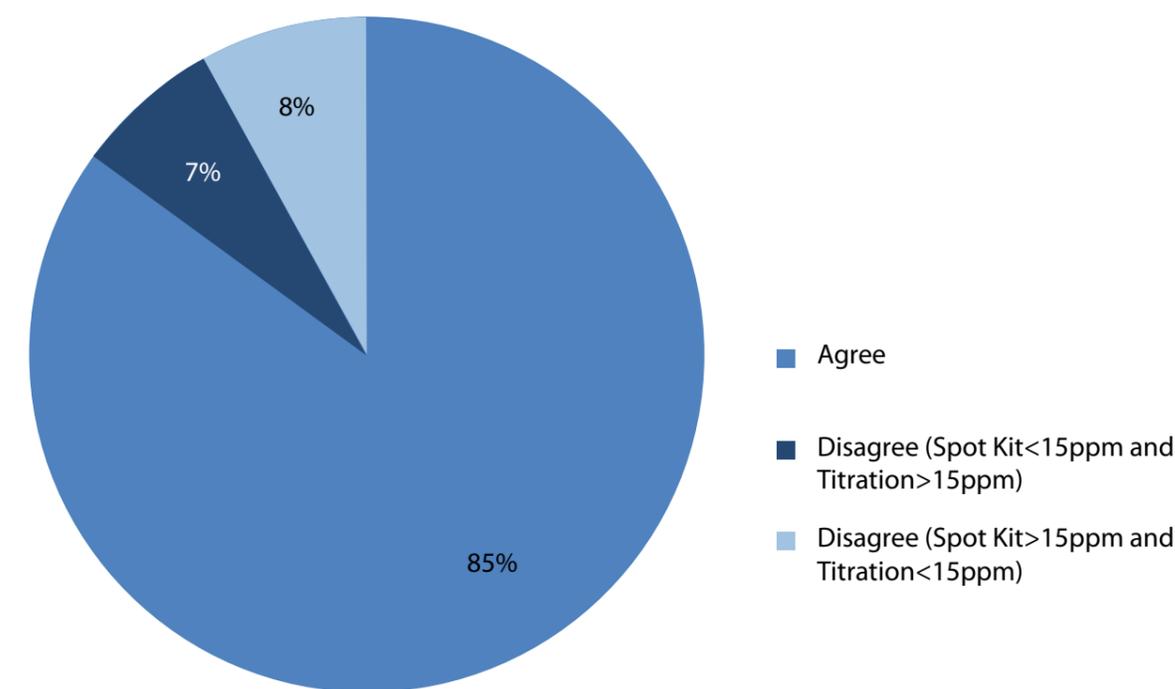
Agreement between Rapid Test Kits and Titration in identifying adequately and Inadequately Iodized salts

While results from a much larger Rapid Test Kits sample size (10,752) was compared to 3,263 titration results in Table NU.12, only 3,215 salt samples were compared in checking the percentage agreement between the two methods. The summary of results of this comparison is shown in Figure NU.3, while comprehensive results will be included in the stand-alone report. As shown above, titrimetry did not detect any of the salt samples as being completely devoid of iodine (0 ppm), and various studies have shown that this is more reliable than the 22 percent reported by the Rapid Test Kits. Natural salts, completely devoid of iodine may, in fact, be difficult to find in Ghana. The titration results of this survey confirmed the presence of traces of iodine in all salt samples tested. The rather high concentration (22%) of non-iodised salts (0 ppm) found through the Rapid Test Kits suggests that, at low iodine concentration levels, the Rapid Test Kits are unable to adequately distinguish between different levels of concentration of iodine in salts. As studies have shown, the Rapid Test Kits are less sensitive than titrimetry.

Table NU.12 also shows that the Rapid Test Kits reported that 38 percent of sampled salts were adequately iodised, compared to 29 percent reported by titration. This suggests that the Rapid Test Kits are likely to report about 10 percent of households to be consuming adequately iodised salt while they are, in fact, consuming inadequately iodised salt. The Rapid Test Kit reported a higher percentage of adequately iodised salts by a margin of about 10 percent above titration.

⁵ Note should be taken of the fact that all RTK results in Table NU.12 are calculated in comparison with the total number of available household salts (n = 10,752), rather than in comparison with the total number of households in the study (n = 11,925) as done in the Table NU.10. The percentages under RTK here are slightly higher in Table .NU.12 than in Table NU.10

Figure NU.3: Agreement and disagreement between salt iodization results obtained using the Rapid Test Kit and the results obtained using salt titration, Ghana, 2011



Children's Vitamin A Supplementation

Vitamin A is essential for eye health and proper functioning of the immune system. It is found in foods such as milk, liver, eggs, red and orange fruits, red palm oil and green leafy vegetables, although the amount of vitamin A readily available to the body from these sources varies widely. In developing areas of the world, where vitamin A is largely consumed in the form of fruits and vegetables, daily per capita intake is often insufficient to meet dietary requirements. Inadequate intakes are further compromised by increased requirements for the vitamin as children grow or during periods of illness, as well as increased losses during common childhood infections. As a result, vitamin A deficiency is quite prevalent in the developing world and particularly in countries with the highest burden of under-five deaths.

The 1990 World Summit for Children set the goal of virtual elimination of vitamin A deficiency and its consequences, including blindness, by the year 2000. This goal was also endorsed at the Policy Conference on Ending Hidden Hunger in 1991, the 1992 International Conference on Nutrition, and the UN General Assembly's Special Session on Children in 2002. The critical role of vitamin A for child health and immune function also makes control of deficiency a primary component of child survival efforts and therefore critical to the achievement of the fourth Millennium Development Goal: a two-thirds reduction in under-five mortality rate by the year 2015.

For countries with vitamin A deficiency problems, current international recommendations call for high-dose vitamin A supplementation every four to six months, targeted to all children between the ages of six to 59 months living in affected areas. Providing young children with two high-dose vitamin A capsules

a year is a safe, cost-effective, efficient strategy for eliminating vitamin A deficiency and improving child survival. Giving vitamin A to new mothers who are breastfeeding helps protect their children during the first few months of life and helps to replenish the mother's stores of vitamin A, which are depleted during pregnancy and lactation. For countries with vitamin A supplementation programs, the definition of the indicator is the percent of children 6-59 months of age receiving at least one high dose vitamin A supplement in the last six months.

Based on UNICEF/WHO guidelines, the Ghana Ministry of Health recommends that children aged 6-11 months be given one high dose of vitamin A capsules and children aged 12-59 months given a vitamin A capsule every 6 months. In Ghana, vitamin A capsules are linked to immunization services and are given when the child has contact with these services after six months of age. It is also recommended that mothers take a vitamin A supplement within eight weeks of giving birth due to increased vitamin A requirements during pregnancy and lactation.

Within the six months prior to the survey, 74 percent of children aged 6-59 months received a high dose of vitamin A supplement (Table NU.13). Overall, 10 percent were based on the Child health book/card/vaccination card, while 72 percent were based on the mother's report. At 58 percent, Ashanti region has the lowest vitamin A supplementation coverage, while all other regions have vitamin A supplementation of over 68 percent. For example, vitamin A supplementation coverage is highest in Upper East region and Brong Ahafo, both reporting 90 percent coverage, followed by Greater Accra with 84 percent.

The vitamin A supplementation in the last six months shows a general decrease with age: about 78 percent among children aged 6-11 months, and aged 12-23 months, 72 percent among children aged 36-47 months, and 68 percent among children aged 48-59 months.

Minimal differentials are noted by other background variables, including residence, mother's education and household wealth.

Table NU.13: Children's vitamin A supplementation

Percent distribution of children aged 6-59 months by receipt of a high dose vitamin A supplement in the last 6 months, Ghana, 2011

Background Characteristics	Percentage who received vitamin A according to:		Percentage of children who received vitamin A during the last 6 months [1]	Number of children age 6-59 months
	Child health book/card/vaccination card	Mother's report		
Sex				
Male	9.3	70.7	72.4	3339
Female	10.1	73.7	75.0	3393
Region				
Western	11.6	69.4	73.1	685
Central	8.6	67.0	68.9	667
Greater Accra	9.5	83.6	84.3	1032
Volta	14.6	73.1	75.4	538
Eastern	15.2	67.5	69.4	721
Ashanti	5.0	57.0	58.3	1238
Brong Ahafo	10.9	89.6	89.9	589
Northern	7.9	72.2	73.3	773
Upper East	9.1	90.0	90.4	289
Upper West	8.9	72.0	72.8	200
Residence				
Urban	8.9	71.8	73.2	2938
Rural	10.3	72.5	74.1	3794
Age				
6-11	44.9	67.6	77.8	725
12-23	14.3	77.3	78.7	1453
24-35	4.7	74.1	74.1	1553
36-47	2.1	71.7	72.1	1576
48-59	1.1	67.8	67.8	1426
Mother's education				
None	8.5	72.2	73.8	2221
Primary	9.5	73.0	74.1	1451
Middle/JSS	9.3	70.5	72.1	2271
Secondary +	14.9	75.7	77.0	789
Wealth index quintiles				
Poorest	9.2	73.8	74.9	1561
Second	10.7	72.2	74.1	1387
Middle	9.9	69.1	71.4	1372
Fourth	7.8	70.0	71.4	1262
Richest	11.0	75.6	76.9	1151
Total	9.7	72.2	73.7	6732

[1] MICS indicator 2.17

Low Birth Weight

Weight at birth is a good indicator not only of a mother's health and nutritional status but also the newborn's chances of survival, growth, long-term health and psychosocial development. Low birth weight (less than 2,500 grams) carries a range of grave health risks for children. Babies who were undernourished in the womb face a greatly increased risk of dying during their early months and years. Those who survive have impaired immune function and increased risk of disease; they are likely to remain undernourished, with reduced muscle strength, throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life. Children born underweight also tend to have a lower IQ and cognitive disabilities, affecting their performance in school and their job opportunities as adults.

In the developing world, low birth weight stems primarily from the mother's poor health and nutrition. Three factors have most impact: the mother's poor nutritional status before conception, short stature (due mostly to under nutrition and infections during her childhood), and poor nutrition during the pregnancy. Inadequate weight gain during pregnancy is particularly important since it accounts for a large proportion of foetal growth retardation. Moreover, diseases such as diarrhoea and malaria, which are common in many developing countries, can significantly impair foetal growth if the mother becomes infected while pregnant.

In the industrialized world, cigarette smoking during pregnancy is the leading cause of low birth weight. In developed and developing countries alike, teenagers who give birth when their own bodies have yet to finish growing run the risk of bearing underweight babies.

One of the major challenges in measuring the incidence of low birth weight is the fact that more than half of infants in the developing world are not weighed. In the past, most estimates of low birth weight for developing countries were based on data compiled from health facilities. However, these estimates are biased for most developing countries because the majority of new-borns are not delivered in health facilities, and those who are represent only a selected sample of all births.

Because many infants are not weighed at birth and those who are weighed may be a biased sample of all births, the reported birth weights usually cannot be used to estimate the prevalence of low birth weight among all children. Therefore, the percentage of births weighing below 2500 grams is estimated from two items in the questionnaire: the mother's assessment of the child's size at birth (i.e., very small, smaller than average, average, larger than average, very large) and the mother's recall of the child's weight or the weight as recorded on a health card if the child was weighed at birth⁶.

Overall, 54 percent of births were weighed at birth and approximately 11 percent of infants are estimated to weigh less than 2500 grams at birth (Table NU.14).

Children from Greater Accra region are most likely to be weighed at birth (82%), and those from Northern region the least likely to be weighed at birth (25%). Children from rural households, those from the poorest households and those whose mothers have no education are also less likely than more advantaged children to be weighed at birth. For example, 73 percent of children in urban households were weighed at birth, compared to 40 percent of children in rural households. Also, children from the wealthiest

⁶ For a detailed description of the methodology, see Boerma, J. T., Weinstein, K. I., Rutstein, S.O., and Sommerfelt, A. E., 1996. Data on Birth Weight in Developing Countries: Can Surveys Help? Bulletin of the World Health Organization, 74(2), 209-16.

households are more likely to be weighed at birth (91%), compared to children from poorest households (25%). Additionally, the possibility that children are weighed at birth increases with mother's education – 28 percent for children whose mothers have no education, to 51 percent for children whose mothers have primary education, to 64 percent for children whose mothers have middle/JSS education, and to 90 percent for children whose mothers have secondary or higher education.

Brong Ahafo region has the lowest proportion (8%) of children weighing below 2,500 grams. All other regions have low birth weight ranging from 10 – 15 percent. Minimal differentials on low birth weight are recorded for other background variables, including residence, mother's education and household wealth.

Table NU.14: Low birth weight infants

Percentage of last-born children in the 2 years preceding the survey that are estimated to have weighed below 2500 grams at birth and percentage of live births weighed at birth, Ghana, 2011

Background Characteristics	Percent of live births:		Number of last-born children in the two years preceding the survey
	Below 2500 grams [1]	Weighed at birth [2]	
Region			
Western	10.7	50.4	270
Central	10.5	46.1	246
Greater Accra	9.9	82.4	397
Volta	10.5	49.7	189
Eastern	10.6	62.6	288
Ashanti	11.4	53.9	449
Brong Ahafo	8.2	51.8	227
Northern	11.9	25.0	283
Upper East	14.5	49.5	105
Upper West	9.5	44.5	75
Residence			
Urban	10.9	72.7	1068
Rural	10.5	40.4	1460
Mother's education			
None	11.2	28.2	733
Primary	10.5	50.6	565
Middle/JSS	10.1	63.8	886
Secondary +	11.4	89.6	344
Wealth index quintiles			
Poorest	11.6	25.1	560
Second	10.3	42.7	546
Middle	11.2	50.6	500
Fourth	10.4	69.0	455
Richest	9.7	91.2	467
Total	10.7	54.0	2528
[1] MICS indicator 2.18			
[2] MICS indicator 2.19			

Anaemia and Diet Diversity in Children aged 6-59 months

Table NU.15 shows prevalence of anemia in children 6-59 months old by age group, sex, residence, region, ecological zone, mother's education and wealth quintile. Overall, the prevalence of any anaemia was 57 percent, a significant decline compared to 78 percent in DHS 2008. Children aged 12-23 months had much higher levels at 71 percent, compared to the rest in this age group, while the prevalence in the 48-59 months old group was 48 percent. Male children had a slightly higher level of anemia (60%) than female children (53%). Children living in urban areas had a lower rate of anemia (48%) compared to children living in rural areas (64%).

Although there is a notable improvement since 2008, these rates are still above 40 percent, the WHO cut-off point for a severe public health problem. The rates in the three Northern regions are above 75 percent, while in the remaining regions the rates are below 65 percent. The three Northern regions have one rainy season and this negatively affects food security.

Besides the strong influence of region, educational level of the mother and wealth quintile, are two other major determinants. The rate of anemia in children whose mothers had secondary or higher education, and/or belonged to the richest wealth quintile was 36 percent. These are the groups that have a moderate level while the rest have a severe level of public health significance.

About half of the anemia problem is related to dietary practices, especially consumption of iron rich sources. While many foods contain iron, the bioavailability value is low. Suitable iron-rich or iron-fortified foods include fresh foods such as red organ meat, other red meat, commercially fortified foods specially designed for infants and young children which contain iron, or foods fortified in the home with a micronutrient powder containing iron or a lipid-based nutrient supplement containing iron.

Table NU. 15: Prevalence of Anaemia in children

Percentage of children age 6-59 months classified as having Anaemia, by background characteristics, Ghana
MICS4, 2011

Background Characteristics	Anaemia status by haemoglobin level			Any Anaemia	Number of children
	Mild (10.0-10.9 g/dL)	Moderate (7.0-9.9 g/dL)	Severe (below 7.0 g/dL)		
Age in months					
6-8	25.7	34.1	4.3	64.1	258
9-11	20.4	40.2	3.8	64.4	224
12-17	24.4	43.2	3.7	71.3	515
18-23	29.0	33.9	3.9	66.8	455
24-35	21.8	30.4	3.7	55.8	1,033
36-47	21.8	29.6	1.1	52.5	1,063
48-59	21.0	25.3	1.0	47.4	969
Sex					
Male	24.1	33.0	3.4	60.6	2,224
Female	21.5	30.3	1.7	53.5	2,292
Residence					
Urban	23.6	22.9	1.2	47.7	1,979
Rural	22.1	38.4	3.7	64.2	2,538
Region					
Western	23.7	32.1	.7	56.5	458
Central	23.5	30.1	3.7	57.2	455
Greater Accra	25.2	22.1	.5	47.8	683
Volta	22.6	33.7	1.8	58.1	364
Eastern	24.2	21.7	.3	46.2	490
Ashanti	20.0	22.3	1.7	44.0	830
Brong Ahafo	21.6	39.5	2.2	63.3	400
Northern	22.5	50.8	7.8	81.2	508
Upper East	22.9	48.1	6.4	77.5	195
Upper West	22.2	52.1	7.2	81.5	135
Mother's education					
None	21.9	39.6	3.9	65.4	1,786
Primary	24.5	32.1	2.5	59.2	977
Middle/JSS	22.6	24.8	1.4	48.9	1,540
Secondary +	23.3	12.3	.2	35.8	214
Wealth index quintile					
Poorest	21.7	47.3	6.1	75.1	1,032
Second	22.6	38.9	2.5	64.0	944
Middle	21.1	33.4	2.0	56.5	920
Fourth	26.4	19.4	1.2	46.9	877
Richest	22.4	13.0	.2	35.6	745
Total	22.8	31.6	2.6	57.0	4,517

Note: Table is based on children who stayed in the household the night before the interview. Hemoglobin levels are adjusted for altitude using CDC formulas (CDC, 1998). Hemoglobin is measured in grams per deciliter (g/dL).



Vaccinations

The Millennium Development Goal (MDG) 4 is to reduce child mortality by two thirds between 1990 and 2015. Immunization plays a key part in this goal. Immunizations have saved the lives of millions of children in the three decades since the launch of the Expanded Programme on Immunization (EPI) in 1974. Worldwide there are still 27 million children overlooked by routine immunization and as a result, vaccine-preventable diseases cause more than 2 million deaths every year.

A World Fit for Children goal is to ensure full immunization of children less than one year of age at 90 percent nationally, with at least 80 percent coverage in every district or equivalent administrative unit. According to UNICEF and WHO guidelines, a child should receive a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against diphtheria, pertussis, and tetanus, three doses of polio vaccine, and a measles vaccination by the age of 12 months.

Since 2007, children in Ghana receive DPT as part of a combined Pentavalent (PENTA) dose which also contains Hepatitis B and Influenza vaccination. In Ghana the vaccination scheduled for children under five years therefore covers BCG, Polio 0, Polio 1, Polio2, Polio3, DPT/HepB/INFL 1, DPT/HepB/INFL2, DPT/HepB/INFL3, Measles and Yellow Fever. Two new vaccines, pneumococcal and rotavirus were launched in Ghana in 2012, and will now be part of the immunization schedule. These immunizations will simultaneously tackle pneumonia and diarrhoea – two of the biggest killers of Ghanaian children. The Rotavirus vaccine is being given at 6 weeks and 10 weeks of age, while the Pneumococcal vaccine is given at 6 weeks, 10 weeks and 14 weeks of age. However, these are not included in the 2011 Ghana MICS Survey.

Mothers were asked to provide vaccination cards for children under the age of five. Interviewers copied vaccination information from the cards onto the MICS questionnaire. Where vaccination cards were not available, mothers/caregivers were asked to recall whether or not the child had received each of the vaccinations and, for DPT /HepB/INFL and Polio, how many times. Overall, 89 percent of children had health cards (Table CH.2).

The percentage of children aged 12 to 23 months who received each of the vaccinations is shown in Table CH.1. The denominator for the Table is comprised of children aged 12-23 months so that only children who are old enough to be fully vaccinated are counted. In the three first columns, the numerator includes all children who were vaccinated at any time before the survey according to the vaccination card or the mother's report. In the last column, only those who were vaccinated before their first birthday, as recommended, are included. For children without vaccination cards, the proportion of vaccinations given before the first birthday is assumed to be the same as for children with vaccination cards.

Overall, 98 percent of children aged 12-23 months received a BCG vaccination by the age of 12 months and the first dose of DPT/HepB/INFL was given to 98 percent of the children. The percentage declines for subsequent doses of DPT/HepB/INFL to 97 percent for the second dose, and to 92 percent for the third dose (Figure CH.1). Similarly, 98 percent of children received the first dose of vaccine against polio (Polio 1) by age 12 months and this declines to 91 percent by the third dose. The coverage for measles vaccine by 12 months is 89 percent. Overall, 84 percent of children aged 12-23 months are fully immunized in Ghana and the percent of children who have received all the recommended vaccinations by their first birthday account to 77 percent.

Table CH.1: Vaccinations in first year of life
Percentage of children age 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, Ghana, 2011

Background characteristics	Vaccinated at any time before the survey according to: Vaccination card	Vaccinated at any time before the survey according to: Mother's report	Vaccinated at any time before the survey according to: Either	Vaccinated by 12 months of age
BCG [1]	86,4	11,7	98,1	97,8
Polio 0	64,1	16,4	80,5	80,4
Polio 1	87,1	11,5	98,6	98,0
Polio 2	86,6	10,4	97,0	96,5
Polio 3 [2]	84,9	6,4	91,2	90,7
DPT/HepB/INFL1	87,6	10,8	98,4	97,7
DPT/HepB/INFL2	87,0	10,3	97,4	96,7
DPT/HepB/INFL3 [3] [5]	85,3	7,6	92,9	92,1
Measles [4]	80,7	13,1	93,7	88,5
Yellow fever [6]	81,2	12,5	93,8	88,3
All vaccinations	81,4	3,1	84,4	77,3
No vaccinations	,0	,4	,5	,5
Number of children age 12-23 months	1453	1453	1453	1453

[1] MICS indicator 3.1
[2] MICS indicator 3.2
[3] MICS indicator 3.3
[4] MICS indicator 3.4; MDG indicator 4.3
[5] MICS indicator 3.5
[6] MICS indicator 3.6

Figure CH.1: Vaccinations in first year of life, Percentage of children age 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, Ghana, 2011

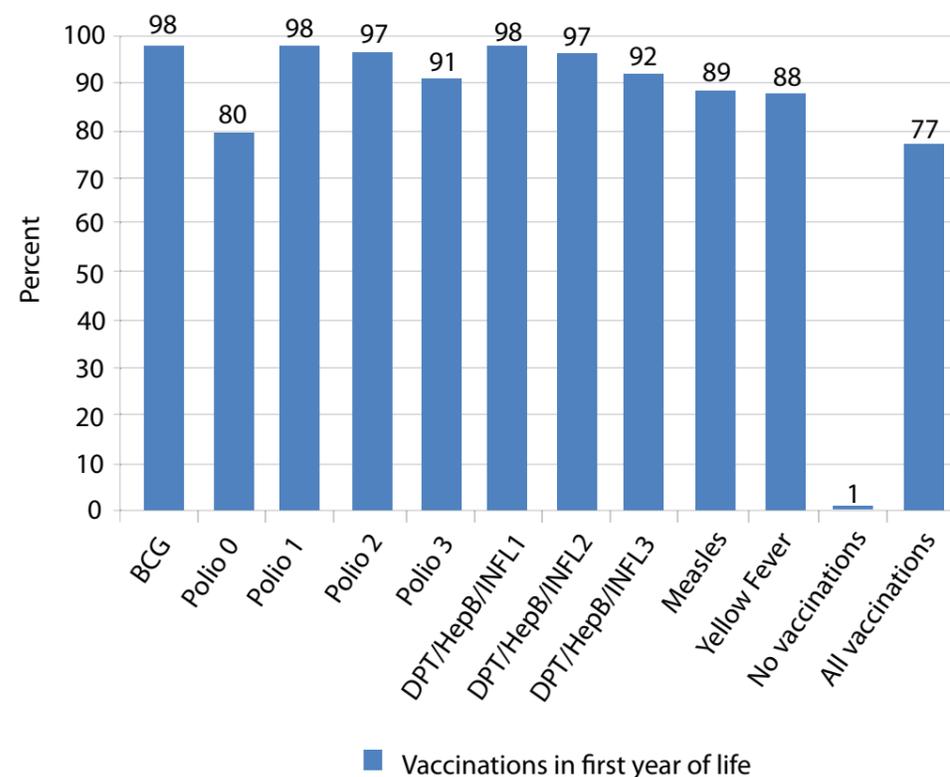


Table CH.2 also shows vaccination coverage rates among children aged 12-23 months by background characteristics. The figures indicate children receiving the vaccinations at any time up to the date of the survey, and are based on information from both the vaccination cards and mothers'/caretakers' reports.

BCG Vaccination coverage is 98 percent, and little variation is observed in BCG coverage according to the different background variables. Coverage for Polio at birth is 81 percent, with an Urban-Rural variation of 90 percent and 70 percent, respectively. The Greater Accra region has the highest coverage of 89 percent, while the Northern region has the lowest coverage of 71 percent. Wide differences are also observed by educational background of the mother/caretaker; the highest coverage of 95 percent was recorded for children born to mothers with secondary or higher education, compared to 70 percent for children born to mothers with no education. Also, children born in the wealthiest households are more likely to have received Polio vaccination at birth (98%), compared to 65 percent of children from the poorest households.

The coverage for Polio 1 vaccination is 99 percent. Minor differences are observed by residence, educational background of the mother and wealth index quintile. Also, all regions recorded vaccination coverage of over 96 percent. For Polio 2, the vaccination coverage is 97 percent with a Rural/Urban variation of 94 percent and 98 percent respectively. The Western region has the highest coverage at 99 percent, while Central region has the lowest at 96 percent. The coverage for Polio 3 vaccination is 91 percent with an Urban/Rural variation of 88 percent and 94 percent respectively. Also, Upper East region has the highest coverage of Polio 3 vaccination at 98 percent, while Greater Accra region has the lowest at 84 percent.

The first dose DPT/HepB/Infl vaccination coverage is 98 percent, second dose is 97 percent and 93 percent for the third dose. For the 3rd dose DPT/HepB/INFL, the data indicated an Urban/Rural small variation of 92 percent and 94 percent respectively. Regional variation for the 3rd dose DPT/HepB/INFL, indicates that the Upper East region has the highest coverage of 98 percent, while Volta region has the lowest at 83 percent. Slight differences are also noted by educational level of the mother.

The coverage for Measles vaccination is 94 percent with Urban/Rural variation of 97 percent and 92 percent respectively. Regional variation for Measles vaccination reveals that Brong Ahafo has the highest vaccination coverage (100%), while Volta region has the lowest, at 86 percent. Also, children born to mothers with secondary or higher education are more likely to have received the measles vaccination compared to children of mothers with lower levels of education.

The coverage for Yellow Fever vaccination is 94 percent. The data indicate Urban/Rural variation of 97 percent and 92 percent respectively. Regional variation for Yellow Fever vaccination reveals that Brong Ahafo has the highest coverage (100%), while Volta has the lowest Yellow Fever vaccination coverage of 87 percent. Also, nearly all children whose mothers have secondary or higher education have received the Yellow Fever vaccination, compared to children of mothers with lower levels of education. The coverage for all vaccination for children aged 12-23 months is 84 percent, while less than 1 percent of children in Ghana have not received any vaccinations.

Table CH.2: Vaccinations by background characteristics

Percentage of children age 12-23 months currently vaccinated against childhood diseases, Ghana, 2011

Background Characteristics	Percentage of children who received:													Percentage with vaccination card seen	Number of children age 12-23 months
	BCG	Polio at birth	Polio 1	Polio 2	Polio 3	DPT/ HepB/ INFL1	DPT/ HepB/ INFL2	DPT/ HepB/ INFL3	Measles	Yellow fever	None	All			
Sex															
Male	98.6	80.9	98.5	96.3	89.7	98.4	96.7	92.7	93.3	93.2	.2	83.2	88.1	715	
Female	97.6	80.1	98.7	97.6	92.7	98.4	98.0	93.0	94.1	94.4	.8	85.7	89.0	737	
Region															
Western	99.1	74.2	99.1	99.1	95.1	99.1	99.1	98.1	96.4	96.4	.9	91.4	87.1	151	
Central	96.0	82.3	98.0	96.1	88.2	97.2	92.0	85.3	90.6	90.8	.4	78.4	83.7	154	
Greater Accra	97.7	89.3	95.5	94.5	84.4	96.9	95.4	89.1	94.2	94.1	1.2	78.3	82.0	237	
Volta	97.4	78.1	99.6	98.8	92.7	95.3	95.3	83.4	86.2	86.9	.4	71.8	81.9	108	
Eastern	100.0	81.9	98.1	96.9	96.9	98.1	98.1	94.5	92.7	92.7	.0	88.0	86.9	141	
Ashanti	98.1	79.1	100.0	96.5	90.9	100.0	100.0	97.6	95.6	95.6	.0	86.8	96.8	262	
Brong Ahafo	99.4	79.4	100.0	97.9	95.6	100.0	100.0	97.5	99.6	99.6	.0	94.9	92.7	122	
Northern	97.1	71.3	98.9	97.3	88.3	98.9	97.3	91.7	89.8	89.9	.8	80.2	89.7	173	
Upper East	99.3	86.5	100.0	98.8	97.7	99.2	99.5	97.7	97.8	97.0	.0	94.6	95.5	61	
Upper West	98.6	88.5	99.1	98.7	96.1	99.5	98.5	97.4	97.2	97.5	.3	93.4	93.0	45	
Residence															
Urban	98.2	94.3	98.5	96.2	87.7	98.7	97.7	91.6	96.6	96.6	.1	81.7	82.9	619	
Rural	98.0	70.2	98.6	97.6	93.9	98.2	97.1	93.8	91.6	91.7	.8	86.5	92.7	833	
Mother's education															
None	96.9	70.2	96.5	93.0	87.7	96.4	94.8	91.9	92.1	92.2	1.6	82.6	89.7	433	
Primary	98.6	77.8	99.2	98.1	92.0	98.5	97.5	90.4	89.1	88.7	.0	80.5	88.4	345	
Middle/JSS	98.5	86.2	99.4	99.2	93.9	99.7	99.0	94.7	96.4	96.8	.0	87.5	88.8	512	
Secondary +	99.2	95.3	100.0	98.4	90.8	99.4	99.0	94.8	99.4	99.4	.0	88.3	85.2	162	
Wealth index quintile															
Poorest	96.6	62.4	98.8	97.9	92.6	97.9	97.2	93.0	90.9	91.3	.9	83.8	91.0	336	
Second	97.3	76.8	98.9	95.4	89.6	98.5	97.4	93.2	93.4	93.3	1.0	84.8	85.6	329	
Middle	98.6	85.3	98.5	96.7	95.1	98.0	96.0	90.1	94.0	93.7	.1	83.5	91.4	279	
Fourth	99.2	88.7	97.3	96.1	92.5	97.7	97.2	94.0	93.3	93.5	.0	85.8	89.5	273	
Richest	99.6	96.4	99.4	99.4	85.9	100.0	99.4	94.4	98.3	98.3	.0	84.5	84.8	235	
Total	98.1	80.5	98.6	97.0	91.2	98.4	97.4	92.9	93.7	93.8	.5	84.4	88.6	1453	

of tetanus toxoid vaccine. However, if women have not received two doses of the vaccine during the pregnancy, they (and their newborns) are also considered to be protected if the following conditions are met:

- Received at least two doses of tetanus toxoid vaccine, the last within the prior 3 years;
- Received at least 3 doses, the last within the prior 5 years;
- Received at least 4 doses, the last within 10 years;
- Received at least 5 doses during lifetime.

Table CH.3 shows the protection status from tetanus of women who have had a live birth within the last 2 years. Figure CH.2 shows the protection of women against neonatal tetanus by major background characteristics. Table CH.3 indicate that 55 percent of women received at least 2 doses of tetanus vaccination during the last pregnancy, with women in urban areas more likely to receive the 2 doses (61%), than their rural counterparts (50%). Overall, Table CH.3 and Figure CH.2 show that the percentage of women 15-49 years who had a live birth in the last 2 years, and who were protected against neonatal tetanus is 70 percent. Greater Accra region has the highest protection level of 82 percent and the Upper East region has the lowest level of 57 percent. It is worth noting that Greater Accra, Central, Eastern and Ashanti regions have protection levels above the national average of 70 percent. The percentage of protection against tetanus is correlated with residence, education and wealth index quintile: it is much higher in the urban areas (78%) than in rural areas (65%), and it increases from 61 percent for women with no education, to 86 percent for women with secondary or higher education, and from 59 percent for women from the poorest wealth quintile, to 88 percent for women belonging to the richest wealth quintile.

Neonatal Tetanus Protection

One of the MDGs is to reduce by three quarters the maternal mortality ratio, with one strategy to eliminate maternal tetanus. Another goal is to reduce the incidence of neonatal tetanus to less than 1 case of neonatal tetanus per 1000 live births in every district. A World Fit for Children goal is to eliminate maternal and neonatal tetanus by 2005.

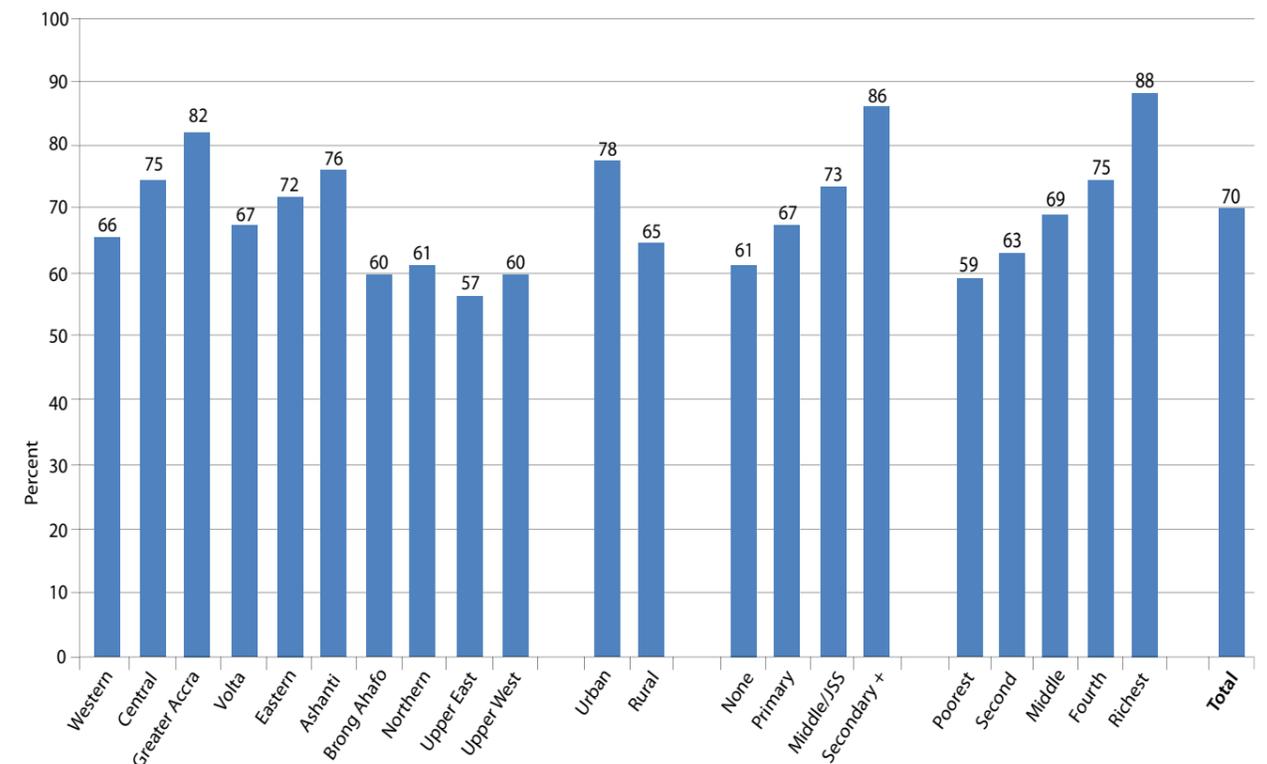
Prevention of maternal and neonatal tetanus is to ensure that all pregnant women receive at least two doses

Table CH.3: Neonatal tetanus protection
Percentage of women age 15-49 years with a live birth in the last 2 years protected against neonatal tetanus, Ghana, 2011

Background Characteristics	Percentage of women who received at least 2 doses during last pregnancy	Percentage of women who did not receive two or more doses during last pregnancy but received:				Protected against tetanus [1]	Number of women with a live birth in the last 2 years
		2 doses, the last within prior 3 years	3 doses, the last within prior 5 years	4 doses, the last within prior 10 years	5 or more doses during lifetime		
Residence							
Urban	60.9	16.2	.5	.0	.0	77.5	1068
Rural	50.1	14.0	.7	.0	.2	65.0	1460
Region							
Western	49.8	14.1	1.4	.0	.3	65.6	270
Central	66.1	8.1	.3	.0	.0	74.6	246
Greater Accra	63.8	17.9	.3	.0	.0	82.1	397
Volta	44.8	22.5	.0	.0	.0	67.3	189
Eastern	65.1	7.0	.0	.0	.0	72.1	288
Ashanti	54.2	21.5	.5	.0	.0	76.2	449
Brong Ahafo	41.5	15.4	2.0	.0	1.0	59.9	227
Northern	47.1	13.0	1.1	.0	.1	61.3	283
Upper East	46.4	10.1	.0	.0	.0	56.5	105
Upper West	52.6	7.5	.2	.0	.0	60.3	75
Education							
None	46.0	14.2	1.0	.0	.2	61.3	733
Primary	51.8	14.8	.9	.0	.0	67.5	565
Middle/JSS	57.2	15.6	.3	.0	.3	73.3	886
Secondary +	70.9	14.8	.3	.0	.0	86.0	344
Wealth index quintiles							
Poorest	45.8	12.6	.8	.0	.0	59.2	560
Second	47.6	14.1	1.1	.0	.5	63.3	546
Middle	52.7	16.0	.4	.0	.0	69.1	500
Fourth	59.0	16.2	.0	.0	.2	75.3	455
Richest	71.3	16.2	.7	.0	.0	88.2	467
Total	54.6	14.9	.6	.0	.1	70.3	2528

[1] MICS indicator 3.7

Figure CH.2: Percentage of women age 15-49 years with a live birth in the last 2 years protected against neonatal tetanus, Ghana, 2011



Oral Rehydration Treatment

Diarrhoea is the second leading cause of deaths among children under five worldwide. Most diarrhoea-related deaths in children are due to dehydration from loss of large quantities of water and electrolytes from the body in liquid stools. Management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) - can prevent many of these deaths. Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

The goals are to: 1) reduce by one half death due to diarrhoea among children under five by 2010 compared to 2000 (A World Fit for Children); and 2) reduce by two thirds the mortality rate among children under five by 2015 compared to 1990 (Millennium Development Goals). In addition, the World Fit for Children calls for a reduction in the incidence of diarrhoea by 25 percent.

The indicators are:

- Prevalence of diarrhoea
- Oral rehydration therapy (ORT)
- Home management of diarrhoea
- ORT with continued feeding

In the MICS questionnaire, mothers (or caretakers) were asked to report whether their child had had

diarrhoea in the two weeks prior to the survey. If so, the mother was asked a series of questions about what the child had to drink and eat during the episode and whether this was more or less than the child usually ate and drank.

Overall, 13 percent of under- five children had diarrhoea in the two weeks preceding the survey (Table CH.4). Regional variations were noticed with a higher diarrhoea prevalence rate in Northern region (21%) and the lowest in the Eastern region (7%). The peak of diarrhoea prevalence occurs in the weaning period, among children aged 12-23 months, with a prevalence of 18 percent.

Table CH.4 also shows the percentage of children receiving various types of recommended fluids during episodes of diarrhoea. Since mothers were able to name more than one type of fluids, the percentages do not necessarily add to 100. Figure CH.3 presents, in particular, the percentage of children who received an oral rehydration treatment (using ORS). About a third of the children (35%) received fluids from ORS packets or pre-packaged ORS fluids and 20 percent received recommended homemade fluids. Approximately 48 percent of children with diarrhoea received one or more of the recommended home treatments (i.e., were treated with ORS or any recommended homemade fluid). Children with diarrhoea and from Ashanti region were more likely (63%) to receive ORS or any recommended homemade fluid compared to those living in Northern region (32%). The percentage of ORS or any recommended homemade fluid administration increases with mother's educational level, but not necessarily with the wealth index quintiles.

Figure CH.3: Percentage of children age 0-59 months with diarrhoea in the last two weeks, and who received oral rehydration treatment, Ghana, 2011

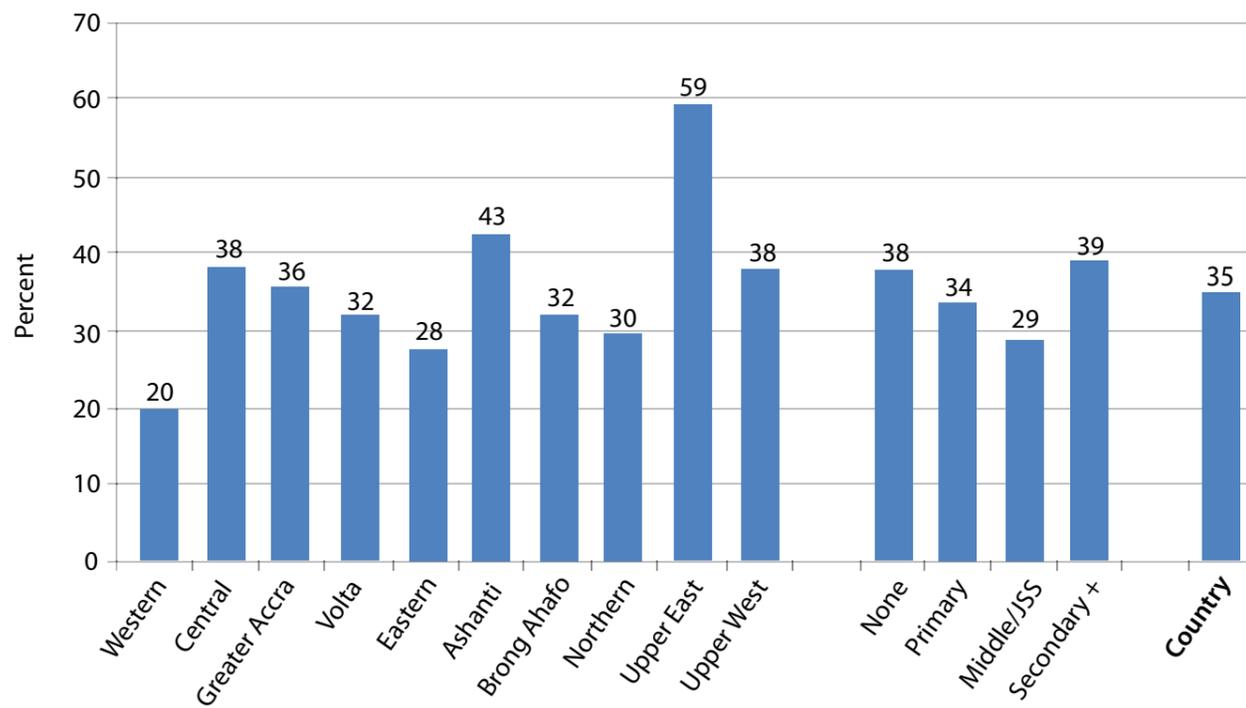


Table CH.4: Oral rehydration solutions and recommended homemade fluids
Percentage of children age 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration solutions and recommended homemade fluids, Ghana, 2011

Background Characteristics	Had diarrhoea in last two weeks	Number of children age 0-59 months	Children with diarrhoea who received:					Number of children aged 0-59 months with diarrhoea	
			ORS (Fluid from ORS packet or pre-packaged ORS fluid)	Recommended homemade fluids					
				Coconut water	Rice water	Mashed Kenkey	Any recommended homemade fluid		ORS or any recommended homemade fluid
Sex									
Male	12.9	3757	34.8	10.4	6.7	12.8	23.3	49.5	484
Female	12.4	3793	35.1	4.7	4.2	10.2	16.4	46.0	471
Region									
Western	13.7	758	20.2	8.9	5.8	10.8	22.0	40.8	104
Central	11.9	740	38.4	12.5	1.2	8.0	19.8	51.0	88
Greater Accra	7.9	1142	(35.8)	(6.0)	(15.0)	(10.4)	(21.0)	(54.9)	91
Volta	7.6	601	32.0	5.9	3.2	7.7	16.9	43.2	45
Eastern	6.5	827	(27.5)	(3.1)	(7.1)	(6.2)	(13.3)	(37.7)	54
Ashanti	14.5	1411	42.5	15.8	8.9	22.7	36.5	62.6	204
Brong Ahafo	16.2	671	32.2	8.1	3.5	16.2	24.1	47.3	108
Northern	21.4	852	30.1	.4	1.5	3.0	4.4	31.7	182
Upper East	15.8	325	59.3	.6	1.4	6.6	7.3	60.0	51
Upper West	12.5	223	37.9	.5	3.1	8.9	11.7	44.1	28
Residence									
Urban	10.4	3283	37.0	11.5	8.5	14.0	26.5	53.9	343
Rural	14.4	4267	33.8	5.4	3.7	10.1	16.2	44.4	613
Age									
0-11	11.6	1543	26.7	1.4	.4	8.4	8.8	33.3	180
12-23	18.0	1453	39.8	8.6	6.1	15.0	23.4	54.6	262
24-35	14.6	1553	37.2	13.5	4.9	15.2	24.8	52.9	227
36-47	11.6	1576	33.5	4.9	8.5	5.2	17.7	43.9	183
48-59	7.3	1426	34.8	7.3	8.3	10.9	23.2	51.3	103
Mother's education									
None	16.9	2455	38.3	3.2	5.0	5.3	11.2	45.1	414
Primary	13.4	1628	33.7	4.5	10.3	18.0	24.4	47.7	218
Middle/JSS	9.6	2578	29.3	12.8	2.8	18.1	28.3	49.9	248
Secondary +	8.5	889	39.2	23.0	2.3	5.0	26.6	55.7	76
Wealth index quintiles									
Poorest	16.9	1730	44.3	1.4	1.6	8.9	10.9	49.9	293
Second	14.6	1551	33.5	4.6	3.7	9.9	16.1	44.9	226
Middle	11.9	1559	33.1	9.3	11.3	13.5	27.3	47.7	186
Fourth	11.6	1397	26.6	13.8	9.4	18.7	30.2	51.8	162
Richest	6.8	1313	27.0	20.3	3.0	6.9	24.8	40.9	89
Total	12.7	7550	35.0	7.6	5.5	11.5	19.9	47.8	956

Figures in parentheses '()' are based on 25-49 unweighted cases.

Overall, Table CH.5 shows that 23 percent of under fives with diarrhoea drank more than usual while 42 percent drank same quantity of fluid, 15 percent of children were given much less to drink and 3 percent were given nothing to drink; while, 32 percent of children were given somewhat less to eat, 37 percent were given about the same quantity of food, 5 percent were given more, 4 percent stopped food and 4 percent were not given food to eat. Caretakers in rural areas are more likely to give less drink or nothing to drink compared to their urban counterparts who are more likely to give about the same or more drink to children.

Table CH.5: Feeding practices during diarrhoea

Percent distribution of children age 0-59 months with diarrhoea in the last two weeks by amount of liquids and food given during episode of diarrhea, Ghana, 2011

Background Characteristics	Had diarrhoea in last two weeks	Number of children age 0-59 months	Drinking practices during diarrhoea:						Eating practices during diarrhoea:						Number of children aged 0-59 months with diarrhoea	
			Given much less to drink	Given somewhat less to drink	Given about the same to drink	Given more to drink	Given nothing to drink	Total	Given much less to eat	Given somewhat less to eat	Given about the same to eat	Given more to eat	Stopped food	Had never been given food		Total
Sex																
Male	12.9	3757	16.8	17.1	39.3	24.6	2.2	100.0	16.8	34.4	38.4	2.4	4.2	3.8	100.0	484
Female	12.4	3793	12.9	17.4	45.1	21.7	2.9	100.0	18.5	30.2	35.3	7.9	3.2	4.8	100.0	471
Region																
Western	13.7	758	31.2	7.2	34.9	20.2	6.5	100.0	36.2	17.3	36.3	4.7	2.3	3.1	100.0	104
Central	11.9	740	8.9	28.8	39.2	17.7	5.4	100.0	10.2	41.1	36.1	5.9	3.7	3.0	100.0	88
Greater Accra	7.9	1142	(19.9)	(24.4)	(33.9)	(19.8)	(2.0)	100.0	(12.6)	(58.6)	(24.0)	(4.8)	(.0)	(.0)	100.0	91
Volta	7.6	601	27.4	21.4	29.5	18.4	3.3	100.0	35.4	24.9	28.8	7.1	.0	3.8	100.0	45
Eastern	6.5	827	(6.9)	(34.0)	(33.4)	(25.7)	(.0)	100.0	(15.9)	(47.8)	(31.1)	(3.1)	(2.1)	(.0)	100.0	54
Ashanti	14.5	1411	9.3	7.6	51.8	31.4	.0	100.0	15.7	30.9	39.5	5.0	1.7	7.2	100.0	204
Brong Ahafo	16.2	671	15.0	17.0	47.6	16.5	3.9	100.0	16.2	28.8	40.8	7.6	3.4	3.2	100.0	108
Northern	21.4	852	11.6	16.0	42.7	27.7	1.9	100.0	13.7	24.8	41.7	4.9	9.7	5.3	100.0	182
Upper East	15.8	325	10.6	27.2	41.9	20.4	.0	100.0	14.5	39.0	30.9	4.5	5.6	5.5	100.0	51
Upper West	12.5	223	20.3	17.6	48.7	7.1	6.3	100.0	15.6	18.2	53.1	.8	3.3	8.8	100.0	28
Residence																
Urban	10.4	3283	14.3	13.0	45.1	25.6	2.1	100.0	15.2	37.4	39.4	5.2	1.3	1.6	100.0	343
Rural	14.4	4267	15.2	19.7	40.5	21.8	2.8	100.0	19.1	29.5	35.5	5.1	5.1	5.7	100.0	613
Age																
0-11	11.6	1543	10.4	20.3	48.4	14.9	6.0	100.0	12.9	24.6	35.5	6.0	2.1	18.8	100.0	180
12-23	18.0	1453	21.3	18.1	41.2	17.6	1.7	100.0	23.2	31.4	35.0	2.7	5.2	2.5	100.0	262
24-35	14.6	1553	13.7	12.8	39.5	32.4	1.6	100.0	11.6	39.5	39.4	5.9	3.6	.0	100.0	227
36-47	11.6	1576	14.2	12.8	42.5	28.5	2.1	100.0	22.0	29.9	40.8	4.1	3.0	.2	100.0	183
48-59	7.3	1426	9.9	27.6	39.2	21.8	1.5	100.0	17.7	36.5	31.7	9.9	4.2	.0	100.0	103
Mother's education																
None	16.9	2455	18.2	19.1	37.7	22.3	2.7	100.0	19.9	29.8	36.6	4.8	4.8	4.2	100.0	414
Primary	13.4	1628	14.2	11.7	51.3	22.3	.5	100.0	17.0	35.2	35.2	4.2	2.8	5.5	100.0	218
Middle/JSS	9.6	2578	8.1	19.3	41.5	28.3	2.9	100.0	11.8	36.2	36.9	7.3	3.5	4.4	100.0	248
Secondary +	8.5	889	20.6	16.9	42.4	13.6	6.5	100.0	27.0	25.0	43.5	2.5	1.2	.8	100.0	76
Wealth index quintiles																
Poorest	16.9	1730	15.6	20.9	40.8	20.1	2.6	100.0	18.2	24.8	40.5	4.2	6.5	5.9	100.0	293
Second	14.6	1551	18.4	18.0	41.1	20.1	2.5	100.0	20.0	29.7	35.7	6.0	4.7	4.5	100.0	230
Middle	11.9	1559	16.6	15.4	40.6	26.6	.8	100.0	21.2	37.3	35.7	4.4	.7	.4	100.0	186
Fourth	11.6	1397	8.3	16.5	45.9	25.9	3.3	100.0	9.8	44.9	29.9	8.8	2.7	5.0	100.0	166
Richest	6.8	1313	11.6	8.7	46.1	29.0	4.6	100.0	17.1	29.7	44.1	.0	.0	5.0	100.0	82
Total	12.7	7550	14.9	17.3	42.2	23.2	2.5	100.0	17.7	32.3	36.9	5.1	3.7	4.3	100.0	956

Figures in parentheses '()' are based on 25-49 unweighted cases.

Table CH.6: Oral rehydration therapy with continued feeding and other treatments

Percentage of children age 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, and percentage of children with diarrhoea who received other treatments, Ghana, 2011

Background Characteristics	Children with diarrhoea who received:		Other treatment:										Number of children aged 0-59 months with diarrhoea				
	ORT (ORS or homemade fluids) increased	ORT with continued feeding [1]	Antibiotic	Pill or syrup	Antimotility	Zinc	Other	Pill or syrup	Unknown	Intravenous	Injection: Unknown	Injection: Antibiotic		Injection: Non-antibiotic	Home remedy/ Herbal medicine	Not given any treatment or drug	
Sex																	
Male	50.7	60.7	44.5	28.9	18.7	2.0	6.4	3.5	3.8	2	2	.2	.2	4.3	6.6	11.1	484
Female	48.1	56.2	43.3	28.5	14.1	2	7.5	3.8	3	3	3	.9	.1	4.7	7.7	12.2	471
Region																	
Western	39.6	55.2	34.3	34.8	10.3	2.2	2.8	4.9	2.8	2.8	2.2	.0	.0	.8	12.3	13.0	104
Central	49.5	58.5	47.5	25.4	12.5	.7	8.6	1.9	8.6	1.9	.7	.0	.0	9.5	8.8	9.1	88
Greater Accra	(43.5)	(62.6)	(55.1)	(22.6)	(8.4)	(.0)	(18.7)	(3.9)	(.0)	(.0)	(.0)	(.0)	(.0)	(8.9)	(3.1)	(9.9)	91
Volta	39.0	50.1	28.2	37.2	12.6	.0	3.8	.0	3.8	.0	2.0	.0	.0	16.6	6.6	11.3	45
Eastern	(50.2)	(55.1)	(37.1)	(65.9)	(3.4)	(.0)	(3.5)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(8.6)	(8.5)	54
Ashanti	60.1	70.8	57.1	23.6	28.4	4.1	5.6	1.0	5.6	1.0	.0	.0	.0	3.4	4.9	9.4	204
Brong Ahafo	45.3	56.4	42.7	12.8	20.7	.0	6.1	16.1	6.7	16.1	.0	.0	.0	3.5	4.2	11.1	108
Northern	47.7	48.8	34.8	36.3	12.4	.4	4.6	1.6	4.6	1.6	.4	.3	.6	2.7	6.1	16.7	182
Upper East	64.1	64.8	47.6	20.1	27.6	.0	1.7	2.9	12.8	2.9	.0	.0	.0	3.0	13.8	9.3	51
Upper West	41.3	47.5	31.2	14.6	12.0	.0	1.1	2.2	7.1	2.2	.0	.0	.0	3.8	15.5	18.5	28
Residence																	
Urban	51.5	63.6	51.2	30.4	19.7	.0	4.8	4.9	4.8	4.8	1.9	1.3	.0	3.3	4.7	11.2	343
Rural	48.2	55.7	39.8	27.7	14.6	.2	2.6	2.9	8.2	2.9	2.6	.2	.2	5.2	8.4	11.9	613
Age																	
0-11	35.0	41.5	28.5	20.2	13.2	.2	3.3	2.5	6.6	2.5	3.3	.0	.0	6.3	8.3	18.5	180
12-23	50.4	63.6	42.4	31.7	14.1	.0	.9	4.2	6.9	4.2	.0	.1	.0	6.2	7.4	10.4	262
24-35	57.9	65.7	55.4	27.6	19.7	.0	2.8	5.1	5.4	5.1	.0	.0	.2	4.3	6.3	9.2	227
36-47	51.9	57.3	43.0	29.7	16.0	.2	3.4	2.4	11.2	2.4	.3	.5	.3	2.2	4.8	13.2	183
48-59	48.8	61.5	50.8	36.1	21.7	.7	1.8	3.3	3.8	3.3	.0	.0	.3	1.8	10.2	5.9	103
Mother's education																	
None	52.4	56.7	40.1	24.7	12.5	.1	1.6	4.0	8.9	4.0	.4	.3	.3	4.8	8.1	11.4	414.4
Primary	47.6	58.2	46.5	26.0	17.0	.3	2.6	2.8	6.6	2.8	.3	1.8	.0	7.3	5.1	12.8	217.5
Middle/JSS	47.1	62.2	48.6	39.2	20.9	.1	2.6	3.8	4.6	3.8	.0	.0	.0	3.0	7.5	10.2	248.0
Secondary +	45.6	57.0	41.9	23.5	22.5	.0	5.1	3.8	5.1	3.8	.0	.4	.0	.0	6.1	14.9	75.6
Wealth index quintiles																	
Poorest	57.1	62.0	44.7	25.1	15.8	.1	2.7	3.4	8.1	3.4	.3	.3	.2	3.1	8.2	12.7	293
Second	46.1	55.3	40.8	23.1	10.9	.2	2.3	2.8	6.8	2.8	.5	.0	.2	5.6	8.2	11.6	230
Middle	47.7	56.5	43.6	36.5	16.2	.4	.7	4.8	8.9	4.8	.0	.0	.0	5.3	6.2	11.1	186
Fourth	41.7	58.4	50.7	37.0	24.4	.0	1.5	5.2	5.2	4.1	.0	2.7	.0	4.6	6.4	8.7	166
Richest	49.9	59.5	37.6	23.1	19.2	.0	6.4	2.8	2.8	3.2	.0	.0	.0	4.5	3.7	15.6	82
Total	49.4	58.5	43.9	28.7	16.5	.1	2.4	3.6	7.0	3.6	.2	.6	.1	4.5	7.1	11.7	956

[1] MICS indicator 3.8. Figures in parentheses '()' are based on 25-49 unweighted cases.

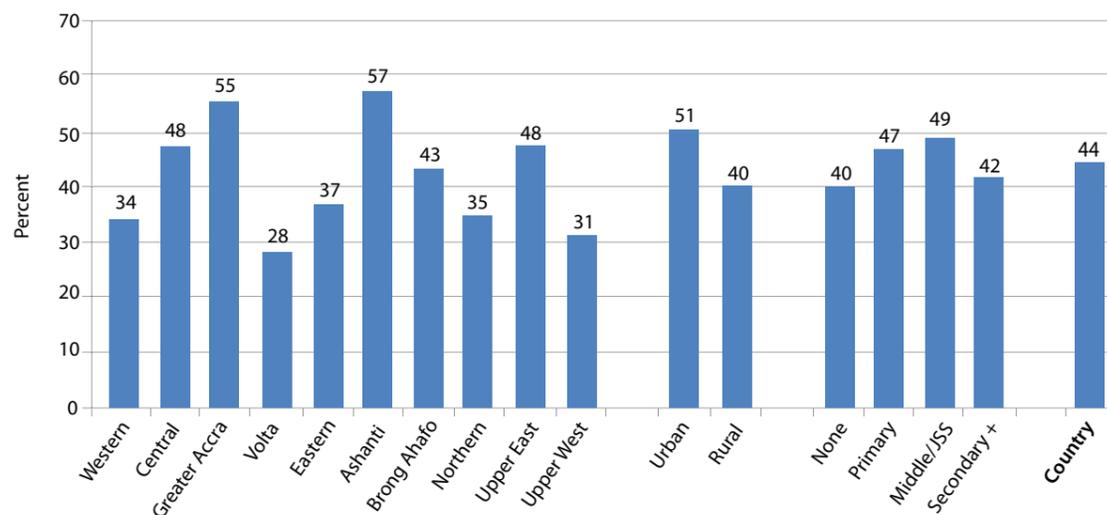
Table CH.6 provides the proportion of children aged 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, and percentage of children with diarrhoea who received other treatments. Overall, half of children (49%) with diarrhoea received ORS or increased fluids and 59 percent received ORT (ORS or recommended homemade fluids or increased fluids). Combining the information in Table CH.5 with those in Table CH.4 on oral rehydration therapy, it is observed that 44 percent of children received ORT and, at the same time, feeding was continued, as is the recommendation.

There are significant differences in the home management of diarrhoea by background characteristics as shown in Figure CH.4. For example, in Volta region, only 28 percent of children received ORT and continued feeding, while the coverage is 57 percent in Ashanti region. Also, urban areas have coverage of 51 percent compared to 40 percent in rural areas. Differences by age groups are also observed – for age-group 0-11 months, the coverage is 29 percent, while the coverage for the 24-35 months age-group is 55 percent. For both educational background and wealth quintile of the household, uneven patterns are observed.

The survey revealed that other orthodox treatments were used to treat diarrhoea in children, and included intravenous infusion, anti-motility, herbal remedy, antibiotic and zinc. These treatments were administered in syrup, pill, herbal medicine and injection forms. Overall, nearly 30 percent received antibiotic in pill or syrup, 17 percent were given antimotility, 4 percent antibiotic injection, 2 percent other pill or syrup, 5 percent with herbal medicine, 7 percent unknown pill or syrup and 7 percent received other treatment (Table CH.6).

Table CH.6 also shows that 12 percent of children who had diarrhoea during the last two weeks preceding the survey were not given any treatment or drug, and the highest was recorded in age-group of 0-11 months (19%).

Figure CH.4: Percentage of children age 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, Ghana 2011



Care Seeking and Antibiotic Treatment of Pneumonia

Pneumonia is the leading cause of death in children and the use of antibiotics in under-5s with suspected pneumonia is a key intervention. A World Fit for Children goal is to reduce by one-third the deaths due to acute respiratory infections.

Children with suspected pneumonia are those who had an illness with a cough accompanied by rapid or difficult breathing and whose symptoms were NOT due to a problem in the chest and a blocked nose.

The indicators are:

- Prevalence of suspected pneumonia
- Care seeking for suspected pneumonia
- Antibiotic treatment for suspected pneumonia
- Knowledge of the danger signs of pneumonia

Table CH.7 presents the prevalence of suspected pneumonia and, if care was sought outside the home, the source of care. Overall, only 3 percent of children aged 0-59 months were reported to have had symptoms of pneumonia during the two weeks preceding the survey, and 41 percent of them were taken to an appropriate provider. Also, 56 percent of children with suspected pneumonia in the last two weeks received antibiotics. The table shows that children with suspected pneumonia were mainly taken to public health facilities (18% were taken to public hospital, 12% to public health centres), while a smaller proportion were taken to private hospital or clinic (7%).

Due to the small number of children reported to have had symptoms of pneumonia in the last two weeks, the analysis of the use of antibiotics and health care providers by background variables will be limited to sex of the child only. Table CH.7 shows that male children are more likely to be taken to any appropriate provider (49%) or receiving antibiotics (69%) compared to female children with 34 percent and 43 percent, respectively.

Table CH.7: Care seeking for suspected pneumonia and antibiotic use during suspected pneumonia

Percentage of children age 0-59 months with suspected pneumonia in the last two weeks who were taken to a health provider and percentage of children who were given antibiotics, Ghana, 2011

Back-ground Characteristics	Had suspected pneumonia in the last two weeks	Number of children age 0-59 months	Children with suspected pneumonia who were taken to:									Percentage of children with suspected pneumonia who received antibiotics in the last two weeks [2]	Number of children age 0-59 months with suspected pneumonia in the last two weeks
			Public sector: Government hospital	Public sector: Government health center	Other public	Private hospital / clinic	Private pharmacy	Other private medical	Relative / Friend	Other	Any appropriate provider [1]		
Sex													
Male	2.9	3757	23.4	14.3	3.5	7.3	9.8	.3	6.0	3.5	48.8	69.0	109
Female	3.0	3793	12.4	9.8	2.3	7.1	15.4	2.3	1.8	4.3	33.9	42.8	112
Region													
Western	1.9	758	*	*	*	*	*	*	*	*	*	*	14
Central	2.9	740	(20,8)	(7,5)	(2,4)	(,0)	(14,9)	(1,4)	(,0)	(4,1)	(32,1)	(51,5)	22
Greater Accra	.6	1142	*	*	*	*	*	*	*	*	*	*	7
Volta	2.1	601	*	*	*	*	*	*	*	*	*	*	12
Eastern	4.2	827	*	*	*	*	*	*	*	*	*	*	34
Ashanti	2.9	1411	*	*	*	*	*	*	*	*	*	*	41
Brong Ahafo	3.6	671	*	*	*	*	*	*	*	*	*	*	24
Upper East	6.3	852	13.0	25.1	9.1	,0	12.5	2.3	,0	8.9	49.5	59.8	53
Upper West	2.3	325	*	*	*	*	*	*	*	*	*	*	7
Residence													
Urban	1.8	3283	(36,6)	(11,6)	(,9)	(12,1)	(10,0)	(,0)	(3,3)	(,9)	(61,2)	(73,0)	60
Rural	3.8	4267	10.9	12.2	3.7	5.3	13.6	1.8	4.1	5.0	33.9	49.2	161
Age													
0-11	2.6	1543	15.6	10.4	2.8	8.8	12.1	5.0	7.1	10.4	42.7	49.0	40
12-23	3.5	1453	29.5	7.2	6.0	9.0	10.7	,0	,0	,0	51.7	58.9	51
24-35	2.9	1553	(26,3)	(15,8)	(,9)	(3,4)	(12,2)	(,0)	(9,8)	(5,5)	(46,4)	(55,5)	46
36-47	2.1	1576	6.9	22.2	5.3	,0	13.4	,9	,0	4.7	35.2	67.1	32
48-59	3.7	1426	7.7	8.3	,3	12.0	14.8	1.1	2.5	,9	29.5	50.6	53
Mother's education													
None	4.0	2455	13.1	15.9	3.6	2.1	7.3	1.2	5.3	6.9	36.0	49.9	99
Primary	2.0	1628	(24,4)	(11,0)	(6,2)	(14,2)	(7,0)	(4,1)	(4,0)	(2,8)	(59,9)	(69,4)	32
Middle/JSS	2.9	2578	21.1	9.0	1.2	9.8	20.1	,4	2.6	1.2	41.4	60.4	76
Secondary +	1.5	889	(19,4)	(2,6)	(,0)	(12,9)	(23,7)	(,0)	(,0)	(,0)	(34,9)	(39,1)	13
Wealth index quintile													
Poorest	4.4	1730	7.2	15.3	7.1	1.1	10.1	3.7	1.9	6.5	34.4	53.1	77
Second	3.7	1551	13.9	15.3	,0	11.5	9.0	,0	9.0	5.3	40.8	44.7	57
Middle	2.5	1559	(10,6)	(13,9)	(2,6)	(14,7)	(17,3)	(,0)	(,0)	(1,4)	(41,9)	(61,7)	39
Fourth	2.1	1397	*	*	*	*	*	*	*	*	*	*	30
Richest	1.4	1313	*	*	*	*	*	*	*	*	*	*	18
Total	2.9	7550	17.9	12.0	2.9	7.2	12.6	1.3	3.9	3.9	41.3	55.7	221

[1] MICS indicator 3.9

[2] MICS indicator 3.10

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

The issues related to the knowledge of danger signs of pneumonia are presented in Table CH.8. Obviously, mothers' knowledge of the danger signs is an important determinant of care-seeking behaviour. Only 1 percent of the mothers and caretakers of children aged 0-59 months know the two danger signs of pneumonia – fast and difficult breathing.

Table CH.8: Knowledge of the two danger signs of pneumonia

Percentage of mothers and caretakers of children age 0-59 months by symptoms that would cause them to take the child immediately to a health facility, and percentage of mothers who recognize fast and difficult breathing as signs for seeking care immediately, Ghana, 2011

Background Characteristics	Percentage of mothers/caretakers who think that a child should be taken immediately to a health facility if the child:										Mothers/caretakers who recognize the two danger signs of pneumonia	Number of mothers/caretakers of children age 0-59 months	
	Is not able to drink or breastfeed	Becomes sicker	Develops a fever	Has fast breathing	Has difficulty breathing	Has blood in stool	Is drinking poorly	Child has diarrhoea	Child incessant crying for no reason	Child not eating well			Has other symptoms
Region													
Western	13.8	53.6	58.2	5.8	9.4	11.1	1.7	25.3	21.9	28.7	18.7	2.7	455
Central	4.9	46.3	66.8	1.9	3.8	3.0	1.5	33.6	13.6	22.6	26.0	.1	435
Greater Accra	6.3	40.1	82.0	1.7	3.6	3.6	3.4	40.3	20.3	30.3	41.9	.8	714
Volta	10.9	40.9	75.7	1.4	6.2	2.8	.6	28.5	22.4	30.3	44.1	.7	357
Eastern	5.2	63.4	67.0	2.7	3.9	2.5	2.7	39.1	18.1	28.9	20.6	.7	520
Ashanti	5.2	37.7	84.5	1.7	1.2	6.3	2.5	31.3	18.7	23.5	45.7	.0	863
Brong Ahafo	7.9	27.3	84.2	2.4	6.9	3.4	.4	28.1	23.3	26.6	45.4	1.6	439
Northern	12.1	45.9	81.9	1.6	4.4	3.0	3.1	38.5	22.1	25.9	25.0	.1	495
Upper East	8.9	55.8	76.4	3.7	6.2	4.6	3.0	34.3	12.3	8.3	18.5	.8	214
Upper West	20.7	35.7	73.1	5.0	9.1	6.9	7.2	36.9	27.4	39.2	27.1	1.9	143
Residence													
Urban	6.3	43.9	78.3	2.8	5.1	4.0	2.6	35.5	18.5	27.6	38.2	.9	2100
Rural	9.9	44.5	74.5	2.1	4.3	5.2	2.2	32.3	20.8	25.4	29.8	.7	2535
Education													
None	10.0	46.3	75.8	1.6	4.2	5.2	2.1	31.0	18.1	24.0	28.6	.5	1406
Primary	7.1	44.8	76.0	1.9	4.2	4.8	1.4	34.7	21.1	27.3	28.9	.7	1010
Middle/JSS	7.8	42.7	75.3	2.6	4.3	3.6	2.8	34.5	19.5	27.8	37.7	.7	1630
Secondary +	7.4	42.7	80.1	4.8	7.4	6.1	3.7	36.7	22.3	27.0	42.3	2.1	588
Wealth index quintiles													
Poorest	10.9	45.5	78.4	1.7	4.6	5.0	2.0	34.0	17.9	21.3	27.6	.4	1008
Second	9.2	44.6	70.7	1.8	4.9	4.2	2.2	29.9	22.1	25.8	27.0	.4	919
Middle	7.3	42.1	74.9	3.6	5.1	4.3	2.0	31.5	20.2	30.0	34.6	1.4	947
Fourth	6.0	48.3	75.5	2.1	3.1	4.9	2.2	34.4	20.2	29.3	40.4	.6	908
Richest	7.5	40.3	81.7	3.1	5.7	4.9	3.5	39.3	18.5	26.2	39.4	1.2	852
Total	8.2	44.2	76.2	2.5	4.7	4.7	2.4	33.7	19.8	26.4	33.6	.8	4635

The most commonly identified symptom for taking a child to a health facility is developing a fever (76%), while 44 percent of mothers indicated that a child should be taken immediately to a health facility if the child becomes sicker. Also, 34 percent and 26 percent of mothers indicated that the child should be taken to a health facility if he/she has diarrhoea, or if child is not eating well, respectively. In contrast, only 3 percent and 5 percent of mothers/caretakers identified respectively fast breathing and difficult breathing as symptoms for taking children immediately to a health care provider.

Solid Fuel Use

More than 3 billion people around the world rely on solid fuels (biomass and coal) for their basic energy needs, including cooking and heating. Cooking and heating with solid fuels leads to high levels of indoor smoke, a complex mix of health-damaging pollutants. The main problem with the use of solid fuels is products of incomplete combustion, including carbon monoxide, polyaromatic hydrocarbons, sulphur dioxide, and other toxic elements. Use of solid fuels increases the risk of acute respiratory illness, pneumonia, chronic obstructive lung disease, cancer, and possibly tuberculosis, low birth weight, cataracts, and asthma. The primary indicator is the proportion of the population using solid fuels as the primary source of domestic energy for cooking.

As shown by Table CH.9, overall, more than three quarters (81%) of all households in Ghana are using solid fuels for cooking. As can be expected, use of solid fuels is lower in urban areas (66%) than in rural areas, where almost all household members are using solid fuels (96%).The findings show that less than 50 percent of households in Accra use solid fuels for cooking, compared to over 80 percent of households in all other regions. The three northern regions have the highest percentage of households using solid fuels for cooking (about 98%).

One in every two households in all ten regions use wood/firewood for cooking (50%), while nearly 30 percent of the households use charcoal and a further 17 percent use Liquefied Petroleum Gas (LPG). Households in Accra are more likely to use LPG than households in other regions (50%).

Differentials with respect to household wealth and educational level of the household head are quite significant. The use of solid fuels decreases with educational level and wealth index quintile. The results reveal that households where the head has no education are more than twice as likely to use solid fuels (98%), compared to households where the head has secondary or higher education (45%). Also, virtually all households at the bottom 40 percent wealth quintiles use solid fuels, compared to 24 percent of the richest 20 percent of the households.

Solid fuel use alone is a poor proxy for indoor air pollution, since the concentration of the pollutants is different when the same fuel is burnt in different stoves or fires. Use of closed stoves with chimneys minimizes indoor pollution, while open stove or fire with no chimney or hood means that there is no protection from the harmful effects of solid fuels. Solid fuel use by place of cooking is depicted in Table CH.10. For about a quarter (26%) of those households using solid fuels, cooking is done in a separate room used as a kitchen. For a further 25 percent of households using solid fuels, cooking is done elsewhere in the house, while 15 percent of the households use a separate building. Also, about one in three of the households (34%) cook outdoors.

Table CH.9: Solid fuel use
Percent distribution of household members according to type of cooking fuel used by the household, and percentage of household members living in households using solid fuels for cooking, Ghana, 2011

Background Characteristics	Percentage of household members in households using:										Solid fuels for cooking [1]
	Electricity	Liquefied Petroleum Gas (LPG)	Biogas	Kerosene	Charcoal	Wood/ Firewood	Straw / Shrubs / Grass	Agricultural crop residue/ Sawdust	No food cooked in household	Total	
Region											
Western	.1	17.5	.0	.2	20.3	60.9	.0	.0	1.0	100.0	81.3
Central	.0	12.8	.0	.1	32.2	54.2	.0	.0	.6	100.0	86.4
Greater Accra	.3	49.7	.1	.6	44.2	3.8	.0	.0	1.4	100.0	47.9
Volta	.0	6.0	.1	.1	28.3	64.6	.0	.0	.9	100.0	92.9
Eastern	1.7	13.6	.4	.0	35.4	48.1	.0	.0	.8	100.0	83.4
Ashanti	.1	17.7	.0	.0	35.8	44.3	.0	.3	1.8	100.0	80.3
Brong Ahafo	.0	6.0	.0	.0	19.1	73.6	.0	.0	1.3	100.0	92.7
Northern	.1	1.3	.0	.1	15.7	82.1	.0	.3	.4	100.0	98.2
Upper East								.1	2.5	.1	.0
Upper West	.0	1.9	.0	.0	16.3	81.4	.0	.0	.4	100.0	97.7
Residence											
Urban	.6	31.8	.1	.3	44.2	21.2	.1	.3	1.5	100.0	65.7
Rural	.0	3.6	.0	.0	15.6	77.0	.7	2.2	.7	100.0	95.6
None	.0	1.6	.0	.0	19.5	74.1	1.1	3.2	.4	100.0	97.9
Education											
Primary	.0	5.2	.0	.0	32.9	59.1	.4	1.5	.8	100.0	93.9
Middle/JSS	.2	17.3	.1	.1	36.7	44.1	.0	.3	1.3	100.0	81.1
Secondary+	1.1	50.6	.2	.5	28.3	17.5	.0	.1	1.7	100.0	45.8
Missing/DK	*	*	*	*	*	*	*	*	*	100.0	*
Wealth index quintiles											
Poorest	.0	.0	.0	.0	.7	91.6	1.8	5.7	.2	100.0	99.8
Second	.0	.0	.0	.1	8.9	89.4	.3	.6	.6	100.0	99.2
Middle	.0	1.4	.0	.0	43.1	53.7	.0	.0	1.8	100.0	96.8
Fourth	.1	12.2	.1	.3	70.6	14.9	.0	.0	1.8	100.0	85.5
Richest	1.4	72.7	.3	.3	23.8	.6	.0	.0	.9	100.0	24.4
Total	.3	17.3	.1	.1	29.4	50.0	.4	1.3	1.1	100.0	81.2

1] MICS indicator 3.11
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Table CH.10: Solid fuel use by place of cooking

Percent distribution of household members in households using solid fuels by place of cooking, Ghana, 2011

Background Characteristics	Place of cooking:					Total	Number of household members in households using solid fuels for cooking
	In a separate room used as kitchen	Elsewhere in the house	In a separate building	Outdoors	Other		
Region							
Western	29.9	25.8	23.4	20.9	.0	100.0	3510
Central	28.3	17.0	19.4	35.3	.0	100.0	3938
Greater Accra	15.4	33.0	3.1	48.5	.0	100.0	3655
Volta	7.8	11.9	31.7	48.7	.0	100.0	3666
Eastern	22.3	29.3	26.1	22.3	.0	100.0	4377
Ashanti	38.1	24.9	9.2	27.7	.0	100.0	6747
Brong Ahafo	32.8	21.9	12.0	33.1	.2	100.0	3924
Northern	10.2	31.9	4.9	52.8	.1	100.0	4182
Upper East	51.8	26.4	7.8	13.7	.2	100.0	2048
Upper West	40.2	29.4	3.7	26.7	.0	100.0	1362
Residence							
Urban	23.9	33.2	8.1	34.8	.0	100.0	14631
Rural	28.0	19.6	19.0	33.3	.0	100.0	22779
Education of households head							
None	24.5	23.7	12.3	39.5	.0	100.0	13449
Primary	22.1	27.0	16.1	34.7	.1	100.0	5821
Middle/JSS	28.0	24.3	17.5	30.1	.0	100.0	14178
Secondary +	33.7	28.1	10.9	27.3	.0	100.0	3962
Wealth index quintiles							
Poorest	25.5	20.7	13.4	40.3	.1	100.0	9200
Second	27.1	16.4	21.9	34.5	.0	100.0	9155
Middle	25.0	23.1	17.2	34.7	.0	100.0	8925
Fourth	24.9	38.7	7.9	28.4	.0	100.0	7880
Richest	38.4	35.3	5.1	21.0	.1	100.0	2251
Total	26.4	24.9	14.7	33.9	.0	100.0	37410





Introduction

This chapter presents data that are useful for assessing the implementation of malaria control strategies, including the availability, ownership and use of insecticide treated nets; the use of antimalarial drugs for prophylaxis during pregnancy and for treatment of children under age five years; indoor residual spraying of dwellings with insecticides; knowledge of malaria symptoms, cause, and prevention; and the prevalence of anaemia. Data on the above indicators have been collected in previous MICS and DHS surveys in Ghana. In addition, data on malaria parasite prevalence, based on rapid diagnostic testing (RDTs) and microscopy, are incorporated as part of the new components in the MICS 2011. These data provide a unique nationwide snapshot of peak-season malaria point-prevalence in children aged 6-59 months.

Background on Malaria in Ghana

Malaria is endemic and perennial in all parts of the country, with seasonal variations that are more pronounced in the north. All Ghana's population of 24.2 million is at risk of malaria infection, but children under five years of age and pregnant women are at higher risk of severe illness due to lowered immunity. Transmission tends to be less intense in large urban centres. According to the Ghana Health Service (GHS) health facility data, malaria is the number one cause of morbidity, accounting for about 38 percent of all outpatient illnesses, 35 percent of all admissions, and about 34 percent of all deaths in children under five years (NMCP 2010 Annual Report). Between 3.1 and 3.5 million cases of clinical malaria are reported in public health facilities each year, of which 900,000 cases are in children under five years (Ghana National Malaria Control Strategic Plan, 2008-2015). There were an estimated 21,000 deaths due to malaria for children under age 5 in 2006 (WHO, World Malaria Report 2008). Malaria is also a significant cause of adult morbidity, and the leading cause of workdays lost due to illnesses.

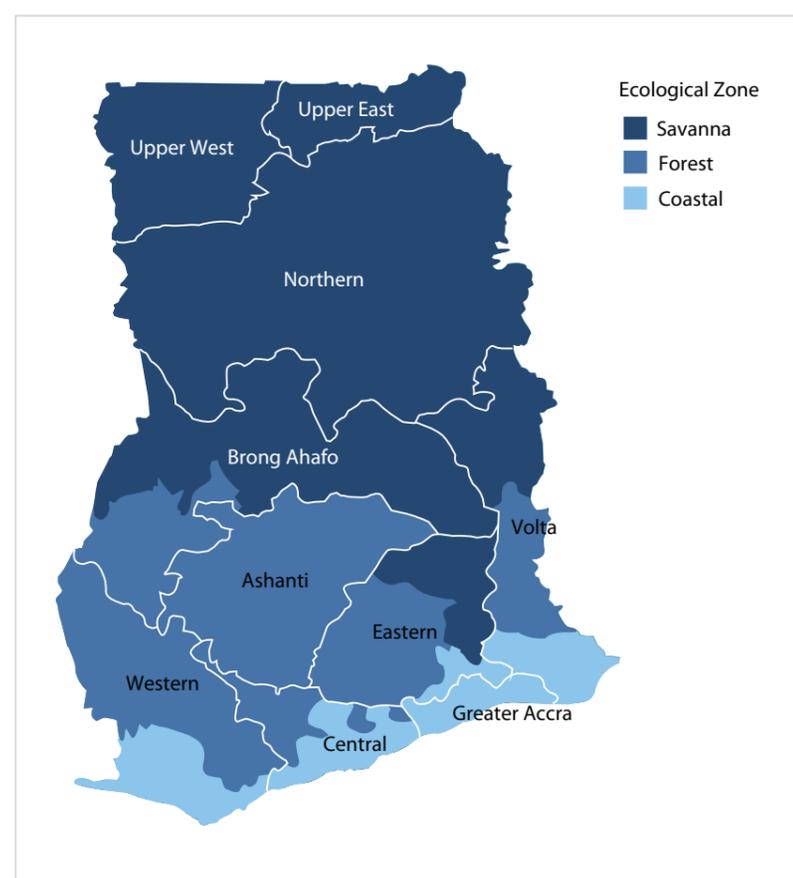
Malaria: Cause and Transmission

Malaria is caused by a single-celled parasite called Plasmodium, and is transmitted by the female Anopheles mosquito. The main parasite species causing malaria in Ghana is *P. falciparum* (over 90-95 percent of infections in most prevalence studies). *P. malariae* (<10 percent), and *P. ovale* (<2 percent) are also found. *P. vivax* is not known in Ghana. Mixed infections of *P. falciparum* and *P. malariae* are fairly common (Noguchi Memorial Institute for Medical Research, unpublished reports). The major vectors found throughout the country are *Anopheles gambiae* species complex and *A. funestus*. These species generally bite late in the night, are indoor resting, and are commonly found in the rural and peri-urban areas where socio-economic activities lead to the creation of breeding sites. Outdoor biting is more common in the northern savannah zone. *Anopheles melas* is found in the mangrove swamps of the southwest (Ghana National Malaria Control Strategic Plan 2008-2015).

Transmission is greatest during the rainy season(s) because the increase in relatively clean, temporary fresh stagnant water bodies favour the breeding of *Anopheles* mosquitoes during that period. The normal duration of the intense malaria transmission season ranges from approximately 6-7 months in the northern-most part of the country (May-October) up to 10-11 months in the forest zone. Peak levels of malaria infection and malaria-associated anaemia in the population persist for 2-3 months into the dry season. The MICS 2011 was conducted from mid-September to mid-December, a period which is presumed to coincide with the peak or average periods of malaria-associated anaemia and malaria parasitaemia in all areas of the country (Koram et al, 2001; Owusu-Agyei et al, 2002).

Ghana can be stratified into three malaria epidemiologic zones: the northern savannah; the tropical rainforest; and the coastal savannah/mangrove swamps. The boundaries of these zones have not been defined precisely, and are presumed to have shifted over recent decades with changing land use and settlement patterns. However, a fairly close approximation of the zones in contemporary Ghana is provided by the demarcations used by the Ghana Statistical Service in its periodic living standards surveys since 1998, which were based on technical input from the University of Ghana's Center for Remote Sensing (CERSGIS). (See Figure M.B.1). All selected EAs were allocated to the ecological zones they belonged to, given that GSS already had demarcation of the ecological zones.

Figure MB.1: Map of Ecological Zones and Regions, Ghana 2011



National Strategies for Malaria Control

Over the years, strategies for malaria control have evolved to take advantage of improved control methods, increasing resource levels, and revised international technical standards. The World Health Organization (WHO) launched the Roll Back Malaria Strategy in 1998, which was adopted by Ghana in the year 2000. That same year, Ghana signed the Abuja Declaration to halve the burden of the disease through:

- Distribution of insecticide-treated nets (ITNs) to cover populations at risk (especially children under the age of five and pregnant women)
- Indoor residual spraying (IRS) to reduce transmission

- Prevention of malaria among pregnant women through intermittent preventive treatment during pregnancy (IPTp)
- Prompt diagnosis and treatment with effective medicine

In 2003, a Global Fund Round 2 malaria grant ensured intensification of malaria control interventions in 20 districts across the country, improving key indicators in these districts within three years. In 2005, Ghana again received increased funds under a Round 4 Global Fund malaria grant to scale up interventions nationwide, resulting in improved indicators across the country. In 2004, Ghana adopted artemisinin-based combination therapies (ACTs) as first-line treatment for uncomplicated malaria, due to the emergence of resistance to chloroquine. In that same year, IPTp using the drug sulphadoxine-pyrimethamine (SP) was adopted as the national policy, to be implemented by the Reproductive Health Division in collaboration with the NMCP in all public health facilities, faith-based facilities, and private maternity homes.

Since 2005, Indoor Residual Spraying (IRS) has been implemented on a district-wide scale by the AngloGold Ashanti mining company in Obuasi, Ashanti Region. This was followed by IRS in nine districts in the Northern region starting in 2008 by the President's Malaria Initiative (PMI), and currently scaling up to 45 districts by 2015 under a Global Fund Round 8 grant implemented by Anglo Gold Ashanti. In addition, small-scale operations on a community-level scale have been conducted by mining companies, at plantations, tourist facilities, housing estates, and district assemblies, largely in southern Ghana.

These early successes attracted an increase in support from the Global Fund and other international partners between 2006 and 2012, including DFID, UNICEF, Japanese Government, the World Bank, the US President's Malaria Initiative (PMI), and a number of local and international NGOs. The government of China has, over the years, donated ACTs to the country, to support the malaria control program. Targeted larviciding has been implemented on a consistent basis in several focal areas, notably by AngloGold Ashanti in Obuasi and by the Cuban-supported Labiofam program in central urban neighborhoods of Accra, Kumasi and Sunyani.

Scale-up of proven malaria control intervention continues to be central to the national strategic goals outlined in the National Malaria Control Strategy 2008-2015. This strategic plan was developed by the National Malaria Control Program (NMCP) under the Ghana Health Service within the Ministry of Health, together with all stakeholders. The strategic plan calls for a 75 percent reduction in malaria mortality by the year 2015, using 2006 as the baseline (National Malaria Control Strategic Plan 2008-2015).

The key targets of the national strategy include:

1. Universal coverage with insecticide treated nets (ITNs).
Targets: 1 ITN available per 2 persons by 2015; 100 percent of household ITN ownership by 2015; 85 percent of children under five years and pregnant women, and 80 percent of the general population, sleeping under an ITN by 2015
2. Rapid scale up of IRS to cover one-third of the country
Target: 90 percent of all households' dwellings/structures in targeted districts covered
3. Universal coverage of pregnant women receiving intermittent preventive treatment (IPTp) using the drug sulphadoxine-pyrimethamine (SP)
Target: 85 percent of pregnant women receiving at least two doses of IPTp by 2011, and 100 percent by 2015

4. Early diagnosis of malaria using microscopy or rapid diagnostic test (RDT)
Target: originally allowed for clinical diagnosis for children under age 5, but amended in 2009 to aim for universal testing wherever practicable
5. Prompt and effective treatment with artemisinin-based combination therapies (ACTs)
Target: 90 percent of patients with uncomplicated malaria correctly treated using ACTs at public and private facilities by 2015

The plan also calls for strengthening health systems at all levels, with an emphasis on research, monitoring and evaluation and, creating and sustaining partnerships for malaria control. Current priority areas are focused on sustaining ITN coverage following ITN mass distribution campaigns; managing insecticide resistance; and resolving implementation bottlenecks in community and home management of malaria.

As part of the NMCP's effort to influence attitude and practice on malaria prevention and treatment, the programme has also undertaken intensive public education (IE&C/BCC) on all programme interventions. All media channels were used ranging from mass media to inter-personal communication.

Malaria Prevention

There are two main approaches to preventing malaria in Ghana. The first is integrated vector control which primarily aims at reducing man-vector contact through the use of Insecticide Treated Nets (ITNs), larviciding and Indoor Residual Spraying (IRS). The second preventive measure is Intermittent Preventive Treatment (IPT) that targets pregnant women. Larviciding was not covered in the Ghana MICS 2011, due to its highly focal targeting to date. As mentioned, larviciding on a limited basis has been implemented in central urban districts of Accra, Kumasi, and Sunyani (since 2009-11), as well as in Obuasi (since 2005).

Insecticide Treated Mosquito Nets (ITNs)

One of the most effective measures for preventing malaria is the use of insecticide-treated bed net (ITN). ITNs have been shown not only to reduce malaria transmission by as much as 90 percent under trial conditions, but also to reduce the indoor vector population (Binka et al, 1998; Hawley et al, 2003). ITNs also reduce malaria morbidity and mortality.

An insecticide-treated net (ITN) is any of the following: either a factory-treated net that does not require any further treatment (known as a "long-lasting insecticide-treated net," LLIN); a pre-treated net obtained within the past 12 months; or a net that has been soaked with insecticide within the past 12 months. 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 net must retain its effective biological activity without re-treatment for repeated washes and three years of use under field conditions (WHO 2007.) The current generation of LLINs lasts 3-5 years, after which point the net should be replaced.

The MICS 2011 included questions on net ownership, use, type and source of net. Questions were asked to determine who had slept under each net the previous night. In determining ITN usage, only persons reported to have slept under a net the night before the survey were considered users of ITNs (consistent with Roll Back Malaria international guidelines).

Community level protection against malaria is of interest because it helps to reduce the spread of the disease and offers an additional level of protection for the most vulnerable groups, children and pregnant women. Age is an important factor in determining levels of acquired immunity to malaria. It is established that for the first six months following birth, antibodies acquired from the mother during pregnancy protect children born in areas of endemic malaria. This immunity is gradually lost and children start to develop their own immunity to malaria. The pace at which immunity is developed depends on their exposure to malaria infection, and in high malaria-endemic areas, children are thought to have attained a high level of immunity by their fifth birthday. Such children may experience episodes of malaria illness but usually do not suffer from severe, life-threatening malaria. Immunity in areas of low malaria transmission is acquired more slowly and malaria illness affects all age groups of the population (Doolan et al., 2009). Unlike some other infectious diseases, immunity against malaria is not permanent, and protection from being infected requires the regular use of the protective interventions. The use of ITNs confers some protection if the child uses the net on a regular basis, and in Ghana, messaging around ITN distribution has stressed the importance of consistent use by children under five.

Brief History of ITN Distributions in Ghana

The MICS 2011 data on ITN ownership and use will be best understood if Ghana's recent history of ITN distribution is known. From 2002 to 2009, the Ghanaian Ministry of Health (MOH) embraced a mixed model of ITN distribution, in which subsidized distribution through the public and private sector, workplace and NGOs distributions, and full-cost sales all contributed. This resulted in 42 percent of ITN ownership, as reported in the 2008 Ghana Demographic and Health Survey (GDHS). In order to promote the ownership of mosquito nets, the government of Ghana, since 2002, has implemented a tax waiver policy on the importation of mosquito nets into the country. Development partners contributed by providing ITNs for distribution at subsidised costs to pregnant women and children under five in disadvantaged areas of the country through routine public health services. During 2002-2010, the NMCP, PMI, World Bank, UNICEF and Global Fund between them provided enhanced support for subsidized ITN distribution in all regions except Greater Accra. JICA continued such support in Upper West through 2011.

In 2010, Ghana Health Service, led by the NMCP, and with the support of development partners, began focusing on a "catch-up" strategy of implementing free mass distribution campaigns with the goal of achieving universal coverage of LLINs in all ten regions by 2012. This campaign provided free LLINs in door-to-door, hang-up exercises nationwide, distributing approximately 14 million LLINs over two years. The LLIN hang-up exercises were carried out through a program of door-to-door visits by community volunteers in each region.

The door-to-door, hang-up approach was tested in May 2010 in the Northern Region, through a campaign which targeted just children under five and pregnant women. The remaining campaign targeted universal coverage of the general population, defined as one net per every two persons. The NMCP goal for these campaigns was to achieve 75 percent of households owning at least one LLIN. At the time of the 2011 Ghana MICS survey data collection (Sept 15-Dec 15, 2011), universal-coverage campaigns had been completed in the Eastern, Volta, and Western regions. Central Region began its campaign toward the end of that period. The remaining regions had their campaigns in 2012, i.e. after the MICS data had already been collected. Table MB.1 outlines the timing of the various campaigns.

Table MB.1: Regional distributions of Insecticide Treated Bed Nets in 2010-11

Time of Campaign	Region	ITN Coverage (numbers of ITNs)	Status at time of Data Collection (mid Sept-mid Dec 2011)
May 2010	Northern Region	Targeted <5, and Pregnant women 566,900	Completed
December 2010	Eastern Region, 10 districts	Universal Coverage 450,000	Completed
April 2011	Eastern Region, 11 districts	Universal Coverage 710,463	Completed
July 2011	Volta	Universal Coverage 1,064,692	Completed
November 2011	Western	Universal Coverage 1,346,900	Partly Completed
December 2011	Central	Universal Coverage 1,049,100	Partly Completed
February-March 2012	Ashanti	Universal Coverage 2,516,100	Not yet begun.
April 2012	Upper East	Universal Coverage 598,368	Not yet begun.
February-March 2012	Upper West	Universal Coverage 375,029	Not yet begun.
May 2012	Brong Ahafo,	Universal Coverage 1,378,300	Not yet begun
July-August 2012	Northern Region	Universal Coverage 1,300,000 (projected)	Not yet begun
August 2012	Greater Accra	U. Coverage (rural areas) 2,023,705 (projected)	Not yet begun

Household Ownership of Mosquito Nets

Table MB.2 presents data on the percentage of households possessing at least one mosquito net (treated or untreated), the average number of nets per household, and the percentage of households with at least one net for every two persons (household members) who stayed in the household the previous night, by background characteristics. Overall, 51 percent of households had at least one mosquito net whether treated or untreated and 49 percent had at least one ITN. We observed from the table that few ITNs in Ghana came from categories other than LLINs, since households with at least one LLIN made up 48 percent, very close to the percentage of household with at least one ITN.

In 34 percent of households, an ITN was observed hanging by the MICS team in the field. Rural households were more likely to own at least one net (63%) than urban households (41%). The findings were similar whether the net was noted to be an LLIN, or any ITN.

Table MB.2: Household possession of mosquito nets

Percentage of households with at least one mosquito net (treated or untreated), insecticide-treated net (ITN), and long-lasting insecticidal net (LLIN); average number of nets, ITNs, and LLINs per household; and percentage of households with at least one net, ITN, and LLIN per two persons who stayed in the household last night, Ghana, 2011

Background Characteristics	Percentage of households with at least one mosquito net				Average number of nets per household				Percentage of households with at least one net for every two persons who stayed in the household last night ¹				Number of households with at least one person who stayed in the household last night		
	Any mosquito net	Insecticide treated net (ITN) ² [1]	Insecticide treated net (ITN) seen hanging in household	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide treated net (ITN) ²	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide treated net (ITN) ²	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide treated net (ITN) ²	Long-lasting insecticidal net (LLIN)	Number of households with at least one person who stayed in the household last night	Number of households with at least one person who stayed in the household last night
Region															
Western	44.2	42.7	26.2	42.2	0.8	0.8	0.8	22.6	21.7	21.4	21.4	21.4	1,116	1,105	
Central	33.5	32.1	20.4	31.6	0.5	0.5	0.4	13.7	12.8	12.6	12.6	12.6	1,236	1,229	
Greater Accra	29.6	25.5	11.3	24.7	0.4	0.4	0.4	2.321	10.4	10.4	10.4	10.4	2,321	2,300	
Volta	90.3	85.4	68.9	85.3	2.3	2.0	2.0	992	65.3	65.2	65.2	65.2	992	983	
Eastern	78.4	78.2	55.0	77.8	1.5	1.5	1.5	1,533	57.7	57.3	57.3	57.3	1,533	1,521	
Ashanti	42.4	39.8	29.1	39.0	0.6	0.6	0.6	2,321	16.4	16.1	16.1	16.1	2,321	2,310	
Brong Ahafo	56.5	53.4	38.8	52.4	0.9	0.8	0.8	1,011	22.2	21.4	21.4	21.4	1,011	999	
Northern	68.8	67.2	47.6	67.0	1.4	1.4	1.3	727	19.3	19.3	19.3	19.3	727	727	
Upper East	53.2	51.8	38.8	51.4	1.0	0.9	0.9	414	18.0	17.7	17.7	17.7	414	414	
Upper West	66.3	60.7	44.5	59.5	1.3	1.2	1.2	253	19.7	19.4	19.4	19.4	253	253	
Ecological Zone															
Coastal	36.8	33.5	19.4	32.9	0.7	0.6	0.6	4,297	18.0	18.0	18.0	18.0	4,297	4,255	
Forest	56.8	54.7	38.9	54.1	1.0	0.9	0.9	5,344	30.3	29.9	29.9	29.9	5,344	5,308	
Savannah	66.4	64.2	48.5	63.7	1.4	1.3	1.3	2,284	28.2	28.0	28.0	28.0	2,284	2,277	
Residence															
Urban	41.4	39.1	22.5	38.4	0.7	0.6	0.6	6,358	20.7	20.6	20.6	20.6	6,358	6,298	
Rural	62.9	60.1	46.5	59.5	1.2	1.1	1.1	5,567	30.9	30.6	30.6	30.6	5,567	5,542	
Education of household head															
None	53.9	51.3	38.4	51.0	1.0	1.0	1.0	2,997	23.5	23.2	23.2	23.2	2,997	2,984	
Primary	54.2	50.8	36.6	49.9	1.0	0.9	0.9	1,560	23.6	23.5	23.5	23.5	1,560	1,554	
Middle/JSS	51.8	49.7	34.3	49.2	1.0	0.9	0.9	4,590	26.8	26.6	26.6	26.6	4,590	4,559	
Secondary +	46.6	43.9	26.1	42.9	0.8	0.7	0.7	2,775	26.6	26.2	26.2	26.2	2,775	2,740	
Missing/DK	*	*	*	*	*	*	*	3	*	*	*	*	3	3	
Wealth index quintile															
Poorest	69.4	65.9	54.5	65.4	1.4	1.3	1.3	1,763	26.6	26.3	26.3	26.3	1,763	1,760	
Second	61.1	58.5	44.9	58.1	1.1	1.1	1.1	2,244	31.1	30.9	30.9	30.9	2,244	2,236	
Middle	55.1	52.2	37.5	51.7	1.0	0.9	0.9	2,450	28.9	28.7	28.7	28.7	2,450	2,411	
Fourth	43.7	41.0	24.7	40.5	0.7	0.7	0.6	2,639	21.5	21.3	21.3	21.3	2,639	2,625	
Richest	36.5	35.2	17.0	34.1	0.6	0.6	0.6	2,829	21.2	20.8	20.8	20.8	2,829	2,808	
Total	51.4	48.9	33.7	48.3	0.9	0.9	0.9	11,925	27.5	25.5	25.2	25.2	11,925	11,840	

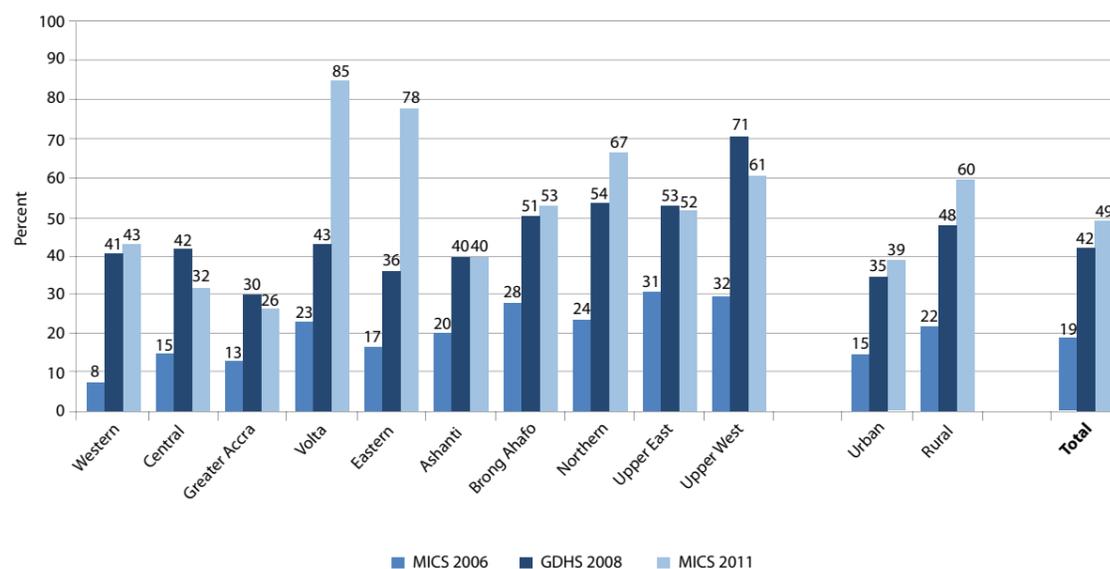
[1] MICS indicator 3.12
An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Figure MB.2 present the increasing trend in household ITN ownership from the three latest household surveys: the MICS 2006, the GDHS 2008, and the MICS 2011. The percentage of households with at least one ITN increased from 19 percent in the 2006 Ghana MICS, to 42 percent in the 2008 Ghana DHS, and most recently, to nearly 50 percent in the 2011 Ghana MICS. Figure MB.2 also shows that ITN ownership was highest in the Volta region (85%), an increase from 23 percent in 2006, and Eastern region, where ITN ownership increased from 17 percent in 2006 to 78 percent in 2011. All districts in these regions had fully completed their distribution campaigns 3-12 months prior to MICS 2011 data collection. Although net ownership may well have reached comparable levels in other regions following their respective mass distribution campaigns, the MICS could not capture those outcomes due to the timing of the campaigns (Table MB.1). Among the regions which had not yet benefited from the mass regional campaigns, Upper West had the highest ownership at 61 percent, an increase from 32 percent in 2006. The lowest percentage of net ownership was observed in the Greater Accra region (26%), which had neither enhanced support for routine distribution in 2002-2010, nor any mass distribution campaign after 2010. Table MB.2 also shows that increase in ownership of ITN has been higher in rural households, compared to urban households. For rural areas, ITN ownership increased from 22 percent in 2006, to 48 percent in 2008, and to 60 percent in 2011. For urban households, ITN ownership increased from 15 percent in 2006, to 35 percent in 2008 and to 39 percent in 2011.

Table MB.2 also reveals that the Savannah ecological zone had the highest LLIN ownership (64%), followed by the Forest (54%), and Coastal (33%) ecological zones. The results also reveal that household net ownership decreases with increasing household wealth and with increasing level of education of the household head.

The average number of mosquito nets per household was about one net per household. Also, 26 percent of households had at least one ITN for every two persons who stayed in the household the night before the survey. Volta Region, at 65 percent, was closest to the universal coverage goal of at least one net per two persons sleeping in the household.

Figure MB.2: Trends in ownership of ITNs: Percent of households with at least one ITN by region and residence, Ghana 2011



Use of Mosquito Nets by Persons in the Household

Table MB.3 presents information on the percentage of the household population (i.e. usual household members who slept in the household last night) who slept the night before the survey under a mosquito net (treated or untreated), ITN, LLIN, or in a dwelling in which the interior walls had been sprayed with indoor residual spray (IRS) in the past 12 months, by background characteristics. The results show that 31 percent of the household members slept under any mosquito net the night before the survey; 29 percent slept under an ITN; 28 percent slept under an LLIN; and 36 percent slept under an ITN or in a dwelling which has been sprayed with IRS in the past 12 months. Among households with at least one ITN, 48 percent of the household population slept under an ITN the night before the survey.

By age, 45 percent of children under age five slept under any mosquito net the night before the survey and 42 percent slept under an ITN. Among households with an ITN, 63 percent of children under age five slept under an ITN. Slightly more females slept under an ITN the night before the interview than their male counterparts (30% versus 27%, respectively). A similar pattern is observed among households with at least one ITN, where 51 percent of females slept under an ITN the night before the survey compared with 45 percent of males.

People living in rural areas were more likely to have slept under any mosquito net, an ITN, or LLIN than their urban counterparts. For example, 33 percent of people in rural households slept under an ITN compared with 19 percent of people in urban households. For households with at least one ITN, 51 percent of population in rural households and 40 percent of urban households slept under an ITN.

At the regional level, Volta Region – which finished its ITN campaign just 3 months prior to the Ghana MICS 2011 data collection – had the highest percentage of household population sleeping under ITNs and LLINs (66% for both). Greater Accra region has the lowest percentage among all the categories of nets (11% for ITNs and LLINs). The percentages of the household population who slept under an ITN the night prior to the survey ranges from 66 percent in the Volta region to 11 percent in Greater Accra. Among households with at least one ITN, the percentage of households sleeping under an ITN the night before was not as varied among the regions.

In terms of ecological zones, the Forest zone had the highest percentage of the household population who slept under an ITN last night (32%), followed by the Savannah zone (31%), and the Coastal zone (19%). The highest percentage of households who slept under an ITN or in a dwelling sprayed with IRS in the last 12 months before the interview was observed among households in the Savannah (43%), while the Coastal zone had the lowest percentage (20%).

Net usage among the household population generally decreases with an increase in wealth for each type of net. ITN usage the night prior to the survey ranged from 33 percent in the poorest 40 percent of the households to 15 percent in the richest wealth quintile.

Table MB.3 Use of mosquito nets by members in the household
Percentage of the household population¹ who slept the night before the survey under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among the de facto household population in households with at least one ITN, the percentage who slept under an ITN the night before the survey, Ghana, 2011

Background Characteristics	Household population					Number of persons in household with at least one ITN ²	
	Percentage who slept under any mosquito net last night	Percentage who slept under an ITN last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN or in a dwelling sprayed with IRS in the last 12 months	Number of persons	Percentage who slept under an ITN last night	Number of persons
Sex							
Male	28.8	26.9	26.5	35.0	25,901	45.2	15,426
Female	32.2	30.3	29.9	37.3	27,068	50.9	16,085
Region							
Western	25.7	24.0	23.7	24.9	2,831	51.2	1,327
Central	18.4	17.2	16.7	18.1	7,189	46.4	2,673
Greater Accra	13.0	10.9	10.6	11.9	3,193	32.3	1,077
Volta	72.0	65.6	65.5	65.6	2,944	71.9	2,683
Eastern	51.2	50.6	50.5	51.2	2,602	59.5	2,215
Ashanti	23.6	21.3	20.8	27.0	3,460	48.6	1,516
Brong Ahafo	29.9	27.6	26.9	28.3	2,924	49.1	1,645
Northern	28.2	26.9	26.8	57.5	11,724	37.4	8,434
Upper East	29.3	28.7	28.1	29.2	7,674	50.7	4,340
Upper West	35.8	32.6	32.0	32.6	8,428	49.1	5,601
Ecological zones							
Coastal	21.1	18.7	18.3	19.5	10,626	47.9	4,145
Forest	34.1	32.2	31.8	34.4	11,646	54.5	6,869
Savannah	32.5	30.7	30.3	42.5	30,697	46.0	20,497
Residence							
Urban	20.2	19.0	18.7	24.2	16,805	40.2	7,936
Rural	35.3	33.1	32.7	41.7	36,164	50.8	23,575
Age (in years)							
<5	43.6	41.5	41.0	48.8	7,514	63.0	4,951
5-14	26.2	24.6	24.3	33.4	16,515	40.2	10,117
15-34	27.9	26.1	25.7	32.9	13,541	45.3	7,794
35-49	34.4	32.3	31.9	38.0	7,007	54.9	4,113
50+	28.0	26.6	26.4	33.0	436	49.4	235
DK/Missing	*	*	*	*	16	*	9
Wealth index quintile							
Poorest	35.1	32.8	32.4	44.3	23,146	49.2	15,426
Second	35.3	33.3	32.9	39.1	10,460	53.2	6,552
Middle	28.0	26.1	25.6	30.7	7,513	46.5	4,211
Fourth	22.3	20.9	20.5	24.4	6,472	43.2	3,129
Richest	15.0	14.5	14.2	17.0	5,378	35.5	2,193
Total	30.5	28.6	28.2	36.1	52,969	48.1	31,511

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Use of Mosquito Nets by Children Under Five Years

Table MB.4 presents information on the use of mosquito nets by children under- five years who, the night before the survey, slept under any mosquito net, an ITN, a LLIN, and an ITN or in a dwelling in which the interior walls were treated with IRS in the past twelve months, by background characteristics. The table also presents information on the percentage of children under five who slept under an ITN last night among children who live in households with at least one ITN. Overall, 42 percent of children under five slept under any mosquito net (treated or untreated) the night before the survey; 39 percent slept under an ITN; 38 percent slept under an LLIN; and 43 percent slept under an ITN, or in a dwelling in which the interior walls were treated with IRS in the past 12 months. Among children under five years of age in households with at least one ITN, 63 percent slept under an ITN the night before the survey.

Among the regions, the percentage of children under five who slept under any mosquito net the night before the survey ranged from a low of 26 percent in Greater Accra to a high of 76 percent in Volta. The same pattern was observed by region for the percentage of children under five who slept under ITNs, LLINs, and those who slept under an ITN or in household sprayed with IRS. With respect to children under five years in households with at least one ITN, the Volta region also had the largest percentage of children who slept under an ITN the night before the survey (78%).

In terms of ecological zones, the Savannah has the highest percentage of children under- five years who slept under any net the night before the interview (48%), slept under an ITN (46%), slept under an LLIN (46%), and slept either under an ITN or in a dwelling sprayed with IRS in the 12 months preceding the survey (56%). However, with respect to the percentage of children under five years in households with at least one ITN, the Forest zone has the highest percentage of children who slept under an ITN the night before the survey (65%).

Table MB.4: Use of mosquito nets by children under 5 years of age

Percentage of children under age five who, the night before the survey, slept under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among children under five years of age in households with at least one ITN, the percentage who slept under an ITN the night before the survey, Ghana, 2011

Background Characteristics	Children under five in all households				Children under five in households with at least one ITN1		
	Percentage who slept under any net last night [1]	Percentage who slept under an ITN last night [2]	Percentage who slept under an LLIN last night	Percentage who slept under an ITN1 last night or in a dwelling sprayed with IRS in the past 12 months	Number of children	Percentage who slept under an ITN last night	Number of children
Sex							
Male	41.3	39.3	38.3	43.7	3,715	63.3	2,306
Female	41.9	38.8	38.4	42.5	3,746	63.2	2,298
Region							
Western	33.7	32.7	31.6	32.9	743	62.6	388
Central	29.0	27.7	26.8	28.1	729	60.0	337
Greater Accra	25.5	22.1	20.8	23.1	1,131	47.9	523
Volta	76.3	70.7	70.7	70.7	575	77.8	522
Eastern	60.7	60.2	59.7	60.5	819	70.5	699
Ashanti	35.5	31.2	31.0	37.2	1,407	61.2	718
Brong Ahafo	43.7	41.3	40.4	41.6	663	66.7	411
Northern	43.0	41.8	41.8	65.3	847	54.6	649
Upper East	46.8	45.0	44.1	45.3	324	72.6	201
Upper West	49.6	46.9	46.4	47.1	222	67.0	156
Ecological zones							
Coastal	32.8	29.7	28.7	30.4	2,250	59.0	1,133
Forest	43.6	40.9	40.4	43.7	3,185	65.3	1,995
Savannah	48.2	46.4	45.9	56.3	2,026	63.8	1,475
Residence							
Urban	32.0	30.1	29.2	33.3	3,253	56.4	1,737
Rural	49.0	45.9	45.5	50.7	4,208	67.4	2,867
Age							
0-11	47.7	44.5	43.1	48.1	1,531	68.9	989
12-23	47.0	44.2	43.5	48.8	1,429	71.3	885
24-35	40.1	37.0	36.6	41.2	1,531	62.0	913
36-47	37.3	34.9	34.5	38.8	1,554	57.4	946
48-59	35.8	34.6	34.4	38.8	1,415	56.4	870
Mother's education							
None	44.5	41.8	41.5	49.1	2,443	62.3	1,638
Primary	41.1	38.8	38.1	40.8	1,609	65.9	948
Middle/JSS	40.6	37.8	37.4	40.0	2,536	64.9	1,477
Secondary +	36.9	35.3	33.1	39.5	873	56.9	541
Wealth index quintile							
Poorest	53.3	49.7	49.2	57.9	1,710	69.0	1,232
Second	48.2	45.5	45.2	47.9	1,537	68.8	1,017
Middle	43.3	41.0	40.7	43.7	1,530	63.3	993
Fourth	33.8	31.0	30.2	34.7	1,382	60.1	713
Richest	24.6	23.6	22.1	26.3	1,301	47.2	649
Total	41.6	39.0	38.4	43.1	7,461	63.3	4,604

[1] MICS Indicator 3.14
[2] MICS Indicator 3.15; MDG Indicator 6.7

Figure MB.3 shows various other differentials for ITN use among children. Children aged 23 months and younger were more likely (44%) to have slept under an ITN than older children the night before the survey. There was no variation by gender. The proportion of children under five who slept under an ITN the night before is higher in rural areas (46% against 30% in urban areas), In terms of ecological zones, the Savannah has the highest ITN use among children (46%) and Coastal the lowest (30%), and ITN use among children decreases as mother's education or household wealth increases. In general, Table MB.4 shows that, for all different background variables, similar observations can be made on all of the indicators.

Figure MB.3: Differentials in ITN usage among children under 5, Ghana 2011

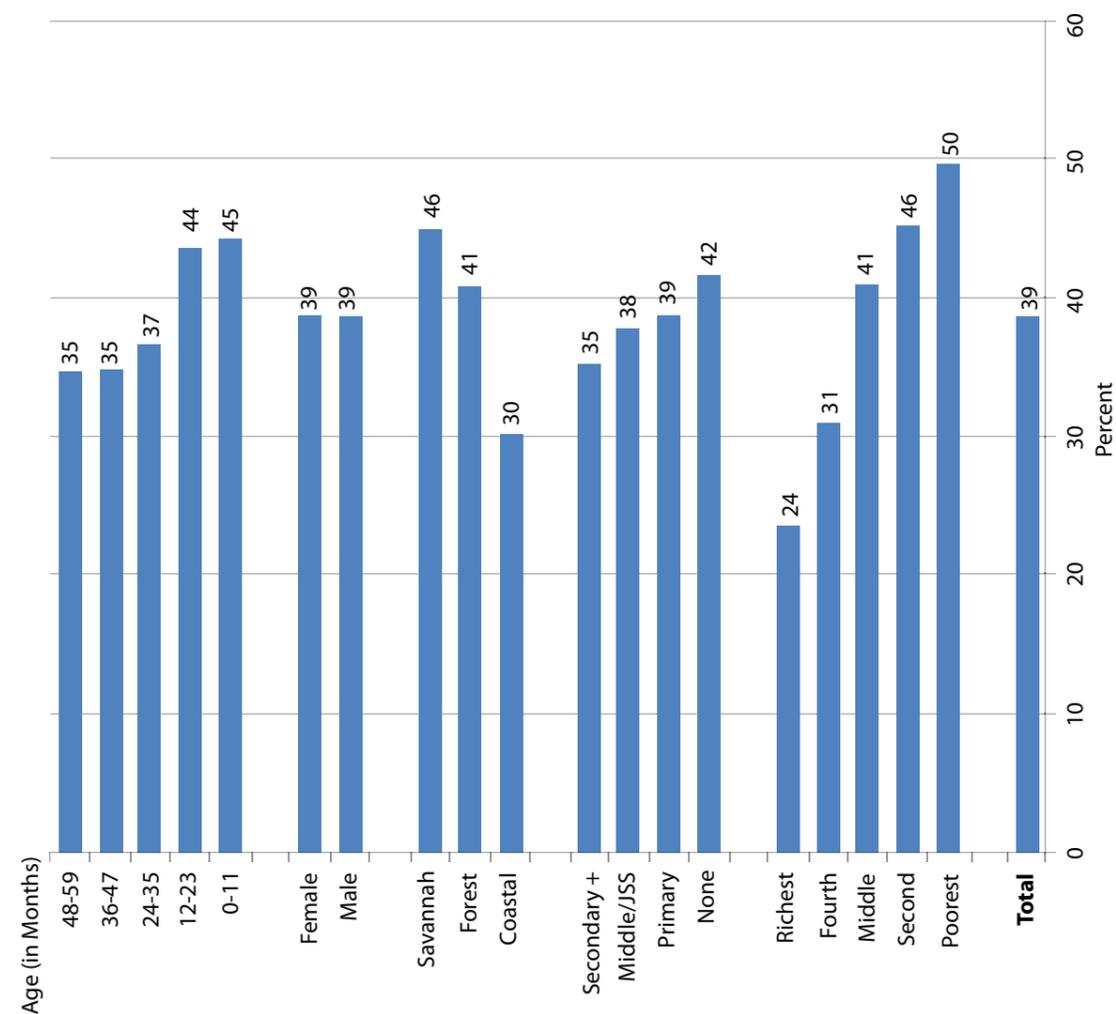
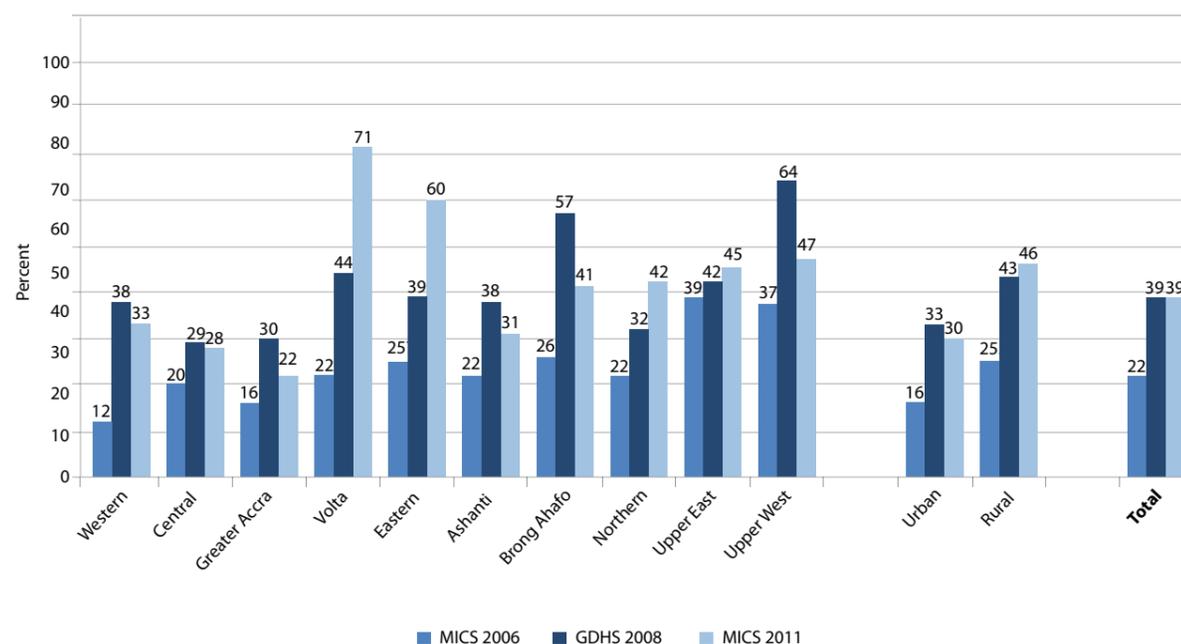


Figure MB.4 presents trends in ITN usage in the latest three surveys. ITN use among children under five has steadily increased in the 5-year period between the MICS 2006 and the MICS 2011. In 2006, 22 percent of children under 5 slept under an ITN the night before the survey. Two years later, the Ghana DHS 2008 estimated that 39 percent of children slept under an ITN the previous night. In 2011, the percent of children under 5 who slept under an ITN held steady at 39 percent. Net use at the national level is expected to have increased further, because only Volta and Eastern regions had completed their universal coverage campaigns prior to MICS 2011 data collection. Seven other regions had their campaigns during or after the data collection (Table MB.1).

Figure MB.4: Trends in proportion of children under five who slept under an ITN the previous night by region and residence, Ghana 2011



Use of Mosquito Nets by Pregnant Women

In malaria-endemic areas, adults usually have acquired some degree of immunity to severe, life-threatening malaria. However, pregnancy leads to a depression of the immune system so that pregnant women, especially those in their first pregnancy, have a higher risk of malaria. Moreover, these infections may be asymptomatic and lead to malaria-induced anaemia and may interfere with the mother-foetus exchange resulting in low weight births (WHO 1993). During pregnancy, women can reduce the risk of the adverse effects of malaria by sleeping under insecticide-treated mosquito nets.

Table MB.5 presents information on mosquito net use by pregnant women aged 15-49 years in all households, and in households with an ITN, by background characteristics. Nationally, 35 percent of pregnant women aged 15-49 years in all households slept under any mosquito net the night before the survey; 33 percent slept under an ITN; 32 percent slept under an LLIN; and 39 percent slept under an ITN or in a dwelling in which the interior walls had been sprayed against mosquitoes (IRS) in the 12 months prior to the survey. Among pregnant women age 15-49 years in households with at least one ITN, 58 percent slept under an ITN the night before the survey.

Table MB.5 also shows that use of ITN increases with women's age (from 29% for the pregnant women aged 15-24 years to 35% for women aged 35-49 years) and is more than twice larger in the rural areas than in the urban areas (44% vs. 19%). Like for children under five, ITN usage by pregnant women is highest in the Savannah zone (42%) and lowest in the Coastal zone (23%) and decreases with the educational level of the women and the wealth quintile index.

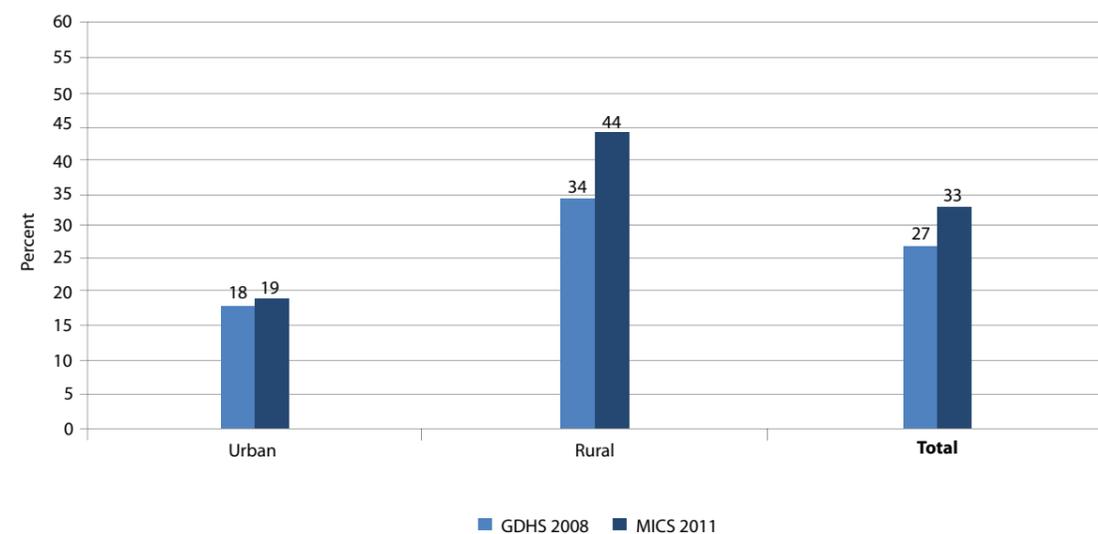
Figure MB.5 shows trends in ITN use among pregnant women for the period between the GDHS 2008 and the MICS 2011. Over the three-year period overall net use among pregnant women has increased from 27 percent to 33 percent; the increase is mostly due to an increase in use among women in rural areas. However, the results fall short of the national program's 2011 target aiming to have 65 percent of pregnant women sleeping under ITNs.

Table MB.5: Use of mosquito nets by pregnant women
 Percentages of pregnant women age 15-49 who, the night before the survey, slept under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among pregnant women age 15-49 in households with at least one ITN, the percentage who slept under an ITN the night before the survey, Ghana, 2011

Background Characteristics	Among pregnant women age 15-49 in all households					Among pregnant women age 15-49 in households with at least one ITN	
	Percentage who slept under any net last night [1]	Percentage who slept under an ITN last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN1 last night or in a dwelling sprayed with IRS in the past 12 months	Number of women	Percentage who slept under an ITN last night	Number of women
Region							
Western	(22.4)	(21.5)	(17.5)	(23.5)	80	*	37
Central	31.8	29.3	28.8	30.0	80	65.3	36
Greater Accra	(15.9)	(11.8)	(11.8)	(13.6)	107	*	35
Volta	65.0	57.8	57.8	57.8	74	63.5	67
Eastern	(62.3)	(62.3)	(62.3)	(62.3)	71	(78.1)	57
Ashanti	23.4	21.3	21.3	35.1	186	(51.2)	77
Brong Ahafo	37.7	36.1	34.8	38.5	72	(55.6)	47
Northern	39.6	37.9	37.9	62.2	86	49.3	66
Upper East	50.5	50.5	50.5	50.5	32	78.1	21
Upper West	44.5	41.2	40.4	41.2	22	64.8	14
Ecological zones							
Coastal	26.5	22.9	22.7	24.5	245	51.9	108
Forest	35.8	34.0	33.1	41.5	366	60.8	205
Savannah	43.9	41.8	41.2	52.3	200	57.6	145
Residence							
Urban	21.3	18.8	17.6	25.3	360	45.8	148
Rural	45.9	43.6	43.4	50.1	451	63.3	310
Age							
15-24	29.9	29.1	28.7	36.7	235	55.2	124
25-34	36.7	33.6	32.7	40.0	407	60.5	226
35-49	38.1	34.9	34.9	39.9	169	54.6	108
Education							
None	45.2	42.2	42.1	49.0	236	63.2	158
Primary	36.5	33.0	33.0	40.3	165	59.1	92
Middle/JSS	32.2	30.0	29.5	35.8	279	54.3	154
Secondary +	20.5	20.1	17.6	26.3	130	(48.5)	54
Wealth index quintile							
Poorest	53.4	51.4	51.4	59.3	185	70.6	135
Second	51.5	49.7	49.4	52.3	150	68.5	109
Middle	33.5	31.9	31.8	38.0	150	53.6	89
Fourth	18.5	12.9	12.3	19.5	166	34.7	61
Richest	16.8	15.8	13.7	24.4	160	(39.5)	64
Total	35.0	32.6	32.0	39.0	811	57.7	458

[1] MICS Indicator 3.19
 An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.

Figure MB.5: Trends in proportion of pregnant women age 15-49 who slept under an ITN the previous night, Ghana 2011



Source, Cost and Disposal of ITNs

In the MICS 2011, households that owned nets were asked where they had obtained the nets and how much they had paid for them. Table MB.6 presents information on the source and cost of nets by background characteristics.

Overall, 28 percent of ITNs were obtained from the public health sector, while 42 percent were obtained from public “door-to-door hang-up” campaigns. A small proportion (4%) of nets was obtained from the private medical sector, while 25 percent of nets were obtained from other sources. Table MB.6 also shows that 83 percent of ITN obtained in the public sector were free, when only 17 percent of ITN obtained in the private medical sector were. Nearly half (47%) of ITN obtained from other sources were free. The average cost of ITN that had been purchased was 2.20 Ghana Cedis (GhC) for nets purchased through the public sector, 6.61 GhC for nets purchased through the private sector, and 5.53 GhC for nets purchased through other sources.

Results also show that 8 percent of households had disposed of at least one net in the 12-month period prior to the survey (results not shown in a table). Of this small number of households, almost half (47%) had kept the net for less than 2 years, 36 percent had used the net between 2 and 4 years, and 17 percent had used the net for more than 4 years. The major reason cited for disposing of the net was that the net was torn (81%), while 8 percent of households indicated that the net no longer repelled mosquitoes, and another 8 percent responded that they disposed of the net because they had a new net.

Indoor Residual Spraying Against Mosquitoes

Indoor residual spraying (IRS) is the spraying of the interior walls of a dwelling with insecticide that has a long-lasting effect against mosquitoes. It reduces the transmission of malaria by killing adult female mosquitoes when they rest on the walls of the dwelling after feeding. Due primarily to cost and operations constraints, IRS is not targeted to all areas of the country. Within each targeted area, however, a high coverage of structures should be achieved in order to achieve the full entomologic and epidemiologic benefits of IRS. Ghana’s policy sets this target at 90%.

Prior to the MICS2011 data collection period, IRS had been implemented in Ghana on a large scale by AngloGold Ashanti in the Obuasi area of Ashanti Region, and by PMI/GHS in nine districts of Northern Region. As mentioned, small-scale operations had also been conducted, at mines, plantations, housing estates, etc. at scattered locations elsewhere in the country.

Table MB.7 shows the percentage of households in which the dwelling’s interior walls had been sprayed against mosquitoes (IRS) in the past 12 months, and the percentage of households with at least one ITN and/or IRS in the past 12 months by background characteristics. In Ghana as a whole, five percent of households had received IRS in the 12 months preceding the survey. In Northern Region, more than a third of households (36%) had been treated with IRS, making it the region where IRS was used more than other regions. Ashanti Region was second at 9 percent.

Table MB.6: Source and cost of insecticide treated nets (ITNs)

Among all ITNs, source of the ITN, percent of nets obtained for free, and median cost of ITNs by source of net, Ghana, 2011

Background Characteristics	Source of insecticide treated nets					Total	Percent free			Number of insecticide treated nets	Median cost (GhC)		
	Public sector ¹	Public campaign	Private medical sector	Other	DK,Missing		Public	Private	Other		Number of insecticide treated nets	Number of insecticide treated nets	Number of insecticide treated nets
Region													
Western	16.7	33.8	1.9	47.6	0.0	100.0	91.5	*	75.6	874	3.5	*	5.7
Central	42.9	5.5	10.2	40.5	0.9	100.0	68.0	26.4	51.8	557	2.5	5.4	5.2
Greater Accra	45.4	5.6	12.4	35.3	1.4	100.0	71.7	11.1	33.5	869	2.5	(10.5)	7.0
Volta	6.9	85.6	0.9	6.4	0.1	100.0	97.5	*	21.1	1,962	3.5	*	4.2
Eastern	10.9	80.8	1.0	5.6	1.6	100.0	81.1	*	39.4	2,346	1.0	*	(6.4)
Ashanti	36.2	6.5	5.2	49.1	2.9	100.0	63.9	(11.4)	47.3	1,311	3.0	(4.8)	5.6
Brong Ahafo	44.0	5.8	6.1	43.8	0.3	100.0	60.2	(45.6)	44.2	831	4.0	*	5.9
Northern	48.8	30.5	1.9	18.2	0.5	100.0	96.8	(9.4)	33.7	985	2.5	(4.6)	4.1
Upper East	61.5	2.3	5.2	30.3	0.6	100.0	70.1	8.7	47.2	389	2.0	5.5	4.6
Upper West	70.6	0.6	4.0	23.4	1.4	100.0	56.0	10.7	31.7	298	2.0	3.8	3.9
Ecological zones													
Coastal	26.8	43.3	6.5	22.7	0.7	100.0	85.6	11.1	39.2	2,468	2.5	8.8	6.2
Forest	20.3	46.0	3.2	29.0	1.4	100.0	80.4	26.6	56.6	5,007	2.0	5.1	5.7
Savannah	42.9	34.8	2.4	19.2	0.7	100.0	84.2	6.7	30.6	2,947	2.0	5.0	4.7
Residence													
Urban	29.4	39.3	6.4	24.0	0.9	100.0	77.5	13.4	41.4	4,109	2.5	7.3	6.4
Rural	27.5	44.1	2.1	25.3	1.1	100.0	86.1	23.3	50.7	6,313	2.0	5.0	4.9
Education of household head													
None	33.4	37.8	1.9	26.0	0.9	100.0	85.7	18.1	43.9	2,895	2.5	4.3	4.6
Primary	28.4	44.8	2.5	23.4	0.9	100.0	85.8	(13.9)	46.1	1,361	2.0	(5.6)	6.0
Middle/JSS	22.3	49.3	3.6	23.4	1.4	100.0	82.7	21.8	52.5	4,100	2.0	7.4	5.8
Secondary +	32.4	32.4	7.6	26.7	0.8	100.0	76.3	12.0	42.8	2,067	2.5	7.0	6.3
Wealth index quintile													
Poorest	38.2	36.3	1.8	23.0	0.6	100.0	86.9	11.0	36.2	2,291	2.5	4.5	5.0
Second	22.4	47.1	1.4	27.7	1.3	100.0	86.5	(27.6)	56.7	2,398	2.0	(4.4)	5.0
Middle	22.7	49.7	2.5	24.0	1.1	100.0	79.4	32.4	56.1	2,265	2.0	(5.1)	5.6
Fourth	27.3	44.8	5.5	21.5	1.0	100.0	81.9	9.2	44.7	1,727	2.5	6.7	5.3
Richest	31.2	30.7	9.5	27.4	1.3	100.0	76.7	14.6	37.6	1,741	4.0	8.1	7.1
Total	28.2	42.2	3.8	24.8	1.1	100.0	82.8	16.7	47.1	10,422	2.2	6.6	5.5

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

Table MB.7 also provides data on household coverage of ITNs and IRS counted together, because households are considered to be covered by vector control if they own at least one ITN and/or they had the interior walls of their rooms sprayed with IRS at any time in the past 12 months. Among all households, 49 percent had at least one ITN, while 51% of all households possessed an ITN and/or had received IRS.

Of note, in order to distinguish between IRS and common aerosol bug sprays (e.g. "Doom"), this table only includes IRS in those households in which the spraying was conducted by a government agency, an NGO, or a private company (contractor).

Table MB.7: Indoor residual spraying against mosquitoes				
Percentage of households in which someone has come into the dwelling to spray the interior walls against mosquitoes (IRS) in the past 12 months, and the percentage of households with at least one ITN and/or IRS in the past 12 months, Ghana, 2011				
Background Characteristics	Percentage of households with IRS1 in the past 12 months	Percentage of households with at least one ITN2	Percentage of households with at least one ITN2 and/or received IRS in the past 12 months [1]	Number of households
Region				
Western	2.0	42.7	44.4	1,116
Central	0.8	32.1	32.8	1,236
Greater Accra	1.5	25.5	26.4	2,321
Volta	0.0	85.4	85.4	992
Eastern	1.2	78.2	78.4	1,533
Ashanti	8.7	39.8	46.8	2,321
Brong Ahafo	0.8	53.4	54.0	1,011
Northern	36.0	67.2	76.2	727
Upper East	1.0	51.8	52.2	414
Upper West	0.2	60.7	60.7	253
Ecological zones				
Coastal	1.3	33.5	34.4	4,297
Forest	4.4	54.7	58.1	5,344
Savannah	11.8	64.2	67.2	2,284
Residence				
Urban	3.9	39.1	41.5	6,358
Rural	5.7	60.1	62.4	5,567
Education of household head				
None	8.1	51.3	54.0	2,997
Primary	3.5	50.8	52.4	1,560
Middle/JSS	3.1	49.7	51.9	4,590
Secondary +	4.5	43.9	46.7	2,775
Missing/DK	*	*	*	3
Wealth index quintile				
Poorest	10.2	65.9	68.6	1,763
Second	3.4	58.5	59.7	2,244
Middle	3.9	52.2	54.5	2,450
Fourth	4.3	41.0	44.2	2,639
Richest	3.4	35.2	37.7	2,829
Total	4.7	48.9	51.3	11,925
[1] MICS indicator 3.13 An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.				

Intermittent Preventive Treatment of Malaria in Pregnancy

In highly malaria-endemic areas, it is often health policy that pregnant women receive prophylactic treatment with the antimalarial drug SP/Fansidar once at the beginning of the second trimester of pregnancy and once at the beginning of the third trimester, preferably during routine antenatal care. Pregnant women who take malaria medicine only to treat an existing case of malaria are not considered to have received IPTp.

In the MICS 2011, women who had a live birth within the last two years were asked if they took any antimalarial drug during pregnancy at an ANC visit. Table MB.8 presents the percent of women aged 15-49 who had a live birth in the two years preceding the survey and who, during the pregnancy preceding the last birth, took any antimalarial drug for prevention, took one dose of SP/Fansidar, and those who received at least two doses of SP/Fansidar, i.e. that received intermittent preventive treatment (IPTp), by background characteristics. Among women with a live birth in the two years preceding the survey, 84 percent reported taking some type of antimalarial medicine to prevent getting malaria during the last pregnancy. Table MB.8 also shows that 83 percent of women took SP/Fansidar at least once during their pregnancy, compared with 58 percent in GDHS 2008. Overall, 65 percent of women took SP/Fansidar two or more times during an ANC visit.

The percentage of women taking IPTp did not vary much between women living in urban and rural areas but IPTp was highest among women with a Middle/JSS education and women in the fourth wealth quintile.

Figure MB.6 shows that the percentage of women who received IPTp increased from 44 percent in 2008 to 65 percent in 2011. The results show a marked increase between the two surveys, and are high by comparison to many other countries. Yet, they do not meet the 2011 national program's target of 85 percent coverage for IPTp among pregnant women.

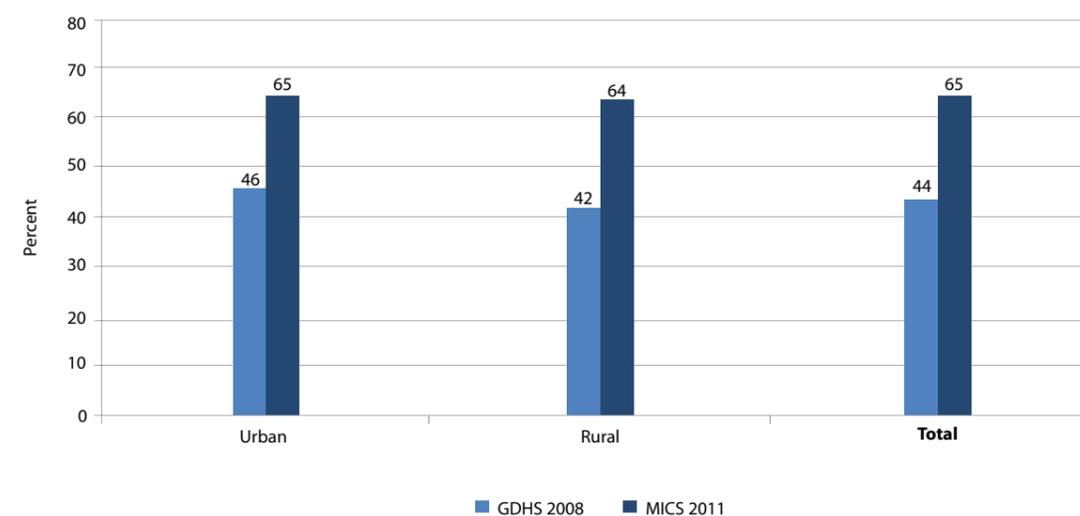
Note that, because the indicator for IPTp definition has changed over time, a direct comparison with the MICS 2006 data is not possible. In the MICS 2006, all women were asked if they took an antimalarial during pregnancy, but the information was not restricted to taking antimalarials during an ANC visit. The MICS 2011 did not collect information on women who took antimalarials during pregnancy outside of ANC visits. However, both GDHS 2008 and MICS 2011 asked women who had a birth in the two years preceding the survey, if they took antimalarial drugs during an ANC visit.

Table MB.8: Intermittent preventative treatment by women during pregnancy (IPTp)
Percentage of women age 15-49 with a live birth in the two years preceding the survey who, during an antenatal care visit preceding the last birth, received any antimalarial drug, received one or more doses of SP/Fansidar, and who received intermittent preventative treatment (IPTp), Ghana, 2011

Background Characteristics	Percentage who, during an ANC visit, took:			Number of women who had a live birth in the two years preceding the survey
	Any antimalarial drug	SP/Fansidar at least once	SP/Fansidar two or more times [1]	
Region				
Western	81.1	77.4	59.8	270
Central	85.0	82.0	65.0	246
Greater Accra	78.4	77.7	61.6	397
Volta	80.1	76.3	39.3	189
Eastern	92.5	91.5	71.4	288
Ashanti	92.6	92.6	75.0	449
Brong Ahafo	78.8	78.8	61.9	227
Northern	80.9	80.2	67.0	283
Upper East	79.2	78.5	69.4	105
Upper West	79.7	79.2	65.3	75
Ecological zones				
Coastal	80.6	79.3	61.1	754
Forest	87.3	85.7	66.8	1,095
Savannah	82.3	81.6	65.2	680
Residence				
Urban	82.9	81.7	65.3	1,068
Rural	84.7	83.4	64.2	1,460
Age				
15-24	84.5	82.8	59.4	620
25-34	85.3	84.2	68.6	1,264
35-49	80.7	79.6	62.1	645
Education				
None	77.0	76.0	60.0	733
Primary	86.2	84.2	63.1	565
Middle/JSS	88.4	87.1	69.1	886
Secondary +	83.5	82.8	65.8	344
Wealth index quintile				
Poorest	78.9	78.0	60.5	560
Second	81.3	78.5	60.1	546
Middle	86.8	86.2	63.8	500
Fourth	91.7	91.0	73.5	455
Richest	82.5	81.1	67.3	467
Total	84.0	82.7	64.6	2,528

[1] MICS Indicator 3.20

Figure MB.6: Trends in Intermittent Preventive Treatment (IPTp) by Women during Pregnancy, Ghana 2011



Prevalence, Diagnosis, and Treatment of Fever in Children Under-Five

Most fevers occur at home. When due to malaria, the fever can rapidly progress to severe illness if treatment is not received promptly. To promote effective management of febrile illness, the MOH and Ghana Health Service recommends (1) promptly evaluating and treating childhood fevers at a health facility; (2) obtaining a confirmatory blood test if the fever is suspected to be malaria; and (3) if the diagnosis is indeed malaria, treating promptly with an appropriate anti-malaria medication. Since 2004, the recommended first-line treatment for malaria has been artemisinin-based combination therapies (ACTs). ACTs are defined as antimalarial medicines that contain an artemisinin component as well as a second antimalarial drug component. The MOH/GHS has actively discouraged the use of “mono-therapies” such as chloroquine, SP/Fansidar, amodiaquine alone, or artesunate alone, due to concerns regarding clinical effectiveness and the development of drug resistance. In order to increase the availability of high-quality, affordable ACTs in the country, Ghana has since 2009 been piloting the Affordable Medicines Facility for Malaria (AMFm) program, with support from the Global Fund. All ACTs subsidized through the AMFm in Ghana are marketed under the “green leaf” label.

To assess the progress made in promoting these aspects of effective malaria treatment policy, the MICS 2011 asked women with children under age 5 a series of questions. They were asked if any of these children had a fever in the two weeks preceding the survey, and if so, whether any treatment was sought for the fever, and where the child was treated. Questions were also asked about blood testing, the types of drugs given to the child, and how soon and for how long the drugs were taken.

The Table MB.9 shows that 19 percent of children under -five years of age had a fever in the two weeks preceding the survey. It is noteworthy that the survey was conducted in the late rainy season, when malaria as well as many other types of childhood febrile illnesses, such as diarrhoeal and respiratory illnesses are common. Infants aged 0-11 months had a lower rate of two-week fever history (12%) than the older cohorts (20-22%). Also, prevalence of fever decreased steadily with increasing household wealth and mother’s education.

Among the children with a fever, treatment was sought for 50 percent of them from a health facility, health provider, or a pharmacy. Half of the children with fever were not taken anywhere for treatment. The table also shows that 16 percent of the febrile children were reported by their caregivers to have had a blood sample taken from their finger or heel for testing and 53 percent of children took an antimalarial drug, though fewer children (35%) took an antimalarial the same or next day. It follows that at least one-third of febrile children can be assumed to have been treated presumptively for malaria, without a blood test having been done.

Only 18 percent of children were recorded to have taken the recommended ACT, and 12 percent of children took the ACT the same or next day. However, due to an unresolved ambiguity in the questionnaire regarding the term “amodiaquine,” it is suspected that the true rate of ACT use was significantly higher (this issue is described further in the next section). By 2015, the national objective is for 90 percent of children aged 3 months to five years with fever to receive an appropriate ACT within 24 hours.

The prevalence of fever was higher among rural children (22%) than their urban counterparts (15%), but treatment was sought from a health care provider for a larger percentage of urban children (54%) than rural children (47%) and children living in urban areas (28%) were twice as likely as their rural counterparts to have received ACT (13%). Urban children were also twice as likely as rural children to have taken an ACT the same or next day (19% and 8%, respectively). Compared to the average rate (50%), the least-educated and poorest quintiles of the population were only somewhat more likely to not have taken the child anywhere (57% and 62%, respectively).

Table MB.10 shows in detail which type of facility the febrile children had been taken to. It appears that 20 percent of children were taken to a government clinic or health centre, 12 percent were taken to a government hospital, 8 percent were taken to a private hospital or clinic, 6 percent were taken to a private pharmacy, chemical shop or other private source, and 3 percent were taken to a government health post, community-based health worker, or an outreach clinic. Urban residents were more likely than rural residents to have used a hospital (16 vs. 11%), private hospital/clinic (11% vs. 6%) or private shop (8% vs. 4%), whereas rural residents were slightly more likely to have used a government health centre (22% vs. 18%), and eight times as likely to have accessed a community-based public sector resource such as a CHPS compound (4% vs. 1%). According to the data, community-based treatment for malaria in Ghana was accessed in 6 to 13 percent of cases in the three northern regions where it has been promoted the most consistently, but was scarcely used elsewhere in the country in spite of on-going efforts to scale up this approach (Table MB.10).

Table MB.9: Prevalence, diagnosis and prompt treatment of children with fever

Percentage of children under age five years with fever in the two weeks preceding the survey; and among children under age five with fever, the percentage for whom advice or treatment was sought from a health facility, provider, or pharmacy; the percentage who had blood taken from a finger or heel, Ghana, 2011

Background Characteristics	Among children under age five years		Among children under age five years with fever						
	Percentage with fever in the two weeks preceding the survey	Number of children under age five years	Percentage for whom advice or treatment was sought from a health facility, provider or pharmacy ¹	Percentage who had blood taken from a finger or heel for testing [1]	Percentage who took ACT ^{2,3}	Percentage who took ACT same or next day ^{2,3}	Percentage who took antimalarial drugs [2]	Percentage who took antimalarial drugs same or next day ³	Number of children under age five years with fever
Sex									
Male	19.8	3,757	51.5	16.3	15.6	10.1	53.5	36.3	743
Female	18.0	3,793	47.1	15.4	21.1	13.7	51.5	33.4	685
Region									
Western	22.0	758	42.5	11.1	16.2	9.6	42.7	22.7	166
Central	20.2	740	39.3	7.4	19.3	14.4	42.8	35.6	149
Greater Accra	8.9	1,142	(55.9)	(11.4)	(30.0)	(19.1)	(63.2)	(36.9)	101
Volta	14.5	601	43.7	24.4	23.5	8.8	49.4	32.5	87
Eastern	10.5	827	(76.8)	(14.9)	(16.3)	(6.4)	(66.8)	(55.0)	87
Ashanti	16.1	1,411	51.0	16.5	21.3	15.9	65.7	42.8	227
Brong Ahafo	28.8	671	44.9	13.1	19.8	13.1	46.1	30.5	193
Northern	31.8	852	42.7	16.3	8.7	6.4	44.4	27.5	271
Upper East	24.8	325	68.8	35.9	27.3	20.8	72.7	51.3	81
Upper West	29.4	223	62.2	23.3	11.5	4.9	51.2	33.5	66
Ecological zones									
Coastal	11.6	2,296	51.5	9.2	28.9	18.5	55.2	35.9	265
Forest	17.6	3,211	46.2	15.3	16.5	11.0	53.1	36.5	566
Savannah	29.2	2,043	51.5	19.3	15.2	9.7	50.9	32.9	596
Residence									
Urban	15.1	3,283	53.9	14.2	27.6	19.0	63.6	43.7	494
Rural	21.9	4,267	47.0	16.7	13.3	8.0	46.8	30.2	933
Age in months									
0-11	11.7	1,543	44.6	13.8	7.0	5.4	36.4	24.2	180
12-23	20.4	1,453	54.9	18.2	17.7	11.2	49.7	31.8	297
24-35	22.0	1,553	48.3	15.3	23.8	15.9	60.7	38.7	342
36-47	20.3	1,576	49.5	15.8	21.0	12.6	56.4	39.6	321
48-59	20.2	1,426	47.8	15.4	16.2	10.7	51.6	35.0	288
Mother's education									
None	24.3	2,455	42.9	14.5	15.2	9.6	44.5	28.4	598
Primary	18.3	1,628	50.4	21.0	16.2	13.6	55.4	42.8	297
Middle/JSS	15.3	2,578	57.0	12.6	18.6	11.0	59.6	37.8	394
Secondary +	15.6	889	53.5	20.0	34.5	20.0	61.5	37.4	139
Wealth index quintile									
Poorest	26.0	1,730	38.1	14.2	9.5	7.0	41.4	26.7	449
Second	21.8	1,551	52.1	16.0	14.6	9.5	46.7	32.3	337
Middle	17.3	1,559	51.5	17.7	20.0	10.4	62.6	41.3	270
Fourth	16.1	1,397	60.1	16.8	29.0	20.5	63.0	44.3	225
Richest	11.1	1,313	57.4	15.8	33.9	21.3	65.8	39.6	145
Total	18.9	7,550	49.4	15.9	18.2	11.8	52.6	34.9	1,427

[1] MICS indicator 3.16

[2] MICS Indicator 3.18; MDG Indicator 6.8

[3] MICS Indicator 3.17

Figures in parentheses are based on 25-49 unweighted cases.

1 Excludes market, shop, traditional practitioner, drug peddlers, relatives or friends, other, DK, missing

2 Includes ACT and ACT with green leaf. The Affordable medicine facility for malaria (AMFm) is an internationally subsidized ACT through the Global Fund. The packaging has a hologram of a green leaf to identify the drugs as an AMFm.

3 The true proportion of ACT is suspected to be higher. Ghana's first-line ACT "Artesunate-Amodiaquine (AS/AQ)," is often referred to in popular parlance as "amodiaquine." The MICS data collection process failed to distinguish between AS/AQ and the unapproved monotherapy, "Amodiaquine." Thus a large but unknowable proportion of "Amodiaquine" responses should have been recorded as an ACT.

Table MB.10: Treatment of fever in children, by type of facility
Among children under age five years with fever in the two weeks preceding the survey, the percent distribution of the type of facility the child was taken to, Ghana, 2011

Background Characteristics	Among children under age five years with fever									
	Type of facility or person child was taken to								Total	Number of children under age five years with fever
	Government hospital	Government clinic/ Health center	Government health post/ CHPS compound/ Other public sector	Private hospital/ clinic	Private pharmacy/ Chemical shop/ Other private	Other	Not taken anywhere			
Sex										
Male	10.7	22.8	3.2	10.0	4.6	0.1	48.4	100.0	743	
Female	14.2	17.8	2.9	5.7	6.5	0.5	52.4	100.0	685	
Region										
Western	12.5	15.2	0.4	11.9	2.6	0.0	57.5	100.0	166	
Central	19.0	9.5	0.7	3.0	7.1	0.8	60.0	100.0	149	
Greater Accra	(15.1)	(16.2)	(0.0)	(9.8)	(14.8)	(0.0)	(44.1)	100.0	101	
Volta	16.4	16.3	0.5	8.7	1.9	0.0	56.3	100.0	87	
Eastern	(17.7)	(20.8)	(0.0)	(10.0)	(28.2)	(1.7)	(21.5)	100.0	87	
Ashanti	14.7	18.7	0.0	13.7	3.9	0.0	49.0	100.0	227	
Brong Ahafo	4.0	27.4	4.0	8.9	0.6	0.0	55.1	100.0	193	
Northern	7.2	22.9	6.6	2.3	3.7	0.3	57.1	100.0	271	
Upper East	20.9	29.6	9.6	7.9	0.8	0.6	30.6	100.0	81	
Upper West	8.5	33.8	12.6	4.0	3.3	0.7	37.0	100.0	66	
Ecological zones										
Coastal	17.0	15.6	0.4	9.1	9.5	0.4	48.0	100.0	265	
Forest	13.0	15.6	0.1	11.8	5.6	0.0	53.8	100.0	566	
Savannah	9.8	27.1	7.1	3.8	3.7	0.5	48.0	100.0	596	
Residence										
Urban	15.7	18.3	0.6	11.2	8.2	0.0	46.1	100.0	494	
Rural	10.6	21.6	4.4	6.3	4.1	0.5	52.6	100.0	933	
Age in months										
0-11	13.1	17.4	3.4	4.7	6.1	0.0	55.4	100.0	180	
12-23	14.9	20.1	2.6	12.5	4.8	0.7	44.4	100.0	297	
24-35	11.1	22.8	4.9	7.2	2.3	0.4	51.3	100.0	342	
36-47	10.4	21.5	2.6	7.6	7.3	0.2	50.3	100.0	321	
48-59	13.2	18.7	1.7	6.6	7.6	0.2	52.1	100.0	288	
Mother's education										
None	7.6	21.7	4.8	5.5	3.3	0.3	56.8	100.0	598	
Primary	9.9	21.4	4.0	7.3	7.8	0.0	49.6	100.0	297	
Middle/JSS	17.2	20.8	0.9	11.4	6.7	0.0	43.0	100.0	394	
Secondary +	24.5	11.6	0.1	10.4	6.9	1.9	44.6	100.0	139	
Wealth index quintile										
Poorest	4.6	22.7	6.2	1.9	2.6	0.3	61.5	100.0	449	
Second	15.2	20.2	3.7	8.3	4.7	0.1	47.9	100.0	337	
Middle	10.4	22.0	1.0	11.1	7.0	0.0	48.5	100.0	270	
Fourth	19.0	20.6	0.2	13.3	7.0	0.0	39.9	100.0	225	
Richest	23.6	10.9	0.0	11.8	11.2	1.8	40.8	100.0	145	
Total	12.4	20.4	3.1	8.0	5.5	0.3	50.3	100.0	1,427	

Figures in parentheses are based on 25-49 unweighted cases.

Type and Timing of Antimalarial Drug Use for Children

Details on the types and timing of antimalarial drugs given to children to treat fever are provided in Table MB.11. Overall, 24 percent of children under age 5 who had a fever in the two weeks preceding the survey were reported to have taken "amodiaquine," 18 percent some type of ACT, 11 percent "ACT with green leaf," 4 percent quinine, 1 percent took chloroquine, 1 percent took SP/Fansidar, and 6 percent took some other type of antimalarial drug.

The unexpectedly high figure for amodiaquine use is surprising. Taken at face value, the MICS data suggest that, of all children who took antimalarials for recent fever, 44 percent took "amodiaquine," including 55 percent of those given antimalarials at CHPS compounds, where compliance with national guidelines tends to be optimal. Unfortunately, it has emerged that the MICS data collection process did not distinguish adequately between "Artesunate-Amodiaquine," which is Ghana's widely available first-line official ACT product, on the one hand, and "Amodiaquine," which is a non-approved monotherapy, not widely favored due to perceived side effects. In popular parlance, "amodiaquine" is used as a shortened form of "Artesunate-amodiaquine," which appears to be the source of the error. Thus, analysis suggests strongly that a large, but unknown portion of the "amodiaquine" responses should have been recorded as "ACT." This would put the proportion of children with fever who took an ACT at somewhere between 18 and 42 percent.

In terms of timing of treatment, of those children who took any antimalarial, two thirds (35%/53%) took it on the same day or the day following the fever onset. This ratio applies also to those children who took ACTs (12%/18%).

Table MB.11: Type and timing of antimalarial drugs

Among children under age five years with fever in the two weeks preceding the survey, the percentage who took specific antimalarial drugs and the percentage who took each type of drug the same or next day after developing fever, Ghana, 2011

Background Characteristics	Percentage of children with fever who took antimalarial drugs, and the percentage who took antimalarial drugs the same or next day																Number of children under age five years with fever
	SP/Fansidar		Chloriquine		Amodiaquine		Quinine		Any ACT[1]		ACT with green leaf		Other antimalarial drugs		Any antimalarial drugs		
	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug [1]	Same or next day[2]	
Sex																	
Male	1.4	0.6	1.0	0.9	26.6	19.8	4.4	2.4	15.6	10.1	8.9	6.2	5.9	3.4	53.5	36.3	743
Female	0.8	0.4	1.5	1.2	20.4	13.7	3.4	2.5	21.1	13.7	12.7	8.2	5.6	2.9	51.5	33.4	685
Region																	
Western	1.0	1.0	1.0	1.0	18.0	8.1	2.5	1.7	16.2	9.6	7.1	5.7	4.8	2.0	42.7	22.7	166
Central	0.6	0.6	1.3	1.3	15.8	12.9	0.8	0.8	19.3	14.4	10.0	6.5	6.5	6.1	42.8	35.6	149
Greater Accra	(0.0)	(0.0)	(0.0)	(0.0)	(13.8)	(6.9)	(0.0)	(0.0)	(30.0)	(19.1)	(27.6)	(16.7)	(21.4)	(12.9)	(63.2)	(36.9)	101
Volta	2.7	2.0	0.0	0.0	22.5	20.2	1.0	1.0	23.5	8.8	15.6	6.9	1.0	1.0	49.4	32.5	87
Eastern	(0.0)	(0.0)	(6.6)	(6.6)	(41.7)	(39.8)	(0.0)	(0.0)	(16.3)	(6.4)	(7.7)	(4.5)	(2.2)	(2.2)	(66.8)	(55.0)	87
Ashanti	1.1	0.0	0.9	0.0	29.0	23.4	5.1	2.0	21.3	15.9	15.8	10.4	8.4	1.5	65.7	42.8	227
Brong Ahafo	1.8	0.0	0.0	0.0	19.2	12.7	3.3	3.3	19.8	13.1	6.3	5.8	2.0	1.3	46.1	30.5	193
Northern	0.8	0.6	1.1	0.8	24.8	14.3	7.5	4.5	8.7	6.4	4.6	3.1	3.4	2.7	44.4	27.5	271
Upper East	2.6	1.1	3.1	3.1	30.9	22.4	9.2	6.1	27.3	20.8	15.9	13.0	5.8	2.3	72.7	51.3	81
Upper West	1.6	1.2	1.9	1.7	28.7	21.5	5.2	2.9	11.5	4.9	7.3	3.5	5.1	3.8	51.2	33.5	66
Ecological zones																	
Coastal	0.2	0.2	0.3	0.3	12.0	7.8	0.8	0.8	28.9	18.5	19.9	12.5	14.6	9.4	55.2	35.9	265
Forest	0.8	0.3	1.6	1.3	27.3	21.2	3.1	1.6	16.5	11.0	9.2	6.0	3.9	1.2	53.1	36.5	566
Savannah	1.8	0.8	1.3	1.2	25.2	16.7	6.0	3.9	15.2	9.7	8.1	5.8	3.5	2.4	50.9	32.9	596
Residence																	
Urban	0.2	0.2	1.2	1.0	21.4	17.0	4.9	2.9	27.6	19.0	19.7	14.0	9.4	4.3	63.6	43.7	494
Rural	1.6	0.7	1.3	1.1	24.7	16.7	3.3	2.2	13.3	8.0	6.0	3.5	3.8	2.6	46.8	30.2	933
Age in months																	
0-11	0.1	0.0	0.3	0.3	20.2	15.2	2.9	1.5	7.0	5.4	1.3	0.8	6.2	2.0	36.4	24.2	180
12-23	0.6	0.4	0.6	0.5	22.7	14.1	4.0	3.0	17.7	11.2	9.3	5.4	7.5	5.1	49.7	31.8	297
24-35	1.8	0.9	0.4	0.4	23.0	16.1	6.1	3.2	23.8	15.9	14.7	10.3	6.6	3.0	60.7	38.7	342
36-47	0.7	0.7	2.2	2.0	27.1	20.3	2.2	1.9	21.0	12.6	14.6	9.1	4.0	2.6	56.4	39.6	321
48-59	1.9	0.3	2.6	1.9	23.4	17.7	3.6	2.2	16.2	10.7	9.0	7.0	4.6	3.0	51.6	35.0	288
Mother's education																	
None	1.1	0.8	0.9	0.9	20.1	13.3	5.4	3.7	15.2	9.6	9.8	5.5	3.4	1.5	44.5	28.4	598
Primary	1.0	0.8	3.3	2.4	27.1	20.7	2.1	1.9	16.2	13.6	10.8	9.5	6.5	4.3	55.4	42.8	297
Middle/JSS	1.6	0.1	0.6	0.6	29.3	21.6	2.8	1.0	18.6	11.0	9.7	6.0	7.7	4.0	59.6	37.8	394
Secondary +	0.0	0.0	0.5	0.5	15.0	10.2	4.3	2.3	34.5	20.0	17.6	12.5	8.7	5.8	61.5	37.4	139
Wealth index quintile																	
Poorest	2.0	1.0	1.6	1.6	22.0	13.5	6.0	4.0	9.5	7.0	6.0	4.5	2.4	1.2	41.4	26.7	449
Second	1.9	0.7	2.4	1.8	21.5	15.6	2.0	1.5	14.6	9.5	6.6	3.4	5.5	4.4	46.7	32.3	337
Middle	0.2	0.2	1.1	0.8	35.1	28.1	3.1	0.4	20.0	10.4	8.8	4.5	3.5	1.3	62.6	41.3	270
Fourth	0.0	0.0	0.0	0.0	23.3	18.0	2.8	1.6	29.0	20.5	22.4	15.2	8.9	4.5	63.0	44.3	225
Richest	0.0	0.0	0.0	0.0	12.3	7.1	5.1	4.5	33.9	21.3	20.4	16.4	15.9	8.0	65.8	39.6	145
Total	1.1	0.5	1.3	1.1	23.6	16.8	3.9	2.4	18.2	11.8	10.7	7.1	5.7	3.2	52.6	34.9	1,427

[1] MCS Indicator 3.18; MDG Indicator 6.8

[2] MICS Indicator 3.17

Figures in parentheses are based on 25-49 unweighted cases.

Knowledge of Malaria Symptoms

To assess basic knowledge about malaria, all women and men interviewed in the MICS 2011 were asked if they could name any symptoms of malaria. The combined results are shown in Table MB.12 for women and men aged 15-49 years of age. Percentages may sum to more than 100 percent because respondents could give more than one response.

The table shows that 96 percent of the women and men aged 15-49 years were able to list at least one malaria symptom. While 60 percent of women and men stated that a person's body temperature rises and the person feels hot, 40 percent said there is weakness in the body, 35 percent of women and men listed vomiting as a symptom and 33 said that a strong headache is a symptom, 26 percent said that chills are a symptom and 25 percent said that loss of appetite is a symptom. Interestingly, with increasing wealth and education, there was only a marginal trend, if any, towards more accurate responses (such as fever as a symptom, and cough not a symptom).

Background Characteristics	Symptoms or signs of malaria infection											Number of women and men
	Hot body fever	Vomiting	Strong headache	Loss of appetite	Weakness of body	Cough	Chills	Bitterness in the mouth	Other	Any symptom	Does not know any	
Sex												
Male	60.2	33.2	35.1	27.1	39.9	3.1	26.6	19.6	18.7	96.6	3.5	5,965
Female	60.3	37.3	30.9	23.7	40.3	3.0	25.9	22.7	23.5	96.2	3.8	7,108
Region												
Western	71.7	19.0	43.1	23.5	38.1	1.1	33.1	28.8	19.2	97.8	2.4	1,317
Central	53.5	27.4	32.4	19.5	33.8	2.8	38.1	27.1	19.5	98.7	1.3	1,229
Greater Accra	60.3	43.1	41.4	35.0	43.9	4.7	34.4	25.8	17.3	97.4	2.6	2,618
Volta	46.7	47.2	45.8	20.0	34.1	1.9	25.5	13.4	26.1	98.9	1.8	1,018
Eastern	59.8	45.3	25.3	32.2	41.9	4.1	24.5	35.7	18.4	98.9	1.1	1,486
Ashanti	62.4	31.5	22.8	27.1	44.0	1.5	16.7	20.5	27.3	94.2	5.8	2,431
Brong Ahafo	52.0	34.4	23.4	20.1	34.5	3.9	24.8	8.7	22.4	89.3	10.7	1,180
Northern	64.0	28.5	31.7	10.9	42.5	2.7	19.0	5.4	23.6	95.7	4.3	948
Upper East	71.5	37.1	27.6	11.1	35.7	3.3	14.5	6.0	19.7	97.5	2.5	489
Upper West	68.3	40.2	37.2	26.8	45.1	6.0	13.4	12.5	13.7	97.6	2.5	356
Ecological zones												
Coastal	59.8	38.7	41.0	29.6	40.7	3.6	33.6	25.1	20.3	98.3	1.7	4,668
Forest	60.4	33.7	28.0	25.6	40.7	2.6	24.5	23.1	22.2	95.7	4.5	5,571
Savannah	60.7	33.5	28.8	17.2	38.3	3.1	17.3	11.3	21.1	94.9	5.2	2,834
Residence												
Urban	61.9	38.1	35.2	28.8	44.5	3.7	29.3	22.3	20.3	97.5	2.5	6,993
Rural	58.4	32.4	30.1	21.1	35.1	2.3	22.7	20.1	22.4	95.2	4.9	6,080
Age												
15-24	55.8	39.2	31.4	22.8	36.4	2.8	24.7	15.7	21.1	94.5	5.5	4,523
25-34	62.2	34.4	32.4	27.0	40.0	2.9	26.8	22.6	21.2	97.2	2.8	4,126
35-49	63.0	32.6	34.6	26.0	44.2	3.4	27.2	25.7	21.5	97.7	2.5	4,424
Education												
None	61.6	28.2	26.3	16.8	36.0	2.5	17.0	13.8	21.9	92.6	7.4	2,160
Primary	55.6	29.8	26.7	20.6	36.4	2.2	22.3	20.1	23.8	94.2	6.0	2,138
Middle/JSS	57.1	38.2	30.6	26.0	39.6	2.7	27.5	24.9	22.1	97.2	2.9	5,610
Secondary +	68.1	39.3	45.2	32.7	46.6	4.6	33.0	20.8	17.8	99.2	0.8	3,164
Wealth index quintile												
Poorest	60.0	28.1	26.6	14.7	33.4	2.6	15.7	9.4	22.4	92.7	7.6	2,035
Second	55.8	31.5	27.6	21.1	35.0	3.1	23.0	21.0	23.4	94.8	5.2	2,232
Middle	56.8	40.7	30.6	23.9	39.1	1.6	25.6	24.5	24.4	97.4	2.7	2,550
Fourth	62.1	35.3	33.2	27.5	42.1	2.1	29.7	22.5	21.2	97.3	2.7	2,964
Richest	64.5	38.7	41.5	33.4	47.0	5.2	32.1	25.2	16.8	98.2	1.8	3,293
Total	60.3	35.4	32.8	25.2	40.2	3.0	26.2	21.3	21.3	96.4	3.6	13,073

Knowledge of Causes of Malaria

Women and men were also asked during the survey if they know any causes of malaria. Those who responded that they knew any cause of malaria were asked to name specific causes. Table MB.13 shows responses provided by women and men aged 15-49 years. There are various messages and beliefs as to what causes malaria. Table MB.13 divides the responses into three categories: correct cause of malaria, partially correct causes, and incorrect beliefs in what causes malaria. In this table as well, percentages may sum to more than 100 percent because respondents could give more than one response.

Overall, 86 percent of women and men correctly identified mosquito bites as a cause of malaria, and 6 percent correctly identified the malaria parasite, *Plasmodium falciparum*, as the cause of malaria. A third (32%) of women and men state that weedy surroundings and stagnant water cause malaria.

Remarkably, more than half of women and men (56 %) stated that dirty surroundings cause malaria. This is a common misconception in Ghana. In reality, although non-malaria bearing mosquitoes, such as *Culex*

and *Aedes* may breed and be found in polluted surroundings such as urban centers, however, the malaria-bearing species *Anopheles* prefers water free of organic or chemical pollution, and does not thrive in such settings. Interestingly, the wealthiest, best-educated and urban respondents focused the most on dirty surroundings as an alleged cause of malaria.

Background Characteristics	Correct Mosquito bites	Partly correct Malaria parasite (p. falciparum)	Incorrect						Does not know any	Number of women and men
			Weedy surroundings and stagnant water	Dirty surroundings	Eating contaminated food	Standing / working in the sun	Eating sweet foods	Other		
Sex										
Male	85.7	8.7	34.2	58.4	16.2	14.2	2.8	6.3	1.6	5,965
Female	85.9	3.0	29.9	54.6	19.1	12.1	2.1	9.2	2.2	7,108
Region										
Western	89.2	1.9	31.1	57.4	15.9	6.0	3.9	7.3	0.9	1,317
Central	85.5	1.3	33.3	62.9	22.1	10.0	5.1	9.5	0.6	1,229
Greater Accra	89.2	14.1	44.0	67.4	19.2	9.2	1.4	7.6	0.6	2,618
Volta	89.8	1.1	17.4	26.5	20.8	37.3	0.9	9.1	2.2	1,018
Eastern	87.7	1.9	39.4	66.8	18.4	20.8	1.2	5.0	0.6	1,486
Ashanti	80.7	7.2	29.9	57.6	20.3	3.9	1.8	12.1	2.0	2,431
Brong Ahafo	83.5	5.4	31.4	57.3	11.3	9.1	3.8	5.8	6.4	1,180
Northern	79.8	2.8	13.7	36.5	12.3	29.7	2.1	4.1	5.3	948
Upper East	84.4	2.2	16.2	41.2	15.9	8.9	3.9	4.7	1.2	489
Upper West	90.0	2.5	35.2	50.8	10.4	14.0	1.4	7.3	1.8	356
Ecological zones										
Coastal	88.4	8.4	39.5	62.5	20.8	12.7	2.5	8.5	0.6	4,668
Forest	85.4	4.9	30.9	58.3	17.3	10.2	2.3	8.9	1.9	5,571
Savannah	82.3	2.3	21.1	42.1	13.7	19.2	2.5	5.0	4.3	2,834
Residence										
Urban	87.3	8.0	36.2	61.7	17.6	9.4	2.1	8.0	1.1	6,993
Rural	84.0	2.8	26.9	50.1	18.1	17.2	2.8	7.8	2.9	6,080
Age										
15-24	83.5	5.5	33.2	53.4	15.5	8.3	2.2	6.0	2.4	4,523
25-34	86.4	7.4	32.7	57.0	17.9	13.9	1.7	9.0	1.3	4,126
35-49	87.5	4.0	29.7	58.6	20.0	17.2	3.2	8.8	2.0	4,424
Education										
None	79.2	2.8	17.6	42.2	17.1	21.0	2.7	6.1	6.5	2,160
Primary	83.3	1.7	22.9	47.7	19.4	16.0	2.7	8.5	3.6	2,138
Middle/JSS	86.0	4.1	34.5	61.8	20.9	12.8	2.7	8.9	0.6	5,610
Secondary +	91.6	12.8	43.0	62.0	11.8	6.1	1.3	6.9	0.1	3,164
Wealth index quintile										
Poorest	79.7	1.9	17.3	37.5	14.2	21.2	2.3	4.9	5.5	2,035
Second	85.1	1.9	26.6	51.8	20.6	17.5	2.8	8.5	2.4	2,232
Middle	85.6	4.8	30.4	57.7	20.7	14.3	3.4	8.4	1.7	2,550
Fourth	87.3	6.4	32.9	59.7	19.0	11.0	2.2	9.3	1.1	2,964
Richest	88.8	10.3	44.6	66.8	14.8	5.9	1.5	7.6	0.4	3,293
Total	85.8	5.6	31.9	56.3	17.8	13.1	2.4	7.9	1.9	13,073

Knowledge of ways to avoid Malaria

Women and men were also asked if they know of ways to avoid getting malaria. Those who know ways to avoid getting malaria were further asked to name specific ways. Table MB.14 shows the responses provided by women and men aged 15 - 49 years. Respondents could give more than one response so the figures may sum to more than 100 percent.

Nationally, 48 percent of women and men said that sleeping under an ITN can help to avoid the risk of getting malaria, and 28 percent said that sleeping under any net can help a person avoid malaria. About a quarter of women and men said that filling in stagnant water and avoiding mosquito bites can reduce the risk of malaria. One in four women and men said that using repellent can help to avoid malaria.

Again, it is remarkable that such a high proportion of respondents focused on “keep surroundings clean” as a means to protect from malaria. Although, as mentioned, filth in the environment does not promote Anopheles breeding (in fact, the opposite is true), 59 percent of women and men said that keeping surroundings clean helps to avoid malaria. Once more, the wealthiest, best-educated and urban respondents were more likely to give this incorrect answer. For example, a far higher proportion of the richest Ghanaians (71%) identified “keeping surroundings clean” as a way to protect from malaria, than well established methods such as sleeping under an ITN (55%) or putting mosquito screens in the window (4%). Also of note is the seeming disconnect between the overall percentage which had earlier identified mosquito bites as a cause of malaria (89%) and the percentage who reported “avoid mosquito bites” as a means of protection (24%).

Table MB.14: Knowledge of ways to protect from Malaria											
Among women and men age 15-49 the percentage who cite specific ways to protect from malaria infection, Ghana, 2011											
Background Characteristics	More accurate										Number of women and men
	Sleep under mosquito net	Sleep under ITN	Use repellent	Avoid mosquito bites	Fill in stagnant waters	Put mosquito screen in window	Clear weeds around the house	Keep surroundings clean	Other	Does not know any	
Sex											
Male	28.2	52.7	25.2	26.9	26.4	3.9	20.2	60.3	12.9	1.7	5,965
Female	27.9	43.9	16.5	21.9	22.7	1.6	16.8	58.2	17.5	3.3	7,108
Region											
Western	25.0	46.2	16.4	16.4	12.6	1.6	15.2	58.1	9.7	0.7	1,317
Central	42.6	30.1	17.9	14.4	25.4	2.0	19.9	60.6	23.3	0.8	1,229
Greater Accra	23.5	57.8	41.3	40.0	36.6	2.7	19.6	71.1	13.9	0.8	2,618
Volta	34.5	52.9	14.8	21.8	16.7	0.2	9.9	35.4	23.2	3.2	1,018
Eastern	35.3	48.7	26.4	32.8	22.2	6.6	19.8	64.1	9.1	0.6	1,486
Ashanti	19.8	49.2	12.1	19.0	27.3	4.1	19.4	64.7	21.0	2.4	2,431
Brong Ahafo	25.7	41.1	10.7	16.8	28.3	1.1	33.6	58.7	14.4	8.2	1,180
Northern	26.7	45.8	12.2	22.1	12.2	0.7	7.1	40.0	11.7	8.5	948
Upper East	33.1	43.8	10.0	13.0	11.9	1.5	11.1	44.1	6.8	2.0	489
Upper West	33.2	51.4	8.6	22.9	23.6	1.6	15.9	53.0	11.0	1.9	356
Ecological zones											
Coastal	29.5	49.2	33.3	31.7	29.8	2.5	18.3	64.4	16.3	0.9	4,668
Forest	26.7	48.0	14.5	19.9	23.9	3.4	20.7	60.8	17.2	2.1	5,571
Savannah	28.3	45.8	11.2	20.3	16.4	1.4	13.9	47.4	10.5	6.3	2,834
Residence											
Urban	25.5	50.0	26.1	27.9	28.7	2.7	19.5	65.8	15.3	1.5	6,993
Rural	30.9	45.6	14.0	19.9	19.5	2.6	17.1	51.5	15.5	3.8	6,080
Age											
15-24	28.6	47.2	19.6	19.4	27.0	1.3	18.4	57.8	14.9	2.9	4,523
25-34	26.3	52.5	21.3	24.4	22.8	2.9	18.2	58.5	15.8	2.2	4,126
35-49	29.0	44.5	20.6	29.0	23.3	3.8	18.4	61.1	15.5	2.5	4,424
Education											
None	27.1	40.7	11.0	20.9	10.4	1.4	10.7	44.8	12.7	8.7	2,160
Primary	28.9	39.7	15.3	23.5	16.2	1.9	14.3	50.1	16.9	4.8	2,138
Middle/JSS	27.8	45.7	21.5	25.0	25.8	2.7	19.5	63.9	17.4	0.8	5,610
Secondary +	28.5	62.4	28.6	25.5	37.0	4.0	24.2	66.7	12.6	0.1	3,164
Wealth index quintile											
Poorest	30.3	42.1	7.5	17.8	13.0	1.0	13.0	40.5	12.7	8.0	2,035
Second	30.5	44.1	13.6	20.7	19.5	1.5	15.5	52.9	16.7	3.1	2,232
Middle	31.2	45.6	20.7	21.7	21.9	3.7	18.0	59.8	18.2	1.9	2,550
Fourth	26.5	49.1	23.9	25.3	26.3	2.0	20.2	62.5	15.4	1.3	2,964
Richest	23.9	55.0	29.9	31.5	35.0	4.3	22.2	71.4	14.1	0.5	3,293
Total	28.0	48.0	20.5	24.2	24.4	2.7	18.4	59.2	15.4	2.6	13,073

Specific Messages Seen or Heard about Malaria

In the Mics 2011 survey, women and men age 15–49 were asked about various media messages that address the topic of preventing and treating malaria. For respondents who had heard of any messages, they were asked specifically which messages they had heard and the source of the messages. Tables MB. 15 and MB. 16 present data related to specific messages from national communication campaigns, by the NMCP and its partners. The first set of message promoted ITNs and general knowledge about malaria. The second set of message promoted the “ACT with green leaf” type of malaria medications, which as mentioned earlier, is the marketing brand for the subsidized ACTs provided through Ghana’s AMFM pilot program (i.e., the Affordable Medicines Facility - Malaria).

Women and men aged 15–49 who had heard or seen any messages on malaria within the past six months were directly asked if they had heard or seen the following specific messages, and where they heard or seen these messages:

- Nana Boro’s (a popular singer) “Aha ye de-ntontom be wu” music video/song
- Advert (humorous) where a woman does not want to stay the night with the man unless he has a treated net
- Short documentaries featuring the true stories of Ghanaian families and children suffering epilepsy and learning disabilities due to severe malaria
- Advert where people from all walks of life are sleeping under treated nets

Table MB.15 presents data for women and men aged 15–49 who had heard or seen any of the above-mentioned messages on malaria during the six months preceding the survey, disaggregated by whether they heard or saw the messages on the television, radio, or both, by background characteristics. It appears all messages on malaria were more seen on the television than heard on the radio. Almost half (49%) of women and men reported seeing the advert “where a woman doesn’t want to stay the night with the man unless he has a treated net” on the television and 42 percent of women and men reported seeing on television the short documentaries about the effect of epilepsy and learning disabilities that severe malaria may cause. A third of the respondents (34%) reported that they saw the Nana Boro music video and the “advert where people from all walks of life sleep under a treated net”.

A smaller percentage of women and men reported hearing the same messages on the radio. For example, 13 percent of women had heard the Nana Boro song on the radio, and 4 percent of respondents had heard the remaining messages on the radio. Data are also presented for women and men who saw any of the specific malaria messages on the television, and/or heard them on the radio. The data indicate that a small percentage of women and men had seen or heard the messages on malaria on both the television and the radio. Also, 9 percent of women and men saw and heard the Nano Boro music video or song on the television and radio. Only 2 percent of women and men had both seen or heard the remaining malaria messages through both forms of media. The data indicate that these messages were seen mostly on television.

Table MB.15: Specific malaria messages seen or heard on television or radio

Background Characteristics	Nana Boro’s “Aha ye de-ntontom be wu” Music video/song			Advert where woman doesn’t want to stay the night with the man unless he has a treated net			Short documentaries featuring the true stories of Ghanaian families, children suffering epilepsy and learning disabilities due to severe malaria			Advert where people from all walks of life are sleeping under treated nets			Number of women and men who have seen or heard a message about malaria in the past six months
	TV	Radio	TV and radio	TV	Radio	TV and radio	TV	Radio	TV and radio	TV	Radio	TV and radio	
Sex													
Male	31.2	14.7	9.7	44.3	4.5	2.1	34.5	4.8	2.1	27.6	4.2	1.8	3,582
Female	35.6	12.1	8.5	52.7	2.7	1.1	49.3	2.6	1.1	39.6	2.5	1.3	3,915
Region													
Western	28.8	15.1	6.5	40.1	0.9	0.0	38.3	0.9	0.3	25.8	1.4	0.0	878
Central	27.5	16.1	2.5	39.4	12.3	1.0	39.4	14.0	2.0	40.3	12.5	3.3	811
Greater Accra	47.6	6.4	9.9	68.0	0.6	0.4	69.8	0.7	0.4	44.7	0.1	0.4	2,049
Volta	19.5	22.6	5.9	29.3	6.1	0.0	24.2	5.2	0.1	28.1	2.6	2.0	310
Eastern	28.2	15.3	18.1	40.6	4.6	0.8	29.0	3.7	2.3	24.4	4.8	0.9	847
Ashanti	30.0	16.0	12.8	49.0	3.2	5.9	28.2	3.7	4.4	31.2	3.5	3.8	1,581
Brong Ahafo	29.9	13.4	1.9	42.7	3.3	0.2	33.4	3.3	0.0	31.5	1.2	0.0	437
Northern	33.1	15.2	3.5	41.2	4.3	0.0	40.3	3.4	0.3	31.4	4.2	0.5	286
Upper East	20.0	20.4	2.5	23.1	5.3	0.0	19.1	4.8	0.2	18.7	1.3	0.1	162
Upper West	20.7	11.5	3.0	23.8	2.2	0.6	16.8	0.9	0.2	16.7	4.9	0.8	135
Ecological zones													
Coastal	42.8	9.2	8.4	59.9	3.3	0.4	58.9	3.8	0.7	41.9	3.2	1.0	3,341
Forest	26.2	16.1	10.9	42.0	3.1	3.0	29.0	3.5	2.9	27.5	3.4	2.4	3,162
Savannah	25.3	18.5	5.2	32.2	5.7	0.8	28.4	3.7	0.3	27.0	3.1	0.3	993
Residence													
Urban	41.2	10.1	10.0	58.2	1.7	1.4	52.3	2.1	1.2	40.3	1.5	1.4	4,800
Rural	19.9	19.1	7.4	31.6	6.9	1.9	24.4	6.3	2.3	22.3	6.4	1.8	2,697
Age													
15-24	38.3	11.3	9.9	53.4	2.6	1.4	39.5	2.5	1.1	34.2	2.6	1.2	2,311
25-34	32.8	13.7	9.9	50.1	3.9	2.0	45.8	3.0	1.6	33.6	3.3	1.5	2,579
35-49	29.9	14.8	7.5	43.0	4.0	1.3	41.1	5.4	2.0	33.8	3.8	1.8	2,607
Education													
None	17.2	20.3	5.0	24.2	6.3	0.2	24.9	6.6	0.5	18.8	6.6	0.7	647
Primary	29.9	18.2	4.1	39.2	6.7	0.0	36.0	7.6	1.3	28.0	6.2	0.8	924
Middle/JSS	31.2	14.5	9.5	47.7	2.9	2.0	41.7	3.0	1.9	34.5	3.1	1.6	3,304
Secondary +	41.6	8.4	11.3	59.2	2.5	1.9	49.5	2.4	1.5	38.8	1.7	1.8	2,622
Wealth index quintile													
Poorest	5.5	32.1	1.7	8.3	10.1	0.0	5.7	7.6	0.1	7.9	8.1	0.0	541
Second	13.5	22.4	3.0	25.4	6.3	0.1	19.3	7.0	0.2	16.6	7.0	1.0	835
Middle	27.0	17.6	7.1	37.9	5.2	1.7	27.7	6.6	3.7	27.8	5.5	2.8	1,392
Fourth	37.9	11.8	10.6	52.4	3.1	2.1	45.9	2.4	2.3	36.7	2.1	1.8	1,965
Richest	45.1	5.8	12.3	66.3	0.9	1.9	61.0	1.3	0.7	45.2	1.0	1.1	2,764
Total	33.5	13.3	9.1	48.7	3.5	1.6	42.2	3.7	1.6	33.8	3.3	1.5	7,496

Women and men aged 15-49 years were asked whether they had heard or seen any advert on the use of ACT with green leaf or not. If the respondent replied in the affirmative, the person was asked where.

Table MB.16 presents data on the percentage of women and men aged 15-49 years who had seen or heard any advert on the use of ACT with green leaf in the six months preceding the survey according to media source, and background characteristics. Since the respondent could cite more than one media source the percentage may sum to more than 100 percent. Overall, 43 percent of women and men had seen or heard an advert on the use of ACT with green leaf. The majority of women and men had seen an advert about ACT with green leaf on television (78 percent). Less than half of women and men (45%) had heard an advert about ACT with green leaf on the radio. Also, 4 percent had seen a poster, and 3 percent a billboard, while 5 percent of respondents reported other unspecified sources. Interestingly, although more respondents recalled messages on TV as compared to radio (78% vs. 45%), for the poorest quintile which has the highest malaria prevalence, TV was much less important than radio (19% vs. 77%).

Table MB.16: Knowledge of ACT with green leaf to treat malaria, and source of message											
Among women and men age 15-49 the percentage who have seen/heard any advert on the use of ACT with green leaf in the preceding six months, the percentage who cite specific media sources, Ghana, 2011											
Background Characteristics	Percentage of women and men who have seen/heard any advert on ACT with green leaf	Number of women and men	Among women and men who have seen/heard any advert on ACT with green leaf, percentage who cite the following sources:							Does not know/remember where	Number of women and men who have seen/heard any advert on ACT with green leaf
			TV	Radio	News-paper	Poster	Billboard	Other			
Sex											
Male	43.7	5,965	73.8	48.8	2.4	3.5	3.2	3.6	0.0	2,608	
Female	42.3	7,108	81.9	41.0	1.2	5.0	2.1	5.9	0.3	3,003	
Region											
Western	45.5	1,317	72.2	40.4	0.3	6.0	0.6	3.9	0.0	599	
Central	47.8	1,229	66.7	39.8	0.1	5.0	0.9	6.3	0.0	587	
Greater Accra	70.4	2,618	90.5	42.9	3.3	3.9	1.2	1.8	0.1	1,844	
Volta	17.2	1,018	72.0	52.8	1.1	3.8	2.9	3.9	0.0	175	
Eastern	41.2	1,486	73.9	55.9	2.1	4.0	2.0	2.9	0.0	612	
Ashanti	47.4	2,431	79.1	43.4	0.2	3.3	6.7	8.1	0.6	1,153	
Brong Ahafo	23.0	1,180	71.0	36.3	5.6	8.2	6.3	6.8	0.0	272	
Northern	16.5	948	68.1	37.1	0.0	4.7	0.9	11.2	0.1	157	
Upper East	24.5	489	44.8	70.0	0.2	1.8	1.6	10.0	0.0	120	
Upper West	25.9	356	51.7	66.3	0.6	0.7	0.7	9.8	0.7	92	
Ecological zones											
Coastal	59.4	4,668	86.1	41.3	2.2	4.4	1.1	2.4	0.0	2,772	
Forest	39.5	5,571	73.9	46.1	1.1	4.6	4.4	6.3	0.3	2,202	
Savannah	22.5	2,834	58.2	53.9	1.7	2.4	3.2	10.0	0.1	637	
Residence											
Urban	56.1	6,993	86.2	40.5	2.1	4.5	2.5	4.1	0.1	3,920	
Rural	27.8	6,080	59.4	54.2	0.8	3.7	2.9	6.6	0.2	1,690	
Age											
15-24	37.0	4,523	85.1	37.0	0.7	3.5	2.2	4.7	0.3	1,672	
25-34	48.3	4,126	76.9	44.1	2.7	4.8	3.4	5.1	0.2	1,995	
35-49	43.9	4,424	73.4	51.7	1.7	4.4	2.1	4.6	0.0	1,944	
Education											
None	17.5	2,160	47.2	55.9	0.1	1.9	2.7	8.0	0.0	378	
Primary	29.6	2,138	70.0	48.0	0.0	3.1	1.6	5.0	0.8	634	
Middle/JSS	41.3	5,610	75.5	44.4	0.6	4.1	2.1	4.9	0.0	2,318	
Secondary +	72.1	3,164	88.2	41.9	3.7	5.2	3.4	4.1	0.2	2,281	
Wealth index quintile											
Poorest	14.3	2,035	18.6	77.2	0.2	3.0	6.0	9.9	0.2	291	
Second	19.0	2,232	50.3	55.6	0.5	7.2	0.6	5.3	0.8	424	
Middle	34.3	2,550	63.2	48.9	0.1	3.8	1.3	5.9	0.4	874	
Fourth	52.9	2,964	83.9	39.8	0.7	3.3	3.0	4.5	0.0	1,568	
Richest	74.5	3,293	91.6	40.4	3.4	4.7	2.7	3.9	0.0	2,453	
Total	42.9	13,073	78.1	44.6	1.7	4.3	2.6	4.8	0.2	5,611	

Malaria Biomarkers: Anaemia and Malaria in Children Aged 6-59 Months

The MICS 2011 incorporated three “malaria biomarkers,” namely: anaemia testing, malaria testing using rapid diagnostic tests (RDTs), and thick blood smear samples prepared on microscope slides. After obtaining informed consent from caregivers, blood samples were obtained from a heel- or finger-prick of children aged 6- 59 months to perform on-the-spot anaemia and malaria tests, and to prepare thick blood smears that were later transported and read in the laboratory at NHRC to determine the presence of malaria parasites. The microscopy was used as the gold standard to obtain prevalence rates. Rapid diagnostic test was utilized primarily for ethical reasons, in order to identify and treat malaria in participating children while in the field. The methods used for Anaemia and Malaria testing are detailed in the Appendix B.

Coverage levels for children aged 6-59 months eligible for testing, and those actually tested for anaemia and malaria were uniformly high across most of the population. Testing coverage was somewhat lower among children whose mothers had a secondary or higher education (91% for anaemia and malaria testing coverage), and among children living in the wealthiest households (94% for anaemia and malaria testing coverage) (see Table MB.17).

Table MB.17: Coverage of testing for anaemia and Malaria in Children				
Percentage of eligible children age 6-59 months who were tested for anaemia and for malaria (unweighted), Ghana, 2011				
Background Characteristics	Percentage tested for:			Number of children eligible (unweighted)
	Anaemia	Malaria by microscopy	Malaria by RDT1	
Sex				
Male	98.0	97.8	97.9	2,298
Female	98.1	98.0	98.1	2,311
Region				
Western	95.9	95.9	95.9	368
Central	96.8	96.8	96.8	471
Greater Accra	95.8	95.8	95.8	355
Volta	99.7	99.7	99.7	361
Eastern	98.3	98.3	98.3	300
Ashanti	97.6	97.6	97.6	415
Brong Ahafo	97.5	97.5	97.5	359
Northern	99.1	98.9	99.2	960
Upper East	99.4	98.7	98.9	464
Upper West	98.2	98.2	98.2	556
Ecological zones				
Coastal	96.3	96.3	96.3	977
Forest	98.2	98.2	98.2	1,271
Savannah	98.6	98.4	98.6	2,361
Residence				
Urban	96.5	96.6	96.6	1,449
Rural	98.7	98.5	98.6	3,160
Age				
6-8	96.8	96.8	96.4	249
9-11	97.8	97.8	97.8	229
12-17	97.3	97.1	97.3	514
18-23	97.9	97.9	97.9	473
24-35	98.4	98.1	98.3	1,038
36-47	97.7	97.7	97.8	1,110
48-59	98.7	98.7	98.7	996
Mother's education				
None	98.5	98.3	98.5	2,242
Primary	98.7	98.6	98.6	866
Middle/JSS	97.8	97.8	97.8	1,111
Secondary +	93.8	93.8	93.8	390
Wealth index quintile				
Poorest	98.6	98.3	98.5	1,864
Second	98.5	98.5	98.5	982
Middle	98.7	98.7	98.7	681
Fourth	97.8	98.0	98.0	590
Richest	94.1	94.1	94.1	492
Total	98.0	97.9	98.0	4,609

Notes: Selection of children based on question AM1. Anaemia based on haemoglobin readings (AM8), not purely on consent. Malaria by RDT based on whether test (AM9), not purely on consent. Malaria by microscopy based on whether bar code exists (AM7), not purely on consent.

Anaemia Prevalence in Children

Table MB.18 shows the percentage of children aged 6-59 months with haemoglobin (Hb) lower than 8.0 grams per decilitre (g/dL), by background characteristics. In endemic settings, a haemoglobin level below 8.0 g/dL is often associated with malaria infection (Korenromp et al, 2004)¹. The likely cause of childhood anaemia varies, of course, depending on the area of the world in which the child lives. Overall, iron deficiency is the most common cause of anaemia. However, in developing countries, infectious diseases such as malaria, helminth infections, HIV and tuberculosis are also important (WHO, 2001; Coyer, 2005; Asobayire et al, 2001).

The results show that 7 percent of children aged 6-59 months were anaemic. Anaemia prevalence was highest among children aged 12-17 months, and thereafter, decreases with an increase in age. Among the regions, anaemia ranged from a low of 2 percent in the Eastern region to 19 percent in the Northern region. There was also a large variance in anaemia prevalence by ecological zone. Anaemia was three times higher in the Savannah zone (15%) than in the Coastal (4%) and Forest (5%) zones; but are lower than rates reported in important studies of malaria-associated anaemia a decade ago (Koram et al, 2001, Owus-Adyei et al, 2002).

The data show that anaemia prevalence was higher among children whose mothers had less education. For children whose mothers had no education, anaemia prevalence was 13 percent, and this decreased to less than 2 percent among children whose mothers have secondary or higher education.

Similar to the pattern observed with anaemia prevalence and mother's education, anaemia was highest among children in households in the poorest wealth quintile (16%), decreasing to less than 1 percent among children in households in the richest wealth quintile.

Table MB.18: Prevalence of anaemia (haemoglobin <8.0 g/dL) in children age 6-59 months

Percentage of children age 6-59 months with haemoglobin lower than 8.0 g/dL, Ghana, 2011

Background Characteristics	Haemoglobin <8.0 g/dL	Number of children
Sex		
Male	8.0	2,224
Female	6.8	2,292
Region		
Western	4.8	458
Central	7.2	455
Greater Accra	2.8	683
Volta	6.3	364
Eastern	1.7	490
Ashanti	5.1	830
Brong Ahafo	9.6	400
Northern	19.3	508
Upper East	15.9	195
Upper West	16.0	135
Ecological zones		
Coastal	3.8	1,399
Forest	5.1	1,898
Savannah	15.3	1,219
Residence		
Urban	3.8	1,979
Rural	10.2	2,538
Age in months		
6-8	10.2	258
9-11	9.5	224
12-17	13.2	515
18-23	9.7	455
24-35	8.6	1,033
36-47	5.4	1,063
48-59	3.0	969
Mother's education		
None	12.8	1,493
Primary	6.9	977
Middle/JSS	4.5	1,540
Secondary +	1.6	507
Wealth index quintile		
Poorest	15.8	1,032
Second	8.8	944
Middle	6.6	920
Fourth	2.8	877
Richest	0.6	745
Total	7.4	4,517

Note: Table is based on children who stayed in the household the night before the interview. Hemoglobin levels are adjusted for altitude using CDC formulas (CDC, 1998). Hemoglobin is measured in grams per deciliter (g/dL).

¹ Note that the cut-off value for malaria-related anaemia (8.0g/dl) differs from the standard cut-off value for severe anaemia used in nutrition analysis (7.0g/dl)

Malaria Prevalence in Children

Table MB.19 presents the prevalence of malaria parasitaemia in children aged 6-59, by background characteristics, during the testing period of mid-September through mid-December 2011. The microscopy results are used to determine malaria prevalence, as this method is the gold standard. RDTs were included in the protocol for ethical reasons (so as to be able to treat malaria cases in the field). However, RDT-based prevalence figures are also provided, and are discussed below.

While the national malaria microscopy-based prevalence was 28 percent among children aged 6-59 months, prevalence steadily increased with age from 16 percent among children aged 6-8 months to 34 percent among children aged 48-59 months, as presented in Figure MB.7.

Figure MB.8 shows that malaria prevalence varied greatly between regions, from 4 percent in Greater Accra to 51 percent in the Upper West region. Interestingly, three contiguous regions had prevalence clustering between 17 and 22 percent (Volta, Eastern and Ashanti), three regions had prevalence clustering between 32 to 37 percent (Central, Western and Brong Ahafo), while three regions had prevalence of 44 to 51 percent (Northern, Upper East, and Upper West). As depicted in Figure MB.9, children in the Savannah zone were three times as likely as children in the Coastal zone to have malaria (44 and 14%, respectively), while 28 percent of children had malaria in the Forest zone.

Clear patterns in malaria distribution were found in education, wealth and urban/rural residence, as shown in Figure MB.10. The mother's education and household wealth were both inversely associated with malaria among children: 43 percent of children whose mothers had no education had malaria, compared with only 5 percent of children whose mothers had a secondary or higher education. Likewise, more than half of children (52%) in households in the poorest wealth quintile had malaria, compared to only 3 percent of children in the richest households. Children in rural areas were three times more likely than their counterparts in urban areas to have malaria (39% compared with 13%, respectively).

Not surprisingly, the RDT-based prevalence results shown in Table MB.19 were consistently higher than the microscopy results. For example, overall prevalence was 48 percent based on RDTs, and 28 percent based on microscopy. The 20-point, 42-percent discordance found in this survey is somewhat higher than average for recent national malaria surveys. However, it is similar to the RDT-microscopy discordance found in Mozambique 2007 (25%), Zambia 2010 (40%), Senegal 2008-09 (52%), and Kenya 2007 (57%), and among other surveys (RBM 2012, Measure DHS 2012). Moreover, a district-level survey conducted in Northern Region at the same time as the MICS with exactly the same RDT product, but using different laboratory for microscopy, reassuringly found very similar results: RDT prevalence of 70 percent versus 70 percent for the MICS (Northern Region only); and microscopy prevalence of 48 versus 50 percent (Abuaku et al, 2011).

Discordance between RDT and microscopy is expected, largely because the two tests measure different things. As mentioned earlier, RDTs detect proteins (antigens) which were released into the blood by an ongoing or recently resolved malaria infection. These antigens typically remain detectable for two to four weeks, depending on an RDT product's sensitivity. On the other hand, microscopy detects parasites present in the blood at the time of testing. A child who was recently infected with malaria but was either treated successfully or cleared of the infection spontaneously would be expected to test positive for RDTs and negative for microscopy (Wongsrichanalai et al, 2007). It appears that this scenario was common in

the Ghana MICS 2011, where out of 4505 children tested, 24 percent were RDT-positive but microscopy negative. In contrast, only 2 percent were false negative (RDT negative but microscopy positive).

Again, the focus of the MICS 2011 findings is on the microscopy-based point-prevalence rates. These suggest heterogeneity in malaria burden in Ghana by region, urban/rural residence, and ecological zone that may hitherto have been underappreciated. The potential programmatic implications may be significant, and may warrant further epidemiologic and entomologic investigation and policy discussion. For example, the MICS findings have already begun to stimulate useful discussion on such topics as: the potential value of prioritizing lower-prevalence areas for increased investment in testing to discriminate between malarial and non-malarial cause of fever; the prioritization of higher-prevalence areas for increased investments in malaria prevention methods; the need to update and refine the demarcations of Ghana's major malaria transmission zones; among others.

Table MB.19: Prevalence of malaria parasitaemia in children age 6-59 months
Percentage of children age 6-59 months classified in two tests as having malaria, Ghana, 2011

Background Characteristics	Malaria prevalence according to microscopy		Malaria prevalence according to RDT1	
	Microscopy positive	Number of children tested	RDT1 positive	Number of children tested
Sex				
Male	27.1	2,221	47.8	2,224
Female	28.0	2,290	47.3	2,293
Region				
Western	36.2	458	55.6	458
Central	32.2	454	53.3	455
Greater Accra	4.1	683	9.8	683
Volta	17.3	363	32.6	364
Eastern	21.6	489	40.4	490
Ashanti	22.3	828	49.9	830
Brong Ahafo	37.3	399	58.9	400
Northern	48.3	508	70.1	509
Upper East	44.0	194	77.4	194
Upper West	51.2	135	80.6	135
Ecological zones				
Coastal	13.6	1,398	25.9	1,399
Forest	27.5	1,896	50.1	1,898
Savannah	43.5	1,218	68.2	1,219
Residence				
Urban	13.1	1,978	25.8	1,980
Rural	38.8	2,533	64.5	2,537
Age in months				
6-8	15.7	256	24.6	257
9-11	16.3	224	35.5	224
12-17	22.9	515	41.2	515
18-23	26.3	455	47.4	455
24-35	26.0	1,032	48.9	1,033
36-47	31.3	1,063	51.6	1,064
48-59	33.7	967	53.8	969
Mother's education				
None	42.6	1,491	65.8	1,493
Primary	24.5	976	46.7	976
Middle/JSS	22.1	1,538	41.2	1,540
Secondary +	5.3	507	14.3	507
Wealth index quintile				
Poorest	51.8	1,029	77.6	1,031
Second	38.6	943	63.1	944
Middle	25.1	917	48.1	920
Fourth	10.4	878	28.0	878
Richest	3.2	745	8.3	745
Total	27.5	4,512	47.5	4,517

1 RDT = Rapid Diagnostic Test (CareStart Combo Access Bio, New Jersey, USA).
Pf = Plasmodium falciparum; Pv = Plasmodium vivax; Po = Plasmodium ovale; Pm = Plasmodium malariae

Figure MB. 7: Malaria prevalence in children age 6-59 months by age group, Ghana, 2011

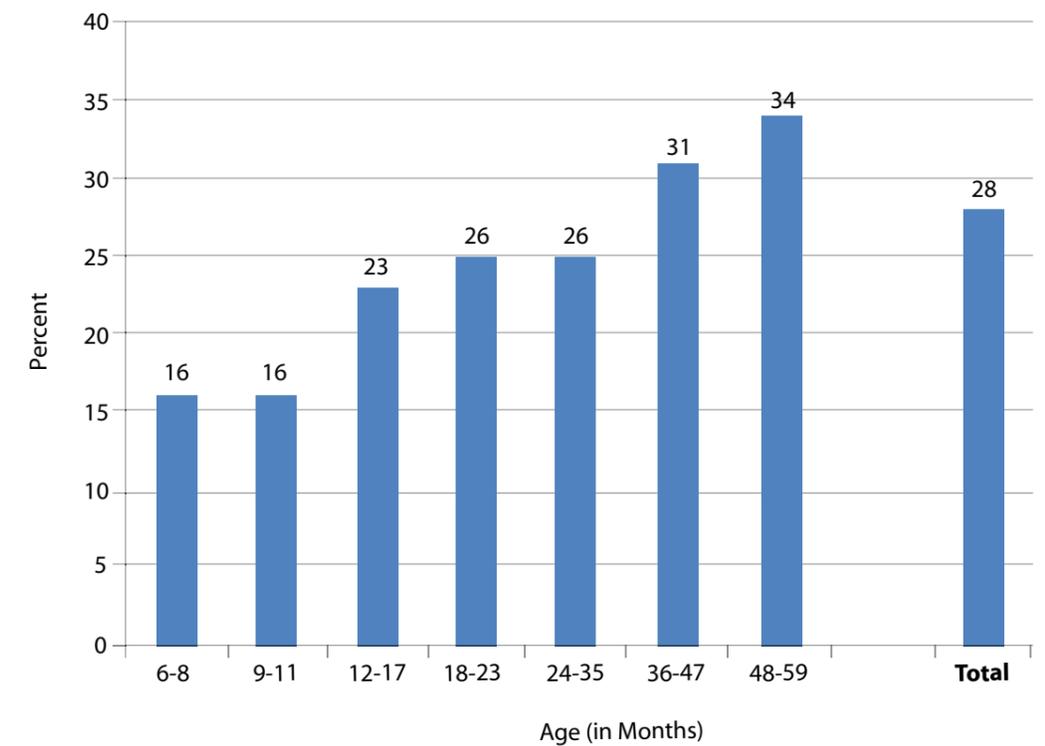


Figure MB.8: Malaria prevalence in children age 6-59 months by region, Ghana, 2011

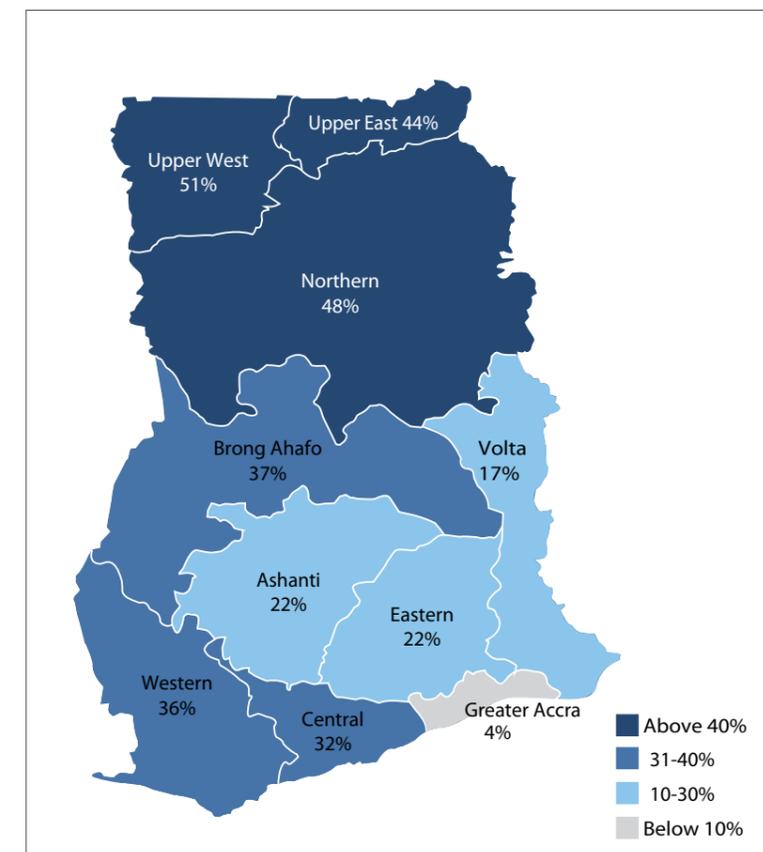


Figure MB.9: Malaria prevalence in children age 6-59 months by ecological zone, Ghana, 2011

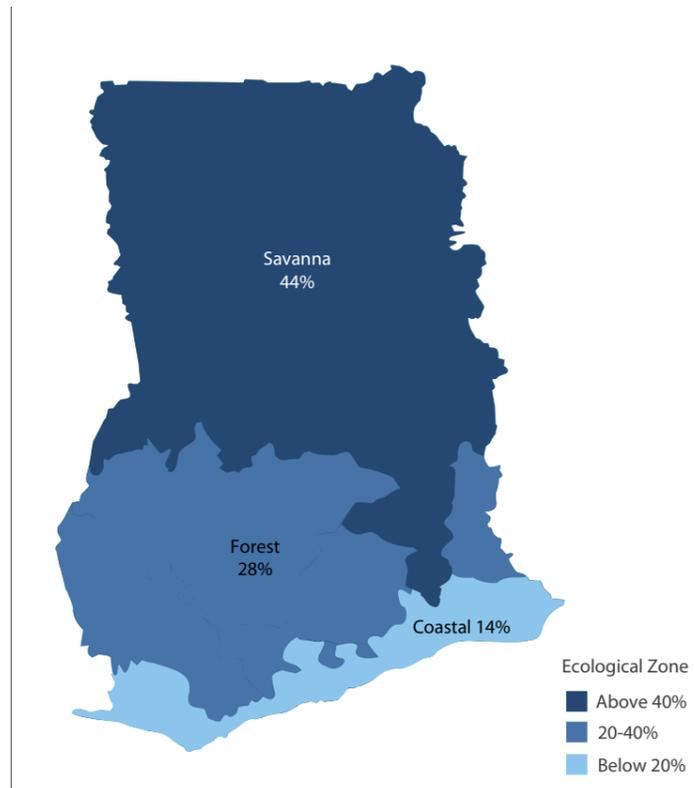
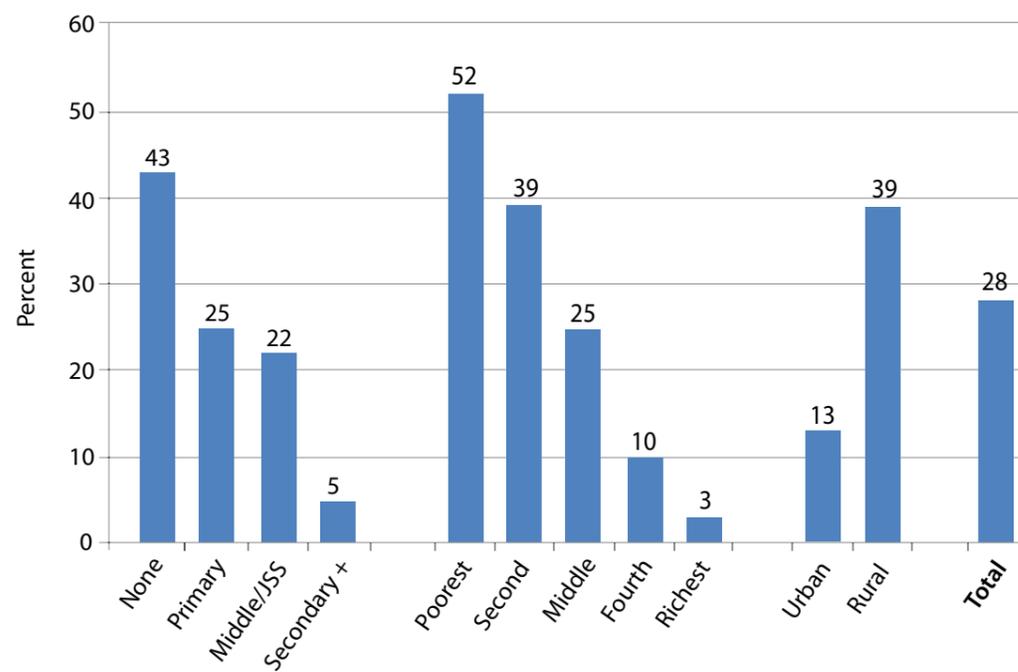


Figure MB.10: Malaria prevalence in children age 6-59 months by mother's education, wealth quintile and residence, Ghana, 2011





Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant carrier of diseases such as trachoma, cholera, typhoid, and schistosomiasis. Drinking water can also be tainted with chemical, physical and radiological contaminants with harmful effects on human health. In addition to its association with disease, access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances.

The MDG goal is to reduce by half, between 1990 and 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. The World Fit for Children goal calls for a reduction in the proportion of households without access to hygienic sanitation facilities and affordable and safe drinking water by at least one-third.

The list of indicators used in MICS 2011 is as follows:

Water

- Use of improved drinking water sources
- Use of adequate water treatment method
- Time to source of drinking water
- Person collecting drinking water

Sanitation

- Use of improved sanitation facilities
- Sanitary disposal of child's faeces

For more details on water and sanitation and to access some reference documents, please visit the UNICEF childinfo website <http://www.childinfo.org/wes.html>.

Use of Improved Water Sources

The distribution of the population by source of drinking water is shown in Table WS.1 and Figure WS.1. The population using improved sources of drinking water are those using any of the following types of supply: piped water (into dwelling, compound, yard or plot, public tap/standpipe), tube well/borehole, protected well, protected spring, and rainwater collection. Bottled water is considered as an improved water source only if the household is using an improved water source for other purposes, such as hand washing and cooking.

Nearly 80 percent of the population is using an improved source of drinking water – 91 percent in urban areas and 69 percent in rural areas. The situation in the Volta region is considerably worse than in other regions; only 62 percent of the population in this region gets its drinking water from an improved source, while 91 percent of the population in Ashanti use improved sources of water for drinking.

The source of drinking water for the population varies strongly by region (Table WS.1). In the Volta region, 41 percent of the population uses drinking water that is piped into their dwelling or into their yard or plot or piped water in neighbours house or public standpipe. In Central, Greater Accra, Eastern and Ashanti regions, 40 percent, 34 percent, 33 percent and 32 percent respectively use piped water. In contrast, only about 19 percent of those residing in Brong Ahafo region and less than 8 percent of those in Upper East

region use water from a piped system. In Greater Accra region, sachet water (47%) is the most important source of drinking water whereas in Upper East and Upper West, the most important source is the tube well or borehole constituting 65 percent and 70 percent respectively. Tube well or bore hole is seen as the second most important source of drinking water in all the regions, and protected well also contribute significantly as a source of water in Brong Ahafo region. In Brong Ahafo, Northern, Eastern, Western and Volta, a significant percentage of the population rely on river or stream water (an unimproved source) as their main source of drinking water and about 10 percent of the population in the Northern region depend on water from either dam or lake or pond or canal or irrigation for drinking.

As expected, the use of improved drinking water increases with educational level of the head of household: from 72 percent for those with no education to 92 percent for those with secondary or higher education.

With regards to wealth quintiles, about 92 percent of the population in the fourth and fifth wealth quintiles use improved source of water for drinking but only 56 percent of the population in the poorest quintile get the opportunity to use improved sources of water for drinking.

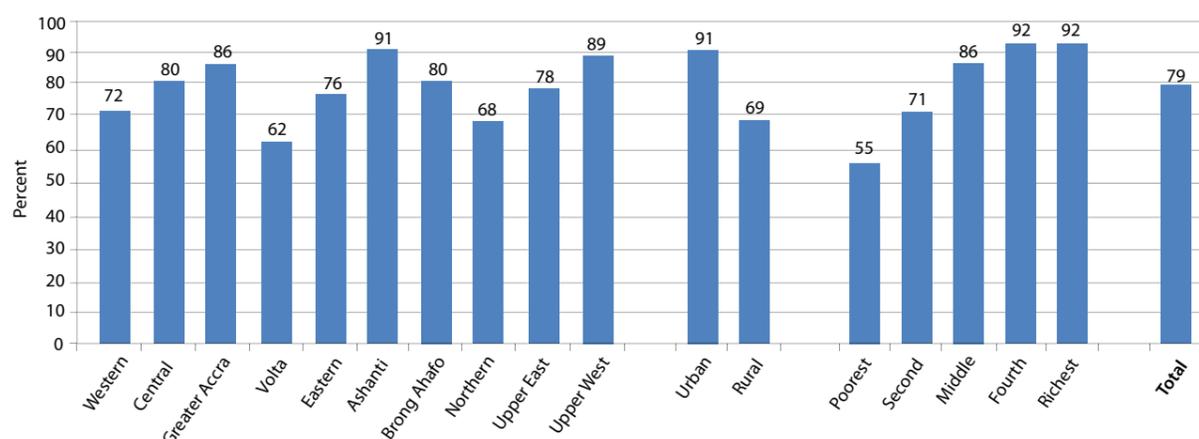
Table WS.1: Use of improved water sources

Percent distribution of household population according to main source of drinking water and percentage of household population using improved drinking water sources, Ghana, 2011

Background Characteristics	Main source of drinking water														Total	Percentage using improved sources of drinking water [1]	Number of household members				
	Unimproved sources																				
	Improved sources				Unimproved sources																
	Piped into dwelling	Piped into compound, yard or plot	Piped to neighbour	Public tap/standpipe	Tube well, Borehole	Protected well	Protected spring	Rainwater collection	Bottled water	Sachet water	Unprotected well	Unprotected spring	Tanker-truck	Cart with small tank/drum	River/Stream	Dam, lake, pond, canal, irrigation channel	Bottled water	Sachet water	Other		
Region																					
Western	4.3	2.1	3.1	15.0	25.3	6.4	.0	.0	.8	14.6	8.1	.3	.0	.0	18.1	.0	.0	1.8	.0	4318	
Central	1.8	3.8	2.8	31.1	19.6	6.5	.0	1.2	.1	13.4	4.6	.2	1.8	.0	7.9	.5	.0	4.6	.0	4557	
Greater Accra	5.2	9.6	10.4	8.9	.8	1.0	.0	.7	1.7	47.4	.0	.0	1.5	.0	.8	.0	.3	11.9	.0	7625	
Volta	.9	4.7	6.5	28.6	12.1	3.5	.0	1.6	.0	3.8	7.6	.3	.0	.0	2.1	6.5	.0	2.5	.0	3947	
Eastern	2.0	8.1	7.6	15.4	16.3	9.2	.8	1.8	.0	15.3	3.4	.2	.0	.0	16.4	.7	.0	2.8	.0	5247	
Ashanti	3.0	9.2	6.8	13.2	38.1	9.2	.0	.5	.8	9.7	2.1	.0	.0	.0	6.1	.6	.0	.6	.0	8397	
Brong Ahafo	5.6	1.1	1.3	11.5	41.6	13.8	.1	.1	.1	5.3	6.5	.2	.2	.0	10.1	2.3	.0	.3	.0	4234	
Northern	.9	6.2	6.0	11.8	38.2	3.7	.1	.3	.1	1.1	7.1	.3	.0	.1	14.1	10.0	.0	.0	.0	4261	
Upper East	1.6	1.9	1.7	2.1	64.8	5.5	.0	.0	.0	.8	18.8	.0	.0	.0	2.4	.2	.0	.1	.1	2113	
Upper West	2.2	3.0	5.5	5.5	70.0	1.0	.0	.0	.0	1.5	4.5	.2	.2	.0	4.5	1.6	.0	.2	.0	1395	
Residence																					
Urban	5.9	11.2	10.2	19.3	8.0	6.6	.2	.7	1.0	27.6	2.1	.0	.9	.0	1.1	.5	.1	4.5	.0	22266	
Rural	.3	1.1	1.8	10.9	44.2	6.0	.0	.7	.1	3.3	7.4	.3	.1	.0	18.1	3.4	.0	2.1	.0	23827	
Education of household head																					
None	.6	2.9	4.2	14.4	38.0	7.9	.2	.6	.0	3.4	8.3	.3	.5	.0	14.4	3.7	.0	.9	.0	13735	
Primary	1.2	6.0	6.1	17.6	26.9	5.4	.1	.8	.2	9.0	4.3	.0	.5	.0	15.0	2.5	.0	4.3	.0	6196	
Middle/JSS	2.5	6.4	6.9	16.7	24.7	6.8	.1	.7	.3	16.1	4.4	.1	.5	.0	8.4	1.3	.1	4.2	.0	17493	
Secondary +	9.1	10.3	6.5	10.4	12.8	3.4	.1	1.0	2.2	35.9	1.0	.1	.3	.0	2.1	.4	.1	4.4	.0	8643	
Missing/DK	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	25
Wealth index quintiles																					
Poorest	.1	.0	.4	3.8	46.6	4.2	.0	.2	.0	.0	11.0	.4	.0	.0	2.5	7.1	.0	.0	.0	9216	
Second	.0	.4	3.4	15.9	42.7	7.0	.2	.6	.0	.5	8.7	.1	.1	.0	18.2	2.3	.0	.7	.0	9222	
Middle	.5	3.5	9.4	26.1	27.7	10.3	.2	1.3	.0	7.5	3.9	.2	1.2	.0	5.3	.6	.0	2.9	.0	9214	
Fourth	2.3	12.0	11.2	23.0	14.1	7.5	.1	.9	.0	21.5	1.0	.0	.6	.0	1.0	.0	.2	5.1	.0	9220	
Richest	12.3	14.2	5.0	5.9	2.5	2.4	.0	.5	2.6	45.7	.0	.0	.3	.0	.0	.0	.0	7.5	.0	9221	
Total	3.0	6.0	5.9	14.9	26.7	6.3	.1	.7	.5	15.0	4.9	.2	.4	.0	9.9	2.0	.1	3.3	.0	46093	

[1] MICS indicator 4.1; MDG indicator 7.8. An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Figure WS.1: Percentage of population using improved sources of drinking water by region, residence and wealth quintile, Ghana, 2011



Use of in-house water treatment is presented in Table WS.2. Households were asked of ways they may be treating water at home to make it safer to drink – boiling, adding bleach or chlorine, using a water filter, and using solar disinfection were considered as proper treatment of drinking water. The table shows water treatment by all households and the percentage of household members living in households using unimproved water sources but using appropriate water treatment methods.

Results from the survey shows that 91 percent of household members do not treat their water before drinking perhaps they see it as coming from an improved source (Table WS.2). This means that less than 10 percent of all Ghanaians treat their water before drinking. For household members that treat their water before drinking, the most common method is straining through a cloth (3%), while 2 percent of the people let it stand, and another 2 percent boil it. Regarding households with unimproved sources of water, 17 percent of household members treat their water using appropriate water treatment method before they drink it. Household members in the Northern and Volta regions who use unimproved water sources for drinking are more likely to treat it using appropriate water treatment method than those in the other regions (40% and 28% respectively). In terms of residence, rural inhabitants (18%) are more likely to use appropriate water treatment method than those living in urban areas (13%) in households where unimproved source is used. People whose household head has no education or has only primary education are more likely to treat water before drinking than those with middle school/junior secondary school or secondary and higher level of education when using unimproved water sources. The richest households are also less likely to treat water from unimproved sources compared to the poorest households.

Table WS.2: Household water treatment

Percentage of household population by drinking water treatment method used in the household, and for household members living in households where an unimproved drinking water source is used, the percentage who are using an appropriate treatment method, Ghana, 2011

Background Characteristics	Water treatment method used in the household										Number of household members	Percentage of household members in households using unimproved drinking water sources and using an appropriate water treatment method [1]	Number of household members in households using unimproved drinking water sources	
	None	Boil	Add bleach / chlorine	Strain through a cloth	Use water filter	Solar disinfection	Let it stand and settle	Add camphor/ naphthalene	Add water tablet	Other				Don't know
Region														
Western	93.8	1.1	.0	1.5	.2	.0	2.2	1.8	.0	.0	.0	4318	7.4	1229
Central	92.3	1.3	.1	1.8	.3	.0	1.2	2.2	1.0	.2	.1	4557	11.2	891
Greater Accra	90.5	2.7	1.1	.3	1.0	.0	3.5	1.0	.3	.1	.0	7625	8.4	1099
Volta	83.7	2.0	.1	7.6	3.4	.0	2.1	.9	.6	.3	.0	3947	28.4	1508
Eastern	92.0	1.7	.8	3.0	.1	.3	1.4	1.7	.0	.0	.0	5247	14.7	1234
Ashanti	91.0	1.8	1.3	1.9	.7	.0	3.3	1.0	.0	.1	.0	8397	10.2	795
Brong Ahafo	94.8	1.0	.4	3.5	.0	.0	.2	.6	.0	.0	.0	4234	11.0	828
Northern	82.2	1.1	1.1	12.4	2.9	.1	.6	.6	.0	.1	.0	4261	39.8	1345
Upper East	94.9	1.4	.6	1.7	.6	.0	.2	1.0	.0	.0	.1	2113	6.1	458
Upper West	97.8	.7	.1	.7	.0	.0	.4	.3	.1	.0	.0	1395	7.4	159
Residence														
Urban	91.3	1.6	1.1	1.6	1.0	.1	2.4	1.2	.4	.1	.0	22266	13.1	2061
Rural	90.2	1.7	.3	4.8	.9	.0	1.5	1.1	.1	.1	.0	23827	18.3	7484
Education of household head														
None	90.1	1.3	.7	4.9	1.2	.0	.9	1.1	.0	.1	.0	13735	19.1	3852
Primary	90.0	1.0	.2	3.7	.5	.0	3.6	1.9	.0	.0	.0	6196	21.0	1654
Middle/JSS	91.8	1.7	.8	2.4	.5	.1	2.1	1.0	.3	.1	.0	17493	13.3	3312
Secondary +	90.3	2.5	1.0	2.0	1.5	.0	2.0	1.1	.5	.0	.0	8643	15.9	726
Missing/DK	*	*	*	*	*	*	*	*	*	*	*	25	.	0
Wealth index quintiles														
Poorest	86.4	1.8	.5	8.2	1.6	.0	1.2	.9	.0	.2	.0	9214	23.2	4015
Second	92.3	1.2	.2	3.8	.8	.0	1.1	1.2	.0	.0	.0	9224	13.2	2781
Middle	92.5	.9	.3	2.0	.4	.0	2.2	1.6	.3	.1	.0	9217	12.9	1291
Fourth	92.3	1.0	1.1	1.5	.2	.2	2.9	1.2	.2	.1	.0	9218	17.6	734
Richest	90.0	3.4	1.4	.8	1.7	.0	2.3	.9	.5	.0	.0	9219	6.3	725
Total	90.7	1.6	.7	3.3	.9	.0	1.9	1.2	.2	.1	.0	46093	17.2	9545

[1] MICS indicator 4.2
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Overall, 66 percent of households do not have drinking water on their premises. For these households, Table WS.4 shows that for the majority of households, an adult female (64%) is usually the person collecting the water. Adult men collect water in only 19 percent of cases, while for the rest of the households, female or male children under age 15 collect water (11% and 6% respectively). The pattern is the same in all regions but adult female collecting water is more predominant in the Brong Ahafo (70%), Volta (71%), Northern (88%), Upper East (87%), and Upper West (86%) regions. Men are less likely to collect water in the three northern regions compared to the other seven regions. With regards to female and male children under age 15 collecting water, the girls are mostly engaged than the boys in collecting water outside their own premises in all regions as well as in both urban and rural areas. In the households where the head of the household has secondary or higher education, adult men are more likely (29%) to collect water than households where the household head has no education (12%). The same pattern is observed in the case of the wealth quintiles, where the percentage of adult men collecting water increases with household wealth – 12 percent in the poorest households, 18 percent in the second wealth quintile, 20 percent in the middle wealth quintile, 25 percent in the fourth wealth quintile, and 25 percent in the richest households.

Table WS.4: Person collecting water

Percentage of households without drinking water on premises, and percent distribution of households without drinking water on premises according to the person usually collecting drinking water used in the household, Ghana, 2011

Background characteristics	Person usually collecting drinking water						DK	Total	Number of households without drinking water on premises
	Percentage of households without drinking water on premises	Number of households	Adult woman (age 15+ years)	Adult man (age 15+ years)	Female child (under 15)	Male child (under 15)			
Region									
Western	77.7	1116	55.5	23.6	13.0	7.8	.0	100.0	867
Central	76.8	1236	55.6	21.8	13.1	9.5	.0	100.0	950
Greater Accra	29.3	2321	61.8	27.4	7.2	3.6	.0	100.0	680
Volta	79.7	992	70.9	18.4	8.1	2.6	.0	100.0	791
Eastern	68.7	1533	56.5	20.3	14.9	8.3	.0	100.0	1054
Ashanti	66.1	2321	55.5	21.6	15.2	7.6	.1	100.0	1535
Brong Ahafo	78.9	1011	70.3	15.7	9.5	4.4	.1	100.0	797
Northern	80.9	727	88.0	6.9	4.3	.7	.2	100.0	589
Upper East	90.7	414	86.7	8.1	3.7	1.5	.1	100.0	376
Upper West	83.9	253	86.1	7.0	5.3	1.1	.5	100.0	212
Residence									
Urban	43.8	6358	60.3	22.0	12.3	5.4	.0	100.0	2787
Rural	91.0	5567	66.1	17.6	10.3	6.0	.1	100.0	5063
Education of household head									
None	85.3	2997	71.7	12.2	10.9	5.1	.1	100.0	2556
Primary	75.7	1560	65.0	18.6	11.8	4.6	.0	100.0	1180
Middle/JSS	65.7	4590	59.6	21.7	11.6	7.1	.0	100.0	3014
Secondary +	39.6	2775	57.3	28.8	8.7	4.9	.2	100.0	1100
Missing/DK	*	3	-	-	-	-	-	100.0	0
Wealth index quintiles									
Poorest	97.5	1763	75.9	12.2	8.2	3.6	.1	100.0	1718
Second	91.9	2244	64.2	17.3	12.5	6.0	.0	100.0	2062
Middle	75.7	2450	60.7	19.5	12.1	7.6	.0	100.0	1854
Fourth	57.4	2639	55.4	25.7	12.4	6.5	.1	100.0	1514
Richest	24.8	2829	61.8	26.3	7.8	4.1	.0	100.0	702
Total	65.8	11925	64.0	19.1	11.0	5.8	.1	100.0	7850

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Use of Improved Sanitation Facilities

Inadequate disposal of human excreta and personal hygiene is associated with a range of diseases including diarrhoeal diseases and polio. An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved sanitation can reduce diarrhoeal disease by more than a third, and can significantly lessen the adverse health impacts of other disorders responsible for death and disease among millions of children in developing countries. Improved sanitation facilities for excreta disposal include flush or pour flush to a piped sewer system, septic tank, or latrine; ventilated improved pit latrine, pit latrine with slab, and composting toilet.

Table WS.5 provide information on the proportion of Ghanaian population living in households using improved sanitation facilities. In this table, both household and public facilities are included in the calculation of this indicator, as the critical element is the category of the facility. About 61 percent of the population are living in households using improved sanitation facilities (Table WS.5). Households in urban areas (80%) have more access to an improved sanitation facility than those in rural areas (43%). Also, residents of Northern, Upper East and Upper West regions are less likely than populations in other regions to use improved facilities. For example, in Upper East region, only 10 percent of the population is using improved sanitation facilities. Table WS.5 reveals that use of improved sanitation facilities is strongly associated with wealth and educational level of head of households. Less than 1 in 5 (19%) of the household members belonging to the poorest wealth quintile have access to an improved sanitation facility. This increases to 44 percent for household members in the second wealth quintile, to nearly 70 percent for household members in the middle wealth quintile, 79 percent for household members in the fourth wealth quintile, and to a high of 94 percent for household members in the wealthiest quintile. There is also profound difference in specific facilities between urban and rural areas. In rural areas, the population is mostly using ventilated improved pit (VIP) latrine, pit latrines without slabs, or simply have no facilities. –In urban areas, the most common facilities are flush toilets with connection to a sewage system or septic tank (26%) and use of ventilated improved pit (VIP) latrine (40%).

Nearly 1 out of 4 households (23%) in Ghana practice open defecation or have no toilet facility, and this is more pronounced in rural areas (35%) than urban areas (10%). It is a practice that is more common among the poor and also those with relatively lower levels of education. For example, 67 percent of household members in the poorest wealth quintile practice open defecation; this reduces to 27 percent for household members in the second wealth quintile, to 14 percent for those in the middle wealth quintile, 6 percent for household members in the fourth wealth quintile, and to less than 1 percent for household members in the richest wealth quintile. The same pattern is observed in the case of the education level of the head of the household, where the percentage of household members practicing open defecation decreases with educational levels – 45 percent where the household head has no education, 26 percent when the head has primary education, 12 percent when the head has middle/JSS education, and to 8 percent in cases where the household head has secondary or higher education. In terms of regional distribution, open defecation is mostly practiced in Upper East (89%), Northern (72%) and Upper West (71%). Greater Accra region has the lowest proportion of household members practicing open defecation (9%).

Table WS.5: Types of sanitation facilities
Percent distribution of household population according to type of toilet facility used by the household, Ghana, 2011

Background Characteristics	Type of toilet facility used by household											Open defecation (No facility, Bush, Field)	Total	Percentage of improved sanitation facilities	Number of household members						
	Improved sanitation facility					Unimproved sanitation facility															
	Flush to piped sewer system	Flush to septic tank	Flush to pit (latrine)	Flush don't know where	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab / Open pit	Flush to somewhere else	Bucket	Hanging toilet, Hanging latrine					Mobile toilet	Other				
Region																					
Western	.0	8.1	3.6	.1	20.8	21.0	.0	34.4	.2	.1	.0	.0	.0	.0	.0	.0	11.9	100.0	53.7	4318	
Central	.4	6.6	2.6	.0	29.0	21.7	.0	24.5	.0	.3	.0	.0	.0	.0	.0	.0	14.8	100.0	60.3	4557	
Greater Accra	5.7	35.1	.7	.9	36.4	6.3	.1	5.3	.0	.7	.0	.0	.0	.1	.2	.0	8.5	100.0	85.2	7625	
Volta	2.4	2.3	.3	.0	31.4	12.2	.0	24.8	.0	2.1	.0	.0	.0	.0	.0	.0	24.5	100.0	48.6	3947	
Eastern	3.2	7.3	.2	.0	38.7	11.6	.0	31.9	.0	.7	.0	.0	.0	.0	.0	.0	6.2	100.0	61.1	5247	
Ashanti	.9	14.9	2.5	.0	40.1	23.7	.0	7.8	.0	.0	.0	.0	.0	.0	.0	.0	10.1	100.0	82.0	8397	
Brong Ahafo	1.4	4.8	1.3	.0	28.5	30.3	.0	17.5	.1	.1	.0	.0	.0	.0	.0	.0	15.9	100.0	66.4	4234	
Northern	.5	1.6	.1	.0	20.2	4.1	.0	1.7	.0	.0	.0	.0	.0	.0	.0	.0	71.9	100.0	26.4	4261	
Upper East	.5	1.5	.1	.0	5.3	2.6	.0	1.2	.0	.1	.0	.0	.0	.0	.1	.0	88.6	100.0	10.1	2113	
Upper West	.1	1.5	.8	.0	16.0	5.9	.0	4.4	.0	.0	.0	.0	.1	.0	.1	.0	71.1	100.0	24.3	1395	
Residence																					
Urban	3.6	22.8	2.3	.3	40.0	10.7	.0	9.7	.1	.5	.0	.0	.0	.0	.1	.0	9.9	100.0	79.8	22266	
Rural	.3	1.3	.5	.0	21.6	19.6	.0	21.2	.0	.4	.0	.0	.0	.0	.0	.0	35.2	100.0	43.2	23827	
Education of household head																					
None	.2	3.0	.9	.0	23.0	14.3	.0	13.2	.0	.3	.0	.0	.0	.0	.1	.0	45.0	100.0	41.4	13735	
Primary	.9	6.2	.9	.2	27.7	15.5	.1	22.2	.0	.1	.0	.0	.0	.0	.0	.0	26.2	100.0	51.4	6196	
Middle/JSS	1.2	11.2	1.3	.3	36.8	17.6	.0	19.2	.0	.6	.0	.0	.0	.0	.1	.0	11.8	100.0	68.3	17493	
Secondary +	6.8	29.9	2.7	.1	31.5	12.2	.0	7.7	.1	.5	.0	.0	.0	.0	.0	.0	8.2	100.0	83.5	8643	
Missing/DK	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100.0	100.0	100.0	25
Wealth index quintile																					
Poorest	.0	.0	.1	.0	4.0	14.5	.0	15.3	.0	.3	.0	.0	.0	.0	.0	.0	65.7	100.0	18.6	9214	
Second	.1	.6	.2	.0	23.0	19.7	.0	29.2	.0	.1	.0	.0	.0	.0	.0	.0	27.1	100.0	43.5	9224	
Middle	.4	3.8	1.1	.1	43.5	20.2	.0	16.6	.0	.6	.0	.0	.0	.0	.0	.0	13.8	100.0	69.0	9217	
Fourth	1.1	8.8	1.8	.3	52.2	14.8	.1	13.2	.0	.4	.0	.0	.0	.0	.0	.0	7.4	100.0	79.0	9218	
Richest	8.0	45.0	3.8	.5	29.5	7.3	.0	4.0	.1	.8	.0	.0	.0	.0	.1	.2	.7	100.0	94.2	9219	
Total	1.9	11.6	1.4	.2	30.4	15.3	.0	15.7	.0	.4	.0	.0	.0	.0	.0	.0	22.9	100.0	60.9	46093	

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed

The MDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify households as using an unimproved sanitation facility if they are using otherwise acceptable sanitation facilities but sharing a facility between two or more households or using a public toilet facility.

This position is similar to that taken by the Government of Ghana in the revised Environmental Sanitation Policy (2010) and the National Environmental Sanitation Strategy and Action Plan (2010) in which a clear distinction is made between household toilets for domestic use, and public toilets¹ for use at public locations.

In fact, in Ghana (as shown in Table WS.6), only 15 percent of household members can be considered as using improved sanitation facilities, using JMP's definition that requires that the facility is both improved (as described in WS.5) and unshared. As much as 28 percent use improved public facility², 12 percent share improved facility with 5 or less households and 6 percent share it with more than 5 households. Almost 5 percent of households, even though do not share the facility with any other households, are found to be using facility types that are unimproved. Urban households are more likely (21%) than rural households (9%) to use an improved toilet facility that is not shared. Greater Accra region (28%) has the highest household population using an improved toilet facility that is not shared. Five other regions have over 10 percent of household population using an improved toilet facility that is not shared: Ashanti (18%), Western and Eastern (17%), Central (13%), and Brong Ahafo (10%).

Education of household head and household wealth status are not strongly associated with the use of an improved sanitation facility that is not shared. For example, only 6 percent of household members from the poorest households are using an improved sanitation facility that is not shared, compared to 44 percent of household members from the richest households.

¹ The Ghana Government's Guidelines for the Provision, operation and maintenance management of public toilets states clearly that the country goal is to ensure that all households have their own toilet facilities. An acknowledgment is however made that this may not be achievable within the medium term and provision is made for households who do not yet have facilities to use these public facilities in the interim. The use of these public facilities, however, does not count towards improved sanitation coverage, and therefore all public toilets are considered as unimproved sanitation facilities in the Ghana.

² Idem

Table WS.6: Use and sharing of sanitation facilities

Background Characteristics	Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Ghana, 2011												
	Users of improved sanitation facilities					Users of unimproved sanitation facilities					Number of household members		
	Not shared [1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/DK	Not shared	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/DK		Open defecation (no facility, bush field)	Total
Region													
Western	17,3	17,0	13,1	6,1	,0	11,0	17,4	4,3	1,7	,0	11,9	100,0	4318
Central	13,3	25,4	14,9	6,8	,0	4,7	12,3	5,1	2,6	,2	14,8	100,0	4557
Greater Accra	28,0	33,4	13,7	9,9	,1	1,8	,8	2,3	1,3	,0	8,5	100,0	7625
Volta	7,0	29,1	6,6	5,6	,3	8,2	9,4	4,0	4,9	,5	24,5	100,0	3947
Eastern	16,9	23,5	14,9	5,6	,3	9,5	7,6	12,6	2,6	,4	6,2	100,0	5247
Ashanti	17,5	35,7	20,6	7,8	,3	1,5	4,7	1,5	,2	,0	10,1	100,0	8397
Brong Ahafo	9,8	48,7	5,3	2,3	,3	5,3	4,0	6,0	2,4	,0	15,9	100,0	4234
Northern	5,2	17,7	2,5	1,0	,0	,7	,4	,4	,2	,0	71,9	100,0	4261
Upper East	3,0	4,1	2,0	1,0	,0	1,1	,2	,0	,1	,0	88,6	100,0	2113
Upper West	5,2	15,3	2,5	1,3	,0	2,7	,6	1,0	,3	,0	71,1	100,0	1395
Residence													
Urban	21,2	34,7	15,0	8,8	,0	2,4	2,8	3,5	1,5	,0	9,9	100,0	22266
Rural	9,1	21,9	8,9	3,0	,3	6,5	8,8	4,4	1,8	,2	35,2	100,0	23827
Education of household head													
None	7,0	25,0	6,2	3,2	,1	4,8	4,5	3,2	1,1	,0	45,0	100,0	13735
Primary	6,5	31,8	9,7	3,3	,1	4,8	10,4	4,7	2,3	,1	26,2	100,0	6196
Middle/JSS	15,2	31,9	13,9	7,1	,2	5,2	7,1	5,0	2,3	,2	11,8	100,0	17493
Secondary +	33,2	22,5	18,1	9,3	,3	2,5	2,6	2,5	,7	,0	8,2	100,0	8643
Missing/DK	,0	,0	100,0	,0	,0	*	*	*	*	*	*	100,0	25
Wealth index quintiles													
Poorest	6,2	9,7	2,2	,5	,1	6,9	5,9	1,9	,8	,1	65,7	100,0	9214
Second	5,6	29,9	5,9	2,0	,0	7,6	12,8	6,6	2,0	,3	27,1	100,0	9224
Middle	7,8	40,6	13,9	6,3	,4	4,2	5,5	4,8	2,6	,0	13,8	100,0	9217
Fourth	11,6	39,7	17,4	10,2	,1	3,4	3,8	4,5	1,9	,0	7,4	100,0	9218
Richest	43,5	20,4	19,9	10,0	,3	,5	1,7	1,9	,9	,0	,7	100,0	9219
Total	15,0	28,1	11,9	5,8	,2	4,5	5,9	4,0	1,6	,1	22,9	100,0	46093

[1] MCS indicator 4.3; MDG indicator 7.9

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Safe disposal of a child's faeces is disposing of the stool, by the mother or caretaker of the child using a toilet or by rinsing the stool into a toilet or latrine. Disposal of faeces of children 0-2 years of age is presented in Table WS.7. The results show that only slightly more than one-third (36%) of children had their stools disposed of safely. In most cases, mothers or caretakers of these children throw the stools into garbage (38%) or put the stools/rinse it into toilet or latrine, (34%). For households using an improved toilet facility, 42 percent of the 0-2 children's stool is put/rinsed into toilet or latrine; and for households using unimproved facility, this figure is 52 percent. In very few cases (2%), the children use the toilet facility themselves, while in 6 percent of cases, the children's stools are buried, and in 2 percent of cases, the stools are left in the open. With regard to type of sanitation in dwelling, it is 44 percent as against 54 percent for improved and unimproved in terms of safe disposal. The MICS results also show that Upper East (4%), Upper West (4%), and Northern (6%) regions are least likely to dispose of children's stools safely. The safe stool disposal is associated with mother's education and wealth index quintile. In other words, the percentage of safe stool disposal increases with the mother's education and wealth quintile.

Table WS.7: Disposal of child's faeces
Percent distribution of children age 0-2 years according to place of disposal of child's faeces, and the percentage of children age 0-2 years whose stools were disposed of safely the last time the child passed stools, Ghana, 2011

Background Characteristics	Place of disposal of child's faeces									Percentage of children whose last stools were disposed of safely [1]	Number of children age 0-2 years
	Child used toilet / latrine	Put / Rinsed into toilet or latrine	Put / Rinsed into drain or ditch	Thrown into garbage (solid waste)	Buried	Left in the open	Other	DK	Total		
Type of sanitation facility in dwelling											
Improved	2.0	42.1	11.5	38.0	3.6	.5	1.6	.8	100.0	44.1	2616
Unimproved	2.4	52.3	10.0	26.3	3.8	2.0	2.5	.6	100.0	54.7	759
Open defecation	.8	4.5	18.6	45.1	11.8	6.9	11.9	.5	100.0	5.3	1160
Region											
Western	2.5	44.6	6.8	37.8	2.0	6.0	.0	.3	100.0	47.1	447
Central	2.7	45.3	7.5	37.9	2.0	.0	4.2	.4	100.0	48.0	453
Greater Accra	.3	38.8	6.2	48.4	.8	.8	4.2	.6	100.0	39.0	671
Volta	3.0	25.4	16.5	27.2	13.4	.0	14.5	.0	100.0	28.4	338
Eastern	1.2	50.3	19.7	23.0	4.4	.0	.3	1.2	100.0	51.5	515
Ashanti	2.8	41.9	10.0	37.6	4.9	.5	1.2	1.1	100.0	44.6	890
Brong Ahafo	2.1	32.4	21.5	33.9	4.0	.6	5.1	.3	100.0	34.5	411
Northern	.6	5.0	19.7	48.0	9.3	6.9	9.8	.6	100.0	5.7	491
Upper East	.4	3.1	24.8	24.5	27.3	17.4	1.9	.7	100.0	3.5	184
Upper West	.5	3.7	6.7	63.7	9.7	1.5	13.2	1.0	100.0	4.2	134
Residence											
Urban	2.5	39.0	10.4	40.0	4.6	.7	2.3	.5	100.0	41.5	1977
Rural	1.2	30.5	15.1	36.2	6.6	3.7	6.0	.8	100.0	31.7	2559
Mother's education											
None	1.1	19.4	16.6	39.3	10.3	5.6	6.9	.8	100.0	20.5	1354
Primary	15.3	33.6	6.4	1.8	4.7	.8	100.0	37.3	999		
Middle/JSS	2.3	42.3	12.4	35.9	3.1	.7	2.9	.5	100.0	44.5	1604
Secondary +	2.6	43.5	2.8	47.1	1.5	.3	1.7	.5	100.0	46.1	579
Wealth index quintiles											
Poorest	1.7	34.7	15.2	35.4	5.0	2.3	5.5	.3	100.0	36.4	917
Second	1.5	35.0	15.2	35.2	8.0	.8	3.2	1.0	100.0	36.5	932
Middle	1.5	45.6	12.3	34.8	1.4	.6	2.7	1.1	100.0	47.1	867
Fourth	3.6	43.5	5.1	45.5	.7	.0	.8	.8	100.0	47.1	814
Richest	1.7	34.7	15.2	35.4	5.0	2.3	5.5	.3	100.0	36.4	917
Total	1.8	34.2	13.1	37.8	5.7	2.4	4.4	.7	100.0	36.0	4535

[1] MICS indicator 4.4

In its 2008 report³, the JMP developed a new way of presenting the access figures, by disaggregating and refining the data on drinking-water and sanitation and reflecting them in "ladder" format. This ladder allows a disaggregated analysis of trends in a three rung ladder for drinking-water and a four-rung ladder for sanitation. For sanitation, this gives an understanding of the proportion of population with no sanitation facilities at all, of those reliant on technologies defined by JMP as "unimproved," of those sharing sanitation facilities of otherwise acceptable technology, and those using "improved" sanitation facilities. Table WS.8 presents the percentages of households by drinking water and sanitation ladders. The Table also shows the percentage of household members using improved sources of drinking water and sanitary means of excreta disposal.

³ WHO/UNICEF JMP (2008), MDG assessment report - http://www.wssinfo.org/download?id_document=1279

Table WS.8: Drinking water and sanitation ladders
Percentage of household population by drinking water and sanitation ladders, Ghana, 2011

Background Characteristics	Percentage of household population using:										Number of household members	
	Improved drinking water [1]					Unimproved sanitation						
	Improved into dwelling, piped or yard	Other improved	Unimproved drinking water	Total	Improved sanitation [2]	Shared improved facilities	Unimproved facilities	Open defecation	Total	Improved drinking water sources and improved sanitation		
Region												
Western	6.9	64.7	28.5	100.0	17.3	36.2	34.4	11.9	100.0	11.8	4318	
Central	5.7	74.7	19.5	100.0	13.3	47.0	24.9	14.8	100.0	10.5	4557	
Greater Accra	16.0	69.6	14.4	100.0	28.0	57.2	6.1	8.5	100.0	22.4	7625	
Volta	5.7	56.1	38.2	100.0	7.0	41.6	26.9	24.5	100.0	5.8	3947	
Eastern	10.1	66.4	23.5	100.0	16.9	44.2	32.7	6.2	100.0	15.1	5247	
Ashanti	12.9	77.7	9.5	100.0	17.5	64.5	7.9	10.1	100.0	14.7	8397	
Brong Ahafo	6.7	73.7	19.6	100.0	9.8	56.5	17.7	15.9	100.0	6.6	4234	
Northern	7.2	61.3	31.6	100.0	5.2	21.2	1.8	71.9	100.0	4.6	4261	
Upper East	3.4	74.9	21.7	100.0	3.0	7.1	1.4	88.6	100.0	2.7	2113	
Upper West	5.1	83.5	11.4	100.0	5.2	19.0	4.5	71.1	100.0	4.8	1395	
Residence												
Urban	17.9	72.9	9.3	100.0	21.2	58.5	10.3	9.9	100.0	18.7	22266	
Rural	1.5	67.1	31.4	100.0	9.1	34.1	21.6	35.2	100.0	5.8	23827	
Education of household head												
None	3.5	67.9	28.0	100.0	7.0	34.5	13.6	45.0	100.0	4.1	13735	
Primary	7.3	65.0	26.7	100.0	6.5	44.9	22.4	26.2	100.0	4.6	6196	
Middle/JSS	9.1	67.5	18.9	100.0	15.2	53.1	19.9	11.8	100.0	11.9	17493	
Secondary +	20.9	54.9	8.4	100.0	33.2	50.1	8.3	8.2	100.0	30.3	8643	
Missing/DK	*	*	*	100.0	*	*	*	*	100.0	*	25	
Wealth index quintiles												
Poorest	.1	55.3	44.6	100.0	6.2	12.4	15.6	65.7	100.0	1.7	9214	
Second	.4	70.5	29.1	100.0	5.6	37.9	29.3	27.1	100.0	3.3	9224	
Middle	4.0	81.5	13.8	100.0	7.8	61.2	17.2	13.8	100.0	6.5	9217	
Fourth	14.3	74.3	8.0	100.0	11.6	67.4	13.6	7.4	100.0	10.3	9218	
Richest	28.4	42.9	7.9	100.0	43.5	50.6	5.0	.7	100.0	38.3	9219	
Total	9.4	69.9	20.7	100.0	15.0	45.9	16.1	22.9	100.0	12.1	46093	

Table WS.8 shows that among household population using improved drinking water, only 9 percent of them have water piped in dwelling, plot or yard; as much as 70 percent use improved water that they obtain from other improved sources, and 21 percent use unimproved sources of drinking water. The household population in Greater Accra, Eastern and Ashanti are more likely to have piped system within the dwelling or on plots compared to the other regions. The urban household population with pipe in dwelling are 18 percent as against only two percent for rural households; and as much as 31 percent of the rural household population rely on unimproved water sources for drinking against nine percent for urban residents.

The ladder for sanitation shows that 15 percent of household population use toilet facility exclusively (improved type and unshared) while 62 percent use unimproved toilet facilities (either because shared or because toilet category is unimproved), and 23 percent do not have it at all and practice open defecation.

At the national level, only 12 percent of the households have both improved drinking water sources and improved sanitation (not shared). Household members in urban areas are three times (19%) more likely than those in rural areas (6%) to have both improved drinking water sources and improved sanitation. There is also a positive relationship between education level and wealth index quintiles for the use of both improved drinking water sources and improved sanitation: for example, 38 percent of households in the richest wealth quintile have both improved drinking water source, and improved sanitation, compared to only 2 percent of the households in the poorest wealth quintile. Five regions have less than 10 percent of their household populations having access to both improved drinking water source, and an improved sanitation facility (Volta, Brong Ahafo, Northern, Upper East and Upper West), compared to the other five regions. Greater Accra region stands tall among all regions with 22 percent of households with access to both improved water source, and improved sanitation.

Handwashing

Handwashing with water and soap is the most cost effective health intervention to reduce both the incidence of diarrhoea and pneumonia for children under - 5 years. It is most effective when this is done by using water and soap after visiting a toilet or cleaning a child, before eating or handling food and before feeding a child. Monitoring correct hand washing behaviour at these critical times is challenging. A reliable alternative to observations or self-reported behaviour is assessing the likelihood that correct handwashing behaviour takes place by observing if a household has a specific place where people most often wash their hands, and observing if water and soap (or other local cleansing materials) are present at a specific place for handwashing.

As shown in Table WS.9, in Ghana, only 24 percent of the households with a specific place for handwashing were observed, while 70 percent households could not indicate a specific place where household members usually wash their hands. Less than 1 percent of the households did not give permission to see the place used for handwashing. Of those households where a place for handwashing was observed, 50 percent had both water and soap present at the designated place. In 14 percent of the households, only water was available at the designated place, while in 12 percent of the households the place had only soap but no water. The remaining 24 percent of households had neither water nor soap available at the designated place for handwashing.

Table WS.9: Water and soap at place for handwashing

Percentage of households where place for handwashing was observed and percent distribution of households by availability of water and soap at place for handwashing, Ghana, 2011

Background Characteristics	Percentage of households where place for handwashing was observed		Percentage of households where place for handwashing was not observed			Number of households	Percent distribution of households where place for handwashing was observed, and:				Total	Number of households where place for handwashing was observed	
	households where place for handwashing was observed	place for handwashing was not observed	Not in dwelling/plot/yard	No permission to see	Other reasons		Water and soap are available [1]	Water is available, soap is not available	Water is not available, soap is available	Water and soap are not available			Missing
Region													
Western	14.0	79.1	.0	6.9	1116	79.9	6.2	4.9	9.0	.0	100.0	156	
Central	38.3	51.0	.7	10.0	1236	40.1	10.7	13.8	35.2	.2	100.0	474	
Greater Accra	37.3	47.6	.8	14.2	2321	55.5	11.4	10.6	22.1	.4	100.0	866	
Volta	14.5	85.4	.0	.1	992	15.9	25.7	11.5	46.3	.7	100.0	144	
Eastern	6.5	93.3	.0	.2	1533	64.1	4.3	30.1	1.6	.0	100.0	99	
Ashanti	23.3	72.4	.3	4.0	2321	46.7	10.8	13.3	29.2	.0	100.0	542	
Brong Ahafo	29.5	70.4	.0	.1	1011	60.8	14.5	6.2	18.6	.0	100.0	298	
Northern	20.4	75.5	1.7	2.4	727	37.5	31.0	13.3	16.5	1.7	100.0	149	
Upper East	19.5	79.9	.0	.6	414	46.4	34.5	14.9	3.7	.6	100.0	81	
Upper West	10.5	87.0	1.4	1.0	253	36.3	35.3	14.5	13.2	.7	100.0	27	
Residence													
Urban	30.8	61.6	.6	7.0	6358	55.7	13.0	10.9	20.1	.3	100.0	1960	
Rural	15.7	80.4	.3	3.6	5567	37.3	14.9	14.2	33.2	.4	100.0	875	
Education of household head													
None	17.9	77.6	.4	4.1	2997	35.4	22.8	14.1	27.0	.8	100.0	538	
Primary	18.5	77.2	.2	4.1	1560	35.3	13.7	17.0	33.9	.0	100.0	289	
Middle/JSS	20.1	73.5	.5	5.9	4590	49.0	10.3	13.1	27.5	.2	100.0	923	
Secondary+	39.0	53.4	.6	7.0	2775	62.3	11.6	8.4	17.4	.2	100.0	1083	
Missing/DK	*	*	*	*	3	*	*	*	*	*	100.0	3	
Wealth index quintiles													
Poorest	12.9	83.7	.5	2.8	1763	35.6	26.5	15.9	20.8	1.2	100.0	228	
Second	16.6	78.3	.1	5.1	2244	35.1	15.2	11.2	38.2	.3	100.0	372	
Middle	17.7	78.1	.3	3.9	2450	34.4	14.4	17.1	34.0	.1	100.0	433	
Fourth	20.0	74.0	.3	5.7	2639	37.0	13.1	18.0	31.5	.5	100.0	529	
Richest	45.0	45.7	.8	8.5	2829	67.7	10.7	7.1	14.3	.1	100.0	1274	
Total	23.8	70.3	.4	5.5	11925	50.0	13.6	11.9	24.2	.3	100.0	2836	

[1] MICS indicator 4.5
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Availability of place of handwashing and soap is associated with residence, education and wealth background characteristics. Huge regional variations are noted for households where water and soap are available, with the highest proportion (80%) in Western and the lowest (16%) in Volta region.

Table WS.10 presents the availability of soap within dwellings, no matter the location of the soap. In total, almost two thirds of the households have soap somewhere in the dwelling: the soap was observed in 15% of the households where place for handwashing was also observed; it was shown in 38% of the households where place for handwashing was not observed; one third of the households had no soap anywhere in the household.

Figure WS.2 show the percentage of households with soap anywhere in the dwelling for hand washing by background characteristics. It appears that availability of soap in the dwelling is higher in urban areas (72%), than in rural areas (54%). Northern (28%), Volta (29%), and Upper West (34%) regions have the least proportions of households with soap available anywhere in the dwelling for handwashing, while Ashanti (87%), Brong Ahafo (78%) and Greater Accra (76%) have the highest proportions. Availability of soap for handwashing in households increases with educational level of the head of the household. This is also true for household wealth and availability of soap for handwashing anywhere in the dwelling.

Figure WS.2: Percentage of households with soap anywhere in the dwelling, Ghana, 2011

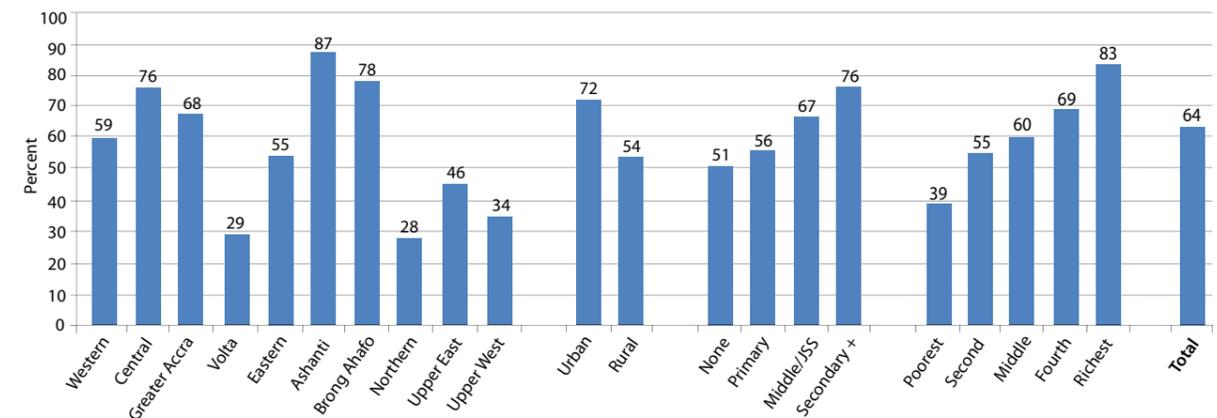


Table WS.10: Availability of soap
Percent distribution of households by availability of soap in the dwelling, Ghana, 2011

Background Characteristics	Place for handwashing observed				Place for handwashing not observed				Percentage of households with soap anywhere in the dwelling [1]	Number of households		
	Soap observed	Soap shown	No soap in household	Not able/Does not want to show soap	Missing	Soap shown	No soap in household	Not able/Does not want to show soap			Missing	Total
Region												
Western	11.9	1.5	.6	.0	.0	40.8	39.8	.0	5.5	100.0	59.4	1116
Central	20.7	10.6	5.5	.0	1.6	39.4	18.4	.1	3.8	100.0	75.8	1236
Greater Accra	24.7	8.2	3.6	.1	.7	29.1	27.6	.7	5.3	100.0	67.6	2321
Volta	4.0	3.7	6.6	.0	.3	19.0	64.1	.0	2.3	100.0	28.6	992
Eastern	6.1	.0	.4	.0	.0	44.4	43.7	.1	5.3	100.0	54.5	1533
Ashanti	14.0	6.9	1.3	.0	1.1	53.7	10.3	.1	12.5	100.0	87.2	2321
Brong Ahafo	19.8	7.0	2.0	.0	.8	47.2	19.1	.0	4.2	100.0	78.1	1011
Northern	10.4	4.7	4.1	.0	1.2	11.4	66.2	.0	1.9	100.0	27.8	727
Upper East	11.9	.5	6.7	.1	.2	30.7	42.2	.2	7.5	100.0	45.6	414
Upper West	5.3	3.4	1.1	.0	.7	22.9	63.2	.1	3.3	100.0	34.3	253
Residence												
Urban	20.5	6.9	2.5	.0	.8	38.4	24.6	.3	5.9	100.0	71.9	6358
Rural	8.1	3.8	3.2	.0	.6	36.6	41.4	.0	6.2	100.0	54.0	5567
Education of household head												
None	8.9	4.9	3.6	.0	.5	34.3	43.4	.1	4.3	100.0	51.0	2997
Primary	9.7	5.2	3.2	.0	.4	37.1	39.4	.4	4.6	100.0	56.0	1560
Middle/JSS	12.5	4.6	2.2	.1	.7	42.5	30.2	.2	7.0	100.0	66.7	4590
Secondary +	27.6	7.5	2.8	.0	1.1	33.2	20.4	.1	7.3	100.0	76.1	2775
Missing/DK	*	*	*	*	*	*	*	*	*	100.0	*	3
Wealth index quintiles												
Poorest	6.7	1.8	4.0	.0	.4	27.9	55.0	.1	4.0	100.0	39.0	1759
Second	7.7	5.1	3.5	.0	.3	38.4	39.7	.2	5.2	100.0	54.9	2199
Middle	9.1	4.9	3.0	.0	.7	40.5	36.1	.1	5.7	100.0	60.4	2455
Fourth	11.0	6.0	2.0	.0	1.0	43.4	27.6	.3	8.7	100.0	69.4	2664
Richest	33.7	8.0	2.2	.1	1.0	35.0	13.9	.2	5.8	100.0	82.7	2847
Total	14.7	5.5	2.8	.0	.7	37.6	32.4	.2	6.0	100.0	63.6	11925

[1] MICS indicator 4.6
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.





Fertility

In MICS4, adolescent birth rates and total fertility rates are calculated using information on the date of last birth of each woman and are based on the one-year period (1-12 months) preceding the survey. Rates are underestimated by a very small margin due to the absence of information on multiple births (twins, triplets, etc) and on women having multiple deliveries during the one year period preceding the survey.

Table RH.1 shows adolescent birth rates and total fertility rate. The adolescent birth rate (age-specific fertility rate for women aged 15-19) is defined as the number of births to women aged 15-19 years during the one year period preceding the survey, divided by the average number of women aged 15-19 (number of women-years lived between ages 15 through 19, inclusive) during the same period, expressed per 1000 women. The total fertility rate (TFR) is calculated by summing the age-specific fertility rates calculated for each of the 5-year age groups of women, from age 15 through to age 49. The TFR denotes the average number of children to which a woman will have given birth by the end of her reproductive years if current fertility rates prevailed.

Overall, the adolescent birth rate is 60 per 1000 women in Ghana. However, huge variations are observed across the regions, residence, mother's education and wealth index. For example, Brong Ahafo has the lowest rate (17) while the Eastern region has the highest with 94 per 1000 women. In urban and rural areas, the rates are 33 and 89 per 1000 women, respectively. One would expect that the level of mother's education would have a positive impact in reducing the adolescent birth rate, but is not the case with the MICS4 results: adolescents who have the primary and secondary and higher education level, have the highest adolescent birth rates with 114 and 134 per 1000 women, respectively. Also the poorest and middle quintiles have the highest adolescent birth rates, 83 and 89 per 1000 women, respectively.

Table RH.1 also shows that the TFR for Ghana is 4.3 children per woman. The average is 3.3 children per woman in the urban area and 5.5 per woman in the rural area. At the regional level, the Northern region has the highest TFR with 6.2 children per woman. As can be expected, the lowest TFR is observed among women with secondary or higher education (3.6) and in the richest quintile (2.9).

Background Characteristics	Adolescent birth rate [1] (Age-specific fertility rate for women age 15-19)	Total Fertility Rate
Region		
Western	87	4.7
Central	61	4.4
Greater Accra	42	3.2
Volta	83	3.9
Eastern	94	4.8
Ashanti	61	3.9
Brong Ahafo	17	4.6
Northern	73	6.2
Upper East	42	4.9
Upper West	40	4.8
Residence		
Urban	33	3.3
Rural	89	5.5
Women's education		
None	45	4.8
Primary	114	4.5
Middle/JSS	49	4.0
Secondary+	131	3.6
Wealth index quintile		
Poorest	83	6.0
Second	67	5.4
Middle	89	4.4
Fourth	46	3.7
Richest	10	2.9
Total	60	4.3

[1] MICS indicator 5.1; MDG indicator 5.4

Sexual activity and childbearing early in life carry significant risks for young people all around the world. Table RH.2 presents some early childbearing indicators for women aged 15-19 and 20-24 while Table RH.3 presents the trends for early childbearing.

As shown in Table RH.2, 10 percent of women aged 15-19 have already had a birth, about 2 percent are pregnant with their first child, so in total, 12 percent have begun childbearing. Also, 1 percent has had a live birth before age 15. Table RH.2 shows that 16 percent of women aged 20-24 years had a live birth before age 18. The percentage of women aged 20-24 years who had a live birth before age 18 is twice as large in the rural area (24%) as in the urban area (11%), and decreases significantly with educational level and wealth quintile. Some regions are more exposed to this early childbearing such as Volta (32%) and Western region (24%) while Greater Accra region has the lowest rate of early childbearing (8%).

Background Characteristics	Number of women age 15-19				Number of women age 15-19	Percentage of women age 20-24 who have had a live birth before age 18 [1]	Number of women age 20-24
	Have had a live birth	Are pregnant with first child	Have begun childbearing	Have had a live before age 15			
Region							
Western	17.3	4.2	21.5	4.0	188	23,7	141
Central	11.6	2.5	14.1	.8	214	14,6	164
Greater Accra	3.6	.0	3.6	.0	265	7,5	367
Volta	16.1	3.5	19.5	.5	156	31,7	116
Eastern	14.5	2.8	17.2	.0	209	15,3	189
Ashanti	7.4	3.3	10.7	.7	359	16,5	359
Brong Ahafo	7.2	2.0	9.2	2.1	243	21,1	153
Northern	9.7	1.1	10.8	.7	117	16,5	102
Upper East	7.8	1.2	9.1	.0	87	16,2	45
Upper West	7.0	2.0	9.0	.9	60	11,4	37
Residence							
Urban	5.8	1.3	7.1	.5	976	10,7	963
Rural	14.3	3.5	17.7	1.5	923	23,6	710
Education							
None	6.9	1.3	8.2	1.5	394	39,2	602
Primary	16.8	4.2	21.0	1.3	373	26,9	238
Middle/JSS	8.6	2.1	10.8	.7	1123	16,1	645
Secondary +	23.3	.0	23.3	.0	10	3,9	189
Wealth index quintile							
Poorest	16.7	2.8	19.5	2.8	322	24,6	203
Second	12.8	3.9	16.6	1.4	422	26,0	242
Middle	12.1	2.9	15.0	.9	421	21,6	360
Fourth	7.2	1.0	8.2	.0	387	12,3	390
Richest	.6	1.1	1.7	.1	347	6,6	479
Total	9.9	2.4	12.3	1.0	1899	16.2	1674

[1] MICS indicator 5.2

Table RH.3 shows that the percentages of women with a live birth before age 15 and 18 are higher in rural areas compared to urban areas for all age-groups, except for those aged 40-44 years. While the lowest percentage is found in the age-group 15-19 years for those with a live birth before age 15, there is no linear association between age and early childbearing. However, for women who had a live birth before age 18, early childbearing declines with age in urban areas from 26 percent in age-group 40-44 years to 11 percent for those aged 20-24 years.

Table RH.3: Trends in early childbearing

Percentage of women who have had a live birth by age 15 and 18, by age groups, Ghana, 2011

Background Characteristics	Urban				Rural				All			
	Percentage of women with a live birth before age 15	Number of women age 15-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years	Percentage of women with a live birth before age 15	Number of women age 5-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years	Percentage of women with a live birth before age 15	Number of women age 15-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years
15-19	.5	976	na	na	1.5	923	.	0	1.0	1899	.	0
20-24	1.3	963	10.9	963	4.7	710	23.4	710	2.7	1674	16.2	1674
25-29	1.2	1025	13.5	1025	4.0	743	22.7	743	2.4	1768	17.3	1768
30-34	3.8	885	15.2	885	5.7	753	29.1	753	4.7	1638	21.6	1638
35-39	3.4	733	19.4	733	5.9	697	29.1	697	4.6	1431	24.1	1431
40-44	5.1	661	26.4	661	3.2	534	23.9	534	4.2	1195	25.3	1195
45-49	1.9	527	19.7	527	2.9	496	20.2	496	2.4	1023	19.9	1023
Total	2.3	5770	16.7	4794	4.0	4857	25.0	3934	3.1	10627	20.4	8728

Contraception

Appropriate family planning is important for the health of women and children through: 1) preventing pregnancies that are too early or too late; 2) extending the period between births; and 3) limiting the number of children. Access by all couples to information and services to prevent pregnancies that are too early, too closely spaced, too late or too many is critical.

Current use of contraception was reported by about one third (35%) of the women currently married or in union (Table RH.4). The most popular method is the injectable and periodic abstinence, both used by 9 percent of married women in Ghana. The next most popular method is the use of the pill, which accounts for about 8 percent of married women. Between 2 and 3 percent of women reported use of the male condom, the implants, female sterilization and lactational amenorrhoea method (LAM). Less than 1 percent of women use withdrawal, IUD, male sterilization, and vaginal methods with their partners.

Contraceptive prevalence is highest in the Greater Accra Region at 44 percent and Eastern at 43 percent. In terms of modern methods however, 29 percent of married women in Central Region, and 27 percent in both Greater Accra and Brong Ahafo recorded the highest use. In Volta and Northern regions, contraceptive use is lowest; only one in five married women (20%) reported using any method. Adolescents are far less likely to use contraception than older women – only 17 percent of married or women in union aged 15-19 currently use a method of contraception compared to 37 percent of women aged 20-24 year old and 38 percent of women aged 25-39 years.

Women’s educational level is strongly associated with contraceptive prevalence. The percentage of women using any method of contraception rises from 26 percent among those with no education to 34 percent among women with primary education, 39 percent among women with middle/JSS education, and to 42 percent among women with secondary or higher education. Partners of women with secondary or higher education are likely to use male condom more than those with lower educational levels. Likewise, women with secondary or higher education are more likely to have a higher negotiating power for abstinence compared with those with lower education.

Unmet Need

Unmet need for contraception refers to fecund women who are not using any method of contraception, but who wish to postpone the next birth (spacing) or who wish to stop childbearing altogether (limiting). Unmet need is identified in MICS by using a set of questions eliciting current behaviours and preferences pertaining to contraceptive use, fecundity, and fertility preferences.

Table RH.4: Use of contraception

Percent of women 15-49 years currently married or in union who are using (or whose partners are using) a contraception method, Ghana, 2011

Background Characteristics	Not using any method	Female sterilization	Male sterilization	IUD	Injectables	Implants	Percent of women (currently married or in union) who are using:										LNG-IUS	Other	Any modern method	Any traditional method	Any method [1]	Number of women currently married or in union
							Female condom	Male condom	Pill	Diaphragm/foam/jelly	Lactational amenorrhoea method (LAM)	Periodic abstinence/Rhythm	Withdrawal									
Region																						
Western	64.0	.4	.0	.0	4.9	2.8	11.8	3.9	.2	.0	.0	10.6	.9	.6	23.9	12.1	36.0	672				
Central	58.6	1.8	.0	.8	10.0	3.4	8.3	4.3	.0	1.3	.9	9.3	.9	.9	29.1	12.4	41.4	598				
Greater Accra	56.5	2.6	.0	1.3	8.1	1.2	7.9	5.1	.0	.2	.2	13.9	2.9	.0	26.5	16.9	43.5	1089				
Volta	80.1	.6	.4	.3	8.0	.6	4.6	1.3	.0	.0	.0	3.7	.0	.5	15.8	4.1	19.9	541				
Eastern	57.2	2.2	.0	1.0	9.4	3.5	8.4	1.7	.0	.6	.4	15.5	.4	.0	26.2	16.6	42.8	752				
Ashanti	67.4	2.1	.0	.0	9.4	1.2	8.3	2.2	.0	.1	.2	5.8	.4	.5	23.3	9.3	32.6	1310				
Brong Ahafo	59.8	1.8	.0	2.0	11.3	1.8	9.7	.4	.0	4.7	1.2	6.6	.0	.6	27.0	13.2	40.2	585				
Northern	79.9	.2	.0	.3	6.6	.4	3.9	1.7	.0	3.1	.0	3.7	.0	.3	13.1	7.0	20.1	576				
Upper East	78.4	.1	.0	.1	11.7	2.5	3.5	.8	.0	.1	.1	2.7	.1	.1	18.7	2.9	21.6	264				
Upper West	72.8	.0	.0	.5	15.3	1.3	3.9	1.3	.0	2.0	.3	2.3	.3	.3	22.4	4.8	27.2	188				
Residence																						
Urban	63.1	1.7	.1	.8	7.5	1.7	7.8	3.6	.0	.1	1.4	10.6	1.3	.2	23.3	13.5	36.9	3220				
Rural	67.5	1.4	.0	.5	10.2	1.9	7.7	1.7	.0	1.6	.5	6.6	.5	.5	23.4	9.2	32.5	3353				
Age																						
15-19	83.0	.0	.0	.0	2.0	.1	6.8	3.3	.0	.7	.7	3.9	.0	.3	12.1	4.9	17.0	134				
20-24	63.0	.0	.0	.0	11.7	1.3	11.1	3.6	.0	1.3	1.2	6.7	1.2	.0	27.8	9.2	37.0	758				
25-29	61.7	.2	.0	.4	10.9	2.4	8.1	2.7	.0	1.9	1.8	9.2	1.8	.6	24.8	13.5	38.3	1271				
30-34	62.1	1.0	.2	.4	11.1	1.9	8.6	3.1	.0	1.9	.7	8.7	.7	.3	26.2	11.6	37.9	1422				
35-39	62.0	1.3	.0	.8	8.4	2.8	8.9	2.7	.0	1.6	.7	10.7	.7	.1	24.9	13.1	38.0	1209				
40-44	70.6	2.4	.0	1.0	6.6	1.5	4.9	2.0	.0	1.5	.8	8.0	.8	.3	18.7	10.7	29.4	991				
45-49	74.9	5.6	.0	1.6	3.3	.3	4.4	1.1	.1	.3	.1	7.2	.1	.7	16.8	8.3	25.1	788				
Number of children																						
0	83.7	.0	.0	.0	.0	.0	5.3	3.6	.0	.0	.3	7.1	.3	.0	9.0	7.3	16.3	411				
1	73.0	.0	.0	.3	7.0	.8	5.5	3.6	.0	.6	.9	7.7	.9	.5	17.3	9.7	27.0	1055				
2	63.1	1.1	.0	1.3	9.1	1.3	9.1	2.9	.0	1.3	2.0	8.6	2.0	.3	24.8	12.1	36.9	1266				
3	59.7	.8	.2	.8	11.7	1.7	9.3	2.9	.0	1.5	.4	10.8	.4	.0	27.6	12.7	40.3	1187				
4+	63.0	2.9	.0	.5	9.6	2.8	7.7	1.8	.0	2.2	.7	8.1	.7	.6	25.4	11.5	37.0	2656				

Table RH.4 (cont'd)

Back-ground Characteristics	Percent of women (currently married or in union) who are using:													Number of women currently married or in union					
	Not using any method	Female sterilization	Male sterilization	IUD	Injections	Implants	Pill	Male condom	Female condom	Diaphragm/foam/jelly	Lactational amenorrhoea method (LAM)	Periodic abstinence/Rhythm	Withdrawal		LNG-IUS	Other	Any modern method	Any traditional method	Any method [1]
Education																			
None	73.9	.5	.0	.2	9.4	1.7	4.9	1.1	.0	.1	2.3	4.4	1.0	.0	.5	17.9	8.3	26.1	1867
Primary	65.7	2.6	.0	1.1	9.6	2.1	8.6	1.3	.0	.0	1.1	6.9	.9	.0	.0	25.4	8.9	34.3	1367
Middle/JSS	61.3	1.6	.1	.6	8.6	1.8	9.3	3.1	.0	.1	1.5	10.6	.9	.0	.5	25.3	13.4	38.7	2474
Secondary +	58.0	1.6	.0	1.1	7.2	1.8	8.0	6.5	.0	.2	.5	14.1	.9	.0	.2	26.5	15.6	42.0	866
Wealth index quintile																			
Poorest	76.6	.2	.0	.1	9.1	1.5	4.6	1.0	.0	.0	2.0	3.6	.7	.0	.6	16.5	6.9	23.4	1233
Second	67.0	2.4	.0	.8	10.5	2.1	8.0	1.6	.1	.1	1.1	5.4	.6	.0	.3	25.5	7.5	33.0	1160
Middle	61.2	1.7	.0	.3	10.1	2.4	10.6	1.8	.0	.2	2.1	8.9	.4	.0	.2	27.1	11.7	38.8	1250
Fourth	64.0	.6	.0	.4	10.4	2.0	9.4	1.8	.0	.1	1.5	8.6	1.2	.0	.1	24.6	11.4	36.0	1410
Richest	59.6	2.7	.2	1.6	4.9	1.2	6.3	6.1	.0	.1	.9	14.6	1.4	.0	.5	23.0	17.4	40.4	1521
Total	65.3	1.5	.0	.6	8.8	1.8	7.7	2.6	.0	.1	1.5	8.5	.9	.0	.4	23.4	11.3	34.7	6574

[1] MICS indicator 5.3; MDG indicator 5.3

Table RH.5 shows the results of the survey on contraception, unmet need, and the demand for contraception satisfied.

Unmet need for spacing is defined as the percentage of women who are not using a method of contraception AND

- are not pregnant and not postpartum amenorrheic¹ and are fecund² and want to wait two or more years for their next birth OR
- are not pregnant and not postpartum amenorrheic and are fecund and unsure whether they want another child OR
- are pregnant and say that pregnancy was mistimed: would have wanted to wait OR
- are postpartum amenorrheic and say that the birth was mistimed: would have wanted to wait.

Unmet need for limiting is defined as the percentage of women who are not using a method of contraception AND

- are not pregnant and not postpartum amenorrheic and are fecund and say they do not want any more children OR
- are pregnant and do not want to have a child OR
- are postpartum amenorrheic and say that they didn't want the birth

Total unmet need for contraception is simply the sum of unmet need for spacing and unmet need for limiting. Table RH.5 gives the distribution of the indicators of unmet need – 26 percent of women aged 15-49 years have unmet need for contraception, 16 percent have unmet need for spacing and 10 percent have unmet need for limiting. About two thirds (62%) of women aged 15-19 have unmet need for family planning, the highest among the age-groups. As expected unmet need is lowest among women aged 45-49 as they tend to have far less need for contraception due to menopause (16%). Unmet need is about 26 percent for women in the age-groups 25-29, 30-34 and 40-44 years. Differences exist in women's unmet need for contraception by level of education. For instance, 31 percent of women with no education have unmet need compared to 25 percent of those with middle or JSS education. However, those with secondary or higher education have less unmet need (17%) than the others. Women from the poorest households have more unmet need than those from the richest households (33% versus 16%).

Met need for limiting includes women who are using a contraceptive method and who want no more children, those that are using male or female sterilization or those who have indicated that they are infecund. Met need for spacing includes women who are using a contraceptive method and who want to have another child or are undecided whether to have another child. The sum of met need for spacing (19%) and limiting (16%) makes up to the total met need for contraception (35%). Also, 38 percent of women aged 25-29, 30-34 and 35-39 years have their need for family planning met. This is higher than the met needs for women in other age categories.

Using information on contraception and unmet need, the percentage of demand for contraception satisfied is also estimated from the MICS data. Percentage of demand satisfied is defined as the proportion of women currently married or in a marital union who are currently using contraception, of the total demand for contraception. The total demand for contraception includes women who currently have an unmet need (for spacing or limiting), plus those who are currently using contraception. More than half (57%) of women consider their demand for contraception as

1 A women is postpartum amenorrheic if she had a birth in last two years and is not currently pregnant, and her menstrual period has not returned since the birth of the last child
 2 A women is considered infecund if she is neither pregnant nor postpartum amenorrheic, and (1a) has not had menstruation for at least six months, or (1b) never menstruated, or (1c) her last menstruation occurred before her last birth, or (1d) in menopause/has had hysterectomy OR
 (2) She declares that she has had hysterectomy, or that she has never menstruated or that she is menopausal, or that she has been trying to get pregnant for 2 or more years without result in response to questions on why she thinks she is not physically able to get pregnant at the time of survey OR
 (3) She declares she cannot get pregnant when asked about desire for future birth OR
 (4) She has not had a birth in the preceding 5 years, is currently not using contraception and is currently married and was continuously married during the last 5 years preceding the survey

satisfied. Greater Accra has the highest demand for contraception satisfied (69%) while Volta region presents the least at 35 percent. Close to 62 percent of women aged 45-49 indicate that their need for contraception has been satisfied compared to 22 percent for women aged 15-19. The percentage of demand for contraception satisfied averages 57 for women in the other age-groups (20-24, 25-29, 30-34, 35-39, and 40-44 years). Also, women from the richest households (70%) are more likely to have their demand for contraception satisfied than women from the poorest households (41%). Finally, 71 percent of women with secondary or higher education have their need for contraception satisfied compared to 46 percent of those with no education.

Table RH.5: Unmet need for contraception
Percentage of women aged 15-49 years currently married or in union with an unmet need for family planning and percentage of demand for contraception satisfied,

Back-ground Character-istics	Met need for contraception - For spacing	Met need for contraception - For limiting	Met need for contraception - Total	Unmet need for contraception - For spacing	Unmet need for contraception - For limiting	Unmet need for contraception - Total [1]	Number of women currently married or in union	Percentage of demand for contraception satisfied	Number of women currently married or in union with need for contraception
Region									
Western	21.0	14.9	36.0	11.3	13.7	25.1	672	58.9	410
Central	20.7	20.7	41.4	12.8	9.8	22.6	598	64.7	383
Greater Accra	24.1	19.5	43.6	12.2	7.5	19.7	1089	68.9	690
Volta	11.3	8.6	19.9	25.2	12.6	37.9	541	34.5	312
Eastern	22.0	20.8	42.8	13.1	9.2	22.4	752	65.7	490
Ashanti	16.6	16.0	32.6	18.2	11.6	29.8	1310	52.3	818
Brong Ahafo	21.5	18.8	40.3	15.8	11.5	27.3	585	59.7	395
Northern	15.6	4.7	20.3	24.9	5.4	30.4	576	40.0	292
Upper East	16.1	5.5	21.6	16.4	9.8	26.3	264	45.2	126
Upper West	18.8	8.4	27.2	18.2	9.8	28.0	188	49.3	104
Residence									
Urban	19.9	17.1	36.9	14.6	9.9	24.4	3220	60.2	1977
Rural	18.6	13.9	32.6	18.0	10.4	28.4	3353	53.5	2043
Age									
15-19	15.9	1.2	17.0	61.1	.4	61.6	134	21.7	105
20-24	35.4	1.7	37.1	31.2	2.1	33.3	758	52.7	533
25-29	31.6	6.8	38.4	22.5	2.7	25.2	1271	60.4	809
30-34	23.6	14.3	37.9	18.3	8.0	26.3	1422	59.1	913
35-39	13.2	24.9	38.1	10.5	16.4	27.0	1209	58.5	787
40-44	6.1	23.5	29.5	6.4	19.9	26.3	991	52.9	553
45-49	2.4	22.7	25.1	2.3	13.3	15.5	788	61.8	320
Education									
None	14.3	12.0	26.3	17.5	13.2	30.7	1867	46.1	1064
Primary	18.5	15.9	34.4	16.7	12.3	29.0	1367	54.3	867
Middle/JSS	21.1	17.6	38.7	16.7	8.3	25.0	2474	60.8	1576
Secondary +	25.8	16.3	42.0	12.0	5.2	17.2	866	71.0	513
Wealth index quintile									
Poorest	15.8	7.7	23.5	21.6	10.9	32.5	1233	42.0	690
Second	17.2	15.8	33.1	18.1	15.5	33.5	1160	49.7	772
Middle	20.0	19.0	38.9	19.9	10.9	30.8	1250	55.8	872
Fourth	20.9	15.1	36.1	13.7	8.7	22.4	1410	61.7	824
Richest	21.5	18.9	40.4	10.2	6.0	16.2	1521	71.3	861
Total	19.3	15.5	34.7	16.3	10.1	26.4	6574	56.8	4020

[1] MICS indicator 5.4; MDG indicator 5.6

Antenatal Care

The antenatal period presents important opportunities for reaching pregnant women with a number of interventions that may be vital to their health and well-being and that of their infants. Better understanding of foetal growth and development and its relationship to the mother's health has resulted in increased attention to the potential of antenatal care as an intervention to improve both maternal and newborn health. For example, if the antenatal

period is used to inform women and families about the danger signs and symptoms and about the risks of labour and delivery, it may provide the route for ensuring that pregnant women do, in practice, deliver with the assistance of a skilled health care provider. The antenatal period also provides an opportunity to supply information on birth spacing, which is recognized as an important factor in improving infant survival. Tetanus immunization during pregnancy can be life-saving for both the mother and infant. The prevention and treatment of malaria among pregnant women, management of anaemia during pregnancy and treatment of STIs can significantly improve foetal outcomes and improve maternal health. Adverse outcomes such as low birth weight can be reduced through a combination of interventions to improve women's nutritional status and prevent infections (e.g., malaria and STIs) during pregnancy. More recently, the potential of the antenatal period as an entry point for HIV prevention and care, in particular for the prevention of HIV transmission from mother to child, has led to renewed interest in access to and use of antenatal services.

WHO recommends a minimum of four antenatal visits based on a review of the effectiveness of different models of antenatal care. WHO guidelines are specific on the content of antenatal care visits, which include:

- Blood pressure measurement
- Urine testing for bacteriuria and proteinuria
- Blood testing to detect syphilis and severe anaemia
- Weight/height measurement (optional)

The type of personnel providing antenatal care to women aged 15-49 years who gave birth in the two years preceding the survey is presented in Table RH.6. Coverage of antenatal care (by a doctor, nurse, or midwife) is relatively high in Ghana with 96 percent of women receiving antenatal care at least once during the pregnancy. The highest level of antenatal care is found in Upper East Region (99%), while the lowest level of 90 percent is found in the Northern Region. Antenatal care coverage is slightly higher in urban areas (98%) than in rural areas (95%). As expected, education and wealth are associated with the use of antenatal care services from skilled personnel. For example, 94 percent of women with no education received at least one antenatal care visit from skilled personnel, compared to 100 percent of women with secondary or higher education.

Table RH.6: Antenatal care provider
Percent distribution of women age 15-49 who gave birth in the two years preceding the survey by type of personnel providing antenatal care during the pregnancy for the last birth, Ghana, 2011

Background Characteristics	Person providing antenatal care							Total	At least once by skilled personnel [1]	Number of women who gave birth in the preceding two years
	Doctor	Nurse / Midwife	Auxiliary midwife	Traditional birth attendant	Community health worker	Other/ missing	No antenatal care received			
Residence										
Western	13.5	80.6	.9	.3	1.0	.0	3.8	100	95.0	270
Central	20.3	73.3	2.4	.0	.0	.0	4.0	100	96.0	246
Greater Accra	51.6	46.9	.0	.0	.0	.0	1.5	100	98.5	397
Volta	20.3	74.7	2.2	1.0	.0	.0	1.8	100	97.2	189
Eastern	40.0	55.9	.5	.0	.0	.0	3.7	100	96.3	288
Ashanti	26.4	70.8	1.4	.0	.5	.0	.9	100	98.6	449
Brong Ahafo	8.4	86.9	1.6	.0	1.0	.0	2.0	100	97.0	227
Northern	6.9	80.4	3.1	.0	3.2	.4	6.0	100	90.4	283
Upper East	8.9	88.6	1.5	.0	.0	.2	.8	100	98.9	105
Upper West	5.8	76.5	10.6	.0	4.5	.0	2.6	100	92.9	75
Residence										
Urban	35.3	62.3	.3	.0	.0	.1	2.0	100	98.0	1068
Rural	16.3	76.2	2.6	.2	1.3	.0	3.3	100	95.2	1460
Mother's age at birth										
Less than 20	15.7	78.4	1.4	.0	2.2	.0	2.3	100	95.5	223
20-34	26.7	68.7	1.8	.1	.6	.0	2.0	100	97.2	1783
35-49	20.1	72.4	1.3	.0	.8	.2	5.3	100	93.8	522
Missing	.0	100.0	.0	.0	.0	.0	.0	100	100.0	1
Education										
None	10.8	79.2	2.9	.4	1.5	.2	5.1	100	92.9	733
Primary	20.0	73.7	2.9	.0	.6	.0	2.9	100	96.5	565
Middle/JSS	28.4	68.8	.5	.0	.6	.0	1.7	100	97.7	886
Secondary +	49.9	50.0	.1	.0	.0	.0	.0	100	100.0	344
Wealth index quintiles										
Poorest	6.4	82.7	3.3	.3	2.2	.1	5.0	100	92.4	560
Second	14.0	78.1	2.0	.1	.8	.0	4.9	100	94.2	546
Middle	24.6	71.4	2.1	.0	.2	.0	1.7	100	98.1	500
Fourth	33.5	64.5	.2	.0	.4	.1	1.3	100	98.2	455
Richest	48.7	51.0	.2	.0	.0	.0	.0	100	100.0	467
Total	24.3	70.4	1.7	.1	.8	.1	2.7	100	96.4	2528

[1] MICS indicator 5.5a; MDG indicator 5.5

UNICEF and WHO recommend a minimum of at least four antenatal care visits during pregnancy. This recommendation has been taken on by the Ghana Ministry of Health. Table RH.7 shows the number of antenatal care visits during the last pregnancy during the two years preceding the survey, regardless of provider by selected characteristics. The survey reveals that in Ghana, 87 percent of pregnant women received antenatal care at least four times, 2 percent of pregnant women received one ANC visit, a further 2 percent had 2 visits, and 6 percent had 3 visits. Only 3 percent of women received no antenatal care visits during their last pregnancy. Women from the poorest households and those with no education are less likely than more advantaged mothers to receive ANC four or more times. For example, 74 percent of the women living in poorest households reported four or more antenatal care visits, compared with 99 percent among women belonging to the wealthiest households. Also, 78 percent of women with no education received ANC four or more times, compared to 97 percent of women with secondary or higher education.

Background Characteristics	Percent of women who had:						Total	Number of women who gave birth in the preceding two years
	No antenatal care visits	One visit	Two visits	Three visits	4 or more visits [1]	Missing/DK		
Region								
Western	3.8	2.9	5.4	8.8	78.5	.6	100	270
Central	4.0	.8	1.1	5.8	88.0	.3	100	246
Greater Accra	1.5	3.4	.3	2.8	91.9	.0	100	397
Volta	1.8	1.9	3.5	9.1	82.6	1.1	100	189
Eastern	3.7	.9	.0	2.2	93.2	.0	100	288
Ashanti	.9	.2	.4	7.1	91.0	.4	100	449
Brong Ahafo	2.0	1.6	2.3	7.9	83.9	2.3	100	227
Northern	6.0	1.8	7.0	8.9	75.1	1.0	100	283
Upper East	.8	.5	2.3	7.0	88.8	.6	100	105
Upper West	2.6	.5	1.5	4.8	90.3	.3	100	75
Residence								
Urban	2.0	.1	.7	2.9	94.1	.2	100	1068
Rural	3.3	2.6	3.2	8.8	81.2	.9	100	1460
Mother's age at birth								
Less than 20	2.3	4.0	1.7	11.1	80.9	.0	100	223
20-34	2.0	1.5	2.0	5.9	88.0	.5	100	1783
35-49	5.3	.7	2.9	5.6	84.4	1.0	100	522
Missing	.0	.0	.0	33.1	66.9	.0	100	1
Education								
None	5.1	2.5	4.5	8.7	77.9	1.2	100	733
Primary	2.9	1.5	2.0	8.5	84.7	.3	100	565
Middle/JSS	1.7	1.4	.9	4.8	91.0	.3	100	886
Secondary +	.0	.3	.8	1.3	97.1	.5	100	344
Wealth index quintiles								
Poorest	5.0	2.1	5.0	12.5	74.3	1.2	100	560
Second	4.9	2.2	3.0	9.8	79.2	1.0	100	546
Middle	1.7	3.0	.9	2.7	91.7	.0	100	500
Fourth	1.3	.1	1.1	4.2	93.0	.3	100	455
Richest	.0	.2	.3	.7	98.5	.4	100	467
Total	2.7	1.6	2.2	6.3	86.6	.6	100	2528

[1] MICS indicator 5.5b; MDG indicator 5.5

At the regional level, variations are also observed. Eastern and Greater Accra regions recorded the highest proportions of pregnant women who attended 4 or more antenatal care visits – 93 percent and 92 percent respectively. The Northern region recorded the lowest proportion of pregnant women who had at least 4 antenatal care visits (75%).

The types of services pregnant women received are shown in Table RH.8. Among those women who have given birth to a child during the two years preceding the survey, 93 percent reported that a blood sample was taken during the antenatal care visits, 96 percent reported that their blood pressure was checked, and 91 percent that urine specimen was taken. In total, 89 percent of women had their blood pressure measured, and their urine specimen and blood sample taken. For all three tests/measurements carried out, the Greater Accra Region (97%) records the highest proportion while the Northern Region had the lowest (63%). Coverage for these types of antenatal care services increases with women's education and wealth quintile, while little variations are observed by age of woman.

Background Characteristics	Percent of pregnant women who had:			Blood pressure measured, urine specimen and blood test taken [1]	Number of women who gave birth in two years preceding survey
	Blood pressure measured	Urine specimen taken	Blood test taken		
Region					
Western	94.9	93.6	92.7	91	270
Central	95.5	92.7	92.4	90.6	246
Greater Accra	98.2	97.6	98	96.9	397
Volta	96.6	91.7	89.7	85.6	189
Eastern	96.3	96.3	95.9	95.9	288
Ashanti	99.1	96.3	96	96	449
Brong Ahafo	97.2	93.4	93	89.4	227
Northern	90.4	67.5	81.2	63.3	283
Upper East	96.6	86.9	93.9	85	105
Upper West	96.3	77.8	83.7	71.3	75
Residence					
Urban	97.9	94.9	95.5	93.5	1068
Rural	95.2	88.3	90.7	85.4	1460
Mother's age at birth					
Less than 20	95.2	91.7	93.6	88.3	223
20-34	97	92	93.2	89.6	1783
35-49	94.4	87.8	90.8	86.5	522
Missing	66.9	31.5	100	31.5	1
Education					
None	92.6	79.4	86	76.1	733
Primary	96.7	92.6	93.1	90.1	565
Middle/JSS	97.9	96.7	95.9	95.1	886
Secondary +	99.6	99.2	98.6	97.7	344
Wealth index quintile					
Poorest	91.9	76.9	83.6	71.5	560
Second	94.9	88.8	90	87.1	546
Middle	97.7	95.8	96	94.2	500
Fourth	98.2	98.1	96.9	96.4	455
Richest	100	99	99.3	98.6	467
Total	96.3	91.1	92.8	88.8	2528

[1] MICS indicator 5.6

Table RH.9: Assistance during delivery

Percent distribution of women age 15-49 who had a live birth in the two years preceding the survey by person assisting at delivery and percentage of births delivered by C-section, Ghana, 2011

Background Characteristics	Person assisting at delivery								Total	Any skilled personnel [1]	Percent delivered by C-section [2]	Number of women who gave birth in preceding two years
	Doctor	Nurse / Midwife	Auxiliary midwife	Traditional birth attendant	Community health worker	Relative / Friend	Other/ missing	No attendant				
Region												
Western	6.8	57.0	.7	24.8	.6	9.6	.0	.5	100.0	64.5	7.2	270
Central	7.8	54.4	1.2	29.9	.3	3.8	1.0	1.6	100.0	63.4	11.3	246
Greater Accra	29.0	60.7	.0	5.4	.0	2.5	.4	2.0	100.0	89.7	23.2	397
Volta	9.2	54.5	.7	11.1	.0	17.9	.0	6.7	100.0	64.4	14.7	189
Eastern	18.9	57.8	1.1	12.0	.0	9.2	.0	.9	100.0	77.9	11.9	288
Ashanti	12.6	59.0	2.0	12.0	2.6	6.5	1.3	3.8	100.0	73.7	12.3	449
Brong Ahafo	8.5	52.5	2.7	10.6	.6	21.4	.0	3.8	100.0	63.7	6.1	227
Northern	4.8	31.7	.7	33.2	1.8	22.9	.5	4.3	100.0	37.3	3.4	283
Upper East	7.8	58.7	.5	3.8	.9	27.9	.2	.2	100.0	67.0	4.1	105
Upper West	7.4	48.5	4.5	13.0	4.3	16.6	1.3	4.4	100.0	60.4	4.4	75
Residence												
Urban	21.8	65.6	.9	5.7	.0	4.1	.2	1.8	100.0	88.2	17.3	1068
Rural	6.5	45.9	1.5	23.5	1.7	16.8	.7	3.5	100.0	53.9	7.0	1460
Mother's age at birth												
Less than 20	5.4	66.6	1.0	14.7	.2	10.0	.6	1.5	100.0	73.0	7.4	221
20-34	14.0	55.1	1.0	15.7	.7	10.6	.6	2.3	100.0	70.0	11.3	1783
35-49	12.8	45.9	2.1	17.1	2.1	15.1	.2	4.8	100.0	60.7	13.3	524
Missing	*	*	*	*	*	*	*	*	*	*	*	1
Place of delivery												
Public sector health facility	17.7	80.1	1.4	.2	.6	.0	.0	.0	100.0	99.2	15.9	1434
Private sector health facility	27.3	69.6	2.8	.0	.3	.0	.0	.0	100.0	99.7	21.9	269
Home	.0	2.7	.4	50.0	1.9	36.0	.6	8.4	100.0	3.1	.0	793
Other	(.0)	(39.0)	(.0)	(12.5)	(.0)	(12.8)	(25.4)	(10.2)	(100.0)	(39.0)	(.0)	32
Education												
None	4.7	38.2	1.1	24.7	1.8	23.9	.3	5.2	100.0	44.0	3.8	733
Primary	9.7	55.4	1.0	18.2	1.4	10.9	.9	2.3	100.0	66.2	8.7	565
Middle/JSS	13.3	64.5	1.7	12.2	.3	5.4	.6	2.1	100.0	79.4	12.4	886
Secondary +	35.2	59.6	.5	3.2	.1	1.4	.0	.1	100.0	95.3	29.2	344
Wealth index quintile												
Poorest	3.7	33.6	1.4	25.7	2.5	27.6	.3	5.3	100.0	38.6	4.4	560
Second	5.6	50.6	1.0	22.6	1.0	13.5	1.0	4.6	100.0	57.3	6.9	546
Middle	11.6	58.0	1.0	17.3	.7	9.0	.5	2.0	100.0	70.6	9.8	500
Fourth	15.3	69.5	1.1	9.4	.3	3.4	.6	.4	100.0	85.9	11.6	455
Richest	32.0	64.1	1.5	1.4	.0	.2	.1	.7	100.0	97.6	26.3	467
Total	13.0	54.2	1.2	15.9	1.0	11.5	.5	2.8	100.0	68.4	11.4	2528

[1] MICS indicator 5.7; MDG indicator 5.2

[2] MICS indicator 5.9

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

Assistance at Delivery

Three quarters of all maternal deaths occur during delivery and the immediate post-partum period. The single most critical intervention for safe motherhood is to ensure a competent health worker with midwifery skills is present at every birth, and transport is available to a referral facility for obstetric care in case of an emergency. A World Fit for Children goal is to ensure that women have ready and affordable access to skilled attendance at delivery. The indicators are the proportion of births with a skilled attendant and proportion of institutional deliveries. The skilled attendant at delivery indicator is also used to track progress toward the Millennium Development target of reducing the maternal mortality ratio by three quarters between 1990 and 2015.

The MICS included a number of questions to assess the proportion of births attended by a skilled attendant. A skilled attendant includes a doctor, nurse, midwife or auxiliary midwife. About 68 percent of births occurring in the two years preceding the MICS survey were delivered by skilled personnel (Table RH.9). This percentage is highest in Greater Accra region at 90 percent and lowest in Northern region at 37 percent. The more educated a woman is, the more likely she is to have delivered with the assistance of a skilled attendant. For example, only 44 percent of mothers with no education delivered with the assistance of skilled personnel, compared to 95 percent for women with secondary or higher education. Also, women from the poorest households were less likely to deliver using skilled personnel (39%), compared to women from the richest households (98%).

Slightly more than half (54%) of the births that occurred in the two years preceding the MICS survey were delivered with the assistance of a midwife or a nurse. Doctors assisted with the delivery of 13 percent of births. Also, 16 percent of women were delivered with the assistance of a Traditional Birth Attendant, while relatives/friends assisted in 12 percent of deliveries. Among those who gave birth at home, 50 percent were delivered by a Traditional Birth Attendant while 36 percent were by relatives or friends. Northern (33%) and Central (30%) regions recorded the highest number of assisted deliveries by a TBA, while in Brong Ahafo (21%), Northern (23%), and Upper East (28%), relatives or friends assisted with deliveries. Also, women in urban areas are more likely to be assisted by skilled personnel during delivery (82%), compared to women in rural areas (54%). Women in rural areas are also more likely to deliver with the assistance of a TBA (24%), compared to women in urban areas (6%). Interestingly, women in the younger age group were more likely to be delivered by skilled personnel than older women.

The survey results also reveal that 11 percent of women who had a live birth in the two years prior to the survey delivered by C-section³. Deliveries by C-section are highest among women in Greater Accra region, where nearly 1 out of 4 women (23%) had a C-section. Volta (15%), Ashanti (12%), Eastern (12%) and Central (11%) all have C-section rates of above 10 percent. Deliveries by C-section are associated with area of residence, place of delivery, mother's education and household wealth. For example, 17 percent of women in urban areas delivered by C-section, compared to 7 percent of women in rural areas. Also, while 4 percent of women with no education delivered by C-section, this increases to 9 percent for women with primary education, to 12 percent for those with middle/JSS education, and to nearly 30 percent for women with secondary or higher education. The data also show that women from the poorest 20 percent of the households are less likely to deliver by C-section (4%), compared to women in other wealth categories – 7 percent for those in the second wealth quintile, 10 percent for women in the middle wealth quintile, 12 percent for women in the fourth wealth quintile, and 26 percent for women belonging to the richest wealth quintile.

³ The World Health Organization has determined an "ideal rate" of all cesarean deliveries at 15 percent for a population, given that about 15 percent of women who give birth annually experience some potentially life-threatening complications during pregnancy.

Place of Delivery

Increasing the proportion of births that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby. Table RH.10 presents the percent distribution of women aged 15-49 who had a live birth in the two years preceding the survey by place of delivery and the percentage of births delivered in a health facility, according to background characteristics.

More than 2 in 3 (67%) births in Ghana are delivered in a health facility; 57 percent of deliveries occur in public sector facilities, while 11 percent occur in private sector facilities. Almost 1 in 3 births (31%) still occurs at home. Greater Accra has the highest proportion of institutional deliveries (88%), followed by Eastern Region (78%), while the Northern Region has the lowest proportion (37%). As can be expected, Greater Accra region has the highest percentage of deliveries taking place in a private health facility (20%), followed by Ashanti region, where 16 percent of deliveries took place in a private facility.

By age, younger women 15-19 are most likely to deliver in a health facility (71%) compared with women 35-49 (60%). Also, nearly nine in ten women in urban areas (88%) delivered in a health facility, compared to 53 percent of their rural counterparts. Women with higher levels of educational attainment are more likely to deliver in a health facility than women with no education. For example, 43 percent of women with no education delivered in a health facility, compared to 66 percent for women with primary education, 79 percent for women with middle/JSS education, and 94 percent of women with secondary or higher levels of education. The proportion of births occurring in a health facility increases steadily with increasing wealth quintile, from 38 percent of births in the poorest households, to 97 percent among those in the richest households.

Nearly 3 out of 4 (73%) women who received 4 or more ANC visits delivered in a health facility, compared to those who had 1-3 ANC visits (33%), and no ANC visits (4%). The majority of women who received no antenatal care services delivered at home (86%).

Table RH.10: Place of delivery
Percent distribution of women age 15-49 with a birth in two years preceding the survey by place of delivery, Ghana, 2011

Background Characteristics Region	Place of delivery				Total	Delivered in health facility [1]	Number of women who gave birth in preceding two years
	Public sector health facility	Private sector health facility	Home	Other			
Western	52.4	10.1	36.9	.6	100.0	62.5	270
Central	51.1	9.8	36.2	2.9	100.0	60.9	246
Greater Accra	67.5	20.0	10.8	1.6	100.0	87.6	397
Volta	57.2	4.8	35.7	2.3	100.0	62.1	189
Eastern	69.4	8.5	21.4	.7	100.0	77.9	288
Ashanti	58.2	16.2	24.2	1.4	100.0	74.4	449
Brong Ahafo	51.4	10.7	37.9	.0	100.0	62.1	227
Northern	36.1	1.0	61.5	1.5	100.0	37.1	283
Upper East	62.7	3.5	33.5	.2	100.0	66.3	105
Upper West	60.3	1.1	37.9	.7	100.0	61.4	75
Residence							
Urban	71.1	16.4	12.0	.5	100.0	87.5	1068
Rural	46.2	6.4	45.5	1.8	100.0	52.7	1460
Mother's age at birth							
Less than 20	63.6	7.2	26.8	2.4	100.0	70.8	221
20-34	57.5	11.7	29.4	1.4	100.0	69.2	1783
35-49	51.2	8.6	39.8	.5	100.0	59.7	524
Missing	*	*	*	*	100.0	*	1
Number of ANC visits							
None	3.7	.0	85.8	10.5	100.0	3.7	69
1-3 visits	27.7	5.5	64.6	2.3	100.0	33.1	254
4+ visits	61.6	11.6	25.8	.9	100.0	73.3	2190
Missing/DK	*	*	*	*	100.0	*	15
Education							
None	40.3	2.2	56.5	1.0	100.0	42.5	733
Primary	58.1	7.7	32.8	1.5	100.0	65.8	565
Middle/JSS	65.4	13.0	20.0	1.6	100.0	78.5	886
Secondary +	67.2	27.3	4.7	.9	100.0	94.4	344
Wealth index quintile							
Poorest	35.3	2.5	61.1	1.2	100.0	37.7	560
Second	51.6	5.3	41.3	1.8	100.0	56.9	546
Middle	62.8	5.8	29.4	2.1	100.0	68.5	500
Fourth	66.9	17.4	14.5	1.2	100.0	84.3	455
Richest	72.1	25.3	2.5	.1	100.0	97.4	467
Total	56.7	10.6	31.4	1.3	100.0	67.4	2528

[1] MICS indicator 5.8
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Postnatal Health Checks

The time of birth and immediately after is a critical window of opportunity to deliver lifesaving interventions for both the mother and newborn. Across the world, approximately 3 million newborns die annually in the first month of life⁴ and the majority of these deaths occur within a day or two of birth⁵, which is also the time when the majority of maternal deaths occur⁶. Research also shows that up to 45 percent of all maternal deaths occur within one day of delivery, and 65 percent occur within the first week. This period is also critical to newborn survival because 50 to 70 percent of life-threatening newborn illnesses occur within the first week of life (AED, the Manoff Group, and USAID, 2005)⁷.

Despite the importance of the first few days following birth, large-scale, nationally representative household survey programmes have not systematically included questions on the post-natal period and care for the mother and newborn. In 2008, the Countdown to 2015 initiative, which monitors progress on maternal, newborn and child health interventions, highlighted this data gap, and called not only for post-natal care (PNC) programmes to be strengthened, but also for better data availability and quality⁸.

Following the establishment and discussions of an Inter-Agency Group on PNC and drawing on lessons learned from earlier attempts of collecting PNC data, a new questionnaire module for MICS was developed and validated. Named the Post-natal Health Checks (PNHC) module, the objective is to collect information on newborns' and mothers' contact with a provider, not content of care. The rationale for this is that as PNC programmes scale up, it is important to measure the coverage of that scale up and ensure that the platform for providing essential services is in place. Content is considered more difficult to measure, particularly because the respondent is asked to recall services delivered up to two years preceding the interview.

Postnatal check-up in the first week of delivery, is therefore, seen as an important component of a complete maternal health care schedule to ensure optimal maternal and newborn health. In Ghana, the first postnatal check-up is advised within the first three days of delivery, with subsequent check-ups made as appropriate. In the National MICS survey, women with a live birth in the 2 years preceding the survey were asked about post-natal health checks on their newborn and themselves. Table RH.11 presents the percent distribution of women aged 15-49 who gave birth in a health facility in the two years preceding the survey by duration of stay in the facility following the delivery, according to background characteristics.

As seen previously, in Ghana, 67 percent of women delivered in a health facility (public or private). Of those women, 10 percent stayed in the facility for less than 6 hours, 16 percent for 6-11 hours, and 9 percent for 12 to 23 hours. About 42 percent stayed at the facility for 1-2 days after delivery, while 23 percent stayed for 3 days or more. In total, nearly 3 out of 4 women (74%) stayed at the health facility for 12 hours or more, after delivery.

Duration of stay in a health facility after delivery varies by the mother's age during the birth. For example, 14 percent of mothers less than 20 years stayed at the facility for 3 days or more, 24 percent of mothers aged 20-34 years stayed at the facility for 3 days or more, while 26 percent of those aged 35-49 years stayed at the facility for 3 days or more. The proportion of mothers who stayed at the health facility for 12 hours or more increases with household wealth, from 67 percent for mothers from the poorest households, to 79 percent among mothers from the richest households.

4 Liu L, Johnson HL, Cousens S, et al. Global, regional, and national causes of child mortality in 2000-2010: an updated systematic analysis. Lancet. 2012;11 May 2012. doi:10.1016/S0140-6736(12)60560-1.

5 Lawn JE, Cousens S, Zupan J. 4 million neonatal deaths: When? Where? Why? Lancet 2005; 365:891-900.

6 WHO, UNICEF, UNFPA, The World Bank. Trends in Maternal Mortality: 1990-2010. Geneva: World Health Organization 2012.

7 Academy for Educational Development (AED), the Manoff Group, and USAID, 2005. Maternal survival: Improving access to skilled care, a behaviour approach, CHANGE project. Washington, DC (www.manoffgroup.com).

8 Countdown to 2015: Tracking Progress in Maternal, Newborn & Child Survival, The 2008 Report. New York: UNICEF 2008.

Table RH.11: Post-partum stay in health facility
Percent distribution of women age 15-49 years who gave birth in a health facility in the two years preceding the survey by duration of stay in health facility following their last live birth, Ghana, 2011

Background Characteristics	Duration of stay in health facility:					Total	12 hours or more	Number of women who gave birth in a health facility in the preceding two years
	Less than 6 hours	6-11 hours	12-23 hours	1-2 days	3 days or more			
Region								
Western	15.1	15.2	3.7	50.6	15.4	100.0	69.6	169
Central	7.4	17.6	8.8	42.7	23.4	100.0	75.0	150
Greater Accra	7.0	12.1	4.0	46.1	30.8	100.0	80.9	348
Volta	4.7	12.7	1.8	50.8	29.9	100.0	82.5	117
Eastern	2.2	10.8	7.4	51.9	27.8	100.0	87.1	224
Ashanti	10.2	25.1	21.3	23.7	19.8	100.0	64.8	334
Brong Ahafo	16.0	9.0	9.3	41.1	24.6	100.0	75.0	141
Northern	32.8	17.4	6.0	30.2	13.7	100.0	49.8	105
Upper East	15.1	19.1	8.8	49.3	7.6	100.0	65.7	70
Upper West	9.2	15.5	4.2	54.5	16.6	100.0	75.3	46
Residence								
Urban	10.7	12.4	8.1	42.8	26.0	100.0	76.9	934
Rural	10.1	19.8	9.7	40.8	19.6	100.0	70.1	769
Mother's age at birth								
Less than 20	10.2	18.8	6.0	51.2	13.8	100.0	71.0	158
20-34	10.5	14.8	8.8	42.2	23.7	100.0	74.7	1,233
35-49	10.2	18.0	10.4	35.9	25.6	100.0	71.9	311
Number of ANC visits								
None	*	*	*	*	*	100.0	*	3
1-3 visits	11.6	28.8	14.7	34.6	10.3	100.0	59.6	84
4+ visits	10.4	14.9	8.5	42.4	23.8	100.0	74.7	1,605
Education								
None	12.3	13.8	9.5	40.2	24.1	100.0	73.8	493
Primary	10.9	21.3	7.7	41.8	18.4	100.0	67.9	371
Middle/JSS	9.5	15.5	8.3	44.2	22.6	100.0	75.1	695
Secondary +	7.1	9.5	12.1	36.9	34.4	100.0	83.3	144
Wealth index quintiles								
Poorest	14.5	20.7	7.6	40.7	16.5	100.0	64.9	212
Second	15.7	19.1	7.8	37.2	20.2	100.0	65.2	311
Middle	8.4	13.2	10.9	45.8	21.7	100.0	78.4	343
Fourth	8.9	16.1	7.2	44.5	23.0	100.0	74.7	383
Richest	7.7	12.8	10.0	40.5	28.9	100.0	79.4	455
Total	10.4	15.8	8.8	41.9	23.1	100.0	73.8	1,703

An asterisk (*) indicates figure is based on fewer than 25 unweighted cases and has been suppressed.

Safe motherhood programmes have recently increased emphasis on the importance of post-natal care, recommending that all women and newborns receive a health check within two days of delivery. To assess the extent of post-natal care utilization, women were asked whether they and their newborns received a health check after the delivery, the timing of the first check, and the type of health provider for the woman's last birth in the two years preceding the survey.

Table RH.12 shows the percentage of newborns born in the last two years who received health checks and post-natal care visits from any health provider after birth. Please note that health checks following birth while in a facility or at home refer to checks provided by any health provider regardless of timing (column 1), whereas post-natal care visits refer to a separate visit to check on the health of the newborn and provide preventive care services and therefore do not include health checks following birth while in a facility or at home. The indicator, Post-natal health checks, include any health check after birth received while in the health facility and at home (column 1), regardless of timing, as well as PNC visits within two days of delivery (columns 2, 3, and 4).

The Ghana MICS data reveal that 81 percent of the newborns received a health check following the birth while in a facility or at home. However, 5 regions fall below this national average: Volta (72%), Brong Ahafo (70%), Northern (63%), Upper East (70%), and Upper West (76%). Also, over 80 percent of newborns in the other five regions had health checks following the birth while in a facility or at home. Greater Accra has the highest proportion of newborns that had a health check (94%). Additionally, Central (89%), Western (86%), Eastern (85%), and Ashanti (83%) also fall above the national average. Newborns in urban areas are more likely to have a health check following birth (90%), compared to those in rural localities (74%).

Variations by education of mother, place of delivery and wealth quintile exist. For example, at least 97 percent of newborns delivered in a health facility (either public or private) received a health check, compared to only 47 percent of those delivered at home. Also, 64 percent of newborns whose mothers has no education received a health check, compared to 96 percent of newborns whose mothers have secondary or higher education. Newborns from the richest households are also more likely to receive a health check (97%), compared to newborns from poorest households (62%).

With regards to PNC visits, 9 percent of the newborns received their first PNC visit the same day of birth, 5 percent one day following birth, while 2 percent received the PNC visit 2 days following birth. Only 5 percent of the newborn received the PNC visit 3-6 days following the birth, and 21 percent received the PNC visit after the first week following the birth. Nearly 60 percent of the newborns did not receive a PNC visit. Overall, a total of 83 percent of all newborns received a post-natal health check. In Greater Accra region, almost all newborns received a health check (96%) while only two thirds (66%) of the newborns in Northern region, and 73 percent in Volta region received post-natal health check. Urban newborns are much more likely to receive a post-natal health check (92%) than their rural counterparts (77%). There is a very clear association with to both education and household wealth, with the percentage of post-natal health checks of newborns increasing with education and wealth. For example, 66 percent of the newborns in the poorest wealth quintile received a post-natal health check, compared to 98 percent for newborns in the richest wealth quintile. Post-natal health checks following birth occur mainly in facility deliveries (97 to 98% for both public and private), whereas only 55 percent for newborns delivered at home received a post-natal health check.

Table RH.12: Post-natal health checks for newborns
Percentage of newborns born in the last two years who received health checks and post-natal care (PNC) visits from any health provider after birth, Ghana, 2011

Background Characteristics	Health check following birth while in facility or at home	PNC visit							Total	Post-natal health check for the newborn [1]	Number of last births in the two years preceding the survey
		Same day	1 day following birth	2 days following birth	3-6 days following birth	After the first week following birth	No post-natal care visit	Missing/DK			
Region											
Western	85.8	14.9	3.9	3.2	4.2	13.7	59.5	.7	100.0	87.9	270
Central	89.2	5.0	6.2	1.0	3.7	8.0	75.5	.6	100.0	90.8	246
Greater Accra	93.7	5.0	9.5	2.4	3.0	21.8	57.1	1.2	100.0	95.6	397
Volta	71.9	6.0	3.7	.0	7.7	29.5	51.6	1.6	100.0	72.6	189
Eastern	85.3	10.4	1.0	.8	2.5	9.1	76.1	.0	100.0	87.1	288
Ashanti	82.8	13.3	2.2	.2	1.6	20.5	59.6	2.6	100.0	85.5	449
Brong Ahafo	70.3	3.8	2.9	1.9	7.8	54.8	28.8	.0	100.0	73.5	227
Northern	63.1	8.3	3.2	2.5	9.6	16.8	58.4	1.1	100.0	66.4	283
Upper East	70.1	6.4	8.6	2.2	13.5	19.3	48.7	1.2	100.0	75.8	105
Upper West	75.8	6.8	7.8	3.2	9.8	19.8	52.3	.2	100.0	80.2	75
Residence											
Urban	90.0	7.3	4.1	1.6	5.1	25.4	55.2	1.2	100.0	91.8	1,068
Rural	74.2	9.5	4.8	1.5	5.0	17.3	60.9	1.0	100.0	77.1	1,460
Mother's age at birth											
Less than 20	81.9	11.4	1.0	1.9	3.8	20.0	57.5	4.4	100.0	83.1	221
20-34	82.4	7.9	4.9	1.6	5.2	21.4	58.4	.6	100.0	84.8	1,783
35-49	75.1	9.7	4.6	1.6	5.0	19.0	58.9	1.2	100.0	78.4	524
Missing	*	*	*	*	*	*	*	*	*	*	1
Type of health facility											
Home	47.4	12.6	7.5	1.4	5.3	8.1	64.3	.8	100.0	54.5	793
Health facility	97.1	6.4	3.2	1.7	5.0	26.8	55.7	1.2	100.0	97.2	1,703
Public	96.9	6.5	2.7	1.8	5.2	26.3	56.4	1.1	100.0	97.0	1,434
Private	98.2	6.0	5.6	1.3	4.0	29.3	52.2	1.6	100.0	98.2	269
Other/DK/ Missing	(45.9)	(25.2)	(.0)	(.0)	(.0)	(14.0)	(60.8)	(.0)	(100.0)	(57.0)	32
Education											
None	63.7	9.8	5.3	2.2	6.3	16.7	58.6	1.1	100.0	68.0	733
Primary	82.9	9.6	3.7	1.6	6.5	17.2	61.2	.1	100.0	85.2	565
Middle/JSS	87.9	7.0	3.6	.9	3.1	22.9	60.8	1.8	100.0	89.7	886
Secondary +	96.1	8.1	6.2	2.2	5.2	29.7	47.6	.8	100.0	96.5	344
Wealth index quintile											
Poorest	61.8	9.3	5.6	1.9	7.8	17.9	56.3	1.3	100.0	65.9	560
Second	73.1	11.2	4.0	2.1	5.0	17.2	59.7	.7	100.0	76.2	546
Middle	84.3	6.3	2.7	.9	5.4	21.7	62.2	.9	100.0	86.4	500
Fourth	93.0	7.7	1.7	1.5	3.7	24.8	58.3	2.4	100.0	94.8	455
Richest	97.3	7.9	8.3	1.5	2.9	23.4	55.8	.2	100.0	98.0	467
Total	80.9	8.6	4.5	1.6	5.1	20.7	58.5	1.1	100.0	83.3	2,528

[1] MICS indicator 5.11
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

In Table RH.13, the percentage of newborns who received the first PNC visit within one week of birth is shown by location and type of provider of service. As defined above, a visit does not include a check in the facility or at home following birth. Overall, 36 percent of the newborns received their first post-natal care visit at home, 56 percent received their first PNC at a public sector facility, while 8 percent had their first PNC visit at a private sector facility. About 44 percent of newborns in rural areas had their first PNC visit at home, compared to 25 percent of newborns in urban areas. Also, newborns in the poorest wealth quintile are more likely (46%) to have their first post-natal care visit at home, compared to 15 percent of newborns from the wealthiest wealth quintile.

About 71 percent of newborns were provided their first post natal care by a doctor/nurse or midwife, while 2 percent were provided their first PNC by an auxiliary midwife. Five percent of the newborns received their first post-natal care by a Community health worker, while traditional birth attendants provided the first PNC visit to 23 percent of the newborns (Table RH.13). Newborns in urban areas are more likely to receive their first post-natal care by a doctor/nurse/midwife (83%), compared to newborns in rural areas (63%). Also, the proportion of the first PNC provided by a doctor/nurse/midwife increases with increasing wealth quintile, from 61 percent in the lowest wealth quintile, to 67 percent for the middle quintile and to 96 percent among newborns in the highest wealth quintile.

Table RH.13: Post-natal care (PNC) visits for newborns within one week of birth
 Percentage of newborns who were born in the last two years and received a PNC visit within one week of birth by location and provider of the first PNC visit, Ghana, 2011

Background Characteristics	Location of first PNC visit					Provider of first PNC visit					Number of all newborns born in the preceding two years with a PNC visit within the first week of life
	Home	Public Sector	Private Sector	Other location	Total	Doctor/nurse/midwife	Auxiliary midwife	Community health worker	Traditional birth attendant	Total	
Region											
Western	(36.0)	(56.1)	(7.9)	(.0)	100.0	(70.2)	(.0)	(.0)	(29.8)	100.0	71
Central	45.3	42.3	12.3	.0	100.0	56.8	1.6	5.8	35.8	100.0	39
Greater Accra	(33.8)	(50.4)	(15.8)	(.0)	100.0	(81.0)	(.0)	(.0)	(19.0)	100.0	79
Volta	(40.2)	(59.8)	(.0)	(.0)	100.0	(63.3)	(2.4)	(3.5)	(30.8)	100.0	33
Eastern	*	*	*	*	100.0	*	*	*	*	100.0	42
Ashanti	(35.0)	(47.3)	(15.5)	(2.2)	100.0	(72.6)	(2.2)	(2.2)	(22.9)	100.0	78
Brong Ahafo	(43.4)	(47.1)	(9.5)	(.0)	100.0	(70.2)	(4.4)	(13.0)	(12.4)	100.0	37
Northern	48.8	50.5	.0	.7	100.0	52.0	1.6	19.3	27.0	100.0	67
Upper East	16.3	82.2	1.6	.0	100.0	93.2	.7	3.2	2.9	100.0	32
Upper West	31.7	67.5	.9	.0	100.0	65.0	10.7	9.3	15.0	100.0	21
Residence											
Urban	24.6	57.8	17.6	.0	100.0	82.3	1.2	2.7	13.8	100.0	195
Rural	43.2	54.4	1.7	.7	100.0	63.3	2.0	6.8	28.0	100.0	304
Mother's age at birth											
Less than 20	(22.0)	(69.8)	(8.2)	(.0)	100.0	(79.5)	(2.0)	(1.3)	(17.2)	100.0	40
20-34	34.3	57.0	8.3	.5	100.0	72.6	1.4	4.7	21.3	100.0	349
35-49	46.4	46.7	6.5	.4	100.0	61.7	2.4	8.0	27.9	100.0	109
Type of health facility											
Home	67.7	32.2	.1	.0	100.0	38.7	1.7	7.7	51.9	100.0	213
Health facility	12.3	73.7	14.0	.0	100.0	95.5	1.7	2.8	.1	100.0	278
Public	12.3	87.7	.1	.0	100.0	95.2	1.4	3.3	.1	100.0	232
Private	(12.4)	(2.2)	(85.4)	(.0)	100.0	(96.9)	(3.1)	(.0)	(.0)	100.0	45
Other/DK/ Missing	*	*	*	*	100.0	*	*	*	*	100.0	8
Education											
None	47.3	52.0	.5	.3	100.0	57.9	1.7	9.1	31.4	100.0	173
Primary	32.2	57.4	9.0	1.4	100.0	74.0	3.4	4.5	18.1	100.0	121
Middle/JSS	34.4	57.2	8.3	.0	100.0	74.1	.9	1.6	23.4	100.0	129
Secondary +	18.4	59.3	22.3	.0	100.0	89.2	.2	3.5	7.1	100.0	75
Wealth index quintile											
Poorest	44.4	55.0	.5	.0	100.0	62.7	3.6	10.7	23.0	100.0	138
Second	45.3	50.8	3.5	.4	100.0	60.1	.7	4.2	35.0	100.0	122
Middle	41.1	57.2	1.8	.0	100.0	70.1	1.0	2.5	26.5	100.0	76
Fourth	29.3	50.7	17.5	2.6	100.0	73.5	2.6	4.8	19.1	100.0	66
Richest	12.4	65.5	22.1	.0	100.0	94.3	.0	.9	4.8	100.0	96
Total	35.9	55.8	7.9	.4	100.0	70.7	1.7	5.2	22.4	100.0	499

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

Tables RH.14 and RH.15 present information collected on post-natal health checks and visits of the mother and are identical to Tables RH.12 and RH.13 that presented the data collected for newborns. Please be reminded that health checks following birth while in a facility or at home refer to checks provided by any health provider regardless of timing (column 1), whereas post-natal care visits refer to a separate visit to check on the health of the mother and provide preventive care services and, therefore, do not include health checks following birth while in a facility or at home. The indicator, post-natal health checks, include any health check after birth received while in the health facility and at home (column 1), regardless of timing, as well as PNC visits within two days of delivery (columns 2, 3, and 4).

Table RH.14 provides results of health checks and post-natal health checks for mothers who gave birth in the 2 years preceding the survey. Overall, 81 percent of women received a health check following the birth of their child while in the health facility or at home. Mothers from Greater Accra (95%), Central (88%), Eastern (86%), Ashanti (86%) and Western (84%), are more likely to have received a health check following birth while in a facility or home, compared to mothers in Volta (71%), Brong Ahafo (71%), Upper West (74%), Upper East (70%) and Northern region (61%).

Mothers from rural households, those from the poorest households and those with no education are less likely than more advantaged mothers to receive a health check following the birth while in a facility or at home. For example, 91 percent of mothers in urban households received a health check compared to 74 percent of mothers in rural households. Also, mothers from the wealthiest households are more likely to receive a health check (97%), compared to mothers from poorest households (61%).

Five percent of the mothers received their first post-natal care visit the same day of the birth, 3 percent received it one day after delivery, 1 percent received the PNC two days following the birth, while 4 percent received the first post-natal care visit within 3 to 6 days after delivery. About 13 percent of the women with a live birth in the 2 years before the survey received their first postnatal health check after the first week following the birth, while 75 percent of the women did not receive any post-natal care visit. Interestingly, slight variations are observed by wealth of the mother. In total, 83% of the mothers had post-natal health check, the proportion being larger in urban areas (92%) than in rural areas (76%). The frequency of post-natal health checks frequency varies across regions from 64 percent in the Northern region to 95 percent in Greater Accra region. It also increases with women's education and wealth quintile. Not surprisingly, almost all women (close to 100%) who had C-section had post-natal health check whereas only 80 percent of the others had.

Table RH.14: Post-natal health checks for mothers
Percentage of women age 15-49 years who gave birth in the 2 years preceding the survey who received health checks and post-natal care (PNC) visits from any health provider after birth, Ghana, 2011

Background Characteristics	Health check following birth while in facility or at home	PNC visit							Total	Post-natal health check for the mother [1]	Number of women who gave birth in the two years preceding the survey
		Same day	1 day following birth	2 days following birth	3-6 days following birth	After the first week following birth	No post-natal care visit	Missing/DK			
Region											
Western	84.3	5.7	4.9	2.8	1.6	5.4	79.5	.0	100.0	87.7	270
Central	87.8	1.6	2.7	.7	1.8	6.2	87.0	.0	100.0	88.2	246
Greater Accra	94.5	4.8	2.7	.5	3.3	15.4	73.4	.0	100.0	94.5	397
Volta	71.0	6.0	3.2	.5	5.3	19.2	63.6	2.3	100.0	72.3	189
Eastern	86.9	4.3	1.6	.0	1.9	7.2	85.0	.0	100.0	87.7	288
Ashanti	85.7	8.8	.5	.0	3.7	13.8	72.3	.9	100.0	86.5	449
Brong Ahafo	71.0	1.2	1.2	1.3	5.4	26.7	64.2	.0	100.0	72.2	227
Northern	61.1	4.5	2.4	1.9	6.5	9.5	75.0	.3	100.0	63.6	283
Upper East	70.1	2.9	5.4	1.9	7.4	10.5	71.7	.2	100.0	74.6	105
Upper West	73.6	3.7	6.0	1.9	7.2	11.6	69.6	.0	100.0	76.8	75
Residence											
Urban	91.3	3.3	1.5	.7	4.3	17.7	72.2	.3	100.0	91.9	1,068
Rural	73.7	6.0	3.2	1.1	3.6	8.8	76.9	.4	100.0	75.6	1,460
Mother's age at birth											
Less than 20	83.9	5.2	.9	.4	2.2	9.5	80.4	1.4	100.0	85.3	221
20-34	82.5	4.8	2.4	.9	3.9	13.0	74.6	.2	100.0	84.1	1,783
35-49	75.1	4.8	3.4	1.2	4.3	12.1	73.8	.5	100.0	76.0	524
Missing	*	*	*	*	*	*	*	*	100.0	*	1
Type of health facility											
Home	47.3	8.0	4.9	1.0	3.7	3.9	78.4	.1	100.0	51.6	793
Health facility	97.5	3.2	1.4	.9	4.0	16.6	73.4	.5	100.0	97.5	1,703
Public	97.2	2.9	1.3	1.1	4.5	15.8	73.7	.6	100.0	97.3	1,434
Private	99.1	4.6	1.9	.0	1.3	20.6	71.6	.0	100.0	99.1	269
Other/DK/ Missing	(45.9)	(16.0)	(.0)	(.0)	(.0)	(12.9)	(71.1)	(.0)	100.0	(47.8)	32
Type of delivery											
C-section	99.9	4.4	1.7	1.0	5.8	24.0	62.4	.7	100.0	99.9	287
Not via C-section	78.7	4.9	2.6	.9	3.6	11.1	76.5	.3	100.0	80.3	2,241
Education											
None	63.9	4.8	3.5	1.3	4.8	8.1	77.0	.4	100.0	66.1	733
Primary	82.7	4.9	2.7	1.3	4.8	9.9	76.1	.2	100.0	84.3	565
Middle/JSS	88.3	5.3	2.1	.6	1.9	15.0	74.6	.6	100.0	89.4	886
Secondary +	96.5	3.7	1.1	.5	5.3	20.0	69.5	.0	100.0	96.8	344
Wealth index quintile											
Poorest	61.0	5.8	3.2	1.7	5.1	9.1	74.9	.2	100.0	63.7	560
Second	74.7	4.7	3.2	1.3	3.9	8.2	77.8	1.0	100.0	77.2	546
Middle	85.2	3.9	2.2	1.0	4.5	13.3	74.4	.6	100.0	85.2	500
Fourth	92.8	5.3	1.7	.2	1.6	16.9	74.2	.0	100.0	94.2	455
Richest	97.0	4.6	1.9	.2	3.8	16.6	72.8	.0	100.0	97.0	467
Total	81.1	4.9	2.5	.9	3.9	12.6	74.9	.4	100.0	82.5	2,528

[1] MICS indicator 5.12
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Table RH.15 is similar Table RH.13, but deals with PNC visits for mothers by location and type of provider. As defined above, a visit does not include a check in the facility or at home following birth. Overall, 47 percent of the mothers who received a PNC visit, had their first post-natal care visit at home, 49 percent received it at a public sector facility, while 4 percent received their first PNC visit at a private sector facility.

About 65 percent of mothers were provided their first PNC visit by a doctor/nurse or midwife, while 2 percent were provided their first PNC visit by an auxiliary midwife. Seven percent of the mothers received their first post-natal care visit by a Community health worker, while Traditional birth attendants provided the first PNC visit to 26 percent of the mothers.

Due to the few numbers of women who gave birth in the two years preceding survey and received a PNC visit within one week of delivery, the analysis by other background characteristics has not been included.

Table RH.15: Post-natal care (PNC) visits for mothers within one week of birth
Percentage of women age 15-49 years who gave birth in the preceding 2 years and received a PNC visit within one week of birth, by location and provider of the first PNC visit, Ghana, 2011

Background Characteristics	Location of first PNC visit				Provider of first PNC visit				Number of women who gave birth in the two years preceding survey and received a PNC visit within one week of delivery	
	Home	Public Sector	Private Sector	Total	Doctor/nurse/midwife	Auxiliary midwife	Community health worker	Traditional birth attendant		
Region										
Western	*	*	*	100.0	*	*	*	*	100.0	21
Central	*	*	*	100.0	*	*	*	*	100.0	12
Greater Accra	*	*	*	100.0	*	*	*	*	100.0	24
Volta	*	*	*	100.0	*	*	*	*	100.0	21
Eastern	*	*	*	100.0	*	*	*	*	100.0	20
Ashanti	*	*	*	100.0	*	*	*	*	100.0	44
Brong Ahafo	*	*	*	100.0	*	*	*	*	100.0	12
Northern	54.8	45.2	.0	100.0	43.8	5.0	24.9	26.4	100.0	20
Upper East	(33.1)	(66.9)	(.0)	100.0	(92.0)	(.0)	(3.7)	(4.3)	100.0	8
Upper West	(33.2)	(66.8)	(.0)	100.0	(63.8)	(4.6)	(4.0)	(27.6)	100.0	7
Residence										
Urban	(42.2)	(53.0)	(4.8)	100.0	(77.5)	(.0)	(2.1)	(20.3)	100.0	70
Rural	49.7	46.1	4.2	100.0	57.8	3.1	9.3	29.8	100.0	119
Mother's age at birth										
Less than 20	*	*	*	100.0	*	*	*	*	100.0	6
20-34	46.3	50.5	3.2	100.0	68.1	1.0	4.6	26.4	100.0	132
35-49	48.8	43.0	8.2	100.0	59.3	4.1	8.8	27.8	100.0	51
Place of birth										
Home	72.5	27.2	.3	100.0	35.9	1.8	11.1	51.1	100.0	96
Health facility	20.5	70.7	8.8	100.0	95.4	2.1	2.0	.5	100.0	93
Public	18.8	81.2	.0	100.0	94.7	2.4	2.3	.6	100.0	81
Private	*	*	*	100.0	*	*	*	*	100.0	12
Other/DK/Missing	*	*	*	100.0	*	*	*	*	100.0	0
Type of delivery										
C-section	(.0)	(93.9)	(6.1)	100.0	(100.0)	(.0)	(.0)	(.0)	100.0	26
Not via C-section	54.5	41.3	4.2	100.0	59.5	2.2	7.7	30.5	100.0	163
Mother's education										
None	60.1	37.3	2.6	100.0	50.5	3.9	12.2	33.4	100.0	63
Primary	47.8	47.5	4.7	100.0	65.2	2.5	7.7	24.6	100.0	47
Middle/JSS	(35.6)	(56.1)	(8.2)	100.0	(69.9)	(.0)	(2.4)	(27.7)	100.0	56
Secondary +	*	*	*	100.0	*	*	*	*	100.0	24
Wealth index quintile										
Poorest	57.3	42.2	.5	100.0	51.1	7.0	16.5	25.4	100.0	52
Second	(43.8)	(39.4)	(16.8)	100.0	(66.3)	(.0)	(4.0)	(29.7)	100.0	38
Middle	(52.6)	(47.4)	(.0)	100.0	(46.7)	(.0)	(2.3)	(51.0)	100.0	30
Fourth	*	*	*	100.0	*	*	*	*	100.0	34
Richest	*	*	*	100.0	*	*	*	*	100.0	35
Total	47.0	48.6	4.4	100.0	65.1	1.9	6.7	26.3	100.0	189

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

Table RH.16 presents the distribution of women with a live birth in the two years preceding the survey by receipt of health checks or PNC visits within 2 days of birth for the mother and the newborn, thus combining the indicators presented in Tables RH.12 and RH.14.

The survey results reveal that in 80 percent of cases, health checks or post-natal care visits within 2 days of birth were provided for both mother and her newborn baby. Two percent of mothers only and 3 percent of newborns only received a health check or post-natal care visit within 2 days of birth. About 15 percent of neither mother nor newborn received a health check or PNC visits within 2 days of birth. Receiving a health check or post-natal care visit within 2 days of birth by both mother and newborn varies by region, and other background characteristics. For example, 31 percent of neither mother, nor newborn received a health check or PNC visits within 2 days of birth in Northern region, compared to only 4 percent in Greater Accra.

Mothers and newborns from rural households, those from the poorest households and those with no education are less likely than more advantaged mothers and their newborns to receive a health check or PNC visit within 2 days of birth. For example, 89 percent of both mothers and newborns in urban households received a health check or PNC visit within 2 days of birth, compared to 74 percent of mothers and their newborns in rural households. Also, mothers and newborns from the wealthiest households are more likely to receive a health check or PNC visit within 2 days of birth (96%), compared to mothers and newborns from poorest households (62%). Additionally, receiving a health check or a PNC visit within 2 days of birth increases with educational level – 63 percent for mothers with no education, to 83 percent for mothers with primary education, to 87 percent for mothers with middle/JSS education and to 95 percent for mothers with secondary or higher education. In situations where the delivery took place at home, the mothers and newborns are less likely (48%) to receive a health check or PNC visit within 2 days of birth, compared to situations where the deliveries took place in a health facility (96%).

In situations where the delivery was through a C-section, the mothers and newborns are more likely (99%) to receive a health check or PNC visit within 2 days of birth, compared to vaginal births (78%).

Table RH.16: Post-natal health checks for mothers and newborns
 Percent distribution of women age 15-49 who gave birth in the two years preceding the survey by receipt of health checks and post-natal care (PNC) visits within 2 days of birth, for the mother and newborn, Ghana, 2011

Background Characteristics	Health checks or PNC visits within 2 days of birth for:					Total	Number of women age 15-49 years who gave birth in the 2 years preceding the survey
	Both mothers and newborns	Mothers only	Newborns only	Neither mother nor newborn	Missing		
Region							
Western	85.0	2.7	2.9	9.5	.0	100.0	270
Central	87.2	1.0	3.6	8.1	.0	100.0	246
Greater Accra	93.7	.9	2.0	3.5	.0	100.0	397
Volta	69.0	1.7	2.0	25.7	1.6	100.0	189
Eastern	85.5	2.2	1.6	10.7	.0	100.0	288
Ashanti	81.6	4.4	3.4	10.0	.5	100.0	449
Brong Ahafo	70.9	1.3	2.6	25.2	.0	100.0	227
Northern	61.5	2.1	4.9	31.3	.3	100.0	283
Upper East	73.3	1.1	2.3	23.1	.2	100.0	105
Upper West	75.9	.8	4.3	18.9	.0	100.0	75
Residence							
Urban	89.2	2.5	2.4	5.7	.2	100.0	1,068
Rural	73.6	1.8	3.3	21.0	.3	100.0	1,460
Mother's age at birth							
Less than 20	80.7	3.2	1.0	13.7	1.4	100.0	221
20-34	81.7	2.2	2.9	13.0	.2	100.0	1,783
35-49	74.6	1.3	3.7	20.3	.1	100.0	524
Missing	*	*	*	*	*	100.0	1
Type of health facility							
Home	48.4	3.2	6.1	42.2	.1	100.0	793
Health facility	95.6	1.6	1.3	1.1	.3	100.0	1,703
Public	95.2	1.7	1.4	1.3	.4	100.0	1,434
Private	97.5	1.6	.7	.2	.0	100.0	269
Other/DK/							
Missing	(47.8)	(.0)	(9.2)	(43.0)	(.0)	100.0	32
Type of delivery							
C-section	98.7	1.2	.1	.0	.0	100.0	287
Not via C-section	77.8	2.2	3.3	16.4	.3	100.0	2,241
Education							
None	63.3	2.8	4.7	29.1	.1	100.0	733
Primary	82.9	1.3	2.3	13.4	.0	100.0	565
Middle/JSS	86.7	2.1	2.3	8.2	.6	100.0	886
Secondary +	94.8	2.0	1.6	1.6	.0	100.0	344
Wealth index quintile							
Poorest	62.0	1.7	3.8	32.3	.2	100.0	560
Second	72.3	4.5	3.5	19.3	.4	100.0	546
Middle	82.7	1.9	3.1	11.7	.6	100.0	500
Fourth	93.6	.6	1.2	4.6	.0	100.0	455
Richest	95.5	1.5	2.5	.5	.0	100.0	467
Total	80.2	2.1	2.9	14.6	.2	100.0	2,528

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.



Early Childhood Education and Learning

Attendance to pre-school education in an organized learning or child education program is important for the readiness of children to go to school. One of the World Fit for Children goals is the promotion of early childhood education. In accordance with section 8 of The Children's Act, 1998 (Act 560), the government of Ghana drafted a comprehensive Early Childhood Care and Development (ECCD) policy in 2004 to provide a good start in life for all children. Early education and learning constitute an integral part of the ECCD Policy.

A little over 68 percent of children aged 36-59 months in Ghana are attending pre-school (Table CD.1). There are significant variations in pre-school attendance by urban-rural residence. The figure is as high as 81 percent in urban areas, compared to 59 percent in rural areas. Significant differentials exist in terms of gender with female children more likely to attend pre-school (72%), compared to male children (65%). With regards to socio-economic status, pre-school attendance is highest among children from the richest households (94%) compared to children from the poorest households (42%). Also, older children 48-59 months are more likely to attend pre-school (78%), than younger children (59%), while attendance appears to be highest for children whose mothers have secondary or higher education (94%), and lowest for children whose mothers have no education (49%).

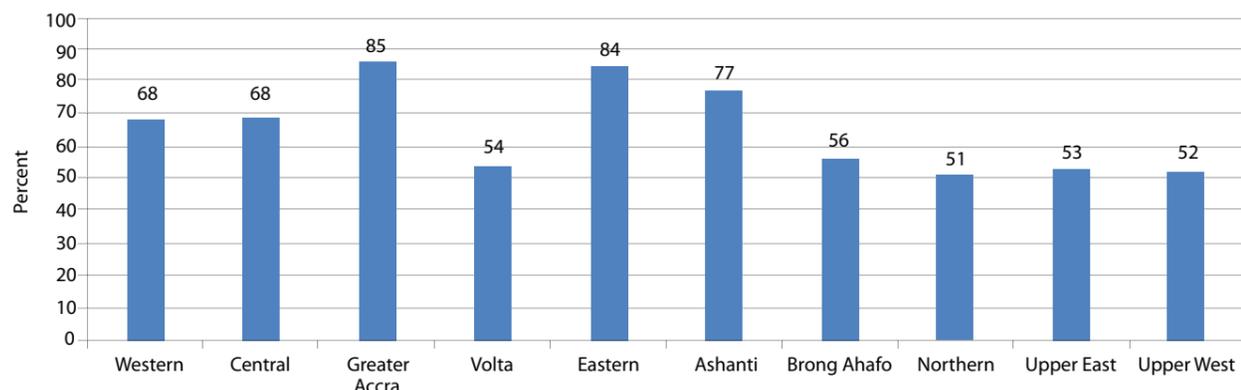
Table CD.1: Early childhood education
Percentage of children age 36-59 months who are attending some form of organized early childhood education programme, Ghana, 2011

Background Characteristics	Percentage of children age 36-59 months currently attending early childhood education [1]	Number of children aged 36-59 months
Sex		
Male	65.0	1524
Female	71.5	1478
Region		
Western	67.8	310
Central	67.7	286
Greater Accra	84.9	469
Volta	53.8	263
Eastern	83.9	307
Ashanti	76.9	516
Brong Ahafo	56.4	260
Northern	50.5	360
Upper East	53.1	140
Upper West	51.9	89
Residence		
Urban	80.5	1304
Rural	58.8	1698
Age of child		
36-47 months	59.1	1576
48-59 months	78.3	1426
Mother's education		
None	49.1	1100
Primary	67.8	621
Middle/JSS	81.9	971
Secondary +	93.9	310
Wealth index quintile		
Poorest	41.5	719
Second	59.2	634
Middle	72.9	622
Fourth	83.2	529
Richest	96.5	498
Total	68.2	3002

[1] MICS indicator 6.7

Among children aged 36-59 months, attendance to pre-school is more prevalent in the Greater Accra (85%), and lowest in the Northern Region (51%) as seen in Figure CD.1.

Figure CD.1: Percentage of children aged 36-59 months currently attending early childhood education by region, Ghana, 2011



Placing children in pre-school is an important decision parents take but such a decision is more beneficial if parents also take interest in children’s school activities whilst at home. Parental involvement in children’s preschool work has significant effects on their development (Hill & Taylor, 2004). It is well recognized that a period of rapid brain development occurs in the first 3-4 years of life, and the quality of home care is the major determinant of the child’s development during this period. In this context, adult activities with children, presence of books in the home for the child, and the conditions of care are important indicators of quality of home care. Children should be physically healthy, mentally alert, emotionally secure, socially competent and ready to learn.

Information on a number of activities that support early learning was collected in the MICS survey. These included the involvement of adults with children in the following activities: reading books or looking at picture books, telling stories, singing songs, taking children outside the home, compound or yard, playing with children, and spending time with children naming, counting, or drawing things.

Table CD.2 presents the percentage of children aged 36-59 months with whom an adult household member engaged in activities that promote learning and school readiness during the last three days preceding the survey. The data indicate that with 40 percent of under-five children, an adult household member engaged in more than four activities that promote learning and school readiness during the three days preceding the survey. The average number of activities that adults engaged in with children was 3. Generally, the table also indicates that fathers’ involvement in such activities was limited. Father’s involvement with one or more activities was only 30 percent but significantly higher (65%) in cases where the father had secondary or higher education. The mean number of activities the father engaged in with the child was less than 1. The survey results also reveal that about 30 percent of children aged 36-59 months were living in a household without their natural fathers.

Table CD.2: Support for learning

Percentage of children age 36-59 months with whom an adult household member engaged in activities that promote learning and school readiness during the last three days, Ghana, 2011

Background Characteristics	Percentage of children aged 36-59 months		Mean number of activities		Percentage of children not living with their natural father	Number of children aged 36-59 months
	With whom adult household members engaged in four or more activities [1]	With whom the father engaged in one or more activities [2]	Any adult household member engaged with the child	The father engaged with the child		
Sex						
Male	37.9	29.4	2.9	.6	26.6	1524
Female	41.8	29.8	3.1	.6	32.6	1478
Region						
Western	25.7	25.8	2.4	.5	23.0	310
Central	39.4	31.3	3.0	.7	33.0	286
Greater Accra	60.4	35.6	3.8	.9	29.5	469
Volta	23.6	27.7	2.4	.5	41.9	263
Eastern	62.1	27.3	3.9	.6	37.8	307
Ashanti	37.3	27.0	3.0	.4	33.3	516
Brong Ahafo	33.4	33.0	2.9	.6	33.3	260
Northern	21.6	29.4	2.3	.5	14.5	360
Upper East	56.8	25.4	3.8	.6	20.0	140
Upper West	34.1	31.6	2.7	.7	20.7	89
Residence						
Urban	52.7	32.3	3.5	.7	32.3	1304
Rural	30.0	27.5	2.7	.5	27.5	1698
Age						
36-47 months	37.3	28.5	3.0	.6	28.7	1576
48-59 months	42.7	30.8	3.1	.6	30.6	1426
Mother's education						
None	25.0	25.3	2.4	.4	22.3	1100
Primary	33.5	28.2	2.9	.5	35.3	621
Middle/JSS	49.4	31.3	3.5	.6	34.0	971
Secondary +	75.4	42.2	4.3	1.3	30.3	310
Father's education						
None	32.2	34.6	2.7	.6	.0	780
Primary	25.9	33.0	2.6	.6	.0	333
Middle/JSS	44.2	41.1	3.3	.8	.0	768
Secondary +	69.4	64.8	4.2	1.9	.0	232
Father not in household	40.3	4.8	3.0	.1	100.0	888
Wealth index quintile						
Poorest	23.0	24.8	2.3	.4	18.6	719
Second	31.7	26.5	2.7	.4	38.2	634
Middle	31.4	19.4	2.7	.3	40.5	622
Fourth	46.2	35.8	3.5	.8	25.3	529
Richest	78.4	46.5	4.4	1.2	25.3	498
Total	39.8	29.6	3.0	.6	29.6	3002

[1] MICS indicator 6.1

[2] MICS Indicator 6.2

Involvement of adult household members with children in activities that promote learning and school readiness is very limited. Generally, adult's activities are higher with female children (42%) than with male children (38%). Slight differences are noted by area of residence – fathers in urban areas engaged more with children in one or more activities (32%), than fathers in rural areas (28%).

Significant differentials by region and socio-economic status are also observed: adult engagement in activities with children was highest in the Greater Accra region (60%) and lowest in the Northern region (22%), while the proportion was 78 percent for children living in the richest households, as opposed to those living in the poorest households (23%).

Exposure to books in early years not only provides the child with greater understanding of the nature of print, but may also give the child opportunities to see others reading, such as older siblings doing school work. Presence of books is important for later school performance and IQ scores. The mother/caretaker of all children under- 5 were asked about the number of children's books or picture books they have for the child, household objects or outside objects, and homemade toys or toys that came from a shop that are available at home.

In Ghana, only 6 percent of children aged 0-59 months are living in households where at least 3 children's books are present (Table CD.3), and about 1 percent live in households that have 10 or more books (Table CD.3). While slight gender differentials are observed in households that have 3 or more books, none is observed in relation to households with 10 or more books.

As can be expected, urban children appear to have more access to children's books than those living in rural households. The proportion of under-5 children who have 3 or more children's books is 11 percent in urban areas, and 2 percent in rural areas. The presence of children's books is also higher (10%) in homes of children aged 24-59 months than in the homes of children aged 0-23 months (1%).

Table CD.3 also shows that 41 percent of children aged 0-59 months had 2 or more playthings in their homes. The playthings in MICS4 included homemade toys (such as dolls and cars, or other toys made at home), toys that came from a store, and household objects (such as pots and bowls) or objects and materials found outside the home (such as sticks, rocks, animal shells, or leaves). It is interesting to note that 40 percent of children play with toys that come from a store, 26 percent play with homemade toys and 65 percent play with household objects and other objects found outside.

Overall, 40 percent of the male children, and 42 percent of the female children have 2 or more playthings. Urban-rural differentials are also observed in this respect (46% and 37% respectively). Also, substantial differences are observed in relation to the mother's education and availability of 2 or more playthings for children – 50 percent in cases where the mother has secondary or higher education, and 34 percent for children whose mothers have no education. The same pattern is observed by socio-economic status of the households – 31 percent for children in the poorest households, and 51 percent for children in the richest wealth quintile.

With respect to the proportion of children who play with household objects or objects found outside, the Volta region ranks highest (80%) in comparison to the Eastern region which ranked lowest (57%) as seen in Figure CD.2. More children from the poorest households (73%) play with household objects or objects found outside than children from richest households (54%). Also, 71 percent of children whose mothers have no education play with household objects or objects found outside, compared to 52 percent for children whose mothers have secondary or higher education.

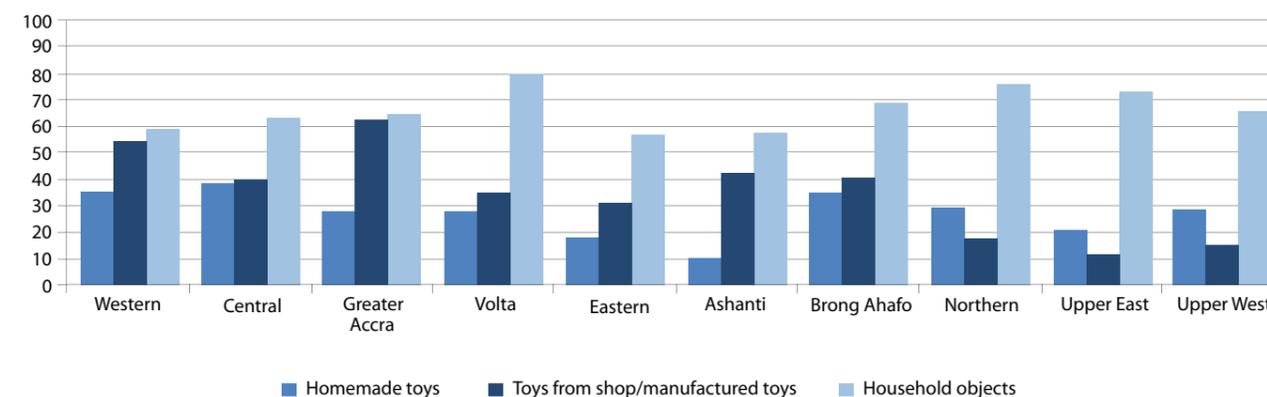
Regarding the toys from shop/manufactured toys, there is a direct association with area of residence, mother's education and socio-economic status. For example, only 13 percent of children from the poorest wealth quintile plays with toys from a shop/manufactured toys. This increases to 28 percent for children in the second wealth quintile, to 38 percent for children in the middle quintile, and to 56 percent for children in the fourth quintile. About 3 out of 4 children from the richest wealth quintile play with toys from a shop/manufactured toys. Regional variations are also observed with the highest proportion (63%) in Greater Accra compared to the lowest (12%) in Upper East region.

Table CD.3: Learning materials
Percentage of children under age 5 by numbers of children's books present in the household, and by playthings that child plays with, Ghana, 2011

Background Characteristics	Household has for the child:		Child plays with:			Two or more types of playthings [2]	Number of children under age 5
	3 or more children's books [1]	10 or more children's books	Homemade toys	Toys from a shop/manufactured toys	Household objects/objects found outside		
Sex							
Male	5.8	1.0	26.3	38.8	64.6	39.9	3757
Female	6.6	.8	25.4	40.9	65.7	42.4	3793
Region							
Western	5.6	2.2	35.1	54.5	58.6	42.0	758
Central	5.7	.2	38.1	40.3	63.4	48.2	740
Greater Accra	17.1	2.6	27.8	63.3	65.0	51.0	1142
Volta	1.3	.0	27.7	35.0	80.3	45.0	601
Eastern	6.3	.2	18.0	31.7	57.0	33.5	827
Ashanti	6.2	1.2	10.6	42.6	57.3	33.8	1411
Brong Ahafo	2.7	.0	35.3	40.8	69.4	54.3	671
Northern	1.3	.0	29.5	17.9	75.7	35.2	852
Upper East	2.8	.1	21.2	11.9	73.8	25.7	325
Upper West	1.3	.0	29.2	15.7	66.0	34.2	223
Residence							
Urban	11.0	1.8	25.6	55.5	61.9	46.4	3283
Rural	2.4	.2	26.1	27.7	67.6	37.1	4267
Age							
0-23 months	.6	.0	15.5	37.1	41.3	27.2	2995
24-59 months	9.9	1.5	32.7	41.7	80.8	50.3	4555
Mother's education							
None	1.3	.0	27.2	19.5	71.4	34.4	2455
Primary	2.7	.0	25.1	35.1	67.2	38.9	1628
Middle/JSS	6.8	.5	25.3	51.0	62.4	46.0	2578
Secondary +	24.3	6.1	25.4	72.0	51.9	49.8	889
Wealth index quintile							
Poorest	.6	.0	25.8	13.2	72.6	30.9	1730
Second	1.0	.0	29.4	28.2	67.9	38.7	1551
Middle	3.3	.3	24.4	38.0	64.8	39.8	1559
Fourth	6.6	.6	25.7	55.8	63.0	49.0	1397
Richest	22.7	4.0	23.6	73.9	54.6	50.9	1313
Total	6.2	.9	25.9	39.8	65.1	41.1	7550

[1] MICS indicator 6.3
[2] MICS indicator 6.4

Figure CD.2: Types of toys owned by children by region, Ghana, 2011



Leaving children alone or in the presence of other young children is known to increase the risk of accidents. In MICS4, two questions were asked to find out whether children aged 0-59 months were left alone during the week preceding the interview, and whether children were left in the care of other children under 10 years of age.

Table CD.4 shows that 9 percent of children aged 0-59 months were left in the care of other children younger than 10 years of age, while 16 percent were left alone during the week preceding the interview. Combining the two care indicators, the results show that 1 out of 5 children (21%) were left with inadequate care during the week preceding the survey, either by being left alone or in the care of another child younger than 10 years of age. No differences were observed by the sex of the child; while little variations were observed by residence – 18 percent of children were left with inadequate care in urban areas the week preceding the survey, compared to 22 percent of children living in rural areas. Also, inadequate care was less prevalent among children whose mothers had secondary or higher education (16%), as opposed to children whose mothers had no education (27%). Older children 24-59 months were more likely to be left with inadequate care (26%), than those aged 0-23 months (12%). Significant regional differentials exist in respect of children left with inadequate care the week preceding the survey. Upper West region (36%) recorded the highest proportion while Eastern region had the lowest proportion (10%). Furthermore, children from the richest households were less likely (15%) to be left with inadequate care than those from the poorest households (27%).

Table CD.4: Inadequate care

Percentage of children under age 5 left alone or left in the care of other children under the age of 10 years for more than one hour at least once during the past week, Ghana, 2011

Background Characteristics	Percentage of children under age 5			Number of children under age 5
	Left alone in the past week	Left in the care of another child younger than 10 years of age in the past week	Left with inadequate care in the past week [1]	
Sex				
Male	15.9	8.5	20.6	3757
Female	16.2	8.6	20.7	3793
Region				
Western	18.3	6.5	20.8	758
Central	17.7	9.9	22.4	740
Greater Accra	15.8	3.4	17.6	1142
Volta	10.3	7.1	13.9	601
Eastern	7.2	4.3	9.9	827
Ashanti	19.2	8.1	22.6	1411
Brong Ahafo	17.2	5.1	20.2	671
Northern	19.0	15.7	28.7	852
Upper East	16.0	16.8	27.6	325
Upper West	18.4	30.0	36.2	223
Residence				
Urban	15.1	6.1	18.4	3283
Rural	16.8	10.4	22.4	4267
Age				
0-23	9.5	4.8	12.2	2995
24-59	20.4	11.0	26.2	4555
Mother's education				
None	17.6	12.5	24.8	2455
Primary	17.2	8.5	20.8	1628
Middle/JSS	14.3	6.4	18.0	2578
Secondary +	15.0	4.0	16.4	889
Wealth index quintile				
Poorest	17.5	15.4	26.5	1730
Second	16.7	8.4	21.0	1551
Middle	16.6	8.3	21.3	1559
Fourth	15.4	5.9	17.8	1397
Richest	13.7	2.7	14.8	1313
Total	16.1	8.5	20.7	7550
[1] MICS indicator 6.5				

Early Childhood Development

Early child development is defined as an orderly, predictable process along a continuous path, in which a child learns to handle more complicated levels of moving, thinking, speaking, feeling and relating to others. Physical growth, literacy and numeracy skills, socio-emotional development and readiness to learn are vital domains of a child's overall development, which is a basis for overall human development.

A 10-item module that has been developed for the MICS programme was used to calculate the Early Child Development Index (ECDI). The indicator is based on some benchmarks that children would be expected to have if they are developing. The primary purpose of the ECDI is to inform public policy regarding the developmental status of children in Ghana.

Each of the 10 items is used in one of the four domains to determine if children are developmentally on track in that domain. The domains in question are:

- Literacy-numeracy: Children are identified as being developmentally on track based on whether they can identify/name at least ten letters of the alphabet, whether they can read at least four simple, popular words, and whether they know the name and recognize the symbols of all numbers from 1 to 10. If at least two of these are true, then the child is considered developmentally on track.
- Physical: If the child can pick up a small object with two fingers, like a stick or a rock from the ground and/or the mother/caretaker does not indicate that the child is sometimes too sick to play, then the child is regarded as being developmentally on track in the physical domain.
- In the social-emotional domain, children are considered to be developmentally on track if two of the following are true: If the child gets along well with other children, if the child does not kick, bite, or hit other children and if the child does not get distracted easily.
- Learning: If the child follows simple directions on how to do something correctly and/or when given something to do, is able to do it independently, then the child is considered to be developmentally on track in the learning domain.

ECDI is then calculated as the percentage of children who are developmentally on track in at least three of these four domains.

In Ghana, 74 percent of children aged 36-59 months are developmentally on track (Table CD.5). Urban-rural and regional differentials are observed in this indicator – 78 percent in urban areas, and 70 percent in rural areas. The regional distribution shows that Western (88%) has the highest ECDI, while the lowest is Eastern (55%). ECDI is lower among boys (70%) than girls (78%). As expected, ECDI is much higher in the older age group 48-59 months (80%), compared to 68% among the 36-47 months age group, since children acquire more skills with increasing age.

Higher ECDI is seen in children attending pre-school (79%) compared to 62 percent for those who are not attending preschool. Children living in the poorest households have lower ECDI (69%) than children living in the richest households (84%).

The analysis of the four domains of child development shows that 97 percent of children aged 36-59 months are developmentally on track in the physical domain, but much less on track in learning (89%), social-emotional (73%) and literacy-numeracy (28%) domains. In each individual domain, a higher score is associated with children living in the richest households, children attending preschool, older children, children whose mothers have secondary or higher education, children living in urban areas, and for female children.

Table CD.5: Early child development index

Percentage of children age 36-59 months who are developmentally on track in literacy-numeracy, physical, social-emotional, and learning domains, and the early child development index score, Ghana, 2011

Background Characteristics	Percentage of children age 36-59 months who are developmentally on track for indicated domains				Early child development index score [1]	Number of children age 36-59 months
	Literacy-numeracy	Physical	Social-Emotional	Learning		
Sex						
Male	25.2	96.9	68.6	89.7	69.9	1524
Female	31.5	97.6	77.4	88.2	77.6	1478
Region						
Western	29.8	97.3	88.2	96.4	87.8	310
Central	38.6	97.1	71.1	92.0	74.5	286
Greater Accra	46.6	99.4	67.6	91.0	79.2	469
Volta	13.6	98.0	52.5	90.9	55.9	263
Eastern	29.1	91.1	66.4	63.7	55.1	307
Ashanti	27.6	98.2	73.7	92.6	75.9	516
Brong Ahafo	22.3	97.9	76.8	96.3	81.3	260
Northern	17.5	97.8	83.4	87.5	76.4	360
Upper East	15.9	96.9	80.9	88.1	72.4	140
Upper West	18.5	96.0	65.1	89.8	66.5	89
Residence						
Urban	40.6	98.0	71.3	90.6	78.2	1304
Rural	18.8	96.7	74.1	87.8	70.3	1698
Age						
36-47 months	17.8	96.6	70.8	87.8	68.3	1576
48-59 months	39.9	98.0	75.2	90.3	79.7	1426
Preschool attendance						
Attending preschool	39.6	97.5	74.7	90.4	79.2	2048
Not attending preschool	3.9	96.7	69.1	86.0	62.0	954
Mother's education						
None	12.2	97.0	74.5	86.8	68.4	1100
Primary	24.5	97.6	69.9	91.1	73.6	621
Middle/JSS	37.3	96.8	71.8	89.0	75.8	971
Secondary +	64.8	99.1	76.8	92.6	86.3	310
Wealth index quintile						
Poorest	7.6	96.6	76.1	87.5	68.5	719
Second	20.0	98.4	73.0	90.5	71.6	634
Middle	27.9	96.5	70.6	86.1	70.4	622
Fourth	39.2	96.3	71.6	89.7	77.4	529
Richest	57.8	98.8	72.5	92.0	84.3	498
Total	28.3	97.3	72.9	89.0	73.7	3002

[1] MICS indicator 6.6

The Table CD.6 presents the results on early child development by domain and by age. Four domains were taken into consideration: Language-cognitive, Physical, Approaches to learning and Socio-emotional. Each of these four items was examined on different topics and by group (in months).

For all four domains, the lowest development index scores are observed in the Language-cognitive, especially for the item called “Can read at least four simple popular words”. This is not surprising since table CD.5 has already shown the same pattern in the literacy-numeracy domain, with only 28 percent of children considered developmentally on track. Furthermore, the development index scores increases (doubles) with age in all three items considered in the Language-cognitive domain.

Regarding the other three domains (Physical, Approaches to learning, Socio-emotional), age has an impact on the development index score in many of the 7 items considered. Overall, the highest development indexes are recorded in for the following items:

- Can pick up a small object with two fingers (92%), in the Physical domain;
- Gets along well with other children (95%), in the Approaches to learning domain.

Table CD.6: Early child development items

Percentage and weighted number of children age 36-59 months by items of early child development used for construction of early child, development index score, by age, Ghana, 2011

Background Characteristics		Children Age:		Children age 36-59 months
		36-47 months	48-59 months	
Language-cognitive	Can identify or name at least 10 letters of the alphabet	19.8	42.0	30.4
	Can read at least four simple popular words	7.5	15.6	11.3
Physical	Knows the names and recognizes the symbols of all numbers from 1 to 10	24.6	49.5	36.4
	Can pick up a small object with two fingers	89.4	93.9	91.5
	Is not sometimes too sick to play	75.8	76.6	76.2
Approaches to learning	Follow simple directions on how to do something correctly	82.8	84.7	83.7
	When given something to do, is able to do it independently	68.3	75.1	71.5
Socio-emotional	Gets along well with other children	94.6	96.3	95.4
	does not kick, bite or hit other children or adults	43.3	46.2	44.7
	Does not get distracted easily	60.3	65.9	63.0
		1576	1426	3002



Literacy among Young Women and Men

One of the World Fit for Children goals is to assure adult literacy. Adult literacy is also an MDG indicator relating to both men and women. In MICS4, men and women's questionnaires were administered and the results presented in Table ED.1 are based on males and females aged 15-24 years. Literacy was assessed on the ability of men and women to read a short simple statement. Table ED.1 indicates that 61 percent of women and 71 percent of men aged 15-24 years in Ghana are literate. Literacy status varies greatly by place of residence. Literacy among young women varies from 44 percent in the Northern region to 81 percent in Greater Accra, and literacy among young men varies from 47 percent in the Upper East region to 84 percent in the Western region. More than 7 in every 10 women (72%) and 8 in every 10 men (83%) in urban areas were able to read the statement shown to them compared to less than half of women (48%) and 59 percent of men in rural areas. There are marked variations by socio-economic background. Ninety-three percent and 85 percent of young men and women respectively living in the richest households are literate, compared to 41 percent of men and 31 percent of women belonging in the poorest households.

Overall, the results from MICS4 show a decrease (61 percent) in the proportion of literate young women aged 15-24 years compared to MICS3 (68 percent). In contrast, the percentage of literate young men aged 15-24 years has decreased from 75 percent in MICS3 to 71 percent in MICS4. This means that the gap in literacy levels between the young women and men has increased in MICS4 compared to MICS3.

Background Characteristics	Young women			Young men		
	Percentage literate [1]	Percentage not known	Number of women age 15-24 years	Percentage literate [1]	Percentage not known	Number of men age 15-24 years
Region						
Western	56.8	.0	329	83,8	.0	107
Central	66.7	.0	379	76,9	.0	94
Greater Accra	81.1	.2	632	83,3	.0	194
Volta	59.8	3.3	272	80,0	.4	87
Eastern	70.6	.4	398	(74,0)	(.0)	95
Ashanti	54.7	.0	718	67,2	.0	195
Brong Ahafo	49.4	.0	396	57,0	.0	92
Northern	44.3	.2	219	56,6	.0	86
Upper East	47.6	.0	132	46,9	.6	49
Upper West	50.3	.0	98	54,2	.0	36
Residence						
Urban	72.7	.1	1939	83,1	.0	537
Rural	48.0	.6	1634	58,6	.1	499
Education						
None	.1	.0	286	1,2	.0	41
Primary	15.2	.7	610	30,9	.0	156
Middle/JSS	67.4	.5	1767	73,2	.1	560
Secondary +	100.0	.0	909	100,0	.0	280
Age						
15-19	64.9	.3	1899	69,8	.0	657
20-24	57.4	.4	1674	73,8	.1	379
Wealth index quintiles						
Poorest	30.8	.2	526	41,2	.2	169
Second	48.2	.0	663	66,5	.0	204
Middle	60.4	.1	781	75,2	.1	246
Fourth	68.9	.0	778	75,9	.0	223
Richest	85.3	.0	826	92,5	.0	193
Total	61.4	.3	3573	71,3	.1	1036

[1] MICS indicator 7.1; MDG indicator 2.3
Figures in parenthesis '()' are based on 25-49 unweighted cases.

School Readiness

The concept of school readiness, generally, refers to the child's attainment of a certain set of emotional, behavioral, and cognitive skills needed to learn, work and function successfully in school. Young children have a wide range of needs and require support in preparing them for the standards of learning they will face in primary school. Attendance to pre-school education in an organised learning or child education programme is important for the readiness of children to school.

Table ED.2 shows the proportion of children in the first grade of primary school who attended pre-school the previous year. Overall, 80 percent of children who are currently attending the first grade of primary school attended pre-school the previous year. The proportion of first grade primary school attendants among females (81%) is slightly higher than males (79%). Little variations are observed by area of residence for children in first grade of primary school that attended pre-school the previous year (81% for urban, and 80% for rural). Large regional differentials are observed. For instance, the proportion of children in the first grade of primary school that attended pre-school the previous year in the Volta region (91%) is much higher than their counterparts in Ashanti region (60%). The results also reveal that children attending first grade of primary school who attended pre-school the previous year and whose mothers have no education, or have primary education is slightly higher than those whose mothers have middle/JSS and secondary or higher education.

Background Characteristics	Percentage of children attending first grade who attended preschool in previous year [1]	Number of children attending first grade of primary school
Sex		
Male	79.4	612
Female	81.1	608
Region		
Western	81.6	132
Central	87.1	97
Greater Accra	84.1	169
Volta	91.4	104
Eastern	72.2	135
Ashanti	59.7	127
Brong Ahafo	87.7	161
Northern	89.0	143
Upper East	74.5	97
Upper West	65.4	55
Residence		
Urban	81.4	491
Rural	79.5	729
Mother's education		
None	82.5	589
Primary	83.0	260
Middle/JSS	77.7	320
Secondary +	(77.9)	38
Mother not in household	*	1
Wealth index quintile		
Poorest	80.7	363
Second	79.2	265
Middle	80.2	252
Fourth	76.0	193
Richest	86.9	146
Total	80.3	1220

[1] MICS indicator 7.2
(* Figures are based on less than 25 unweighted cases, and have been suppressed. () Figures are based on 25-49 unweighted cases.

Primary and Secondary School Participation

Universal access to basic education and the achievement of primary education by the world's children are some of the most important goals of the Millennium Development Goals and the World Fit for Children Declaration. Education is a vital pre-requisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour, sexual exploitation, promoting human rights and democracy, protecting the environment, and influencing population growth.

The indicators for primary and secondary school attendance include:

- Net intake rate in primary education.
- Primary school net attendance rate adjusted.
- Secondary school net attendance rate adjusted.
- Female to male education ratio (or gender parity index - GPI) in primary and secondary school.
- The indicators of school progression include:
 - Children reaching last grade of primary.
 - Primary completion rate.
 - Transition rate to secondary school.

Of the children who are of primary school entry age (i.e. age 6), 32 percent are attending the first grade of primary school (Table ED.3). There is not much difference between male and female children. However, disparities exist among regions and between urban and rural dwellers. The proportion of children who are of primary school entry age and attending the first grade of primary school is lowest in Central (22%) and reaches 44 percent among children in Greater Accra. The percentage of children of primary school entry age entering grade 1 in urban areas (39%) is higher than in rural areas (26%). A positive association is observed between six year olds entering grade one and socio-economic status. In richest households, the proportion is 43 percent, while it is 24 percent among children living in the poorest households.

Background Characteristics	Percentage of children of primary school entry age entering grade 1 [1]	Number of children of primary school entry age
Sex		
Male	31.2	719
Female	32.5	677
Region		
Western	39.7	124
Central	21.5	133
Greater Accra	44.0	217
Volta	37.7	119
Eastern	24.2	141
Ashanti	25.9	235
Brong Ahafo	31.0	154
Northern	28.4	153
Upper East	35.0	74
Upper West	29.6	46
Residence		
Urban	38.8	617
Rural	26.3	779
Mother's education		
None	29.2	634
Primary	36.5	278
Middle/JSS	29.3	443
Secondary +	(67.1)	41
Wealth index quintile		
Poorest	24.2	320
Second	24.6	335
Middle	31.7	261
Fourth	41.1	257
Richest	43.0	222
Total	31.8	1,396
[1] MICS Indicator 7.3 () Figures are based on 25-49 unweighted cases.		

Table ED.4 provides the percentage of children of primary school age (6 to 11 years) who are attending primary or secondary school¹. Nearly 3 out of every 4 (73%) children of primary school age are attending school. However, more than a quarter of the children (27%) are out of school or still in the pre-school when they are expected to be participating in school. Generally, there is not much difference between the participation of boys and girls in both urban and rural areas. Net primary school attendance rate in urban areas is 80 percent and 68 percent in rural areas. Regional variations exist with Northern region recording the least net attendance rate (59%) compared to the highest in Greater Accra (82%). Net attendance rates are relatively higher for girls compared with boys in all regions, except in Ashanti and Eastern regions where the reverse is the case. Children aged 6-11 years whose mothers have secondary or higher education, and those from the richer households are more likely to attend primary school, compared to their counterparts. The proportion of children of primary school age who are attending primary school is directly related to age – the net attendance rate for children aged 6 years is only 34 percent, while those aged 11 years recorded a net attendance rate of 94 percent.

¹ Rates presented in this table are "adjusted" since they include not only primary school attendance, but also secondary school attendance in the numerator.

Background Characteristics	Male		Female		Total	
	Net attendance ratio (adjusted) [1]	Number of children	Net attendance ratio (adjusted) [1]	Number of children	Net attendance ratio (adjusted) [1]	Number of children
Region						
Western	75.7	384	77.8	365	76.7	749
Central	70.9	400	75.6	396	73.2	796
Greater Accra	77.3	526	85.5	538	81.5	1064
Volta	72.9	352	73.4	365	73.1	717
Eastern	76.2	395	73.4	460	74.7	854
Ashanti	75.2	742	72.2	682	73.8	1424
Brong Ahafo	72.3	416	72.5	394	72.4	810
Northern	59.3	433	59.5	407	59.4	841
Upper East	68.7	223	74.6	196	71.5	419
Upper West	62.1	141	68.4	134	65.2	275
Residence						
Urban	78.7	1695	81.4	1773	80.1	3468
Rural	67.4	2317	67.7	2164	67.5	4481
Age at beginning of school year						
6	33.7	719	33.9	677	33.8	1396
7	56.6	688	60.4	681	58.5	1369
8	78.3	600	80.4	650	79.4	1250
9	85.3	660	88.2	628	86.7	1288
10	90.8	667	87.4	621	89.2	1289
11	92.3	678	95.1	680	93.7	1357
Mother's education						
None	65.4	1821	67.2	1745	66.3	3566
Primary	74.3	796	75.4	746	74.9	1541
Middle/JSS	78.9	1269	79.2	1257	79.0	2525
Secondary +	89.3	127	93.2	189	91.6	316
Wealth index quintile						
Poorest	61.0	995	60.4	905	60.7	1900
Second	68.1	873	66.8	884	67.4	1757
Middle	75.4	801	75.6	769	75.5	1570
Fourth	80.1	726	83.7	756	81.9	1482
Richest	82.5	616	89.1	623	85.8	1240
Total	72.2	4012	73.8	3937	73.0	7949

[1] MICS indicator 7.4; MDG indicator 2.1

The secondary school net attendance rate is presented in Table ED.5². The results show that only 42 percent of children of secondary school age are attending secondary school. Of the remaining 58 percent, some of them are either out of school or attending primary school; 43 percent of the children of secondary school age are attending primary school when they should be attending secondary school while the remaining 15 percent are not attending school at all.

More than half (51%) of children of secondary school age in urban areas and about one-third (34%) of their rural counterparts are attending secondary school. Female children of secondary school age (44%) are more likely than males (40%) to attend secondary school. Compared to females (41%), a relatively higher proportion of male children

² Rates presented in this table are "adjusted" since they include not only secondary school attendance, but also attendance to higher levels in the numerator.

(46%) of secondary school age attends primary school. In the regions, Greater Accra (51%) recorded the highest proportion, while Northern (25%) has the least net attendance rate. For both sexes, the secondary school net attendance rate is associated with mother's education level, and household wealth, and children from the richest household and from the most educated women are also less likely to attend primary school education when they should be attending secondary schools.

Background Characteristics	Male			Female			Total		
	Net attendance ratio (adjusted) [1]	Percent attending primary school	Number of children	Net attendance ratio (adjusted) [1]	Percent attending primary school	Number of children	Net attendance ratio (adjusted) [1]	Percent attending primary school	Number of children
Region									
Western	48.7	41.5	301	43.0	42.8	302	45.8	42.1	603
Central	39.3	48.2	363	43.9	40.9	329	41.4	44.7	692
Greater Accra	50.6	35.2	412	51.6	33.5	443	51.1	34.4	855
Volta	39.0	48.1	295	40.1	48.3	260	39.5	48.2	554
Eastern	38.4	53.6	369	40.6	48.4	357	39.5	51.1	726
Ashanti	46.4	40.9	567	51.8	31.4	625	49.2	35.9	1192
Brong Ahafo	41.0	48.2	340	43.2	38.0	344	42.1	43.1	684
Northern	22.8	43.1	338	28.0	44.1	259	25.1	43.6	597
Upper East	23.5	60.9	189	34.1	54.4	138	28.0	58.1	327
Upper West	24.6	51.4	118	31.7	50.7	95	27.8	51.1	213
Residence									
Urban	49.6	38.8	1441	52.5	33.3	1511	51.1	36.0	2952
Rural	32.0	51.0	1850	35.3	47.1	1640	33.6	49.2	3490
Age at beginning of school year									
12	15.9	77.5	707	17.4	75.5	651	16.6	76.6	1358
13	27.7	65.9	630	35.5	55.8	611	31.5	60.9	1241
14	44.4	45.2	563	51.4	40.0	668	48.2	42.4	1231
15	52.8	27.5	511	53.1	26.3	415	52.9	27.0	926
16	56.3	20.6	478	62.2	12.1	413	59.0	16.7	891
17	57.5	11.1	402	56.8	4.3	394	57.1	7.7	796
Mother's education									
None	27.9	56.6	1377	34.6	48.9	1131	31.0	53.1	2508
Primary	37.5	52.2	488	39.5	49.4	542	38.6	50.7	1030
Middle/JSS	48.9	40.5	839	50.9	37.9	877	50.0	39.2	1716
Secondary +	66.8	23.0	99	67.3	22.8	119	67.0	22.9	219
Not in the household	53.4	22.2	470	50.0	20.9	452	51.8	21.6	922
Cannot be determined	(62.7)	(4.0)	19	*	*	30	53.9	1.6	48
Wealth index quintile									
Poorest	20.9	54.3	779	22.6	53.0	584	21.6	53.7	1364
Second	35.5	52.7	742	37.0	46.7	666	36.2	49.8	1408
Middle	44.5	44.7	709	47.0	39.1	720	45.8	41.9	1429
Fourth	44.0	44.1	579	51.0	35.5	621	47.6	39.7	1201
Richest	64.4	23.8	481	60.8	27.3	560	62.5	25.7	1041
Total	39.7	45.6	3291	43.6	40.5	3152	41.6	43.1	6443

[1] MICS indicator 7.5
(*) Figures are based on less than 25 unweighted cases, and have been suppressed. () Figures are based on 25-49 unweighted cases.

The percentage of children entering first grade who eventually reach the last grade of primary school is presented in Table ED.6. Of all children starting grade one, the majority of them (95%) are expected to eventually reach the last grade. It is important to note that this number includes children that repeat grades but eventually move up to reach last grade. Children whose mothers are not with them in their households (88%) and those in poor households (93%) are less likely to complete the last grade of primary school. The percentage of children entering first grade of primary school who finally reach grade 6 is about the same for both male and female children (95 and 96 percent respectively) and in urban and rural areas (97 and 94 percent respectively).

Background Characteristics	Percent attending grade 1 last year who are in grade 2 this year	Percent attending grade 2 last year who are attending grade 3 this year	Percent attending grade 3 last year who are attending grade 4 this year	Percent attending grade 4 last year who are attending grade 5 this year	Percent attending grade 5 last year who are attending grade 6 this year	Percent who reach grade 6 of those who enter grade 1 [1]
Sex						
Male	98.6	99.4	98.5	98.8	99.7	95.2
Female	99.2	99.2	98.9	98.9	99.3	95.6
Region						
Western	98.7	100.0	97.4	97.7	100.0	93.9
Central	98.8	99.6	99.1	99.2	99.5	96.2
Greater Accra	100.0	98.9	96.3	100.0	100.0	95.2
Volta	97.8	97.6	98.9	95.0	100.0	89.7
Eastern	100.0	100.0	100.0	100.0	100.0	100.0
Ashanti	99.0	100.0	100.0	98.1	99.8	96.9
Brong Ahafo	98.5	100.0	99.2	100.0	98.2	95.9
Northern	98.0	98.4	99.0	99.4	98.6	93.5
Upper East	99.8	98.4	99.1	99.5	98.4	95.1
Upper West	98.9	99.2	98.6	99.6	100.0	96.4
Residence						
Urban	99.0	99.5	98.5	100.0	99.9	96.8
Rural	98.9	99.2	98.9	97.8	99.2	94.2
Mother's education						
None	98.7	99.7	98.6	99.9	99.1	95.9
Primary	99.2	99.1	99.9	97.1	99.7	95.1
Middle/JSS	99.5	99.3	98.5	99.7	99.9	96.9
Secondary +	100.0	96.8	100.0	100.0	100.0	96.8
Mother not in household	100.0	97.6	91.9	98.1	100.0	88.0
Wealth index quintile						
Poorest	98.3	98.3	99.3	98.1	98.9	93.1
Second	99.3	99.6	98.6	97.6	99.2	94.4
Middle	99.3	99.7	98.8	98.9	100.0	96.7
Fourth	98.7	99.9	99.9	100.0	99.8	98.3
Richest	99.3	99.0	96.5	100.0	99.9	94.8
Total	98.9	99.3	98.7	98.8	99.5	95.4

[1] MICS indicator 7.6; MDG indicator 2.2

Table ED.7 shows the primary school completion and transition rates to secondary education. The primary completion rate is the ratio of the total number of students, regardless of age, entering the last grade of primary school for the first time, to the number of children of the primary graduation age at the beginning of the current (or most recent) school year. It is therefore a gross rate, meaning it can exceed 100%. Results of the survey show that the primary school completion rate is 90 percent. The primary school completion rate shows wide differences between males (96%) and females (83%), probably due to more overage children among the boys; and also between urban dwellers (92%) and rural dwellers (88%). Eastern (117%) has the highest primary school completion rate, while Northern region has the lowest (78%).

Table ED.7 further shows that 3 out of 4 of the children that completed successfully the last grade of primary school were found to be attending the first grade of secondary school. Only a slight difference is observed between males (76%) and females (74%). However, at residence level, children in urban areas (78%) who successfully completed primary school education are more likely to begin the first grade of secondary school compared to those in rural areas (72%). Similarly, children in Brong Ahafo are more likely (94%) than those in Eastern (59%) to enter first grade of secondary school after completing primary education.

Background Characteristics	Primary school completion rate [1]	Number of children of primary school completion age	Transition rate to secondary school [2]	Number of children who were in the last grade of primary school the previous year
Sex				
Male	96.4	678	76.0	593
Female	83.3	680	73.8	496
Region				
Western	117.1	116	69.9	101
Central	86.7	137	69.8	104
Greater Accra	80.2	209	85.8	175
Volta	112.8	116	87.0	91
Eastern	88.3	147	59.3	126
Ashanti	83.9	250	62.2	210
Brong Ahafo	84.3	154	93.9	126
Northern	77.6	121	81.6	78
Upper East	106.1	65	72.3	49
Upper West	82.2	44	73.8	29
Residence				
Urban	92.1	633	78.2	551
Rural	87.9	725	71.7	538
Mother's education				
None	80.7	550	75.3	341
Primary	81.5	287	77.6	171
Middle/JSS	79.1	447	75.4	340
Secondary +	82.5	73	(80.3)	42
Mother not in household	.	0	69.9	132
Wealth index quintile				
Poorest	85.9	300	77.7	181
Second	98.4	282	78.3	219
Middle	94.3	263	69.5	254
Fourth	90.5	254	73.9	233
Richest	80.0	259	77.3	203
Total	89.9	1357	75.0	1090

[1] MICS indicator 7.7

[2] MICS indicator 7.8

() Figures are based on 25-49 unweighted cases.

The ratio of girls to boys attending primary and secondary education is provided in Table ED.8. These ratios are better known as the Gender Parity Index (GPI). It is worthy to mention that the ratios included in the table are obtained from net attendance rates rather than gross attendance ratios. The latter provides an erroneous description of the GPI mainly because in most of the cases, the majority of over-aged children attending primary education tend to be boys. Table ED.8 indicates that gender parity for primary school is about 1.00, meaning that there is no difference between primary school attendance of boys and girls while the GPI for secondary school is slightly greater than 1 (1.10), meaning that girls school attendance is higher than boys attendance. There is a slight disadvantage of girls in primary education in Eastern and Ashanti regions (with a ratio of 0.96). At the secondary school level, girls are disadvantaged in Western region where the GPI is 0.88. However, a rapid increase of GPI at the secondary school level was observed for Northern region compared to MICS 2006 and DHS 2008. This rapid increase in the GPI should be investigated in the further analysis of the data.

Table ED.8: Education gender parity						
Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school, Ghana, 2011						
Background Characteristics	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR [1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR [2]
Region						
Western	77.8	75.7	1.03	43.0	48.7	.88
Central	75.6	70.9	1.07	43.9	39.3	1.12
Greater Accra	85.5	77.3	1.11	51.6	50.6	1.02
Volta	73.4	72.9	1.01	40.1	39.0	1.03
Eastern	73.4	76.2	.96	40.6	38.4	1.06
Ashanti	72.2	75.2	.96	51.8	46.4	1.12
Brong Ahafo	72.5	72.3	1.00	43.2	41.0	1.05
Northern	59.5	59.3	1.00	28.0	22.8	1.23
Upper East	74.6	68.7	1.08	34.1	23.5	1.45
Upper West	68.4	62.1	1.10	31.7	24.6	1.29
Residence						
Urban	81.4	78.7	1.03	52.5	49.6	1.06
Rural	67.7	67.4	1.00	35.3	32.0	1.10
Mother's education						
None	67.2	65.4	1.03	34.6	27.9	1.24
Primary	75.4	74.3	1.01	39.5	37.5	1.05
Middle/JSS	79.2	78.9	1.00	50.9	48.9	1.04
Secondary +	93.2	89.3	1.04	67.3	66.8	1.01
Not in the household	.	.	.	50.0	53.4	.94
Cannot be determined	.	.	.	*	(62.7)	*
Wealth index quintile						
Poorest	60.4	61.0	.99	22.6	20.9	1.08
Second	66.8	68.1	.98	37.0	35.5	1.04
Middle	75.6	75.4	1.00	47.0	44.5	1.05
Fourth	83.7	80.1	1.04	51.0	44.0	1.16
Richest	89.1	82.5	1.08	60.8	64.4	.94
Total	73.8	72.2	1.02	43.6	39.7	1.10
[1] MICS indicator 7.9; MDG indicator 3.1						
[2] MICS indicator 7.10; MDG indicator 3.1						
(*) Figures are based on less than 25 unweighted cases, and have been suppressed. () Figures are based on 25-49 unweighted cases.						

Tables ED.9 and ED.9M present the educational attainment of the female and male household population respectively. They show that the proportion of women with no education is 23 percent compared to 13 percent for men. Women with secondary education are 34 percent while that for men it is 41 percent. Overall, nearly 50 percent of men and 39 percent of women have secondary or higher education.

Table ED.9: Educational attainment of household population

Percentage distribution of the Female population age 5 and over by highest level of education attended, Ghana, 2011

Age-group	Female									
	None		Pre-School		Primary		Secondary		Higher	
	Number	Percent	Number	Percent	number	Percent	number	Percent	number	Percent
0-4	278	8.5	1,230	37.7	1,750	53.7	4	0.1	0	0
5-9	121	3.7	54	1.7	2,355	72.3	728	22.3	0	0
10-14	84	4.5	5	0.3	369	19.8	1394	74.9	9	0.5
15-19	199	12.3	3	0.2	229	14.1	1013	62.4	181	11.2
20-24	313	18.3	2	0.1	325	19	798	46.8	268	15.7
25-29	395	25.1	2	0.1	316	20.1	729	46.3	131	8.3
30-34	442	32.2	2	0.2	313	22.8	518	37.8	96	7
35-39	376	32	4	0.3	219	18.7	500	42.6	74	6.3
40-44	339	34	1	0.1	190	19	395	39.6	73	7.3
45-49	554	46.8	1	0.1	155	13.1	419	35.4	55	4.7
50-54	322	46.2	2	0.2	95	13.6	224	32.2	54	7.8
55-59	291	54.5	2	0.4	70	13.2	139	26.1	31	5.8
60-64	226	66.1	0	0	42	12.2	53	15.6	21	6
65-69	273	76.3	0	0	43	12.1	34	9.6	7	2.1
70-74	234	85.4	0	0	21	7.6	18	6.5	1	0.5
75-79	156	87.8	0	0	11	6.1	11	6	0	0
80-84	192	94.2	0	0	8	3.8	4	2	0	0
85+	8	100	0	0	0	0	0	0	0	0
Total	4,803	23.3	1,307	6.3	6,510	31.6	6,982	33.9	1,003	4.9

Table ED.9M: Educational attainment of household population

Percentage distribution of the male population age 5 and over by highest level of education attended, Ghana, 2011

Age-group	Male									
	None		Pre-School		Primary		Secondary		Higher	
	Number	Percent	Number	Percent	number	Percent	number	Percent	number	Percent
0-4	319	9.5	1,338	39.7	1,705	50.6	7	0.2	0	0
5-9	121	3.7	53	1.6	2491	76.7	583	17.9	2	0.1
10-14	107	4.7	2	0.1	493	21.9	1,639	72.7	14	0.6
15-19	103	7	2	0.1	156	10.5	1,064	72	152	10.3
20-24	141	10.4	0	0	192	14.2	730	54	290	21.4
25-29	157	12.2	0	0	161	12.5	698	54.3	270	21
30-34	211	16.6	0	0	159	12.5	709	55.7	194	15.2
35-39	201	19.4	0	0	118	11.4	590	57.1	125	12.1
40-44	183	18.7	0	0	93	9.5	565	57.8	133	13.6
45-49	161	20.4	0	0	69	8.7	429	54.5	129	16.4
50-54	146	24.9	0	0.1	44	7.5	274	46.7	122	20.8
55-59	181	34.4	0	0	46	8.8	221	42.1	77	14.7
60-64	141	44.6	0	0	28	8.8	107	33.6	41	13
65-69	133	41.2	0	0	29	9	136	42.2	25	7.7
70-74	111	53.5	0	0	17	8.1	67	32.4	12	6
75-79	61	66.4	0	0	7	7.4	20	21.3	4	4.8
80-84	100	76.9	0	0	10	7.5	20	15.3	0	0.2
85+	6	100	0	0	0	0	0	0	0	0
Total	2,583	13.4	1,396	7.3	5,816	30.2	7,859	40.8	1,592	8.3

School attendance, regardless of the level, of the population aged 5 to 24 is presented by gender and residence in Table ED.10. Over 90 percent of both male and female household members aged 5-14 and residing in urban areas are attending school. Their counterparts in rural areas recorded relatively lower proportions. It is important to note that Table ED.10 include children attending pre-school. It appears clearly that regardless of gender and residence, school attendance increases gradually from age 5 to 11 years and then at age 12 years, which corresponds to the secondary entry school age, it decreases gradually. There is also a sharp drop at age 15, especially in urban areas.

Background Characteristics	Urban				Rural			
	Male		Female		Male		Female	
	Percentage attending	Number of household members						
Age at beginning of school year								
5	94.8	298	91.8	275	72.2	407	77.3	356
6	93.5	321	92.6	296	85.6	398	85.5	381
7	95.5	297	97.5	272	86.8	392	88.8	409
8	97.7	230	95.9	287	91.5	370	90.3	363
9	95.2	285	98.9	278	91.3	374	90.7	350
10	97.4	281	98.3	288	91.2	386	89.6	333
11	99.3	281	97.6	351	91.8	396	94.8	329
12	99.6	325	93.8	286	88.8	382	93.3	364
13	98.3	267	94.7	311	90.3	363	87.7	300
14	95.3	243	93.4	312	86.9	320	89.6	356
15	80.3	222	80.2	197	80.9	289	78.6	219
16	74.8	199	74.4	202	78.5	278	74.2	211
17	73.2	185	67.5	204	64.8	218	54.3	190
18	68.9	227	48.9	184	59.1	258	46.4	145
19	53.9	158	31.3	155	46.1	201	24.0	140
20	43.9	175	21.1	185	43.2	185	17.4	138
21	34.8	173	20.4	191	22.0	130	12.0	125
22	21.8	181	16.4	183	16.3	120	5.0	146
23	19.8	142	8.5	182	18.2	104	2.7	136
24	16.6	186	6.6	206	10.6	91	6.3	147

Table ED.11 presents information on primary school gross attendance ratios (GAR). The gross attendance ratio indicates school attendance among the population aged 5-24 years, and is expressed as a percentage of the school-age population for that level of schooling. Generally, the GAR is nearly always higher than the Net Attendance Rate (NAR) for the same level, because the GAR includes participation by the population who are older or younger than the official age range for that level. The GAR can exceed 100 if there is sizeable over-age or under-age participation at that level of schooling.

Overall, the male GAR (152%) exceeds the female GAR (146%) in primary school. The GAR is also higher in urban areas (158% against 141% in rural areas) and, at the regional level, the highest GAR is recorded in the Greater Accra region (153%) while the lowest is in Northern (114%). Also, the GAR increases with the mother's educational level.

Background Characteristics	Primary school gross attendance ratio (GAR), girls	Weighted number of girls	Primary school gross attendance ratio (GAR), boys	Weighted number of boys	Primary school gross attendance ratio (GAR), Total	Weighted number total
Region						
Western	149.0	365	155.0	384	152.1	749
Central	148.9	396	159.3	400	154.1	796
Greater Accra	152.7	538	148.9	526	150.8	1064
Volta	141.8	365	165.4	352	153.4	717
Eastern	149.3	460	170.3	395	159.0	854
Asante	151.6	682	149.5	742	150.5	1424
Brong Ahafo	151.1	394	154.2	416	152.7	810
Northern	114.2	407	125.6	433	120.1	841
Upper East	147.6	196	156.8	223	152.5	419
Upper West	137.9	134	141.3	141	139.6	275
Area						
Urban	157.0	1773	159.2	1695	158.1	3468
Rural	136.1	2164	147.4	2317	141.9	4481
Mother's education						
None	122.5	1745	130.7	1821	126.6	3566
Primary	139.2	746	129.6	796	134.3	1541
Middle/JSS	139.8	1257	136.7	1269	138.2	2525
Secondary +	147.7	189	152.7	127	149.7	316
Wealth index quintile						
Poorest	119.2	905	135.7	995	127.8	1900
Second	135.9	884	156.8	873	146.3	1757
Middle	160.8	769	165.2	801	163.1	1570
Fourth	156.7	756	159.2	726	157.9	1482
Richest	164.7	623	148.5	616	156.7	1240
Total	145.5	3937	152.4	4012	149.0	7949

The secondary school Gross Attendance Ratios are presented in Table ED.12. At the national level, the GAR is 59%, higher for boys (62%) than for girls (55%). As shown in this table, the GAR is higher (72%) in urban areas compared to 47 percent in the rural areas, and increases with mother's educational level. At the regional level, Greater Accra presents the highest ratio (72%) and the Northern region, the lowest (40%). Also, the Gross Attendance Ratios increase with mother's educational level as well as the wealth index quintiles.

Table ED.12: Gross attendance ratios: Secondary school						
Ratio and weighted number of the number of children attending secondary school, to the number of children of secondary school age, ratio expressed as a percentage (Gross attendance ratio), Ghana, 2011						
Background Characteristics	Secondary school gross attendance ratio (GAR), girls	Weighted number of girls	Secondary school gross attendance ratio (GAR), boys	Weighted number of boys	Secondary school gross attendance ratio (GAR), Total	Weighted number total
Region						
Western	53.0	302	73.6	301	63.3	603
Central	58.5	329	60.9	363	59.7	692
Greater Accra	65.6	443	78.3	412	71.7	855
Volta	52.4	260	69.2	295	61.4	554
Eastern	49.5	357	57.5	369	53.6	726
Ashanti	59.7	625	67.7	567	63.5	1192
Brong Ahafo	55.5	344	62.9	340	59.2	684
Northern	40.0	259	40.7	338	40.4	597
Upper East	52.7	138	40.7	189	45.8	327
Upper West	43.7	95	43.2	118	43.4	213
Residence						
Urban	67.7	1511	77.0	1441	72.2	2952
Rural	43.6	1640	50.5	1850	47.3	3490
Mother's education						
None	36.4	1131	29.0	1377	32.3	2508
Primary	39.8	542	38.7	488	39.3	1030
Middle/JSS	52.0	877	51.6	839	51.8	1716
Secondary +	82.5	119	81.5	99	82.1	219
Wealth index quintile						
Poorest	31.5	584	36.2	779	34.2	1364
Second	45.8	666	53.6	742	49.9	1408
Middle	58.1	720	65.6	709	61.8	1429
Fourth	62.9	621	73.3	579	67.9	1201
Richest	78.6	560	98.7	481	87.9	1041
Total	55.1	3152	62.1	3291	58.7	6443
[1] MICS indicator 7.9; MDG indicator 3.1"						
[2] MICS indicator 7.10; MDG indicator 3.1"						

Repetition rates are one of key indicators of the quality of the educational system. Across all background characteristics, the Table ED.13 shows that repetition is more likely to occur in grades 1 and 6 whereas it is very rare in other grades. Overall, the repetitions for these two grades are respectively 11 and 22 percent.

At the regional level, grade 6 is of great concern since the repetition rates are above 19 percent, except in four regions (Greater Accra, Volta, Brong Ahafo and Northern) and for the second quintile. The situation is even worse for the Eastern and Ashanti regions where the repetition rates in grade 6 are close to 40 percent. In terms of repetition at grade 6, Brong Ahafo region recorded the lowest repetition rate (less than 3%).

Table ED.13: Grade repetition rate						
Grade repetition rates at primary school, by grade, according to background characteristics, Ghana, 2011						
Background Characteristics	1	2	3	4	5	6
Sex						
Male	11.9	1.1	0.5	1	0.9	22.4
Female	10.6	1.6	0.7	1.4	0.3	22.4
Region						
Western	12	0	0.5	0	0	27.1
Central	5.9	1	1.1	1.9	1.5	24.7
Greater Accra	13.6	0	0	0	0	11.5
Volta	5.2	0.5	1.5	0.9	0	10.5
Eastern	13.9	1.7	0	0	2.6	39.9
Ashanti	13	3.1	0.7	4.2	0	37.8
Brong Ahafo	8.1	2.8	0	0.8	1	2.9
Northern	7.2	0.8	1.8	0.4	0.7	11.4
Upper East	20.9	1	0.5	0	0	26.2
Upper West	15.1	1.6	0.3	0.4	0.5	22.2
Residence						
Urban	10.2	1.6	0.8	0.4	0.9	19.9
Rural	12	1.2	0.6	1.9	0.3	25
Mother's education						
None	10.7	0.8	0.5	0.4	0.5	21.3
Primary	9.7	2	0.2	2.3	0.8	21.5
Middle/JSS	12.1	2	1.3	1.8	1	23.4
Secondary +	12.1	0	0	0	0	19.7
Mother not in household	15.5	0	0	0	0	25.1
Wealth index quintile						
Poorest	13.3	1.2	0.3	0.6	0.2	19.2
Second	11.2	1.8	0.4	2.6	1	16.5
Middle	10.6	0.3	1.2	1.3	0	27.8
Fourth	10.2	1.2	0.8	1	0	27.2
Richest	10.2	2.6	0.4	0	2	19.6
Total	11.2	1.4	0.6	1.2	0.6	22.4



Birth Registration

The birth of a baby is celebrated with much fanfare among all communities of the world; it is acclaimed to be the bundle of joy to its parents; above all, it is regarded as a miracle of nature. Yet, this much-celebrated event seems to go unrecorded in a number of communities. This unsettling fact has prompted governments and child right organizations to step up efforts towards ensuring that each child has the right of being registered.

Articles 7 and 8 of the United Nations Convention on the Rights of the Child (the CRC) state that every child has the right to a name and a nationality and the right to protection from being deprived of his or her identity. Birth registration is a fundamental means of securing these rights for children. 'A World Fit for Children,' the outcome document approved at the Special Session of the General Assembly on Children on 10 May 2002, sets 21 specific goals for the next decade which include developing systems to ensure the registration of every child at birth, and fulfilling his or her right to acquire a name and a nationality, in accordance with national laws and relevant international instruments.

In Ghana, the Registration of Births and Deaths Act (301) of 1965 made birth registration compulsory and mandated the Births and Deaths Registry to undertake all registrations. Despite significant progress made by Government with support from stakeholders, including UNICEF, there are still many children, about 35 percent since 2009¹ whose births are not registered every year. Children from poor families and those in rural areas are least likely to have a birth certificate.

The indicator of a country's progress is the percentage of children under 5 years of age whose birth is registered (Table CP.1). Overall, 63 percent of children under-five years in Ghana have been registered. In terms of sex, there are no significant variations in birth registration. There is, however, significant discrepancy between urban and rural registration at 72 and 55 percent respectively. Across the regions, children in the Greater Accra region are more likely to be registered (77%), followed by children in the Upper West Region (72%), while those in the Western region are less likely to be registered (49%).

Children aged 0-11 months are least likely to have their births registered – while birth registration is fully subsidized for children below 12 months, less than half (45%) of children in this age-group were registered at the time of the survey. This increases to over 65 percent for all other age-groups. This means that some parents are still not taking advantage of free registration, and are registering their children after the age of 12 months.

The percentages of birth registration and availability of birth certificate increase with mother's educational level and wealth index quintiles. For example, 53 percent of children whose mothers have no education have their births registered. This increases to 57 percent among children whose mothers have primary education, to 69 percent for children whose mothers have middle/JSS education, and 83 percent among children whose mothers have secondary or higher education. As for wealth quintiles, the percentage of birth registration increases from 47 percent among the poorest households to 82 percent among the richest households (Figure CP.1).

Also, in total, 58 percent of the children under five have birth certificates, where 32 percent of the certificates were seen, and 26 percent were not seen. For 37 percent of children whose births are not registered, 63 percent of the mothers know how to register the birth.

¹ Births and Deaths Annual Reports, 2009, 2010 & 2011

The Government has committed itself to ensure that at least 75 percent of the children under the age of 1 year in the country and, those under the age of 5 years in rural communities, as well as 70 percent of children under the age of 5 from the poorest wealth quintile are registered by 2016.

Figure CP.1: Percentage of children under age 5 who are registered and percentage with birth certificate, Ghana, 2011

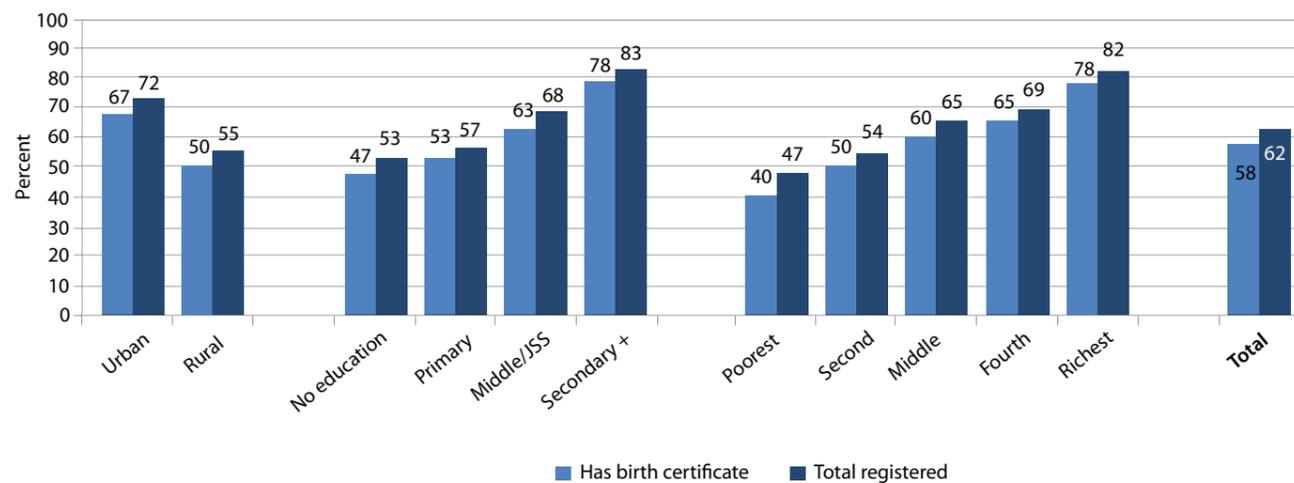


Table CP.1: Birth registration

Percentage of children under age 5 by whether birth is registered and percentage of children not registered whose mothers/caretakers know how to register birth, Ghana, 2011

Background Characteristics	Children under age 5 whose birth is registered with civil authorities				Total registered [1]	Children under age 5 whose birth is not registered	
	Seen	Not seen	No birth certificate	Number of children		Percent of children whose mother/caretaker knows how to register birth	Number of children without birth registration
Sex							
Male	32.3	25.4	5.1	62.8	3757	63.6	1398
Female	31.0	26.4	4.8	62.2	3793	62.8	1434
Region							
Western	20.2	24.8	3.9	48.9	758	56.4	387
Central	30.1	33.4	3.9	67.4	740	69.9	242
Greater Accra	41.4	32.0	3.3	76.7	1142	80.6	266
Volta	25.9	22.0	5.7	53.6	601	60.2	279
Eastern	26.7	23.9	6.2	56.8	827	68.3	357
Ashanti	38.5	26.3	2.5	67.3	1411	70.3	462
Brong Ahafo	21.3	23.6	7.8	52.6	671	63.1	318
Northern	31.4	20.6	9.9	61.9	852	44.5	325
Upper East	37.3	17.6	3.5	58.3	325	57.3	135
Upper West	39.5	28.5	4.5	72.6	223	47.9	61
Residence							
Urban	37.9	29.6	4.5	72.0	3283	76.3	920
Rural	26.8	23.0	5.3	55.2	4267	56.9	1912
Age							
0-11	22.4	15.6	7.3	45.3	1543	69.8	843
12-23	39.4	24.1	4.1	67.5	1453	58.9	472
24-35	33.6	30.2	4.4	68.2	1553	66.9	493
36-47	32.1	30.2	3.9	66.3	1576	59.0	532
48-59	31.0	29.5	5.0	65.5	1426	56.9	492
Mother's education							
None	25.8	21.6	5.2	52.6	2455	50.1	1163
Primary	27.3	25.8	3.8	56.9	1628	63.7	701
Middle/JSS	32.1	30.5	5.8	68.5	2578	76.2	813
Secondary +	54.0	24.4	4.1	82.5	889	91.3	155
Wealth index quintile							
Poorest	21.6	18.7	6.8	47.1	1730	47.5	916
Second	27.6	22.7	3.8	54.0	1551	60.8	713
Middle	29.0	31.3	5.2	65.4	1559	68.8	539
Fourth	36.8	27.8	4.7	69.3	1397	78.8	429
Richest	47.3	30.8	3.9	82.0	1313	90.1	236
Total	31.6	25.9	5.0	62.5	7550	63.2	2832

[1] MICS indicator 8.1

Child Discipline

Many children are regularly exposed to physical abuse at school, home and other settings. Some teachers and parents believe that corporal punishment is unavoidable when they need to manage their classrooms or discipline children. They also claim that it can help encourage good behaviour on the part of children, despite the fact that exposing children to physical and psychological punishment is harmful to their development. The use of corporal punishment is strongly rooted in the society and is passed on through generations. Therefore, there is often opposition or reluctance when people try to end the practice and help implement alternative disciplinary strategies.

As stated in 'A World Fit for Children,' "children must be protected against any acts of violence." Also, the United Nations Millennium Declaration, which was adopted by the General Assembly in September 2000, calls for the protection of children against abuse, exploitation and violence. The CRC requires everyone, in article 19, to protect children from "all forms of physical and mental violence" while in the care of parents and others. In addition to these legal documents, the United Nations Secretary-General's Study on Violence Against Children (2006) asks states to prohibit all forms of violent practice, including violence rooted in cultural, economic and social practices.

In Ghana, the Children's Act, 1998 (ACT 560) prohibits correction that is "unreasonable in kind or in degree according to the age, physical and mental condition of the child," while leaving open the possibility of justifiable punishment². The Ghana Education Code of Discipline for second cycle schools provides for corporal punishment in very rare cases where the head of the school must authorise or administer it. Recently, the National Child-Friendly School Standards was drafted by the Ghana Education Service, which states that schools should be free from any form of abuse, including corporal punishment. However, punishment such as caning and whipping is still widely practiced at home and school. Although the Government is currently coping with the issue, there are no mechanisms in place that can effectively monitor the practice.

In the Ghana MICS4 2011 survey, parents/caretakers of children aged 2-14 years were asked a series of questions on the ways parents tend to discipline their children when they misbehave. Out of these questions, two indicators were used to describe aspects of child discipline: 1) the number of children aged 2-14 years that experience psychological aggression as punishment or minor physical punishment or severe physical punishment; and 2) the number of parents/caretakers of children aged 2-14 years of age that believe that in order to raise their children properly, they need to physically punish them (Table CP.2). These interviews were conducted with adults and one randomly selected child of age 2-14 years living in households.

The Situation of Child Discipline

In Ghana, 94 percent of children aged 2-14 years were subjected to at least one form of psychological or physical punishment by their parents/caretakers or other household members during the last month before the survey. Fourteen percent were subjected to severe physical punishment, while 73 percent were subjected to any physical punishment. Only 4 percent of the children aged 2-14 years experienced only non-violent discipline. On the other hand, nearly 9 out of 10 children (89%) experienced some form of psychological aggression.

For male and female children, there is no significant difference in the method of discipline applied (both minor and severe). It is also interesting to note that differentials with respect to many of the background variables were relatively small for both younger and older children within the age range 2-14 years.

Respondents were also assessed on their attitudes towards physical punishment as a necessary aide for proper up-

² 13(2) No correction of a child is justifiable which is unreasonable in kind or in degree according to the age, physical and mental condition of the child and no correction is justifiable if the child by reason of tender age or otherwise is incapable of understanding the purpose of the correction.

bringing of children. The survey results also show that about 50 percent of respondents believe that a child needs to be physically punished to bring them up properly, and slight variations are observed by background characteristics. This figure also indicates that some respondents continue to use corporal punishment notwithstanding the fact that they think it is not necessary.

Background Characteristics	Percentage of children age 2-14 years who experienced:					Number of children age 2-14 years	Respondent believes that the child needs to be physically punished	Respondents to the child discipline module
	Only non-violent discipline	Psychological aggression	Physical punishment		Any violent discipline method [1]			
			Any	Severe				
Sex								
Male	3.9	88.6	74.2	15.5	93.5	8450	48.9	3603
Female	3.7	88.7	71.2	13.3	93.6	8463	50.5	3697
Region								
Western	3.0	83.6	72.6	11.1	91.9	1552	35.4	685
Central	3.9	89.7	69.5	16.0	93.4	1693	55.4	743
Greater Accra	6.2	87.0	69.1	11.9	90.4	2306	40.8	1193
Volta	3.8	88.5	73.6	19.4	94.9	1503	58.4	636
Eastern	1.9	94.3	79.1	12.1	97.0	1853	68.2	903
Ashanti	3.2	87.0	74.2	13.3	93.7	3111	54.6	1353
Brong Ahafo	2.2	89.1	70.8	11.5	94.3	1646	31.6	676
Northern	3.6	91.7	75.8	20.5	95.0	1830	58.8	587
Upper East	5.3	91.8	69.5	19.7	93.9	859	37.5	326
Upper West	8.5	82.1	67.6	9.8	87.7	561	41.5	198
Residence								
Urban	4.0	89.3	73.5	12.7	93.7	7435	47.9	3531
Rural	3.7	88.2	72.1	15.7	93.5	9478	51.4	3770
Age								
2-4 years	2.6	87.3	78.2	11.2	94.0	3775	48.6	1798
5-9 years	2.7	91.0	79.4	16.4	95.4	6620	52.6	2673
10-14 years	5.6	87.2	62.9	14.1	91.4	6518	47.7	2830
Education of household head								
None	3.4	90.8	72.4	17.0	94.3	5474	53.4	2080
Primary	2.8	90.7	73.3	16.9	95.3	2459	50.0	1030
Middle/JSS	3.9	86.7	74.3	13.3	93.1	6517	49.7	2923
Secondary +	5.6	87.2	68.8	9.1	91.3	2459	43.5	1264
Missing/DK	*	*	*	*	*	3	*	3
Respondent's education								
None	3.8	89.7	71.1	15.1	94.0	6734	51.1	2686
Primary	2.4	91.7	76.3	17.3	95.6	3064	51.0	1299
Secondary +	4.4	86.4	72.8	12.5	92.2	7112	48.1	3312
Missing/DK	*	*	*	*	*	3	*	3
Wealth index quintiles								
Poorest	4.0	88.9	71.1	17.2	93.4	3983	52.1	1378
Second	2.6	88.1	72.9	16.4	94.2	3619	50.3	1462
Middle	4.0	90.7	71.3	14.1	94.3	3482	56.3	1530
Total	3.1	88.9	77.5	13.8	93.5	3208	50.2	1518
Richest	5.7	86.3	71.1	8.5	92.0	2620	39.1	1412
Total	3.8	88.7	72.7	14.4	93.6	16913	49.7	7301

[1] MICS indicator 8.5
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Type of disciplinary methods

Table CP.2A provides details of disciplining methods used by household members on children aged 2-14 years during the last one month. The results reveal that among family members who used non-violent disciplinary methods to address a behavioural problem, 85 percent explained to the child why the behaviour was wrong and not to be repeated, and 27 percent took away privileges, forbade something the child liked or did not allow the child to leave the house. Also, 86 percent of household members used psychological aggression as a method of discipline by shouting, yelling or screaming at the child. For household members that resorted to physical punishment, 52 percent hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object. Family members, who admitted administering severe physical punishment as discipline, mostly hit or slapped the child on the face, head or ears (10%).

Age	2-4 years	5-9 years	10-14 years	2-14 years
Non-violent discipline:				
Took away privileges, forbade something the child liked or did not allow child to leave the house	25.1	28.1	26.5	26.8
Explained why the child's behaviour was wrong	80.0	86.2	87.3	85.2
Gave the child something else to do	14.9	20.2	21.6	19.6
Psychological aggression:				
Shouted, yelled or screamed at the child	86.1	86.2	84.5	85.5
Ignored/Refused to communicate to	10.6	10.6	11.9	11.1
Called the child dumb, lazy or another name	37.9	44.5	46.4	43.8
Physical punishment:				
Shook the child	23.7	22.3	17.5	20.7
Spanked, hit or slapped the child on the bottom with bare hand	56.6	50.2	40.5	47.9
Hit the child on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object	51.1	55.1	48.5	51.7
Hit or slapped the child on the hand, arm, or leg	39.0	34.7	28.2	33.2
Severe physical punishment:				
Hit or slapped the child on the face, head or ears	9.9	10.2	9.1	9.7
Beat the child up, hitting him over and over as hard as one could	6.0	7.6	6.1	6.7

Early Marriage and Polygyny

In many parts of the world, parents encourage the marriage of their daughters while they are still children with the hope that the marriage will benefit them both financially and socially. According to UNICEF's worldwide estimates, over 64 million women aged 20-24 were married/in union before the age of 18. Factors that influence child marriage rates include the existence of an adequate legislative framework with an accompanying enforcement mechanism to address cases of child marriage, or the existence of customary or religious laws that condone the practice. Also, the state of the country's civil registration system, which provides proof of age for children may have an impact upon whether the Government can sufficiently monitor the practice.

In actual fact, child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation, with no education and poor vocational training reinforcing the gendered nature of poverty. Although child marriage is not directly addressed by the Committee on the Rights of the Child, the right to 'free and full' consent to a marriage is recognized in the article 16 of the Universal Declaration of Human Rights. Also, the Convention on the Elimination of All Forms of Discrimination against Women states that "the betrothal and the marriage of a child shall have no legal effect" and calls upon states to set legal minimum age for marriage and to make marriage registration compulsory (article 16). Other relevant rights include the right to

express their views freely, the right to protection from all forms of abuse, and the right to be protected from harmful traditional practices.

Though the Children's Act in Ghana expressly prohibits child marriage, it continues in certain parts of the country. Research suggests that many factors interact to place a child at risk of marriage, including poverty, protection of girls, family honour and the provision of stability during unstable social periods. This practice deprives girls of education and thus the opportunity to be less-dependant on men in later life, restricts their economic autonomy and often adversely affects their reproductive health.

The percentage of women married at various ages and in polygynous union is provided in Table CP.3. Polygynous unions are relationships in which a man has more than one wife. In Ghana, about 70% of marriages contracted are under customary law and marriages under customary and Mohammedan law are potentially polygamous, which continues to be a source of discrimination against women. The practice may also create concerns about transmission of HIV/AIDS and other health issues, while economic instability and vulnerability to women are especially aggravated by polygyny.

Overall, 6 percent of women were married before age 15. Such marriages were higher in rural areas (8%) than in urban areas (4%). Also, those women with high education and from wealthiest households were less likely to get married before age 15 years. The regions where a woman is most likely to be married before age 15 are the Western and Volta regions with about 8 percent. The two are closely followed by the Eastern and Brong Ahafo regions, with about 7 percent, each. The lowest proportion (3%) is recorded in Greater Accra.

The table also demonstrates variations according to age. The highest proportion (9%) was found in 35-39 age-group, followed by the age-group 40-44 years with 8 percent. Young women aged 15-19 years are less likely (3%) to get married before age 15. Before age 18, 27 percent of women are married. This phenomenon is highest in the Upper East region (39%), followed by the Western (37%) and Upper West (36%) regions. Similarly, marriage before age 18 is nearly twice as high in rural communities (36%) compared to urban ones (19%).

Table CP.3 shows that the percentage of women getting married before age 18 decreases sharply with educational level and wealth status. For example, women with no education are more likely (42%) to get married before age 18 compared to those with secondary or higher education (5%).

Across the age-groups, the younger women (aged 20-24 years) are less likely (21%) to be married before age 18 in comparison with the women aged 25-49 years.

Among women aged 15-19 years, 7 percent are currently married. Most of these women are in the Volta region (14%), followed by the Western (12%) and Northern regions (11%) while Greater Accra has the lowest proportion (3%). The area of residence also matters – women in rural areas are more likely (11%) to be married/in union than those in urban areas (3%).

With respect to polygyny, 18 percent of women aged 15-49 years are in polygynous marriages or unions. The three Northern regions have the highest rate of polygynous marriage: Northern (45%), Upper East (39%), and Upper West (36%). The lowest proportion (9%) of polygynous marriage is found in the Greater Accra region. Differentials are also observed by area of residence; 24 percent in rural areas compared to 13 percent in urban areas.

Furthermore, the results show that the percentage of polygynous marriage increases with age and decreases with educational level and wealth index quintiles.

Table CP.3: Early marriage and polygyny for women
 Percentage of women age 15-49 years who first married or entered a marital union before their 15th birthday, percentages of women age 20-49 years who first married or entered a marital union before their 15th and 18th birthdays, percentage of women age 15-19 years currently married or in union, and the percentage of women currently married or in union who are in a polygynous marriage or union, Ghana, 2011

Background Characteristics	Percentage married before age 15 [1]	Number of women age 15-49 years	Percentage married before age 15	Percentage married before age 18 [2]	Number of women age 20-49 years	Percentage of women 15-19 years currently married/in union [3]	Number of women age 15-19 years	Percentage of women age 15-49 years in polygynous marriage/ union [4]	Number of women age 15-49 years currently married/in union
Region									
Western	8.3	1022	9.0	36.7	834	12.0	188	11.7	672
Central	5.8	1044	6.8	31.2	830	3.8	214	14.9	598
Greater Accra	2.7	2074	3.1	12.2	1809	2.9	265	8.5	1089
Volta	7.8	821	8.8	29.3	665	13.5	156	27.6	541
Eastern	6.9	1237	7.8	27.2	1029	6.8	209	11.7	752
Ashanti	6.4	1983	6.8	30.5	1623	6.5	359	12.9	1310
Brong Ahafo	7.2	1005	8.9	29.1	762	6.0	243	18.2	585
Northern	4.4	754	4.8	27.4	637	10.7	117	44.9	576
Upper East	5.4	404	6.7	39.2	317	7.3	87	39.3	264
Upper West	4.4	282	5.2	36.3	222	5.4	60	35.5	188
Residence									
Urban	4.3	5770	4.9	19.4	4794	3.4	976	12.5	3220
Rural	7.6	4857	8.4	36.2	3934	10.9	923	23.9	3353
Age									
15-19	2.6	1899	.	.	0	7.0	1899	22.3	134
20-24	5.0	1674	5.0	20.7	1674	.	0	11.2	758
25-29	5.7	1768	5.7	24.7	1768	.	0	12.5	1271
30-34	7.2	1638	7.2	27.6	1638	.	0	17.0	1422
35-39	8.6	1431	8.6	31.6	1431	.	0	19.9	1209
40-44	7.6	1195	7.6	30.0	1195	.	0	22.2	991
45-49	5.0	1023	5.0	30.1	1023	.	0	28.7	788
Education									
None	11.5	2224	11.4	41.6	2142	33.0	83	32.9	1867
Primary	9.3	2026	10.2	38.7	1653	11.3	373	18.1	1367
Middle/JSS	3.8	4328	4.6	23.2	3205	5.7	1123	11.7	2474
Secondary +	.5	2049	.5	4.7	1728	.1	321	5.6	866
Wealth index quintile									
Poorest	8.3	1659	9.0	41.2	1336	14.3	322	32.4	1233
Second	8.7	1877	10.5	37.3	1455	7.0	422	23.3	1160
Middle	6.6	2101	7.4	31.3	1679	10.0	421	19.4	1250
Fourth	5.2	2345	5.8	24.1	1957	2.8	387	13.5	1410
Richest	2.1	2646	2.4	11.5	2300	1.4	347	6.6	1521
Total	5.8	10627	6.5	27.0	8728	7.0	1899	18.3	6574

[1] MICS indicator 8.6
 [2] MICS indicator 8.7
 [3] MICS indicator 8.8
 [4] MICS indicator 8.9

Table CP.3M presents the same indicators on early marriage and polygyny but for men aged 15-59. Unsurprisingly, early marriage is much less frequent for men than for women: less than 1 percent of men were married before age 15 and 5 percent before age 18. In total, 10 percent of men are in a polygynous union, twice more in rural areas than in urban areas (13% vs. 6%). Polygynous unions are more common in the Northern (27%), Upper East (25%) and Upper West (20%) regions, compared to other regions.

Table CP.3M: Early marriage and polygyny for men
 Percentage of men age 15-59 years who first married or entered a marital union before their 15th birthday, percentages of men age 20-49 years who first married or entered a marital union before their 15th and 18th birthdays, percentage of men age 15-19 years currently married or in union, and the percentage of men currently married or in union who are in a polygynous marriage or union, Ghana, 2011

Background Characteristics	Percentage married before age 15	Number of men age 15-49 years	Percentage married before age 15	Percentage married before age 18	Number of men age 20-49 years	Percentage of men 15-19 years currently married/in union	Number of men age 15-19 years	Percentage of men age 15-49 years in polygynous marriage/ union	Number of men age 15-49 years currently married/in union
Region									
Western	.8	352	1.0	6.0	275	(.0)	77	5.6	214
Central	.2	296	.2	2.7	245	.0	51	7.3	162
Greater Accra	.0	676	.0	.7	546	(.0)	129	4.6	342
Volta	1.5	252	2.0	6.0	199	(2.1)	53	14.2	143
Eastern	1.1	358	1.4	10.9	287	(4.0)	71	10.6	229
Ashanti	1.4	638	1.7	6.5	536	(.0)	102	5.7	379
Brong Ahafo	.0	296	.0	2.2	238	(.0)	58	5.0	149
Northern	.3	243	.4	2.6	188	.0	54	27.3	129
Upper East	1.2	120	1.4	5.7	85	2.8	35	24.8	64
Upper West	.0	91	.0	2.3	65	.6	26	20.2	46
Residence									
Urban	.4	1746	.5	2.9	1430	.0	316	5.7	917
Rural	1.0	1575	1.2	6.5	1234	1.5	342	12.9	939
Age									
15-19	.0	657	.	.	0	.8	657	*	5
20-24	.9	379	.9	3.5	379	.	0	(8.5)	44
25-29	1.7	456	1.7	5.0	456	.	0	5.2	241
30-34	.2	442	.2	3.8	442	.	0	7.1	347
35-39	1.5	363	1.5	8.4	363	.	0	6.2	314
40-44	.3	288	.3	5.3	288	.	0	11.4	258
45-49	1.2	313	1.2	5.1	313	.	0	12.1	278
50-54	.0	221	.0	2.5	221	.	0	11.9	186
55-59	.0	204	.0	.6	204	.	0	15.2	184
Education									
None	.2	417	.2	3.5	393	.7	23	21.3	333
Primary	.2	416	.3	6.0	299	.4	117	8.2	204
Middle/JSS	1.3	1483	1.7	7.2	1070	1.1	413	7.8	803
Secondary +	.2	1006	.2	1.3	902	.0	105	4.6	517
Wealth index quintile									
Poorest	.6	518	.8	5.2	392	.9	125	20.0	314
Second	.4	557	.6	5.1	414	.8	143	11.3	295
Middle	.4	621	.5	4.6	467	1.8	153	6.8	304
Fourth	1.6	779	1.9	7.4	664	.0	115	9.9	445
Richest	.2	847	.3	1.2	726	.0	121	2.5	498
Total	.7	3321	.8	4.6	2664	.8	657	9.4	1856

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Table CP.4 presents the proportion of women who were first married or entered into a marital union before age 15 and 18 by residence and age-group. Examining the percentages married before age 15 and 18 by different age groups allow us to see the trends in early marriage over time.

From the data, it can be deduced that the percentage of women in age-group 45-49 years who married before age

15 got married around the year 1980. Similarly, those in age-group 40-44 years got married in 1985, those in age-group 35-39 years got married in 1990, and so those in age-group 15-19 years got married in 2010. Table CP.4 shows a higher proportion of rural women married before age 15 (8%) compared to their urban counterparts (4%). As to marrying before age 18, it seems that the younger generation are less likely to get married before age 18.

Background Characteristics	Urban				Rural				All			
	Percentage of women married before age 15	Number of women age 15-49	Percentage of women married before age 18	Number of women age 20-49	Percentage of women married before age 15	Number of women age 15-49	Percentage of women married before age 18	Number of women age 20-49	Percentage of women married before age 15	Number of women age 15-49	Percentage of women married before age 18	Number of women age 20-49
Age												
15-19	0.9	976	.	0	4.1	923	.	0	2.4	1899	.	0
20-24	3.1	963	12.7	963	9	710	32.1	710	5.6	1674	20.9	1674
25-29	2.5	1025	16.5	1025	9.6	743	35.8	743	5.5	1768	24.6	1768
30-34	7.3	885	21.7	885	8.5	753	34.9	753	7.9	1638	27.8	1638
35-39	6.5	733	23.4	733	10.3	697	39.4	697	8.4	1431	31.2	1431
40-44	7.6	661	24.6	661	7.2	534	37.6	534	7.4	1195	30.4	1195
45-49	3.2	527	24	527	5.9	496	36.7	496	4.5	1023	30.1	1023
Total	4.2	5770	19.7	4794	7.8	4857	36	3934	5.8	10627	27	8728

Figure CP.2 shows that there has been a gradual drop in the percentage of women marrying before age 15 for both rural and urban communities. However, a gap between the two communities is noticeable across all age-groups.

Figure CP.2: Percentage of women who were first married/union before age 15 by age group and residence, Ghana, 2011

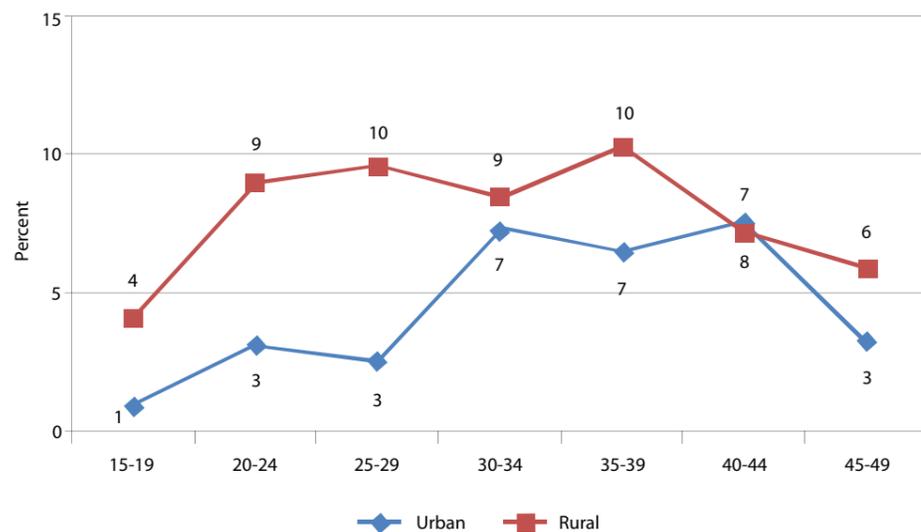
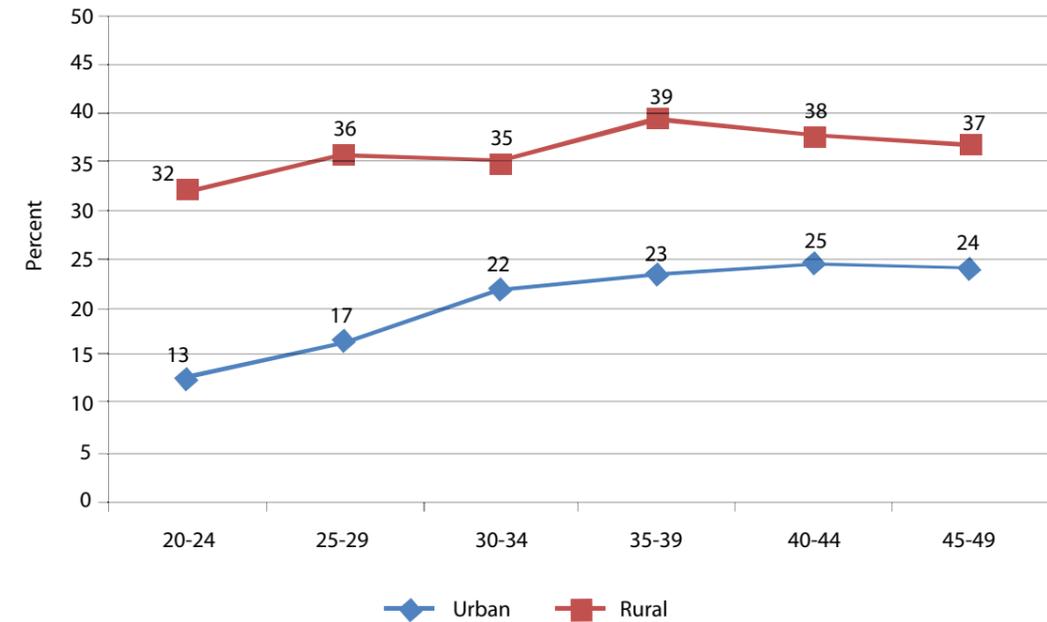


Figure CP.3 shows the percentage of women marrying before age 18 by age-group and residence. This figure shows that the proportion of women who were married before age 18 is higher in rural communities than in urban ones in all the age-groups. The trends show a small decline in the percentages married over the time, but the gap is still noticeable between the urban and rural areas across all age-groups.

Figure CP.3: Percentage of women who were first married/union before age 18 by age group and residence, Ghana, 2011

Table CP.4M, on the other hand, presents the percentage of men aged 15-59 years who were first married or entered into a marital union before age 15 and 18 by residence and age-groups. In case of men, situation is almost the same for all age-groups, showing no difference overtime, while the figures for women exhibit some changes according to generation.



Background Characteristics	Urban				Rural				All			
	Percentage of men married before age 15	Number of men age 15-59	Percentage of men married before age 18	Number of men age 20-59	Percentage of men married before age 15	Number of men age 15-59	Percentage of men married before age 18	Number of men age 20-59	Percentage of men married before age 15	Number of men age 15-59	Percentage of men married before age 18	Number of men age 20-59
Age of man												
15-19	.0	316	.	0	.1	342	.	0	.0	657	.	0
20-24	.0	221	.0	221	2.2	158	8.4	158	.9	379	3.5	379
25-29	.9	226	1.7	226	2.5	230	8.3	230	1.7	456	5.0	456
30-34	.0	269	3.4	269	.5	172	4.3	172	.2	442	3.8	442
35-39	1.3	198	5.9	198	1.7	164	11.5	164	1.5	363	8.4	363
40-44	.0	130	2.2	130	.5	157	7.9	157	.3	288	5.3	288
45-49	1.4	161	6.3	161	1.0	152	3.7	152	1.2	313	5.1	313
50-54	.0	124	2.5	124	.0	97	2.6	97	.0	221	2.5	221
55-59	.0	100	.0	100	.0	103	1.2	103	.0	204	.6	204
Total	.4	1746	2.9	1430	1.0	1575	6.5	1234	.7	3321	4.6	2664

Another component is the spousal age difference, with the indicator being the percentage of married/in union women who are 10 or more years younger than their current spouse. The age gap between partners is thought to contribute to abusive power dynamics or domestic violence and to increase the risk of untimely widowhood. Table CP.5 presents the results of the age difference between husbands and wives. The results show that there are some important spousal age differences in Ghana.

About one in five women (19%) aged 20-24 years is currently married to a man who is older by ten years or more, and about 16 percent of women aged 15-19 years are currently married to a man who is older by ten years or more. This type of union is common in poorest households, in rural areas, and it decreases with higher educational levels of the women.

Similar characteristics can be observed for younger women aged 15-19 years in terms of their level of education and in the urban and rural divide.

Table CP.5: Spousal age difference

Percent distribution of women currently married/in union age 15-19 and 20-24 years according to the age difference with their husband or partner, Ghana, 2011

Background Characteristics	Percentage of currently married/in union women age 15-19 years whose husband or partner is:					Number of women age 15-19 years currently married/in union	Percentage of currently married/in union women age 20-24 years whose husband or partner is:					Number of women age 20-24 years currently married/in union		
	Younger	0-4 years older	5-9 years older	10+ years older [1]	Husband/partner's age unknown		Total	Younger	0-4 years older	5-9 years older	10+ years older [2]		Husband/partner's age unknown	Total
Region														
Western	*	*	*	*	*	22	1.7	48.5	29.7	16.3	3.7	100.0	73	
Central	*	*	*	*	*	8	2.0	37.9	42.6	13.4	4.1	100.0	60	
Greater Accra	*	*	*	*	*	8	(2.6)	(42.0)	(35.3)	(18.3)	(1.8)	100.0	94	
Volta	*	*	*	*	*	21	4.8	37.7	24.4	27.0	6.2	100.0	76	
Eastern	*	*	*	*	*	14	(.0)	(41.3)	(40.6)	(16.4)	(1.7)	100.0	88	
Ashanti	*	*	*	*	*	23	.0	35.8	46.4	13.4	4.3	100.0	206	
Brong Ahafo	*	*	*	*	*	15	(.0)	(48.6)	(28.6)	(22.8)	(.0)	100.0	57	
Northern	(.0)	(12.6)	(33.1)	(38.4)	(15.9)	12	.0	28.4	32.5	34.4	4.7	100.0	61	
Upper East	*	*	*	*	*	6	1.0	31.9	40.1	27.0	.0	100.0	24	
Upper West	*	*	*	*	*	3	1.6	36.9	32.6	24.9	4.1	100.0	19	
Residence														
Urban	.0	41.8	35.6	20.7	1.9	33	.9	36.7	38.8	20.0	3.6	100.0	310	
Rural	2.5	39.8	37.4	15.1	5.2	101	1.4	40.7	36.2	18.5	3.2	100.0	448	
Age														
15-19	1.9	40.3	37.0	16.4	4.4	134	.0	.0	.0	.0	.0	.0	0	
20-24	.0	.0	.0	.0	.0	0	1.2	39.1	37.2	19.1	3.4	100.0	758	
Education														
None	(.0)	(22.8)	(34.9)	(32.7)	(9.6)	27	2.0	36.1	28.5	27.9	5.5	100.0	139	
Primary	(.0)	(26.9)	(55.9)	(15.8)	(1.5)	42	1.4	34.6	39.7	19.8	4.5	100.0	174	
Middle/JSS	4.0	56.7	25.4	9.7	4.2	64	1.0	42.6	39.3	14.9	2.2	100.0	339	
Secondary +	*	*	*	*	*	0	.4	38.8	38.1	20.1	2.6	100.0	106	
Wealth index quintile														
Poorest	5.5	27.8	45.0	14.7	6.8	46	1.0	44.2	25.3	25.2	4.1	100.0	148	
Second	.0	24.9	34.4	32.4	8.3	30	3.8	38.3	33.0	22.3	2.5	100.0	125	
Middle	*	*	*	*	*	42	1.4	40.3	39.4	15.3	3.6	100.0	196	
Fourth	*	*	*	*	*	11	.0	38.2	43.6	14.2	4.0	100.0	166	
Richest	*	*	*	*	*	5	.0	32.8	43.7	21.4	2.0	100.0	124	
Total	1.9	40.3	37.0	16.4	4.4	134	1.2	39.1	37.2	19.1	3.4	100.0	758	

[1] MICS indicator 8.10a

[2] MICS indicator 8.10b

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

Female Genital Mutilation/Cutting

Female genital mutilation/cutting (FGM/C) is the partial or total removal of the female external genitalia or other injury to the female genital organs. FGM/C is always traumatic with immediate complications including excruciating pain, shock, urine retention, ulceration of the genitals and injury to adjacent tissues. Other complications include septicaemia, infertility, obstructed labour, and even death.

In some communities in Ghana, FGM/C is a deep-rooted tradition, and underlying gender structures still uphold such harmful practices. Those who support FGM/C believe that it is a necessary requirement and puberty ceremony to raise a girl 'properly' as well as to make her eligible for marriage. Despite the fact that FGM/C is a social norm that requires and expects community members to follow, it is a fundamental violation of human rights. The procedure is generally carried out on girls between the ages of 4 and 14; it is also done to infants, women who are about to be married and, sometimes, to women who are pregnant with their first child or who have just given birth. It is often performed by traditional practitioners, including midwives and 'wansams' without anaesthesia, using scissors, razor blades or broken glass. In the absence of adequate medical facilities and professionals, it subjects girls and women to health risks and has life-threatening consequences. Among those rights violated are the rights to the highest attainable standard of health and to bodily integrity. Furthermore, it could be argued that girls (under 18) cannot be said to have given informed consent to such a potentially damaging practice as FGM/C.

FGM/C in Ghana is practised among few groups of people, including some ethnic groups in the three northern regions (Upper East, Upper West and Northern) namely the Kusasis; Frafras; Kassenas; Nankani's; Busangas; Wallas; Dagarbas; Builsas and Sisalas. Furthermore, FGM/C is existent in some southern areas of the country as some migrants from neighbouring countries of Mali, Togo, Niger and Burkina Faso, residing mostly in urban slums of the south, have carried their customs with them. Three forms of female genital mutilation reported as being practised, include excision, clitoridectomy and infibulation³.

All forms of FGM/C are illegal in Ghana under the Criminal Code Amendment Act of 2003 (ACT 646)⁴. Nevertheless, the practice still persists. In 2007, the Criminal Code was amended to include not only those who performed the operation, but also those who request, incite or promote FGM/C, as offenders who should face imprisonment and/or fines.

Table CP.6 presents the prevalence of FGM/C among women and the type and extent of the procedure. The table shows that 4 percent of women aged 15-49 years had some form of female genital mutilation. The percentage declines with educational level: from 9 percent for women with no education, to less than 1 percent for women with secondary or higher education. About 41 percent and 28 percent of women in Upper West and Upper East respectively have had one form of FGM/C or the other, while Central and Volta have the lowest proportion of less than 1 percent. The practice also appears more common in rural areas (5%), and among households in the poorest and second wealth quintiles. The main form or type of FGM/C practiced in these areas is the total or partial removal of flesh in the female genital organ (excision).

³ Excision is partial or total removal of the clitoris and the labia minora, with or without excision of the labia majora, while clitoridectomy is to remove partially or totally the clitoris and/or the prepuce. Infibulation is to narrow the vaginal orifice with creation of a covering seal by cutting and appositioning the labia minora and/or the labia majora, with or without excision of the clitoris.

⁴ Section 69A (1) reads: "Whoever excises, infibulates, or otherwise mutilates the whole or any part of the labia majora and the clitoris of another person commits an offence and shall be guilty of a second degree felony and liable on conviction to imprisonment of not less than three years."

Table CP.6: Female genital mutilation/cutting (FGM/C) among women
Percent distribution of women age 15-49 years by FGM/C status, Ghana, 2011

Background Characteristics	Percent distribution of women age 15-49 years:					Total	Percentage who had any form of FGM/C [1]	Number of women aged 15-49 years
	No FGM/C	Who had FGM/C			Form of FGM/C not determined			
		Had flesh removed	Were nicked	Were sewn closed				
Region								
Western	97.9	1.4	.2	.1	.4	100.0	2.1	1022
Central	99.2	.2	.2	.3	.1	100.0	.8	1044
Greater Accra	98.8	1.2	.0	.0	.0	100.0	1.2	2074
Volta	99.6	.2	.1	.1	.0	100.0	.4	821
Eastern	98.7	.7	.0	.3	.3	100.0	1.3	1237
Ashanti	98.1	1.6	.0	.3	.0	100.0	1.9	1983
Brong Ahafo	95.5	3.1	.2	.1	1.0	100.0	4.5	1005
Northern	97.2	2.2	.3	.2	.2	100.0	2.8	754
Upper East	72.2	23.6	.6	.7	2.9	100.0	27.8	404
Upper West	58.9	26.5	1.6	4.4	8.6	100.0	41.1	282
Residence								
Urban	97.5	1.9	.1	.2	.4	100.0	2.5	5770
Rural	94.7	4.0	.2	.4	.7	100.0	5.3	4857
Age								
15-19	98.5	1.3	.1	.1	.2	100.0	1.5	1899
20-24	98.2	.9	.1	.4	.4	100.0	1.8	1674
25-29	97.0	2.2	.1	.3	.4	100.0	3.0	1768
30-34	95.6	3.2	.2	.2	.7	100.0	4.4	1638
35-39	94.5	4.4	.1	.3	.6	100.0	5.5	1431
40-44	93.4	5.2	.4	.3	.7	100.0	6.6	1195
45-49	93.6	4.6	.2	.5	1.1	100.0	6.4	1023
Education								
None	87.1	9.7	.4	.8	1.9	100.0	12.9	2224
Primary	97.0	2.4	.0	.2	.4	100.0	3.0	2026
Middle/JSS	99.1	.6	.1	.1	.1	100.0	.9	4328
Secondary +	99.1	.6	.2	.1	.1	100.0	.9	2049
Wealth index quintile								
Poorest	87.2	9.5	.4	1.1	1.7	100.0	12.8	1659
Second	95.9	3.4	.2	.1	.4	100.0	4.1	1877
Middle	97.3	1.9	.2	.1	.5	100.0	2.7	2101
Fourth	98.6	1.1	.0	.1	.2	100.0	1.4	2345
Richest	98.9	.5	.1	.2	.2	100.0	1.1	2646
Total	96.2	2.8	.2	.3	.5	100.0	3.8	10627

[1] MICS indicator 8.12

Table CP.7 presents the prevalence and extent of FGM/C performed on daughters of the respondents. Overall, less than 1 percent of women reported that at least 1 of their living daughters had undergone FGM/C.

Table CP.7: Female genital mutilation/cutting (FGM/C) among daughters
Percent distribution of daughters age 0-14 by FGM/C status, Ghana, 2011

Background Characteristics	Percent distribution of daughters age 0-14 years:					Total	Percentage who had any form of FGM/C [1]	Number of daughters age 0-14 years
	No FGM/C	Who had FGM/C						
		Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined			
Region								
Western	99.8	.0	.0	.0	.2	100.0	.2	1004
Central	100.0	.0	.0	.0	.0	100.0	.0	718
Greater Accra	100.0	.0	.0	.0	.0	100.0	.0	1396
Volta	99.9	.0	.0	.1	.0	100.0	.1	643
Eastern	99.6	.0	.0	.4	.0	100.0	.4	848
Ashanti	100.0	.0	.0	.0	.0	100.0	.0	1617
Brong Ahafo	99.5	.3	.1	.1	.0	100.0	.5	799
Northern	98.4	1.2	.4	.0	.0	100.0	1.6	387
Upper East	99.2	.8	.0	.0	.0	100.0	.8	537
Upper West	94.9	4.3	.1	.6	.2	100.0	5.1	325
Residence								
Urban	99.8	.1	.0	.1	.1	100.0	.2	4087
Rural	99.3	.5	.1	.1	.0	100.0	.7	4189
Age								
0-4	99.6	.2	.0	.2	.0	100.0	.4	2129
5-9	99.5	.4	.0	.1	.0	100.0	.5	1876
10-14	98.8	.9	.1	.1	.2	100.0	1.2	1690
Missing/DK	100.0	.0	.0	.0	.0	100.0	.0	2581
None	99.0	.9	.1	.1	.0	100.0	1.0	2612
Primary	99.7	.1	.0	.1	.1	100.0	.3	1776
Education								
Middle/JSS	99.9	.0	.0	.1	.0	100.0	.1	2991
Secondary +	100.0	.0	.0	.0	.0	100.0	.0	896
Mother's FGM/C experiences								
No FGM/C	99.9	.0	.0	.0	.0	100.0	.1	7557
Had FGM/C	95.4	3.4	.3	.9	.1	100.0	4.6	719
Wealth index quintiles								
Poorest	98.2	1.4	.2	.2	.0	100.0	1.8	1534
Second	99.9	.1	.0	.0	.0	100.0	.1	1620
Middle	99.9	.1	.0	.0	.0	100.0	.1	1649
Fourth	99.8	.1	.0	.0	.1	100.0	.2	1778
Richest	99.8	.0	.0	.2	.0	100.0	.2	1694
Total	99.6	.3	.0	.1	.0	100.0	.4	8276

[1] MICS indicator 8.13

Table CP.8 below presents women's attitudes towards FGM/C. In Ghana, three women out of four (74%) have ever heard of FGM/C. Among those who have heard about FGM/C, in expressing their opinion as to whether the practice should be continued or not, 94 percent of women thought it should not be continued, while about 2 percent believe it should be continued; 3 percent indicated that it depended on the situation. Given that the highest proportion of women who had undergone FGM/C are in the Upper West region (41%), it was interesting to note that 87 percent

of them would like the practice to be discontinued. Approval of the continuation of the practice is highest among women with no education (3%), and least among women with secondary or higher education (less than 1%). Also, women from the middle to the fifth wealth quintiles are less likely to approve the continuation of the practice than women from the poorest households.

Table CP.8: Approval of female genital mutilation/cutting (FGM/C)
Percentage of women age 15-49 years who have heard of FGM/C, and percent distribution of women according to attitudes towards whether the practice of FGM/C should be continued, Ghana, 2011

Background Characteristics	Percentage of women who have heard of FGM/C	Number of women aged 15-49 years	Percent distribution of women who believe the practice of FGM/C should be:					Total	Number of women age 15-49 years who have heard of FGM/C
			Continued [1]	Discontinued	Depends	Don't know/ Missing			
Region									
Western	79.6	1022	.4	97.0	1.1	1.4	100.0	814	
Central	66.3	1044	.7	91.9	5.3	2.1	100.0	693	
Greater Accra	88.2	2074	.0	95.1	3.5	1.4	100.0	1829	
Volta	69.0	821	1.5	93.4	1.2	4.0	100.0	566	
Eastern	65.3	1237	.0	99.4	.0	.6	100.0	808	
Ashanti	74.5	1983	1.9	92.7	3.5	1.9	100.0	1478	
Brong Ahafo	71.0	1005	2.3	95.1	1.6	1.0	100.0	713	
Northern	44.3	754	5.0	85.9	4.6	4.5	100.0	334	
Upper East	94.0	404	3.8	94.9	.5	.8	100.0	380	
Upper West	91.7	282	7.9	87.2	3.3	1.6	100.0	259	
Residence									
Urban	81.3	5770	.6	95.8	2.3	1.2	100.0	4692	
Rural	65.5	4857	2.5	92.2	2.8	2.4	100.0	3181	
Age									
15-19	71.4	1899	1.6	97.2	.5	.7	100.0	1356	
20-24	73.5	1674	3.9	90.5	2.2	3.5	100.0	1230	
25-29	75.4	1768	1.2	92.7	3.9	2.2	100.0	1333	
30-34	75.2	1638	1.7	93.9	2.0	2.4	100.0	1231	
35-39	73.6	1431	.9	96.1	1.5	1.4	100.0	1054	
40-44	76.8	1195	1.1	95.3	2.1	1.5	100.0	918	
45-49	73.6	1023	1.7	93.6	4.3	.5	100.0	753	
Education									
None	62.9	2224	2.9	91.7	3.6	1.8	100.0	1398	
Primary	64.7	2026	1.1	94.2	2.2	2.4	100.0	1311	
Middle/JSS	75.1	4328	1.0	95.1	1.9	2.0	100.0	3251	
Secondary +	93.4	2049	.6	96.3	2.8	.2	100.0	1913	
Mother's FGM/C experience									
No FGM/C	73.1	10221	1.1	94.6	2.6	1.8	100.0	7468	
Had FGM/C	100.0	406	7.0	89.0	2.3	1.6	100.0	406	
Wealth index quintiles									
Poorest	61.7	1659	4.3	90.2	3.0	2.5	100.0	1024	
Second	61.8	1877	2.4	94.3	.8	2.5	100.0	1160	
Middle	70.1	2101	.6	96.8	1.5	1.1	100.0	1473	
Fourth	78.3	2345	.3	94.8	3.7	1.2	100.0	1835	
Richest	90.0	2646	1.0	94.0	3.2	1.8	100.0	2382	
Total	74.1	10627	1.5	94.2	2.6	1.8	100.0	7874	

[1] MICS indicator 8.11

Attitudes toward Domestic Violence

Women and children may be exposed to great danger in their families, which should be the safest place for them. Since they face violence from family members whom they should be able to trust, victims being unable to express their opinions and protect themselves/their children suffer considerably in both the physical and psychological sense.

Domestic violence occurs in a current or former intimate relationship when one person treats the other in an intentionally violent or controlling way. Even though there is an increasing discussion and understanding of the issue of violence against women and children, domestic violence is the form of violence which are relatively hidden or ignored. It is difficult for the problem in families to be made known to the public, and reliable statistics are hard to come by.

The Domestic Violence Act, 2007 (Act 732) was established in Ghana. It specifies the acts and threats that are likely to result in physical, sexual, economic and psychological abuse or the deprivation of the basic amenities. It also allows the Courts to authorise special protection of a person, the temporary custody of a child who is a victim of domestic violence, and to shelter victims from domestic violence. Yet, the tradition tends to make Ghanaian women and children accept the obvious disparity or gap between their situation and that of their male counterparts, and yield to violence.

A number of questions were asked of women aged 15-49 years to assess their attitudes towards whether husbands are justified to hit or beat their wives/partners for a variety of scenarios. These questions were asked to have an indication of social norms that tend to be associated with the prevalence of violence against women by their husbands/partners. The main assumption here is that women who agree with the statements indicating that husbands/partners are justified to beat their wives/partners under the situations described here in reality tend to be abused by their own husbands/partners. The responses to these questions can be found in Table CP.9.

Overall, 60 percent of women in Ghana feel that their husband/partner has a right to hit or beat them for at least one of a variety of reasons:

- If she goes out without telling him
- If she neglects the children
- If she argues with him
- If she refuses sex with him
- If she burns the food
- If she insults him
- If she refuses to give him food
- If she has another partner
- If she steals
- If she gossips

Women who approve of their partner's violence, in most cases, agree and justify violence in instances when they have another partner (47%), if they insult him (41%), if they steal (36%), if they neglect the children (31%), or if they demonstrate their autonomy, e.g. go out without telling their husbands or argue with them (25%). Also, 17 percent of women believe that their partner has a right to hit or beat them if they refuse to have sex with him. Acceptance of partner's violence is higher among those living in poorest households (79%), those with no education (75%), those in rural communities (70%) and also formerly married/in union women (62 percent).

Regionally, acceptance of domestic violence by women aged 15-49 years is highest in the Northern (84%), Upper West (84%) and Upper East (79%) regions, and least in the Greater Accra region (40%).

As shown in Table CP.9M, men are less likely than women to believe that wife beating is justified for any of the individual specified reasons. However, still more than a third of the men (36%) agree that it is justifiable to beat their wives/partners for any of the given reasons. About 12 percent of men justify domestic violence when their wife/partner goes out without telling them, 15 percent when she neglects the children, 12 percent when she argues with him, 10 percent if she refuses to have sex with him, and 5 percent when she burns the food.

Justifying domestic violence among men is associated with educational levels, area of residence and household wealth. Men from the poorest households are more likely to accept domestic violence (79%), than men from the richest households (35%). Also, men with secondary or higher education are less likely to justify domestic violence (35%), than men with middle/JSS education (60%), those with primary education (68%), and those with no education (75%).

Table CP.9: Attitudes toward domestic violence among women
Percentage of women age 15-49 years who believe a husband is justified in beating his wife/partner in various circumstances, Ghana, 2011

Background Characteristics	Percentage of women age 15-49 years who believe a husband is justified in beating his wife/partner:											Number of women age 15-49 years
	If goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	If she insults him	If she refuses to give him food	If she has another partner	If she steals	If she gossips	For any of these reasons [1]	
Region												
Western	20.6	27.1	22.6	11.0	4.3	37.2	11.2	39.3	25.8	21.6	50.9	1022
Central	31.2	34.7	27.6	16.5	9.1	48.8	23.6	54.9	37.1	28.5	70.1	1044
Greater Accra	10.0	16.0	15.3	5.9	3.4	24.3	8.7	27.0	17.6	14.4	40.1	2074
Volta	34.1	42.2	30.4	26.4	24.6	45.0	33.5	65.0	52.5	42.8	72.9	821
Eastern	24.6	31.5	19.4	15.2	11.3	45.6	25.1	53.0	38.3	24.9	61.8	1237
Ashanti	17.1	26.7	25.3	12.8	7.0	35.8	16.4	36.9	27.0	24.2	54.1	1983
Brong Ahafo	24.7	32.8	21.8	19.5	10.7	42.9	24.1	50.7	36.7	30.7	64.9	1005
Northern	49.6	55.2	50.2	37.7	25.9	68.2	53.4	72.9	64.6	54.9	83.5	754
Upper East	33.8	47.3	38.1	35.4	19.5	55.1	46.4	70.7	65.3	52.1	79.3	404
Upper West	48.3	58.6	25.2	34.3	23.2	65.4	45.6	75.1	70.3	55.6	84.0	282
Residence												
Urban	17.9	25.2	20.3	12.0	7.3	34.0	17.4	38.9	27.7	22.8	51.4	5770
Rural	31.5	38.8	30.5	22.4	14.7	50.0	29.0	57.0	44.8	35.6	69.8	4857
Age												
15-19	30.7	38.2	30.8	18.5	15.4	51.3	30.7	56.2	45.4	35.7	68.4	1899
20-24	21.1	31.2	25.3	13.7	8.9	42.0	22.7	47.0	32.5	28.6	59.5	1674
25-29	23.6	29.9	25.7	15.6	9.5	38.7	21.9	45.0	32.8	26.7	58.3	1768
30-34	22.1	29.1	22.8	15.6	9.3	37.5	18.8	45.0	32.2	26.3	58.0	1638
35-39	23.9	31.5	23.1	18.9	10.7	41.0	21.4	45.6	36.4	26.9	58.3	1431
40-44	23.2	28.6	22.5	18.7	9.9	37.5	20.2	44.4	33.5	27.9	55.3	1195
45-49	22.2	28.9	21.3	17.4	10.1	37.1	20.6	43.5	33.2	26.1	57.5	1023
Marital/Union status												
Currently married/in union	24.7	32.4	25.5	18.0	10.6	41.8	22.8	48.7	35.8	29.7	61.1	6574
Formerly married/in union	25.1	32.8	24.2	19.4	11.9	42.8	22.1	44.3	36.4	26.1	62.0	897
Never married/in union	22.5	29.1	24.0	13.6	10.6	39.9	22.8	44.9	34.7	27.1	56.5	3156
Marital/Union status of man												
Currently married/in union	9.8	12.9	9.9	8.3	3.5	17.9	8.5	19.5	14.1	10	31.3	1856
Formerly married/in union	15	11.9	12.7	7.2	3.5	21.8	6.3	23.1	15.1	11.6	36.8	151
Never married/in union	14.1	18.3	14.7	12.2	5.9	26.6	15.7	29.9	22.1	16.1	42.4	1314
Education												
None	36.4	42.7	34.6	28.4	18.0	53.9	33.4	61.7	49.6	40.6	74.9	2224
Primary	29.8	36.4	28.9	20.8	13.6	47.6	27.0	53.6	41.5	34.7	67.8	2026
Middle/JSS	22.4	31.0	24.6	14.1	9.4	41.1	21.0	46.6	34.6	27.3	60.2	4328
Secondary +	8.7	15.0	11.5	5.8	2.5	21.8	10.7	26.1	16.3	12.5	34.8	2049
Wealth index quintile												
Poorest	42.1	48.3	38.2	32.2	23.3	60.7	42.4	67.4	59.0	48.9	78.9	1659
Second	32.9	39.1	31.4	22.3	15.0	51.2	28.6	59.3	46.1	36.4	71.7	1877
Middle	26.4	34.6	28.8	17.9	11.5	47.4	24.6	53.9	39.4	32.1	67.8	2101
Fourth	19.0	28.9	21.7	12.4	6.5	36.1	18.1	43.1	29.7	23.8	58.2	2345
Richest	9.3	15.1	11.9	6.2	2.9	22.0	8.9	24.2	15.5	12.1	34.5	2646
Total	24.1	31.4	25.0	16.8	10.7	41.3	22.7	47.2	35.5	28.7	59.8	10627

[1] MICS indicator 8.14

Table CP.9M: Attitudes toward domestic violence among men
Percentage of men age 15-59 years who believe a husband is justified in beating his wife/partner in various circumstances, Ghana, 2011

Background Characteristics	Percentage of men age 15-59 years who believe a husband is justified in beating his wife/partner:											Number of men age 15-59 years
	If goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	If she insults him	If she refuses to give him food	If she has another partner	If she steals	If she gossips	For any of these reasons [1]	
Region												
Western	6.2	9.7	10.2	6.4	1.3	17.3	4.3	14.7	10.6	7.9	27.4	352
Central	10.8	9.4	10	13.5	6.3	18.8	13	24.4	13.4	10.2	43	296
Greater Accra	9.5	5.3	7.1	2.9	2.1	17.6	4.8	16.4	8.2	4.3	26.4	676
Volta	3.3	6.9	4.9	17.2	1.9	11.9	5.7	30.4	16.5	3.8	34.7	252
Eastern	24.9	28.5	19	13.3	10.3	29.6	21	35.9	28.6	25.2	43.4	358
Ashanti	8.4	15.4	12	7	1.9	19	8.6	17.4	15.5	10.8	31.1	638
Brong Ahafo	6.1	11.9	8.8	4.3	3	14.4	7.4	16.7	9.7	6.7	27.3	296
Northern	24.6	33.7	26.7	21	10.1	40.6	28.5	35.9	33	29	55.9	243
Upper East	14	23.5	17.3	18.3	10.3	29.9	23.4	40.1	36.3	32.4	55.3	120
Upper West	28	41.3	15.4	22.9	11.9	49.6	25.1	58.9	53.1	32.7	74.1	91
Residence												
Urban	8.8	10.8	9.4	5.6	2.7	18.4	8	17.6	12	8.4	28	1746
Rural	15	19.7	14.7	14.4	6.4	25	14.7	30.6	23.2	17	44.7	1575
Age												
15-19	18.6	23.4	19.9	16.3	8.7	33.8	21.7	37.7	30	22.3	51.7	657
20-24	11.7	17.1	12.4	8.9	3.3	24.1	12.3	25.5	18.7	12.5	38.3	379
25-29	8.7	16.5	12.6	8.1	3.7	19.3	9.6	20.4	15.5	11.1	36.9	456
30-34	8.8	11.5	10.3	4.7	1.4	19.1	7.2	21.4	13.2	9.2	33.1	442
35-39	9.9	11.2	9.1	8.5	4.7	17.4	10.2	20.5	14.7	10.5	27.8	363
40-44	10.6	13.4	8.3	8.7	4.8	17.1	8.2	20	12.9	8.6	28.1	288
45-49	6.7	8.6	6.5	6.6	2.5	10.6	5.2	15.2	10.1	7.2	24	313
50-54	11	8.1	7.2	10.6	3.4	16.2	5.4	13.8	10.5	5.7	28.2	221
55-59	15.7	14.6	11	12.9	4.4	23.4	9.8	23.3	16.6	15.9	37.1	204
Marital/Union status of man												
Currently married/in union	9.8	12.9	9.9	8.3	3.5	17.9	8.5	19.5	14.1	10	31.3	1856
Formerly married/in union	15	11.9	12.7	7.2	3.5	21.8	6.3	23.1	15.1	11.6	36.8	151
Never married/in union	14.1	18.3	14.7	12.2	5.9	26.6	15.7	29.9	22.1	16.1	42.4	1314
Education												
None	20.5	26	17.5	19.8	6.1	34.3	17.5	35.4	27.6	22	54.6	417
Primary	17	20.8	16.7	13.4	7.4	29.1	15.6	32.2	24.3	17.2	48.3	416
Middle/JSS	12.6	14.7	13.2	9.6	5.4	22.8	12.2	25.8	19.4	13.7	37.8	1483
Secondary +	4.6	8.5	5.8	4.4	1.1	11.2	5.3	12.4	7.2	4.9	20.3	1006
Wealth index quintiles												
Poorest	18.6	27.9	18.2	19	8.8	32.8	20.8	37.7	32.4	23.3	52.9	495
Second	17.7	21.5	16.9	16.1	7.5	26.4	17.5	35.3	25.7	21.4	48.3	564
Middle	9.3	13	10.1	8.4	3.5	23	9.3	22.8	14.1	8.8	37.3	614
Fourth	12.1	11.7	12.1	7.3	3.8	20.7	9.4	21.1	15.1	11.3	32.5	763
Richest	5.4	7.8	6.3	3.7	1.2	11.7	4.8	11.5	7.8	4.4	20.7	886
Total	11.7	15	11.9	9.8	4.5	21.5	11.2	23.8	17.3	12.5	35.9	3321

Children's living arrangements and orphanhood

Some children have no choice but to live away from their parents. Children who are orphaned may have lost one or both parents. Other reasons for separation include abduction, trafficking, and migration. Children living in alternative care may have various backgrounds; they might have health issues such as HIV/AIDS, while some may have experienced household violence or poverty.

Children who are in residential care or in vulnerable households may be at increased risk of neglect or exploitation if the parents are not available to care and protect them. As the CRC stipulates in article 20, children who cannot have parental care or cannot be allowed to remain in their family environment, shall be entitled to special protection and assistance by the Government. In Ghana, the Children's Act, 1998 (ACT 560) stipulates that children who are unable to stay with their parents are provided alternative homes or families. This includes children's home, fosterage, and national/international adoptions. These processes are normally overseen and investigated by the Government. Monitoring the variations in different outcomes for orphans and vulnerable children and comparing them gives us a measure of how well communities and governments are responding to their needs.

The percentages of children living with both parents, neither parent, mother only, and father only are presented in Table CP.10. Overall, 57 percent of children aged 0-17 years in Ghana live with both biological parents, while 17 percent live with neither. It appears also that 8 percent of children in Ghana are orphans of one or both parents.

While about 17 percent live with their mother only, just 5 percent live with their father only. For children living with neither of their biological parent, 14 percent have both parents alive, 1 percent has only their father alive, 2 percent have only their mother alive, and about 1 percent have both parents dead.

More children from the middle wealth quintile (21%) than the poorest wealth quintile (12%) do not live with a biological parent. No significant differences are noted in terms of children who have lost both parents. However, there are significant variations in children living with both parents in terms of regional location. The figure is as high as 75 percent in the Northern region, compared to 45 percent in the Volta region. Significant differentials exist in terms of the sex of the child, with higher proportions of male children living with both parents (59%), compared to female children (54%). Variations are also observed by area of residence, with children in rural areas more likely to live with both their biological parents (60%), compared to their counterparts in urban areas (52%).

Table CP.10: Children's living arrangements and orphanhood

Percent distribution of children age 0-17 years according to living arrangements, percentage of children age 0-17 years in households not living with a biological parent and percentage of children who have one or both parents dead, Ghana, 2011

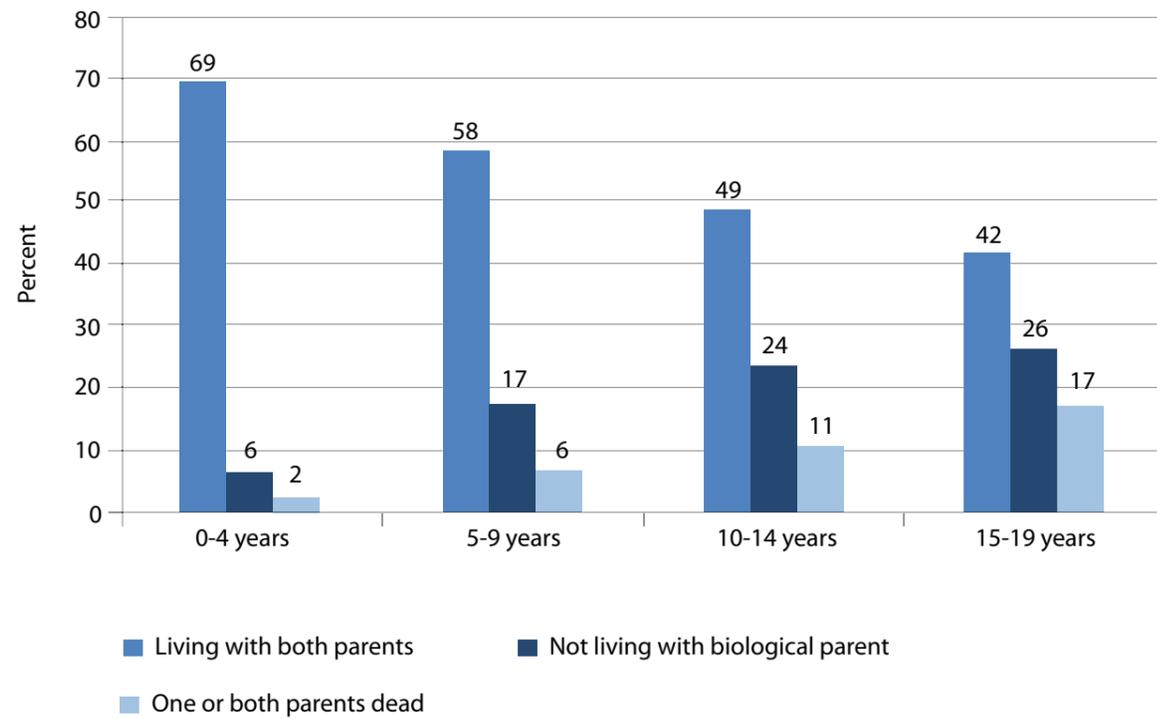
Background Characteristics	Living with both parents		Living with neither parent				Living with mother only				Living with father only		Impossible to determine	Total	Not living with a biological parent [1]	One or both parents dead [2]	Number of children age 0-17 years
	Living with both parents	Living with neither parent	Only father alive	Only mother alive	Both alive	Both dead	Father alive	Father dead	Mother alive	Mother dead							
Sex																	
Male	59.1	1.0	1.1	1.5	11.7	.8	16.2	3.2	5.4	.9	.6	.2	100.0	14.9	7.4	11132	
Female	54.2	1.1	1.8	1.8	15.5	.9	17.6	3.6	4.4	.6	.3	.3	100.0	19.3	8.0	10873	
Region																	
Western	60.7	.5	1.0	1.0	11.8	.7	16.9	2.6	5.0	.7	.6	.2	100.0	13.9	5.4	2082	
Central	51.9	1.5	1.6	1.6	15.3	.7	21.1	2.3	4.8	.6	.3	.3	100.0	19.0	6.7	2238	
Greater Accra	52.4	.9	1.3	1.3	16.7	.8	19.3	1.9	5.9	.3	.3	.6	100.0	19.7	5.3	3028	
Volta	45.4	2.0	1.8	1.8	19.8	.8	18.9	4.0	6.1	.7	.5	.5	100.0	24.5	9.3	1910	
Eastern	49.4	1.3	1.7	1.7	15.2	.9	21.5	3.3	6.1	.4	.2	.2	100.0	19.2	7.7	2416	
Ashanti	56.1	.6	1.5	1.5	11.0	1.4	19.8	3.9	4.0	1.6	.1	.1	100.0	14.5	8.9	4026	
Brong Ahafo	54.9	1.5	3.2	3.2	14.2	.5	17.4	3.1	4.0	.8	.2	.2	100.0	19.5	9.2	2173	
Northern	74.8	.7	1.6	1.6	9.2	.4	5.4	3.0	4.1	.7	.1	.1	100.0	12.0	6.4	2315	
Upper East	66.9	.5	1.2	1.2	9.6	.5	7.5	7.9	4.4	1.3	.2	.2	100.0	11.8	11.4	1094	
Upper West	68.3	.6	2.0	2.0	11.0	.4	6.8	5.7	4.2	.7	.2	.2	100.0	14.1	9.4	721	
Residence																	
Urban	52.3	1.1	1.8	1.8	15.7	.8	20.1	2.5	4.7	.7	.3	.3	100.0	19.4	7.0	9707	
Rural	60.2	1.0	1.5	1.5	11.9	.8	14.4	4.0	5.1	.9	.2	.2	100.0	15.2	8.2	12298	
Age																	
0-4 years	69.4	.4	.2	1.5	5.4	.1	21.2	1.2	1.8	.3	.1	.1	100.0	6.1	2.2	6239	
5-9 years	58.4	1.0	1.3	1.3	14.6	.5	15.5	2.8	5.0	.7	.2	.2	100.0	17.3	6.3	6631	
10-14 years	48.8	1.4	2.2	2.2	18.7	1.5	14.7	4.5	7.1	1.0	.2	.2	100.0	23.8	10.5	6508	
15-17 years	42.1	1.8	4.4	4.4	17.8	2.0	15.8	7.0	6.4	1.8	.9	.9	100.0	26.1	17.1	2627	
Wealth index quintile																	
Poorest	69.5	.7	1.5	1.5	9.0	.5	8.4	4.7	4.8	.7	.2	.2	100.0	11.7	8.0	5041	
Second	52.9	1.4	2.0	2.0	13.7	1.0	18.7	5.2	3.9	.9	.3	.3	100.0	18.1	10.7	4760	
Middle	48.2	1.7	1.5	1.5	17.3	.6	22.7	2.5	4.6	.8	.2	.2	100.0	21.1	7.1	4558	
Total	53.8	.7	1.6	1.6	12.7	1.3	20.2	2.6	5.6	1.2	.3	.3	100.0	16.3	7.4	4125	
Richest	58.1	.5	1.7	1.7	16.1	.7	15.4	1.0	6.0	.3	.2	.2	100.0	19.0	4.2	3521	
Total	56.7	1.0	1.7	1.7	13.6	.8	16.9	3.4	4.9	.8	.2	.2	100.0	17.1	7.7	22005	

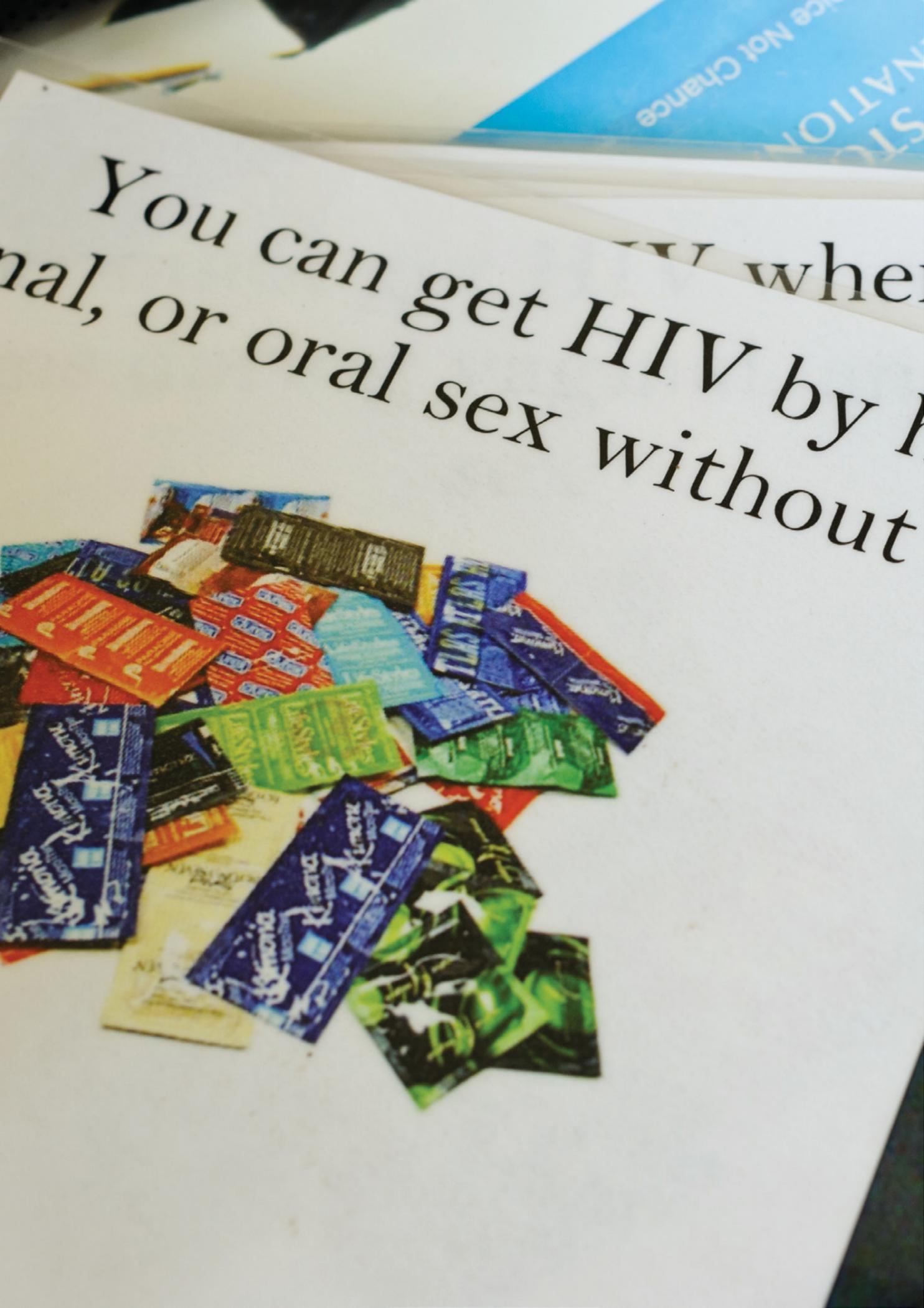
[1] MICS indicator 9.17

[2] MICS indicator 9.18

Figure CP4 shows that the percentage of children living with both parents decreases as the children grow up, from 69 percent for children aged 0-4 years, to 42 percent for children aged 15-17 years. Also, the percentage of children not living with their biological parents increases from 6 percent for children in the 0-4 age group, to 26 percent for children aged 15-17 years. One or both parents of nearly 8 percent of children aged 0-17 years are dead. The percent of children with one or both parents dead increases as the child grows, from 2 percent for children aged 0-4 years to 17 percent for children aged 15-17 years.

Figure CP.4: Percentage of children living with both parents, not living with a biological parent or having one or both parents dead, Ghana, 2011





You can get HIV by [unclear] when [unclear]
[unclear] or oral sex without [unclear]

Knowledge about HIV Transmission and Misconceptions about HIV/AIDS

One of the most important prerequisites for reducing the rate of HIV infection is accurate knowledge of how HIV is transmitted and the strategies for preventing transmission. Correct information is the first step toward raising awareness and giving young people the tools to protect themselves from infection. Misconceptions about HIV are common and can confuse young people and hinder prevention efforts. Different regions are likely to have variations in misconceptions although some appear to be universal (for example, the belief that sharing food or mosquito bites can transmit HIV). The UN General Assembly Special Session on HIV/AIDS (UNGASS) called on governments to improve the knowledge and skills of young people to protect themselves from HIV infection. The indicators to measure this goal as well as the MDG of reducing HIV infections by half include improving the level of knowledge of HIV and its prevention, and changing behaviours to prevent further spread of the disease. The HIV module was administered to women and men, aged 15-49 years and 15-59 years, respectively.

One indicator which is both an MDG and UNGASS indicator is the percent of young women and men who have comprehensive and correct knowledge of HIV prevention and transmission. In the Ghana MICS, all women and men who have heard of AIDS were asked whether they knew of the two main ways of HIV prevention – having only one faithful uninfected partner and using a condom every time. The results are presented in Tables HA.1 and HA.1M. In Ghana, majority of the interviewed women aged 15-49 years, and men aged 15-59 years have heard of AIDS (98% and 99% respectively). However, the percentage of women and men who know of the two main ways of preventing HIV transmission is 72 and 78 percent respectively. In particular, 89 percent of women and 92 percent of men know of having one faithful uninfected sex partner as a main way of preventing HIV transmission, while 76 percent of women 15-49 years and 82 percent of men 15-59 years know of using a condom every time as a way of preventing HIV transmission. For both men and women, these indicators increase with educational level and household wealth.

Despite the high knowledge of HIV in general, there are regional variations. In Greater Accra region, 100 percent of women interviewed had heard about AIDS, compared to 89 percent of women in the Northern region. In the case of men, 100 percent of those in Greater Accra had heard of AIDS, while Upper West had the lowest proportion (94%). There was minimal difference in urban and rural knowledge of HIV – 99 percent of women in urban areas had heard about AIDS compared to 97 percent of those in rural areas.

Table HA.1 and Table HA.1M also present the percent of women aged 15-49 and men aged 15-59 years who can correctly identify misconceptions concerning HIV. The indicator is based on the two most common and relevant misconceptions in Ghana, that HIV can be transmitted by supernatural means, and mosquito bites. The tables also provide information on whether or not women aged 15-49 years, and men aged 15-59 years know that HIV cannot be transmitted by sharing food. Only 42 percent of women and 47 percent of men aged 15-59 years reject the two most common misconceptions and know that a healthy-looking person can be infected. As standalone indicators however, 72 percent of women and 82 percent of men know that a healthy looking person can have the AIDS virus, while 75 percent of women and 80 percent of men know that sharing food with someone with AIDS is not a means of transmitting the virus. Also, 61 percent of women and 64 percent of men know that HIV cannot be transmitted by mosquito bites. The data further reveal that 43 percent and 58 percent of men know that HIV cannot be transmitted by supernatural means. For both men and women, HIV knowledge increases with level of education and household wealth.

Comprehensive knowledge of HIV methods and transmission

Tables HA.1 and HA.1M also present the percentage of women aged 15-49 years, and men 15-59 years with comprehensive knowledge. Women and men who have comprehensive knowledge about HIV prevention include those who know of the two ways of HIV prevention (having only one faithful uninfected partner and using a condom every time), who know that a healthy looking person can have the AIDS virus, and who reject the two most common misconceptions. Comprehensive knowledge about HIV and AIDS is paramount to the reduction of stigma and discrimination. This affects how HIV and AIDS services are assessed.

The survey reveals that comprehensive knowledge of HIV prevention methods and transmission is still low in Ghana, despite the many years of public sensitization. Overall, only 34 percent of women aged 15-49 and 39 percent of men aged 15-59 are found to have comprehensive knowledge. Further the percentage of women and men with comprehensive knowledge of HIV/AIDS transmission increases consistently with rising education and household wealth. For example, more than half of women with secondary education (59%) have comprehensive knowledge of HIV/AIDS transmission, compared to only 16 percent of those with no education. Also, women from the richest households (52%), as well as women who have never married or in union (41%) have higher comprehensive knowledge than women from the poorest households (14%), and those married/in union (31%).

For both men and women, none of the regions recorded comprehensive knowledge of over 50 percent. For women, comprehensive knowledge was highest in Greater Accra (47%) and Eastern region (46%), while it was lowest in Northern region (17%). For men, comprehensive knowledge was highest in Volta (49%) and Easter region (47%), followed by Greater Accra (43%), and was lowest in Central region (22%). Comprehensive knowledge was notably higher in urban areas (42% for women and 48% for men), than in rural areas (25% for women and 29% for men).

Men and women aged 25-29 years have the highest comprehensive knowledge of HIV and AIDS (39% and 42% respectively). The age groups 40-49 years had the least knowledge for both sexes.

Table HA.1: Knowledge about HIV transmission, misconceptions about HIV/AIDS, and comprehensive knowledge about HIV transmission among women

Percentage of women age 15-49 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can have the AIDS virus, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission, Ghana, 2011

Back-ground Characteristics	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:		Percentage of women who know both ways	Percentage who know that a healthy looking person can have the AIDS virus	Percentage who know that HIV cannot be transmitted by:			Percentage who reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus	Percentage with comprehensive knowledge [1]	Number of women
		Having only one faithful uninfected sex partner	Using a condom every time			Mosquito bites	Super-natural means	Sharing food with someone with AIDS			
Region											
Western	98.1	84.3	79.9	75.9	73.8	58.6	35.1	78.3	41.7	37.6	1022
Central	99.4	84.6	73.5	67.4	73.0	54.5	31.2	76.6	32.8	25.5	1044
Greater Accra	100.0	95.9	77.9	76.3	92.4	70.8	50.2	86.9	60.1	47.0	2074
Volta	99.6	90.5	76.1	73.1	87.7	55.7	46.4	64.9	36.5	29.6	821
Eastern	99.1	91.8	81.2	77.0	80.3	74.2	54.0	83.8	56.1	46.2	1237
Ashanti	99.5	90.9	78.7	74.0	72.8	61.9	36.2	73.8	37.2	30.3	1983
Brong Ahafo	95.9	88.4	79.3	75.9	65.3	50.0	29.1	68.3	28.7	25.1	1005
Northern	89.4	74.0	49.0	45.4	56.0	47.9	55.7	49.5	23.1	16.6	754
Upper East	97.8	88.3	74.4	70.6	62.6	54.4	51.7	71.4	31.4	25.9	404
Upper West	94.2	83.7	63.0	59.2	72.0	49.9	51.3	57.0	31.0	23.8	282
Residence											
Urban	99.4	93.2	79.8	77.0	83.7	67.3	46.3	81.5	50.9	41.5	5770
Rural	96.7	84.0	70.6	65.8	67.9	53.1	38.8	66.8	30.6	24.6	4857
Age											
15-24	98.3	88.3	76.6	72.0	75.9	67.6	46.7	75.4	45.6	36.8	3573
25-29	98.3	90.1	78.2	74.7	78.9	65.0	43.5	78.3	47.9	38.9	1768
30-39	98.0	88.9	75.5	72.0	77.3	56.6	40.5	74.1	39.6	32.7	3069
40-49	98.0	89.2	72.2	69.2	74.2	52.4	39.6	71.8	33.1	26.4	2218
Marital status											
Ever married/in union	98.0	88.5	75.3	71.4	75.0	56.3	39.3	73.0	37.3	30.6	7471
Never married/in union	98.6	90.1	76.3	73.0	79.9	71.5	51.4	78.9	51.8	41.3	3156
Education											
None	93.2	79.9	61.0	56.6	61.1	43.1	36.8	54.2	21.0	15.7	2224
Primary	98.4	88.2	72.7	68.6	74.6	51.1	32.4	67.9	29.5	22.5	2026
Middle/JSS	99.7	91.1	81.2	77.2	78.8	63.3	41.1	80.5	43.5	36.2	4328
Secondary +	100.0	95.1	82.5	80.4	90.1	84.6	63.6	91.7	72.1	59.3	2049
Wealth index quintiles											
Poorest	93.1	78.2	60.5	55.4	59.1	43.0	41.3	49.7	18.8	14.0	1659
Second	97.2	85.0	70.2	65.5	68.7	53.8	34.8	67.4	30.6	24.9	1877
Middle	98.9	89.8	77.7	74.6	75.3	57.8	38.9	76.4	38.0	30.7	2101
Fourth	99.8	91.8	81.1	77.0	81.0	65.9	41.5	79.7	45.2	37.0	2345
Richest	100.0	95.4	82.5	80.1	89.7	74.9	54.0	90.0	63.4	52.0	2646
Total	98.2	89.0	75.6	71.9	76.4	60.8	42.9	74.8	41.6	33.8	10627

[1] MICS indicator 9.1

Table HA.1M: Knowledge about HIV transmission, misconceptions about HIV/AIDS, and comprehensive knowledge about HIV transmission among men

Percentage of men age 15-49 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can have the AIDS virus, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission Ghana, 2011

Background Characteristics	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:		Percentage of men who know both ways	Percentage who know that a healthy looking person can have the AIDS virus	Percentage who know that HIV cannot be transmitted by:			Percentage who reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus	Percentage with comprehensive knowledge [1]	Number of men
		Having only one faithful sex partner	Using a condom every time			Mosquito bites	Supernatural means	Sharing food with someone with AIDS			
Regions											
Western	99.6	90.4	83.2	76.2	83.7	62.3	51.9	84.3	46.0	38.5	352
Central	100.0	86.3	71.8	66.3	64.3	60.1	47.5	79.1	32.9	21.7	296
Greater Accra											
Volta	99.8	91.4	84.7	81.4	86.5	75.5	71.3	74.4	56.3	49.1	252
Eastern	99.2	95.4	92.0	89.6	87.4	61.1	48.7	86.2	49.9	47.2	358
Ashanti	99.5	91.5	87.2	83.1	83.9	58.2	50.7	80.5	43.4	40.2	638
Brong Ahafo	99.5	94.1	85.9	84.9	81.5	56.0	54.0	81.1	41.5	39.5	296
Northern	94.9	87.5	76.0	72.7	72.1	54.1	66.6	60.8	36.2	29.3	243
Upper East	98.4	92.9	85.3	82.2	64.5	58.6	59.1	76.2	36.1	31.4	120
Upper West	93.9	84.6	77.9	72.7	74.6	55.8	64.3	66.8	43.2	37.2	91
Residence											
Urban	99.9	93.9	83.4	79.8	87.0	74.3	65.4	85.3	58.5	48.1	1746
Rural	98.3	89.2	81.0	76.4	75.9	52.6	48.9	73.8	33.9	29.0	1575
Age											
15-24	98.0	87.5	79.6	73.1	77.6	70.0	57.3	77.5	48.6	38.6	1036
25-29	99.5	93.7	83.7	80.9	86.3	64.3	55.2	84.1	50.7	42.4	456
30-39	99.8	94.5	83.5	80.4	84.3	60.4	59.3	80.3	44.8	38.0	804
40-49	99.6	92.6	84.3	81.4	81.2	59.1	55.8	80.0	43.8	37.9	601
50-59	99.6	93.2	81.8	78.9	83.0	62.6	60.2	79.8	46.8	40.2	425
Marital status											
Ever married/in union	99.6	93.5	82.5	79.5	83.4	58.4	55.8	80.4	43.9	36.9	2007
Never married/in union	98.3	89.0	81.8	76.2	79.3	72.5	60.2	79.1	51.4	42.3	1314
Education											
None	96.6	87.7	77.9	74.2	69.4	38.5	49.7	59.7	21.6	18.3	417
Primary	97.6	87.9	76.8	71.4	71.6	48.8	40.5	69.1	24.9	19.8	416
Middle/JSS	99.7	91.7	81.9	77.4	80.8	62.5	53.6	80.2	43.1	35.8	1483
Secondary +	100.0	94.9	86.7	83.8	92.5	83.0	73.7	92.1	72.0	60.5	1006
Wealth index quintile											
Poorest	96.2	84.6	76.7	71.7	69.4	46.2	50.7	63.6	27.2	23.0	518
Second	98.9	89.3	82.3	76.7	73.2	52.5	47.7	74.6	32.2	26.2	557
Middle	99.9	93.2	84.4	80.9	83.7	60.7	57.7	80.3	44.4	39.1	621
Fourth	100.0	93.0	83.7	79.5	86.3	67.7	56.0	84.3	50.3	42.3	779
Richest	99.7	95.4	82.6	79.8	89.3	81.4	69.6	88.8	67.2	54.3	847
Total	99.1	91.7	82.2	78.2	81.8	64.0	57.6	79.9	46.9	39.1	3321

[1] MICS indicator 9.1

The results for young women and men aged 15-24 years are separately presented in Tables HA.2 and HA.2M. Those tables present very similar conclusions as those for women aged 15-49 years and men aged 15-49 years, showing that HIV knowledge is hardly any better among young people than among the entire population aged 15-49, and that it is slightly better among young men than among young women. In total, 98 percent of both young women and men have heard of AIDS. With regard to how to prevent its transmission, 88 percent of the young women and men know that maintaining one faithful and uninfected sex partner is a good measure of protection. The use of condom every time is another method of prevention known by 77 percent of women and 80 percent of men, while 72 percent of the young women and 73 percent of young men know of both ways of preventing HIV transmission. Also, 76 percent of the young women and 78 percent of young men know that a healthy looking person can have the AIDS virus.

The results also show that 75 percent of young women, and 78 percent of young men reject the notion that AIDS can be spread by sharing food with a person living with the AIDS virus, while 68 percent of young women, and 70 percent of the young men reject the fact that AIDS can be transmitted through mosquito bite. However, less than one in two (48%) young women, and 57 percent of young men know that HIV cannot be transmitted by supernatural means. Overall, 46 percent of young women and 49 percent of young men reject the two major misconceptions about transmission and know that a healthy looking person can have the AIDS virus.

In total, only 37 percent of the young women and 39 percent of the young men have comprehensive knowledge about HIV transmission, very similar to the entire population aged 15-49 years (respectively 34% et 39%)

The UNGASS target proposed by UNAIDS is 'by 2010, is to ensure that 95 per cent of youth aged 15-24 years have information, education, services and life skills that enable them to reduce their vulnerability to HIV infection (UNGASS): The results show that the comprehensive knowledge for Ghanaian young women and men fall short of the UNGASS target. The low comprehensive figures mean that a lot more still needs to be done to provide young people with information to acquire knowledge on how to protect themselves from HIV transmission (UNAIDS). While both women and men should be targeted with education on HIV prevention, concerted efforts should be directed at young people as many continue to get infected due to low levels of comprehensive HIV knowledge.

Comprehensive knowledge increases with increasing age as the 20-24 year age-groups in both sexes have higher figures than the age-group 15-19 years. For example, 34 percent of young men aged 15-19 years have comprehensive knowledge, compared to 46 percent of young men aged 20-24 years. The same is true for young women – 35 percent of those aged 15-19 years have comprehensive knowledge, compared to 39 percent of those aged 20-24 years.

Comprehensive knowledge for both young women and men increases with educational level and household wealth. As shown in Figure HA.1, for young women with no education, comprehensive knowledge is estimated at 11 percent. This increases to 21 percent for those with primary education, to 36 percent for those with Middle/JSS education, and to 57 percent for those with secondary or higher education. In relation to household wealth, 19 percent of young men and 18 percent of young women from the poorest households have comprehensive knowledge, compared to 49 percent for young men and 53 percent for young women in the richest wealth quintile. Also, young women and men living in urban areas have higher comprehensive knowledge (42% and 49% respectively), compared to their counterparts in rural areas (30% and 28% respectively). Variations are also observed on marital status for both young women and men. Young women and men who have never been married have higher comprehensive knowledge (40% for both sexes), compared to those married/in union (29% for women and 20% for men).

Table HA.2: Knowledge about HIV transmission, misconceptions about HIV/AIDS, and comprehensive knowledge about HIV transmission among young women

Percentage of young women age 15-24 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can have the AIDS virus, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission, Ghana, 2011

Background Characteristics	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:		Percentage of women who know both ways	Percentage who know that a healthy looking person can have the AIDS virus	Percentage who know that HIV cannot be transmitted by:			Percentage who reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus	Percentage with comprehensive knowledge [1]	Number of women age 15-24
		Having only one faithful uninfected sex partner	Using a condom every time			Mosquito bites	Supernatural means	Sharing food with someone with AIDS			
Region											
Western	99.1	83.6	81.1	74.3	70.2	63.1	37.1	79.9	43.1	38.9	329
Central	99.2	84.0	74.7	68.0	71.2	61.8	35.1	75.7	37.7	30.4	379
Greater Accra	100.0	96.1	75.0	72.9	90.5	77.5	56.6	85.9	65.2	49.5	632
Volta	99.8	89.3	81.5	77.2	89.0	63.3	55.7	68.3	42.6	36.1	272
Eastern	98.6	89.5	76.6	73.8	77.0	79.5	58.2	83.8	58.7	46.8	398
Ashanti	99.6	90.0	79.5	73.5	73.2	70.9	39.5	73.4	41.2	33.2	718
Brong Ahafo	96.4	88.4	82.2	77.5	68.3	56.1	30.8	67.2	32.2	27.4	396
Northern	89.6	73.0	55.5	51.6	60.9	51.8	59.5	57.1	29.0	22.5	219
Upper East	98.0	90.2	78.0	75.5	65.5	69.9	58.3	77.2	42.9	36.7	132
Upper West	94.4	82.7	65.0	61.6	77.2	58.3	59.2	63.9	39.7	30.3	98
Residence											
Urban	99.4	92.5	79.6	75.9	81.3	72.9	49.7	79.9	53.4	42.3	1939
Rural	97.1	83.4	73.0	67.5	69.5	61.3	43.1	70.1	36.2	30.3	1634
Age											
15-19	98.2	87.7	75.1	70.7	74.4	67.4	48.9	73.1	43.0	34.5	1899
20-24	98.5	89.1	78.3	73.6	77.7	67.7	44.1	78.0	48.4	39.4	1674
Marital status											
Ever married/in union	97.3	84.9	77.1	70.8	70.2	57.5	36.8	70.2	33.6	28.6	986
Never married/in union	98.7	89.7	76.4	72.5	78.1	71.4	50.4	77.4	50.1	39.9	2587
Education											
None	88.2	69.0	56.1	50.3	58.0	39.5	32.1	47.3	16.6	11.4	286
Primary	97.0	84.0	69.7	64.9	67.7	52.2	32.4	56.9	23.8	20.5	610
Middle/JSS	99.6	89.8	79.6	74.7	74.8	68.6	46.4	78.0	44.3	36.0	1767
Secondary +	100.0	94.6	81.7	78.6	89.2	84.8	61.2	91.7	71.8	57.4	909
Wealth index quintile											
Poorest	93.5	77.6	64.1	59.5	63.1	48.7	43.6	54.1	23.8	18.2	526
Second	97.9	84.3	75.1	68.6	71.1	63.7	40.1	70.2	37.6	32.5	663
Middle	99.0	89.0	77.4	73.8	73.3	67.0	45.0	79.0	44.2	34.9	781
Fourth	99.6	91.0	81.0	75.8	78.9	72.7	45.3	77.6	47.1	37.7	778
Richest	99.9	95.3	80.7	77.7	87.7	78.4	56.7	87.8	65.7	53.1	826
Total	98.3	88.3	76.6	72.0	75.9	67.6	46.7	75.4	45.6	36.8	3573

[1] MICS indicator 9.2; MDG indicator 6.3

Table HA.2M: Knowledge about HIV transmission, misconceptions about HIV/AIDS, and comprehensive knowledge about HIV transmission among young men

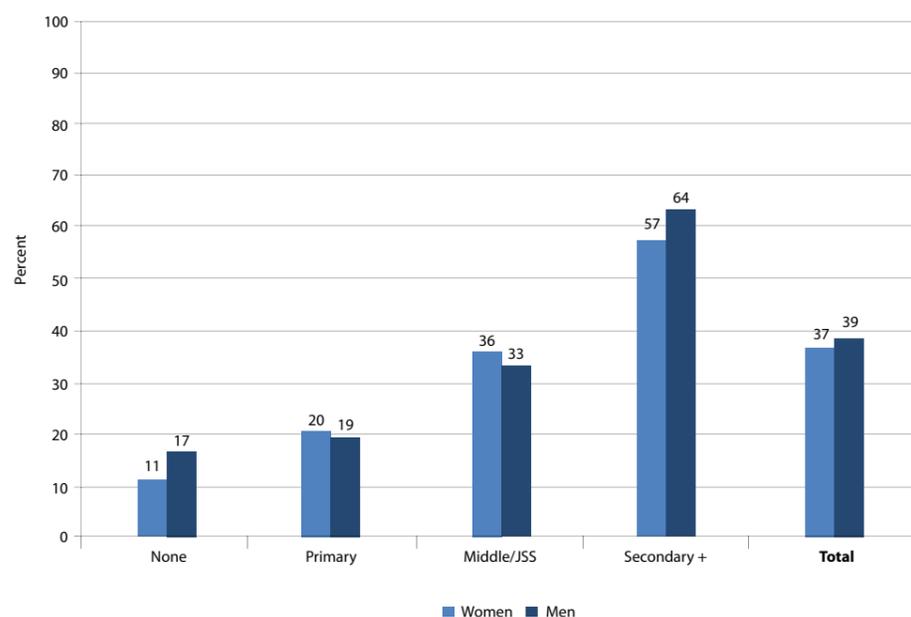
Percentage of young men age 15-24 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can have the AIDS virus, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission Ghana, 2011

Background Characteristics	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:		Percentage of men who know both ways	Percentage who know that a healthy looking person can have the AIDS virus	Percentage who know that HIV cannot be transmitted by:			Percentage who reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus	Percentage with comprehensive knowledge [1]	Number of men age 15-24
		Having only one faithful uninfected sex partner	Using a condom every time			Mosquito bites	Supernatural means	Sharing food with someone with AIDS			
Region											
Western	98.8	79.8	82.7	67.9	76.6	64.7	41.6	87.6	42.2	31.3	107
Central	100.0	81.8	67.9	60.7	62.7	68.0	54.7	75.2	37.1	23.1	94
Greater Accra	100.0	88.9	68.6	59.0	89.9	91.0	66.8	79.6	65.4	39.3	194
Volta	99.5	89.6	82.7	80.8	83.7	73.0	76.5	70.7	51.0	43.8	87
Eastern	(97.0)	(91.6)	(86.7)	(83.5)	(78.1)	(62.4)	(45.7)	(77.1)	(43.0)	(41.2)	95
Ashanti	98.4	88.1	90.3	82.6	78.3	76.6	54.7	83.7	60.4	56.3	195
Brong Ahafo	98.9	93.1	81.5	80.6	81.3	51.7	44.5	77.4	32.6	31.3	92
Northern	92.1	85.6	75.4	72.6	69.2	54.9	66.3	63.5	37.6	29.9	86
Upper East	96.6	92.6	84.4	82.0	59.1	58.3	60.5	73.7	31.8	29.3	49
Upper West	90.3	80.4	74.7	69.0	70.6	55.2	63.2	66.3	40.9	35.2	36
Residence											
Urban	99.8	91.2	80.9	74.7	87.0	80.3	66.5	84.3	62.8	48.6	537
Rural	96.0	83.4	78.2	71.3	67.6	58.9	47.3	70.3	33.2	27.9	499
Age											
15-19	97.4	85.0	77.5	69.9	73.5	68.6	55.0	75.7	45.1	34.2	657
20-24	99.1	91.8	83.2	78.7	84.8	72.5	61.2	80.7	54.5	46.4	379
Marital status											
Ever married/in union	99.7	97.8	79.1	78.1	84.2	51.1	34.9	65.7	34.1	20.1	53
Never married/in union	97.9	86.9	79.6	72.8	77.3	71.0	58.5	78.2	49.3	39.6	983
Education											
None	82.1	68.8	64.7	60.7	48.3	33.6	30.3	37.7	17.2	16.7	41
Primary	94.0	76.7	74.9	64.6	66.4	56.6	35.4	57.4	25.8	19.2	156
Middle/JSS	99.3	87.9	78.1	70.6	76.1	68.7	55.7	78.4	44.1	33.2	560
Secondary +	100.0	95.2	87.3	84.5	91.3	85.5	76.5	92.8	74.7	63.5	280
Wealth index quintile											
Poorest	92.3	78.6	74.3	68.1	59.4	47.5	50.4	63.6	24.2	18.6	169
Second	97.6	86.0	77.6	70.7	67.4	62.5	46.1	71.4	32.3	27.3	204
Middle	100.0	89.5	87.3	80.5	83.1	70.8	59.4	80.6	54.1	46.7	246
Fourth	100.0	86.4	85.5	76.5	86.9	76.1	62.0	82.1	57.7	46.3	223
Richest	98.5	95.4	69.8	66.6	86.8	89.7	66.9	87.1	69.6	49.0	193
Total	98.0	87.5	79.6	73.1	77.6	70.0	57.3	77.5	48.6	38.6	1036

[1] MICS indicator 9.2; MDG indicator 6.3

Figures in parentheses '()' are based on 25-49 unweighted cases.

Figure HA.1: Percentage of young women and men aged 15-24 years who have a comprehensive knowledge of HIV/AIDS transmission by education background, Ghana, 2011



KNOWLEDGE OF MOTHER TO CHILD TRANSMISSION OF HIV

Knowledge of mother-to-child transmission of HIV is also an important first step for women to seek HIV testing when they are pregnant to avoid infection in the baby. Women should know that HIV can be transmitted during pregnancy, delivery, and through breastfeeding. The level of knowledge among women aged 15-49 years concerning mother-to-child transmission is presented in Table HA.3. Men aged 15-59 years were also interviewed on their knowledge on mother-to child transmission of HIV; the results are presented in Table HA.3M. Overall, 91 percent of both women and men know that HIV can be transmitted from mother to child. However, slight differences exist in the knowledge levels of the three different ways of transmission. 74 percent of women and 76 percent of men know that HIV can be transmitted from mother-to-child during pregnancy. Surprisingly, 72 percent of men are aware that transmission of the virus can occur during delivery compared to 69 percent of women. The results also show that 83 percent of the women, and 80 percent of the men know that HIV can be transmitted from mother-to-child breastfeeding. The percentage of both women and men who know all three ways of mother-to-child transmission is estimated at 57 percent, while 7 percent of women and 8 percent of men did not know of any specific way. Male involvement, knowledge and understanding of mother-to-child transmission are highly relevant in meeting the Universal Access targets in Ghana.

The regional distribution shows that Greater Accra, Central and Volta recorded 94 percent knowledge of mother-to-child transmission for women, the highest in this category. For all regions, a higher proportion of women aged 15-49 years know that HIV transmission occurs during breastfeeding than during pregnancy and delivery. Upper East, Brong Ahafo, Northern and Western regions have the highest proportion of women who do not know any of the three specific ways in which a mother can transmit the virus to her child, the highest being 10 percent recorded in Upper East, Northern and Western regions. Volta region has the highest proportion of men who know that HIV can be transmitted from mother-to-child (98%), while Upper West region has the lowest proportion (82%). For women aged 15-49 years, little variations are observed by education level and household wealth, while for men aged 15-59 years, and erratic pattern is observed by these background characteristics.

Table HA.3: Knowledge of mother-to-child HIV transmission
Percentage of women age 15-49 years who correctly identify means of HIV transmission from mother to child, Ghana, 2011

Background Characteristics	Percentage of women who know HIV can be transmitted from mother to child	Percent of women who know HIV can be transmitted:				Does not know any of the specific means	Number of women
		During pregnancy	During delivery	By breastfeeding	All three means [1]		
Region							
Western	88.4	72.4	65.0	80.8	55.2	9.7	1022
Central	94.4	71.7	69.2	89.2	58.9	5.0	1044
Greater Accra	94.4	78.6	74.5	82.5	60.0	5.6	2074
Volta	94.0	75.9	71.0	86.7	58.3	5.7	821
Eastern	93.3	77.2	74.1	90.1	64.8	5.8	1237
Ashanti	92.1	75.7	65.2	83.6	52.6	7.4	1983
Brong Ahafo	87.0	67.9	62.7	79.3	52.0	8.9	1005
Northern	79.7	63.3	58.4	73.4	49.3	9.8	754
Upper East	87.8	74.2	73.9	82.2	64.9	10.0	404
Upper West	85.4	71.7	67.1	79.0	60.1	8.8	282
Residence							
Urban	93.1	75.3	71.0	83.8	57.8	6.2	5770
Rural	88.4	72.4	65.6	82.9	56.5	8.3	4857
Age							
15-24	89.5	69.1	64.4	82.1	52.6	8.9	3573
15-19	87.4	67.4	60.7	81.1	50.3	10.8	1899
20-24	91.8	71.0	68.6	83.3	55.2	6.7	1674
25-29	92.5	76.4	71.1	84.3	58.9	5.8	1768
30-39	92.0	75.3	70.7	83.2	58.7	6.0	3069
40-49	90.9	78.0	70.2	84.7	60.9	7.1	2218
50-59	na	na	na	na	na	na	na
Marital status							
Ever married/ in union	91.5	75.5	70.4	84.3	59.3	6.5	7471
Never married/in union	89.8	70.3	64.2	81.1	52.0	8.8	3156
Education							
None	84.6	70.1	64.4	78.8	55.7	8.5	2224
Primary	90.4	70.2	68.7	85.5	58.2	8.0	2026
Middle/JSS	92.1	75.4	68.1	84.4	56.7	7.6	4328
Secondary +	96.1	78.9	73.8	83.9	58.8	3.9	2049
Wealth index quintiles							
Poorest	83.2	69.8	63.7	77.8	56.6	9.9	1659
Second	88.3	71.4	65.8	83.7	56.6	8.9	1877
Middle	91.9	71.6	66.5	85.7	55.4	7.1	2101
Fourth	93.5	74.7	69.4	85.0	56.8	6.2	2345
Richest	94.8	79.6	74.3	83.2	59.6	5.1	2646
Total	91.0	74.0	68.5	83.3	57.2	7.2	10627

[1] MICS indicator 9.3

Table HA.3M: Knowledge of mother-to-child HIV transmission
Percentage of men age 15-59 years who correctly identify means of HIV transmission from mother to child, Ghana, 2011

Background Characteristics	Percentage who know HIV can be transmitted from mother to child	Percent who know HIV can be transmitted:				Does not know any of the specific means	Number of men
		During pregnancy	During delivery	By breastfeeding	All three means [1]		
Region							
Western	90.1	76.0	65.2	75.5	52.4	9.5	352
Central	95.0	74.4	74.7	87.7	60.3	5.0	296
Greater Accra	90.5	79.4	73.2	71.9	56.0	9.5	676
Volta	97.5	76.8	80.7	92.9	61.1	2.3	252
Eastern	96.8	79.9	78.2	91.2	67.2	2.4	358
Ashanti	89.7	74.5	68.7	79.7	56.8	9.8	638
Brong Ahafo	91.5	75.3	71.1	80.2	58.0	8.0	296
Northern	86.2	69.5	69.4	74.2	52.6	8.7	243
Upper East	85.0	64.9	68.0	74.8	52.1	13.4	120
Upper West	81.5	66.8	58.6	70.8	48.7	12.4	91
Residence							
Urban	92.4	76.6	72.6	77.9	55.5	7.5	1746
Rural	90.0	74.4	70.7	82.0	59.4	8.3	1575
Age							
15-24	88.7	70.9	64.8	76.6	50.7	9.3	1036
15-19	87.9	71.6	62.4	75.4	50.5	9.5	657
20-24	90.2	69.8	68.9	78.7	51.1	8.9	379
25-29	87.0	68.5	71.9	78.5	54.4	12.6	456
30-39	95.4	80.5	74.8	83.3	59.6	4.3	804
40-49	90.9	76.9	75.8	80.6	62.3	8.7	601
50-59	94.5	83.1	76.6	81.8	65.4	5.0	425
Marital status							
Ever married/in union	93.4	79.1	76.5	83.2	62.4	6.3	2007
Never married/in union	88.0	70.1	64.3	74.7	49.6	10.3	1314
Education							
None	83.8	73.3	68.0	78.6	61.2	12.7	417
Primary	89.2	69.3	65.8	81.0	53.7	8.4	416
Middle/JSS	92.0	75.8	69.8	83.3	58.6	7.7	1483
Secondary +	94.1	78.7	78.3	74.8	55.3	5.9	1006
Wealth index quintiles							
Poorest	85.7	70.9	67.2	79.0	57.2	10.5	518
Second	93.4	76.0	72.0	84.2	60.1	5.6	557
Middle	90.1	69.6	62.4	78.7	48.0	9.8	621
Fourth	91.6	78.6	75.0	83.3	63.5	8.4	779
Richest	93.8	79.7	78.0	75.2	56.8	5.9	847
Total	91.3	75.6	71.7	79.9	57.3	7.9	3321

[1] MICS indicator 9.3

Accepting Attitudes toward People Living with HIV & AIDS (PLHIV)

The indicators on attitudes toward people living with HIV measure stigma and discrimination in the community. Stigma and discrimination are low if respondents report an accepting attitude on the following four questions: 1) would care for a family member sick with AIDS; 2) would buy fresh vegetables from a vendor who was HIV positive; 3) thinks that a female teacher who is HIV positive should be allowed to teach in school; and 4) would not want to keep the HIV status of a family member a secret. Tables HA.4 and HA.4M presents the attitudes of women aged 15-49 years and men aged 15-59 years towards people living with HIV/AIDS.

In Ghana, 93 percent of women and 95 percent of men who have heard of AIDS agree with at least one discriminatory statement. A higher proportion of men express accepting attitude towards people living with HIV and AIDS (PLHIV), than women. The most common discriminative attitude for both women and men is the rejection of buying fresh vegetables from a person who has HIV and AIDS, “accepting rate” is only 30 percent and 41 percent for women and men respectively. The results also show that 83 percent of men are willing to care for a family member with the AIDS virus in their own home, compared to 73 percent of women, while 63 percent of the men believe that a female teacher with the AIDS virus and is not sick should be allowed to continue teaching, compared to 57 percent of women. Also, nearly half of the men (47%) would not want to keep secret that a family member is infected with the AIDS virus, compared to 35 percent of the women.

Overall, there are only 6 percent of the women and 15 percent of men who express accepting attitudes towards all four indicators. Women (7%) and men (20%) living in urban areas are more likely to express accepting attitudes towards people living with HIV and AIDS, compared to their rural counterparts (5% and 10% respectively).

Although low, the results also show that the proportion of women and men with accepting attitudes towards PLHIV improves with levels of education and household wealth. For example, only 2 percent of women with no education express accepting attitudes on all four indicators, compared to 12 percent of women with secondary or higher education. The trend is similar for men, where only 5 percent of those with no education express accepting attitudes towards PLHIV on all four indicators. This increases to 13 percent for those with middle/JSS education, and to 26 percent for those with secondary or higher education. In the case of household wealth, 7 percent of men from the poorest households express accepting attitudes on all four indicators. This increases to 26 percent for men belonging to the wealthiest households. The disaggregated data by age shows that the group with the highest level of accepting attitudes is the 25-29 age group for women (9%), and 30-39 age group for men (18%), and those with least accepting attitude is the 40-49 age-group for women (5%), and 15-19 age group for men (13%).

The low levels of accepting attitudes towards people living with HIV and AIDS, requires sensitization strategies to increase accepting attitudes, and to encourage care and support to those infected by HIV. According to the Ghana AIDS Commission, this includes developing programmes to educate on modes of transmission and how to prevent HIV infection, to debunk common misconceptions of the disease, and to promote regular HIV testing.

Table HA.4: Accepting attitudes toward people living with HIV/AIDS
Percentage of women age 15-49 years who have heard of AIDS who express an accepting attitude towards people living with HIV/AIDS, Ghana, 2011

Background Characteristics	Percent of women who:						Number of women who have heard of AIDS
	Are willing to care for a family member with the AIDS virus in own home	Would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus	Believe that a female teacher with the AIDS virus and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member got infected with the AIDS virus	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	
Region							
Western	49.4	19.6	46.6	46.6	87.1	5.0	1002
Central	70.7	26.1	57.2	36.8	91.9	5.1	1038
Greater Accra	73.0	37.7	70.5	28.6	93.9	8.6	2074
Volta	72.7	21.1	43.1	55.5	93.8	7.7	818
Eastern	75.7	35.8	53.5	26.2	92.7	4.6	1226
Ashanti	78.5	35.2	58.0	32.7	93.8	7.7	1972
Brong Ahafo	80.8	29.0	58.2	25.5	93.0	3.7	964
Northern	63.5	16.4	46.2	51.2	92.6	4.0	675
Upper East	84.8	26.9	57.4	34.8	96.5	6.2	396
Upper West	75.7	27.9	56.7	38.5	92.5	6.6	266
Residence							
Urban	76.1	35.9	64.8	31.6	94.2	7.3	5733
Rural	68.0	22.7	47.0	40.1	91.0	5.1	4698
Age							
15-24	71.4	29.9	56.9	31.8	90.8	6.5	3513
15-19	67.3	26.8	53.8	30.3	88.6	5.5	1864
20-24	76.1	33.5	60.5	33.4	93.3	7.7	1649
25-29	74.5	35.3	60.5	38.9	94.8	8.7	1738
30-39	72.9	30.3	56.1	35.5	93.4	5.5	3007
40-49	71.9	25.3	54.6	38.3	93.5	5.1	2173
Marital status							
Ever married/in union	71.9	28.2	54.7	37.5	93.2	5.7	7319
Never married/in union	73.8	34.2	61.7	30.5	91.8	7.8	3112
Education							
None	64.0	14.5	39.9	45.2	91.2	2.4	2073
Primary	66.1	19.6	44.3	37.5	90.0	4.1	1994
Middle/JSS	73.6	31.1	58.4	32.5	92.5	6.2	4315
Secondary +	84.8	53.3	82.7	29.6	97.8	12.4	2048
Wealth index quintiles							
Poorest	64.3	14.7	37.4	45.9	90.7	2.5	1544
Second	66.0	21.0	45.1	40.0	90.3	4.7	1824
Middle	68.9	25.5	50.5	37.9	91.7	4.7	2078
Fourth	75.4	32.6	61.1	29.9	91.9	6.9	2339
Richest	81.8	46.2	77.3	29.1	97.4	10.2	2646
Total	72.5	30.0	56.8	35.4	92.8	6.3	10431

[1] MICS indicator 9.4

Table HA.4M: Accepting attitudes toward people living with HIV/AIDS
Percentage of men age 15-59 years who have heard of AIDS who express an accepting attitude towards people living with HIV/AIDS, Ghana, 2011

Background Characteristics	Percent of men who:						Number of men who have heard of AIDS
	Are willing to care for a family member with the AIDS virus in own home	Would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus	Believe that a female teacher with the AIDS virus and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member got infected with the AIDS virus	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	
Region							
Western	68.5	29.8	53.9	58.5	91.5	13.6	351
Central	74.8	35.0	61.7	51.7	92.6	14.0	296
Greater Accra	85.9	52.5	72.8	46.5	95.8	21.1	676
Volta	91.4	29.5	43.0	22.5	95.4	3.4	252
Eastern	77.8	47.1	62.7	58.7	96.3	20.8	355
Asante	86.2	40.8	69.1	41.7	97.4	13.9	634
Brong Ahafo	80.8	38.9	64.8	42.3	93.8	12.8	295
Northern	86.1	36.2	53.4	46.9	94.6	13.4	230
Upper East	91.2	31.6	62.4	50.6	97.9	12.0	118
Upper West	89.2	44.5	70.6	54.4	98.6	19.6	85
Residence							
Urban	86.3	49.0	72.8	46.9	96.5	20.2	1744
Rural	78.2	31.1	52.5	46.6	93.9	9.6	1548
Age							
15-24	79.5	36.4	61.6	52.0	94.6	13.7	1015
15-19	76.0	29.4	56.7	55.1	92.6	13.1	640
20-24	85.3	48.4	69.9	46.6	98.0	14.8	375
25-29	85.2	43.5	64.6	40.1	97.6	14.0	453
30-39	84.9	45.0	64.8	45.2	96.1	17.5	802
40-49	81.9	37.8	60.1	48.3	94.6	14.7	598
50-59	83.0	43.2	66.9	42.4	93.8	16.8	423
Marital status							
Ever married/in union	82.6	40.3	62.1	45.2	95.1	15.2	2000
Never married/in union	82.3	41.0	64.9	49.2	95.5	15.4	1292
Education							
None	74.8	17.1	41.7	45.4	90.2	4.9	402
Primary	70.1	22.4	42.9	47.0	92.7	6.5	406
Middle/JSS	81.9	36.1	60.5	47.4	94.5	13.1	1478
Secondary +	91.4	63.9	84.0	46.3	99.5	26.0	1006
Wealth index quintiles							
Poorest	77.3	22.9	43.0	48.2	93.0	7.1	498
Second	75.3	26.9	49.9	42.1	91.0	7.7	551
Middle	82.3	39.2	59.0	47.2	96.3	11.8	620
Fourth	83.5	43.8	68.6	47.1	94.7	17.4	779
Richest	89.4	58.1	82.0	48.4	99.2	25.5	844
Total	82.5	40.6	63.2	46.8	95.3	15.2	3292

[1] MICS indicator 9.4

Knowledge of a Place for HIV Testing, Counselling and Testing during Antenatal Care

Another important indicator is the knowledge of where to be tested for HIV and use of such services. In order to protect themselves and to prevent infecting others, it is important for individuals to know their HIV status. Knowledge of one's status is also a critical factor in the decision to seek treatment. Questions related to knowledge among women and men of a facility for HIV testing and whether they have ever been tested is presented in Table HA.5. The results show that 74 percent of women aged 15-49 years, and 73 percent of men knew where to get tested, while only 45 percent of women and 26 percent of men have actually ever been tested.

Within the last 12 months less than 20 percent (19%) of women aged 15-49 years have been tested for HIV, and 17 percent have been told their results. Comparatively, only 11 percent of men have been tested for HIV within the past 12 months, and 10 percent have been told their results. The level of education is associated with HIV testing – the more educated the women, the higher the testing rates. For example, as indicated in Table HA.5M, only 11 percent of women aged 15-49 years with no education have been tested in the last 12 months and have been told their results. This increases to 17 percent for those with Middle/JSS education, and to 24 percent for those with secondary or higher education. The highest testing rate within the past 12 months occurred in the 25-29 years age- group for women (27%) and 25-29 and 30-39 years age-groups for men (13%). Women in the Eastern region (52%) and men in the Greater Accra region (32%) are more likely to have ever been tested for HIV. Women in the Eastern region are also more likely to have been tested in the last 12 months and received their results (21%), while women in the Northern region are least likely to have been tested in the last 12 months and received their results (9%).

From Tables HA.5 and HA.5M, we can see that significant variations exist in the testing rates for women and men. In general, it can be inferred that more women in Ghana test for HIV than men. This could be attributed to the fact that majority of women attend antenatal clinics when pregnant and receive HIV counselling and testing through the Provider Initiated Routine Testing (PIROT) program. However, a closer look at the data reveals that more women than men in the younger age-groups receive HIV testing and counselling, indicating that ANC may not be the only factor accounting for the higher testing rates in women.

Table HA.5: Knowledge of a place for HIV testing

Percentage of women age 15-49 years who know where to get an HIV test, percentage of women who have ever been tested, percentage of women who have been tested in the last 12 months, and percentage of women who have been tested and have been told the result, Ghana, 2011

Background Characteristics	Percentage of women who:				Number of women
	Know a place to get tested [1]	Have ever been tested	Have been tested in the last 12 months	Have been tested in the last 12 months and have been told result [2]	
Region					
Western	62.1	38.0	15.1	12.6	1022
Central	76.4	46.0	21.1	19.2	1044
Greater Accra	90.7	49.0	17.8	16.6	2074
Volta	79.0	49.9	22.8	18.5	821
Eastern	83.6	52.2	21.4	20.5	1237
Asante	70.7	46.0	21.6	19.6	1983
Brong Ahafo	62.5	39.4	16.7	15.5	1005
Northern	49.4	29.2	10.8	8.7	754
Upper East	66.4	42.7	15.4	10.7	404
Upper West	71.3	51.4	20.0	17.3	282
Area					
Urban	81.5	47.9	20.4	18.9	5770
Rural	65.2	41.7	16.8	14.2	4857
Age					
15-24	66.4	30.8	14.2	12.3	3573
15-19	54.1	15.8	7.9	6.4	1899
20-24	80.3	47.8	21.3	19.1	1674
25-29	85.0	61.3	26.9	24.5	1768
30-39	78.5	55.6	22.9	20.6	3069
40-49	71.5	40.4	13.9	12.4	2218
Marital status					
Ever married/in union	77.0	53.5	22.2	19.6	7471
Never married/in union	67.2	25.0	10.7	10.1	3156
Education					
None	58.3	36.7	14.4	11.4	2224
Primary	67.9	45.4	18.6	16.3	2026
Middle/JSS	76.4	45.1	18.4	16.5	4328
Secondary +	92.2	53.5	24.5	23.5	2049
Wealth index quintiles					
Poorest	52.0	31.3	10.6	7.7	1659
Second	64.3	40.4	16.2	13.3	1877
Middle	74.1	45.9	20.8	18.5	2101
Fourth	79.8	49.0	19.6	18.2	2345
Richest	89.7	52.7	23.3	22.2	2646
Total	74.0	45.0	18.8	16.8	10627
1] MICS indicator 9.5					
[2] MICS indicator 9.6					

Table HA.5M: Knowledge of a place for HIV testing

Percentage of men age 15-59 years who know where to get an HIV test, percentage of men who have ever been tested, percentage of men who have been tested in the last 12 months, and percentage of men who have been tested and have been told the result, Ghana, 2011

Background Characteristics	Percentage of men who:				Number of men
	Know a place to get tested [1]	Have ever been tested	Have been tested in the last 12 months	Have been tested in the last 12 months and have been told result [2]	
Region					
Western	58.5	23.6	7.0	7.0	352
Central	70.2	25.0	9.4	8.6	296
Greater Accra	83.2	31.9	15.0	14.5	676
Volta	69.8	19.1	8.0	6.7	252
Eastern	82.4	29.2	14.3	13.1	358
Asante	68.1	23.4	10.5	9.8	638
Brong Ahafo	81.2	21.0	6.9	6.3	296
Northern	65.7	20.9	7.8	6.5	243
Upper East	67.0	28.4	10.3	8.0	120
Upper West	73.8	29.3	16.8	14.1	91
Area					
Urban	80.6	30.3	13.7	12.7	1746
Rural	64.9	20.3	7.7	7.0	1575
Age					
15-24	62.9	12.0	6.6	5.3	1036
15-19	56.4	6.6	3.5	2.8	657
20-24	74.2	21.5	12.1	9.7	379
25-29	77.1	30.6	13.4	13.2	456
30-39	79.5	35.3	13.6	12.9	804
40-49	76.3	31.2	13.3	12.4	601
50-59	77.2	26.6	9.4	8.9	425
Marital status					
Ever married/in union	77.1	30.8	11.8	11.1	2007
Never married/in union	67.1	17.5	9.2	8.2	1314
Education					
None	56.8	20.9	9	7.6	417
Primary	57.7	13.4	4.3	4.2	416
Middle/JSS	70.7	21	7.9	7.2	1483
Secondary +	89.8	39.1	18.5	17.4	1006
Wealth index quintiles					
Poorest	54.9	18.2	5.9	4.6	518
Second	64.1	16.4	7.5	6.4	557
Middle	70.1	20.1	8.5	7.6	621
Fourth	76.3	25.3	11.3	11.0	779
Richest	89.5	40.3	17.3	16.3	847
Total	73.1	25.5	10.8	10.0	3321
[1] MICS indicator 9.5					
[2] MICS indicator 9.6					

Tables HA.6 and HA>6M present the same results for sexually active young women and men aged 15-24 years. The proportion of young people who have been tested and have been told the result provides a measure of the effectiveness of interventions that promote HIV counselling and testing among young people. This is important to know, because young people may feel that there are barriers to accessing services related to sensitive issues, such as sexual health.

The results show that 54 percent of young women and 32 percent of young men had had sex within the past 12 months. The highest percentages of sexually active young women are in Western (65%), Eastern (58%) and Volta (58%) regions, while the highest percentages of sexually active young men can be found in the Eastern region (44%). Overall, of those sexually active young people, 75 percent of women, and 68 percent of men know where to get tested, while 43 percent of the women and 18 percent of the men have ever been tested for HIV. Within the past 12 months, 20 percent of young women got tested and 17 percent received their results. The results for women are higher, as only 10 percent of young men had been tested in the last 12 months, and only 8 percent received their results.

For young women, it is worth noting that knowledge of where to get tested is high among regions with high sexual activity except Western which recorded the lowest knowledge level (55%). There is a slight difference between urban and rural young women: women from urban areas are more likely (20%) to have been tested and to have received the results in the last 12 months than women from rural areas (15%). This difference does not exist among young men. As expected, there is a direct relationship between the proportion of young women who were tested for HIV in the last 12 months and received their results and their education levels and household wealth. For example, only 8 percent of young women from the poorest households got tested in the last 12 months and received their results, compared to 23 percent of the women in the wealthiest households. The same pattern is observed by levels of education. However, for young men, this cannot be sufficiently concluded due to the small numbers in the sample for some of the background characteristics.

Table HA.6: Knowledge of a place for HIV testing among sexually active young women
 Percentage of women age 15-24 years who have had sex in the last 12 months, and among women who have had sex in the last 12 months, the percentage who know where to get an HIV test, percentage of women who have ever been tested, percentage of women who have been tested in the last 12 months, and percentage of women who have been tested and have been told the result, Ghana, 2011

Background Characteristics	Percentage who have had sex in the last 12 months	Number of women age 15-24 years	Percentage of women who:				Number of women age 15-24 years who have had sex in the last 12 months
			Know a place to get tested	Have ever been tested	Have been tested in the last 12 months	Have been tested in the last 12 months and have been told result [1]	
Region							
Western	65.1	329	55.0	34.4	14.4	11.2	214
Central	51.7	379	81.1	41.4	21.5	19.8	196
Greater Accra	51.4	632	95.0	47.6	21.9	19.6	325
Volta	58.0	272	77.7	47.5	19.4	14.2	158
Eastern	58.2	398	85.0	52.0	28.1	24.6	232
Ashanti	56.5	718	71.5	46.5	18.2	16.4	406
Brong Ahafo	54.4	396	62.8	36.6	20.6	17.7	215
Northern	48.2	219	46.7	22.7	9.3	7.0	106
Upper East	34.7	132	75.3	45.4	24.1	17.9	46
Upper West	39.8	98	78.9	54.0	26.1	23.0	39
Residence							
Urban	49.4	1939	81.1	43.0	21.3	19.6	959
Rural	59.8	1634	68.3	43.6	18.9	15.1	977
Age							
15-19	33.7	1899	60.1	25.7	14.1	10.6	639
20-24	77.5	1674	81.8	52.0	23.1	20.6	1297
Marital status							
Ever married/in union	93.6	986	77.3	60.8	28.9	23.7	923
Never married/in union	39.2	2587	72.2	27.4	12.1	11.5	1013
Education							
None	70.5	286	50.2	35.6	15.8	10.9	202
Primary	56.7	610	64.7	40.3	18.7	16.2	346
Middle/JSS	51.1	1767	76.0	46.6	22.2	18.8	902
Secondary +	53.4	909	89.4	42.5	19.0	17.9	486
Wealth index quintiles							
Poorest	54.6	526	50.0	32.6	13.6	8.0	287
Second	58.8	663	68.3	39.4	18.6	15.3	390
Middle	59.2	781	77.8	46.6	20.8	17.9	462
Fourth	53.7	778	80.3	43.6	21.1	19.7	418
Richest	45.9	826	89.8	51.1	24.6	23.1	379
Total	54.2	3573	74.6	43.3	20.1	17.3	1936

[1] MICS indicator 9.7

Table HA.6M: Knowledge of a place for HIV testing among sexually active young men
 Percentage of men age 15-24 years who have had sex in the last 12 months, and among men who have had sex in the last 12 months, the percentage who know where to get an HIV test, percentage of men who have ever been tested, percentage of men who have been tested in the last 12 months, and percentage of men who have been tested and have been told the result, Ghana, 2011

Background Characteristics	Percentage who have had sex in the last 12 months	Number of men age 15-24 years	Percentage of men who:				Number of men age 15-24 years who have had sex in the last 12 months
			Know a place to get tested	Have ever been tested	Have been tested in the last 12 months	Have been tested in the last 12 months and have been told result [1]	
Region							
Western	24.3	107	*	*	*	*	26
Central	39.5	94	76.3	18.1	9.2	9.2	37
Greater Accra	26.8	194	*	*	*	*	52
Volta	37.5	87	*	*	*	*	32
Eastern	(44.3)	95	*	*	*	*	42
Ashanti	37.6	195	(65.0)	(16.4)	(16.4)	(10.3)	73
Brong Ahafo	34.0	92	*	*	*	*	31
Northern	20.8	86	(59.7)	(23.6)	(12.8)	(9.1)	18
Upper East	23.4	49	(74.1)	(30.3)	(11.3)	(5.9)	11
Upper West	25.8	36	(77.2)	(20.6)	(14.4)	(14.4)	9
Residence							
Urban	34.0	537	74.7	17.1	10.0	8.3	182
Rural	30.2	499	59.4	17.9	10.7	8.5	151
Age of man							
15-19	17.2	657	59.9	9.7	1.5	.9	113
20-24	58.2	379	71.8	21.4	14.8	12.2	220
Marital status							
Ever married/in union	96.4	53	(63.1)	(9.7)	(8.8)	(8.8)	51
Never married/in union	28.8	983	68.6	18.8	10.6	8.3	283
Education							
None	37.3	41	(48.2)	(18.1)	(13.8)	(9.0)	15
Primary	22.4	156	(41.8)	(3.3)	(2.5)	(2.5)	35
Middle/JSS	27.7	560	60.4	17.5	10.0	8.5	155
Secondary +	45.9	280	85.9	21.1	12.4	9.7	129
Wealth index quintiles							
Poorest	24.1	169	51.8	17.5	10.1	3.7	41
Second	29.0	204	67.8	17.1	11.3	10.1	59
Middle	33.6	246	66.5	14.6	11.0	10.2	83
Fourth	42.5	223	65.8	20.2	10.9	10.9	95
Richest	28.9	193	(84.7)	(17.4)	(7.4)	(2.9)	56
Total	32.2	1036	67.8	17.5	10.3	8.4	333

[1] MICS indicator 9.7
 An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Among women who had given birth within the two years preceding the survey, the percent who received counselling and HIV testing during antenatal care is presented in Table HA.7. Testing and counselling during pregnancy is an important component of elimination of mother-to-child transmission (eMTCT), and more so if the desire is to attain the MDG's and Ghana's target of having a generation free of HIV as stipulated by the UNAIDS in its targets 'getting to Zero new HIV infections'.

A high proportion of women aged 15-49 that gave birth in the 2 years preceding the survey received antenatal care from a health care professional for the last pregnancy (96%). Less than 60 percent received routine HIV counselling during the antenatal care, and two thirds (67%) were offered an HIV test and were tested for HIV during antenatal care. Slightly more than half (55%) of the women were offered an HIV test and were tested for HIV during antenatal care, and received the results. The results show that overall, 46 percent of the women who received HIV counselling were offered an HIV test, accepted and were tested, and received the results during antenatal care. This relatively low coverage might be due to communication pitfalls between providers and clients when these tests are requested and done.

Greater Accra (79%), Upper East (71%), Upper West (70%) and Eastern regions (68%) have the highest proportions of women that received HIV counselling during antenatal care, while Northern region (36%) and Volta (39%) have the lowest proportions. For women who were offered an HIV test, and were tested for HIV during antenatal care, and received the results, the highest proportion can be found in Eastern region (81%), while Northern region has the lowest (27%).

A mother who knows early in her pregnancy that she is HIV infected has more time to make important decisions. She and her health care provider will have more time to decide on effective ways to protect her health and prevent mother-to-child transmission of HIV. She can also take steps to prevent infecting others with HIV.

Table HA.7: HIV counselling and testing during antenatal care
 Among women age 15-49 who gave birth in the last 2 years, percentage of women who received antenatal care from a health professional during the last pregnancy, percentage who received HIV counseling, percentage who were offered and accepted an HIV test and received the results, Ghana, 2011

Background Characteristics	Percent of women who:					Number of women who gave birth in the 2 years preceding the survey
	Received antenatal care from a health care professional for last pregnancy	Received HIV counseling during antenatal care [1]	Were offered an HIV test and were tested for HIV during antenatal care	Were offered an HIV test and were tested for HIV during antenatal care, and received the results [2]	Received HIV counseling, were offered an HIV test, accepted and received the results	
Region						
Western	95.0	56.2	53.6	48.6	43.2	270
Central	96.0	61.6	63.1	55.7	46.9	246
Greater Accra	98.5	78.5	85.2	75.8	67.9	397
Volta	97.2	38.8	62.5	36.6	23.1	189
Eastern	96.3	68.1	87.4	80.7	63.9	288
Ashanti	98.6	59.2	69.7	51.3	40.6	449
Brong Ahafo	97.0	48.3	55.7	46.1	38.3	227
Northern	90.4	36.1	38.2	26.8	23.3	283
Upper East	98.9	70.6	74.5	49.9	47.9	105
Upper West	92.9	70.4	68.7	61.4	54.5	75
Residence						
Urban	98.0	69.6	79.3	67.9	57.1	1068
Rural	95.2	51.0	57.4	44.8	37.3	1460
Age						
15-24	96.0	56.3	62.9	48.5	40.0	620
15-19	96.9	50.3	59.3	42.5	31.2	156
20-24	95.7	58.4	64.1	50.5	43.0	464
25-29	98.3	61.9	69.6	59.6	52.8	641
30-39	96.3	60.4	69.9	58.2	47.0	1040
40-49	92.2	50.3	53.5	40.7	35.2	227
Marital status						
Ever married/in union	96.4	58.4	66.7	54.3	45.1	2353
Never married/in union	95.3	65.0	65.7	58.2	54.1	175
Education						
None	92.9	45.6	47.1	34.9	30.2	733
Primary	96.5	56.2	68.1	52.4	43.9	565
Middle/JSS	97.7	67.2	74.0	63.0	53.4	886
Secondary +	100.0	70.0	86.7	78.3	61.9	344
Wealth index quintile						
Poorest	92.4	41.7	43.5	29.4	26.3	560
Second	94.2	54.7	58.1	46.7	39.2	546
Middle	98.1	57.1	69.1	55.0	41.0	500
Fourth	98.2	68.1	81.3	67.1	58.2	455
Richest	100.0	77.2	87.5	81.5	69.4	467
Total	96.4	58.9	66.6	54.6	45.7	2528

[1] MICS indicator 9.8
 [2] MICS indicator 9.9

Sexual Behaviour Related to HIV Transmission

Promoting safer sexual behaviour is critical for reducing HIV prevalence. The correct and consistent use of condoms during sex, especially with non-regular partners, is especially important for reducing the spread of HIV. In most countries, over half of new HIV infections are among young people aged 15-24 years thus a change in behaviour among this age group will be especially important to reduce new infections. A module of questions was administered to women aged 15-24 years to assess their risk of HIV infection. Risk factors for HIV include sex at an early age, sex with older men, sex with a non-marital, non-cohabitating partner, and failure to use a condom. Similar questions were also asked of men aged 15-24.

The frequencies of sexual behaviours that increases the risk of HIV infection among women are presented in Table HA.8 and Figure HA.2. The results from the survey show that more than half of the never married young women (52%) and 61 percent of never married young men have never had sex. About 10 percent of all young women and 5 percent of all young men aged 15-24 years had sex before age 15 years. The highest proportion (18%) was recorded among young women with primary education. In terms of household economic status, young women from the 40 percent poorest households are more likely to have had sex before age 15 (14%), compared to their counterparts from the richest wealth quintile (4%).

Intergenerational sex is relatively high among young women aged 15-24 years – 12 percent of young women had sex with a man at least 10 years older in the 12 months preceding the survey. This situation may partly account for the high numbers of new infections among the youth and especially young women in Ghana. The relatively weak and maturing vagina lining (mucosa), decreased the ability of younger women to negotiate for safer sex with older men and the argument that older men have higher HIV prevalence than their adolescent counterparts play critical role in increasing their vulnerabilities. Among the young men aged 15-24 years who had sex in the 12 months preceding the survey, virtually none had sex with a woman 10 or more years older.

Table HA.8: Sexual behaviour that increases the risk of HIV infection
 Percentage of never-married young women age 15-24 years who have never had sex, percentage of young women age 15-24 years who have had sex before age 15, and percentage of young women age 15-24 years who had sex with a man/man 10 or more years older during the last 12 months, Ghana, 2011

Background Characteristics	Percentage of never-married women age 15-24 years who have never had sex [1]	Number of never-married women age 15-24 years	Percentage of women age 15-24 Background Characteristics years who had sex before age 15 [2]	Number of women age 15-24 years	Percentage of women age 15-24 years who had sex in the last 12 months with a man 10 or more years older [3]	Number of women age 15-24 years who had sex in the 12 months preceding the survey
Region						
Western	39.4	224	19.0	329	8.7	214
Central	47.7	296	10.3	379	7.9	196
Greater Accra	49.2	524	5.2	632	7.1	325
Volta	52.6	170	12.5	272	16.8	158
Eastern	52.8	281	8.7	398	10.9	232
Ashanti	56.0	465	8.1	718	12.1	406
Brong Ahafo	48.4	315	14.9	396	15.1	215
Northern	63.2	141	8.6	219	27.9	106
Upper East	76.0	99	4.2	132	17.0	46
Upper West	69.6	73	4.3	98	18.1	39
Residence						
Urban	51.3	1559	6.0	1939	10.8	959
Rural	53.7	1028	14.2	1634	13.5	977
Age						
15-19	66.0	1743	10.1	1899	6.6	639
20-24	24.0	844	9.3	1674	14.9	1297
Marital status						
Ever married/in union	na	na	17.5	986	20.3	923
Never married/in union	52.3	2587	6.8	2587	4.7	1013
Education						
None	53.0	102	15.1	286	24.7	202
Primary	62.1	371	17.7	610	14.6	346
Middle/JSS	56.4	1319	9.3	1767	10.8	902
Secondary +	40.9	795	3.4	909	7.7	486
Wealth index quintiles						
Poorest	61.4	318	14.4	526	17.1	287
Second	49.7	482	13.6	663	13.4	390
Middle	49.3	518	10.2	781	10.9	462
Fourth	49.7	583	8.9	778	9.8	418
Richest	54.3	687	3.8	826	11.1	379
Total	52.3	2587	9.7	3573	12.1	1936
[1] MICS indicator 9.10						
[2] MICS indicator 9.11						
[3] MICS indicator 9.12						
na: Not applicable						

Table HA.8M: Sexual behaviour that increases the risk of HIV infection

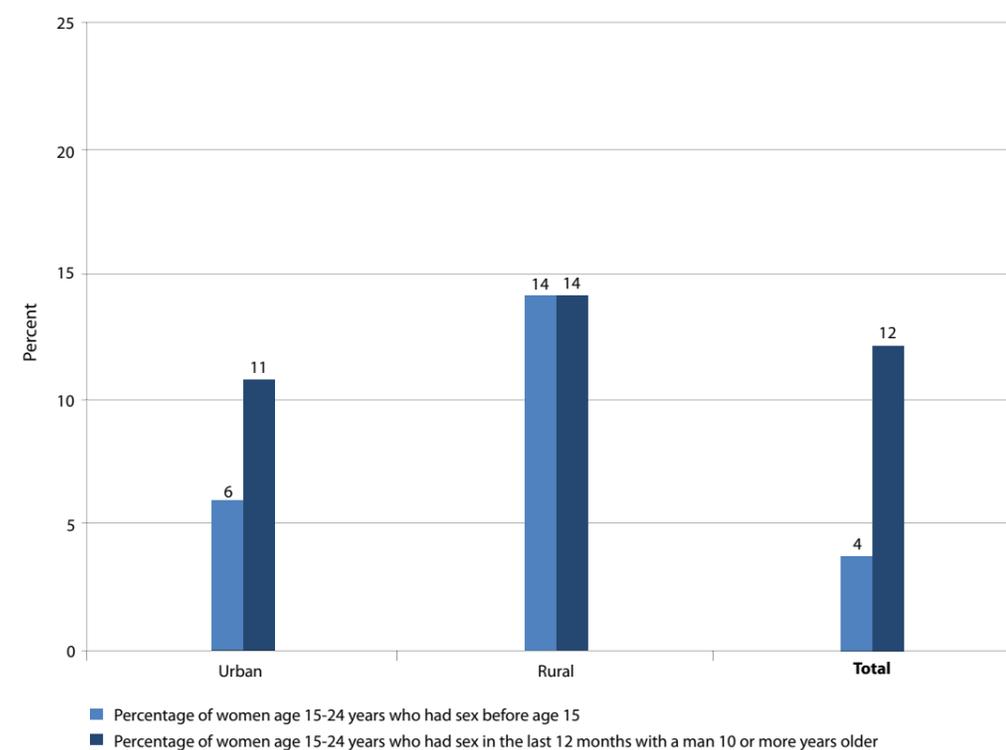
Percentage of never-married young men age 15-24 years who have never had sex, percentage of young men age 15-24 years who have had sex before age 15, and percentage of young men age 15-24 years who had sex with a woman 10 or more years older during the last 12 months, Ghana, 2011

Background Characteristics	Percentage of never-married men age 15-24 years who have never had sex [1]	Number of never-married men age 15-24 years	Percentage of men age 15-24 years who had sex before age 15 [2]	Number of men age 15-24 years	Percentage of men age 15-24 years who had sex in the last 12 months with a woman 10 or more years older [3]	Number of men age 15-24 years who had sex in the 12 months preceding the survey
Region						
Western	67.6	104	4.3	107	*	26
Central	50.2	91	4.0	94	.0	37
Greater Accra	63.4	190	3.6	194	*	52
Volta	50.9	85	6.9	87	*	32
Eastern	(56.7)	83	(15.3)	95	*	42
Ashanti	57.2	176	4.1	195	(.0)	73
Brong Ahafo	65.5	89	1.1	92	*	31
Northern	70.4	84	3.4	86	(.0)	18
Upper East	70.2	45	4.3	49	(.0)	11
Upper West	72.8	34	1.9	36	(.0)	9
Residence						
Urban	57.0	518	2.9	537	.0	182
Rural	66.1	465	7.0	499	.0	151
Age of man						
15-19	77.5	652	6.2	657	.0	113
20-24	29.3	332	2.6	379	.0	220
Marital status						
Ever married/in union	na	na	.0	53	(.0)	51
Never married/in union	61.3	983	5.1	983	.0	283
Education						
None	65.5	36	2.8	41	(.0)	15
Primary	75.6	151	6.2	156	(.0)	35
Middle/JSS	68.6	527	6.1	560	.0	155
Secondary +	38.1	269	2.0	280	.0	129
Wealth index quintiles						
Poorest	72.8	160	3.5	169	.0	41
Second	64.7	194	7.0	204	.0	59
Middle	58.7	235	2.1	246	.0	83
Fourth	53.0	211	6.4	223	.0	95
Richest	60.4	183	5.6	193	(.0)	56
Total	61.3	61.3	983	4.9	1036	.0

[1] MICS indicator 9.10, [2] MICS indicator 9.11, [3] MICS indicator 9.12
na: Not applicable

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Figure HA.2: Sexual behaviour that increases risk of HIV infection, Ghana, 2011



Sexual behaviour and condom use during sex with more than one partner was assessed in all women (aged 15-49) and men (aged 15-59), and separately for women and men aged 15-24 years who had sex with more than one partner in the 12 months preceding the survey (Tables HA.9 and HA.10). Overall, 87 percent of women aged 15-49 and 81 percent of men aged 15-59 years have ever had sex; 74 percent of the women and 73 percent had sex in the last 12 months. Table HA.9 also shows that 2 percent of women aged 15-49 years report having sex with more than one partner in the last 12 months. Of those women, 23 percent report that a condom was used the last time they had sex.

A higher proportion of men aged 15-59 years reported to have had sex with more than one partner in the last 12 months (14%) than for women, and of these, 13 percent reported that a condom was used the last time they had sex.

The data also show that a higher proportion of women (2%) in the urban areas had sex with multiple partners in the last 12 months, compared to those living in rural areas (1%). For men who had sex with multiple partners in the last 12 months, slight variations are noted by area of residence (14% for urban and 13% for rural).

Sex with multiple partners is a high risk behaviour that predisposes people to HIV infection and other Sexually Transmissible Infections (STI's) such as Human Papilloma Virus (HPV), viral hepatitis, Chlamydia, etc.

Table HA.9: Sex with multiple partners

Percentage of women age 15-49 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with more than one partner in the last 12 months and among those who had sex with multiple partners, the percentage who used a condom at last sex, Ghana, 2011

Background Characteristics	Percentage of women who:			Number of women age 15-49 years	Percent of women age 15-49 years who had more than one sexual partner in the last 12 months, who also reported that a condom was used the last time they had sex [2]	Number of women age 15-49 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in last 12 months [1]			
Region						
Western	90.7	81.6	2.3	1022	*	23
Central	86.3	74.0	1.7	1044	*	18
Greater Accra	85.7	69.8	2.6	2074	*	54
Volta	88.4	76.3	2.4	821	*	19
Eastern	87.6	79.0	1.4	1237	*	17
Ashanti	86.0	75.0	1.8	1983	*	35
Brong Ahafo	84.5	74.7	2.6	1005	*	26
Northern	88.0	72.2	.5	754	*	4
Upper East	81.0	62.4	.6	404	*	2
Upper West	81.6	68.4	.9	282	*	3
Residence						
Urban	84.9	70.9	2.4	5770	23.8	136
Rural	88.3	78.1	1.4	4857	21.6	66
Age						
15-24	62.1	54.2	3.3	3573	27.2	119
15-19	39.4	33.7	2.2	1899	(22.3)	42
20-24	87.9	77.5	4.6	1674	(29.9)	76
25-29	96.8	85.2	2.1	1768	(25.7)	38
30-39	99.2	87.2	1.0	3069	(11.2)	31
40-49	99.9	79.7	.7	2218	*	15
Marital status						
Ever married/in union	100.0	87.9	1.2	7471	12.0	93
Never married/in union	54.5	41.8	3.5	3156	32.5	109
Education						
None	97.2	81.9	1.0	2224	(.8)	21
Primary	88.2	77.0	1.6	2026	(15.6)	32
Middle/JSS	82.5	71.6	1.8	4328	16.2	77
Secondary +	81.6	68.6	3.5	2049	(40.5)	72
Wealth index quintiles						
Poorest	88.0	74.5	1.2	1659	(9.2)	20
Second	87.0	74.9	1.8	1877	*	34
Middle	87.6	74.1	2.1	2101	(5.5)	43
Fourth	87.0	76.6	1.8	2345	(38.2)	43
Richest	83.9	71.4	2.4	2646	27.1	63
Total	86.5	74.2	1.9	10627	23.1	202

[1] MICS indicator 9.13

[2] MICS indicator 9.14

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Table HA.9M: Sex with multiple partners

Percentage of men age 15-59 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with more than one partner in the last 12 months and among those who had sex with multiple partners, the percentage who used a condom at last sex, Ghana, 2011

Background Characteristics	Percentage of men who:			Number of men age 15-59 years	Percent of men age 15-59 years who had more than one sexual partner in the last 12 months, who also reported that a condom was used the last time they had sex [2]	Number of men age 15-59 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in last 12 months [1]			
Region						
Western	76.8	72.7	14.4	352	*	51
Central	84.2	75.6	12.5	296	16.1	37
Greater Accra	80.2	70.6	14.0	676	(15.0)	95
Volta	82.8	75.0	5.6	252	*	14
Eastern	86.9	82.4	18.1	358	(10.9)	65
Asante	83.9	75.7	17.1	638	(6.0)	109
Brong Ahafo	78.4	71.0	10.5	296	*	31
Northern	72.2	61.2	14.7	243	12.3	36
Upper East	71.2	60.1	9.8	120	(33.6)	12
Upper West	71.4	62.2	11.7	91	26.5	11
Area						
Urban	81.3	73.3	13.3	1746	16.0	232
Rural	79.7	71.8	14.4	1575	9.4	227
Age						
15-24	41.7	32.2	6.3	1036	39.3	65
15-19	23.0	17.2	2.6	657	*	17
20-24	74.2	58.2	12.6	379	(31.5)	48
25-29	93.0	81.6	17.5	456	18.5	80
30-39	98.7	93.9	21.0	804	9.6	169
40-49	99.8	93.9	15.7	601	1.5	95
50-59	100.0	90.9	12.0	425	1.1	51
Marital status						
Ever married/in union	99.9	95.3	17.8	2007	5.2	357
Never married/in union	50.8	37.9	7.8	1314	39.0	102
Education						
None	93.5	84.2	13.6	417	4.8	57
Primary	70.6	64.9	11.7	416	7.6	49
Middle/JSS	75.2	68.6	12.8	1483	12.0	189
Secondary +	87.1	76.8	16.3	1006	17.8	164
Wealth index quintiles						
Poorest	76.0	67.2	10.0	518	8.7	52
Second	76.8	68.8	12.6	557	13.6	70
Middle	77.0	67.7	14.2	621	17.0	88
Fourth	84.3	77.9	15.0	779	13.2	117
Richest	84.9	77.0	15.6	847	10.5	132
Total	80.5	72.6	13.8	3321	12.7	459

[1] MICS indicator 9.13

[2] MICS indicator 9.14

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Tables HA.10 and HA.10M shows similar indicators but for young women and men aged 15-24 years. The results reveal that 62 percent of young women who have never been married and 42 percent of young men who have never been married have ever had sex. Of these, 54 percent of the women and 32 percent of the men had sex in the last 12 months.

Table HA.10 also shows that 3 percent of young women had sex with more than one sexual partner in the past 12 months and, of these, only 27 percent reported using a condom in their most recent sexual activity. In the case of young men, the Table HA.10M shows that 6 percent had sex with multiple partners in the 12 months prior to the survey, and of these, 39 percent reported that a condom was used the last time they had sex.

Table HA.10: Sex with multiple partners (Young women)

Percentage of women age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with more than one partner in the last 12 months and among those who had sex with multiple partners, the percentage who used a condom at last sex, Ghana, 2011

Background Characteristics	Percentage of women who:			Number of women age 15-24 years	Percent of women age 15-24 years who had more than one sexual partner in the last 12 months, who also reported that a condom was used the last time they had sex [2]	Number of women age 15-24 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in last 12 months [1]			
Region						
Western	73.2	65.1	4.1	329	*	14
Central	62.8	51.7	1.4	379	*	5
Greater Accra	59.2	51.4	4.4	632	*	28
Volta	67.3	58.0	1.4	272	*	4
Eastern	62.7	58.2	3.5	398	*	14
Asante	63.7	56.5	3.5	718	*	25
Brong Ahafo	61.5	54.4	5.7	396	*	23
Northern	59.4	48.2	1.4	219	*	3
Upper East	42.8	34.7	1.0	132	*	1
Upper West	48.2	39.8	2.2	98	*	2
Residence						
Urban	58.7	49.4	4.3	1939	(24.9)	83
Rural	66.2	59.8	2.2	1634	(32.5)	35
Age						
15-19	39.4	33.7	2.2	1899	(22.3)	42
20-24	87.9	77.5	4.6	1674	(29.9)	76
Marital status						
Ever married/in union	100.0	93.6	2.3	986	*	22
Never married/in union	47.7	39.2	3.7	2587	29.0	96
Education						
None	81.1	70.5	3.1	286	*	9
Primary	62.2	56.7	2.4	610	*	15
Middle/JSS	57.9	51.1	2.7	1767	(17.9)	48
Secondary +	64.3	53.4	5.2	909	*	47
Wealth index quintiles						
Poorest	62.9	54.6	2.0	526	(.2)	11
Second	63.9	58.8	2.2	663	(62.7)	15
Middle	67.3	59.2	3.9	781	(7.9)	30
Fourth	62.7	53.7	3.7	778	(36.7)	28
Richest	54.8	45.9	4.2	826	(28.5)	34
Total	62.1	54.2	3.3	3573	27.2	119

[1] MICS indicator 9.13

[2] MICS indicator 9.14

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Table HA.10M: Sex with multiple partners (Young men)

Percentage of men age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with more than one partner in the last 12 months and among those who had sex with multiple partners, the percentage who used a condom at last sex, Ghana, 2011

Background Characteristics	Percentage of men who:			Number of men age 15-24 years	Percent of men age 15-24 years who had more than one sexual partner in the last 12 months, who also reported that a condom was used the last time they had sex [2]	Number of men age 15-24 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in last 12 months [1]			
Region						
Western	34.5	24.3	8.7	107	*	9
Central	51.3	39.5	6.2	94	*	6
Greater Accra	37.9	26.8	6.6	194	*	13
Volta	49.8	37.5	.0	87	*	0
Eastern	(50.8)	(44.3)	(7.5)	95	*	7
Asante	48.3	37.6	9.3	195	*	18
Brong Ahafo	36.5	34.0	2.9	92	*	3
Northern	31.3	20.8	4.5	86	*	4
Upper East	32.7	23.4	4.4	49	*	2
Upper West	31.2	25.8	8.9	36	*	3
Area						
Urban	45.0	34.0	6.3	537	(49.1)	34
Rural	38.2	30.2	6.2	499	(28.6)	31
Age of man						
15-19	23.0	17.2	2.6	657	*	17
20-24	74.2	58.2	12.6	379	(31.5)	48
Marital status						
Ever married/in union	97.7	96.4	24.4	53	*	13
Never married/in union	38.7	28.8	5.3	983	43.6	52
Education						
None	42.3	37.3	13.6	41	*	6
Primary	26.3	22.4	4.1	156	*	6
Middle/JSS	35.2	27.7	5.3	560	(31.5)	30
Secondary +	63.4	45.9	8.3	280	(65.6)	23
Wealth index quintiles						
Poorest	30.5	24.1	5.0	169	*	8
Second	38.4	29.0	4.2	204	*	9
Middle	44.0	33.6	7.3	246	*	18
Fourth	50.0	42.5	9.2	223	*	21
Richest	42.7	28.9	5.0	193	*	10
Total	41.7	32.2	6.3	1036	39.3	65

[1] MICS indicator 9.13

[2] MICS indicator 9.14

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Tables HA.11 and HA.11M present the percentage of women and men aged 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with a non-marital, non-cohabiting partner in the last 12 months and among those who had sex with a non-marital, non-cohabiting partner, the percentage who used a condom the last time they had sex with such a partner.

Slightly more than half (56%) of the sexually active young women aged 15-24 years report having had sex with a non-marital, non-cohabiting partner in the 12 months prior to the survey. Of those women, 41 percent reported that a condom was used the last time they had sex with such a partner. For sexually active young men aged 15-24 years, 88 percent report having had sex with a non-marital, non-cohabiting partner in the last 12 months, and 54 percent of these young men reported that a condom was used the last time they had sex with such a partner.

For both young women and men who reported having had sex with a non-marital, non-cohabiting partner in the 12 months prior to the survey, a higher proportion of those living in urban areas reported that a condom was used the last time they had sex with such a partner (49% and 64% respectively), compared to those living in rural areas (30% and 41% respectively).

Table HA.11: Sex with non-regular partners

Percentage of women age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with a non-marital, non-cohabiting partner in the last 12 months and among those who had sex with a non-marital, non-cohabiting partner, the percentage who used a condom the last time they had sex with such a partner, Ghana, 2011

Background Characteristics	Percentage of women 15-24 who:		Number of women age 15-24 years	Percentage who had sex with a non-marital, non-cohabiting partner in the last 12 months [1]	Number of women age 15-24 years who had sex in the last 12 months	Percentage of women age 15-24 years who had sex with a non-marital, non-cohabiting partner in the last 12 months, who also reported that a condom was used the last time they had sex with such a partner [2]	Number of women age 15-24 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months					
Region							
Western	73.2	65.1	329	57.0	214	40.2	122
Central	62.8	51.7	379	65.5	196	42.8	128
Greater Accra	59.2	51.4	632	69.1	325	56.3	224
Volta	67.3	58.0	272	42.0	158	32.9	66
Eastern	62.7	58.2	398	56.5	232	37.2	131
Ashanti	63.7	56.5	718	45.7	406	31.8	186
Brong Ahafo	61.5	54.4	396	69.5	215	31.1	150
Northern	59.4	48.2	219	41.6	106	40.2	44
Upper East	42.8	34.7	132	46.7	46	55.4	21
Upper West	48.2	39.8	98	49.6	39	55.6	19
Residence							
Urban	58.7	49.4	1939	66.1	959	48.7	634
Rural	66.2	59.8	1634	46.8	977	30.2	458
Age							
15-19	39.4	33.7	1899	79.4	639	35.8	507
20-24	87.9	77.5	1674	45.1	1297	45.4	585
Marital status							
Ever married/in union	100.0	93.6	986	8.7	923	17.7	81
Never married/in union	47.7	39.2	2587	99.8	1013	42.8	1011
Education							
None	81.1	70.5	286	24.3	202	13.7	49
Primary	62.2	56.7	610	39.6	346	24.6	137
Middle/JSS	57.9	51.1	1767	58.0	902	35.9	523
Secondary +	64.3	53.4	909	78.7	486	57.1	382
Wealth index quintiles							
Poorest	62.9	54.6	526	41.0	287	30.1	118
Second	63.9	58.8	663	60.4	390	34.8	236
Middle	67.3	59.2	781	53.4	462	35.3	247
Fourth	62.7	53.7	778	57.1	418	40.5	238
Richest	54.8	45.9	826	66.8	379	57.5	253
Total	62.1	54.2	3573	56.4	1936	40.9	1092

[1] MICS indicator 9.15

[2] MICS indicator 9.16; MDG indicator 6.2

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (i) are based on 25-49 unweighted cases.

Table HA.11M: Sex with non-regular partners

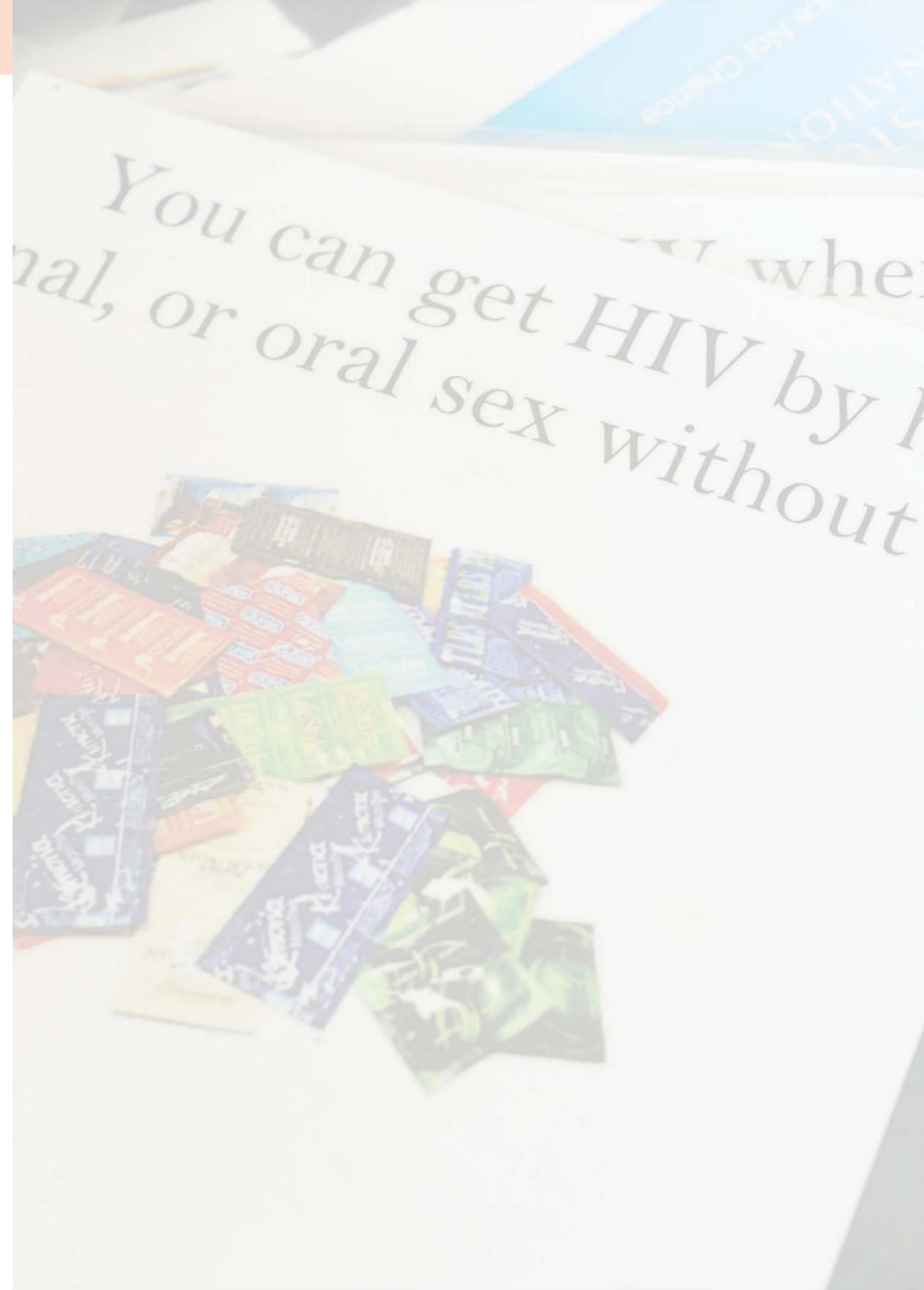
Percentage of men age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with a non-marital, non-cohabiting partner in the last 12 months and among those who had sex with a non-marital, non-cohabiting partner, the percentage who used a condom the last time they had sex with such a partner, Ghana, 2011

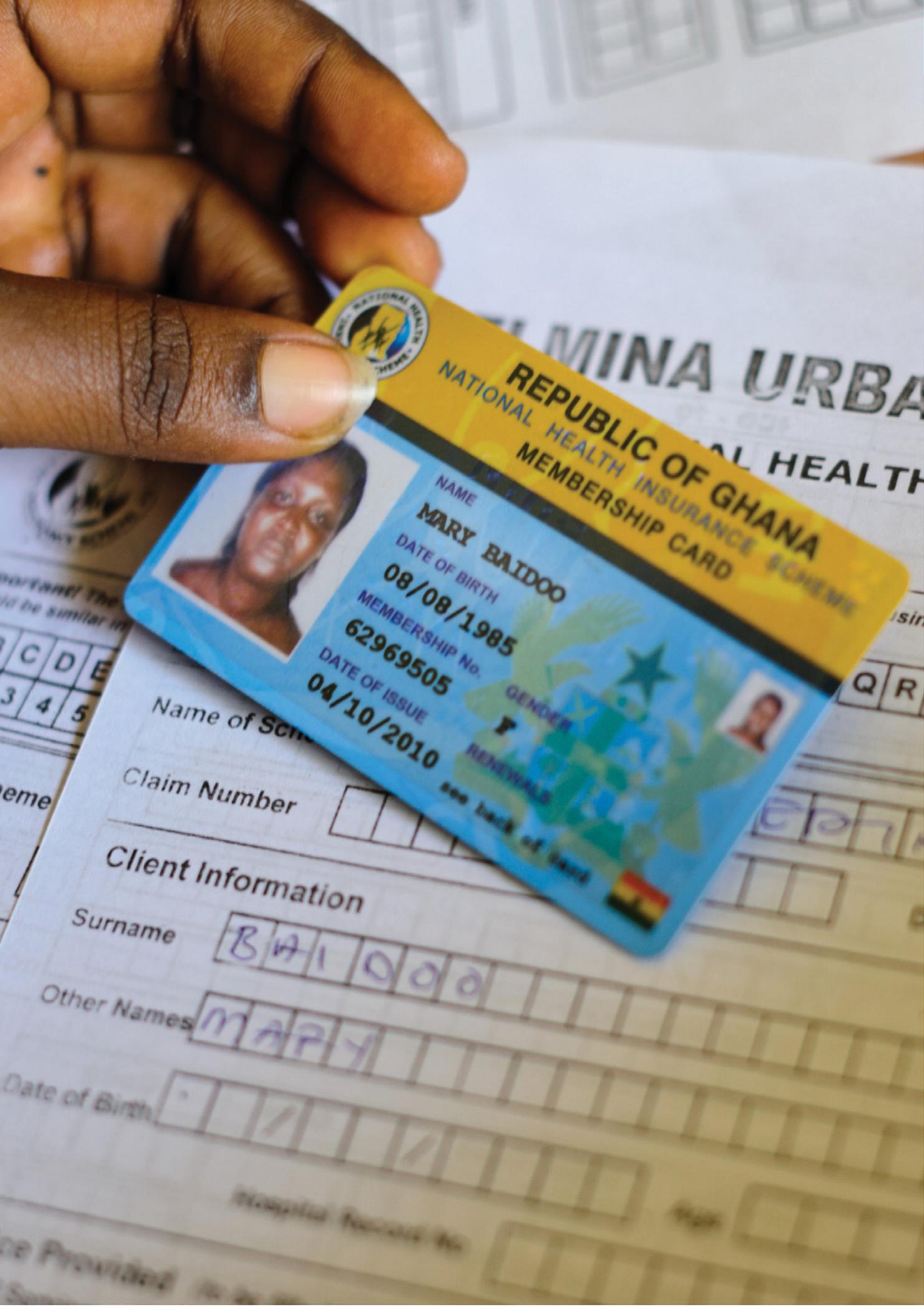
Background Characteristics	Percentage of men 15-24 who:		Number of men age 15-24 years	Percentage who had sex with a non-marital, non-cohabiting partner in the last 12 months [1]	Number of men age 15-24 years who had sex in the last 12 months	Percentage of men age 15-24 years who had sex with a non-marital, non-cohabiting partner in the last 12 months, who also reported that a condom was used the last time they had sex with such a partner [2]	Number of men age 15-24 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months					
Region							
Western	34.5	24.3	107	*	26	*	23
Central	51.3	39.5	94	96.7	37	55,0	36
Greater Accra	37.9	26.8	194	*	52	*	48
Volta	49.8	37.5	87	*	32	*	31
Eastern	(50.8)	(44.3)	95	*	42	*	33
Ashanti	48.3	37.6	195	(79.3)	73	(56,7)	58
Brong Ahafo	36.5	34.0	92	*	31	*	29
Northern	31.3	20.8	86	(94.4)	18	(44,4)	17
Upper East	32.7	23.4	49	(87.7)	11	(69,1)	10
Upper West	31.2	25.8	36	(87.0)	9	(54,6)	8
Residence							
Urban	45.0	34.0	537	90.6	182	62.9	165
Rural	38.2	30.2	499	84.8	151	39.9	128
Age of man							
15-19	23.0	17.2	657	96.1	113	48.1	108
20-24	74.2	58.2	379	83.9	220	55.6	185
Marital status							
Ever married/in union	97.7	96.4	53	(21.2)	51	*	11
Never married/in union	38.7	28.8	983	100.0	283	53,7	283
Education							
None	42.3	37.3	41	(70.7)	15	(6,8)	11
Primary	26.3	22.4	156	(97.1)	35	(34,1)	34
Middle/JSS	35.2	27.7	560	83.5	155	48,1	129
Secondary +	63.4	45.9	280	93.0	129	69,8	120
Wealth index quintiles							
Poorest	30.5	24.1	169	86.4	41	45,5	35
Second	38.4	29.0	204	84.9	59	26,9	50
Middle	44.0	33.6	246	89.1	83	62,4	74
Fourth	50.0	42.5	223	91.6	95	51,1	87
Richest	42.7	28.9	193	(84.7)	56	(80,5)	47
Total	41.7	32.2	1036	88.0	333	52.8	293

[1] MICS indicator 9.15

[2] MICS indicator 9.16; MDG indicator 6.2

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.





The National Health Insurance Scheme (NHIS) was founded as one of the key pillars of the Poverty Reduction Programme of the Government of Ghana. It was introduced in 2003 by the National Health Insurance Act, (Act 650), with the view of improving financial access of Ghanaians, especially the poor and the vulnerable, to quality basic health care services. The NHIS is a contributory scheme, renewable on an annual basis, and valid card holders can access both public and private healthcare facilities accredited by the National Health Insurance Authority. The contribution is structured in a way that people would contribute according to their ability, and each person receives according to his/her need. In this way, the health insurance subsidizes the health cost for the sick, and the economically active pays for children, the aged and the indigents (for further details, see www.nhis.gov.gh).

The MICS4 incorporated the NHIS module in the individual women's, children's and men's questionnaires and covered issues on individual membership status, reasons for non-membership, use of services under the scheme, and perception of provider attitude towards registered members.

National Health Insurance Registration

Tables NHI.1A and NHI.1B show respectively the percentages of women aged 15-49 years and men aged 15-59 years, who have ever registered with the NHIS, and the distribution of women and men who are registered according to the validity status of their NHIS card. Nearly 70 percent (69%) of the women aged 15-49 years and 56 percent of men aged 15-59 years have ever registered. For both sexes, the proportion of registration with NHIS increases with education and wealth status of the household. For example, only 61 percent of women with no education have ever registered, compared to 78 percent among those with secondary or higher education. The percentage of ever registered women varies from 57 percent among the poorest households to 74 percent among the richest households. Also, differentials are observed by residence for both men and women: those people living in urban areas are more likely to get registered with NHIS (71% among women, 59% among men), than those in rural areas (66% among women, and 53% among men).

Regional variations are observed, with Brong Ahafo region having the highest proportion of women who have ever registered (84%) and of men who have ever registered (72%). The lowest registration rate is found in Greater Accra for women (56%) and in Central and Greater Accra regions for men (44%).

Tables NHI.1A and NHI.1B further show that about 40 percent of the women and men who have registered with the NHIS were not holding valid NHIS cards. On the other hand, among those who have registered, 40 percent of women and 34 percent of men had valid NHIS card that they showed to the interviewer, while 20 percent of women and 26 percent of men were not able to show their cards to the interviewers.

The results also show that among those people who have ever registered with NHIS, the poorer a household, the more likely that the NHIS card is not valid; 50 percent of both men and women from the poorest wealth quintile have invalid NHIS card. Also, 43 percent of men and 45 percent of women with no education were found not to have a valid NHIS card. The regional distribution shows that Northern region has the highest percentage of persons without valid NHIS cards (55% for men and 48% for women), while the Ashanti region has the lowest (33% for men and 29% for women). The proportion of men and women without valid NHIS cards is higher in rural areas (45% for men and 41% for women), compared respectively to 36 and 39 percent for men and women living in urban areas.

Background Characteristics	Have ever registered with NHIS	Number of women	Percent of ever registered women by validity of NHIS card			Total	Number of women who have ever registered
			Yes, card seen	Yes, card not seen	No valid NHIS card		
Region							
Western	62.4	1022	41.4	15.7	42.9	100.0	638
Central	58.0	1044	24.2	29.2	46.6	100.0	606
Greater Accra	56.1	2074	27.5	27.9	44.6	100.0	1163
Volta	69.0	821	39.3	18.2	42.5	100.0	567
Eastern	74.1	1237	41.5	19.7	38.8	100.0	917
Ashanti	77.4	1983	52.7	18.4	28.9	100.0	1535
Brong Ahafo	83.6	1005	43.0	15.9	41.1	100.0	839
Northern	68.2	754	34.9	16.7	48.4	100.0	514
Upper East	75.4	404	44.7	14.4	40.9	100.0	305
Upper West	80.1	282	54.7	19.1	26.3	100.0	226
Residence							
Urban	70.9	5770	38.6	22.6	38.8	100.0	4091
Rural	66.3	4857	42.4	17.1	40.5	100.0	3219
Age							
15-19	67.4	1899	34.7	22.9	42.4	100.0	1279
20-24	68.0	1674	39.8	20.1	40.1	100.0	1138
25-29	68.4	1768	40.0	22.2	37.8	100.0	1209
30-34	71.6	1638	45.3	17.8	36.9	100.0	1173
35-39	71.2	1431	41.5	18.6	39.9	100.0	1019
40-44	68.9	1195	39.1	20.2	40.7	100.0	823
45-49	65.4	1023	43.3	17.7	38.9	100.0	669
Education							
None	61.0	2224	40.4	14.4	45.3	100.0	1356
Primary	61.6	2026	39.2	15.4	45.4	100.0	1248
Middle/JSS	71.9	4328	38.4	22.0	39.6	100.0	3111
Secondary +	77.8	2049	44.8	25.3	29.9	100.0	1595
Wealth index quintile							
Poorest	57.4	1644	36.6	13.7	49.8	100.0	944
Second	63.7	1857	40.5	15.5	44.0	100.0	1183
Middle	68.1	2110	38.7	18.9	42.4	100.0	1437
Fourth	75.2	2345	39.9	23.9	36.2	100.0	1763
Richest	74.2	2671	43.5	23.6	32.9	100.0	1983
Total	68.8	10627	40.3	20.2	39.5	100.0	7310

Background Characteristics	Have ever registered	Number of men	Percent of ever registered men by validity of NHIS card			Total	Number of men who have ever registered
			Yes, card seen	Yes, card not seen	No valid NHIS card		
Region							
Western	54.8	352	33.4	28.8	37.8	100.0	193
Central	44.5	296	23.9	29.1	47.0	100.0	132
Greater Accra	44.2	676	21.8	46.6	31.6	100.0	299
Volta	52.5	252	25.4	22.5	52.1	100.0	133
Eastern	60.9	358	40.6	19.1	40.3	100.0	218
Ashanti	62.5	638	43.3	23.9	32.8	100.0	399
Brong Ahafo	71.5	296	42.1	14.9	43.0	100.0	212
Northern	56.1	243	29.8	15.2	55.0	100.0	136
Upper East	63.0	120	33.1	18.2	48.6	100.0	75
Upper West	67.7	91	47.0	26.3	26.7	100.0	62
Residence							
Urban	58.8	1746	32.9	31.6	35.5	100.0	1027
Rural	52.7	1575	36.4	18.7	44.9	100.0	830
Age							
15-19	62.4	657	36.6	23.3	40.1	100.0	410
20-24	54.9	379	20.4	29.2	50.4	100.0	208
25-29	46.3	456	41.9	19.5	38.7	100.0	211
30-34	52.4	442	35.1	26.2	38.7	100.0	231
35-39	57.6	363	37.6	20.9	41.5	100.0	209
40-44	46.7	288	38.9	24.5	36.6	100.0	134
45-49	60.8	313	26.8	37.6	35.5	100.0	190
50-54	61.2	221	40.6	24.8	34.6	100.0	135
55-59	62.7	204	31.8	32.7	35.4	100.0	128
Education							
None	41.6	417	40.6	16.8	42.6	100.0	173
Primary	45.1	416	34.7	21.0	44.3	100.0	187
Middle/JSS	55.0	1483	33.0	25.6	41.4	100.0	815
Secondary +	67.7	1006	34.5	29.9	35.6	100.0	682
Wealth index quintile							
Poorest	47.4	518	30.3	19.8	49.8	100.0	245
Second	53.1	557	39.8	15.3	44.9	100.0	296
Middle	52.1	621	29.8	21.8	48.4	100.0	323
Fourth	54.1	779	36.2	26.3	37.5	100.0	421
Richest	67.5	847	34.8	36.1	29.2	100.0	572
Total	55.9	3321	34.4	25.9	39.7	100.0	1857

Table NHI.1C shows the percentage of children under five years that have ever registered with the NHIS and the validity status of their NHIS card. Overall, 54 percent of children are registered with NHIS. Among these, 71 percent have valid cards – for 51 percent of children, valid NHIS cards were shown to the enumerator, while for 20 percent, valid cards were not seen. As much as 29 percent of the supposedly registered children did not have a valid NHIS card. Variations in registration rate are observed across the regions, residence, age, mother's education and wealth quintiles. For example, Upper West region has the highest registration rate (72%), while Central region has the lowest at 37 percent. Children living in urban areas are more likely to be registered with NHIS (57%), compared to children

living in rural areas (51%). The results also show that NHIS registration for children under 5 years increases with age; from 31 percent for those aged 0-11 months, to 63 percent for children aged 36-47 months. NHIS registration for children also increases with mother's education – from 50 percent for children whose mothers have no education, to 67 percent for children whose mothers have secondary or higher children belonging to the poorest households, to over 60 percent for children belonging to the 40 percent wealthiest households.

Background Characteristics	Have ever registered	Number of children	Percent of ever registered children by validity of NHIS card			Total	Number of children who have ever registered
			Yes, card seen	Yes, card not seen	No valid NHIS card		
Region							
Western	46.5	758	52.5	21.2	26.3	100.0	352
Central	37.1	740	40.2	31.4	28.4	100.0	275
Greater Accra	44.5	1142	38.9	28.3	32.8	100.0	508
Volta	50.2	601	45.7	15.4	39.0	100.0	302
Eastern	53.5	827	57.0	19.0	24.1	100.0	443
Ashanti	64.4	1411	59.8	17.8	22.4	100.0	908
Brong Ahafo	66.0	671	55.0	18.8	26.2	100.0	443
Northern	52.4	852	41.4	18.0	40.6	100.0	447
Upper East	68.0	325	50.5	13.9	35.5	100.0	221
Upper West	72.0	223	64.2	18.0	17.7	100.0	161
Residence							
Urban	57.1	3283	51.5	21.6	26.9	100.0	1876
Rural	51.2	4267	50.6	18.9	30.4	100.0	2183
Age							
0-11	31.1	1543	39.9	17.2	42.9	100.0	479
12-23	53.7	1453	57.9	16.9	25.2	100.0	780
24-35	59.0	1553	54.4	21.4	24.2	100.0	915
36-47	63.4	1576	49.3	21.6	29.0	100.0	999
48-59	62.2	1426	49.3	21.9	28.9	100.0	886
Education							
None	50.0	2455	48.3	17.2	34.5	100.0	1229
Primary	50.4	1628	49.7	18.5	31.9	100.0	820
Middle/JSS	55.0	2578	51.6	22.6	25.9	100.0	1419
Secondary +	66.6	889	57.4	23.3	19.3	100.0	592
Wealth index quintiles							
Poorest	45.3	1739	46.6	17.3	36.1	100.0	788
Second	48.2	1535	50.9	18.3	30.7	100.0	739
Middle	52.9	1573	47.6	21.2	31.2	100.0	833
Fourth	63.8	1394	56.3	20.2	23.4	100.0	890
Richest	61.9	1309	53.2	23.7	23.1	100.0	809
Total	53.8	7550	51.0	20.2	28.8	100.0	4059

Reasons why individuals (women, children and men) did not have a valid NHIS card

The following three Tables, NHI.2A, NHI.2B and NHI.2C, deal with the reasons why women, men and children, respectively, did not have a valid NHIS card during the survey period.

Table NHI.2A shows that for the 40 percent of ever registered women aged 15-49 years who do not have a valid NHIS card, the main reason for not having a valid card was that the registration was not renewed (72%). Additionally, 13 percent have registered /renewed their membership, but the card has not been received yet, for 11 percent of women, the card was renewed but in waiting period, 2 percent of women have lost their NHIS card while less than 1 percent have registered but not fully paid. Across the background characteristics for women who had not renewed their NHIS membership, the highest proportion of women can be found in Western region (88%) and the lowest in Eastern region (57%).

Background Characteristics	No valid card	Number of ever registered women	Reason for not having a valid card:						Total	Number of ever registered women with no valid card
			Registered but not fully paid yet	Registered/ Renewed, but card not received yet	Registered, in waiting period	Registration not renewed	Lost NHIS card	Other		
Region										
Western	42.9	638	.0	5.2	4.4	87.8	2.2	.4	100.0	267
Central	46.6	606	.2	14.5	10.1	74.2	.9	.2	100.0	278
Greater Accra	44.6	1163	.4	12.2	11.7	73.2	2.1	.4	100.0	505
Volta	42.5	567	1.1	14.5	8.8	72.1	1.7	1.7	100.0	238
Eastern	38.8	917	.8	25.3	9.5	56.9	4.5	3.0	100.0	352
Asante	28.9	1535	.0	10.4	16.8	68.2	1.5	3.3	100.0	441
Brong Ahafo	41.1	839	.4	8.7	3.1	79.4	3.0	5.4	100.0	340
Northern	48.4	514	.5	17.5	13.0	65.5	1.7	1.8	100.0	248
Upper East	40.9	305	.0	15.5	18.0	64.6	1.5	.3	100.0	123
Upper West	26.3	226	.9	3.9	12.4	80.1	1.9	.8	100.0	59
Residence										
Urban	38.8	4091	.3	13.1	10.3	72.6	2.1	1.5	100.0	1565
Rural	40.5	3219	.5	13.5	10.8	70.4	2.2	2.5	100.0	1284
Age										
15-19	42.4	1279	.5	11.8	9.8	71.5	4.4	2.0	100.0	534
20-24	40.1	1138	.0	11.6	8.4	73.5	2.0	4.6	100.0	452
25-29	37.8	1209	.5	11.5	13.6	70.5	2.4	1.4	100.0	452
30-34	36.9	1173	.1	13.5	10.4	73.8	.6	1.6	100.0	422
35-39	39.9	1019	.1	15.4	8.4	74.1	1.4	.6	100.0	404
40-44	40.7	823	1.4	12.7	12.2	69.7	1.7	2.4	100.0	329
45-49	38.9	669	.1	19.9	12.0	65.5	2.0	.4	100.0	257
Education										
None	45.3	1356	.5	14.3	14.1	69.0	1.0	1.1	100.0	610
Primary	45.4	1248	.8	11.8	10.6	69.6	4.6	2.6	100.0	559
Middle/JSS	39.6	3111	.3	13.6	8.7	73.9	1.9	1.6	100.0	1213
Secondary +	29.9	1595	.0	13.0	10.4	71.6	1.6	3.4	100.0	468
Wealth index quintile										
Poorest	48.0	944	.3	11.6	16.3	66.6	2.1	3.2	100.0	445
Second	45.2	1183	.3	15.7	6.4	74.0	1.4	2.3	100.0	526
Middle	44.5	1442	1.2	13.1	9.8	70.0	3.6	2.3	100.0	636
Fourth	35.4	1768	.1	11.8	11.5	73.8	1.4	1.4	100.0	618
Richest	32.2	1973	.0	14.2	9.7	72.7	2.3	1.1	100.0	625
Total	39.5	7310	.4	13.3	10.5	71.6	2.2	2.0	100.0	2850

Table NHI.2B shows that for the 40 percent of ever registered men aged 15-59 years who do not have a valid NHIS card, the main reason is similar to that of women – 68 percent did not renew their membership. Also, 16 percent have registered/renewed, but card has not been received yet, 11 percent have registered, but in waiting period, 3 percent of the men have lost their NHIS card, while less than 1 percent have registered but not fully paid,. For non-renewal of membership, the highest proportion can found in Brong Ahafo (83%), and Eastern region has the lowest non-renewal (49%). Men in urban areas are also more likely not to renew their NHIS membership (73%), compared to their counterparts in rural areas (63%).

Table NHI.2B: Reasons for not holding a valid card among men who have ever registered with NHIS										
Percentage of registered men aged 15-49 with no valid NHIS card and percent distribution of those men according to the reason for not having a valid NHIS card, Ghana, 2011										
Background Characteristics	No valid card	Number of ever registered men	Reason for not having a valid card:						Total	Number of ever registered men with no valid card
			Registered, but not fully paid	Registered/renewed, card not received	Registered, in waiting period	Not renewed registration	Lost card	Other		
Region										
Western	37.8	193	(.0)	(9.6)	(10.6)	(77.9)	(1.9)	(.0)	100.0	70
Central	47.0	132	.0	8.3	22.5	69.2	.0	.0	100.0	61
Greater Accra	31.6	299	(.0)	(6.9)	(12.2)	(70.4)	(7.5)	(3.1)	100.0	91
Volta	52.1	133	2.4	28.1	9.1	58.2	1.0	1.1	100.0	69
Eastern	40.3	218	(.0)	(42.6)	(1.9)	(49.1)	(6.3)	(.0)	100.0	82
Asante	32.8	399	.0	14.1	10.9	68.2	4.4	2.3	100.0	131
Brong Ahafo	43.0	212	.0	7.2	5.4	83.2	.0	4.3	100.0	91
Northern	55.0	136	1.1	9.9	16.3	70.5	1.8	.4	100.0	75
Upper East	48.6	75	1.4	18.5	17.5	59.2	3.4	.0	100.0	37
Upper West	26.7	62	1.0	10.9	12.7	66.6	2.3	6.5	100.0	16
Residence										
Urban	35.5	1027	.4	9.5	9.7	73.3	4.4	2.7	100.0	358
Rural	44.9	830	.5	21.7	12.5	62.9	1.9	.6	100.0	364
Age										
15-19	40.1	410	.2	24.7	6.7	65.4	.8	2.4	100.0	162
20-24	50.4	208	1.4	13.0	17.3	64.5	3.6	.2	100.0	105
25-29	38.7	211	.2	9.9	8.1	80.8	.0	1.0	100.0	81
30-34	38.7	231	.4	8.7	22.1	57.1	6.5	5.1	100.0	85
35-39	41.5	209	.0	22.5	10.5	63.4	3.6	.0	100.0	87
40-44	36.6	134	.0	10.2	2.4	81.3	3.1	2.9	100.0	48
45-49	35.5	190	.0	16.7	5.4	75.6	2.2	.0	100.0	66
50-54	34.6	135	(.0)	(6.5)	(18.8)	(74.4)	(.4)	(.0)	100.0	45
55-59	35.4	128	(2.2)	(13.5)	(7.9)	(60.2)	(13.3)	(3.0)	100.0	43
Education										
None	42.6	173	.5	15.4	10.4	70.9	2.5	.3	100.0	74
Primary	44.3	187	.0	21.7	13.4	63.5	1.0	.4	100.0	83
Middle/JSS	41.4	815	.5	18.9	11.0	65.0	2.2	2.5	100.0	328
Secondary +	35.6	682	.6	9.2	10.6	72.9	5.4	1.3	100.0	238
Wealth index quintile										
Poorest	49.8	245	.5	13.5	17.8	64.3	2.3	1.7	100.0	122
Second	44.9	296	.2	21.3	6.2	71.3	.1	.9	100.0	129
Middle	48.4	323	.8	21.6	8.6	66.7	2.4	.0	100.0	152
Fourth	37.5	421	.7	15.5	19.7	60.8	2.4	.9	100.0	157
Richest	29.2	572	.0	7.4	4.0	76.5	7.6	4.5	100.0	162
Total	39.7	1857	.4	15.7	11.1	68.0	3.1	1.6	100.0	722

Figures in parentheses '()' are based on 25-49 unweighted cases.

In the case of the children, the Table NHI.2C shows that three main reasons were mentioned: registered/in waiting period (39%), registration not renewed (38%), and renewed/but card not received yet (21%). The Central region has the highest proportion of children whose NHIS was not renewed (58%) while the Greater Accra region has the lowest (25%).

Table NH.2C: Reasons for not holding a valid card among children who have ever registered with NHIS										
Percentage of registered children under five with no valid NHIS card and percent distribution of those children according to the reason for not having a valid NHIS card, Ghana, 2011										
Background Characteristics	No valid card	Number of ever registered children	Reason for not having a valid card:						Total	Number of ever registered children with no valid card
			Registered /Renewed, but card not received yet	Registered, in waiting period	Registration not renewed	Lost NHIS card	Other	Not aware of need to renew the card		
Region										
Western	26.3	352	15.9	38.2	42.8	3.1	.0	.0	100.0	90
Central	28.4	275	23.0	18.2	58.3	.0	.0	.5	100.0	78
Greater Accra	32.8	508	21.5	51.1	24.9	2.4	.0	.0	100.0	161
Volta	39.0	302	'	27.3	54.1	.8	.0	.0	100.0	115
Eastern	24.1	443	(42.2)	(21.4)	(31.2)	(4.1)	(1.1)	(.0)	100.0	106
Asante	22.4	908	9.2	57.4	33.4	.0	.0	.0	100.0	201
Brong Ahafo	26.2	443	33.2	20.0	44.5	2.3	.0	.0	100.0	114
Northern	40.6	447	20.5	45.0	32.5	.1	.5	1.5	100.0	181
Upper East	35.5	221	18.8	46.0	32.9	1.3	1.1	.0	100.0	78
Upper West	17.7	161	15.3	46.5	37.5	.7	.0	.0	100.0	28
Residence										
Urban	26.9	1876	18.4	38.9	40.3	2.2	.2	.0	100.0	497
Rural	30.4	2183	23.4	39.7	35.4	.7	.3	.5	100.0	656
Age										
0-11	42.9	479	25.0	69.5	5.5	.0	.0	.0	100.0	203
12-23	25.2	780	26.7	45.6	27.1	.0	.6	.0	100.0	195
24-35	24.2	915	20.2	40.4	33.6	5.1	.4	.3	100.0	218
36-47	29.0	999	17.0	28.7	52.5	1.5	.1	.1	100.0	285
48-59	28.9	886	19.7	21.4	57.7	.2	.2	.8	100.0	252
Mother's education										
None	34.5	1229	20.6	42.4	35.3	1.0	.2	.5	100.0	423
Primary	31.9	820	23.2	36.2	38.3	1.8	.3	.2	100.0	259
Middle/JSS	25.9	1419	20.9	34.4	42.4	2.0	.3	.0	100.0	361
Secondary +	19.3	592	19.9	51.7	28.1	.0	.0	.4	100.0	110
Wealth index quintile										
Poorest	36.8	783	19.4	46.8	31.2	1.6	.3	.7	100.0	285
Second	31.4	746	24.4	33.8	40.5	.1	.9	.3	100.0	234
Middle	29.3	835	26.0	31.9	42.1	.0	.0	.0	100.0	242
Fourth	23.9	876	19.6	37.3	41.2	1.9	.0	.0	100.0	206
Richest	23.4	818	15.6	46.9	33.4	3.9	.0	.2	100.0	186
Total	28.8	4059	21.2	39.4	37.5	1.4	.2	.3	100.0	1153

Achievement of Membership

This section deals with the means one has used to become a member of NHIS. Options available include: through the payment of premiums, registering for free maternal care when pregnant, free child service or as an indigent. For those who acquired their NHIS through payment of premiums, a question was asked to find out if the premium was paid by the respondent or someone else.

Since 2009, children under 18 years have been decoupled from their parents, and the health insurance provides for and exempts them from the payment of premium, regardless of whether their parents are registered members or not. Therefore, information on the achievement of membership was not included for children under-5 years. Information on the achievement of membership by women and men and who have ever registered with NHIS is provided in Tables NHI.3A and, NHI.3B. The results from these tables show that the achievement of membership was mainly done through the two following options: premium paid by a relative or friend, and premium paid by self.

Table.NHI.3A reveals that for 60 percent of women aged 15-49 years, the NHIS premium was paid for by a relative or friend, while 29 percent of women paid the premium themselves. For 1 percent of women, the premium was paid for by their employers, while SSNIT paid the premium for about 2 percent of women. In 2008, the government of Ghana introduced free maternal care for pregnant women in order to address the high maternal and child morbidity and mortality, and subsequently, also achieve the Millennium Development Goals (MDGs) 4 and 5, and other national targets. Overall, 8 percent of women aged 15-49 years indicated that they accessed NHIS through the free maternal care. Access to NHIS through free maternal care is higher among women from the poorest households and women with low education level: 12 percent of women with no education, and 14 percent of women in the poorest wealth quintile registered for NHIS through the free maternal care.

Table NHI.3A: Achievement of membership among women

Percentage of women aged 15-49 years who have ever registered with NHIS and distribution of registered women according to who paid for the premium, Ghana, 2011

Background Characteristics	Percent of women who registered	Number of women	Achievement of membership							Total	Number of women registered
			Paid premium myself	Premium Paid by a relative or friend	Premium Paid by employers	Premium Paid by SSNIT	Exempt as indigent	Free maternal Service	Other		
Region											
Western	62.4	1022	31.5	52.9	.5	3.7	.8	10.2	.5	100.0	638
Central	58.0	1044	33.5	50.5	1.1	.3	.0	13.5	1.0	100.0	606
Greater Accra	56.1	2074	39.2	46.5	3.7	5.1	.2	4.9	.3	100.0	1163
Volta	69.0	821	32.3	51.7	.3	1.0	.3	13.0	1.4	100.0	567
Eastern	74.1	1237	32.1	59.4	.1	1.4	.0	6.5	.5	100.0	917
Ashanti	77.4	1983	26.2	65.7	.9	1.6	.0	4.8	.9	100.0	1535
Brong Ahafo	83.6	1005	20.4	64.6	.4	2.0	.3	11.7	.5	100.0	839
Northern	68.2	754	14.3	77.7	.4	.2	.0	7.1	.3	100.0	514
Upper East	75.4	404	23.4	68.8	.3	.8	.0	6.4	.4	100.0	305
Upper West	80.1	282	17.8	73.1	.0	1.1	.3	6.9	.8	100.0	226
Residence											
Urban	70.9	5770	32.2	56.9	1.6	3.3	.1	5.4	.5	100.0	4091
Rural	66.3	4857	24.1	62.9	.3	.5	.2	11.2	.8	100.0	3219
Age											
15-19	67.4	1899	6.6	89.0	.1	.1	.3	3.2	.8	100.0	1279
20-24	68.0	1674	22.4	64.6	.7	.2	.1	11.4	.7	100.0	1138
25-29	68.4	1768	29.4	52.3	2.1	3.0	.0	12.3	.8	100.0	1209
30-34	71.6	1638	28.9	55.6	1.0	3.2	.0	10.7	.6	100.0	1173
35-39	71.2	1431	36.5	52.3	.9	2.2	.0	7.8	.3	100.0	1019
40-44	68.9	1195	44.8	43.8	1.3	2.4	.6	6.0	1.0	100.0	823
45-49	65.4	1023	47.6	45.3	1.1	4.4	.4	.9	.4	100.0	669
Education											
None	61.0	2224	25.5	61.3	.7	.4	.0	11.5	.6	100.0	1356
Primary	61.6	2026	29.2	56.7	.3	.1	.2	12.8	.6	100.0	1248
Middle/JSS	71.9	4328	27.7	63.4	.5	.4	.2	7.0	.7	100.0	3111
Secondary +	77.8	2049	32.7	52.6	2.9	8.2	.1	2.7	.7	100.0	1595
Wealth index quintiles											
Poorest	57.4	1644	17.4	67.6	.2	.2	.0	13.5	1.1	100.0	944
Second	63.7	1857	25.4	60.3	.1	.3	.3	12.4	1.0	100.0	1183
Middle	68.1	2110	29.6	58.7	.2	.3	.4	10.4	.4	100.0	1437
Fourth	75.2	2345	30.4	61.3	.7	.9	.2	5.8	.7	100.0	1763
Richest	74.2	2671	33.6	54.2	2.9	6.4	.0	2.7	.3	100.0	1983
Total	68.8	10627	28.6	59.5	1.0	2.1	.2	7.9	.7	100.0	7310

Table NHI.3B shows that nearly 60 percent of men 15-59 years paid the NHIS premium themselves, while for 31 percent, premiums were paid for by a relative or friend. For 2 percent of the men, premium was paid by their employer, while SSNIT paid the premiums for about 7 percent of the men.

Table NHI.3B: Achievement of membership among men

Percentage of men aged 15-59 years who have ever registered with NHIS and distribution of registered men according to who paid for the premium, Ghana, 2011

Background Characteristics	Percent of men who registered	Number of men	Achievement of membership						Total	Number of men registered
			Paid premium myself	Premium Paid by a relative or friend	Premium Paid by employers	Premium Paid by SSNIT	Exempt as indigent	Other		
Region										
Western	54.8	352	63.4	27.6	1.3	6.7	.0	1.1	100.0	193
Central	44.5	296	67.1	29.6	1.4	1.9	.0	.0	100.0	132
Greater Accra	44.2	676	44.0	27.2	9.9	17.1	.0	1.8	100.0	299
Volta	52.5	252	67.5	27.3	.0	4.6	.0	.5	100.0	133
Eastern	60.9	358	52.7	33.7	2.9	10.7	.0	.0	100.0	218
Ashanti	62.5	638	65.5	29.0	.6	4.9	.0	.0	100.0	399
Brong Ahafo	71.5	296	58.6	35.2	.0	5.6	.6	.0	100.0	212
Northern	56.1	243	59.2	38.0	.6	2.1	.0	.1	100.0	136
Upper East	63.0	120	59.7	36.5	.0	3.8	.0	.0	100.0	75
Upper West	67.7	91	55.4	36.7	.0	4.6	.2	3.1	100.0	62
Residence										
Urban	58.8	1746	57.5	28.3	3.4	10.2	.0	.6	100.0	1027
Rural	52.7	1575	60.6	34.3	.9	3.6	.2	.4	100.0	830
Age										
15-19	62.4	657	9.7	89.1	.0	.4	.3	.5	100.0	410
20-24	54.9	379	40.9	58.3	.2	.2	.0	.3	100.0	208
25-29	46.3	456	68.4	24.8	1.4	3.6	.0	1.8	100.0	211
30-34	52.4	442	79.8	4.9	4.5	10.8	.0	.0	100.0	231
35-39	57.6	363	77.0	2.8	4.3	14.1	.1	1.6	100.0	209
40-44	46.7	288	82.8	2.9	2.3	11.9	.0	.1	100.0	134
45-49	60.8	313	80.8	4.1	1.9	13.2	.0	.0	100.0	190
50-54	61.2	221	83.6	.3	2.9	13.2	.0	.0	100.0	135
55-59	62.7	204	81.1	2.3	7.2	9.4	.0	.0	100.0	128
Education										
None	41.6	417	88.4	8.8	1.3	1.3	.0	.3	100.0	173
Primary	45.1	416	54.0	43.1	2.4	.2	.0	.3	100.0	187
Middle/JSS	55.0	1483	57.2	38.0	.7	3.0	.2	.9	100.0	815
Secondary+	67.7	1006	54.5	25.0	4.4	15.8	.0	.3	100.0	682
Wealth index quintiles										
Poorest	45.9	495	68.1	30.3	.7	.4	.0	.5	100.0	227
Second	55.2	564	55.7	41.7	1.0	.1	.5	1.0	100.0	311
Middle	54.2	614	58.2	35.6	.2	4.9	.0	1.1	100.0	332
Fourth	53.4	763	61.0	30.4	2.7	5.8	.0	.0	100.0	407
Richest	65.4	886	55.7	23.2	4.5	16.2	.0	.4	100.0	580
Total	55.9	3321	58.9	31.0	2.3	7.2	.1	.5	100.0	1857

Opinion on the quality of services offered to the NHI valid card holders, compared to other clients

Tables NHI.4A and NHI.4B present respondent's opinion on the quality of services offered to the NHIS valid card holders. Overall, 42 percent of women (Table NHI.4A) and 39 percent of men (Table NHI.4B) who have ever registered with NHIS think the NHIS card holders get better services than other clients when they attend health care facilities, and 26 percent of women and 22 percent of men think the services are about the same. However, 21 percent of women and 20 percent of men complain that quality of services provided by the scheme is worse, compared to that offered to other clients. It appears also that 10 percent of women and 18 percent of men have never used their NHIS card. As the regional level, 64 percent of men aged 15-59 years in Central region indicated that health services using the NHIS card were better compared to 14 percent for men in Eastern region. For women, Eastern region has a higher satisfaction level (54%) compared to Ashanti region with only 26 percent. The results reveal that women and men with secondary or higher education and also from the wealthiest households were less likely to indicate that they were satisfied with the services provided. Across area of residence, both men and women living in urban areas were less satisfied with the quality of service provided by the scheme, compared to their rural counterparts.

Table NHI.4A: Opinion on quality of service provided to NHIS card holders among women									
Percentage of women age 15-49 years who have ever registered with NHIS and percent distribution of registered women according to their opinion on quality of service offered to NHIS holders, Ghana, 2011									
Background characteristics	Have ever registered	Number of women aged 15-49 years	Compared with other clients, NHIS card holders receive services that are:					Total	Number of women ever registered
			Better	Same	Worse	Never used	Don't know		
Region									
Western	62.4	1022	41.2	29.8	20.8	7.6	.7	100.0	638
Central	58.0	1044	52.0	26.6	12.7	8.2	.5	100.0	606
Greater Accra	56.1	2074	41.1	21.5	16.8	18.7	1.9	100.0	1163
Volta	69.0	821	52.0	20.2	15.2	10.4	2.3	100.0	567
Eastern	74.1	1237	54.1	20.7	10.7	13.3	1.2	100.0	917
Ashanti	77.4	1983	26.4	32.2	31.1	6.9	3.3	100.0	1535
Brong Ahafo	83.6	1005	37.5	33.1	24.5	3.1	1.8	100.0	839
Northern	68.2	754	48.7	21.6	19.5	9.0	1.2	100.0	514
Upper East	75.4	404	45.1	24.0	25.2	3.9	1.8	100.0	305
Upper West	80.1	282	53.3	20.7	21.3	3.9	.8	100.0	226
Residence									
Urban	70.9	5770	39.9	26.1	22.0	10.4	1.5	100.0	4091
Rural	66.3	4857	44.8	26.1	18.6	8.3	2.2	100.0	3219
Age									
15-19	67.4	1899	41.9	21.8	20.2	13.8	2.2	100.0	1279
20-24	68.0	1674	42.6	25.2	21.8	8.8	1.6	100.0	1138
25-29	68.4	1768	43.9	27.3	17.3	10.1	1.4	100.0	1209
30-34	71.6	1638	41.4	29.5	22.0	6.1	.9	100.0	1173
35-39	71.2	1431	42.2	26.2	21.6	7.6	2.4	100.0	1019
40-44	68.9	1195	39.4	29.0	18.7	10.9	2.0	100.0	823
45-49	65.4	1023	42.2	24.5	22.5	8.3	2.5	100.0	669
Education									
None	61.0	2224	45.9	26.7	18.6	7.2	1.6	100.0	1356
Primary	61.6	2026	45.5	23.3	18.6	10.4	2.3	100.0	1248
Middle/JSS	71.9	4328	41.5	25.9	20.4	10.5	1.7	100.0	3111
Secondary +	77.8	2049	37.2	28.3	23.9	8.7	1.8	100.0	1595
Wealth index quintiles									
Poorest	57.4	1644	47.9	23.2	19.2	7.8	2.0	100.0	944
Second	63.7	1857	43.4	26.8	19.5	8.2	2.1	100.0	1183
Middle	68.1	2110	46.5	22.3	18.9	11.0	1.3	100.0	1437
Fourth	75.2	2345	38.9	28.2	22.8	7.8	2.4	100.0	1763
Richest	74.2	2671	38.2	28.0	20.8	11.4	1.5	100.0	1983
Total	68.8	10627	42.1	26.1	20.5	9.5	1.8	100.0	7310

Table NHI.5A: Reasons for no registration with NHIS among women												
Percentage of women age 15-49 who have never registered with NHIS and percentage of the reasons for no registration, Ghana, 2011												
Background Characteristics	Have never registered	Number of women age 15-49 years	Reasons for no registration									Number of women never registered
			Have not heard of NHIS	Premium too expensive	No trust in NHIS	Don't know where to register	Registration Office too far	Do not need health insurance	NHIS does not cover the services I need	NHIS does not cover the facilities I use	Other	
Region												
Western	37.6	1022	.0	51.9	1.3	1.9	7.5	40.4	1.5	.0	2.4	384
Central	42.0	1044	.2	50.4	8.8	4.4	1.6	14.3	3.2	.0	23.8	438
Greater Accra	43.9	2074	.0	19.9	13.1	2.2	.7	30.7	3.3	.0	36.6	911
Volta	31.0	821	.3	31.8	.0	4.5	8.9	19.3	1.8	.0	49.8	255
Eastern	25.9	1237	.0	57.8	.0	.0	4.9	22.6	1.2	.0	15.7	320
Asante	22.6	1983	.0	26.8	6.0	1.0	.8	18.4	2.0	.0	47.0	448
Brong Ahafo	16.4	1005	.0	55.8	.0	2.0	6.1	8.9	.0	.0	27.9	165
Northern	31.8	754	.5	56.3	2.2	6.4	15.5	6.3	.2	.0	17.7	240
Upper East	24.6	404	.0	53.8	2.1	.5	.7	.8	.0	.0	41.9	100
Upper West	19.9	282	.4	58.1	.1	.8	3.2	2.0	.0	.0	40.2	56
Residence												
Urban	29.1	5770	.1	29.3	9.4	2.5	.9	28.0	2.8	.0	32.9	1679
Rural	33.7	4857	.1	49.4	2.5	2.5	7.2	16.1	1.3	.0	26.6	1638
Age												
15-19	32.6	1899	.1	46.0	2.1	3.0	3.2	17.6	.7	.0	30.6	620
20-24	32.0	1674	.0	33.8	6.5	2.1	5.0	27.4	1.3	.0	30.9	536
25-29	31.6	1768	.0	32.0	6.7	2.1	4.9	26.5	1.4	.0	32.6	559
30-34	28.4	1638	.0	38.1	9.0	4.1	4.0	23.3	2.0	.0	26.6	465
35-39	28.8	1431	.2	41.6	5.4	2.7	4.1	17.1	3.3	.0	31.4	411
40-44	31.1	1195	.1	36.0	6.3	1.2	3.4	23.3	1.3	.0	32.6	372
45-49	34.6	1023	.3	49.1	7.0	1.7	3.3	18.2	5.9	.0	21.7	354
Education												
None	39.0	2224	.1	56.1	2.2	2.9	6.7	9.8	.5	.0	26.1	869
Primary	38.4	2026	.0	36.4	5.6	3.6	2.9	22.9	1.3	.0	32.1	778
Middle/JSS	28.1	4328	.1	37.9	7.4	1.6	3.3	23.6	3.0	.0	29.4	1217
Secondary +	22.2	2049	.0	15.3	10.0	1.9	2.9	40.4	3.8	.0	33.9	454
Wealth index quintile												
Poorest	43.1	1659	.2	53.0	1.6	3.7	9.7	8.7	.7	.0	27.4	715
Second	37.0	1877	.1	49.8	1.4	1.5	5.0	15.1	.7	.0	32.0	694
Middle	31.3	2101	.2	47.2	6.8	3.0	1.7	19.8	.8	.0	25.5	658
Fourth	24.6	2345	.0	33.4	6.8	.6	2.3	30.8	2.1	.0	28.8	577
Richest	25.5	2646	.0	11.0	13.8	3.2	.9	38.5	6.0	.0	35.1	674
Total	31.2	10627	.1	39.2	6.0	2.5	4.0	22.1	2.1	.0	29.8	3317

Background Characteristics	Have never registered	Number of men age 15-59 years	Reasons for no registration									Number of men never registered
			Have not heard of NHIS	Premium too expensive	No trust in NHIS	Don't know where to register	Registration Office too far	Do not need health insurance	NHIS does not cover the services I need	NHIS does not cover the facilities I use	Other	
Region												
Western	45.2	352	1.6	36.0	1.1	2.2	4.9	55.8	2.1	.0	3.2	159
Central	55.5	296	.1	39.9	3.5	3.6	.5	19.9	.8	.0	37.4	164
Greater Accra	55.8	676	.0	25.4	9.3	.8	1.2	26.0	7.9	.0	42.3	377
Volta	47.5	252	.6	22.8	3.8	.3	5.3	28.3	2.7	.0	57.2	120
Eastern	39.1	358	.0	27.8	1.5	.0	2.9	49.8	1.3	.0	25.3	140
Asante	37.5	638	.0	14.4	2.8	.0	4.6	28.0	.0	.0	51.6	239
Brong Ahafo	28.5	296	.0	58.3	5.3	3.0	5.8	10.8	.0	.0	18.1	84
Northern	43.9	243	.3	57.0	7.0	1.8	16.1	8.9	1.8	.0	9.5	106
Upper East	37.0	120	.9	49.6	4.6	.0	.6	4.2	.0	.0	40.6	44
Upper West	32.3	91	(.0)	(48.4)	(2.1)	(.3)	(1.8)	(1.7)	(1.0)	(.0)	(49.5)	29
Residence												
Urban	41.2	1746	.0	26.4	7.4	1.1	1.7	30.6	4.4	.0	36.1	719
Rural	47.3	1575	.5	37.0	2.3	1.3	6.1	25.7	1.3	.0	33.8	745
Age												
15-19	37.6	657	1.0	47.8	.9	1.6	4.8	9.0	2.1	.0	37.5	247
20-24	45.1	379	.0	29.4	2.1	1.9	2.3	21.0	.0	.0	46.8	171
25-29	53.7	456	.0	25.3	8.7	.4	3.5	31.8	1.1	.0	32.5	245
30-34	47.6	442	.0	24.6	4.0	.0	3.9	41.8	5.0	.0	32.9	210
35-39	42.4	363	.1	25.9	6.6	3.9	3.8	41.3	6.4	.0	26.5	154
40-44	53.3	288	.2	28.7	2.6	1.3	5.4	36.5	3.0	.0	30.5	153
45-49	39.2	313	.6	28.9	5.9	.4	5.3	21.5	2.6	.0	44.4	123
50-54	38.8	221	.0	45.1	10.5	1.1	4.1	11.6	2.9	.0	30.9	86
55-59	37.3	204	.5	33.9	6.3	.0	.7	41.6	4.1	.0	28.2	76
Education												
None	58.4	417	.3	48.1	2.2	1.6	8.8	15.1	1.9	.0	31.2	243
Primary	54.9	416	.0	39.3	3.6	.7	3.9	24.7	.3	.0	31.9	228
Middle/JSS	45.0	1483	.4	32.0	4.3	1.0	2.4	26.8	3.6	.0	37.3	668
Secondary +	32.3	1006	.2	14.0	8.7	1.5	3.4	42.9	3.8	.0	34.9	325
Wealth index quintile												
Poorest	52.6	518	.5	46.7	3.5	1.9	10.4	15.5	1.0	.0	28.2	272
Second	46.9	557	1.0	41.2	2.9	2.2	2.1	24.1	.6	.0	33.2	261
Middle	47.9	621	.1	34.7	5.5	.8	2.6	26.0	2.8	.0	33.5	297
Fourth	45.9	779	.0	26.5	2.9	.2	3.8	35.2	1.1	.0	35.6	358
Richest	32.5	847	.0	11.9	9.6	1.1	.8	37.4	9.1	.0	43.9	275
Total	44.1	3321	.3	31.8	4.8	1.2	3.9	28.1	2.8	.0	34.9	1464

Figures in parentheses '()' are based on 25-49 unweighted cases

Background Characteristics	Have never registered	Number of children age 0-59 months	Reasons for no registration									Number of children never registered
			Have not heard of NHIS	Not aware card is renewable	No trust in NHIS	Don't know where to register	Registration Office too far	Do not need health insurance	NHIS does not cover the services I need	NHIS does not cover the facilities I use	Other	
Region												
Western	53.5	758	.0	.0	1.2	1.7	15.5	35.5	.5	.0	50.0	405
Central	62.9	740	.0	.0	3.7	3.3	4.5	8.1	3.5	.0	78.9	466
Greater Accra	55.5	1142	.0	.0	12.2	2.8	3.1	25.9	3.2	.0	55.9	634
Volta	49.8	601	.6	.0	2.3	5.3	9.6	19.3	3.0	.0	71.1	299
Eastern	46.5	827	.0	.0	.0	.8	12.6	30.1	.0	.0	56.5	384
Asante	35.6	1411	.7	.0	2.4	2.3	5.0	7.5	1.0	.0	81.0	503
Brong Ahafo	34.0	671	1.2	.0	.0	.8	10.1	1.1	.0	.0	86.9	228
Northern	47.6	852	.9	.1	2.4	6.0	38.4	16.8	.7	.0	39.0	405
Upper East	32.0	325	.3	.0	2.0	.8	4.3	2.0	.5	.0	90.6	104
Upper West	28.0	223	.4	.0	.7	.6	11.2	2.4	.4	.0	86.3	63
Residence												
Urban	42.9	3283	.3	.0	5.9	2.1	2.9	21.9	2.2	.0	66.2	1407
Rural	48.8	4267	.4	.0	2.3	3.3	17.1	15.4	1.2	.0	64.0	2084
Age												
0-11	68.9	1543	.3	.0	1.2	1.6	11.3	18.9	.9	.0	67.4	1064
12-23	46.3	1453	.2	.0	4.3	3.8	12.4	18.9	1.1	.0	62.1	673
24-35	41.0	1553	.2	.0	6.2	2.8	11.1	15.5	2.5	.0	65.4	637
36-47	36.6	1576	.2	.0	3.8	3.2	11.8	19.1	2.6	.0	63.2	578
48-59	37.8	1426	.9	.0	5.0	3.6	10.0	17.3	1.4	.0	64.7	540
Mother's education												
None	50.0	2455	.5	.0	1.8	2.9	17.4	13.0	1.0	.0	66.8	1226
Primary	49.6	1628	.3	.0	4.5	3.6	10.6	22.0	1.8	.0	61.8	808
Middle/JSS	45.0	2578	.3	.0	4.6	2.3	6.0	19.1	1.0	.0	67.9	1159
Secondary +	33.4	889	.0	.0	6.5	2.1	9.4	24.2	5.8	.0	54.1	297
Wealth index quintile												
Poorest	54.7	1730	.7	.0	1.3	3.9	22.0	14.3	1.3	.0	61.3	947
Second	51.9	1551	.0	.0	2.4	2.5	13.9	13.5	.6	.0	69.7	805
Middle	46.4	1559	.2	.0	3.3	2.5	6.3	16.5	1.0	.0	71.4	723
Fourth	37.3	1397	.0	.0	4.6	1.9	3.3	27.2	2.0	.0	64.1	521
Richest	37.7	1313	.7	.0	10.3	2.5	2.8	25.5	4.5	.0	55.4	495
Total	46.2	7550	.3	.0	3.8	2.8	11.4	18.1	1.6	.0	64.9	3491



Access to Mass Media

The world is now linked together with technology; access to information is done through mass media which is fast becoming a necessary pre-requisite for living a meaningful life. People's choice of life is affected by the decision they make based on information available to them. Education globally is now based on information and technology. There is an important link in public education and behavioral change communication through the use of mass media.

The survey collected information from individual men and women on their exposure to mass media: newspaper, radio and television as well as the use of computer and internet. Tables MT.1 and MT. 1M show the exposure of women and men, respectively, to the three mass media at least once a week.

Overall, the Table MT.1 shows that 11 percent of women read a newspaper at least once a week; nearly 70 percent listen to the radio at least once a week and 56 percent watch television at least once a week. However, only 8 percent of the women aged 15-49 years were exposed to all three media at least once a week, and 5 percent were exposed to no media at least once a week. Table MT.1M shows that the exposure of men to newspaper and radio was higher than that of women: 20 percent of men aged 15-59 years read newspapers at least once a week and 80 percent listen to the radio at least once a week. The results reveal that about 60 percent of the men watch television at least once a week and 17 percent are exposed to all three media at least once a week, while 4 percent are not exposed to any media.

Exposure of women to mass media among the age-groups revealed that women aged 15-19 years and 20-24 years are more likely (15%) than women of other age groups to read a newspaper at least once a week. Also, the 20-24 years age-group has the highest proportion (12%) of exposure to all three media at least once a week. For men in Table MT.1M, the reverse is true – young men aged 15-19 years and 20-24 years had the lowest exposure to newspaper at least once a week (16% and 18% respectively), and to all three media at least once a week (13% and 14%, respectively). The highest exposure to all three media at least once a week for men aged 15-59 years is recorded among the 55-59 years age-group (31%).

Differences in exposure to mass media are linked to the area of residence for both women aged 15-49 years, and men aged 15-59 years. Both men and women residing in urban areas have greater exposure to all the categories of mass media, compared to those residing in the rural areas. For example, only 2 percent of women (Table MT.1), and 7 percent of men (Table MT.1M) in the rural areas are exposed to all media at least once a week, while this figure is 14 percent for women and 26 percent for men living in urban areas. Also, 4 percent of women and 10 percent of men residing in rural areas are exposed to newspaper at least once a week compared to 17 percent of women and 30 percent of men living in urban areas. Exposure to radio and TV at least once a week follows the same pattern. In terms of regional exposure to mass media at least once a week, huge variations are observed. For men, Greater Accra region has the highest exposure in reading newspapers (40%), watching TV (85%) and for all three media (36%), while the lowest exposure in all categories for men is Upper West region. For women, Greater Accra has the highest exposure to mass media in all categories compared to the lowest exposure recorded in Upper East region.

For both sexes (Tables MT.1 and MT.1M), the exposure to mass media increases with educational level and household wealth. For example, while 36 percent of women with secondary or higher education were exposed to newspaper at least once a week, less than 1 percent of those with no education were exposed to a newspaper once a week. This is also shown in the overall indicator of exposure to all three media at least once a week with 31 percent of women with secondary or higher education being exposed to all three media at least once a week, compared to less than 1 percent for those with no education. The pattern for men in Table MT.1M is essentially the same with 43 percent

of men with secondary or higher education being exposed to all three media at least once a week compared to virtually 0 percent for those with no education.

Exposure to mass media also increases with household wealth for both men and women. The proportion of women with exposure to a newspaper at least once a week is 26 percent among women from the richest households, compared to about 2 percent for women from the poorest wealth quintile. The percentage of women exposed to all three media at least once a week is about 1 percent for the bottom 40 percent. This increases to 3 percent for the women belonging to the middle wealth quintile, to 8 percent for those in the fourth wealth quintile, and to 23 percent for women in the richest wealth quintile. About 82 percent of women in the richest household listen to the radio at least once a week compared to 50 percent of women from the poorest households.

Men exposure to mass media in Table MT.1M, has a similar pattern – 48 percent of men in the richest households have exposure to reading newspaper at least once a week, compared to 4 percent of men in the poorest households. Again there is a significant difference between men exposure to all three media at least once a week and household wealth –1 percent among men living in the poorest households, to 4 percent among those in the second wealth quintile, and 11 percent among men living in the middle wealth quintile. The exposure increases to 16 percent among men in the fourth wealth quintile, and to 44 percent among men living in the richest wealth quintile.

Table MT.1: Exposure to mass media among women
Percentage of women age 15-49 years who are exposed to specific mass media on a weekly basis, Ghana, 2011

Background Characteristics	Percentage of women age 15-49 who:			All three media at least once a week [1]	No media at least once a week	Number of women age 15-49 years
	Read a newspaper at least once a week	Listen to the radio at least once a week	Watch television at least once a week			
Region						
Western	8.9	75.7	54.7	5.6	3.6	1022
Central	8	71.9	56.7	5.6	5.3	1044
Greater Accra	26.4	78.9	84.2	24.2	2.9	2074
Volta	6.1	54.8	39.8	3	8.6	821
Eastern	8.7	70	58	6.1	6.5	1237
Ashanti	5.9	70.6	59.8	4.1	5.1	1983
Brong Ahafo	7	75.9	48.3	5.4	4.4	1005
Northern	3.4	41.2	31	1.6	4.5	754
Upper East	3.7	48.6	17.6	2.1	7.8	404
Upper West	5	50.9	28	3.6	8	282
Residence						
Urban	16.5	72.4	73.6	13.5	4.2	5770
Rural	3.5	64.1	36.1	2.1	6.1	4857
Age						
15-19	15.2	64.2	58.3	9.5	12.6	1899
20-24	15.2	71	64.6	12.4	5.1	1674
25-29	12.7	73.2	62.8	10.8	3.4	1768
30-34	8.1	69	57.5	7.2	2.6	1638
35-39	5.6	69.2	50.1	5.1	2.6	1431
40-44	6.8	66.4	48.2	5.9	3.4	1195
45-49	5.9	65.8	45.4	4.5	3.1	1023
Education						
None	0.4	51.1	26.3	0.3	0.1	2224
Primary	0.7	60	45.8	0.5	3.9	2026
Middle/JSS	8.3	74.5	63.4	5.6	8.6	4328
Secondary +	36.1	83.4	85	30.7	4.2	2049
Wealth index quintile						
Poorest	1.7	49.6	10	0.7	6.5	1659
Second	2.2	62.8	28.1	0.8	8.2	1877
Middle	5.7	67.2	50.7	2.8	6.1	2101
Fourth	10.3	72.5	78.1	8.1	3.9	2345
Richest	26.2	82.2	91	23	2.2	2646
Total	10.6	68.6	56.4	8.3	5.1	10627

[1] MICS indicator MT1

Table MT.1M: Exposure to mass media among men
Percentage of men age 15-59 years who are exposed to specific mass media on a weekly basis, Ghana, 2011

Background Characteristics	Percentage of men age 15-59 who:			All three media at least once a week [1]	No media at least once a week	Number of women age 15-59 years
	Read a newspaper at least once a week	Listen to the radio at least once a week	Watch television at least once a week			
Region						
Western	19.0	89.4	58.7	16.7	3.9	352
Central	19.7	88.3	64.1	15.3	3.5	296
Greater Accra	42.5	88.3	89.2	38.0	1.1	676
Volta	23.4	81.9	58.0	16.1	8.7	252
Eastern	15.5	88.5	70.8	13.3	2.9	358
Ashanti	17.4	89.2	66.9	12.9	2.7	638
Brong Ahafo	11.7	90.3	42.9	9.6	2.9	296
Northern	12.9	62.1	37.7	9.3	7.9	243
Upper East	7.5	67.6	23.0	6.4	7.7	120
Upper West	6.3	63.5	29.6	4.4	9.0	91
Residence						
Urban	31.7	88.6	80.4	27.3	2.9	1746
Rural	10.5	81.0	44.1	7.5	4.7	1575
Age						
15-19	16.1	76.7	65.3	12.5	6.7	657
20-24	17.5	85.8	63.8	13.8	6.5	379
25-29	20.5	84.4	68.3	17.4	2.9	456
30-34	23.3	84.3	69.5	19.9	2.3	442
35-39	21.9	89.3	61.3	18.5	3.2	363
40-44	18.0	87.0	51.4	15.9	2.7	288
45-49	23.8	90.5	62.4	18.9	1.3	313
50-54	30.9	89.9	56.7	26.0	1.9	221
55-59	36.9	88.7	58.2	30.8	3.1	204
Education						
None	.2	67.0	25.0	.0	1.7	417
Primary	2.9	77.6	46.1	1.8	3.4	416
Middle/JSS	14.3	87.3	65.2	10.4	5.3	1483
Secondary +	49.1	92.1	83.1	43.0	2.6	1006
Wealth index quintiles						
Poorest	4.1	68.2	13.1	1.2	7.4	518
Second	7.0	85.3	34.4	3.7	4.6	557
Middle	15.2	86.4	66.5	11.1	4.0	621
Fourth	20.7	87.3	80.0	16.1	3.3	779
Richest	47.5	91.8	94.8	44.0	1.4	847
Total	21.6	85.0	63.2	17.9	3.8	3321

[1] MICS indicator MT.1

Use of Computers and Internet

MICS 4, this time around, collected information from young men and women aged 15-19 years and 20-24 years who have used a computer and internet during the last 12 months, and the frequency of use during the last one month. Tables MT.2 and MT.2M illustrate respectively the findings for young women and men aged 15-19 years and 20-24 years.

Overall, 1 in 3 young women (32%) and almost half of young men (46%) have ever used a computer (Table MT.2), as shown in Table MT.2M. The results also reveal that 25 percent of young women and 39 percent of young men used a computer during the last 12 months. Also, 15 percent of the young women and 23 percent of young men used a computer at least once a week during the last one month.

The use of the internet is one of the powerful social tools in mass media communication. It enhances one's ability to accomplish many tasks within a short time provided you are exposed to the use of computer. In the MICS survey, 17 percent of young women, and 33 percent of young men indicated that they have ever used the internet. Young men are more likely to have used the internet during the last 12 months (29%), compared to young women (15%). Also, 11% of young women and 19% of young men used the internet at least once a week during the last one month.

The area of residence is also linked to the use of computer and internet for both young men and women: as shown in Tables MT.2 and MT. 2M, both young women and men living in urban areas are more likely to use the computer and internet compared to their counterparts in the rural areas.

Education is seen as one of pre-requisites for the use of the computer and the internet, and for both young women and men; the use of computer and internet increases with educational level. For example, in Table MT.2, less than 1 percent of young women with no education ever used a computer. This increases to 7 percent among young women with primary education, to 24 percent among those with middle/JHS education, and to 74 percent among those with secondary or higher education. In Table MT.2M, virtually 0 percent of young men with no education ever used the computer, against 16 percent among those with primary education, 43 percent among those with middle/JHS education, and 76 percent for the young men with secondary or higher education.

Regional disparities also exist in the use of the computer and the internet for both young women and men. Greater Accra scored higher percentage in all indicators. For example, the proportion of young women who ever used a computer was 50 percent, 41 percent used a computer during the last 12 months, 38 percent ever used the internet, and 33 percent used the internet during the last 12 months. On the other hand, the Northern region has the lowest rates of computer and internet use, especially for internet use, with only 4 percent of young women using the internet during the last 12 months. For young men, Greater Accra region has the highest scores in the use of computer and internet, while the lowest scores are recorded in Upper West region.

The survey has shown that the socio-economic status of households can determine the use of computer and the internet by young people. The proportion of computer and internet use increases with household wealth. About 7 percent of young women from poorest households ever used a computer, which is more than 8 times below that of young women living in the richest households (59%). Furthermore, less than 1 percent of young women from the poorest households ever used the internet, compared to 46 percent of young women in the richest households. There is a large difference between the fourth and richest quintile on all the indicators related to the use of the computer and internet. This is also true for young men – 84 percent of young men living in the richest households have ever used a computer, compared to 54 percent of young men in the fourth quintile. Also, 76 percent of young men living in the richest households have ever used the internet, compared to 45 percent of young men in the fourth quintile (Table MT.2M). Results also reveal that only 11 percent of young men from the poorest households have ever used a computer.

The age-groups also show some variations. For example, young men aged 20-24 years are more likely to use both the computer and internet in comparison to their counterparts aged 15-19 years. The same pattern is also observed in case of young women aged 15-24 years, except for those who had ever used a computer.

Table MT.2: Use of computers and internet							
Percentage of young women age 15-24 who have ever used a computer, percentage who have used a computer during the last 12 months, and frequency of use during the last one month, Ghana, 2011							
Background Characteristics	Percentage of women age 15-24 who have:			Percentage of women age 15-24 who have:			Number of women age 15-24 years
	Ever used a computer	Used a computer during the last 12 months [1]	Used a computer at least once a week during the last one month	Ever used the internet	Used the internet during the last 12 months [2]	Used the internet at least once a week during the last one month	
Region							
Western	23.7	20.3	11.8	12.6	11.2	9.4	329
Central	30.3	21.5	10.2	12.1	10	6.8	379
Greater Accra	49.7	40.6	31.3	38.1	33.3	27.4	632
Volta	23	17.1	7.4	4.3	4.1	2.8	272
Eastern	35.6	29.6	14.1	16.4	14.7	9.8	398
Ashanti	34.8	28.4	18.1	18.7	17.6	9.8	718
Brong Ahafo	24.4	16.8	10.1	7	5.5	3.9	396
Northern	16.3	9.9	4.8	4.7	3.7	1.8	219
Upper East	20.6	15	4.8	6.3	4.3	2.2	132
Upper West	18.2	16	8.5	9.5	9.1	6.4	98
Residence							
Urban	43.5	35.4	23.6	26.9	23.6	17.4	1939
Rural	18.1	12.9	5.4	4.5	4.1	2.3	1634
Age							
15-19	32.6	25.5	14	14.5	12.6	7.8	1899
20-24	31.1	24.7	16.8	19.1	17.1	13.5	1674
Education							
None	0.5	0.5	0	0	0	0	286
Primary	7	3.7	2	0.8	0.8	0.3	610
Middle/JSS	23.7	16	8	7	5.9	3.8	1767
Secondary +	74.4	64.9	43.3	51.3	45.7	33.7	909
Wealth index quintile							
Poorest	6.9	4.3	1.2	0.8	0.5	0.1	526
Second	16.3	12.6	5.2	4.1	3.4	1.8	663
Middle	26	17.8	8.7	7.4	6.4	4	781
Fourth	38.8	29	16	16.7	14.4	9.8	778
Richest	59.3	51.6	38	45.6	40.9	30.8	826
Total	31.9	25.1	15.3	16.7	14.7	10.5	3573

[1] MICS indicator MT.2

[2] MICS indicator MT.3

Table MT.2M: Use of computers and internet							
Percentage of young men age 15-24 years who have ever used a computer, percentage who have used a computer during the last 12 months, and frequency of use during the last one month, Ghana, 2011							
Background Characteristics	Percentage of men age 15-24 who have:			Percentage of men age 15-24 who have:			Number of men age 15-24 years
	Ever used a computer	Used a computer during the last 12 months [1]	Used a computer at least once a week during the last one month	Ever used the internet	Used the internet during the last 12 months [2]	Used the internet at least once a week during the last one month	
Region							
Western	46.4	44.1	32.2	29.9	23.8	19.5	107
Central	39.8	36.2	18.8	23.1	19.5	11.9	94
Greater Accra	74.1	63.7	31.3	69.7	60.3	35.2	194
Volta	33.1	27.9	22.4	17.3	17.3	15.6	87
Eastern	(51.2)	(39.1)	(15.7)	(16.2)	(15)	(7.6)	95
Ashanti	50.6	40.7	29.4	36.2	34	22.2	195
Brong Ahafo	36.1	32.9	17.6	21.1	19.8	14.2	92
Northern	25.4	21.7	13.3	22.3	18.3	12.2	86
Upper East	20.4	13.6	7.3	12.3	8.5	4.9	49
Upper West	16.4	12.7	6.4	11	9.2	5.1	36
Residence							
Urban	62.3	54	32.8	52.5	46.3	31.1	537
Rural	28.8	23.3	12.4	11.5	9.9	5.1	499
Education							
None	0	0	0	0	0	0	41
Primary	16.3	13.3	7.7	9.3	7.7	4.9	156
Middle/JSS	42.7	34.6	18.5	25.2	20.2	11.6	560
Secondary +	76.4	68.5	43.7	65.4	61.8	42.7	280
Age							
15-19	44	36.7	20	30.2	26.4	16	657
20-24	49.9	43.5	28.2	37	32.9	23	379
Wealth index quintiles							
Poorest	11.1	6.2	2.2	3.7	2.8	1.7	169
Second	28.3	25	12.9	11.9	9.7	4.9	204
Middle	48.5	38.4	21.8	25.2	24.5	18.8	246
Fourth	53.9	45.7	32	44.8	38.7	25	223
Richest	83.8	76.7	43	75.7	65.8	40.2	193
Total	46.2	39.2	23	32.7	28.8	18.6	1036

[1] MICS indicator MT.2

[2] MICS indicator MT.3

Figures in parentheses '()' are based on 25-49 unweighted cases.

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Roll Back Malaria: <http://www.malariasurveys.org>



The primary objective of the sample design for the Ghana Multiple Indicator Cluster Survey was to produce statistically reliable estimates of most indicators at the national level, for urban and rural areas, and for the 10 regions (Western, Central, Greater Accra, Volta, Eastern, Ashanti, Brong Ahafo, Northern, Upper East and Upper West regions) of the country. Urban and rural areas in each of the 10 regions were defined as the sampling strata.

A multi-stage, stratified cluster sampling approach was used for the selection of the survey sample.

Sample Size and Sample Allocation

1. Introduction

The Multiple Indicator Cluster Survey (MICS) is an international household survey programme developed by UNICEF. Ghana MICS 2011 is part of the 4th round of MICS surveys (MICS4). Its purpose is to collect reliable, disaggregated and internationally comparable statistics on the situation of the Ghanaian people, especially children under 5, women aged 15-49 and 15-59 men aged 15-59 for effective planning, implementation, monitoring and evaluation at national and regional levels.

The MICS4 is a random two-stage sample survey. The first stage deals with the selection of Primary sampling units (PSUs) from a Sampling frame which is the list of the 2010 Census EAs (enumeration areas). The second stage deals with the selection of the secondary sampling units (SSUs) or the households from each selected EA in first stage.

2. Domains and strata

Since MICS4 survey is a nationwide survey, the sampled universe which is considered comprises the whole country with its 10 regions.

A domain is a part of sampled universe for which separated and reliable estimates are required. From the survey plan, the acceptable domains are:

- The whole country ;
- Each of the 10 regions ;
- The urban and rural areas ;
- Each of the three ecological zones.

Each region is made up of two strata: the urban and the rural areas of the region. The total number of strata is therefore 20 for the whole country. Sample selection and estimation were conducted separately in each stratum.

Table 1 shows some characteristics of the sampled universe, according to the 2010 Population and Housing Census frame.

Region		EAs Distribution		2010 Estimated population	
Code	Name	Number	Proportion	Size	Proportion
1	Western	3,534	0.09	2,303,207	0.10
2	Central	3,242	0.09	2,115,757	0.09
3	Greater Accra	5,423	0.14	3,791,559	0.16
4	Volta	3,604	0.10	2,323,841	0.10
5	Eastern	4,403	0.12	2,595,101	0.11
6	Ashanti	7,039	0.19	4,414,651	0.18
7	Brong Ahafo	3,664	0.10	2,278,862	0.09
8	Northern	3,867	0.10	2,515,904	0.10
9	Upper East	1,727	0.05	1,097,838	0.05
10	Upper West	1,119	0.03	684,438	0.03
Whole country		37,622	1.00	24,121,158	1.00

3. Households sample size

In order to calculate the sample size, using appropriate mathematical formula, several factors must be specified and values for others be assumed or taken from previous or similar surveys. These factors are:

- The precision or relative sampling error needed which is 12% ;
- the level of confidence desired which is 95% ;
- p, the estimated or known proportion of the population in the specified target group ;
- r, the predicted or anticipated coverage rate, or prevalence, for the specified indicator ;
- f, the sample deff (sample design effect) ;
- h, the average household size ;
- 1+t, an adjustment for potential loss of sample households due to non-response of rate t.

Every indicator has its proper required sample size that is the minimum number of households that gives the precision needed in terms of sampling relative error not greater than 12% of the predicted or anticipated coverage rate, as recommended in MICS3 and MICS4.

The recommended strategy for calculating the sample size is to choose an important indicator that will yield the largest size. This entails choosing first a target population that comprises a small proportion of the total population. This is generally a target population of a single-year age group. In MICS3, this is children aged 12 to 23 months. Secondly, the particular indicator must be chosen for this same target population. We have labelled it as the key indicator but only for purpose of calculation of the sample size.

The table 2 gives elements of calculation of the required households sample size for a national survey (or for one domain) and for 5 indicators related to the target population of children aged 12 to 23 months. All these 5 indicators refer to immunization: Full immunization, BCG, Polio 3, MMR and DPT.

As recommended, the sampling relative error is 0,12r or 12% of r, the predicted or anticipated coverage rate, or prevalence, for the specified indicator.

The anticipated coverage rates for these 5 immunization indicators for 2011 are deduced from MICS 2006 national average rates. The other values used in the calculation came from MICS 2006 or other similar surveys or from the total population characteristics.

Among the 5 indicators and for the same sampling relative error (12%), full immunization requires the largest sample size that is 773. This result suggests that for each region taken as domain the household sub sample size will be about 773, and we chose 780.

Variable	Indicator				
	Full Immunization	BCG	Polio 3	MMR	DPT
e	12%	12%	12%	12%	12%
r'	0.734	0.943	0.824	0.854	0.835
r	0.80	0.96	0.86	0.88	0.87
f	1.175	1.612	1.434	1.190	1.330
t	0.052	0.052	0.052	0.052	0.052
h	3.70	3.70	3.70	3.70	3.70
p	0.03	0.03	0.03	0.03	0.03
n	773	177	615	427	523

Formula :

$$n = \frac{4 \cdot (1-r) \cdot r \cdot f \cdot (1+t)}{((0,12 \cdot r)^2 \cdot h \cdot p)}$$

e = relative error = a percentage of the indicator value obtained

r' = 2006 MICS value for the indicator

r = expected rate for the indicator for 2011

f = design effect (deff) for the indicator in MICS 2006

t = non response rate for households in MICS 2006

h = average household size in 2006 DHS

p = proportion of children aged 12-23 months among the total population

n = minimum number of households to be interviewed for the indicator

Confidence level : 95 %

The below formula is used to calculate n, the sample size:

$$n = \frac{4r(1-r)f(1+t)}{(0,12r)^2hp}$$

Due to the need of assessing the achievements of interventions in the four regions (Central, Northern, Upper East and Upper West), the latter were over sampled compared to their shares at national level. This solution was found to be technically more convenient instead of a district level survey for these four regions, which have 55 districts.

The table 3 presents the structure of the four regions in terms of number of EA and in terms of population size.

Region		Variable							
Code	Name	r'	r	f	t	h	p	n	e
2	Central	0.618	0.70	0.781	0.080	3.6	0.03	930	12 %
8	Northern	0.677	0.70	1.045	0.080	5.5	0.03	814	12 %
9	Upper East	0.826	0.83	1.457	0.080	5.3	0.03	563	12 %
10	Upper West	0.865	0.865	0.741	0.080	5.5	0.03	210	12 %
Total								2,517	

								Estimated size		Corrected size
2	Central	0.618	0.70	0.781	0.080	3.6	0.03	1,991	8,2 %	2,010
8	Northern	0.677	0.70	1.045	0.080	5.5	0.03	2,030	7,6 %	2,010
9	Upper East	0.826	0.83	1.457	0.080	5.3	0.03	1,521	7,3 %	1,500
10	Upper West	0.865	0.865	0.741	0.080	5.5	0.03	1,495	4,5 %	1,500
								7,038		7,020

Formula :

$$n = [4*(1-r)r*f*(1+t)]/[(0,12*r)^2*h*p]$$

e = relative error = a percentage of the indicator value obtained

r' = 2006 MICS rate obtained for the indicator

r = expected rate for the indicator for 2011

f = design effect (deff) for the indicator in MICS 2006

t = non response rate for households in MICS 2006

h = average household size in DHS 2008

p = proportion of children aged 12-23 months among the total population

n = minimum number of households to be interviewed for the indicator

Confidence level: 95%

Region	2006 MICS household sample distribution	2008 DHS household sample distribution	2010 estimated population distribution	mics 2011 household sample size	Number of EA to be selected
Western	580	585	0.10	780	52
Central	520	510	0.09	2,010	134
Greater Accra	861	900	0.16	1,005	67
Volta	480	525	0.10	780	52
Eastern	641	645	0.11	780	52
Ashanti	940	1,005	0.18	1,005	67
Brong Ahafo	480	570	0.09	780	52
Northern	710	570	0.10	2,010	134
Upper East	580	420	0.05	1,500	100
Upper West	510	450	0.03	1,500	100
Whole country	6,302	6,180	1.00	12,150	810

Tables 3 and 4 contain the results of the over sampling exercise for the 4 regions. Table 3 gives the new sizes chosen for each of the 4 regions and the corresponding relative errors. The values of the relative error obtained (4.5% to 8%) provide a higher precision for the 4 regions.

By over sampling 4 of the 10 regions, unequal allocation of the total sample was used. However, in each region, the clusters (primary sampling units) were distributed between urban and rural domains, proportional to the size of urban and rural populations. The table below shows the allocation of clusters to the sampling strata.

Region	Number of Clusters		
	Urban	Rural	Total
Western	20	32	52
Central	56	78	134
Greater Accra	61	6	67
Volta	17	35	52
Eastern	22	30	52
Ashanti	37	30	67
Brong Ahafo	21	31	52
Northern	40	94	134
Upper East	19	81	100
Upper West	16	84	100
Total	309	501	810

Sampling Frame and Selection of Clusters

The 2010 population and Housing census frame was used for the selection of clusters. Census enumeration areas were defined as primary sampling units (PSUs), and were selected from each of the sampling strata by using systematic probability proportional to size (PPS), based on the estimated sizes of the enumeration areas from the 2010 Population Census. The first stage of sampling was thus completed by selecting the required number of enumeration areas from each of the 10 regions, separately by urban and rural strata.

Listing Activities

Since the 2010 Population Census sampling frame was up-to-date, a new listing of households was not conducted in all the sample enumeration areas prior to the selection of households.

Selection of Households

With the list of households from the 2012 Population Census, the total number of households in each selected cluster (enumeration area) was sequentially numbered from 1 to n at the Ghana Statistical Service; and then the selection of 15 households in each cluster was carried out using random systematic selection procedures.

Calculation of Sample Weights

The Ghana Multiple Indicator Cluster Survey sample is not self-weighting. Essentially, different sampling fractions were used to allocate households to each of the 10 regions (Central, Northern, Upper East and Upper West regions were over-sampled). For this reason, sample weights were calculated and used in the subsequent analyses of the survey data.

The major component of the weight is the reciprocal of the sampling fraction employed in selecting the number of sample households in that particular sampling stratum (h) and PSU (i):

$$W_{hi} = \frac{1}{f_{hi}}$$

The term f_{hi} , the sampling fraction for the i-th sample PSU in the h-th stratum, is the product of the probabilities of selection at every stage in each sampling stratum, where p_{shi} is the probability of selection of the sampling unit at stage s for the i-th sample PSU in the h-th sampling stratum.

$$f_{hi} = p_{1hi} \times p_{2hi} \times p_{3hi}$$

Since the estimated number of households in each enumeration area (PSU) in the sampling frame used for the first stage selection and the updated number of households in the enumeration area from the listing were different, individual sampling fractions for households in each sample enumeration area (cluster) were calculated. The sampling fractions for households in each enumeration area (cluster), therefore, included the first stage probability of selection of the enumeration area in that particular sampling stratum and the second stage probability of selection of a household in the sample enumeration area (cluster).

A second component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response is equal to the inverse value of:

$$RR_h = \text{Number of interviewed households in stratum } h / \text{Number of occupied households listed in stratum } h$$

After the completion of fieldwork, response rates were calculated for each sampling stratum. These were used to adjust the sample weights calculated for each cluster. Response rates in the Ghana Multiple Indicator Cluster Survey are shown in Table HH.1 in this report.

Similarly, the adjustment for non-response at the individual level (women, men and under-5 children) for each stratum is equal to the inverse value of:

$$RR_h = \text{Completed men and women's (or under-5's) questionnaires in stratum } h / \text{Eligible men and women (or under-5s) in stratum } h$$

The non-response adjustment factors for men, women's and under-5's questionnaires are applied to the adjusted household weights. Numbers of eligible women, men and under-5 children were obtained from the roster of household members in the Household Questionnaire for households where interviews were completed.

The design weights for the households were calculated by multiplying the above factors for each enumeration area. These weights were then standardized (or normalized), one purpose of which was to make the weighted sum of the interviewed sample units equal the total sample size at the national level. Normalization is performed by dividing the aforementioned design weights by the average design weight at the national level. The average design weight is calculated as the sum of the design weights divided by the unweighted total. A similar standardization procedure was followed in obtaining standardized weights for the men, women's and under-5's questionnaires.

Adjusted (normalized) weights varied between 0.04018 and 8.17102 in the 810 sample enumeration areas (clusters).

Sample weights were appended to all data sets and analyses were performed by weighting each household, woman, man or under-5 with these sample weights.

Methods used for Anaemia and Malaria Testing in the MICS 2011

The MICS 2011 incorporated three “malaria biomarkers,” namely: anaemia testing, malaria testing using rapid diagnostic tests (RDTs), and thick blood smear samples prepared on microscope slides. After obtaining informed consent from caregivers, blood samples were obtained from a heel- or finger-prick of children aged 6 to 59 months to perform on-the-spot anaemia and malaria tests, and to prepare thick blood smears that were later transported and read in the laboratory at NHRC to determine the presence of malaria parasites. The microscopy was used as the gold standard to obtain prevalence rates. Rapid diagnostic test was utilized primarily for ethical reasons, in order to identify and treat malaria in participating children while in the field.

As described previously, each of the 20 field teams in the MICS 2011 included a health technician, who was responsible for completing the biomarker portion of the Children Under Five Questionnaire, and conducting the biomarker tests. In accordance with the MICS 2011 biomarker testing protocol pre-approved by the GHS Institution Review Board, the health technicians were responsible for ensuring that informed consent was obtained from the children’s caregivers; for administering medications for uncomplicated malaria in the field when indicated; and for providing medical referrals for clinically severe malaria, severe anaemia, and other conditions when indicated.

Anaemia Testing with Hemocue®

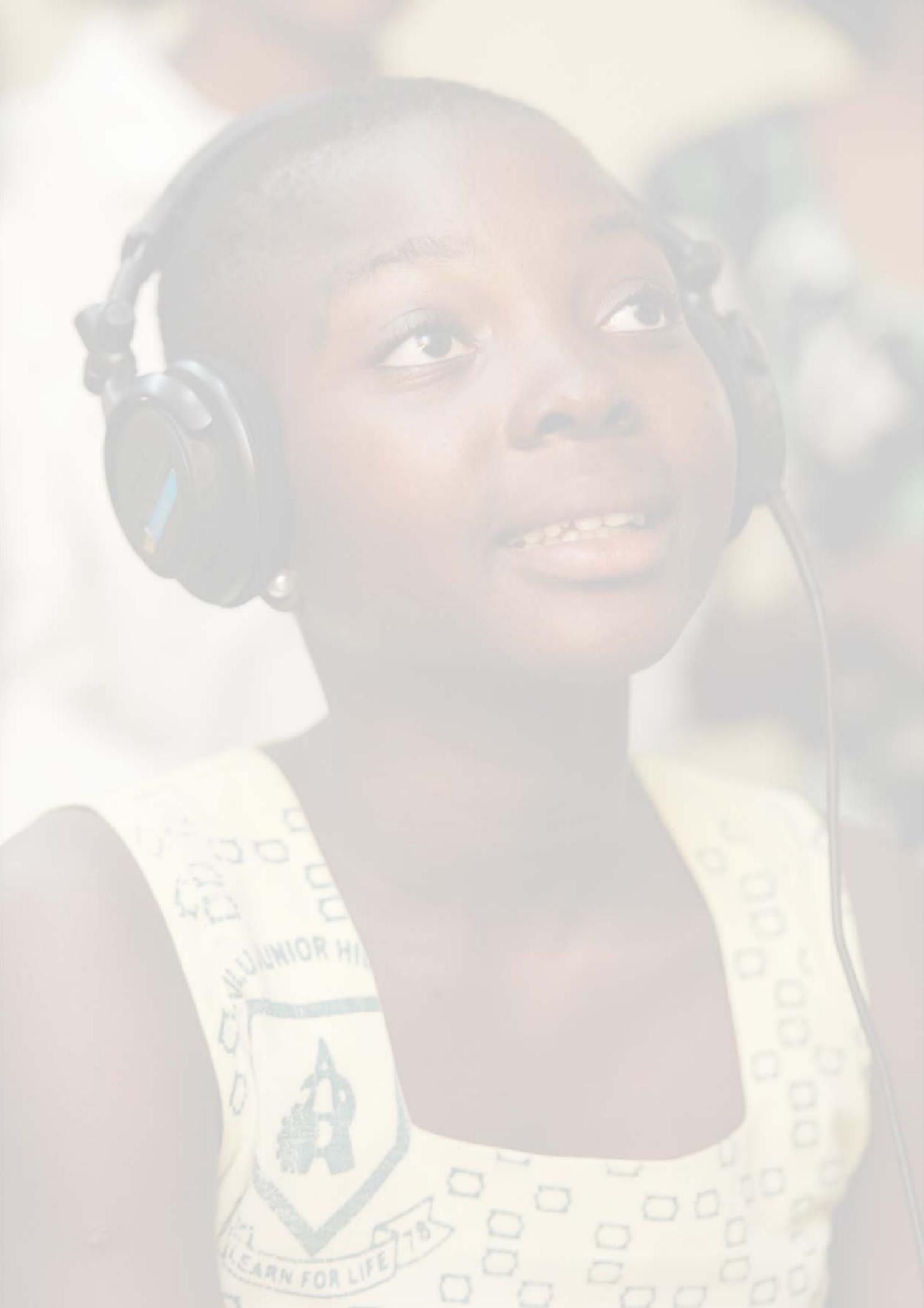
Due to the internationally recognized correlation between anaemia and malaria infection in endemic settings, the MICS 2011 included anaemia testing for children age 6 to 59 months. After requesting informed consent from the child’s parent or guardian, a sample was collected using a microcuvette from a drop of blood taken from a finger-prick (or a heel prick in the case of young children with small fingers). Haemoglobin analysis was carried out on site using a battery-operated portable HemoCue® 201+ photometer which produces results within one minute. Results were given to the child’s parent or guardian verbally and in writing. All households with children aged 6 to 59 months were given a brochure explaining the causes and prevention of anaemia regardless of whether they consented to the anaemia testing. Results of the anaemia test were recorded on the Children Under Five Questionnaire.

Malaria Testing with Rapid Diagnostic Test kits (RDTs)

For rapid diagnostic testing, the CareStart Malaria pLDH/HRP2 Combo (Pan/Pf) product (Access Bio, N.J. USA) was used throughout the survey. Test results were provided to the child’s parent or guardian verbally and written in a brochure that remained with the household, and also recorded in the Children’s Questionnaire. The parents or guardians of all children tested were informed on how to prevent malaria.

Treatment in the field was based on a positive RDT result. Health technicians in each field team offered a full course of artesunate-amodiaquine to children who tested positive for malaria. In Ghana, artesunate-amodiaquine is the first line ACT used to treat uncomplicated malaria. In order to ascertain the correct dose, the parent or guardian was asked about any medications the child may have been taking at the time of the survey. The health technician then provided the appropriate first dose of ACT, along with instructions on how to administer subsequent doses to the child. All drugs for malaria treatment were provided by the NMCP. Children with symptoms of severe illness were referred to a medical facility on an urgent basis, in accordance with the Ghana Health Service national malaria treatment protocol.

The CareStart line of RDTs was selected due to its high performance ratings (WHO/FIND/CDC/TDR 2011), its widespread use in GHS facilities since 2009, and its utilization in other malaria indicator surveys (such as Madagascar 2011 and Kenya 2010). The Pan/Pf product from the CareStart line was specifically selected because recent anaemia and parasitaemia surveys conducted in Ghana by the Noguchi Memorial Institute for Medical Research (Univ. of Ghana) and PMI had used this product, allowing for ready comparison of results (B. Abuaku et al 2010).



All RDTs detect proteins (antigens) which were released into the blood by an ongoing or recently resolved malaria infection. The particular RDT product used in this survey register a positive result for infections caused by any of Ghana's three malaria species, namely: *P. falciparum*, *P. malariae*, and *P. ovale*. A mixed infection (e.g. *P. falciparum* plus *P. malariae*) will also register a positive result. However, the CareStart Malaria pLDH/HRP2 Combo (Pan/Pf) product used does not reliably distinguish between the species. Species identification was not an objective of the Ghana MICS4, and was not reported. Moreover, species differentiation would have required the use of thin smear microscopy, which is the gold standard for this purpose, but is logistically cumbersome and costly.

Malaria Testing with Microscopy

In the MICS 2011 survey, malaria prevalence is based on microscopy results from Giemsa-stained thick blood smears, considered the gold standard for malaria diagnosis. Thick blood smears from each child's blood were made in the field; air dried in the field in a dust-free environment; carefully packed and stored in slide boxes; and transported to the Navrongo Health Research Centre (NHRC) in Navrongo, Upper East Region for microscopic reading and determination of the presence of malaria parasites. At the NHRC laboratory, all slides were checked against slide transmittal forms by a slides coordinator before being logged into a computer database. All slides were then stained with 10 percent Giemsa stain for 10–15 minutes, washed, and air-dried. Efforts were made to ensure that the smears arrived at NHRC within two weeks of the specimen being collected. As mentioned, the purpose of the thick blood smear was to apply the "gold standard" to determine whether the child had malaria through observation of the presence of parasites; however, microscopy was not performed for the purpose of ascertaining the type of malaria parasite species.

The laboratory had four experienced malaria microscopists working full-time for a period of three months. Each slide was examined by two independent microscopists, and any discordant results were read by a third microscopist. The final result for any discordant reading was established by two concordant results. A Measure DHS staff member visited the laboratory at NHRC and observed that it had the required capacity and experienced microscopists. Measure DHS project staff also provided technical assistance to the laboratory staff on how to log received samples into the database by scanning the barcodes into an excel spread sheet. Results from the laboratory microscopy were not reported back to the parents or guardians of the children tested, a fact that was included in the informed consent statement.

Training of Field Staff for Anaemia and Malaria Testing

Health technicians did not necessarily have prior medical qualifications. Rather, in accordance with NMCP and NHRP protocols, they had a minimum of a secondary school education and were specially trained to conduct the malaria and anaemia testing. The malaria biomarker training was led by a biomarker specialist from the USAID Measure DHS project (ICF International) with technical assistance from staff from NHRC, NMCP and PMI. The biomarker specialist prepared the biomarker training manual and all biomarker field forms. Biomarker training consisted of 5 days of classroom lectures and practical demonstrations. The health technicians were trained on how to draw blood (1) onto microcuvettes to measure haemoglobin levels using a portable device (HemoCue); (2) onto rapid diagnostic kits to test for malaria parasites, and (3) onto a glass slide to make thick blood smears. They were also instructed on survey protocols for obtaining informed consent from caregivers, interpreting test results, administering antimalarials when indicated, informing caregivers of results, providing education on malaria prevention, and documenting these processes. Two days of fieldwork practice was an opportunity for the health technicians and interviewers to work as a team under field conditions. This exercise of data collection was done in households in areas that were not selected for the main survey sample. Based on performance during training, 20 health technicians were retained for the survey by the NHRC facilitator, and five were kept as standby.

Biomarker field coordinators participated in the biomarker training. They had also gone through a three-day prior training program held in NHRC for the field coordinators, during which a pilot test was also carried out in Bonia, one of the communities in the Kassena-Nankana East district. The biomarker procedures were evaluated and the standard operating procedures (SOPs) were revised as appropriate.

Quality Control during Field Work and Slide Processing

Quality control during the survey was ensured through effective supervision of the teams during fieldwork. The first level of supervision was provided by the team supervisors and the field editors. The supervisors were responsible for closely monitoring the work of the teams to ensure that all sampled households were visited, all eligible respondents were contacted, and, together with the field editors, that all questionnaires were edited in the field for accuracy and completeness. Supervisors also observed the health technicians' performance to ensure that all procedures were accurately implemented. To ensure high quality of data collection, staff from Measure DHS (ICF), PMI, NHRC, UNICEF, GSS and NMCP visited and supervised teams in the field, especially at the beginning of data collection.

Since close supervision during the first month of fieldwork is critical to establishing high quality standards, NHRC deployed six regional biomarker coordinators who covered the ten regions of Ghana. In addition to providing fieldwork supervision to the health technicians, the biomarker field coordinators picked up and stained the thick smear slides in the regions within a week. The stained slides were then transported to designated central locations across the country, and later picked up by two biomarker field monitors from NHRC and transported to the laboratory for registration and microscopy. In the second and third months of fieldwork, biomarker field supervision was scaled back to three regional field coordinators. Their responsibilities were to visit all teams, provide supervision, pick up thick smear slides and make sure that all slides get to the laboratory within two weeks of sample collection. Slides collected in the second and third months of field work were stained at the laboratory in NHRC.

All slides were read as "positive" or "negative" for malaria parasites by two experienced microscopists at the NHRC laboratory in Navrongo. As mentioned, in cases of discordant readings, a third reader decided the final result. NHRC results were submitted to GSS, for merging of laboratory results with the questionnaire dataset by means of the bar code that was common to the slide and the questionnaire.

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The sample of respondents selected in the Ghana Multiple Indicator Cluster Survey is only one of the samples that could have been selected from the same population, using the same design and size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.

The following sampling error measures are presented in this appendix for each of the selected indicators:

- **Standard error (se):** Sampling errors are usually measured in terms of standard errors for particular indicators (means, proportions, etc.). Standard error is the square root of the variance of the estimate. The Taylor linearization method is used for the estimation of standard errors.
- **Coefficient of variation (se/r)** is the ratio of the standard error to the value of the indicator, and is a measure of the relative sampling error.
- **Design effect (deff)** is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling. The square root of the design effect (deft) is used to show the efficiency of the sample design in relation to the precision. A deft value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a deft value above 1.0 indicates the increase in the standard error due to the use of a more complex sample design.
- **Confidence limits** are calculated to show the interval within which the true value for the population can be reasonably assumed to fall, with a specified level of confidence. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error ($r + 2.se$ or $r - 2.se$) of the statistic in 95 percent of all possible samples of identical size and design.

For the calculation of sampling errors from MICS data, SPSS Version 18 Complex Samples module has been used. The results are shown in the tables that follow. In addition to the sampling error measures described above, the tables also include weighted and unweighted counts of denominators for each indicator.

Sampling errors are calculated for indicators of primary interest, for the national level, for the regions, and for urban and rural areas. Three of the selected indicators are based on households, 8 are based on household members, 13 are based on women, and 15 are based on children under 5. Ten are based on men. All indicators presented here are in the form of proportions. Table SE.1 shows the list of indicators for which sampling errors are calculated, including the base population (denominator) for each indicator. Tables (SE.2 to SE.14) show the calculated sampling errors for selected domains.

Table SE.1: Indicators selected for sampling error calculations		
List of indicators selected for sampling error calculations, and base populations (denominators) for each indicator, Country, Year		
	MICS4 Indicator	Base Population
HOUSEHOLDS		
2.16	Iodized salt consumption	All households in which salt was tested or with no salt
3.12	Household availability of insecticide-treated nets (ITNs)	All households
HOUSEHOLD MEMBERS		
4.1	Use of improved drinking water sources	All household members
4.3	Use of improved sanitation facilities	All household members
7.5	Secondary school net attendance rate (adjusted)	Children of secondary school age
9.18	Prevalence of children with at least one parent dead	Children age 0-17 years
8.5	Violent discipline	Children age 2-14 years
WOMEN		
-	Pregnant women	Women age 15-49 years
3.19	Pregnant women sleeping under insecticide-treated nets (ITNs)	Pregnant women
3.20	Intermittent preventive treatment for malaria	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.2	Early childbearing	Women age 20-24 years
5.3	Contraceptive prevalence	Women age 15-49 years who are currently married or in union
5.4	Unmet need	Women age 15-49 years who are currently married or in union
5.5a	Antenatal care coverage - at least once by skilled personnel	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.5b	Antenatal care coverage - at least four times by any provider	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.7	Skilled attendant at delivery	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.8	Institutional deliveries	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.9	Caesarean section	Women age 15-49 years with a live birth in the 2 years preceding the survey
7.1	Literacy rate among young women	Women age 15-24 years
8.7	Marriage before age 18	Women age 20-49 years
8.9	Polygyny	Women age 15-49 years who are currently married or in union
8.12	Prevalence of female genital mutilation/cutting (FGM/C) among women	Women age 15-49 years
9.2	Comprehensive knowledge about HIV prevention among young people	Women age 15-24 years
9.3	Knowledge of mother- to-child transmission of HIV	Women age 15-49 years
9.4	Accepting attitudes towards people living with HIV	Women age 15-49 years who have heard of HIV
9.6	Women who have been tested for HIV and know the results	Women age 15-49 years
9.7	Sexually active young women who have been tested for HIV and know the results	Women age 15-24 years who have had sex in the 12 months preceding the survey
9.11	Sex before age 15 among young women	Women age 15-24 years
9.16	Condom use with non-regular partners	Women age 15-24 years who had a non-marital, non-cohabiting partner in the 12 months preceding the survey
8.13	Prevalence of female genital mutilation/cutting (FGM/C) among girls	Girls age 0-14 years
UNDER-5s		
2.1a	Underweight prevalence	Children under age 5
2.2a	Stunting prevalence	Children under age 5
2.3a	Wasting prevalence	Children under age 5
2.6	Exclusive breastfeeding under 6 months	Total number of infants under 6 months of age
2.14	Age-appropriate breastfeeding	Children age 0-23 months
-	Tuberculosis immunization coverage	Children age 12-23 months
-	Received polio immunization	Children age 12-23 months
-	Received DPT immunization	Children age 12-23 months

MICS4 Indicator		Base Population
-	Received measles immunization	Children age 12-23 months
-	Received Hepatitis B immunization	Children age 12-23 months
-	Diarrhoea in the previous 2 weeks	Children under age 5
-	Illness with a cough in the previous 2 weeks	Children under age 5
-	Fever in last two weeks	Children under age 5
3.8	Oral rehydration therapy with continued feeding	Children under age 5 with diarrhoea in the previous 2 weeks
3.10	Antibiotic treatment of suspected pneumonia	Children under age 5 with suspected pneumonia in the previous 2 weeks
3.15	Children under age 5 sleeping under insecticide-treated nets (ITNs)	Children under age 5
3.18	Anti-malarial treatment of children under age 5	Children under age 5 reported to have had fever in the previous 2 weeks
6.1	Support for learning	Children age 36-59 months
6.7	Attendance to early childhood education	Children age 36-59 months
8.1	Birth registration	Children under age 5
MEN		
7.1	Literacy rate among young men	Men age 15-24 years
8.7	Marriage before age 18	Men age 15-59 years
8.9	Polygyny	Men age 15-59 years who are currently married or in union
9.2	Comprehensive knowledge about HIV prevention among young men	Men age 15-24 years
9.3	Knowledge of mother-to-child transmission of HIV	Men age 15-59 years
9.4	Accepting attitudes towards people living with HIV	Men age 15-59 years who have heard of HIV
9.6	Men who have been tested for HIV during last 12 months and who have been told the results	Men age 15-59 years who took HIV test in the 12 months preceding the survey
9.7	Sexually active young men who have been tested for HIV and know the results	Men age 15-24 years who have had sex in the 12 months preceding the survey
9.11	Sex before age 15 among young men	Men age 15-24 years
9.16	Condom use with non-regular partners	Men age 15-24 years who had a non-marital, non-cohabiting partner in the 12 months preceding the survey

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.3449	0.0095	0.0274669	4.67175	2.16142341	11819	11762	0.326	0.364
Household availability of insecticide-treated nets (ITNs)	3.12	0.4890	0.009	0.0184741	3.89428	1.97339317	11925	11925	0.471	0.507
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.7929	0.0117	0.015	9.950	3.154	46093	11925	0.770	0.816
Use of improved sanitation facilities	4.3	0.1497	0.0081	0.054	6.132	2.476	46093	11925	0.134	0.166
Secondary school net attendance rate (adjusted)	7.5	0.4161	0.0097	0.023	3.079	1.755	6443	7917	0.397	0.436
Prevalence of children with at least one parent dead	9.18	0.0766	0.0034	0.044	4.379	2.093	22005	27466	0.070	0.083
Child discipline	8.5	0.9355	0.0043	0.005	2.494	1.579	16913	8156	0.927	0.944
WOMEN										
Pregnant women	-	0.0773	0.0042	0.054	2.601	1.613	10627	10627	0.069	0.086
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.3258	0.0148	0.045	0.908	0.953	811	909	0.296	0.355
Intermittent preventive treatment for malaria	3.20	0.6709	0.0133	0.020	2.163	1.471	2436	2706	0.644	0.697
Early childbearing	5.2	0.1615	0.0107	0.066	1.277	1.130	1674	1503	0.140	0.183
Contraceptive prevalence	5.3	0.3469	0.0089	0.026	2.422	1.556	6574	6926	0.329	0.365
Unmet need	5.4	0.2643	0.0074	0.028	1.960	1.400	6574	6926	0.249	0.279
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9636	0.0042	0.004	1.411	1.188	2528	2873	0.955	0.972
Antenatal care coverage - at least four times by any provider	5.5b	0.8662	0.0102	0.012	2.562	1.601	2528	2873	0.846	0.887
Skilled attendant at delivery	5.7	0.6837	0.0125	0.018	2.086	1.444	2528	2873	0.659	0.709
Institutional deliveries	5.8	0.6737	0.0133	0.020	2.306	1.518	2528	2873	0.647	0.700
Caesarean section	5.9	0.1136	0.0093	0.082	2.483	1.576	2528	2873	0.095	0.132
Literacy rate among young women	7.1	0.6139	0.0139	0.023	2.864	1.692	3573	3531	0.586	0.642
Marriage before age 18	8.7	0.2698	0.0082	0.030	2.940	1.715	8728	8599	0.253	0.286
Polygyny	8.9	0.1829	0.0072	0.039	2.400	1.549	6574	6926	0.168	0.197
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0382	0.0023	0.061	1.576	1.255	10627	10627	0.034	0.043
Comprehensive knowledge about HIV prevention among young people	9.2	0.3681	0.0117	0.032	2.078	1.442	3573	3531	0.345	0.392
Knowledge of mother-to-child transmission of HIV	9.3	0.5716	0.0073	0.013	2.321	1.524	10627	10627	0.557	0.586
Accepting attitudes towards people living with HIV	9.4	0.0629	0.0044	0.070	3.308	1.819	10431	10182	0.054	0.072

Table SE.2: Sampling errors: Total sample (cont'd)										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count		
									r - 2se	r + 2se
Women who have been tested for HIV and know the results	9.6	0.1676	0.0055	0.033	2.304	1.518	10627	10627	0.157	0.179
Sexually active young women who have been tested for HIV and know the results	9.7	0.1732	0.0126	0.073	1.923	1.387	1936	1743	0.148	0.198
Sex before age 15 among young women	9.11	0.0971	0.0072	0.074	2.096	1.448	3573	3531	0.083	0.112
Condom use with non-regular partners	9.16	0.4092	0.0216	0.053	1.795	1.340	1092	929	0.366	0.453
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0045	0.0009	0.190	1.471	1.213	8276	9079	0.003	0.006
UNDER-5s										
Underweight prevalence	2.1a	0.1335	0.0058	0.044	2.182	1.477	7375	7395	0.122	0.145
Stunting prevalence	2.2a	0.2275	0.0077	0.034	2.505	1.583	7338	7342	0.212	0.243
Wasting prevalence	2.3a	0.0622	0.0037	0.059	1.713	1.309	7381	7381	0.055	0.070
Exclusive breastfeeding under 6 months	2.6	0.4566	0.0216	0.047	1.493	1.222	818	792	0.413	0.500
Age-appropriate breastfeeding	2.14	0.6393	0.0116	0.018	1.735	1.317	2995	2963	0.616	0.663
Tuberculosis immunization coverage	-	0.9810	0.0041	0.004	1.335	1.155	1453	1451	0.973	0.989
Received polio immunization	-	0.9123	0.0110	0.012	2.194	1.481	1451	1449	0.890	0.934
Received penta immunization	-	0.9288	0.0087	0.009	1.641	1.281	1451	1449	0.912	0.946
Received measles immunization	-	0.9373	0.0087	0.009	1.853	1.361	1450	1447	0.920	0.955
Received yellow fever immunization	-	0.9378	0.0088	0.009	1.899	1.378	1447	1445	0.920	0.955
Diarrhoea in the previous 2 weeks	-	0.1266	0.0068	0.053	3.119	1.766	7550	7550	0.113	0.140
Illness with a cough in the previous 2 weeks	-	0.0293	0.0031	0.105	2.497	1.580	7550	7550	0.023	0.035
Fever in last two weeks	-	0.1891	0.0065	0.034	2.088	1.445	7550	7550	0.176	0.202
Oral rehydration therapy with continued feeding	3.8	0.4391	0.0170	0.039	1.325	1.151	956	1126	0.405	0.473
Antibiotic treatment of suspected pneumonia	3.10	0.5568	0.0276	0.050	0.835	0.914	221	271	0.502	0.612
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.3903	0.0113	0.029	4.010	2.002	7461	7487	0.368	0.413
Anti-malarial treatment of children under age 5 the same day	3.17	0.3488	0.0196	0.056	3.062	1.750	1427	1803	0.310	0.388
Support for learning	6.1	0.3984	0.0142	0.036	2.583	1.607	3002	3069	0.370	0.427
Attendance to early childhood education	6.7	0.6822	0.0138	0.020	2.704	1.644	3002	3069	0.655	0.710
Birth registration	8.1	0.6249	0.0115	0.018	4.233	2.057	7550	7550	0.602	0.648

Table SE.2: Sampling errors: Total sample (cont'd)										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count		
									r - 2se	r + 2se
Literacy rate among young men	-	0.7129	0.0140	0.020	1.105	1.051	1036	1160	0.685	0.741
Marriage before age 18	-	0.0456	0.0054	0.118	1.698	1.303	2664	2554	0.035	0.056
Polygyny	-	0.0935	0.0084	0.090	1.501	1.225	1856	1787	0.077	0.110
Comprehensive knowledge about HIV prevention among young men	-	0.3863	0.0195	0.050	1.850	1.360	1036	1160	0.347	0.425
Knowledge of mother-to-child transmission of HIV	-	0.5734	0.0129	0.022	2.254	1.501	3321	3321	0.548	0.599
Accepting attitudes towards people living with HIV	-	0.1525	0.0088	0.058	1.939	1.392	3292	3229	0.135	0.170
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0997	0.0079	0.079	2.295	1.515	3321	3321	0.084	0.115
Sexually active young men who have been tested for HIV and know the results	-	0.0836	0.0056	0.067	0.131	0.362	333	319	0.072	0.095
Sex before age 15 among young men	-	0.0487	0.0066	0.135	1.081	1.040	1036	1160	0.036	0.062
Condom use with non-regular partners	-	0.5386	0.0242	0.045	0.671	0.819	293	285	0.490	0.587

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.4495	0.0142	0.031	3.618	1.902	6303	4469	0.421	0.478
Household availability of insecticide-treated nets (ITNs)	3.12	0.3910	0.0126	0.032	3.053	1.747	6358	4545	0.366	0.416
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.9074	0.0109	0.012	6.390	2.528	22266	4545	0.886	0.929
Use of improved sanitation facilities	4.3	0.2124	0.0147	0.069	5.861	2.421	22266	4545	0.183	0.242
Secondary school net attendance rate (adjusted)	7.5	0.5109	0.0135	0.026	1.745	1.321	2952	2405	0.484	0.538
Prevalence of children with at least one parent dead	9.18	0.0697	0.0048	0.069	2.757	1.661	9707	7777	0.060	0.079
Child discipline	8.5	0.9367	0.0073	0.008	2.435	1.560	7435	2683	0.922	0.951
WOMEN										
Pregnant women	-	0.0625	0.0063	0.100	2.723	1.650	5770	4056	0.050	0.075
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.1879	0.0189	0.100	0.614	0.783	360	264	0.150	0.226
Intermittent preventive treatment for malaria	3.20	0.6660	0.0198	0.030	1.362	1.167	1047	772	0.626	0.706
Early childbearing	5.2	0.1070	0.0132	0.123	1.214	1.102	963	668	0.081	0.133
Contraceptive prevalence	5.3	0.3693	0.0132	0.036	1.709	1.307	3220	2269	0.343	0.396
Unmet need	5.4	0.2443	0.0111	0.045	1.501	1.225	3220	2269	0.222	0.266
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9798	0.0061	0.006	1.472	1.213	1068	791	0.968	0.992
Antenatal care coverage - at least four times by any provider	5.5b	0.9406	0.0097	0.010	1.336	1.156	1068	791	0.921	0.960
Skilled attendant at delivery	5.7	0.8821	0.0139	0.016	1.460	1.208	1068	791	0.854	0.910
Institutional deliveries	5.8	0.8747	0.0144	0.016	1.490	1.221	1068	791	0.846	0.903
Caesarean section	5.9	0.1734	0.0181	0.104	1.809	1.345	1068	791	0.137	0.210
Literacy rate among young women	7.1	0.7267	0.0190	0.026	2.608	1.615	1939	1440	0.689	0.765
Marriage before age 18	8.7	0.1945	0.0113	0.058	2.689	1.640	4794	3284	0.172	0.217
Polygyny	8.9	0.1248	0.0095	0.076	1.872	1.368	3220	2269	0.106	0.144
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0255	0.0036	0.142	2.123	1.457	5770	4056	0.018	0.033
Comprehensive knowledge about HIV prevention among young people	9.2	0.4227	0.0165	0.039	1.602	1.266	1939	1440	0.390	0.456
Knowledge of mother- to-child transmission of HIV	9.3	0.5775	0.0105	0.018	1.826	1.351	5770	4056	0.557	0.598

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Women who have been tested for HIV and know the results	9.6	0.1892	0.0078	0.041	1.596	1.263	5770	4056	0.174	0.205
Sexually active young women who have been tested for HIV and know the results	9.7	0.1961	0.0205	0.104	1.793	1.339	959	676	0.155	0.237
Sex before age 15 among young women	9.11	0.0601	0.0071	0.118	1.275	1.129	1939	1440	0.046	0.074
Condom use with non-regular partners	9.16	0.4867	0.0300	0.062	1.622	1.274	634	452	0.427	0.547
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0020	0.0010	0.511	1.436	1.198	4087	2786	0.000	0.004
UNDER-5s										
Underweight prevalence	2.1a	0.1050	0.0087	0.083	1.654	1.286	3196	2066	0.088	0.122
Stunting prevalence	2.2a	0.1811	0.0129	0.071	2.311	1.520	3194	2063	0.155	0.207
Wasting prevalence	2.3a	0.0566	0.0055	0.097	1.169	1.081	3191	2061	0.046	0.068
Exclusive breastfeeding under 6 months	2.6	0.4891	0.0324	0.066	0.929	0.964	344	222	0.424	0.554
Age-appropriate breastfeeding	2.14	0.6117	0.0194	0.032	1.300	1.140	1276	824	0.573	0.650
Tuberculosis immunization coverage	-	0.9821	0.0070	0.007	1.096	1.047	619	397	0.968	0.996
Received polio immunization	-	0.8770	0.0225	0.026	1.846	1.359	618	396	0.832	0.922
Received penta immunization	-	0.9163	0.0161	0.018	1.335	1.156	618	396	0.884	0.948
Received measles immunization	-	0.9657	0.0092	0.010	1.004	1.002	617	395	0.947	0.984
Received yellow fever immunization	-	0.9658	0.0091	0.009	0.991	0.995	615	394	0.948	0.984
Diarrhoea in the previous 2 weeks	-	0.1044	0.0098	0.094	2.181	1.477	3283	2117	0.085	0.124
Illness with a cough in the previous 2 weeks	-	0.0182	0.0038	0.209	1.721	1.312	3283	2117	0.011	0.026
Fever in last two weeks	-	0.1505	0.0103	0.068	1.757	1.326	3283	2117	0.130	0.171
Oral rehydration therapy with continued feeding	3.8	0.5123	0.0272	0.053	0.814	0.902	343	276	0.458	0.567
Antibiotic treatment of suspected pneumonia	3.10	0.7302	0.0075	0.010	0.013	0.114	60	47	0.715	0.745
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.3010	0.0187	0.062	3.502	1.871	3253	2099	0.263	0.338
Anti-malarial treatment of children under age 5 the same day	3.17	0.4374	0.0346	0.079	2.030	1.425	494	417	0.368	0.507
Support for learning	6.1	0.5267	0.0233	0.044	1.894	1.376	1304	870	0.480	0.573
Attendance to early childhood education	6.7	0.8053	0.0210	0.026	2.439	1.562	1304	870	0.763	0.847
Birth registration	8.1	0.7197	0.0174	0.024	3.192	1.787	3283	2117	0.685	0.755

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Literacy rate among young men	-	0.8309	0.0215	0.026	1.244	1.115	537	380	0.788	0.874
Marriage before age 18	-	0.0287	0.0057	0.199	1.131	1.064	1430	968	0.017	0.040
Polygyny	-	0.0568	0.0106	0.186	1.268	1.126	917	607	0.036	0.078
Comprehensive knowledge about HIV prevention among young men	-	0.4862	0.0300	0.062	1.369	1.170	537	380	0.426	0.546
Knowledge of mother-to-child transmission of HIV	-	0.5551	0.0179	0.032	1.544	1.243	1746	1189	0.519	0.591
Accepting attitudes towards people living with HIV	-	0.2023	0.0146	0.072	1.557	1.248	1744	1183	0.173	0.231
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.1268	0.0129	0.102	1.793	1.339	1746	1189	0.101	0.153
Sexually active young men who have been tested for HIV and know the results	-	0.0825	0.0058	0.071	0.057	0.239	182	127	0.071	0.094
Sex before age 15 among young men	-	0.0293	0.0071	0.241	0.664	0.815	537	380	0.015	0.043
Condom use with non-regular partners	-	0.6383	0.0384	0.060	0.741	0.861	165	117	0.562	0.715

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.2255	0.0110	0.049	5.007	2.238	5516	7293	0.204	0.247
Household availability of insecticide-treated nets (ITNs)	3.12	0.6010	0.0128	0.021	5.022	2.241	5567	7380	0.575	0.627
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.6859	0.0200	0.029	13.697	3.701	23827	7380	0.646	0.726
Use of improved sanitation facilities	4.3	0.0911	0.0072	0.079	4.589	2.142	23827	7380	0.077	0.105
Secondary school net attendance rate (adjusted)	7.5	0.3359	0.0133	0.040	4.384	2.094	3490	5512	0.309	0.363
Prevalence of children with at least one parent dead	9.18	0.0821	0.0047	0.057	5.672	2.381	12298	19689	0.073	0.091
Child discipline	8.5	0.9346	0.0051	0.005	2.289	1.513	9478	5473	0.924	0.945
WOMEN										
Pregnant women	-	0.0948	0.0052	0.055	2.072	1.440	4857	6571	0.084	0.105
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.4358	0.0195	0.045	0.995	0.998	451	645	0.397	0.475
Intermittent preventive treatment for malaria	3.20	0.6746	0.0178	0.026	2.795	1.672	1390	1934	0.639	0.710
Early childbearing	5.2	0.2356	0.0178	0.076	1.474	1.214	710	835	0.200	0.271
Contraceptive prevalence	5.3	0.3254	0.0118	0.036	2.950	1.717	3353	4657	0.302	0.349
Unmet need	5.4	0.2836	0.0097	0.034	2.167	1.472	3353	4657	0.264	0.303
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9518	0.0057	0.006	1.448	1.204	1460	2082	0.940	0.963
Antenatal care coverage - at least four times by any provider	5.5b	0.8117	0.0154	0.019	3.248	1.802	1460	2082	0.781	0.843
Skilled attendant at delivery	5.7	0.5386	0.0179	0.033	2.695	1.642	1460	2082	0.503	0.574
Institutional deliveries	5.8	0.5266	0.0188	0.036	2.947	1.717	1460	2082	0.489	0.564
Caesarean section	5.9	0.0699	0.0087	0.125	2.427	1.558	1460	2082	0.052	0.087
Literacy rate among young women	7.1	0.4801	0.0195	0.041	3.170	1.780	1634	2091	0.441	0.519
Marriage before age 18	8.7	0.3616	0.0111	0.031	2.829	1.682	3934	5315	0.339	0.384
Polygyny	8.9	0.2387	0.0103	0.043	2.708	1.646	3353	4657	0.218	0.259
Prevalence of female genital mutilation/ cutting (FGM/C) among women	8.12	0.0533	0.0030	0.057	1.189	1.091	4857	6571	0.047	0.059

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Comprehensive knowledge about HIV prevention among young people	9.2	0.3034	0.0155	0.051	2.371	1.540	1634	2091	0.272	0.334
Knowledge of mother-to-child transmission of HIV	9.3	0.5645	0.0099	0.018	2.644	1.626	4857	6571	0.545	0.584
Accepting attitudes towards people living with HIV	9.4	0.0507	0.0041	0.081	2.173	1.474	4698	6190	0.042	0.059
Women who have been tested for HIV and know the results	9.6	0.1420	0.0077	0.054	3.191	1.786	4857	6571	0.127	0.157
Sexually active young women who have been tested for HIV and know the results	9.7	0.1507	0.0145	0.096	1.743	1.320	977	1067	0.122	0.180
Sex before age 15 among young women	9.11	0.1409	0.0128	0.091	2.818	1.679	1634	2091	0.115	0.166
Condom use with non-regular partners	9.16	0.3020	0.0248	0.082	1.391	1.179	458	477	0.252	0.352
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0069	0.0014	0.200	1.762	1.328	4189	6293	0.004	0.010
UNDER-5s										
Underweight prevalence	2.1a	0.1554	0.0077	0.049	2.398	1.548	4178	5329	0.140	0.171
Stunting prevalence	2.2a	0.2632	0.0095	0.036	2.437	1.561	4145	5279	0.244	0.282
Wasting prevalence	2.3a	0.0664	0.0049	0.074	2.089	1.446	4190	5320	0.056	0.076
Exclusive breastfeeding under 6 months	2.6	0.4330	0.0286	0.066	1.902	1.379	473	570	0.376	0.490
Age-appropriate breastfeeding	2.14	0.6597	0.0143	0.022	1.942	1.394	1719	2139	0.631	0.688
Tuberculosis immunization coverage	-	0.9802	0.0050	0.005	1.362	1.167	833	1054	0.970	0.990
Received polio immunization	-	0.9386	0.0090	0.010	1.477	1.215	833	1053	0.921	0.957
Received penta immunization	-	0.9381	0.0091	0.010	1.515	1.231	833	1053	0.920	0.956
Received measles immunization	-	0.9163	0.0132	0.014	2.398	1.549	833	1052	0.890	0.943
Received yellow fever immunization	-	0.9171	0.0134	0.015	2.488	1.577	832	1051	0.890	0.944
Diarrhoea in the previous 2 weeks	-	0.1436	0.0090	0.063	3.613	1.901	4267	5433	0.126	0.162
Illness with a cough in the previous 2 weeks	-	0.0377	0.0045	0.119	3.037	1.743	4267	5433	0.029	0.047
Fever in last two weeks	-	0.2187	0.0084	0.038	2.251	1.500	4267	5433	0.202	0.236
Oral rehydration therapy with continued feeding	3.8	0.3982	0.0219	0.055	1.699	1.303	613	850	0.354	0.442
Antibiotic treatment of suspected pneumonia	3,10	0.4923	0.0349	0.071	1.084	1.041	161	224	0.423	0.562

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.4594	0.0137	0.030	4.086	2.021	4208	5388	0.432	0.487
Anti-malarial treatment of children under age 5 the same day	3.17	0.3019	0.0221	0.073	3.203	1.790	933	1386	0.258	0.346
Support for learning	6.1	0.2999	0.0166	0.056	2.901	1.703	1698	2199	0.267	0.333
Attendance to early childhood education	6.7	0.5876	0.0188	0.032	3.207	1.791	1698	2199	0.550	0.625
Birth registration	8.1	0.5519	0.0152	0.028	5.099	2.258	4267	5433	0.521	0.582
MEN										
Literacy rate among young men	-	0.5861	0.0201	0.034	1.294	1.138	499	780	0.546	0.626
Marriage before age 18	-	0.0652	0.0096	0.147	2.380	1.543	1234	1586	0.046	0.084
Polygyny	-	0.1294	0.0124	0.096	1.599	1.264	939	1180	0.105	0.154
Comprehensive knowledge about HIV prevention among young men	-	0.2790	0.0207	0.074	1.662	1.289	499	780	0.238	0.320
Knowledge of mother-to-child transmission of HIV	-	0.5936	0.0187	0.032	3.102	1.761	1575	2132	0.556	0.631
Accepting attitudes towards people living with HIV	-	0.0964	0.0084	0.087	1.665	1.290	1548	2046	0.080	0.113
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0696	0.0075	0.107	1.839	1.356	1575	2132	0.055	0.085
Sexually active young men who have been tested for HIV and know the results	-	0.0849	0.0102	0.120	0.254	0.504	151	192	0.065	0.105
Sex before age 15 among young men	-	0.0696	0.0111	0.160	1.487	1.220	499	780	0.047	0.092
Condom use with non-regular partners	-	0.4099	0.0228	0.056	0.358	0.598	128	168	0.364	0.455

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.4404	0.0276	0.063	2.328	1.526	1108	752	0.385	0.496
Household availability of insecticide-treated nets (ITNs)	3.12	0.4273	0.0316	0.074	3.079	1.755	1116	757	0.364	0.490
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.7153	0.0385	0.054	5.513	2.348	4318	757	0.638	0.792
Use of improved sanitation facilities	4.3	0.1733	0.0286	0.165	4.327	2.080	4318	757	0.116	0.231
Secondary school net attendance rate (adjusted)	7.5	0.4583	0.0259	0.056	1.139	1.067	603	423	0.407	0.510
Prevalence of children with at least one parent dead	9.18	0.0542	0.0106	0.195	3.163	1.778	2082	1454	0.033	0.075
Child discipline	8.5	0.9191	0.0165	0.018	1.724	1.313	1552	473	0.886	0.952
WOMEN										
Pregnant women	-	0.0799	0.0100	0.125	0.868	0.932	1022	640	0.060	0.100
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.2152	0.0418	0.194	0.475	0.689	80	47	0.132	0.299
Intermittent preventive treatment for malaria	3.20	0.6297	0.0493	0.078	1.686	1.299	256	163	0.531	0.728
Early childbearing	5.2	0.2368	0.0509	0.215	1.321	1.149	141	93	0.135	0.339
Contraceptive prevalence	5.3	0.3599	0.0270	0.075	1.320	1.149	672	417	0.306	0.414
Unmet need	5.4	0.2508	0.0264	0.105	1.546	1.243	672	417	0.198	0.304
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9499	0.0155	0.016	0.866	0.931	270	173	0.919	0.981
Antenatal care coverage - at least four times by any provider	5.5b	0.7852	0.0237	0.030	0.574	0.757	270	173	0.738	0.833
Skilled attendant at delivery	5.7	0.6450	0.0322	0.050	0.778	0.882	270	173	0.581	0.709
Institutional deliveries	5.8	0.6255	0.0350	0.056	0.897	0.947	270	173	0.556	0.695
Caesarean section	5.9	0.0716	0.0199	0.278	1.027	1.014	270	173	0.032	0.111
Literacy rate among young women	7.1	0.5683	0.0397	0.070	1.353	1.163	329	212	0.489	0.648
Marriage before age 18	8.7	0.3665	0.0224	0.061	1.125	1.060	834	521	0.322	0.411
Polygyny	8.9	0.1173	0.0170	0.145	1.161	1.077	672	417	0.083	0.151
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0213	0.0051	0.238	0.790	0.889	1022	640	0.011	0.031
Comprehensive knowledge about HIV prevention among young people	9.2	0.3894	0.0345	0.089	1.056	1.028	329	212	0.320	0.458
Knowledge of mother-to-child transmission of HIV	9.3	0.5524	0.0266	0.048	1.826	1.351	1022	640	0.499	0.606
Accepting attitudes towards people living with HIV	9.4	0.0505	0.0137	0.271	2.442	1.563	1002	626	0.023	0.078

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Sexually active young women who have been tested for HIV and know the results	9.7	0.1124	0.0274	0.243	1.021	1.010	214	137	0.058	0.167
Sex before age 15 among young women	9.11	0.1898	0.0298	0.157	1.222	1.105	329	212	0.130	0.249
Condom use with non-regular partners	9.16	0.4024	0.0588	0.146	1.077	1.038	122	76	0.285	0.520
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0021	0.0021	0.974	1.255	1.120	1004	624	0.000	0.006
UNDER-5s										
Underweight prevalence	2.1a	0.1434	0.0205	0.143	1.336	1.156	718	390	0.102	0.184
Stunting prevalence	2.2a	0.2260	0.0288	0.127	1.829	1.352	713	387	0.168	0.284
Wasting prevalence	2.3a	0.0767	0.0145	0.190	1.169	1.081	722	392	0.048	0.106
Exclusive breastfeeding under 6 months	2.6	0.4678	0.0788	0.168	1.121	1.059	72	46	0.310	0.625
Age-appropriate breastfeeding	2.14	0.7032	0.0387	0.055	1.273	1.128	315	178	0.626	0.781
Tuberculosis immunization coverage	-	0.9906	0.0096	0.010	0.810	0.900	151	82	0.971	1.000
Received polio immunization	-	0.9507	0.0159	0.017	0.435	0.660	151	82	0.919	0.982
Received penta immunization	-	0.9812	0.0193	0.020	1.635	1.279	151	82	0.943	1.000
Received measles immunization	-	0.9637	0.0224	0.023	1.160	1.077	151	82	0.919	1.000
Received yellow fever immunization	-	0.9637	0.0224	0.023	1.160	1.077	151	82	0.919	1.000
Diarrhoea in the previous 2 weeks	-	0.1369	0.0126	0.092	0.554	0.745	758	414	0.112	0.162
Illness with a cough in the previous 2 weeks	-	0.0188	0.0083	0.444	1.561	1.250	758	414	0.002	0.035
Fever in last two weeks	-	0.2197	0.0257	0.117	1.589	1.260	758	414	0.168	0.271
Oral rehydration therapy with continued feeding	3.8	0.3429	0.0700	0.204	1.261	1.123	104	59	0.203	0.483
Antibiotic treatment of suspected pneumonia	3.10	0.4474	0.0000	0.000	0.000	0.000	14	9	0.447	0.447
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.3267	0.0353	0.108	2.293	1.514	743	405	0.256	0.397
Anti-malarial treatment of children under age 5 the same day	3.17	0.2270	0.0366	0.161	0.664	0.815	166	88	0.154	0.300
Support for learning	6.1	0.2572	0.0349	0.136	1.012	1.006	310	160	0.187	0.327
Attendance to early childhood education	6.7	0.6781	0.0559	0.082	2.277	1.509	310	160	0.566	0.790
Birth registration	8.1	0.4894	0.0382	0.078	2.408	1.552	758	414	0.413	0.566
MEN										
Literacy rate among young men	-	0.8376	0.0383	0.046	0.712	0.844	107	67	0.761	0.914
Marriage before age 18	-	0.0605	0.0197	0.326	1.154	1.074	275	170	0.021	0.100
Polygyny	-	0.0559	0.0182	0.325	0.831	0.911	214	134	0.020	0.092

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Comprehensive knowledge about HIV prevention among young men	-	0.3125	0.0363	0.116	0.406	0.637	107	67	0.240	0.385
Knowledge of mother-to-child transmission of HIV	-	0.5240	0.0413	0.079	1.489	1.220	352	219	0.441	0.607
Accepting attitudes towards people living with HIV	-	0.1356	0.0231	0.170	0.987	0.993	351	218	0.089	0.182
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0698	0.0205	0.293	1.409	1.187	352	219	0.029	0.111
Sexually active young men who have been tested for HIV and know the results	-	0.0000	0.0000	.	.	.	26	15	0.000	0.000
Sex before age 15 among young men	-	0.0425	0.0272	0.640	1.198	1.095	107	67	0.000	0.097
Condom use with non-regular partners	-	0.3800	0.0792	0.208	0.319	0.565	23	13	0.222	0.538

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.2410	0.0189	0.078	3.846	1.961	1225	1973	0.203	0.279
Household availability of insecticide-treated nets (ITNs)	3.12	0.3210	0.0141	0.044	1.805	1.344	1236	1989	0.293	0.349
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.8045	0.0202	0.025	5.137	2.266	4557	1989	0.764	0.845
Use of improved sanitation facilities	4.3	0.1330	0.0128	0.096	2.819	1.679	4557	1989	0.107	0.159
Secondary school net attendance rate (adjusted)	7.5	0.4144	0.0188	0.045	1.637	1.280	692	1124	0.377	0.452
Prevalence of children with at least one parent dead	9.18	0.0666	0.0062	0.094	2.302	1.517	2238	3663	0.054	0.079
Child discipline	8.5	0.9344	0.0072	0.008	1.004	1.002	1693	1192	0.920	0.949
WOMEN										
Pregnant women	-	0.0787	0.0070	0.088	1.046	1.023	1044	1571	0.065	0.093
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.2935	0.0445	0.152	1.136	1.066	80	120	0.204	0.382
Intermittent preventive treatment for malaria	3.20	0.6776	0.0222	0.033	0.828	0.910	236	367	0.633	0.722
Early childbearing	5.2	0.1461	0.0202	0.138	0.786	0.887	164	241	0.106	0.187
Contraceptive prevalence	5.3	0.4143	0.0175	0.042	1.140	1.068	598	908	0.379	0.449
Unmet need	5.4	0.2261	0.0162	0.071	1.352	1.163	598	908	0.194	0.258
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9596	0.0107	0.011	1.136	1.066	246	385	0.938	0.981
Antenatal care coverage - at least four times by any provider	5.5b	0.8802	0.0164	0.019	0.979	0.989	246	385	0.847	0.913
Skilled attendant at delivery	5.7	0.6341	0.0332	0.052	1.829	1.352	246	385	0.568	0.701
Institutional deliveries	5.8	0.6093	0.0334	0.055	1.796	1.340	246	385	0.543	0.676
Caesarean section	5.9	0.1125	0.0190	0.169	1.384	1.176	246	385	0.075	0.150
Literacy rate among young women	7.1	0.6667	0.0262	0.039	1.759	1.326	379	569	0.614	0.719
Marriage before age 18	8.7	0.3122	0.0162	0.052	1.519	1.232	830	1243	0.280	0.345
Polygyny	8.9	0.1493	0.0145	0.097	1.500	1.225	598	908	0.120	0.178
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0079	0.0027	0.334	1.404	1.185	1044	1571	0.003	0.013
Comprehensive knowledge about HIV prevention among young people	9.2	0.3041	0.0312	0.103	2.616	1.617	379	569	0.242	0.367
Knowledge of mother-to-child transmission of HIV	9.3	0.5890	0.0124	0.021	1.002	1.001	1044	1571	0.564	0.614
Accepting attitudes towards people living with HIV	9.4	0.0509	0.0071	0.141	1.651	1.285	1038	1561	0.037	0.065
Women who have been tested for HIV and know the results	9.6	0.1921	0.0111	0.058	1.246	1.116	1044	1571	0.170	0.214
Sexually active young women who have been tested for HIV and know the results	9.7	0.1980	0.0229	0.116	0.978	0.989	196	296	0.152	0.244
Sex before age 15 among young women	9.11	0.1027	0.0101	0.098	0.630	0.793	379	569	0.082	0.123

Table SE.6: Sampling errors: Central Region (cont'd)										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Condom use with non-regular partners	9.16	0.4279	0.0425	0.099	1.386	1.177	128	189	0.343	0.513
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0000	0.0000	.	.	.	718	1097	0.000	0.000
UNDER-5s										
Underweight prevalence	2.1a	0.1353	0.0125	0.092	1.306	1.143	727	982	0.110	0.160
Stunting prevalence	2.2a	0.2307	0.0166	0.072	1.504	1.226	723	975	0.198	0.264
Wasting prevalence	2.3a	0.0545	0.0071	0.130	0.951	0.975	727	981	0.040	0.069
Exclusive breastfeeding under 6 months	2.6	0.3947	0.0314	0.079	0.424	0.651	73	104	0.332	0.457
Age-appropriate breastfeeding	2.14	0.6168	0.0221	0.036	0.842	0.918	309	409	0.573	0.661
Tuberculosis immunization coverage	-	0.9602	0.0133	0.014	0.918	0.958	154	200	0.934	0.987
Received polio immunization	-	0.8824	0.0213	0.024	0.869	0.932	153	199	0.840	0.925
Received penta immunization	-	0.8528	0.0216	0.025	0.737	0.859	153	199	0.810	0.896
Received measles immunization	-	0.9060	0.0172	0.019	0.689	0.830	153	199	0.872	0.940
Received yellow fever immunization	-	0.9082	0.0199	0.022	0.938	0.968	153	199	0.868	0.948
Diarrhoea in the previous 2 weeks	-	0.1188	0.0124	0.104	1.456	1.207	740	999	0.094	0.144
Illness with a cough in the previous 2 weeks	-	0.0291	0.0063	0.216	1.394	1.181	740	999	0.017	0.042
Fever in last two weeks	-	0.2018	0.0134	0.066	1.112	1.055	740	999	0.175	0.229
Oral rehydration therapy with continued feeding	3.8	0.4751	0.0346	0.073	0.597	0.772	88	125	0.406	0.544
Antibiotic treatment of suspected pneumonia	3.10	0.5153	0.0671	0.130	0.558	0.747	22	32	0.381	0.649
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.2773	0.0205	0.074	2.057	1.434	729	985	0.236	0.318
Anti-malarial treatment of children under age 5 the same day	3.17	0.3559	0.0279	0.078	0.669	0.818	149	198	0.300	0.412
Support for learning	6.1	0.3940	0.0239	0.061	0.937	0.968	286	392	0.346	0.442
Attendance to early childhood education	6.7	0.6771	0.0238	0.035	1.017	1.008	286	392	0.629	0.725
Birth registration	8.1	0.6738	0.0197	0.029	1.768	1.330	740	999	0.634	0.713
MEN										
Literacy rate among young men	-	0.7690	0.0306	0.040	0.768	0.876	94	147	0.708	0.830
Marriage before age 18	-	0.0273	0.0103	0.377	1.443	1.201	245	363	0.007	0.048
Polygyny	-	0.0731	0.0176	0.240	1.109	1.053	162	245	0.038	0.108
Comprehensive knowledge about HIV prevention among young men	-	0.2312	0.0311	0.134	0.792	0.890	94	147	0.169	0.293
Knowledge of mother-to-child transmission of HIV	-	0.6027	0.0297	0.049	1.654	1.286	296	451	0.543	0.662
Accepting attitudes towards people living with HIV	-	0.1395	0.0192	0.138	1.386	1.177	296	451	0.101	0.178
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0864	0.0146	0.169	1.213	1.101	296	451	0.057	0.116

Table SE.6: Sampling errors: Central Region (cont'd)										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Sexually active young men who have been tested for HIV and know the results	-	0.0920	0.0306	0.333	0.596	0.772	37	54	0.031	0.153
Sex before age 15 among young men	-	0.0397	0.0131	0.330	0.655	0.809	94	147	0.014	0.066
Condom use with non-regular partners	-	0.5496	0.0357	0.065	0.263	0.513	36	52	0.478	0.621

Table SE.7: Sampling errors: Greater Accra Region										
Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Ghana, 2011										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.5613	0.0222	0.039	1.958	1.399	2304	982	0.517	0.606
Household availability of insecticide-treated nets (ITNs)	3.12	0.2554	0.0195	0.076	1.966	1.402	2321	989	0.217	0.294
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.8559	0.0350	0.041	9.811	3.132	7625	989	0.786	0.926
Use of improved sanitation facilities	4.3	0.2803	0.0342	0.122	5.742	2.396	7625	989	0.212	0.349
Secondary school net attendance rate (adjusted)	7.5	0.5111	0.0304	0.059	1.355	1.164	855	368	0.450	0.572
Prevalence of children with at least one parent dead	9.18	0.0526	0.0071	0.136	1.323	1.150	3028	1294	0.038	0.067
Child discipline	8.5	0.9044	0.0177	0.020	1.839	1.356	2306	511	0.869	0.940
WOMEN										
Pregnant women	-	0.0516	0.0078	0.151	1.020	1.010	2074	829	0.036	0.067
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.1178	0.0458	0.389	0.789	0.888	107	40	0.026	0.209
Intermittent preventive treatment for malaria	3.20	0.6254	0.0386	0.062	0.961	0.981	391	152	0.548	0.703
Early childbearing	5.2	0.0745	0.0205	0.275	0.855	0.925	367	141	0.033	0.116
Contraceptive prevalence	5.3	0.4363	0.0260	0.060	1.197	1.094	1089	436	0.384	0.488
Unmet need	5.4	0.1968	0.0227	0.115	1.412	1.188	1089	436	0.152	0.242
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9850	0.0076	0.008	0.604	0.777	397	155	0.970	1.000
Antenatal care coverage - at least four times by any provider	5.5b	0.9194	0.0420	0.046	3.665	1.915	397	155	0.835	1.000
Skilled attendant at delivery	5.7	0.8971	0.0338	0.038	1.901	1.379	397	155	0.830	0.965
Institutional deliveries	5.8	0.8757	0.0431	0.049	2.624	1.620	397	155	0.790	0.962
Caesarean section	5.9	0.2322	0.0361	0.156	1.127	1.062	397	155	0.160	0.304
Literacy rate among young women	7.1	0.8114	0.0308	0.038	1.561	1.249	632	252	0.750	0.873
Marriage before age 18	8.7	0.1216	0.0148	0.122	1.476	1.215	1809	718	0.092	0.151
Polygyny	8.9	0.0849	0.0236	0.279	3.131	1.769	1089	436	0.038	0.132
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0121	0.0042	0.347	1.221	1.105	2074	829	0.004	0.020
Comprehensive knowledge about HIV prevention among young people	9.2	0.4952	0.0291	0.059	0.848	0.921	632	252	0.437	0.553
Knowledge of mother-to-child transmission of HIV	9.3	0.6003	0.0130	0.022	0.587	0.766	2074	829	0.574	0.626
Accepting attitudes towards people living with HIV	9.4	0.0857	0.0154	0.179	2.491	1.578	2074	829	0.055	0.116
Women who have been tested for HIV and know the results	9.6	0.1662	0.0132	0.079	1.041	1.021	2074	829	0.140	0.193
Sexually active young women who have been tested for HIV and know the results	9.7	0.1963	0.0478	0.243	1.752	1.324	325	122	0.101	0.292
Sex before age 15 among young women	9.11	0.0517	0.0121	0.233	0.744	0.863	632	252	0.028	0.076
Condom use with non-regular partners	9.16	0.5635	0.0573	0.102	1.109	1.053	224	84	0.449	0.678

Table SE.7: Sampling errors: Greater Accra Region (cont'd)										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0000	0.0000	.	.	.	1396	562	0.000	0.000
UNDER-5s										
Underweight prevalence	2.1a	0.0832	0.0203	0.244	2.045	1.430	1110	381	0.043	0.124
Stunting prevalence	2.2a	0.1371	0.0215	0.156	1.478	1.216	1110	381	0.094	0.180
Wasting prevalence	2.3a	0.0314	0.0079	0.253	0.795	0.892	1119	385	0.016	0.047
Exclusive breastfeeding under 6 months	2.6	0.2105	0.0433	0.206	0.418	0.646	110	38	0.124	0.297
Age-appropriate breastfeeding	2.14	0.5126	0.0325	0.063	0.674	0.821	477	160	0.447	0.578
Tuberculosis immunization coverage	-	0.9770	0.0159	0.016	0.906	0.952	237	82	0.945	1.000
Received polio immunization	-	0.8444	0.0356	0.042	0.781	0.884	237	82	0.773	0.916
Received penta immunization	-	0.8907	0.0370	0.042	1.141	1.068	237	82	0.817	0.965
Received measles immunization	-	0.9419	0.0305	0.032	1.378	1.174	237	82	0.881	1.000
Received yellow fever immunization	-	0.9413	0.0308	0.033	1.377	1.173	235	81	0.880	1.000
Diarrhoea in the previous 2 weeks	-	0.0793	0.0214	0.270	2.460	1.568	1142	393	0.036	0.122
Illness with a cough in the previous 2 weeks	-	0.0059	0.0034	0.579	0.775	0.880	1142	393	0.000	0.013
Fever in last two weeks	-	0.0886	0.0146	0.165	1.041	1.020	1142	393	0.059	0.118
Oral rehydration therapy with continued feeding	3.8	0.5513	0.0504	0.091	0.267	0.517	91	27	0.450	0.652
Antibiotic treatment of suspected pneumonia	3.10	1.0000	0.0000	0.000	.	.	7	3	1.000	1.000
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.2214	0.0358	0.162	2.898	1.702	1131	390	0.150	0.293
Anti-malarial treatment of children under age 5 the same day	3.17	0.3694	0.0917	0.248	1.262	1.123	101	36	0.186	0.553
Support for learning	6.1	0.6041	0.0500	0.083	1.684	1.298	469	162	0.504	0.704
Attendance to early childhood education	6.7	0.8487	0.0444	0.052	2.467	1.571	469	162	0.760	0.937
Birth registration	8.1	0.7669	0.0282	0.037	1.747	1.322	1142	393	0.710	0.823
MEN										
Literacy rate among young men	-	0.8331	0.0245	0.029	0.285	0.533	194	67	0.784	0.882
Marriage before age 18	-	0.0066	0.0021	0.321	0.149	0.386	546	219	0.002	0.011
Polygyny	-	0.0464	0.0206	0.444	1.283	1.133	342	135	0.005	0.088
Comprehensive knowledge about HIV prevention among young men	-	0.3925	0.0359	0.091	0.357	0.597	194	67	0.321	0.464
Knowledge of mother-to-child transmission of HIV	-	0.5603	0.0279	0.050	0.821	0.906	676	260	0.504	0.616
Accepting attitudes towards people living with HIV	-	0.2114	0.0306	0.145	1.453	1.205	676	260	0.150	0.273
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.1446	0.0235	0.163	1.159	1.076	676	260	0.098	0.192
Sexually active young men who have been tested for HIV and know the results	-	0.1669	0.0060	0.036	0.005	0.070	52	20	0.155	0.179
Sex before age 15 among young men	-	0.0364	0.0111	0.305	0.232	0.482	194	67	0.014	0.059
Condom use with non-regular partners	-	0.7676	0.0514	0.067	0.251	0.501	48	18	0.665	0.870

Table SE.8: Sampling errors: Volta Region										
Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Ghana, 2011										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.1767	0.0234	0.133	2.882	1.698	986	765	0.130	0.224
Household availability of insecticide-treated nets (ITNs)	3.12	0.8540	0.0164	0.019	1.661	1.289	992	771	0.821	0.887
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.6180	0.0555	0.090	10.058	3.171	3947	771	0.507	0.729
Use of improved sanitation facilities	4.3	0.0698	0.0151	0.216	2.697	1.642	3947	771	0.040	0.100
Secondary school net attendance rate (adjusted)	7.5	0.3951	0.0358	0.091	2.390	1.546	554	447	0.324	0.467
Prevalence of children with at least one parent dead	9.18	0.0931	0.0123	0.133	2.751	1.658	1910	1526	0.068	0.118
Child discipline	8.5	0.9489	0.0129	0.014	1.678	1.295	1503	491	0.923	0.975
WOMEN										
Pregnant women	-	0.0917	0.0133	0.145	1.250	1.118	821	593	0.065	0.118
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.5778	0.0553	0.096	0.764	0.874	74	62	0.467	0.688
Intermittent preventive treatment for malaria	3.20	0.4047	0.0497	0.123	1.386	1.177	183	136	0.305	0.504
Early childbearing	5.2	0.3170	0.0467	0.147	0.855	0.925	116	86	0.224	0.410
Contraceptive prevalence	5.3	0.1991	0.0190	0.095	0.886	0.941	541	393	0.161	0.237
Unmet need	5.4	0.3786	0.0211	0.056	0.739	0.860	541	393	0.336	0.421
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9719	0.0125	0.013	0.809	0.900	189	142	0.947	0.997
Antenatal care coverage - at least four times by any provider	5.5b	0.8263	0.0398	0.048	1.556	1.247	189	142	0.747	0.906
Skilled attendant at delivery	5.7	0.6435	0.0521	0.081	1.666	1.291	189	142	0.539	0.748
Institutional deliveries	5.8	0.6207	0.0531	0.086	1.689	1.300	189	142	0.514	0.727
Caesarean section	5.9	0.1468	0.0380	0.259	1.624	1.274	189	142	0.071	0.223
Literacy rate among young women	7.1	0.5985	0.0364	0.061	1.097	1.047	272	200	0.526	0.671
Marriage before age 18	8.7	0.2930	0.0307	0.105	2.170	1.473	665	479	0.232	0.354
Polygyny	8.9	0.2763	0.0303	0.110	1.800	1.342	541	393	0.216	0.337
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0038	0.0022	0.565	0.726	0.852	821	593	0.000	0.008
Comprehensive knowledge about HIV prevention among young people	9.2	0.3610	0.0432	0.120	1.610	1.269	272	200	0.275	0.447
Knowledge of mother-to-child transmission of HIV	9.3	0.5834	0.0294	0.050	2.110	1.453	821	593	0.525	0.642
Accepting attitudes towards people living with HIV	9.4	0.0766	0.0107	0.140	0.948	0.974	818	588	0.055	0.098
Women who have been tested for HIV and know the results	9.6	0.1848	0.0225	0.122	1.996	1.413	821	593	0.140	0.230
Sexually active young women who have been tested for HIV and know the results	9.7	0.1416	0.0364	0.257	1.296	1.138	158	120	0.069	0.214
Sex before age 15 among young women	9.11	0.1248	0.0216	0.173	0.850	0.922	272	200	0.082	0.168
Condom use with non-regular partners	9.16	0.3287	0.0644	0.196	1.014	1.007	66	55	0.200	0.457

Table SE.8: Sampling errors: Volta Region (cont'd)										
Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0012	0.0014	1.106	0.675	0.821	643	448	0.000	0.004
UNDER-5s										
Underweight prevalence	2.1a	0.1087	0.0134	0.124	0.725	0.852	590	390	0.082	0.136
Stunting prevalence	2.2a	0.2224	0.0354	0.159	2.818	1.679	589	390	0.152	0.293
Wasting prevalence	2.3a	0.0853	0.0121	0.142	0.741	0.861	597	397	0.061	0.109
Exclusive breastfeeding under 6 months	2.6	0.4911	0.0672	0.137	0.687	0.829	64	39	0.357	0.625
Age-appropriate breastfeeding	2.14	0.6913	0.0446	0.065	1.344	1.159	220	145	0.602	0.781
Tuberculosis immunization coverage	-	0.9736	0.0052	0.005	0.071	0.267	108	69	0.963	0.984
Received polio immunization	-	0.9266	0.0188	0.020	0.352	0.593	108	69	0.889	0.964
Received penta immunization	-	0.8338	0.0341	0.041	0.571	0.756	108	69	0.766	0.902
Received measles immunization	-	0.8623	0.0383	0.044	0.841	0.917	108	69	0.786	0.939
Received yellow fever immunization	-	0.8687	0.0388	0.045	0.886	0.941	106	68	0.791	0.946
Diarrhoea in the previous 2 weeks	-	0.0755	0.0205	0.271	2.402	1.550	601	400	0.035	0.117
Illness with a cough in the previous 2 weeks	-	0.0207	0.0067	0.325	0.891	0.944	601	400	0.007	0.034
Fever in last two weeks	-	0.1446	0.0216	0.150	1.508	1.228	601	400	0.101	0.188
Oral rehydration therapy with continued feeding	3.8	0.2818	0.0164	0.058	0.053	0.231	45	41	0.249	0.315
Antibiotic treatment of suspected pneumonia	3.10	0.4504	0.0058	0.013	0.001	0.031	12	8	0.439	0.462
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.7067	0.0327	0.046	1.999	1.414	575	388	0.641	0.772
Anti-malarial treatment of children under age 5 the same day	3.17	0.3252	0.0602	0.185	1.107	1.052	87	68	0.205	0.446
Support for learning	6.1	0.2357	0.0319	0.135	0.973	0.987	263	173	0.172	0.300
Attendance to early childhood education	6.7	0.5379	0.0604	0.112	2.524	1.589	263	173	0.417	0.659
Birth registration	8.1	0.5362	0.0301	0.056	1.454	1.206	601	400	0.476	0.596
MEN										
Literacy rate among young men		0.8002	0.0502	0.063	1.040	1.020	87	67	0.700	0.901
Marriage before age 18		0.0604	0.0262	0.435	1.882	1.372	199	156	0.008	0.113
Polygyny		0.1419	0.0354	0.249	1.121	1.059	143	110	0.071	0.213
Comprehensive knowledge about HIV prevention among young men		0.4382	0.0408	0.093	0.447	0.668	87	67	0.357	0.520
Knowledge of mother-to-child transmission of HIV		0.6115	0.0495	0.081	2.034	1.426	252	198	0.512	0.711
Accepting attitudes towards people living with HIV		0.0339	0.0157	0.463	1.474	1.214	252	197	0.003	0.065
Men who have been tested for HIV during last 12 months and who have been told the results		0.0673	0.0195	0.290	1.198	1.095	252	198	0.028	0.106
Sexually active young men who have been tested for HIV and know the results		0.0987	0.0370	0.374	0.353	0.594	32	24	0.025	0.173
Sex before age 15 among young men		0.0692	0.0345	0.499	1.220	1.105	87	67	0.000	0.138
Condom use with non-regular partners		0.2214	0.0735	0.332	0.690	0.831	31	23	0.074	0.369

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.2729	0.0324	0.119	4.038	2.010	1523	762	0.208	0.338
Household availability of insecticide-treated nets (ITNs)	3.12	0.7816	0.0244	0.031	2.682	1.638	1533	767	0.733	0.831
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.7649	0.0350	0.046	5.205	2.281	5247	767	0.695	0.835
Use of improved sanitation facilities	4.3	0.1688	0.0266	0.158	3.865	1.966	5247	767	0.116	0.222
Secondary school net attendance rate (adjusted)	7.5	0.3948	0.0267	0.068	1.127	1.062	726	379	0.341	0.448
Prevalence of children with at least one parent dead	9.18	0.0767	0.0112	0.146	2.192	1.481	2416	1244	0.054	0.099
Child discipline	8.5	0.9696	0.0102	0.010	1.601	1.265	1853	457	0.949	0.990
WOMEN										
Pregnant women	-	0.0590	0.0089	0.151	0.845	0.919	1237	596	0.041	0.077
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.6232	0.0665	0.107	0.677	0.823	71	37	0.490	0.756
Intermittent preventive treatment for malaria	3.20	0.7412	0.0440	0.059	1.321	1.149	277	132	0.653	0.829
Early childbearing	5.2	0.1529	0.0341	0.223	0.827	0.909	189	93	0.085	0.221
Contraceptive prevalence	5.3	0.4278	0.0295	0.069	1.293	1.137	752	365	0.369	0.487
Unmet need	5.4	0.2238	0.0221	0.099	1.025	1.013	752	365	0.180	0.268
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9631	0.0190	0.020	1.367	1.169	288	136	0.925	1.000
Antenatal care coverage - at least four times by any provider	5.5b	0.9318	0.0284	0.030	1.708	1.307	288	136	0.875	0.989
Skilled attendant at delivery	5.7	0.7788	0.0444	0.057	1.546	1.243	288	136	0.690	0.868
Institutional deliveries	5.8	0.7788	0.0444	0.057	1.546	1.243	288	136	0.690	0.868
Caesarean section	5.9	0.1188	0.0338	0.284	1.471	1.213	288	136	0.051	0.186
Literacy rate among young women	7.1	0.7058	0.0387	0.055	1.432	1.197	398	200	0.628	0.783
Marriage before age 18	8.7	0.2719	0.0290	0.107	2.080	1.442	1029	489	0.214	0.330
Polygyny	8.9	0.1168	0.0186	0.159	1.216	1.103	752	365	0.080	0.154
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0131	0.0048	0.368	1.064	1.032	1237	596	0.003	0.023
Comprehensive knowledge about HIV prevention among young people	9.2	0.4678	0.0399	0.085	1.275	1.129	398	200	0.388	0.548
Knowledge of mother-to-child transmission of HIV	9.3	0.6477	0.0180	0.028	0.848	0.921	1237	596	0.612	0.684
Accepting attitudes towards people living with HIV	9.4	0.0456	0.0088	0.193	1.047	1.023	1226	588	0.028	0.063
Women who have been tested for HIV and know the results	9.6	0.2049	0.0140	0.068	0.715	0.845	1237	596	0.177	0.233
Sexually active young women who have been tested for HIV and know the results	9.7	0.2463	0.0351	0.142	0.782	0.884	232	119	0.176	0.316
Sex before age 15 among young women	9.11	0.0872	0.0227	0.260	1.283	1.133	398	200	0.042	0.133
Condom use with non-regular partners	9.16	0.3723	0.0565	0.152	0.928	0.963	131	69	0.259	0.485
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0039	0.0037	0.954	1.385	1.177	848	391	0.000	0.011

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
UNDER-5s										
Underweight prevalence	2.1a	0.1054	0.0219	0.208	1.725	1.314	816	339	0.062	0.149
Stunting prevalence	2.2a	0.2133	0.0201	0.094	0.808	0.899	812	338	0.173	0.253
Wasting prevalence	2.3a	0.0683	0.0150	0.220	1.192	1.092	812	338	0.038	0.098
Exclusive breastfeeding under 6 months	2.6	0.4262	0.0705	0.166	0.895	0.946	107	45	0.285	0.567
Age-appropriate breastfeeding	2.14	0.5881	0.0383	0.065	0.867	0.931	352	144	0.511	0.665
Tuberculosis immunization coverage	-	1.0000	0.0000	0.000	.	.	141	60	1.000	1.000
Received polio immunization	-	0.9688	0.0232	0.024	1.051	1.025	141	60	0.922	1.000
Received penta immunization	-	0.9446	0.0245	0.026	0.678	0.823	141	60	0.895	0.994
Received measles immunization	-	0.9266	0.0351	0.038	1.070	1.035	141	60	0.856	0.997
Received yellow fever immunization	-	0.9266	0.0351	0.038	1.070	1.035	141	60	0.856	0.997
Diarrhoea in the previous 2 weeks	-	0.0652	0.0143	0.219	1.149	1.072	827	345	0.037	0.094
Illness with a cough in the previous 2 weeks	-	0.0417	0.0133	0.320	1.532	1.238	827	345	0.015	0.068
Fever in last two weeks	-	0.1047	0.0190	0.181	1.320	1.149	827	345	0.067	0.143
Oral rehydration therapy with continued feeding	3.8	0.3714	0.0508	0.137	0.265	0.515	54	25	0.270	0.473
Antibiotic treatment of suspected pneumonia	3.10	0.7308	0.0053	0.007	0.002	0.045	34	15	0.720	0.741
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.6017	0.0377	0.063	2.017	1.420	819	341	0.526	0.677
Anti-malarial treatment of children under age 5 the same day	3.17	0.5497	0.0773	0.141	0.869	0.932	87	37	0.395	0.704
Support for learning	6.1	0.6213	0.0426	0.069	1.009	1.005	307	132	0.536	0.706
Attendance to early childhood education	6.7	0.8388	0.0334	0.040	1.080	1.039	307	132	0.772	0.906
Birth registration	8.1	0.5680	0.0340	0.060	1.621	1.273	827	345	0.500	0.636
MEN										
Literacy rate among young men	-	0.7397	0.0364	0.049	0.324	0.569	95	48	0.667	0.813
Marriage before age 18	-	0.1087	0.0279	0.257	1.159	1.076	287	145	0.053	0.165
Polygyny	-	0.1055	0.0287	0.272	0.996	0.998	229	115	0.048	0.163
Comprehensive knowledge about HIV prevention among young men	-	0.4123	0.0599	0.145	0.696	0.834	95	48	0.293	0.532
Knowledge of mother-to-child transmission of HIV	-	0.6718	0.0399	0.059	1.294	1.138	358	180	0.592	0.752
Accepting attitudes towards people living with HIV	-	0.2078	0.0273	0.131	0.804	0.897	355	179	0.153	0.262
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.1309	0.0326	0.249	1.672	1.293	358	180	0.066	0.196
Sexually active young men who have been tested for HIV and know the results	-	0.0325	0.0010	0.030	0.001	0.024	42	20	0.031	0.035
Sex before age 15 among young men	-	0.1529	0.0337	0.220	0.412	0.642	95	48	0.085	0.220
Condom use with non-regular partners	-	0.6450	0.0043	0.007	0.001	0.033	33	15	0.636	0.654

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.3005	0.0216	0.072	2.181	1.477	2304	987	0.257	0.344
Household availability of insecticide-treated nets (ITNs)	3.12	0.3975	0.0212	0.053	1.858	1.363	2321	993	0.355	0.440
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.9053	0.0311	0.034	11.203	3.347	8397	993	0.843	0.968
Use of improved sanitation facilities	4.3	0.1753	0.0171	0.098	2.008	1.417	8397	993	0.141	0.210
Secondary school net attendance rate (adjusted)	7.5	0.4922	0.0302	0.061	1.866	1.366	1192	513	0.432	0.553
Prevalence of children with at least one parent dead	9.18	0.0895	0.0115	0.129	2.729	1.652	4026	1682	0.066	0.112
Child discipline	8.5	0.9372	0.0123	0.013	1.462	1.209	3111	568	0.913	0.962
WOMEN										
Pregnant women	-	0.0947	0.0158	0.167	2.357	1.535	1983	813	0.063	0.126
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.2130	0.0327	0.154	0.447	0.668	186	71	0.148	0.278
Intermittent preventive treatment for malaria	3.20	0.7611	0.0333	0.044	1.050	1.025	443	173	0.694	0.828
Early childbearing	5.2	0.1654	0.0219	0.132	0.535	0.731	359	155	0.122	0.209
Contraceptive prevalence	5.3	0.3264	0.0276	0.085	1.732	1.316	1310	501	0.271	0.382
Unmet need	5.4	0.2979	0.0187	0.063	0.833	0.913	1310	501	0.261	0.335
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9860	0.0080	0.008	0.818	0.904	449	176	0.970	1.000
Antenatal care coverage - at least four times by any provider	5.5b	0.9097	0.0265	0.029	1.502	1.225	449	176	0.857	0.963
Skilled attendant at delivery	5.7	0.7371	0.0323	0.044	0.942	0.971	449	176	0.673	0.802
Institutional deliveries	5.8	0.7440	0.0334	0.045	1.024	1.012	449	176	0.677	0.811
Caesarean section	5.9	0.1226	0.0273	0.222	1.210	1.100	449	176	0.068	0.177
Literacy rate among young women	7.1	0.5469	0.0383	0.070	1.840	1.356	718	312	0.470	0.623
Marriage before age 18	8.7	0.3048	0.0241	0.079	1.800	1.342	1623	656	0.257	0.353
Polygyny	8.9	0.1292	0.0168	0.130	1.251	1.118	1310	501	0.096	0.163
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0185	0.0067	0.365	2.035	1.427	1983	813	0.005	0.032
Comprehensive knowledge about HIV prevention among young people	9.2	0.3322	0.0288	0.087	1.163	1.078	718	312	0.275	0.390
Knowledge of mother-to-child transmission of HIV	9.3	0.5256	0.0260	0.049	2.202	1.484	1983	813	0.474	0.578
Accepting attitudes towards people living with HIV	9.4	0.0770	0.0112	0.145	1.414	1.189	1972	809	0.055	0.099
Women who have been tested for HIV and know the results	9.6	0.1957	0.0161	0.082	1.344	1.159	1983	813	0.163	0.228
Sexually active young women who have been tested for HIV and know the results	9.7	0.1642	0.0291	0.177	1.056	1.028	406	172	0.106	0.222
Sex before age 15 among young women	9.11	0.0808	0.0194	0.241	1.584	1.259	718	312	0.042	0.120
Condom use with non-regular partners	9.16	0.3180	0.0495	0.156	0.970	0.985	186	87	0.219	0.417

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0000	0.0000	.	.	.	1617	639	0.000	0.000
UNDER-5s										
Underweight prevalence	2.1a	0.1189	0.0141	0.118	0.869	0.932	1377	461	0.091	0.147
Stunting prevalence	2.2a	0.2165	0.0221	0.102	1.322	1.150	1370	459	0.172	0.261
Wasting prevalence	2.3a	0.0656	0.0105	0.160	0.821	0.906	1366	459	0.045	0.087
Exclusive breastfeeding under 6 months	2.6	0.3904	0.0676	0.173	1.076	1.037	172	57	0.255	0.526
Age-appropriate breastfeeding	2.14	0.5627	0.0374	0.066	1.001	1.000	518	177	0.488	0.638
Tuberculosis immunization coverage	-	0.9814	0.0137	0.014	0.902	0.950	262	89	0.954	1.000
Received polio immunization	-	0.9089	0.0407	0.045	1.763	1.328	262	89	0.827	0.990
Received penta immunization	-	0.9759	0.0106	0.011	0.419	0.647	262	89	0.955	0.997
Received measles immunization	-	0.9561	0.0212	0.022	0.945	0.972	262	89	0.914	0.999
Received yellow fever immunization	-	0.9561	0.0212	0.022	0.945	0.972	262	89	0.914	0.999
Diarrhoea in the previous 2 weeks	-	0.1448	0.0237	0.164	2.141	1.463	1411	472	0.097	0.192
Illness with a cough in the previous 2 weeks	-	0.0288	0.0100	0.348	1.694	1.302	1411	472	0.009	0.049
Fever in last two weeks	-	0.1606	0.0170	0.106	1.011	1.005	1411	472	0.127	0.195
Oral rehydration therapy with continued feeding	3.8	0.5715	0.0382	0.067	0.404	0.636	204	69	0.495	0.648
Antibiotic treatment of suspected pneumonia	3.10	0.5025	0.0581	0.116	0.203	0.450	41	16	0.386	0.619
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.3125	0.0260	0.083	1.473	1.214	1407	470	0.261	0.364
Anti-malarial treatment of children under age 5 the same day	3.17	0.4284	0.0844	0.197	2.181	1.477	227	76	0.260	0.597
Support for learning	6.1	0.3728	0.0431	0.116	1.412	1.188	516	179	0.287	0.459
Attendance to early childhood education	6.7	0.7694	0.0367	0.048	1.350	1.162	516	179	0.696	0.843
Birth registration	8.1	0.6726	0.0353	0.053	2.672	1.635	1411	472	0.602	0.743
MEN										
Literacy rate among young men	-	0.6716	0.0449	0.067	0.741	0.861	195	82	0.582	0.761
Marriage before age 18	-	0.0650	0.0154	0.236	0.803	0.896	536	208	0.034	0.096
Polygyny	-	0.0575	0.0224	0.389	1.281	1.132	379	140	0.013	0.102
Comprehensive knowledge about HIV prevention among young men	-	0.5631	0.0667	0.118	1.465	1.210	195	82	0.430	0.697
Knowledge of mother-to-child transmission of HIV	-	0.5677	0.0400	0.070	1.635	1.279	638	252	0.488	0.648
Accepting attitudes towards people living with HIV	-	0.1393	0.0165	0.118	0.565	0.752	634	250	0.106	0.172
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0976	0.0189	0.194	1.021	1.010	638	252	0.060	0.136
Sexually active young men who have been tested for HIV and know the results	-	0.1027	0.0084	0.081	0.023	0.153	73	32	0.086	0.119
Sex before age 15 among young men	-	0.0407	0.0154	0.377	0.489	0.699	195	82	0.010	0.071
Condom use with non-regular partners	-	0.5670	0.0960	0.169	0.938	0.969	58	26	0.375	0.759

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.4528	0.0337	0.074	3.274	1.809	1007	715	0.385	0.520
Household availability of insecticide-treated nets (ITNs)	3.12	0.5344	0.0273	0.051	2.154	1.468	1011	718	0.480	0.589
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.8043	0.0404	0.050	7.428	2.725	4234	718	0.724	0.885
Use of improved sanitation facilities	4.3	0.0990	0.0200	0.202	3.207	1.791	4234	718	0.059	0.139
Secondary school net attendance rate (adjusted)	7.5	0.4212	0.0313	0.074	1.921	1.386	684	479	0.359	0.484
Prevalence of children with at least one parent dead	9.18	0.0920	0.0109	0.118	2.187	1.479	2173	1544	0.070	0.114
Child discipline	8.5	0.9435	0.0114	0.012	1.157	1.076	1646	480	0.921	0.966
WOMEN										
Pregnant women	-	0.0734	0.0148	0.201	2.105	1.451	1005	658	0.044	0.103
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.3612	0.0542	0.150	0.661	0.813	72	53	0.253	0.470
Intermittent preventive treatment for malaria	3.20	0.6384	0.0371	0.058	0.878	0.937	221	148	0.564	0.713
Early childbearing	5.2	0.2110	0.0468	0.222	1.340	1.158	153	103	0.117	0.305
Contraceptive prevalence	5.3	0.4019	0.0253	0.063	1.023	1.012	585	385	0.351	0.453
Unmet need	5.4	0.2728	0.0220	0.081	0.938	0.969	585	385	0.229	0.317
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9701	0.0125	0.013	0.819	0.905	227	153	0.945	0.995
Antenatal care coverage - at least four times by any provider	5.5b	0.8387	0.0293	0.035	0.965	0.982	227	153	0.780	0.897
Skilled attendant at delivery	5.7	0.6371	0.0459	0.072	1.384	1.176	227	153	0.545	0.729
Institutional deliveries	5.8	0.6210	0.0510	0.082	1.682	1.297	227	153	0.519	0.723
Caesarean section	5.9	0.0612	0.0154	0.251	0.624	0.790	227	153	0.030	0.092
Literacy rate among young women	7.1	0.4940	0.0277	0.056	0.812	0.901	396	266	0.439	0.549
Marriage before age 18	8.7	0.2905	0.0194	0.067	0.903	0.950	762	495	0.252	0.329
Polygyny	8.9	0.1818	0.0211	0.116	1.144	1.069	585	385	0.140	0.224
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0449	0.0113	0.252	1.964	1.401	1005	658	0.022	0.067
Comprehensive knowledge about HIV prevention among young people	9.2	0.2743	0.0290	0.106	1.117	1.057	396	266	0.216	0.332
Knowledge of mother-to-child transmission of HIV	9.3	0.5200	0.0235	0.045	1.452	1.205	1005	658	0.473	0.567
Accepting attitudes towards people living with HIV	9.4	0.0366	0.0071	0.194	0.893	0.945	964	625	0.022	0.051
Women who have been tested for HIV and know the results	9.6	0.1547	0.0174	0.113	1.523	1.234	1005	658	0.120	0.189
Sexually active young women who have been tested for HIV and know the results	9.7	0.1769	0.0295	0.167	0.879	0.938	215	148	0.118	0.236
Sex before age 15 among young women	9.11	0.1489	0.0299	0.201	1.871	1.368	396	266	0.089	0.209

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Condom use with non-regular partners	9.16	0.3114	0.0409	0.131	0.766	0.875	150	99	0.230	0.393
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0046	0.0026	0.558	0.755	0.869	799	523	0.000	0.010
UNDER-5s										
Underweight prevalence	2.1a	0.1183	0.0185	0.156	1.301	1.141	660	398	0.081	0.155
Stunting prevalence	2.2a	0.1927	0.0213	0.110	1.142	1.069	655	393	0.150	0.235
Wasting prevalence	2.3a	0.0324	0.0095	0.293	1.146	1.070	662	401	0.013	0.051
Exclusive breastfeeding under 6 months	2.6	0.6979	0.0246	0.035	0.135	0.367	82	48	0.649	0.747
Age-appropriate breastfeeding	2.14	0.7231	0.0366	0.051	1.046	1.023	259	157	0.650	0.796
Tuberculosis immunization coverage	-	0.9936	0.0065	0.007	0.487	0.698	122	74	0.981	1.000
Received polio immunization	-	0.9556	0.0296	0.031	1.504	1.226	122	74	0.896	1.000
Received penta immunization	-	0.9747	0.0239	0.025	1.694	1.302	122	74	0.927	1.000
Received measles immunization	-	0.9957	0.0006	0.001	0.006	0.075	122	74	0.995	0.997
Received yellow fever immunization	-	0.9957	0.0006	0.001	0.006	0.075	122	74	0.995	0.997
Diarrhoea in the previous 2 weeks	-	0.1616	0.0194	0.120	1.124	1.060	671	407	0.123	0.200
Illness with a cough in the previous 2 weeks	-	0.0363	0.0116	0.321	1.573	1.254	671	407	0.013	0.060
Fever in last two weeks	-	0.2881	0.0224	0.078	0.991	0.995	671	407	0.243	0.333
Oral rehydration therapy with continued feeding	3.8	0.4268	0.0610	0.143	0.990	0.995	108	66	0.305	0.549
Antibiotic treatment of suspected pneumonia	3.10	0.3707	0.1555	0.419	1.554	1.247	24	16	0.060	0.682
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.4135	0.0332	0.080	1.828	1.352	663	402	0.347	0.480
Anti-malarial treatment of children under age 5 the same day	3.17	0.3046	0.0542	0.178	1.584	1.259	193	115	0.196	0.413
Support for learning	6.1	0.3337	0.0502	0.150	1.789	1.338	260	159	0.233	0.434
Attendance to early childhood education	6.7	0.5636	0.0350	0.062	0.789	0.888	260	159	0.494	0.634
Birth registration	8.1	0.5259	0.0460	0.087	3.440	1.855	671	407	0.434	0.618
MEN										
Literacy rate among young men	-	0.5696	0.0616	0.108	0.960	0.980	92	63	0.446	0.693
Marriage before age 18	-	0.0224	0.0098	0.438	0.675	0.822	238	154	0.003	0.042
Polygyny	-	0.0501	0.0234	0.467	1.149	1.072	149	101	0.003	0.097
Comprehensive knowledge about HIV prevention among young men	-	0.3127	0.0660	0.211	1.257	1.121	92	63	0.181	0.445
Knowledge of mother-to-child transmission of HIV	-	0.5795	0.0390	0.067	1.213	1.101	296	195	0.501	0.658
Accepting attitudes towards people living with HIV	-	0.1279	0.0201	0.157	0.696	0.835	295	193	0.088	0.168
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0632	0.0140	0.221	0.639	0.799	296	195	0.035	0.091
Sexually active young men who have been tested for HIV and know the results	-	0.0000	0.0000	.	.	.	31	21	0.000	0.000
Sex before age 15 among young men	-	0.0109	0.0108	0.992	0.673	0.820	92	63	0.000	0.033
Condom use with non-regular partners	-	0.4310	0.0720	0.167	0.402	0.634	29	20	0.287	0.575

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.1537	0.0115	0.075	2.013	1.419	725	1967	0.131	0.177
Household availability of insecticide-treated nets (ITNs)	3.12	0.6718	0.0154	0.023	2.118	1.455	727	1972	0.641	0.703
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.6844	0.0307	0.045	8.584	2.930	4261	1972	0.623	0.746
Use of improved sanitation facilities	4.3	0.0519	0.0101	0.195	4.094	2.023	4261	1972	0.032	0.072
Secondary school net attendance rate (adjusted)	7.5	0.2508	0.0216	0.086	4.115	2.028	597	1654	0.208	0.294
Prevalence of children with at least one parent dead	9.18	0.0642	0.0054	0.085	3.216	1.793	2315	6528	0.053	0.075
Child discipline	8.5	0.9504	0.0069	0.007	1.628	1.276	1830	1615	0.937	0.964
WOMEN										
Pregnant women	-	0.1145	0.0091	0.080	1.599	1.265	754	1938	0.096	0.133
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.3791	0.0360	0.095	1.253	1.120	86	229	0.307	0.451
Intermittent preventive treatment for malaria	3.20	0.7409	0.0180	0.024	1.130	1.063	255	670	0.705	0.777
Early childbearing	5.2	0.1648	0.0226	0.137	0.949	0.974	102	256	0.120	0.210
Contraceptive prevalence	5.3	0.2010	0.0160	0.080	2.427	1.558	576	1522	0.169	0.233
Unmet need	5.4	0.3039	0.0120	0.039	1.033	1.017	576	1522	0.280	0.328
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9038	0.0131	0.014	1.467	1.211	283	749	0.878	0.930
Antenatal care coverage - at least four times by any provider	5.5b	0.7513	0.0222	0.030	1.977	1.406	283	749	0.707	0.796
Skilled attendant at delivery	5.7	0.3726	0.0308	0.083	3.045	1.745	283	749	0.311	0.434
Institutional deliveries	5.8	0.3706	0.0311	0.084	3.093	1.759	283	749	0.308	0.433
Caesarean section	5.9	0.0342	0.0093	0.271	1.950	1.396	283	749	0.016	0.053
Literacy rate among young women	7.1	0.4429	0.0338	0.076	2.444	1.563	219	530	0.375	0.510
Marriage before age 18	8.7	0.2741	0.0129	0.047	1.393	1.180	637	1664	0.248	0.300
Polygyny	8.9	0.4489	0.0215	0.048	2.833	1.683	576	1522	0.406	0.492
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.0284	0.0058	0.203	2.329	1.526	754	1938	0.017	0.040
Comprehensive knowledge about HIV prevention among young people	9.2	0.2252	0.0192	0.085	1.112	1.055	219	530	0.187	0.264
Knowledge of mother-to-child transmission of HIV	9.3	0.4933	0.0158	0.032	1.934	1.391	754	1938	0.462	0.525
Accepting attitudes towards people living with HIV	9.4	0.0400	0.0071	0.177	2.208	1.486	675	1700	0.026	0.054
Women who have been tested for HIV and know the results	9.6	0.0875	0.0082	0.094	1.645	1.282	754	1938	0.071	0.104
Sexually active young women who have been tested for HIV and know the results	9.7	0.0699	0.0159	0.228	1.016	1.008	106	261	0.038	0.102
Sex before age 15 among young women	9.11	0.0835	0.0150	0.180	1.552	1.246	219	530	0.053	0.113

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Condom use with non-regular partners	9.16	0.4021	0.0576	0.143	1.380	1.175	44	101	0.287	0.517
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0164	0.0077	0.470	3.600	1.897	387	976	0.001	0.032
UNDER-5s										
Underweight prevalence	2.1a	0.2416	0.0128	0.053	1.759	1.326	836	1956	0.216	0.267
Stunting prevalence	2.2a	0.3745	0.0156	0.042	2.031	1.425	834	1950	0.343	0.406
Wasting prevalence	2.3a	0.0811	0.0072	0.089	1.364	1.168	840	1962	0.067	0.096
Exclusive breastfeeding under 6 months	2.6	0.6359	0.0371	0.058	1.113	1.055	79	188	0.562	0.710
Age-appropriate breastfeeding	2.14	0.7658	0.0146	0.019	0.935	0.967	334	783	0.736	0.795
Tuberculosis immunization coverage	-	0.9709	0.0071	0.007	0.703	0.838	173	399	0.957	0.985
Received polio immunization	-	0.8829	0.0189	0.021	1.381	1.175	173	399	0.845	0.921
Received penta immunization	-	0.9167	0.0174	0.019	1.570	1.253	173	399	0.882	0.951
Received measles immunization	-	0.8982	0.0213	0.024	1.968	1.403	173	399	0.856	0.941
Received yellow fever immunization	-	0.8987	0.0212	0.024	1.973	1.405	173	399	0.856	0.941
Diarrhoea in the previous 2 weeks	-	0.2137	0.0151	0.071	2.703	1.644	852	1989	0.183	0.244
Illness with a cough in the previous 2 weeks	-	0.0627	0.0076	0.122	1.967	1.402	852	1989	0.047	0.078
Fever in last two weeks	-	0.3178	0.0138	0.043	1.738	1.318	852	1989	0.290	0.345
Oral rehydration therapy with continued feeding	3.8	0.3480	0.0278	0.080	1.381	1.175	182	407	0.292	0.404
Antibiotic treatment of suspected pneumonia	3,10	0.5976	0.0371	0.062	0.675	0.822	53	119	0.523	0.672
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.4176	0.0230	0.055	4.315	2.077	847	1980	0.372	0.464
Anti-malarial treatment of children under age 5 the same day	3.17	0.2749	0.0252	0.092	1.931	1.389	271	607	0.224	0.325
Support for learning	6.1	0.2155	0.0199	0.092	1.939	1.392	360	830	0.176	0.255
Attendance to early childhood education	6.7	0.5047	0.0272	0.054	2.452	1.566	360	830	0.450	0.559
Birth registration	8.1	0.6186	0.0214	0.035	3.863	1.965	852	1989	0.576	0.661
MEN										
Literacy rate among young men	-	0.5664	0.0407	0.072	1.486	1.219	86	221	0.485	0.648
Marriage before age 18	-	0.0258	0.0072	0.279	0.982	0.991	188	475	0.011	0.040
Polygyny	-	0.2728	0.0257	0.094	1.082	1.040	129	325	0.221	0.324
Comprehensive knowledge about HIV prevention among young men	-	0.2990	0.0375	0.125	1.477	1.215	86	221	0.224	0.374
Knowledge of mother-to-child transmission of HIV	-	0.5263	0.0226	0.043	1.260	1.123	243	617	0.481	0.572
Accepting attitudes towards people living with HIV	-	0.1344	0.0154	0.114	1.172	1.083	230	578	0.104	0.165
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.0653	0.0099	0.152	0.987	0.994	243	617	0.045	0.085

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Sexually active young men who have been tested for HIV and know the results	-	0.0908	0.0222	0.245	0.263	0.513	18	45	0.046	0.135
Sex before age 15 among young men	-	0.0335	0.0119	0.354	0.958	0.979	86	221	0.010	0.057
Condom use with non-regular partners	-	0.4437	0.0406	0.091	0.273	0.523	17	42	0.363	0.525

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.1820	0.0136	0.074	1.695	1.302	386	1375	0.155	0.209
Household availability of insecticide-treated nets (ITNs)	3.12	0.5178	0.0201	0.039	2.392	1.547	414	1475	0.478	0.558
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.7834	0.0267	0.034	6.213	2.493	2113	1475	0.730	0.837
Use of improved sanitation facilities	4.3	0.0296	0.0052	0.175	1.375	1.172	2113	1475	0.019	0.040
Secondary school net attendance rate (adjusted)	7.5	0.2796	0.0147	0.053	1.287	1.134	327	1199	0.250	0.309
Prevalence of children with at least one parent dead	9.18	0.1144	0.0112	0.097	4.912	2.216	1094	4001	0.092	0.137
Child discipline	8.5	0.9395	0.0100	0.011	2.052	1.433	859	1158	0.919	0.960
WOMEN										
Pregnant women	-	0.0799	0.0082	0.103	1.297	1.139	404	1412	0.063	0.096
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.5047	0.0369	0.073	0.633	0.796	32	117	0.431	0.579
Intermittent preventive treatment for malaria	3.20	0.7017	0.0297	0.042	1.504	1.226	104	359	0.642	0.761
Early childbearing	5.2	0.1618	0.0266	0.164	0.781	0.884	45	151	0.109	0.215
Contraceptive prevalence	5.3	0.2162	0.0149	0.069	1.199	1.095	264	921	0.186	0.246
Unmet need	5.4	0.2621	0.0126	0.048	0.752	0.867	264	921	0.237	0.287
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9894	0.0055	0.006	1.059	1.029	105	363	0.978	1.000
Antenatal care coverage - at least four times by any provider	5.5b	0.8876	0.0237	0.027	2.044	1.430	105	363	0.840	0.935
Skilled attendant at delivery	5.7	0.6703	0.0347	0.052	1.976	1.406	105	363	0.601	0.740
Institutional deliveries	5.8	0.6625	0.0346	0.052	1.937	1.392	105	363	0.593	0.732
Caesarean section	5.9	0.0408	0.0103	0.252	0.982	0.991	105	363	0.020	0.061
Literacy rate among young women	7.1	0.4763	0.0277	0.058	1.437	1.199	132	467	0.421	0.532
Marriage before age 18	8.7	0.3917	0.0172	0.044	1.355	1.164	317	1096	0.357	0.426
Polygyny	8.9	0.3928	0.0238	0.061	2.179	1.476	264	921	0.345	0.440
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.2781	0.0208	0.075	3.043	1.744	404	1412	0.237	0.320
Comprehensive knowledge about HIV prevention among young people	9.2	0.3670	0.0319	0.087	2.038	1.428	132	467	0.303	0.431
Knowledge of mother-to-child transmission of HIV	9.3	0.6493	0.0150	0.023	1.396	1.182	404	1412	0.619	0.679
Accepting attitudes towards people living with HIV	9.4	0.0618	0.0102	0.164	2.458	1.568	396	1383	0.041	0.082
Women who have been tested for HIV and know the results	9.6	0.1074	0.0093	0.087	1.284	1.133	404	1412	0.089	0.126
Sexually active young women who have been tested for HIV and know the results	9.7	0.1790	0.0186	0.104	0.383	0.619	46	163	0.142	0.216
Sex before age 15 among young women	9.11	0.0355	0.0091	0.257	1.128	1.062	132	467	0.017	0.054
Condom use with non-regular partners	9.16	0.5545	0.0463	0.083	0.651	0.807	21	76	0.462	0.647

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0079	0.0036	0.454	3.124	1.767	537	1900	0.001	0.015
UNDER-5s										
Underweight prevalence	2.1a	0.1998	0.0155	0.077	1.469	1.212	323	981	0.169	0.231
Stunting prevalence	2.2a	0.3153	0.0200	0.063	1.791	1.338	318	968	0.275	0.355
Wasting prevalence	2.3a	0.0724	0.0087	0.120	1.089	1.044	319	969	0.055	0.090
Exclusive breastfeeding under 6 months	2.6	0.5841	0.0483	0.083	1.008	1.004	35	106	0.487	0.681
Age-appropriate breastfeeding	2.14	0.7588	0.0259	0.034	1.344	1.159	123	369	0.707	0.811
Tuberculosis immunization coverage	-	0.9929	0.0051	0.005	0.638	0.799	61	175	0.983	1.000
Received polio immunization	-	0.9767	0.0107	0.011	0.870	0.933	61	175	0.955	0.998
Received penta immunization	-	0.9767	0.0107	0.011	0.870	0.933	61	175	0.955	0.998
Received measles immunization	-	0.9777	0.0103	0.010	0.839	0.916	61	175	0.957	0.998
Received yellow fever immunization	-	0.9702	0.0126	0.013	0.960	0.980	61	175	0.945	0.995
Diarrhoea in the previous 2 weeks	-	0.1578	0.0133	0.084	1.315	1.147	325	988	0.131	0.184
Illness with a cough in the previous 2 weeks	-	0.0227	0.0053	0.235	1.264	1.124	325	988	0.012	0.033
Fever in last two weeks	-	0.2484	0.0155	0.062	1.263	1.124	325	988	0.217	0.279
Oral rehydration therapy with continued feeding	3.8	0.4755	0.0349	0.073	0.773	0.879	51	159	0.406	0.545
Antibiotic treatment of suspected pneumonia	3.10	0.5649	0.0138	0.024	0.017	0.130	7	23	0.537	0.592
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.4501	0.0209	0.047	1.747	1.322	324	987	0.408	0.492
Anti-malarial treatment of children under age 5 the same day	3.17	0.5129	0.0376	0.073	1.350	1.162	81	239	0.438	0.588
Support for learning	6.1	0.5685	0.0249	0.044	1.078	1.038	140	428	0.519	0.618
Attendance to early childhood education	6.7	0.5309	0.0336	0.063	1.936	1.391	140	428	0.464	0.598
Birth registration	8.1	0.5832	0.0228	0.039	2.117	1.455	325	988	0.538	0.629
MEN										
Literacy rate among young men		0.4695	0.0394	0.084	1.149	1.072	49	185	0.391	0.548
Marriage before age 18		0.0567	0.0118	0.207	0.770	0.877	85	299	0.033	0.080
Polygyny		0.2477	0.0316	0.128	1.172	1.083	64	220	0.185	0.311
Comprehensive knowledge about HIV prevention among young men		0.2933	0.0405	0.138	1.455	1.206	49	185	0.212	0.374
Knowledge of mother-to-child transmission of HIV		0.5214	0.0292	0.056	1.471	1.213	120	432	0.463	0.580
Accepting attitudes towards people living with HIV		0.1203	0.0189	0.157	1.429	1.195	118	424	0.082	0.158
Men who have been tested for HIV during last 12 months and who have been told the results		0.0799	0.0192	0.240	2.163	1.471	120	432	0.041	0.118
Sexually active young men who have been tested for HIV and know the results		0.0588	0.0299	0.508	0.677	0.823	11	43	0.000	0.118
Sex before age 15 among young men		0.0425	0.0166	0.390	1.243	1.115	49	185	0.009	0.076
Condom use with non-regular partners		0.6909	0.0218	0.031	0.082	0.286	10	38	0.647	0.734

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
HOUSEHOLDS										
Iodized salt consumption	2.16	0.3203	0.0174	0.054	2.064	1.437	250	1484	0.285	0.355
Household availability of insecticide-treated nets (ITNs)	3.12	0.6075	0.0173	0.028	1.864	1.365	253	1494	0.573	0.642
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.8863	0.0203	0.023	6.130	2.476	1395	1494	0.846	0.927
Use of improved sanitation facilities	4.3	0.0527	0.0111	0.211	3.698	1.923	1395	1494	0.030	0.075
Secondary school net attendance rate (adjusted)	7.5	0.2777	0.0184	0.066	2.255	1.502	213	1331	0.241	0.315
Prevalence of children with at least one parent dead	9.18	0.0941	0.0076	0.081	3.058	1.749	721	4530	0.079	0.109
Child discipline	8.5	0.8774	0.0115	0.013	1.478	1.216	561	1211	0.854	0.900
WOMEN										
Pregnant women	-	0.0774	0.0075	0.097	1.249	1.118	282	1577	0.062	0.092
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.4121	0.0372	0.090	0.753	0.867	22	133	0.338	0.486
Intermittent preventive treatment for malaria	3.20	0.7025	0.0259	0.037	1.303	1.142	70	406	0.651	0.754
Early childbearing	5.2	0.1141	0.0277	0.242	1.385	1.177	37	184	0.059	0.169
Contraceptive prevalence	5.3	0.2718	0.0169	0.062	1.555	1.247	188	1078	0.238	0.306
Unmet need	5.4	0.2801	0.0160	0.057	1.365	1.168	188	1078	0.248	0.312
Antenatal care coverage - at least once by skilled personnel	5.5a	0.9289	0.0130	0.014	1.121	1.059	75	441	0.903	0.955
Antenatal care coverage - at least four times by any provider	5.5b	0.9031	0.0132	0.015	0.879	0.938	75	441	0.877	0.930
Skilled attendant at delivery	5.7	0.6040	0.0326	0.054	1.959	1.400	75	441	0.539	0.669
Institutional deliveries	5.8	0.6141	0.0336	0.055	2.097	1.448	75	441	0.547	0.681
Caesarean section	5.9	0.0436	0.0127	0.292	1.707	1.307	75	441	0.018	0.069
Literacy rate among young women	7.1	0.5027	0.0293	0.058	1.791	1.338	98	523	0.444	0.561
Marriage before age 18	8.7	0.3634	0.0176	0.049	1.664	1.290	222	1238	0.328	0.399
Polygyny	8.9	0.3554	0.0201	0.057	1.908	1.381	188	1078	0.315	0.396
Prevalence of female genital mutilation/cutting (FGM/C) among women	8.12	0.4107	0.0184	0.045	2.209	1.486	282	1577	0.374	0.448
Comprehensive knowledge about HIV prevention among young people	9.2	0.3028	0.0234	0.077	1.359	1.166	98	523	0.256	0.350
Knowledge of mother-to-child transmission of HIV	9.3	0.6013	0.0176	0.029	2.042	1.429	282	1577	0.566	0.637
Accepting attitudes towards people living with HIV	9.4	0.0657	0.0074	0.113	1.318	1.148	266	1473	0.051	0.081
Women who have been tested for HIV and know the results	9.6	0.1733	0.0146	0.084	2.350	1.533	282	1577	0.144	0.203
Sexually active young women who have been tested for HIV and know the results	9.7	0.2298	0.0410	0.178	1.938	1.392	39	205	0.148	0.312
Sex before age 15 among young women	9.11	0.0433	0.0089	0.206	0.999	0.999	98	523	0.025	0.061
Condom use with non-regular partners	9.16	0.5558	0.0404	0.073	0.608	0.780	19	93	0.475	0.637

Table SE.14: Sampling errors: Upper West Region (cont'd)

Background Characteristics	MICS Indicator	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Design effect (deff)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limit	
									r - 2se	r + 2se
Prevalence of female genital mutilation/cutting (FGM/C) among girls	8.13	0.0511	0.0127	0.249	6.390	2.528	325	1919	0.026	0.077
UNDER-5s										
Underweight prevalence	2.1a	0.1498	0.0121	0.081	1.282	1.132	219	1117	0.126	0.174
Stunting prevalence	2.2a	0.2311	0.0136	0.059	1.139	1.067	215	1101	0.204	0.258
Wasting prevalence	2.3a	0.0922	0.0074	0.080	0.712	0.844	215	1097	0.077	0.107
Exclusive breastfeeding under 6 months	2.6	0.6700	0.0262	0.039	0.372	0.610	23	121	0.618	0.722
Age-appropriate breastfeeding	2.14	0.8083	0.0200	0.025	1.131	1.064	87	441	0.768	0.848
Tuberculosis immunization coverage	-	0.9858	0.0112	0.011	1.970	1.403	45	221	0.963	1.000
Received polio immunization	-	0.9608	0.0126	0.013	0.927	0.963	44	220	0.936	0.986
Received penta immunization	-	0.9741	0.0143	0.015	1.775	1.332	44	220	0.946	1.000
Received measles immunization	-	0.9724	0.0127	0.013	1.309	1.144	44	218	0.947	0.998
Received yellow fever immunization	-	0.9748	0.0106	0.011	0.992	0.996	44	218	0.954	0.996
Diarrhoea in the previous 2 weeks	-	0.1252	0.0117	0.093	1.428	1.195	223	1143	0.102	0.149
Illness with a cough in the previous 2 weeks	-	0.0259	0.0056	0.215	1.401	1.184	223	1143	0.015	0.037
Fever in last two weeks	-	0.2944	0.0154	0.052	1.297	1.139	223	1143	0.264	0.325
Oral rehydration therapy with continued feeding	3.8	0.3124	0.0467	0.150	1.493	1.222	28	148	0.219	0.406
Antibiotic treatment of suspected pneumonia	3.10	0.4370	0.0532	0.122	0.334	0.578	6	30	0.331	0.543
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.4693	0.0169	0.036	1.301	1.141	222	1139	0.436	0.503
Anti-malarial treatment of children under age 5 the same day	3.17	0.3352	0.0331	0.099	1.661	1.289	66	339	0.269	0.401
Support for learning	6.1	0.3409	0.0289	0.085	1.678	1.296	89	454	0.283	0.399
Attendance to early childhood education	6.7	0.5190	0.0286	0.055	1.483	1.218	89	454	0.462	0.576
Birth registration	8.1	0.7255	0.0214	0.029	2.620	1.619	223	1143	0.683	0.768
MEN										
Literacy rate among young men	-	0.5421	0.0368	0.068	1.154	1.074	36	213	0.469	0.616
Marriage before age 18	-	0.0232	0.0076	0.327	0.925	0.962	65	365	0.008	0.038
Polygyny	-	0.2023	0.0246	0.121	0.976	0.988	46	262	0.153	0.251
Comprehensive knowledge about HIV prevention among young men	-	0.3518	0.0379	0.108	1.336	1.156	36	213	0.276	0.428
Knowledge of mother-to-child transmission of HIV	-	0.4868	0.0229	0.047	1.085	1.041	91	517	0.441	0.533
Accepting attitudes towards people living with HIV	-	0.1960	0.0249	0.127	1.877	1.370	85	479	0.146	0.246
Men who have been tested for HIV during last 12 months and who have been told the results	-	0.1415	0.0194	0.137	1.599	1.264	91	517	0.103	0.180
Sexually active young men who have been tested for HIV and know the results	-	0.1440	0.0228	0.158	0.186	0.431	9	45	0.098	0.190
Sex before age 15 among young men	-	0.0188	0.0123	0.652	1.731	1.316	36	213	0.000	0.043
Condom use with non-regular partners	-	0.5459	0.0327	0.060	0.160	0.400	8	38	0.480	0.611



Table DQ.1: Age distribution of household population						
Single-year age distribution of household population by sex, Ghana, 2011						
Background Characteristics	Sex					
	Male		Female		Missing	
	Number	Percent	Number	Percent	Number	Percent
Age						
0	641	2.9	628	2.6	0	.0
1	590	2.6	607	2.6	0	.0
2	616	2.8	668	2.8	0	.0
3	679	3.0	629	2.6	0	.0
4	579	2.6	603	2.5	0	.0
5	712	3.2	634	2.7	0	.0
6	702	3.1	674	2.8	0	.0
7	697	3.1	691	2.9	0	.0
8	617	2.8	654	2.8	0	.0
9	642	2.9	610	2.6	0	.0
10	661	3.0	628	2.6	0	.0
11	677	3.0	689	2.9	0	.0
12	708	3.2	666	2.8	0	.0
13	636	2.8	592	2.5	0	.0
14	568	2.5	683	2.9	0	.0
15	519	2.3	418	1.8	0	.0
16	483	2.2	418	1.8	0	.0
17	407	1.8	383	1.6	0	.0
18	475	2.1	331	1.4	0	.0
19	369	1.7	312	1.3	0	.0
20	358	1.6	309	1.3	0	.0
21	303	1.4	313	1.3	0	.0
22	307	1.4	342	1.4	0	.0
23	248	1.1	316	1.3	0	.0
24	261	1.2	345	1.5	0	.0
25	298	1.3	361	1.5	0	.0
26	282	1.3	295	1.2	0	.0
27	201	.9	399	1.7	0	.0
28	287	1.3	387	1.6	0	.0
29	285	1.3	264	1.1	0	.0
30	309	1.4	371	1.6	0	.0
31	214	1.0	329	1.4	0	.0
32	310	1.4	317	1.3	0	.0
33	243	1.1	311	1.3	0	.0
34	210	.9	244	1.0	0	.0
35	296	1.3	348	1.5	0	.0
36	257	1.1	280	1.2	0	.0
37	236	1.1	208	.9	0	.0
38	236	1.1	316	1.3	0	.0
39	248	1.1	220	.9	0	.0
40	242	1.1	310	1.3	0	.0
41	225	1.0	204	.9	0	.0
42	227	1.0	262	1.1	0	.0
43	183	.8	223	.9	0	.0
44	156	.7	174	.7	0	.0
45	253	1.1	277	1.2	0	.0

Table DQ.1: Age distribution of household population (cont'd)						
Background Characteristics	Sex					
	Male		Female		Missing	
	Number	Percent	Number	Percent	Number	Percent
Age						
46	162	.7	201	.8	0	.0
47	173	.8	168	.7	0	.0
48	177	.8	181	.8	0	.0
49	212	.9	171	.7	0	.0
50	165	.7	207	.9	0	.0
51	181	.8	274	1.2	0	.0
52	143	.6	251	1.1	0	.0
53	111	.5	197	.8	0	.0
54	188	.8	255	1.1	0	.0
55	134	.6	171	.7	0	.0
56	106	.5	166	.7	0	.0
57	122	.5	129	.5	0	.0
58	106	.5	135	.6	0	.0
59	118	.5	94	.4	0	.0
60	136	.6	163	.7	0	.0
61	104	.5	91	.4	0	.0
62	95	.4	111	.5	0	.0
63	89	.4	87	.4	0	.0
64	102	.5	82	.3	0	.0
65	101	.5	108	.5	0	.0
66	44	.2	53	.2	0	.0
67	55	.2	55	.2	0	.0
68	53	.2	88	.4	0	.0
69	64	.3	39	.2	0	.0
70	106	.5	123	.5	0	.0
71	62	.3	37	.2	0	.0
72	70	.3	98	.4	0	.0
73	36	.2	40	.2	0	.0
74	48	.2	59	.2	0	.0
75	59	.3	119	.5	0	.0
76	41	.2	61	.3	0	.0
77	37	.2	32	.1	0	.0
78	41	.2	32	.1	0	.0
79	29	.1	29	.1	0	.0
80+	223	1.0	382	1.6	0	.0
DK/missing	6	.0	8	.0	0	.0
Total	22353	100.0	23739	100.0	0	.0

Table DQ.2: Age distribution of eligible and interviewed women
Household population of women age 10-54, interviewed women age 15-49, and percentage of eligible women who were interviewed, by five-year age groups, Ghana, 2011

Background Characteristics	Household population of women age 10-54	Interviewed women age 15-49		Percentage of eligible women interviewed (Completion rate)
		Number	Percent	
Age				
10-14	3258	.	.	.
15-19	1860	1790	17.9	96.2
20-24	1625	1578	15.8	97.1
25-29	1706	1665	16.6	97.6
30-34	1573	1544	15.4	98.2
35-39	1372	1348	13.5	98.3
40-44	1173	1125	11.2	95.9
45-49	998	964	9.6	96.6
50-54	1184	.	.	.
Total (15-49)	10307	10014	100.0	97.2
Ratio of 50-54 to 45-49	1.19			

Table DQ.2M: Age distribution of eligible and interviewed men
Household population of men age 10-64, interviewed men age 15-59, and percentage of eligible men who were interviewed, by five-year age groups, Ghana, 2011

Background Characteristics	Household population of men age 10-64	Interviewed men age 15-59		Percentage of eligible men interviewed (Completion rate)
		Number	Percent	
Age				
10-14	3250	.	.	.
15-19	2254	618	19.8	27.4
20-24	1477	356	11.4	24.1
25-29	1354	428	13.7	31.6
30-34	1286	415	13.3	32.3
35-39	1273	341	10.9	26.8
40-44	1033	271	8.7	26.2
45-49	978	295	9.4	30.2
50-54	788	208	6.7	26.4
54-59	587	191	6.1	32.5
60-64	526	.	.	.
Total (15-59)	11028	3122	100.0	28.3
Ratio of 60-64 to 55-59	.90			

Table DQ.3: Age distribution of under-5s in household whose mothers/ caretakers were interviewed
Household population of children age 0-7, children age 0-4 whose mothers/caretakers were interviewed, and percentage of under-5 children whose mothers/caretakers were interviewed, by single ages, Ghana, 2011

Background Characteristics	Household population of children 0-7 years	Children under-5 whose mothers/caretakers were interviewed		Percentage of eligible under-5s interviewed (Completion rate)
		Number	Percent	
Age				
0	1268	1259	20.4	99.3
1	1197	1186	19.2	99.1
2	1284	1266	20.5	98.5
3	1307	1299	21.0	99.4
4	1182	1167	18.9	98.7
5	1345	.	.	.
6	1376	.	.	.
7	1388	.	.	.
Total (0-4)	6239	6177	100.0	99.0
Ratio of 5 to 4	1.14			

Table DQ.4: Women's completion rates by socio-economic characteristics of households
Household population of women age 15-49, interviewed women age 15-49, and percentage of eligible women who were interviewed, by selected social and economic characteristics of the household, Ghana, 2011

Background Characteristics	Household population of women age 15-49 years	Interviewed women age 15-49 years	Percent of eligible women interviewed (Completion rates)		
Region					
Western	989	9.6	940	9.4	95.1
Central	1014	9.8	999	10.0	98.4
Greater Accra	2007	19.5	1937	19.3	96.5
Volta	794	7.7	782	7.8	98.5
Eastern	1200	11.6	1191	11.9	99.3
Asante	1930	18.7	1888	18.9	97.8
Brong Ahafo	974	9.5	931	9.3	95.5
Northern	732	7.1	701	7.0	95.6
Upper East	392	3.8	381	3.8	97.1
Upper West	273	2.7	266	2.7	97.2
Area					
Urban	5592	54.3	5436	54.3	97.2
Rural	4715	45.7	4578	45.7	97.1
Household size					
1-3	2951	28.6	2877	28.7	97.5
4-6	4745	46.0	4629	46.2	97.6
7+	2611	25.3	2508	25.0	96.0
Education of household head					
None	3544	34.4	3431	34.3	96.8
Primary	1439	14.0	1402	14.0	97.4
Middle/JSS	4049	39.3	3932	39.3	97.1
Secondary +	1271	12.3	1246	12.4	98.1
Missing/DK	3	.0	3	.0	100.0
Wealth index quintiles					
Poorest	1593	15.5	1542	15.4	96.8
Second	1818	17.6	1749	17.5	96.2
Middle	2046	19.9	1997	19.9	97.6
Richest	2579	25.0	2511	25.1	97.3

Table DQ.4: Women's completion rates by socio-economic characteristics of households (cont'd)					
Background Characteristics	Household population of women age 15-49 years		Interviewed women age 15-49 years		Percent of eligible women interviewed (Completion rates)
Ethnicity of household head					
Akan	4769	46.3	4636	46.3	97.2
Ga/Dangme	1005	9.7	983	9.8	97.9
Ewe	1435	13.9	1407	14.0	98.0
Guan	371	3.6	358	3.6	96.5
Gruma	389	3.8	380	3.8	97.5
Mole Dagbani	1651	16.0	1594	15.9	96.5
Grusi	319	3.1	303	3.0	94.8
Mande	122	1.2	116	1.2	95.5
Non-Ghanaian	176	1.7	169	1.7	96.1
Others	70	.7	69	.7	98.1
Religion of household head					
Catholic	1276	12.4	1231	12.3	96.5
Protestant	1646	16.0	1610	16.1	97.8
Pentecostal/Charismatic	3594	34.9	3505	35.0	97.5
Deeper Life	72	.7	72	.7	100.0
Jehovah witness	148	1.4	142	1.4	95.9
SDA	268	2.6	259	2.6	96.5
Other Christian	370	3.6	360	3.6	97.1
Muslim	1588	15.4	1522	15.2	95.9
Traditional	484	4.7	473	4.7	97.7
Spiritualist	202	2.0	200	2.0	98.7
Other religion	32	.3	31	.3	96.8
No Religion	626	6.1	610	6.1	97.4
Total	10307	100.0	10014	100.0	97.2

Table DQ.4M: Men's completion rates by socio-economic characteristics of households					
Household population of men age 15-59, interviewed men age 15-59, and percentage of eligible men who were interviewed, by selected social and economic characteristics of the household, Ghana, 2011					
Background Characteristics	Household population of men age 15-59 years		Interviewed men age 15-59 years		Percent of eligible men interviewed (Completion rates)
Region					
Western	1131	10.3	316	10.1	89.6
Central	1039	9.4	285	9.1	96.7
Greater Accra	2154	19.5	630	20.2	95.0
Volta	952	8.6	245	7.9	98.2
Eastern	1240	11.2	355	11.4	99.2
Asante	2008	18.2	591	18.9	90.9
Brong Ahafo	947	8.6	275	8.8	94.0
Northern	852	7.7	228	7.3	93.7
Upper East	414	3.8	112	3.6	94.7
Upper West	291	2.6	85	2.7	93.5
Residence					
Urban	5795	52.5	1630	52.2	93.6
Rural	5233	47.5	1492	47.8	95.0
Household size					

Table DQ.4M: Men's completion rates by socio-economic characteristics of households (cont'd)					
Background Characteristics	Household population of men age 15-59 years		Interviewed men age 15-59 years		Percent of eligible men interviewed (Completion rates)
1-3	3730	33.8	1231	39.4	96.6
4-6	4453	40.4	1233	39.5	93.4
7+	2845	25.8	658	21.1	91.6
Education of household head					
None	3778	34.3	1022	32.7	93.0
Primary	1303	11.8	375	12.0	95.3
Middle/JSS	4358	39.5	1216	38.9	94.8
Secondary +	1570	14.2	510	16.3	94.8
Missing/DK	19	.2	.	.	.
Wealth index quintiles					
Poorest	1809	16.4	466	14.9	92.7
Second	1866	16.9	533	17.1	94.7
Middle	2083	18.9	578	18.5	95.8
Fourth	2459	22.3	715	22.9	92.6
Richest	2812	25.5	829	26.6	95.2
Ethnicity of household head					
Akan	4928	44.7	1334	42.7	94.7
Ga/Dangme	966	8.8	333	10.7	96.9
Ewe	1694	15.4	438	14.0	96.6
Guan	430	3.9	128	4.1	93.3
Gruma	485	4.4	125	4.0	89.8
Mole Dagbani	1779	16.1	526	16.8	90.9
Grusi	326	3.0	113	3.6	96.7
Mande	127	1.2	50	1.6	91.6
Non-Ghanaian	210	1.9	59	1.9	91.8
Others	82	.7	17	.5	100.0
Total	11028	100.0	3122	100.0	94.2

Table DQ.5: Completion rates for under-5 questionnaires by socio-economic characteristics of households					
Household population of under-5 children, under-5 questionnaires completed, and percentage of under-5 children for whom interviews were completed, by selected socio-economic characteristics of the household, Ghana, 2011					
Background Characteristics	Household population of under-5 children	Interviewed under-5 children	Percent of eligible under-5s with completed under-5 questionnaires (Completion rates)		
Region					
Western	625	10.0	616	10.0	98.7
Central	614	9.8	606	9.8	98.6
Greater Accra	940	15.1	927	15.0	98.7
Volta	498	8.0	495	8.0	99.3
Eastern	683	10.9	681	11.0	99.8
Asante	1167	18.7	1156	18.7	99.0
Brong Ahafo	555	8.9	551	8.9	99.2
Northern	704	11.3	697	11.3	99.0
Upper East	269	4.3	266	4.3	98.8
Upper West	184	3.0	182	2.9	98.8
Residence					
Urban	2711	43.4	2679	43.4	98.8
Rural	3528	56.6	3498	56.6	99.1
Household size					
1-3	939	15.1	925	15.0	98.5
4-6	3305	53.0	3273	53.0	99.0
7+	1994	32.0	1978	32.0	99.2
Education of household head					
None	2287	36.7	2263	36.6	98.9
Primary	995	15.9	991	16.0	99.6
Middle/JSS	2366	37.9	2344	37.9	99.0
Secondary +	591	9.5	579	9.4	98.1
Wealth index quintiles					
Poorest	1438	23.0	1425	23.1	99.1
Second	1265	20.3	1257	20.4	99.4
Middle	1299	20.8	1288	20.9	99.1
Fourth	1149	18.4	1140	18.5	99.2
Richest	1087	17.4	1067	17.3	98.1
Total	6239	100.0	6177	100.0	99.0

Table DQ.6: Completeness of reporting		
Percentage of observations that are missing information for selected questions and indicators, Ghana, 2011		
Background Characteristics	Percent with missing/incomplete information*	Number of cases
Date of birth: Only month	.6	7550
Date of birth: Both month and year	.0	7550
Anthropometric measurements: Weight	1.6	7550
Anthropometric measurements: Height	1.6	7550
Anthropometric measurements: Both weight and height	1.4	7550
Starting time of interview	.0	7550
Ending time of interview	.0	7550

Table DQ.6: Completeness of reporting		
Percentage of observations that are missing information for selected questions and indicators, Ghana, 2011		
	Percent with missing/incomplete information*	Number of cases
Age	.0	54228

Table DQ.6: Completeness of reporting		
Percentage of observations that are missing information for selected questions and indicators, Ghana, 2011		
Background Characteristics	Percent with missing/incomplete information*	Number of cases
Salt testing	.0	11925
Starting time of interview	.0	11925
Ending time of interview	.0	11925

Table DQ.6: Completeness of reporting		
Percentage of observations that are missing information for selected questions and indicators, Ghana, 2011		
Background Characteristics	Percent with missing/incomplete information*	Number of cases
Date of birth: Only month	.6	7550
Date of birth: Both month and year	.0	7550
Anthropometric measurements: Weight	1.6	7550
Anthropometric measurements: Height	1.6	7550
Anthropometric measurements: Both weight and height	1.4	7550
Starting time of interview	.0	7550
Ending time of interview	.0	7550

Background Characteristics	Valid weight and height	Reason for exclusion from analysis								Total	Percent of children excluded from analysis	Number of children under 5
		Weight not measured	Height not measured	Weight and height not measured	Incomplete date of birth	Weight not measured, incomplete date of birth	Height not measured, incomplete date of birth	Weight and height not measured, incomplete date of birth	Flagged cases (outliers)			
Weight by height												
<6 months	95.5	.1	.4	1.8	.0	.0	.0	.0	2.3	100.0	4.5	792
6-11 months	97.5	.4	.3	.6	.0	.0	.0	.0	1.3	100.0	2.5	720
12-23 months	97.6	.2	.1	1.2	.1	.0	.0	.1	.8	100.0	2.4	1451
24-35 months	97.7	.1	.2	.8	.4	.0	.0	.0	.8	100.0	2.3	1518
36-47 months	96.7	.0	.3	1.1	1.3	.0	.0	.0	.6	100.0	3.3	1599
48-59 months	96.9	.3	.2	.6	1.6	.0	.0	.0	.3	100.0	3.1	1470
Total	97.1	.2	.2	1.0	.7	.0	.0	.0	.9	100.0	2.9	7550

Background Characteristics	Weight		Height	
	Number	Percent	Number	Percent
Digits				
0	762	10.2	1829	24.5
1	787	10.5	640	8.6
2	746	10.0	805	10.8
3	763	10.2	789	10.6
4	736	9.9	643	8.6
5	731	9.8	980	13.1
6	707	9.5	589	7.9
7	710	9.5	483	6.5
8	797	10.7	351	4.7
9	722	9.7	365	4.9
0 or 5	1493	20.0	2809	37.6
Total	7461	100.0	7474	100.0

Percentage of bednets observed by interviewer	Total number of bednets	Observation of places for handwashing: Observed	Place for handwashing not in dwelling	No permission to see	Other	Total	Number of households interviewed	
Region								
Western	56.3	642	13.7	79.3	.0	7.0	100.0	757
Central	59.5	991	36.2	53.4	.5	9.9	100.0	1989
Greater Accra	36.5	466	38.4	46.3	1.0	14.3	100.0	989
Volta	68.2	1763	13.6	86.3	.0	.1	100.0	771
Eastern	59.9	1228	7.2	92.4	.1	.3	100.0	767
Asante	70.7	586	25.9	71.0	.2	2.9	100.0	993
Brong Ahafo	67.6	653	28.4	71.4	.0	.1	100.0	718
Northern	60.5	2927	19.3	76.6	1.9	2.2	100.0	1972
Upper East	69.8	1476	17.9	81.5	.0	.6	100.0	1475
Upper West	66.1	2063	8.7	88.6	1.9	.9	100.0	1494
Residence								
Urban	50.7	3414	32.7	60.2	1.0	6.0	100.0	4545
Rural	68.1	9381	15.1	81.4	.6	2.9	100.0	7380
Wealth index quintiles								
Poorest	69.6	5637	11.5	85.9	1.0	1.6	100.0	4116
Second	67.8	2837	18.9	76.4	.5	4.2	100.0	2368
Middle	59.4	1899	22.2	72.6	.4	4.8	100.0	1959
Fourth	54.6	1339	25.9	67.8	.7	5.6	100.0	1813
Richest	39.6	1083	46.4	45.1	.9	7.6	100.0	1669
Total	62.9	12795	21.8	73.4	.7	4.1	100.0	11925

Background Characteristics	Woman does not have health card	Woman has health card		Missing/DK	Total	Percent of health cards seen by the interviewer (1)/(1+2)*100	Number of women with a live birth in the last two years
		Seen by the interviewer (1)	Not seen by the interviewer (2)				
Region							
Western	11.0	27.7	61.3	.0	100.0	31.2	173
Central	11.9	27.8	60.0	.3	100.0	31.7	385
Greater Accra	5.8	34.2	59.4	.6	100.0	36.6	155
Eastern	5.1	36.8	57.4	.7	100.0	39.1	136
Asante	5.7	41.5	51.1	1.7	100.0	44.8	176
Brong Ahafo	13.7	49.0	37.3	.0	100.0	56.8	153
Northern	13.6	42.1	44.1	.3	100.0	48.8	749
Upper East	5.2	51.0	43.3	.6	100.0	54.1	363
Upper West	9.3	46.5	44.0	.2	100.0	51.4	441
Residence							
Urban	8.3	41.5	49.9	.3	100.0	45.4	791
Rural	11.4	40.3	47.8	.5	100.0	45.7	2082
Wealth index quintiles							
Poorest	12.2	41.8	45.5	.5	100.0	47.8	1324
Second	11.2	39.1	49.3	.3	100.0	44.2	578
Middle	9.6	36.3	53.9	.3	100.0	40.2	397
Fourth	9.7	41.5	47.8	.9	100.0	46.5	318
Richest	3.1	43.8	53.1	.0	100.0	45.2	256
Total	10.6	40.6	48.4	.4	100.0	45.6	2873

Background Characteristics	Child does not have birth certificate	Child has birth certificate		Missing/DK	Total	Percent of birth certificates seen by the interviewer (1)/(1+2)*100	Number of children under age 5
		Seen by the interviewer (1)	Not seen by the interviewer (2)				
Region							
Western	56.5	20.3	23.2	.0	100.0	46.7	414
Central	38.6	28.8	32.1	.4	100.0	47.3	999
Greater Accra	23.4	42.7	32.8	1.0	100.0	56.6	393
Volta	57.0	23.3	19.0	.8	100.0	55.0	400
Eastern	50.7	24.6	23.8	.9	100.0	50.9	345
Asante	35.4	38.3	25.6	.6	100.0	59.9	472
Brong Ahafo	55.0	20.1	24.6	.2	100.0	45.1	407
Northern	51.5	28.9	19.4	.3	100.0	59.9	1989
Upper East	46.7	36.4	16.6	.3	100.0	68.7	988
Upper West	34.8	36.7	27.1	1.3	100.0	57.5	1143
Residence							
Urban	28.1	41.8	29.5	.7	100.0	58.6	2117
Rural	51.4	26.7	21.3	.5	100.0	55.6	5433
Child's age							
0	63.0	22.2	14.6	.2	100.0	60.4	1507
1	41.8	34.3	23.7	.2	100.0	59.1	1451
2	41.6	32.7	25.4	.3	100.0	56.3	1512
3	38.8	33.1	27.5	.6	100.0	54.6	1608
4	39.4	32.4	26.7	1.5	100.0	54.8	1472
Total	44.9	30.9	23.6	.6	100.0	56.7	7550

Background Characteristics	Child does not have vaccination card		Child has vaccination card		Missing/DK	Total	Percent of vaccination cards seen by the interviewer (1)/(1+2)*100	Number of children under age 5
	Had vaccination card previously	Never had vaccination card	Seen by the interviewer (1)	Not seen by the interviewer (2)				
Region								
Western	.5	4.1	76.6	18.8	.0	100.0	80.3	414
Central	.9	2.8	79.0	17.3	.0	100.0	82.0	999
Greater Accra	2.5	.5	77.1	19.8	.0	100.0	79.5	393
Volta	2.0	2.8	82.5	12.8	.0	100.0	86.6	400
Eastern	2.6	1.2	80.6	15.7	.0	100.0	83.7	345
Asante	.4	1.3	84.7	13.6	.0	100.0	86.2	472
Brong Ahafo	3.2	2.5	82.8	11.5	.0	100.0	87.8	407
Northern	3.8	3.9	77.3	14.9	.0	100.0	83.8	1989
Upper East	.5	1.2	86.4	11.8	.0	100.0	88.0	988
Upper West	2.8	1.1	88.5	7.6	.0	100.0	92.1	1143
Residence								
Urban	1.7	1.3	78.0	19.0	.0	100.0	80.4	2117
Rural	2.4	2.8	82.9	11.9	.0	100.0	87.5	5433
Child's age								
0	.5	6.4	88.3	4.8	.0	100.0	94.8	1507
1	.7	1.2	89.6	8.5	.0	100.0	91.3	1451
2	2.3	1.3	84.1	12.3	.0	100.0	87.2	1512
3	2.6	1.3	75.6	20.5	.0	100.0	78.7	1608
4	4.8	1.8	70.7	22.7	.0	100.0	75.7	1472
Total	2.2	2.4	81.5	13.9	.0	100.0	85.5	7550

Background Characteristics	Mother in the household		Mother not in the household			Total	Number of children under 5
	Mother interviewed	Other adult female interviewed	Father interviewed	Other adult female interviewed	Other adult male interviewed		
Age							
0	98.6	.1	.1	1.1	.1	100.0	1268
1	97.3	.2	.1	2.3	.1	100.0	1197
2	91.0	.2	1.0	7.4	.3	100.0	1284
3	87.7	.0	1.8	10.1	.3	100.0	1307
4	83.4	.2	3.2	12.1	1.1	100.0	1182
Total	91.6	.1	1.2	6.6	.4	100.0	6239

Background Characteristics	Percent of households where correct selection was performed	Number of households with 2 or more children age 2-14 years
Region		
Western	97.1	312
Central	97.4	793
Greater Accra	94.9	277
Volta	98.5	336
Eastern	96.4	278
Asante	95.5	377
Brong Ahafo	98.5	332
Northern	91.9	1279
Upper East	94.6	867
Upper West	93.9	948
Residence		
Urban	95.9	1685
Rural	94.7	4114
Number of households by number of children 2-14		
2	96.6	2160
3	96.8	1714
4	95.6	1028
5+	87.2	897
Total	95.0	5799

Background Characteristics	Not attending school	Preschool	Primary						Middle/ JSS/ JHS				Secondary/ SSS/ SHS	Voc/ Comm/ Tech	Post Sec (Nursing/ Teacher Training)	Tertiary	Total	Number of household members
			1	2	3	4	5	6	1	2	3	4						
Age at beginning of school year																		
5	17.4	74.4	7.0	1.2	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100.0	1336
6	11.1	55.1	23.1	8.7	1.4	.6	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100.0	1396
7	8.6	32.9	24.9	23.7	8.1	1.5	.0	.0	.1	.1	.0	.0	.0	.0	.0	.0	100.0	1369
8	6.7	14.0	17.8	29.8	22.6	7.9	.5	.4	.0	.2	.1	.0	.0	.0	.0	.0	100.0	1250
9	6.3	7.0	7.7	25.5	28.4	19.6	4.7	.8	.1	.0	.0	.0	.0	.0	.0	.0	100.0	1288
10	6.3	4.6	3.7	16.1	23.0	24.6	15.9	4.7	.8	.3	.1	.1	.0	.0	.0	.0	100.0	1289
11	4.4	1.9	2.0	8.6	16.0	23.4	21.3	16.5	3.7	1.9	.0	.2	.0	.0	.0	.0	100.0	1357
12	6.3	.5	1.0	5.7	9.7	16.5	21.4	22.3	12.0	3.6	1.1	.0	.0	.0	.0	.0	100.0	1358
13	7.5	.0	.9	3.5	4.8	10.4	16.8	24.5	14.3	13.4	3.4	.0	.4	.0	.0	.0	100.0	1241
14	9.0	.5	.4	2.3	2.8	5.6	12.0	19.1	15.1	20.9	11.5	.0	.6	.0	.0	.0	100.0	1231
15	19.9	.2	.1	.8	2.3	2.5	5.7	15.6	14.4	19.8	15.0	.0	3.8	.0	.0	.0	100.0	926
16	24.3	.0	.0	.2	.4	1.8	4.8	9.5	11.3	19.7	20.4	.1	7.4	.0	.0	.0	100.0	891
17	35.1	.0	.1	.3	.4	.5	2.0	4.4	7.5	14.8	16.9	.0	18.0	.0	.0	.0	100.0	796
18	42.7	.0	.5	.5	.1	.3	1.3	4.3	4.0	10.6	14.5	.0	20.7	.2	.0	.2	100.0	813
19	60.3	.0	.1	.0	.2	.1	1.6	1.5	1.9	6.0	7.7	.0	18.4	.5	.0	1.8	100.0	655

Background Characteristics	Not attending school	Preschool	Primary						Middle/ JSS/ JHS				Secondary/ SSS/ SHS	Voc/ Comm/ Tech	Post Sec (Nursing/ Teacher Training)	Tertiary	Total	Number of household members
			1	2	3	4	5	6	1	2	3	4						
Age at beginning of school year																		
20	67.8	.2	.5	.0	.2	.3	.8	.9	1.5	2.9	4.3	.0	17.5	.2	.8	2.1	100.0	683
21	77.0	.0	.0	.1	.0	.0	.1	.9	.6	.7	1.4	.2	11.7	1.7	.9	4.8	100.0	618
22	84.7	.0	.0	.0	.0	.0	.1	.0	.1	.7	1.7	.0	4.6	1.1	.2	6.7	100.0	630
23	88.3	.8	.0	.0	.0	.0	.2	.4	.0	.7	.8	.0	4.9	.3	.4	3.3	100.0	565
24	89.0	.0	.8	.0	.0	.0	.0	.0	.2	.1	.7	.0	2.1	.5	.9	5.8	100.0	629

Background Characteristics	Children Ever Born			Children Living			Children Deceased			Number of women
	Number of sons ever born	Number of daughters ever born	Sex ratio	Number of sons living	Number of daughters living	Sex ratio	Number of deceased sons	Number of deceased daughters	Sex ratio	
Age										
15-19	111	113	.98	101	103	.98	10	10	1.00	2028
20-24	689	636	1.08	628	582	1.08	61	54	1.13	1503
25-29	1793	1647	1.09	1616	1514	1.07	177	133	1.33	1650
30-34	2878	2838	1.01	2567	2566	1.00	311	272	1.14	1616
35-39	3536	3344	1.06	3085	2978	1.04	451	366	1.23	1487
40-44	3468	3274	1.06	2933	2830	1.04	535	444	1.20	1231
45-49	3580	3238	1.11	2906	2715	1.07	674	523	1.29	1112
Total	16055	15090	1.06	13836	13288	1.04	2219	1802	1.19	10627

Background Characteristics	Number of births			Percent with complete birth date**			Sex ratio at birth***			Calendar year ratio****		
	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
Year of birth												
2011	1149	47	1196	100.0	96.7	99.9	100.9	221.1	103.9	na	na	na
2010	1199	61	1261	100.0	90.7	99.5	94.1	333.5	99.5	100.5	78.0	99.1
2009	1237	110	1348	99.6	88.6	98.7	98.6	101.0	98.8	99.7	115.4	100.8
2008	1284	130	1414	99.0	79.4	97.2	105.6	145.4	108.7	108.6	136.7	110.7
2007	1127	80	1207	98.7	78.3	97.4	96.5	150.4	99.3	89.4	70.1	87.8
2006	1238	97	1335	97.1	68.1	95.0	106.1	89.4	104.8	107.6	124.9	108.7
2005	1173	76	1249	97.1	72.9	95.6	112.3	121.0	112.8	93.6	69.6	91.7
2004	1268	122	1390	96.4	70.6	94.1	100.3	136.5	103.0	113.8	130.1	115.0
2003	1056	111	1167	95.9	75.3	93.9	113.3	108.7	112.8	90.3	94.8	90.7
2002	1069	113	1182	95.7	72.3	93.5	108.3	204.0	114.8	102.9	98.6	102.5
2001	1024	117	1141	93.4	68.4	90.8	110.8	107.5	110.4	94.3	92.2	94.1
2000	1102	141	1243	95.6	62.3	91.8	102.1	77.3	99.0	107.6	129.4	109.7
1999	1025	101	1127	92.2	64.5	89.7	105.2	77.7	102.4	99.6	75.1	96.8
1998	956	128	1084	93.4	62.0	89.6	107.3	163.4	112.7	103.3	126.3	105.6
1997	826	102	928	93.8	62.4	90.4	86.1	122.3	89.5	92.7	82.5	91.5
1996	825	119	944	90.3	73.3	88.2	95.7	71.6	92.3	103.9	122.1	105.9
1995	762	93	855	91.9	61.9	88.7	102.9	148.3	107.0	97.2	79.1	94.9
Year of birth												
1994	743	116	859	90.8	67.7	87.7	97.3	129.7	101.1	102.1	113.4	103.5
1993	693	111	804	89.9	62.3	86.1	116.1	187.2	123.8	101.9	108.7	102.8
1992	617	89	706	87.4	71.3	85.4	101.0	134.4	104.7	22.2	38.6	23.4
2008-2012	4869	349	5218	99.6	86.7	98.8	99.8	155.2	102.8	na	na	na
2003-2007	5861	486	6348	97.0	72.8	95.2	105.3	118.5	106.3	na	na	na
1998-2002	5176	601	5777	94.1	65.7	91.1	106.7	115.4	107.5	na	na	na
1993-1997	3850	540	4390	91.4	65.8	88.3	98.6	123.7	101.4	na	na	na
<1993	4216	832	5048	87.3	67.3	84.0	100.8	121.9	104.0	na	na	na
DK/missing	10	13	23	.0	.0	5.8	235.2	83.5	128.8	na	na	na
Total	23981	2821	26802	94.3	69.7	91.7	102.6	123.6	104.6	na	na	na

DQ.18: Reporting of age at death in days					
Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, by 5-year periods preceding the survey (weighted, unimputed), Ghana, 2011					
Background Characteristics	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
Age at death (days)					
0	45	47	44	44	179
1	63	65	74	44	245
2	3	10	7	10	30
3	16	11	19	10	57
4	5	8	5	3	22
5	8	7	1	9	25
6	2	4	1	1	9
7	7	18	14	14	53
8	1	1	4	5	11
9	0	1	1	3	5
10	0	1	1	0	2
11	0	0	0	0	0
12	0	0	1	0	2
13	0	0	5	0	5
14	4	9	7	19	39
15	2	0	1	1	4
16	1	0	2	1	4
18	0	0	2	0	2
19	2	0	0	0	2
20	0	0	0	0	0
21	8	9	12	3	32
23	1	0	0	0	1
24	0	0	0	2	2
25	0	0	0	0	1
28	0	1	1	1	2
29	0	0	0	0	0
Total 0-30 days					
1.00	169	191	203	170	733
Percent early neonatal*					
84.4	79.7	74.5	71.4	77.4	

DQ.19: Reporting of age at death in months					
Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, by 5-year periods preceding the survey (weighted, unimputed), Ghana, 2011					
Background Characteristics	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
Age at death (months)					
0	170	191	203	170	733
1	24	15	16	10	64
2	9	9	18	14	51
3	12	12	19	18	60
4	11	9	5	7	31
5	10	7	4	7	28
6	12	24	16	7	59
7	20	5	10	12	47
8	4	3	6	16	28
9	4	8	18	14	44
10	3	6	6	3	17
11	4	4	4	0	13
12	2	19	9	6	37
13	0	1	5	0	6
14	0	0	0	2	2
15	1	4	1	0	6
16	0	1	0	0	1
17	2	2	2	0	5
18	6	5	12	3	26
19	0	1	0	0	1
21	0	2	1	0	3
22	0	0	0	0	0
23	0	1	0	0	1
Total 0-11 months	283	291	325	278	1177
Percent neonatal*	60.0	65.4	62.4	61.3	62.3



MICS4 INDICATOR [M]	Module ¹	Numerator	Denominator	MDG ²
1. MORTALITY				
1.1	Under-five mortality rate ³	CM - BH	Probability of dying before turning age 5 years	MDG 4.1
1.2	Infant mortality rate ⁴	CM - BH	Probability of dying before turning age 1 year	MDG 4.2
1.3	Neonatal mortality rate	BH	Probability of dying within the first month of life, during the 5-year period preceding the survey	
1.4	Post-neonatal mortality rate	BH	Difference between infant and neonatal mortality rates, during the 5-year period preceding the survey	
1.5	Child mortality rate	BH	Probability of dying between exact ages one and five, during the 5-year period preceding the survey	

MICS4 INDICATOR [M]	Module ⁵	Numerator	Denominator	MDG ⁶
2. NUTRITION				
2.1a 2.1b	Underweight prevalence	AN	Number of children under age 5 who (a) fall below minus two standard deviations (moderate and severe) (b) fall below minus three standard deviations (severe) from the median weight for age of the WHO standard	Total number of children under age 5 MDG 1.8
2.2a 2.2b	Stunting prevalence	AN	Number of children under age 5 who (a) fall below minus two standard deviations (moderate and severe) (b) fall below minus three standard deviations (severe) from the median height for age of the WHO standard	Total number of children under age 5
2.3a 2.3b	Wasting prevalence	AN	Number of children under age 5 who (a) fall below minus two standard deviations (moderate and severe) (b) fall below minus three standard deviations (severe) from the median weight for height of the WHO standard	Total number of children under age 5

[M] Indicates that the indicator is also calculated for men, for the same age group, in surveys where the Questionnaire for Individual Men has been included. Calculations are carried out by using modules in the Men's Questionnaire

1 Some indicators are constructed by using questions in several modules. In such cases, only the module(s) which contains most of the necessary information is indicated.

2 MDG indicators as of February 2010

3 Indicator is defined as "Probability of dying between birth and fifth birthday, during the 5-year period preceding the survey" when estimated from the birth history

4 Indicator is defined as "Probability of dying between birth and the first birthday, during the 5-year period preceding the survey" when estimated from the birth history

[M] Indicates that the indicator is also calculated for men, for the same age group, in surveys where the Questionnaire for Individual Men has been included. Calculations are carried out by using modules in the Men's Questionnaire

5 Some indicators are constructed by using questions in several modules. In such cases, only the module(s) which contains most of the necessary information is indicated.

6 MDG indicators as of February 2010

MICS4 INDICATOR ^(m)	Module ⁵	Numerator	Denominator	MDG ⁶
		(b) fall below minus three standard deviations (severe) from the median weight for height of the WHO standard		
2.4	Children ever breastfed	MN	Number of women with a live birth in the 2 years preceding the survey who breastfed the child at any time	Total number of women with a live birth in the 2 years preceding the survey
2.5	Early initiation of breastfeeding	MN	Number of women with a live birth in the 2 years preceding the survey who put the newborn infant to the breast within 1 hour of birth	Total number of women with a live birth in the 2 years preceding the survey
2.6	Exclusive breastfeeding under 6 months	BF	Number of infants under 6 months of age who are exclusively breastfed ⁷	Total number of infants under 6 months of age
2.7	Continued breastfeeding at 1 year	BF	Number of children age 12-15 months who are currently breastfeeding	Total number of children age 12-15 months
2.8	Continued breastfeeding at 2 years	BF	Number of children age 20-23 months who are currently breastfeeding	Total number of children age 20-23 months
2.9	Predominant breastfeeding under 6 months	BF	Number of infants under 6 months of age who received breast milk as the predominant source of nourishment ⁸ during the previous day	Total number of infants under 6 months of age
2.10	Duration of breastfeeding	BF	The age in months when 50 percent of children age 0-35 months did not receive breast milk during the previous day	
2.11	Bottle feeding	BF	Number of children age 0-23 months who were fed with a bottle during the previous day	Total number of children age 0-23 months
2.12	Introduction of solid, semi-solid or soft foods	BF	Number of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	Total number of infants age 6-8 months
2.13	Minimum meal frequency	BF	Number of children age 6-23 months receiving solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum times ⁹ or more, according to breastfeeding status, during the previous day	Total number of children age 6-23 months
2.14	Age-appropriate breastfeeding	BF	Number of children age 0-23 months appropriately fed ¹⁰ during the previous day	Total number of children age 0-23 months
2.15	Milk feeding frequency for non-breastfed children	BF	Number of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	Total number of non-breastfed children age 6-23 months

⁷ Infants receiving breast milk, and not receiving any other fluids or foods, with the exception of oral rehydration solution, vitamins, mineral supplements and medicines

⁸ Infants who receive breast milk and certain fluids (water and water-based drinks, fruit juice, ritual fluids, oral rehydration solution, drops, vitamins, minerals, and medicines), but do not receive anything else (in particular, non-human milk and food-based fluids)

⁹ Breastfeeding children: Solid, semi-solid, or soft foods, two times for infants age 6-8 months, 3 times for children 9-23 months; Non-breastfeeding children: Solid, semi-solid, or soft foods, or milk feeds, four times for children age 6-23 months

¹⁰ Infants age 0-5 who are exclusively breastfed, and children age 6-23 months who are breastfed and ate solid, semi-solid or soft foods

MICS4 INDICATOR ^(m)	Module ⁵	Numerator	Denominator	MDG ⁶
2.16	Iodized salt consumption	SI	Number of households with salt testing 15 parts per million or more of iodide/iodate	Total number of households in which salt was tested or with no salt
2.17	Vitamin A supplementation (children under age 5)	IM	Number of children age 6-59 months who received at least one high-dose vitamin A supplement in the 6 months preceding the survey	Total number of children age 6-59 months
2.18	Low-birth weight infants	MN	Number of last live births in the 2 years preceding the survey weighing below 2,500 grams at birth	Total number of last live births in the 2 years preceding the survey
2.19	Infants weighed at birth	MN	Number of last live births in the 2 years preceding the survey who were weighed at birth	Total number of last live births in the 2 years preceding the survey

3. CHILD HEALTH

3.1	Tuberculosis immunization coverage	IM	Number of children age 12-23 months ¹¹ who received BCG vaccine before their first birthday	Total number of children age 12-23 months	
3.2	Polio immunization coverage	IM	Number of children age 12-23 months who received OPV3 vaccine before their first birthday	Total number of children age 12-23 months	
3.3	Immunization coverage for diphtheria, pertussis and tetanus (DPT)	IM	Number of children age 12-23 months who received DPT3 vaccine before their first birthday	Total number of children age 12-23 months	
3.4	Measles immunization coverage	IM	Number of children age 12-23 months who received measles vaccine before their first birthday	Total number of children age 12-23 months	MDG 4.3
3.5	Hepatitis B immunization coverage	IM	Number of children age 12-23 months who received the third dose of Hepatitis B vaccine before their first birthday	Total number of children age 12-23 months	
3.6	Yellow fever immunization coverage	IM	Number of children age 12-23 months who received yellow fever vaccine before their first birthday	Total number of children age 12-23 months	
3.7	Neonatal tetanus protection	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who were given at least two doses of tetanus toxoid vaccine within the appropriate interval ¹² prior to giving birth	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
3.8	Oral rehydration therapy with continued feeding	CA	Number of children under age 5 with diarrhoea in the previous 2 weeks who received ORT (ORS packet or recommended homemade fluid or increased fluids) and continued feeding during the episode of diarrhoea	Total number of children under age 5 with diarrhoea in the previous 2 weeks	
3.9	Care-seeking for suspected pneumonia	CA	Number of children under age 5 with suspected pneumonia in the previous 2 weeks who were taken to an appropriate health provider	Total number of children under age 5 with suspected pneumonia in the previous 2 weeks	

¹¹ Indicators 3.1, 3.2, 3.3, 3.4, 3.5 and 3.6 may be calculated for an older age group, such as 15-26 months or 18-29 months, depending on the immunization schedule

¹² See MICS4 manual for a detailed description

MICS4 INDICATOR ^(m)	Module ⁵	Numerator	Denominator	MDG ⁶	
3.10	Antibiotic treatment of suspected pneumonia	CA	Number of children under age 5 with suspected pneumonia in the previous 2 weeks who received antibiotics	Total number of children under age 5 with suspected pneumonia in the previous 2 weeks	
3.11	Solid fuels	HC	Number of household members in households that use solid fuels as the primary source of domestic energy to cook	Total number of household members	
3.12	Household availability of insecticide-treated nets (ITNs) ¹³	TN	Number of households with at least one insecticide treated net (ITN)	Total number of households	
3.13	Households protected by a vector control method	TN - IR	Number of households with at least one insecticide-treated net (ITN) or that received spraying through an IRS ¹⁴ campaign in the last 12 months preceding the survey	Total number of households	
3.14	Children under age 5 sleeping under any type of mosquito net	TN	Number of children under age 5 who slept under any type of mosquito net the previous night	Total number of children under age 5	
3.15	Children under age 5 sleeping under insecticide-treated nets (ITNs)	TN	Number of children under age 5 who slept under an insecticide-treated mosquito net (ITN) the previous night	Total number of children under age 5	MDG 6.7
3.16	Malaria diagnostics usage	ML	Number of children under age 5 reported to have had fever in the previous 2 weeks who had a finger or heel stick for malaria testing	Total number of children under age 5 reported to have had fever in the previous 2 weeks	
3.17	Anti-malarial treatment of children under age 5 the same or next day	ML	Number of children under age 5 reported to have had fever in the previous 2 weeks who were treated with any anti-malarial drug within the same or next day of onset of symptoms	Total number of children under age 5 reported to have had fever in the previous 2 weeks	
3.18	Anti-malarial treatment of children under age 5	ML	Number of children under age 5 reported to have had fever in the previous 2 weeks who received any antimalarial treatment	Total number of children under age 5 reported to have had fever in the previous 2 weeks	MDG 6.8
3.19	Pregnant women sleeping under insecticide-treated nets (ITNs)	TN	Number of pregnant women who slept under an insecticide-treated net (ITN) the previous night	Total number of pregnant women	
3.20	Intermittent preventive treatment for malaria	MN	Number of women age 15-49 years who received at least 2 doses of SP/Fansidar to prevent malaria during antenatal care visits for their last pregnancy leading to a live birth in the 2 years preceding the survey	Total number of women age 15-49 years who have had a live birth in the 2 years preceding the survey	
4. WATER AND SANITATION					
4.1	Use of improved drinking water sources	WS	Number of household members using improved sources of drinking water	Total number of household members	MDG 7.8

13 An ITN is (a) a factory treated net which does not require any treatment, (b) a pretreated net obtained within the past 12 months, or (c) a net that has been soaked with or dipped in insecticide within the past 12 months

14 Indoor residual spraying

MICS4 INDICATOR ^(m)	Module ⁵	Numerator	Denominator	MDG ⁶	
4.2	Water treatment	WS	Number of household members using unimproved drinking water who use an appropriate treatment method	Total number of household members in households using unimproved drinking water sources	
4.3	Use of improved sanitation	WS	Number of household members using improved sanitation facilities which are not shared	Total number of household members	MDG 7.9
4.4	Safe disposal of child's faeces	CA	Number of children age 0-2 years whose last stools were disposed of safely	Total number of children age 0-2 years	
4.5	Place for handwashing	HW	Number of households with a specific place for hand washing where water and soap are present	Total number of households	
4.6	Availability of soap	HW	Number of households with soap anywhere in the dwelling	Total number of households	

5. REPRODUCTIVE HEALTH

5.1	Adolescent birth rate ¹⁵	CM - BH	Age-specific fertility rate for women age 15-19 years for the one year period preceding the survey		MDG 5.4
5.2	Early childbearing	CM - BH	Number of women age 20-24 years who had at least one live birth before age 18	Total number of women age 20-24 years	
5.3	Contraceptive prevalence rate	CP	Number of women age 15-49 years currently married or in union who are using (or whose partner is using) a (modern or traditional) contraceptive method	Total number of women age 15-49 years who are currently married or in union	MDG 5.3
5.4	Unmet need ¹⁶	UN	Number of women age 15-49 years who are currently married or in union who are fecund and want to space their births or limit the number of children they have and who are not currently using contraception	Total number of women age 15-49 years who are currently married or in union	MDG 5.6

15 Indicator is defined as "Age-specific fertility rate for women age 15-19 years, for the 3-year period preceding the survey" when estimated from the birth history

16 See MICS4 manual for a detailed description

MICS4 INDICATOR ^[m]	Module ⁵	Numerator	Denominator	MDG ⁶	
5.5a 5.5b	Antenatal care coverage	MN	Number of women age 15-49 years who were attended during pregnancy in the 2 years preceding the survey (a) at least once by skilled personnel (b) at least four times by any provider	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	MDG 5.5
5.6	Content of antenatal care	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who had their blood pressure measured and gave urine and blood samples during the last pregnancy	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
5.7	Skilled attendant at delivery	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who were attended during childbirth by skilled health personnel	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	MDG 5.2
5.8	Institutional deliveries	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who delivered in a health facility	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
5.9	Caesarean section	MN	Number of last live births in the 2 years preceding the survey who were delivered by caesarean section	Total number of last live births in the 2 years preceding the survey	
5.10	Post-partum stay in health facility	PN	Number of women age 15-49 years who stayed in the health facility for 12 hours or more after the delivery of their last live birth in the 2 years preceding the survey	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
5.11	Post-natal health check for the newborn	PN	Number of last live births in the last 2 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after birth	Total number of last live births in the last 2 years	
5.12	Post-natal health check for the mother	PN	Number of women age 15-49 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after delivery	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
5.13	Maternal mortality ratio	MM	Deaths during pregnancy, childbirth, or within two months after delivery or termination of pregnancy, per 100.000 births within the 7-year period preceding the survey		MDG 5.1

6. CHILD DEVELOPMENT					
6.1	Support for learning	EC	Number of children age 36-59 months with whom an adult has engaged in four or more activities to promote learning and school readiness in the past 3 days	Total number of children age 36-59 months	
6.2	Father's support for learning	EC	Number of children age 36-59 months whose father has engaged in one or more activities to promote learning and school readiness in the past 3 days	Total number of children age 36-59 months	
6.3	Learning materials: children's books	EC	Number of children under age 5 who have three or more children's books	Total number of children under age 5	
6.4	Learning materials: playthings	EC	Number of children under age 5 with two or more playthings	Total number of children under age 5	
6.5	Inadequate care	EC	Number of children under age 5 left alone or in the care of another child younger than 10 years of age for more than one hour at least once in the past week	Total number of children under age 5	
6.6	Early child development index	EC	Number of children age 36-59 months who are developmentally on track in literacy-numeracy, physical, social-emotional, and learning domains	Total number of children age 36-59 months	
6.7	Attendance to early childhood education	EC	Number of children age 36-59 months who are attending an early childhood education programme	Total number of children age 36-59 months	

7. LITERACY AND EDUCATION					
7.1	Literacy rate among young women [M]	WB	Number of women age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education	Total number of women age 15-24 years	MDG 2.3
7.2	School readiness	ED	Number of children in first grade of primary school who attended pre-school during the previous school year	Total number of children attending the first grade of primary school	
7.3	Net intake rate in primary education	ED	Number of children of school-entry age who enter the first grade of primary school	Total number of children of school-entry age	
7.4	Primary school net attendance rate (adjusted)	ED	Number of children of primary school age currently attending primary or secondary school	Total number of children of primary school age	MDG 2.1
7.5	Secondary school net attendance rate (adjusted)	ED	Number of children of secondary school age currently attending secondary school or higher	Total number of children of secondary school age	
7.6	Children reaching last grade of primary	ED	Proportion of children entering the first grade of primary school who eventually reach last grade		MDG 2.2
7.7	Primary completion rate	ED	Number of children attending the last grade of primary school (excluding repeaters)	Total number of children of primary school completion age (age appropriate to final grade of primary school)	
7.8	Transition rate to secondary school	ED	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year	Total number of children attending the last grade of primary school during the previous school year	
7.9	Gender parity index (primary school)	ED	Primary school net attendance rate (adjusted) for girls	Primary school net attendance rate (adjusted) for boys	MDG 3.1
7.10	Gender parity index (secondary school)	ED	Secondary school net attendance rate (adjusted) for girls	Secondary school net attendance rate (adjusted) for boys	MDG 3.1

8. CHILD PROTECTION					
8.1	Birth registration	BR	Number of children under age 5 whose births are reported registered	Total number of children under age 5	
8.1	Birth registration	BR	Number of children under age 5 whose births are reported registered	Total number of children under age 5	
8.2	Violent discipline	CD	Number of children age 2-14 years who experienced psychological aggression or physical punishment during the past month	Total number of children age 2-14 years	
8.3	Marriage before age 15 [M]	MA	Number of women age 15-49 years who were first married or in union by the exact age of 15	Total number of women age 15-49 years	
8.4	Marriage before age 18 [M]	MA	Number of women age 20-49 years who were first married or in union by the exact age of 18	Total number of women age 20-49 years	
8.5	Young women age 15-19 years currently married or in union [M]	MA	Number of women age 15-19 years who are currently married or in union	Total number of women age 15-19 years	
8.6	Polygyny [M]	MA	Number of women age 15-49 years who are in a polygynous union	Total number of women age 15-49 years who are currently married or in union	
8.7a 8.7b	Spousal age difference	MA	Number of women currently married or in union whose spouse is 10 or more years older, (a) for women age 15-19 years, (b) for women age 20-24 years	Total number of women currently married or in union (a) age 15-19 years, (b) age 20-24 years	
8.8	Approval for female genital mutilation/cutting (FGM/C)	FG	Number of women age 15-49 years favouring the continuation of FGM/C	Total number of women age 15-49 years who have heard of FGM/C	
8.9	Prevalence of female genital mutilation/cutting (FGM/C) among women	FG	Number of women age 15-49 years who report to have undergone any form of FGM/C	Total number of women age 15-49 years	

8. CHILD PROTECTION (cont'd)					
8.10	Prevalence of female genital mutilation/ cutting (FGM/C) among girls	FG	Number of girls age 0-14 years who have undergone any form of FGM/C, as reported by mothers	Total number of girls age 0-14 years	
8.11	Attitudes towards domestic violence [M]	DV	Number of women who state that a husband/ partner is justified in hitting or beating his wife in at least one of the following circumstances: (1) she goes out without telling him, (2) she neglects the children, (3) she argues with him, (4) she refuses sex with him, (5) she burns the food	Total number of women age 15-49 years	
8.12	Children's living arrangements	HL	Number of children age 0-17 years not living with a biological parent	Total number of children age 0-17 years	
8.13	Prevalence of children with one or both parents dead	HL	Number of children age 0-17 years with one or both parents dead	Total number of children age 0-17 years	

9. HIV/AIDS, SEXUAL BEHAVIOUR AND ORPHANS					
9.1	Comprehensive knowledge about HIV prevention [M]	HA	Number of women age 15-49 years who correctly identify two ways of preventing HIV infection ¹⁷ , know that a healthy looking person can have HIV, and reject the two most common misconceptions about HIV transmission	Total number of women age 15-49 years	
9.2	Comprehensive knowledge about HIV prevention among young people [M]	HA	Number of women age 15-24 years who correctly identify two ways of preventing HIV infection ¹² , know that a healthy looking person can have HIV, and reject the two most common misconceptions about HIV transmission	Total number of women age 15-24 years	MDG 6.3
9.3	Knowledge of mother-to-child transmission of HIV [M]	HA	Number of women age 15-49 years who correctly identify all three means ¹⁸ of mother-to-child transmission of HIV	Total number of women age 15-49 years	
9.4	Accepting attitudes towards people living with HIV [M]	HA	Number of women age 15-49 years expressing accepting attitudes on all four questions ¹⁹ toward people living with HIV	Total number of women age 15-49 years who have heard of HIV	
9.5	Women who know where to be tested for HIV [M]	HA	Number of women age 15-49 years who state knowledge of a place to be tested for HIV	Total number of women age 15-49 years	
9.6	Women who have been tested for HIV and know the results [M]	HA	Number of women age 15-49 years who have been tested for HIV in the 12 months preceding the survey and who know their results	Total number of women age 15-49 years	
9.7	Sexually active young women who have been tested for HIV and know the results [M]	HA	Number of women age 15-24 years who have had sex in the 12 months preceding the survey, who have been tested for HIV in the 12 months preceding the survey and who know their results	Total number of women age 15-24 years who have had sex in the 12 months preceding the survey	
9.8	HIV counselling during antenatal care	HA	Number of women age 15-49 years who gave birth in the 2 years preceding the survey and received antenatal care, reporting that they received counselling on HIV during antenatal care	Total number of women age 15-49 years who gave birth in the 2 years preceding the survey	
9.9	HIV testing during antenatal care	HA	Number of women age 15-49 years who gave birth in the 2 years preceding the survey and received antenatal care, reporting that they were offered and accepted an HIV test during antenatal care and received their results	Total number of women age 15-49 years who gave birth in the 2 years preceding the survey	

17 Using condoms and limiting sex to one faithful, uninfected partner
 18 Transmission during pregnancy, during delivery, and by breastfeeding
 19 Women (1) who think that a female teacher with the AIDS virus should be allowed to teach in school, (2) who would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus, (3) who would not want to keep it as a secret if a family member became infected with the AIDS virus, and (4) who would be willing to care for a family member who became sick with the AIDS virus

MICS4 INDICATOR ^[m]	Module ⁵	Numerator	Denominator	MDG ⁶	
9.10	Young women who have never had sex [M]	SB	Number of never married women age 15-24 years who have never had sex	Total number of never married women age 15-24 years	
9.11	Sex before age 15 among young women [M]	SB	Number of women age 15-24 years who have had sexual intercourse before age 15	Total number of women age 15-24 years	
9.12	Age-mixing among sexual partners [M]	SB	Number of women age 15-24 years who had sex in the 12 months preceding the survey with a partner who was 10 or more years older	Total number of women age 15-24 years who have had sex in the 12 months preceding the survey	
9.13	Sex with multiple partners [M]	SB	Number of women age 15-49 years who have had sexual intercourse with more than one partner in the 12 months preceding the survey	Total number of women age 15-49 years	
9.14	Condom use during sex with multiple partners [M]	SB	Number of women age 15-49 years who report having had more than one sexual partner in the 12 months preceding the survey who also reported that a condom was used the last time they had sex	Total number of women age 15-49 years who reported having had more than one sexual partner in the 12 months preceding the survey	
9.15	Sex with non-regular partners [M]	SB	Number of sexually active women age 15-24 years who have had sex with a non-marital, non-cohabitating partner in the 12 months preceding the survey	Total number of women age 15-24 years who have had sex in the 12 months preceding the survey	
9.16	Condom use with non-regular partners [M]	SB	Number of women age 15-24 years reporting the use of a condom during sexual intercourse with their last non-marital, non-cohabitating sex partner in the 12 months preceding the survey	Total number of women age 15-24 years who had a non-marital, non-cohabitating partner in the 12 months preceding the survey	MDG 6.2

10. NATIONAL HEALTH INSURANCE					
10.1	Membership of NHIS among women	NHIS	Number of women age 15-49 years registered with NHIS and the status of their NHIS valid card	Total number of women age 15-49 years	
10.2	Membership of NHIS among men	NHIS	Number of men age 15-59 years registered with NHIS and the status of their NHIS valid cards	Total number of men age 15-59 years	
10.3	Membership of NHIS among children	NHIS	Number of children under-5 years registered with NHIS and status of their valid NHIS cards	Total number of children under-5 years	
10.4	Reasons for not having valid card among women	NHIS	Number of women age 15-49 years who did not have a valid card for various reasons	Total number of women age 15-49 years.	
10.5	Reasons for not having valid card among men	NHIS	Number of men age 15-59 years who did not have a valid card for various reasons	Total number of men age 15-59 years	
10.6	Reasons for not having valid card among children	NHIS	Number of children age 0-4 years who did not have a valid card for various reasons	Total number of children age 0-4 years	
10.7	Achievement of membership among women	NHIS	Number of women age 15-49 registered according to achievement of membership	Total number of women age 15-49 years	
10.8	Achievement of membership among men	NHIS	Number of men age 15-59 registered according to achievement of membership	Total number of men age 15-59 years	
10.9	Achievement of membership among children	NHIS	Number of children age 0-4 years registered according to achievement of membership	Total number of children age 0-4 years	
10.10	Opinion on quality of service provided to NHIS card holders among women	NHIS	Number of women age 15-49 years registered according to opinion on quality of service offered to NHIS card holders	Total number of women age 15-49 years	
10.11	Opinion on quality of services provided to NHIS card holders among men	NHIS	Number of men age 15-59 years registered according to opinion on quality of service offered to NHIS card holders	Total number of men age 15-59 years	
10.12	NHIS registration among women	NHIS	Number of women age 15-49 years who did not register for various reasons	Total number of women age 15-49 years	
10.13	NHIS registration among men	NHIS	Number of men age 15-59 who did not register for various reasons	Total number of men age 15-59 years	
10.14	NHIS registration among children	NHIS	Number of children age 0-59 months who did not register with NHIS for various reasons	Total number of women and men age 15-49, and children age 0-59 months	

11. ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY				
11.1	Exposure to mass media by women [M]	MT	Number of women age 15-49 years who are exposed to specific mass media on a weekly basis	Total number of women age 15-49 years
11.2	Exposure to mass media by men [M]	MT	Number of men age 15-59 years who are exposed to specific mass media on a weekly basis	Total number of men age 15-59 years
11.3	Use of computer and internet by young women	MT	Number of young women age 15-24 who have ever used a computer during the last 12 months	Total number of young women age 15-24 years
11.4	Use of computer and internet by young men	MT	Number of young men age 15-24 who have ever used a computer during the last 12 months	Total number of young men age 15-24 years



		HOUSEHOLD QUESTIONNAIRE GHANA 2011			
HOUSEHOLD INFORMATION PANEL					HH
HH1. Locality Name Cluster No.: _____		HH2. Household Number: _____			
HH3. Interviewer name and number: _____		HH4. Supervisor name and number: _____			
HH5. Date of interview: (DD/ MM / YYYY) ____/____/2011		HH5A: Is the household selected for the male survey? Yes 1 No 2			
HH6. Area:	HH7. Region	HH7A. District	HH7B. Dist-type ____	HH7C. Sub-dist ____	
Urban 1					
Rural 2					
HH7D. Structure Address:		HH7E: Contact No of HH:			

WE ARE FROM THE GHANA STATISTICAL SERVICE. WE ARE CONDUCTING A SURVEY THAT IS CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO ASK YOU A FEW QUESTIONS ON THESE AREAS. THE INTERVIEW WILL TAKE ABOUT 45 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE.

MAY I START NOW?

- Yes, permission is given Go to HH10 to get signature, then HH18 to record time, then begin interview.
 No, permission is not given Complete HH9. Discuss this result with your supervisor.

After all questionnaires for the household have been completed, fill in the following information:

HH8. Name of head of household: _____	
HH9. Result of household interview: Completed 01 No household member or no competent respondent at home at time of visit 02 Entire household absent for extended period of time 03 Refused 04 Dwelling vacant / Address not a dwelling 05 Dwelling destroyed 06 Dwelling not found 07 Other (specify) 96	HH10. Respondent to household questionnaire: Name: _____ _____ (Respondent's signature or thumbprint) Line Number: ____ ____ HH11. Total number of household members: ____ ____
HH12. Number of women age 15-49 years: ____ ____	HH13. Number of women's questionnaires completed: ____ ____
HH14. Number of children under age 5: ____ ____	HH15. Number of under-5 questionnaires completed: ____ ____
IF HOUSEHOLD IS NOT SELECTED FOR THE MALE INTERVIEW (HH5A=2), LEAVE HH15A AND HH15B BLANK	
HH15A. Number of men aged 15-59 years ____ ____	HH15B. Number of men's questionnaires completed: ____ ____
HH16. Field edited by (Name and number): Name _____	HH17. Data entry clerk (Name and number): Name _____

HH18. HOUSEHOLD LISTING FORM Record the time. FIRST, PLEASE TELL ME THE NAME OF EACH PERSON IN YOUR HOUSEHOLD WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HOUSEHOLD. List the head of the household in line 01. List all household members (HL2), their relationship to the household head (HL3), and their sex (HL4) Then ask: ARE THERE ANY OTHERS WHO LIVE HERE, EVEN IF THEY ARE NOT AT HOME NOW? (THESE MAY INCLUDE CHILDREN CURRENTLY IN SCHOOL OR AT WORK). If yes, complete listing for questions HL2-HL4. Then, ask questions starting with HL5 for each person at a time. Use an additional questionnaire if all rows in the household listing form have been used.														
Hour ____														
Minutes ____														
HL1. Line number	HL2. Name	HL3. WHAT IS THE RELATIONSHIP OF (name) TO THE HEAD OF HOUSEHOLD?	HL4. IS (name) MALE OR FEMALE?	HL5. WHAT IS (name)'S DATE OF BIRTH?	HL6. HOW OLD IS (name)?	HL7. Circle line number if woman is age 15-49	HL7A. Check if HH5A=1 Circle line number if man is age 15-59	HL8. WHO IS THE MOTHER OR PRIMARY CARETAKER OF THIS CHILD?	HL9. WHO IS THE MOTHER/ PRIMARY CARETAKER OF THIS CHILD?	HL10. DID (name) STAY HERE LAST NIGHT?	HL11. IS (name)'S NATURAL MOTHER ALIVE?	HL12. DOES (name)'S NATURAL MOTHER LIVE IN THIS HOUSEHOLD?	HL13. IS (name)'S NATURAL FATHER ALIVE?	HL14. DOES (name)'S NATURAL FATHER LIVE IN THIS HOUSEHOLD?
Line	Name	Relation*	M F	Month Year	Age	15-49	15-59	Mother	Mother	Y N	Y N DK	Mother	Y N DK	Father
01		01	1 2			01	01			1 2	1 2 8		1 2 8	
02			1 2			02	02			1 2	1 2 8		1 2 8	
03			1 2			03	03			1 2	1 2 8		1 2 8	
04			1 2			04	04			1 2	1 2 8		1 2 8	
05			1 2			05	05			1 2	1 2 8		1 2 8	
06			1 2			06	06			1 2	1 2 8		1 2 8	
07			1 2			07	07			1 2	1 2 8		1 2 8	
08			1 2			08	08			1 2	1 2 8		1 2 8	
09			1 2			09	09			1 2	1 2 8		1 2 8	
10			1 2			10	10			1 2	1 2 8		1 2 8	
11			1 2			11	11			1 2	1 2 8		1 2 8	
12			1 2			12	12			1 2	1 2 8		1 2 8	
13			1 2			13	13			1 2	1 2 8		1 2 8	
14			1 2			14	14			1 2	1 2 8		1 2 8	
15			1 2			15	15			1 2	1 2 8		1 2 8	
Check box if additional questionnaire is used <input type="checkbox"/>														
Probe for additional household members. Probe especially for any infants or small children not listed, and others who may not be members of the family (such as servants, friends, physically challenged) but who usually live in the household. Insert names of additional members in the household list and complete form accordingly.														
Now for each man age 15-49 years, write her name and line number and other identifying information in the information panel of a separate Individual Women's Questionnaire. Now for each man age 15-59 years, write his name and line number and other identifying information in the information panel of a separate Individual Men's Questionnaire if the household is selected for the Male Interview. For each child under age 5, write his/her name and line number AND the line number of his/her mother or caretaker in the information panel of a separate Under-5 Questionnaire. You should now have a separate questionnaire for each eligible woman, man and each child under five in the household.														

* Codes for HL3: Relationship to head of household:

01 Head	06 Parent	11 Niece / Nephew
02 Wife / Husband/Cohabiting partner	07 Parent-In-Law	12 Other relative (specify)
03 Son / Daughter	08 Brother / Sister	13 Adopted / Foster / Stepchild
04 Son-In-Law / Daughter-In-Law	09 Brother-In-Law / Sister-In-Law	14 Not related
05 Grandchild	10 Uncle / Aunt	98 Don't know

EDUCATION												ED			
For household members age 3 and above						For household members age 3-24 years									
ED1. Line number	ED2. Name and age	ED3. HAS (name) EVER ATTENDED SCHOOL OR PRE-SCHOOL?	ED4A. WHAT IS THE HIGHEST LEVEL OF SCHOOL (name) ATTENDED?*	ED4B. WHAT IS THE HIGHEST CLASS/ YEAR (name) COMPLETED AT THIS LEVEL?*	ED5. DURING THE 2011-2012 SCHOOL YEAR, DID (name) ATTEND SCHOOL OR PRESCHOOL AT ANY TIME?	ED6. DURING THIS/THAT SCHOOL YEAR, WHICH LEVEL AND CLASS/YEAR IS/WAS (name) ATTENDING?*	ED7. DURING THE PREVIOUS SCHOOL YEAR, THAT IS (2010-2011), DID (name) ATTEND SCHOOL OR PRESCHOOL AT ANY TIME?	ED8. DURING THAT PREVIOUS SCHOOL YEAR, WHICH LEVEL AND CLASS/YEAR DID (name) ATTEND?*							
	Copy from Household Listing Form, HL2 and HL6	1 Yes 2 NO Next Line	If level=0 skip to ED5	Class/Year: 8 DK If less than a class/year completed, enter 0.	1 Yes 2 No ED7	If level=0 skip to ED7 Class/Year 8 DK	1 Yes 2 No Next Line 8 DK Next Line	If level=0 go to next person Class/Year: 8 DK							
Line	Name	Age	Yes No	Level*	Class/Year	Yes No	Level*	Class/Year	Y N DK	Level*	Class/Year				
01			1 2			1 2			1 2 8						
02			1 2			1 2			1 2 8						
03			1 2			1 2			1 2 8						
04			1 2			1 2			1 2 8						
05			1 2			1 2			1 2 8						

EDUCATION (cont'd)										ED	
06			1	2			1	2	8		
07			1	2			1	2	8		
08			1	2			1	2	8		
09			1	2			1	2	8		
10			1	2			1	2	8		
11			1	2			1	2	8		
12			1	2			1	2	8		
13			1	2			1	2	8		
14			1	2			1	2	8		
15			1	2			1	2	8		

* Codes for Educational Level: ED4A, ED6, ED8

0 Pre-school 1 Primary	2 Middle/JSS/JHS 3 Secondary/SSS/SHS	4 Voc/Comm/Tech 5 Post Secondary (Nursing/Teacher Training)	6 Tertiary 8 DK
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WATER AND SANITATION		WS	
WS1. WHAT IS THE MAIN SOURCE OF DRINKING WATER FOR MEMBERS OF YOUR HOUSEHOLD?	Piped water		
	Piped into dwelling	11	11 WS6
	Piped into compound, yard or plot	12	12 WS6
	Piped to neighbour	13	13 WS6
	Public tap / standpipe	14	14 WS3
	Tube Well, Borehole	21	21 WS3
	Dug well		
	Protected well	31	31 WS3
	Unprotected well	32	32 WS3
	Protected spring	41	41 WS3
	Unprotected spring	42	42 WS3
	Rainwater collection	51	51 WS3
	Tanker-truck	61	61 WS6
	Cart with small tank / drum	71	71 WS6
	Surface water		
River/ stream	81	81 WS3	
Dam, lake, pond, canal, irrigation channel)	82	82 WS3	
Bottled water	91	91 WS3	
Sachet water	92	92 WS3	
Other (specify)	96	96 WS3	
WS2. WHAT IS THE MAIN SOURCE OF WATER USED BY YOUR HOUSEHOLD FOR OTHER PURPOSES SUCH AS COOKING AND HAND WASHING?	Piped water		
	Piped into dwelling	11	11 WS6
	Piped into compound, yard or plot	12	12 WS6
	Piped to neighbour	13	13 WS6
	Public tap / standpipe	14	14 WS4
	Tube Well, Borehole	21	
	Dug well		
	Protected well	31	
	Unprotected well	32	
	Water from spring		
	Protected spring	41	
	Unprotected spring	42	
	Rainwater collection	51	
	Tanker-truck	61	61 WS6
	Cart with small tank / drum	71	71 WS6
Surface water			
River/ stream	81		
Dam, lake, pond, canal, irrigation channel)	82		
Other (specify)	96		
WS3. WHERE IS THAT WATER SOURCE LOCATED?	In own dwelling	1	1 WS6
	In own yard / plot	2	2 WS6
	Elsewhere	3	
WS4. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?	Number of minutes _ _ _ _		
	DK 998		

WATER AND SANITATION (cont'd)		WS	
WS5. WHO USUALLY GOES TO THIS SOURCE TO COLLECT THE WATER FOR YOUR HOUSEHOLD? Probe: IS THIS PERSON UNDER AGE 15? WHAT SEX?	Adult woman (age 15+ years)	1	
	Adult man (age 15+ years)	2	
	Female child (under 15)	3	
	Male child (under 15)	4	
	DK	8	
WS6. DO YOU DO ANYTHING TO THE WATER TO MAKE IT SAFER TO DRINK?	Yes	1	2 WS7A
	No	2	
	DK	8	8 WS7A
WS7. WHAT DO YOU USUALLY DO TO MAKE THE WATER SAFER TO DRINK? Probe: ANYTHING ELSE? Record all items mentioned.	Boil	A	
	Add bleach / chlorine	B	
	Strain it through a cloth	C	
	Use water filter (ceramic, sand, composite, etc.)	D	
	Solar disinfection	E	
	Let it stand and settle	F	
	Add camphor/naphthalene	G	
	Add water tablet	H	
	Other (specify)	X	
	DK	Z	
WS7A. Check WS1			
<input type="checkbox"/> WS1 = 11 to 14 Continue with WS7B <input type="checkbox"/> WS1 = 21 or 31 or 41 Go to WS7C <input type="checkbox"/> WS1 = other answers Go to WS8			
WS7B. DURING THE LAST MONTH, HOW OFTEN DID THE WATER FLOW THROUGH THE PIPE?	Everyday	1	1 WS8
	3 to 5 days a week	2	2 WS8
	Once a week	3	3 WS8
	Less than once a week	4	4 WS8
	Twice a month	5	5 WS8
	Less than twice a month	6	6 WS8
DK	8	8 WS8	
WS7C. WHEN WAS THE LAST TIME THE WATER FACILITY BROKE DOWN?	During last week	1	
	One month ago	2	
	Three months ago	3	
	More than 3 month ago	4	
	Never broke down	5	5 WS8
	DK	8	8 WS8
WS7D. LAST TIME THE FACILITY WATER BROKE DOWN, HOW LONG DID IT TAKE TO HAVE IT FIXED AND WORKING AGAIN?	Immediately/Few days	1	
	One week	2	
	During the same month	3	
	More than one month	4	
	Not fixed yet	5	
	DK	8	
WS8. WHAT KIND OF TOILET FACILITY DO MEMBERS OF YOUR HOUSEHOLD USUALLY USE? If "flush", probe: WHERE DOES IT FLUSH TO? If necessary, ask permission to observe the facility.	Flush		
	Flush to piped sewer system	11	
	Flush to septic tank	12	
	Flush to pit (latrine)	13	
	Flush to somewhere else	14	
	Flush, don't know where	15	
	Pit latrine		
	Ventilated Improved Pit latrine (VIP)	21	
	Pit latrine with slab	22	
	Pit latrine without slab / Open pit	23	
	Composting toilet	31	
	Bucket	41	
	Hanging toilet, Hanging latrine	51	
	Mobile Toilet	61	
	No facility, Bush, Field, Beach	95	95 Next Module
Other (specify)	96		
WS9. DO YOU SHARE THIS FACILITY WITH OTHERS WHO ARE NOT MEMBERS OF YOUR HOUSEHOLD?	Yes	1	2 Next Module
	No	2	
WS10. DO YOU SHARE THIS FACILITY ONLY WITH MEMBERS OF OTHER HOUSEHOLDS THAT YOU KNOW, OR IS THE FACILITY OPEN TO THE USE OF THE GENERAL PUBLIC?	Other households only (not public)	1	2 Next Module
	Public facility	2	

WATER AND SANITATION (cont'd)		WS
WS11. HOW MANY HOUSEHOLDS IN TOTAL USE THIS TOILET FACILITY, INCLUDING YOUR OWN HOUSEHOLD?	Number of households (if less than 10)	0__
	Ten or more households	10
	DK	98

HOUSEHOLD CHARACTERISTICS		
HC1A. WHAT IS THE RELIGION OF THE HEAD OF THIS HOUSEHOLD?	Catholic	11
	Protestant	12
	Pentecostal/Charismatic	13
	Deeper Life	14
	Jehovah Witness	15
	SDA	16
	Other Christian	17
	Moslem	21
	Traditional	31
	Spiritualist	32
	Other religion (specify)	96
	No Religion 97	
HC1B. TO WHAT ETHNIC GROUP DOES THE HEAD OF THIS HOUSEHOLD BELONG? Refer to Manual for Ethnic classifications	Akan	11
	Ga/Dangme	12
	Ewe	13
	Guan	14
	Gruma	15
	Mole Dagbani	21
	Grusi	22
	Mande	23
	Non-Ghanaian	24
	Other ethnic group (specify)	96
	HC2. HOW MANY ROOMS IN THIS HOUSEHOLD ARE USED FOR SLEEPING?	Number of rooms
HC3. Main material of the dwelling floor. Record observation.	Natural Floor	
	Earth/sand/mud/mud bricks	11
	Rudimentary floor	
	Wood planks	21
	Palm / Bamboo	22
	Stone	23
	Finished floor	
	Parquet or polished wood	31
	Vinyl tiles/Asphalt strips	32
	Ceramic tiles/marble tiles/porcelain	33
	Cement/Concrete	34
	Terrazzo	36
	Burnt Bricks	37
	Other (specify)	96
HC4. Main material of the roof. Record observation.	Natural Roof	
	Thatch / Palm leaf/Raffia	12
	Rudimentary Roof	
	Palm/Bamboo	22
	Wood planks	23
	Cardboard/Polythene sheets	24
	Mud/mud bricks/earth	25
	Finished Roof	
	Metal Sheet	31
	Parquet/Polished Wood	32
	Ceramic tiles	34
	Cement	35
	Roofing titles	36
	Slate/asbestos	37
Other (specify)	96	
HC5. Main material of the exterior walls. Record observation.	Natural Wall	
	Cane / Palm / Trunks	12
	Earth/mud/mud bricks	13
	Rudimentary Wall	
	Palm/Bamboo with mud	21
	Stone with mud	22
	Plywood	24
	Cardboard	25
	Re-used wood	26
	Finished Wall	
	Stone with lime / cement	32
	Burned Bricks	33
	Cement blocks/concrete.	34
	Wood planks	36
Other (specify)	96	

HOUSEHOLD CHARACTERISTICS (cont'd)			
HC6. WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD MAINLY USE FOR COOKING?	Electricity	01	01 HC8
	Liquefied Petroleum Gas (LPG)	02	02 HC8
	Biogas	04	04 HC8
	Kerosene	05	05 HC8
	Charcoal	07	
	Wood/Firewood	08	
	Straw / Shrubs / Grass	09	
	Animal waste	10	
	Agricultural crop residue/sawdust	11	
	No food cooked in household	95	95 HC8
	Other (specify)	96	
HC6A. IN THIS HOUSEHOLD, IS FOOD COOKED ON AN OPEN FIRE, A COAL POT OR A CLOSED STOVE?	Open fire	1	
	Coal pot	2	
	Closed stove	3	
	Other (specify)	6	
HC7. IS THE COOKING USUALLY DONE IN THE HOUSE, IN A SEPARATE BUILDING, OR OUTDOORS? If 'In the house', probe: IS IT DONE IN A SEPARATE ROOM USED AS A KITCHEN?	In the house		
	In a separate room used as kitchen	1	
	Elsewhere in the house	2	
	In a separate building	3	
	Outdoors	4	
Other (specify)	6		
HC8. DOES YOUR HOUSEHOLD HAVE:		Yes	No
	[A] ELECTRICITY?	1	2
	[B] A RADIO?	1	2
	[C] A BLACK AND WHITE TELEVISION?	1	2
	[C1] A COLOUR TELEVISION?	1	2
	[D] A LAND/FIXED TELEPHONE?	1	2
	[E] A REFRIGERATOR/FREEZER?	1	2
	[F] A WASHING MACHINE?	1	2
	[G] A LAPTOP COMPUTER?	1	2
	[H] A DESKTOP COMPUTER?	1	2
	[I] A VIDEO DECK?	1	2
	[J] A DVD/VCD PLAYER?	1	2
	[K] A SEWING MACHINE?	1	2
	HC9. DOES ANY MEMBER OF YOUR HOUSEHOLD OWN:		Yes
[A] A WATCH?		1	2
[B] A MOBILE TELEPHONE?		1	2
[C] A BICYCLE?		1	2
[D] A MOTORCYCLE OR SCOOTER?		1	2
[E] AN ANIMAL-DRAWN CART?		1	2
[F] A CAR OR TRUCK?		1	2
[G] A CANOE/BOAT WITH A MOTOR?		1	2
[H] A CANOE/BOAT WITHOUT A MOTOR?		1	2
HC10. WHAT IS THE OCCUPANCY STATUS OF YOUR HOUSEHOLD IN THIS DWELLING?	Own	01	
	Rent	02	
	Squatting	03	
	Caretaker	04	
	Perching	05	
	Rent Free	06	
	Other (specify)	96	
HC11. DOES ANY MEMBER OF THIS HOUSEHOLD OWN ANY PIECE OF LAND THAT IS USED OR CAN BE USED FOR AGRICULTURE?	Yes	1	
	No	2	2 HC12A
HC12. HOW MANY (HECTARES/POLES/ACRES/PLOT) OF AGRICULTURAL LAND DO MEMBERS OF THIS HOUSEHOLD OWN? If less than 1, record '00'. If 95 or more, record '95'. If unknown, record '98' for Number. If Unit is not known, circle "998".		Unit Number	
	Hectares	1 ___	
	Poles	2 ___	
	Acres	3 ___	
	Plot	4 ___	
	Ropes	5 ___	
DK	998 ___		
HC12A. APART FROM THE PLOT DESCRIBED IN HC11 ABOVE, DOES ANY MEMBER OF THIS HOUSEHOLD OWN ANY PIECE OF LAND THAT IS USED OR CAN BE USED FOR RESIDENTIAL AND/OR COMMERCIAL PURPOSES?	Yes	1	
	No	2	2 HC13

HOUSEHOLD CHARACTERISTICS (cont'd)			
HC12B. HOW MANY (HECTARES POLES/ACRES/PLOT/ROPES) OF RESIDENTIAL PLOTS DO MEMBERS OF THIS HOUSEHOLD OWN?	Hectares Poles Acres Plot Ropes DK	Unit Number 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 998 ___	
HC13. DOES THIS HOUSEHOLD OWN ANY LIVESTOCK, HERDS, OTHER FARM ANIMALS, OR POULTRY?	Yes No DK	1 2 8	2 HC15
HC14. HOW MANY OF THE FOLLOWING ANIMALS DOES THIS HOUSEHOLD HAVE?	[A] CATTLE, MILK COWS, OR BULLS? [B] HORSES, DONKEYS, OR MULES? [C] GOATS? [D] SHEEP? [E] CHICKENS? [F] PIGS? [G] RABBITS? [H] DUCKS? [I] OTHERS (SPECIFY)	Cattle, milk cows, or bulls Horses, donkeys, or mules Goats Sheep Chickens/Roosters Pigs Rabbits Ducks Other (specify)	Number _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____
HC15. DOES ANY MEMBER OF THIS HOUSEHOLD HAVE A BANK ACCOUNT?	Yes No DK	1 2 8	
HC16. OVER THE PAST 12 MONTHS, HAS ANY MEMBER OF THIS HOUSEHOLD RECEIVED ANY FORM OF SUPPORT (KIND OR CASH) FROM NON- HOUSEHOLD MEMBER?	Yes No DK	1 2 8	
HC17. OVER THE PAST 12 MONTHS, HAS ANY MEMBER OF THIS HOUSEHOLD RECEIVED ANY FORM OF SUPPORT (KIND OR CASH) FROM GOVERNMENT OR OTHER ORGANIZATION?	Yes No DK	1 2 8	2 HC19 8 HC19
HC18. FROM WHICH SOURCE DID THE HOUSEHOLD MEMBER(S) RECEIVE THIS FORM OF SUPPORT?	LEAP District Assembly NGO Religious group Social group Other (specify) DK	A B C D E X Z	
HC19. OVER THE PAST 12 MONTHS, HAS ANY MEMBER OF THIS HOUSEHOLD SENT OUT ANY FORM OF SUPPORT (KIND OR CASH) TO NON- HOUSEHOLD MEMBERS?	Yes No DK	1 2 8	

INSECTICIDE TREATED NETS		TN	
TN1. DOES YOUR HOUSEHOLD HAVE ANY MOSQUITO NETS THAT CAN BE USED WHILE SLEEPING?	Yes No	1 2	
TN2. HOW MANY MOSQUITO NETS DOES YOUR HOUSEHOLD HAVE?	Number of nets	_____	
TN3. Ask the respondent to show you the nets in the household. If more than 3 nets, use additional questionnaire(s).			
	1st Net	2nd Net	3rd Net
TN4. Mosquito net observed?	Observed hanging Observed not hanging Not observed	1 2 3	Observed hanging Observed not hanging Not observed 1 2 3

INSECTICIDE TREATED NETS (cont'd)		TN	
TN5. Observe or ask the brand/type of mosquito net.	Long-lasting treated nets Olyset Permanet Interceptor Netprotect Duranet Icon Life Other (specify) DK brand Pre-treated nets Dawa Dawa Plus MOH/NGO treated net Other (specify) DK brand Other nets 31 DK brand / type	11 12 13 14 15 16 17 18 21 22 23 26 28 98	Long-lasting treated nets Olyset Permanet Interceptor Netprotect Duranet Icon Life Other (specify) DK brand Pre-treated nets Dawa Dawa Plus MOH/NGO treated net Other (specify) DK brand Other nets 31 DK brand / type
TN5A. WHERE DID YOU GET THIS NET?	Public Sector Govt. Hospital/Clinic Govt. Health Centre Govt. Health Post/CHPS Fieldworker/Outreach /Peer Education Campaign Other public Private Medical Sector Private Hosp/Clinic Pharmacy/Chemical/ Drug store/shop Other private medical Other Source NGO/CBAs Shop/Market Street Vendor Other Institution Other Don't know	11 12 13 14 15 16 21 22 26 31 32 33 34 36 98	Long-lasting treated nets Olyset Permanet Interceptor Netprotect Duranet Icon Life Other (specify) DK brand Pre-treated nets Dawa Dawa Plus MOH/NGO treated net Other (specify) DK brand Other nets DK brand / type
TN6. HOW MANY MONTHS AGO DID YOU OBTAIN THIS NET?	Months ago More than 94 mo ago DK / Not sure	_____ 95 98	Months ago More than 94 mo ago DK / Not sure

TN6A. HOW MUCH DID IT COST YOU TO ACQUIRE THIS NET (GH¢)?	Cedis _____ DK9998	Cedis _____ DK9998	Cedis _____ DK9998
TN7. Check TN5 for type of net	<input type="checkbox"/> Long-lasting (11-18) TN11 <input type="checkbox"/> Pre-treated (21-28) TN9 <input type="checkbox"/> Else Continue	<input type="checkbox"/> Long-lasting (11-18) TN11 <input type="checkbox"/> Pre-treated (21-28) TN9 <input type="checkbox"/> Else Continue	<input type="checkbox"/> Long-lasting (11-18) TN11 <input type="checkbox"/> Pre-treated (21-28) TN9 <input type="checkbox"/> Else Continue
TN8. WHEN YOU GOT THE NET, WAS IT ALREADY TREATED WITH AN INSECTICIDE TO KILL OR REPEL MOSQUITOES?	Yes No DK / Not sure	1 2 8	Yes No DK / Not sure 1 2 8
TN9. SINCE YOU GOT THE NET, HAS IT EVER BEEN SOAKED OR DIPPED IN A LIQUID TO KILL OR REPEL MOSQUITOES?	Yes No DK / Not sure	1 2 8	Yes No DK / Not sure 1 2 8

INSECTICIDE TREATED NETS (cont'd)			TN			
TN10. HOW MANY MONTHS AGO WAS THE NET LAST SOAKED OR DIPPED? If less than one month, record "00"	Months ago	___	Months ago	___	Months ago	___
	More than 24 mo. ago	95	More than 24 mo. ago	95	More than 24 mo. ago	95
	DK / Not sure	98	DK / Not sure	98	DK / Not sure	98
TN11. DID ANYONE SLEEP UNDER THIS MOSQUITO NET LAST NIGHT?	Yes	1	Yes	1	Yes	1
	No	2	No	2	No	2
		TN13		TN13		TN13
	DK / Not sure	8	DK / Not sure	8	DK / Not sure	8
		TN13		TN13		TN13
TN12. WHO SLEPT UNDER THIS MOSQUITO NET LAST NIGHT? Record the person's line number from the household listing form If someone not in the household list slept under the mosquito net, record "00"	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
TN13.	Go back to TN4 for next net. If no more nets, go to TN14		Go back to TN4 for next net. If no more nets, go to TN14		Go back to TN4 for next net. If no more nets, go to TN14	
			Check box if additional questionnaire used <input type="checkbox"/>			

INSECTICIDE TREATED NETS			TN	
TN14. DURING THE LAST 12 MONTHS, HAS ANY MEMBER OF YOUR HOUSEHOLD DISPOSED OFF ANY TREATED MOSQUITO NETS?	Yes	1	2 Next Module 8 Next Module	
	No	2		
	DK	8		
TN15. NOW I WANT TO TALK ABOUT THE LAST TREATED NET THAT YOU DISPOSED OFF. HOW DID YOU DISPOSE OFF YOUR LAST TREATED MOSQUITO NET?	Burned	1		
	Buried	2		
	Garbage/refuse dump	3		
	Reused for other purposes	4		
	Other (specify)	6		
TN16. HOW LONG DID YOU USE IT BEFORE DISPOSING IT OFF?	Less than 2 years	1		
	2 to 4 years	2		
	More than 4 years	3		
TN17. WHAT WAS THE MAIN REASON FOR DISPOSING OFF THIS NET?	Torn	1		
	Could not repel mosquitoes anymore	2		
	Got a new one	3		
	Other (specify)	6		

INDOOR RESIDUAL SPRAYING			IR	
IR1. AT ANY TIME IN THE PAST 12 MONTHS, HAS ANYONE COME INTO YOUR DWELLING TO SPRAY THE INTERIOR WALLS AGAINST MOSQUITOES?	Yes	1	2 Next Module 8 Next Module	
	No	2		
	DK	8		
IR2. WHO SPRAYED THE INTERIOR WALLS OF YOUR DWELLING? Circle all that apply.	Government worker / program	A		
	Private company	B		
	Non-governmental organization	C		
	Private individual	D		
	Other (specify)	X		
	DK	Z		

CHILD DISCIPLINE						CD	
Table 1: Children Aged 2-14 Years Eligible for Child Discipline Questions							
<ul style="list-style-type: none"> If there is no child aged 2-14 years in the household, skip to Next Module. List each of the children aged 2-14 years below in the order they appear in the Household Listing Form. Do not include other household members outside of the age range 2-14 years. Record the line number, name, sex, and age for each child. Then record the total number of children aged 2-14 in the box provided (CD6). 							
CD1. Rank number	CD2. Line number from HL1	CD3. Name from HL2	CD4. Sex from HL4	CD5. Age from HL6			
Rank	Line	Name	M	F	Age		
1	_0_7_	Kwame	1	2	_1_3_		
2	_0_8_	Kofi	1	2	_1_0_		
3	_1_0_	Adwoa	1	2	_0_8_		
4	_1_1_	Afi	1	2	_0_5_		
5	_1_6_	Fortune	1	2	_1_1_		
6	___		1	2	___		
7	___		1	2	___		
8	___		1	2	___		
CD6.	Total children age 2-14 years				_0_5_		
<ul style="list-style-type: none"> If there is only one child age 2-14 years in the household, skip table 2 and go to CD8; write down '1' and continue with CD9 							

Table 2: Selection of Random Child for Child Discipline Questions							
<ul style="list-style-type: none"> Use Table 2 to select one child between the ages of 2 and 14 years, if there is more than one child in that age range in the household. Check the last digit of the household number (HH2) from the cover page. This is the number of the row you should go to in the table below. Check the total number of eligible children (2-14) in CD6 above. This is the number of the column you should go to. Find the box where the row and the column meet and circle the number that appears in the box. This is the rank number of the child (CD1) about whom the questions will be asked. 							

CD7. Total Number of Eligible Children in the Household (CD6)								
Last digit of household number (HH2)	1	2	3	4	5	6	7	8+
0	1	2	2	4	3	6	5	4
1	1	1	3	1	4	1	6	5
2	1	2	1	2	5	2	7	6
3	1	1	2	3	1	3	1	7
4	1	2	3	4	2	4	2	8
5	1	1	1	1	3	5	3	1
6	1	2	2	2	4	6	4	2
7	1	1	3	3	5	1	5	3
8	1	2	1	4	1	2	6	4
9	1	1	2	1	2	3	7	5
CD8. Record the rank number of the selected child								_5_

CHILD DISCIPLINE			CD	
CD9. Write the name and line number of the child selected for the module from CD3 and CD2, based on the rank number in CD8.	Name			
	Line number	___		
CD10. ADULTS USE CERTAIN WAYS TO TEACH CHILDREN THE RIGHT BEHAVIOUR OR TO ADDRESS A BEHAVIOUR PROBLEM. I WILL READ VARIOUS METHODS THAT ARE USED AND I WANT YOU TO TELL ME IF YOU OR ANYONE ELSE IN YOUR HOUSEHOLD HAS USED THIS METHOD WITH (name) IN THE PAST MONTH.				
CD11. TOOK AWAY PRIVILEGES, FORBADE SOMETHING (name) LIKED OR DID NOT ALLOW HIM/HER TO LEAVE HOUSE.	Yes	1		
	No	2		
CD11A. IGNORED/REFUSED TO COMMUNICATE TO (name).	Yes	1		
	No	2		

CHILD DISCIPLINE (cont'd)		CD	
CD12. EXPLAINED WHY (name)'S BEHAVIOR WAS WRONG.	Yes No	1 2	
CD13. SHOOK HIM/HER.	Yes No	1 2	
CD14. SHOUTED, YELLED AT OR SCREAMED AT HIM/HER.	Yes No	1 2	
CD15. GAVE HIM/HER SOMETHING ELSE TO DO.	Yes No	1 2	
CD16. SPANKED, HIT, PUSHED OR SLAPPED HIM/HER ON THE BOTTOM WITH BARE HAND.	Yes No	1 2	
CD17. HIT HIM/HER ON THE BOTTOM OR ELSEWHERE ON THE BODY WITH SOMETHING LIKE A BELT, COMB, HAIRBRUSH, CANE, STICK OR OTHER HARD OBJECT.	Yes No	1 2	
CD18. CALLED HIM/HER DUMB, LAZY, OR ANOTHER NAME LIKE THAT.	Yes No	1 2	
CD19. HIT OR SLAPPED HIM/HER ON THE FACE, HEAD OR EARS.	Yes No	1 2	
CD20. HIT OR SLAPPED HIM/HER ON THE HAND, ARM, OR LEG.	Yes No	1 2	
CD21. BEAT HIM/HER UP, THAT IS HIT HIM/HER OVER AND OVER AS HARD AS ONE COULD.	Yes No	1 2	
CD22. DO YOU BELIEVE THAT IN ORDER TO BRING UP, RAISE, OR EDUCATE A CHILD PROPERLY, THE CHILD NEEDS TO BE PHYSICALLY PUNISHED?	Yes No Don't know / No opinion	1 2 8	

HAND WASHING		HW	
HW1. PLEASE SHOW ME WHERE MEMBERS OF YOUR HOUSEHOLD MOST OFTEN WASH THEIR HANDS.	Observed	1	
	Not observed		
	Not in dwelling / plot / yard	2	2 HW4
	No permission to see	3	3 HW4
	Other reason	6	6 HW4
HW2. Observe presence of water at the specific place for hand washing.	Water is available	1	
Verify by checking the tap/pump, or basin, bucket, water container or similar objects for presence of water.	Water is not available	2	
HW3. Record if soap or detergent or other traditional detergents are present at the specific place for hand washing.	Washing Soap (e.g. Key soap)	A	A HH19
Circle all that apply. Skip to Next Module if any soap or detergent code (A, B, C, D, E or X) is circled. If "None" (Y) is circled, continue with HW4.	Detergent (Powder / Liquid / Paste)	B	B HH19
	Liquid hand washing soap	C	C HH19
	Ash	D	D HH19
	Toilet Soap (e.g. Lux)	E	E HH19
	Other (specify)	X	X HH19
	None	Y	
	HW4. DO YOU HAVE ANY SOAP OR DETERGENT OR ANY OTHER TRADITIONAL DETERGENTS IN YOUR HOUSEHOLD FOR WASHING HANDS?	Yes No	1 2

HAND WASHING (continued)		HW	
HW5. CAN YOU PLEASE SHOW IT TO ME?	Washing Soap (e.g. Key soap)	A	
Record observation. Circle all that apply.	Detergent (Powder / Liquid / Paste)	B	
	Liquid handwashing soap	C	
	Toilet Soap (e.g. Lux)	E	
	Ash	D	
	Other (specify)	X	
	Not able / Does not want to show	Y	
HH19. Record the time.	Hour and minutes ___ : ___		

SALT IODIZATION		SI	
SI1. WE WOULD LIKE TO CHECK WHETHER THE SALT USED IN YOUR HOUSEHOLD IS IODIZED. MAY I HAVE A SAMPLE OF THE SALT USED TO COOK MEALS IN YOUR HOUSEHOLD?	Not iodized 0 PPM	1	
	More than 0 PPM & less than 15 PPM	2	
	15 PPM or more	3	
	No salt in the house	6	6 HH20
Once you have tested the salt, circle the number that corresponds to the test outcome.	Salt not tested	7	

SI1A. Has the household been selected for male questionnaire?

Check HH5A=1

Yes Collect salt sample from the household for further testing.

No Skip to HH20

SI2. HAS THE SALT SAMPLE BEEN COLLECTED FROM THIS HOUSEHOLD?	Yes No Refused	1 2 3	
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HH20. Does any eligible woman age 15-49 reside in the household?

Check Household Listing Form, column HL7 for any eligible woman. You should have a questionnaire with the Information Panel filled in for each eligible woman.

Yes Go to QUESTIONNAIRE FOR INDIVIDUAL WOMEN Administer the questionnaire to the first eligible woman.

No Continue.

HH21. Does any child under the age of 5 reside in the household?

Check Household Listing Form, column HL9 for any eligible child under age 5. You should have a questionnaire with the Information Panel filled in for each eligible child.

Yes Go to QUESTIONNAIRE FOR CHILDREN UNDER FIVE Administer the questionnaire to mother or caretaker of the first eligible child.

No Continue.

SALT IODIZATION (cont'd)

SI

HH22. [IF THIS HOUSEHOLD WAS SELECTED FOR THE MALE QUESTIONNAIRE] Does any eligible man age 15-59 reside in the household?

Check Household Listing Form, column HL7A for any eligible man.

You should have a questionnaire with the Information Panel filled in for each eligible man.

Yes Go to QUESTIONNAIRE FOR INDIVIDUAL MEN
Administer the questionnaire to the first eligible man.

No End the interview by thanking the respondent for his/her cooperation.
Gather together all questionnaires for this household and complete HH8 TO HH15B on
the cover page.

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

MICS		WOMEN QUESTIONNAIRE GHANA 2011	
WOMAN'S INFORMATION PANEL		WM	
This questionnaire is to be administered to all women age 15 through 49 (see Household Listing Form, column HL7). A separate questionnaire should be used for each eligible woman.			
WM1. Cluster Number:	WM2. Household number:		
WM3. Woman's name:	WM4. Woman's line number:		
WM5. Interviewer name and number:	WM6. Day / Month / Year of interview:		
Name of Region: _____	Name of District: _____		
Repeat greeting if not already read to this woman:		If greeting at the beginning of the household questionnaire has already been read to this woman, then read the following:	
WE ARE FROM GHANA STATISTICAL SERVICE. WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT 45 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.		NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 45 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.	
MAY I START NOW? <input type="checkbox"/> Yes, permission is given Go to WM10 to record the time and then begin the interview. If yes ask for all documents for her and for her children as IDs, maternity card, child's immunization card, birth certificate, antenatal card, baptismal card and any other card on which the child's records are written <input type="checkbox"/> No, permission is not given Complete WM7. Discuss this result with your supervisor.			
WM7. Result of woman's interview	Completed	01	
	Not at home	02	
	Refused	03	
	Partly completed	04	
	Incapacitated	05	
	Other (specify)	96	
WM8. Field edited by (Name and number):	WM9. Data entry clerk (Name and number):		
Name _____	Name _____		
WM10. Record the time.	Hour and minutes _____ : _____		

WOMAN'S BACKGROUND		WB	
WB1. IN WHAT MONTH AND YEAR WERE YOU BORN?	Date of birth Month _____ DK month 98 Year _____ DK year 9998		
WB2. HOW OLD ARE YOU? Probe: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?	Age (in completed years) _____		
Compare and correct WB1 and/or WB2 if inconsistent			
WB3. HAVE YOU EVER ATTENDED SCHOOL? (INCLUDING PRESCHOOL)	Yes 1 No 2	2	WB7
WB4. WHAT IS THE HIGHEST LEVEL OF SCHOOL YOU ATTENDED?	Preschool 0 Primary 1 Middle/JSS/JHS 2 Secondary/SSS/SHS 3 Voc/Comm/Tech 4 Post Secondary (Nursing/Teacher Trg) 5 Tertiary 6	0	WB7

WOMAN'S BACKGROUND (cont'd)		WB	
WB5. WHAT IS THE HIGHEST CLASS/YEAR YOU COMPLETED AT THAT LEVEL?	Class/Year _____		
If no class/year completed at that level, enter "0"			
WB6. Check WB4: <input type="checkbox"/> Secondary or Higher (WB4=3 or WB4=4 or WB4=5 or WB4=6) Go to WB8 <input type="checkbox"/> Primary /Middle/JSS/JHS (WB4=1 or WB4=2) Continue with WB7			
WB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME. Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe: CAN YOU READ PART OF THE SENTENCE TO ME?	Cannot read at all Able to read only parts of sentence Able to read whole sentence No sentence in required language (specify language) Blind / mute, visually / speech impaired	1 2 3 4 5	
WB8. WHAT IS YOUR RELIGION?	Catholic Protestant Pentecostal/Charismatic Deeper Life Jehovah Witness SDA Other Christian Moslem Traditional Spiritualist Other religion (specify) No Religion	11 12 13 14 15 16 17 21 31 32 96 97	
WB9. WHAT IS YOUR ETHNIC GROUP?	Akan Ga/Dangme Ewe Guan Gruma Mole Dagbani Grusi Mande Non-Ghanaian Other ethnic group (specify)	11 12 13 14 15 21 22 23 24 96	

ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY		MT	
MT1. Check WB7: <input type="checkbox"/> Question left blank (Respondent has Secondary or Higher education) Continue with MT2 <input type="checkbox"/> Able to read or no sentence in required language (codes 2, 3 or 4) Continue with MT2 <input type="checkbox"/> Cannot read at all or blind (codes 1 or 5) Go to MT3			
MT2. DO YOU READ A NEWSPAPER OR MAGAZINE ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	

ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY (cont'd)		MT	
MT3. DO YOU LISTEN TO THE RADIO ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	
MT4. DO YOU WATCH TELEVISION ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	
MT6. HAVE YOU EVER USED A COMPUTER?	Yes No	1 2	
MT7. HAVE YOU EVER USED A COMPUTER IN THE LAST 12 MONTHS?	Yes No	1 2	
MT8. DURING THE LAST ONE MONTH, DID YOU USE A COMPUTER ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	
MT9. HAVE YOU EVER USED THE INTERNET?	Yes No	1 2	
MT10. HAVE YOU EVER USED THE INTERNET IN THE LAST 12 MONTHS? If necessary, probe for use from any location, with any device.	Yes No	1 2	
MT11. DURING THE LAST ONE MONTH, DID YOU USE THE INTERNET ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	

INFANT/CHILD MORTALITY		CM	
All questions refer only to LIVE births.			
CM1. NOW I WOULD LIKE TO ASK ABOUT ALL THE BIRTHS YOU HAVE HAD DURING YOUR LIFE. HAVE YOU EVER GIVEN BIRTH?	Yes No	1 2	2 CM8
CM4. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE NOW LIVING WITH YOU?	Yes No	1 2	2 CM6
CM5. HOW MANY SONS LIVE WITH YOU? HOW MANY DAUGHTERS LIVE WITH YOU? If none, record '00'.	Sons at home Daughters at home	— — — —	
CM6. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE ALIVE BUT DO NOT LIVE WITH YOU?	Yes No	1 2	2 CM8
CM7. HOW MANY SONS ARE ALIVE BUT DO NOT LIVE WITH YOU? HOW MANY DAUGHTERS ARE ALIVE BUT DO NOT LIVE WITH YOU? If none, record '00'.	Sons elsewhere Daughters elsewhere	— — — —	
CM8. HAVE YOU EVER GIVEN BIRTH TO A BOY OR GIRL WHO WAS BORN ALIVE BUT LATER DIED? If "No" probe by asking: I MEAN, TO A CHILD WHO EVER BREATHED OR CRIED OR SHOWED OTHER SIGNS OF LIFE – EVEN IF HE OR SHE LIVED ONLY A FEW MINUTES OR HOURS?	Yes No	1 2	2 CM10
CM9. HOW MANY BOYS HAVE DIED? HOW MANY GIRLS HAVE DIED? If none, record '00'.	Boys dead Girls dead	— — — —	
CM10. Sum answers to CM5, CM7, and CM9.	Sum	— —	

INFANT/CHILD MORTALITY (cont'd)		CM
CM11. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE HAD IN TOTAL (total number in CM10) LIVE BIRTHS DURING YOUR LIFE. IS THIS CORRECT?		
<input type="checkbox"/> Yes. Check below: <ul style="list-style-type: none"> <input type="checkbox"/> No live births Go to ILLNESS SYMPTOMS Module <input type="checkbox"/> One or more live births Continue with the BIRTH HISTORY module 		
<input type="checkbox"/> No Check responses to CM1-CM10 and make corrections as necessary before proceeding to the BIRTH HISTORY Module or ILLNESS SYMPTOMS Module		

BIRTH HISTORY											BH						
NOW I WOULD LIKE TO RECORD THE NAMES OF ALL OF YOUR BIRTHS, WHETHER STILL ALIVE OR NOT, STARTING WITH THE FIRST ONE YOU HAD. Record names of all of the births in BH1. Record twins and triplets on separate lines. If there are more than 14 births, use an additional questionnaire.																	
BH Line No	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS?	BH3. IS (name) A BOY OR A GIRL?	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN?	BH5. IS (name) STILL ALIVE?	BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY?	BH7. IS (name) LIVING WITH YOU?	BH8. Record household line number of child (from HL1)	BH9. If dead: HOW OLD WAS (name) WHEN HE/SHE DIED?	BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH?	Y	N	Y	N			
		1 Single 2 Multiple	1 Boy 2 Girl	Probe: WHAT IS HIS/HER BIRTHDAY?	1 Yes 2 No	Record age in completed years.	1 Yes 2 No	Record "00" if child is not listed.	If "1 year", probe: HOW MANY MONTHS OLD WAS (name)? Record days if less than 1 month; record months if less than 2 years; or years	1 Yes 2 No							
Line	Name	S	M	B	G	Month	Year	Y	N	Age	Y	N	Line No	Unit	Number	Y	N
01		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													Next Line			Add Birth	Next Birth
02		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
03		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
04		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
05		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
06		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
07		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
08		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
09		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
10		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
11		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
12		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
13		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth
14		1	2	1	2			1	2		1	2		Days 1 Months 2 Years 3		1	2
													BH10			Add Birth	Next Birth

BIRTH HISTORY (cont'd)		BH
CM12. Compare number in CM10 with number of births in the Birth History above and check:		
<input type="checkbox"/> Numbers are same Continue with CM13		
<input type="checkbox"/> Numbers are different Probe and reconcile		
CM13. Check BH4 in BIRTH HISTORY: Last birth occurred within the last 2 years, that is, since (day and month of interview) in 2009		
<input type="checkbox"/> No live birth in last 2 years. Go to ILLNESS SYMPTOMS Module.		
<input type="checkbox"/> One or more live births in last 2 years. Record name of last born child and continue with CM14		
Name of child _____		
CM14: Check BH5 in BIRTH HISTORY if last child born during the last 2 years (since 2009) is alive or dead		
<input type="checkbox"/> Alive Go to Next Module.		
<input type="checkbox"/> Not Alive Continue with CM15		
CM15 WAS (NAME) REGISTERED WITH THE BIRTHS AND DEATHS REGISTRY WHEN S/HE DIED?	Yes	
	1	
	No	
	2	
	DK	
	8	

DESIRE FOR LAST BIRTH		DB
This module is to be administered to all women with a live birth in the 2 years preceding date of interview.		
Check child mortality module CM13 and record name of last-born child here _____.		
Use this child's name in the following questions, where indicated.		
DB1. WHEN YOU GOT PREGNANT WITH (name), DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes	1
	No	2
DB2. DID YOU WANT TO HAVE A BABY LATER ON, OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later	1
	No more	2
DB3. HOW MUCH LONGER DID YOU WANT TO WAIT?	Months	1 ___
	Years	2 ___
	DK	998

MATERNAL AND NEWBORN HEALTH		MN
This module is to be administered to all women with a live birth in the 2 years preceding date of interview.		
Check child mortality module CM13 and record name of last-born child here _____.		
Use this child's name in the following questions, where indicated.		
MN1. DID YOU SEE ANYONE FOR ANTENATAL CARE DURING YOUR PREGNANCY WITH (name)?	Yes	1
	No	2
		2 MN5

MATERNAL AND NEWBORN HEALTH (cont'd)		MN	
MN2. WHOM DID YOU SEE?	Health professional:		
Probe:	Doctor	A	
ANYONE ELSE?	Nurse / Midwife	B	
	Auxiliary midwife	C	
	Other person		
	Traditional birth attendant	F	
	Community health worker	G	
Probe for the type of person seen and circle all answers given.	Other (specify)	X	
MN3. HOW MANY TIMES DID YOU RECEIVE ANTENATAL CARE DURING THIS PREGNANCY?	Number of times ___		
	DK	98	
MN4. AS PART OF YOUR ANTENATAL CARE DURING THIS PREGNANCY, WERE ANY OF THE FOLLOWING DONE AT LEAST ONCE:	Yes	No	
[A] WAS YOUR BLOOD PRESSURE MEASURED?	Blood pressure	1	2
[B] DID YOU GIVE A URINE SAMPLE?	Urine sample	1	2
[C] DID YOU GIVE A BLOOD SAMPLE?	Blood sample	1	2
MN5. DO YOU HAVE A CARD OR OTHER DOCUMENT WITH YOUR OWN IMMUNIZATIONS LISTED?	Yes (card seen)	1	
	Yes (card not seen)	2	
	No	3	
MAY I SEE IT PLEASE?	DK	8	
If a card is presented, use it to assist with answers to the following questions.			
MN6. WHEN YOU WERE PREGNANT WITH (name), DID YOU RECEIVE ANY INJECTION IN THE ARM OR SHOULDER TO PREVENT THE BABY FROM GETTING TETANUS, THAT IS CONVULSIONS AFTER BIRTH?	Yes	1	2 MN9
	No	2	
	DK	8	8 MN9
MN7. HOW MANY TIMES DID YOU RECEIVE THIS TETANUS INJECTION DURING YOUR PREGNANCY WITH (name)?	Number of times ___		
	DK	8	8 MN9
If 7 or more times, record '7'.			
MN8. How many tetanus injections during last pregnancy were reported in MN7?			
	<input type="checkbox"/> At least two tetanus injections during last pregnancy. Go to MN12		
	<input type="checkbox"/> Fewer than two tetanus injections during last pregnancy. Continue with MN9		
MN9. DID YOU RECEIVE ANY TETANUS INJECTION AT ANY TIME BEFORE YOUR PREGNANCY WITH (name), EITHER TO PROTECT YOURSELF OR ANOTHER BABY?	Yes	1	2 MN12
	No	2	
	DK	8	8 MN12
MN10. HOW MANY TIMES DID YOU RECEIVE A TETANUS INJECTION BEFORE YOUR PREGNANCY WITH (name)?	Number of times ___		
	DK	8	8 MN12
If 7 or more times, record '7'.			
MN11. HOW MANY YEARS AGO DID YOU RECEIVE THE LAST TETANUS INJECTION BEFORE YOUR PREGNANCY WITH (name)?	Years ago ___		
MN12. Check MN1 for presence of antenatal care during this pregnancy:			
	<input type="checkbox"/> Yes, antenatal care received. Continue with MN13		
	<input type="checkbox"/> No antenatal care received Go to MN17		
MN13. DURING ANY OF THESE ANTENATAL VISITS FOR THE PREGNANCY, DID YOU TAKE ANY MEDICINE IN ORDER TO PREVENT YOU FROM GETTING MALARIA?	Yes	1	2 MN17
	No	2	
	DK	8	8 MN17
MN14. WHICH MEDICINES DID YOU TAKE TO PREVENT MALARIA?	SP / Fansidar / Malafan	A	B MN17
	Chloroquine	B	X MN17
Circle all medicines taken. If type of medicine is not determined, show typical anti-malarial to respondent.	Other (specify)	X	Z MN17
	DK	Z	

MATERNAL AND NEWBORN HEALTH (cont'd)		MN	
MN15A. HOW MANY MONTHS WERE YOU PREGNANT WHEN YOU FIRST TOOK SP/FANSIDAR/MALAFAN?	Less than 3 months From 3 to 8 months More than 8 months DK 98	1 2 3	
MN16. DURING THIS PREGNANCY, HOW MANY TIMES DID YOU TAKE SP/FANSIDAR?	Number of times ___ DK 98		
MN16A. DID YOU TAKE THE (number of times of MN16) DOSES IN THE PRESENCE OF A HEALTH WORKER?	Yes, all Yes, some No	1 2 3	
MN16B. DID YOU EXPERIENCE ANY SIDE EFFECTS AFTER HAVING TAKEN THE FIRST DOSE OF SP/FANSIDAR ?	Yes No	1 2	2 MN17
MN16C. WHAT SIDE EFFECTS DID YOU EXPERIENCE AFTER HAVING TAKEN THIS FIRST DOSE OF SP/FANSIDAR? Probe: ANY OTHER SIDE EFFECTS?	Skin rashes Blisters on face/ hands/ feet/etc Itching Yellow colouration of urine/ eyes Other (specify) _____	A B C D X	
MN17. WHO ASSISTED WITH THE DELIVERY OF (name)? Probe: ANYONE ELSE? Probe for the type of person assisting and circle all answers given. If respondent says no one assisted, probe to determine whether any adults were present at the delivery.	Health professional: Doctor Nurse / Midwife Auxiliary midwife Other person Traditional birth attendant Community health worker Relative / Friend Other (specify) No one	A B C F G H X Y	
MN18. WHERE DID YOU GIVE BIRTH TO (NAME)? Probe to identify the type of source. If unable to determine whether public or private, write the name of the place. (Name of place)	Home Your home Other home Public sector Govt. hospital/Polyclinic Govt. clinic / health centre Govt. health post/CHPS compound Other public (specify) Private Medical Sector Private hospital Private clinic Private maternity home Other private medical (specify) Other (specify)	11 12 21 22 23 26 31 32 33 36 96	11 MN20 12 MN20 96 MN20
MN19. WAS (name) DELIVERED BY CAESAREAN SECTION? THAT IS, DID THEY CUT YOUR BELLY OPEN TO TAKE THE BABY OUT?	Yes No	1 2	
MN20. WHEN (name) WAS BORN, WAS HE/SHE VERY LARGE, LARGER THAN AVERAGE, AVERAGE, SMALLER THAN AVERAGE, OR VERY SMALL?	Very large Larger than average Average Smaller than average Very small DK	1 2 3 4 5 8	
MN21. WAS (name) WEIGHED AT BIRTH?	Yes No DK	1 2 8	2 MN23 8 MN23
MN22. HOW MUCH DID (name) WEIGH? Record weight from health card, if available.	From card 1 (kg) ___ . ___ From recall... ..2 (kg) ___ . ___ DK 99998		

MATERNAL AND NEWBORN HEALTH (cont'd)		MN	
MN23. HAS YOUR MENSTRUAL PERIOD RETURNED SINCE THE BIRTH OF (name)?	Yes No	1 2	
MN24. DID YOU EVER BREASTFEED (name)?	Yes No	1 2	2 Next Module
MN25. HOW LONG AFTER BIRTH DID YOU FIRST PUT (name) TO THE BREAST? If less than 1 hour, record '00' hours. If less than 24 hours, record hours. Otherwise, record days.	Immediately 000 Hours 1 ___ Days 2 ___ Don't know / remember 998		
MN26. IN THE FIRST THREE DAYS AFTER DELIVERY, WAS (name) GIVEN ANYTHING TO DRINK OTHER THAN BREAST MILK?	Yes No	1 2	2 Next Module
MN27. WHAT WAS (name) GIVEN TO DRINK? Probe: ANYTHING ELSE?	Milk (other than breast milk) Plain water Sugar or glucose water Gripe water Sugar-salt-water solution Fruit juice Infant formula Tea / Infusions Honey Other (specify)	A B C D E F G H I X	

POST-NATAL HEALTH CHECKS		PN	
This module is to be administered to all women with a live birth in the 2 years preceding the date of interview.			
Check child mortality module CM13 and record name of last-born child here _____. Use this child's name in the following questions, where indicated.			
PN1. Check MN18: Was the child delivered in a health facility? <input type="checkbox"/> Yes, the child was delivered in a health facility (MN18=21-26 or 31-36) Continue with PN2 <input type="checkbox"/> No, the child was not delivered in a health facility (MN18=11-12 or 96) Go to PN6			
PN2. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT WHAT HAPPENED IN THE HOURS AND DAYS AFTER THE BIRTH OF (name). YOU HAVE SAID THAT YOU GAVE BIRTH IN (name or type of facility in MN18). HOW LONG DID YOU STAY THERE AFTER THE DELIVERY? If less than one hour, record '00' for Hours If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.	Hours Days Weeks Don't know / remember	1 ___ 2 ___ 3 ___ 998	
PN3. I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (name), CHECKING THE CORD, OR SEEING IF (name) IS OK. BEFORE YOU LEFT THE (name or type of facility in MN18), DID ANYONE CHECK ON (name)'S HEALTH?	Yes No	1 2	
PN4. AND WHAT ABOUT CHECKS ON YOUR HEALTH – I MEAN, SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU. DID ANY HEALTH CARE PROVIDER CHECK ON YOUR HEALTH WHILE YOU WERE STILL AT THE (name or type or facility in MN18)?	Yes No	1 2	

POST-NATAL HEALTH CHECKS (cont'd)		PN	
NOW I WOULD LIKE TO TALK TO YOU ABOUT WHAT HAPPENED AFTER YOU LEFT (name or type of facility in MN18).	Yes	1	1 PN11
	No	2	
PN5. DID ANY HEALTH CARE PROVIDER CHECK ON (child's name)'S HEALTH AFTER YOU LEFT (name or type of facility in MN18) ?			2 PN16
<p>PN6. Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?</p> <p><input type="checkbox"/> Yes, delivery assisted by a health professional or other health worker (MN17=A-G) Continue with PN7</p> <p><input type="checkbox"/> No, delivery not assisted by a health professional or other health worker (A-G not circled in MN17) Go to PN10</p>			
YOU HAVE ALREADY SAID THAT (person or persons in MN17) ASSISTED WITH THE BIRTH. NOW I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY, FOR EXAMPLE EXAMINING (name), CHECKING THE CORD, OR SEEING IF (name) IS OK.	Yes	1	
	No	2	
PN7. AFTER THE DELIVERY WAS OVER AND BEFORE (person or persons in MN17) LEFT YOU, DID (person or persons in MN17) CHECK ON (name)'S HEALTH?			
PN8. AND DID (person or persons in MN17) CHECK ON YOUR HEALTH BEFORE LEAVING?	Yes	1	
	No	2	
BY CHECK ON YOUR HEALTH, I MEAN ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.			
PN9. AFTER THE (person or persons in MN17) LEFT YOU, DID ANYONE CHECK ON THE HEALTH OF (name)?	Yes	1	1 PN11
	No	2	2 PN18
PN10. I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (name), CHECKING THE CORD, OR SEEING IF THE BABY IS OK.	Yes	1	
	No	2	2 PN19
AFTER (name) WAS DELIVERED, DID ANYONE CHECK ON HIS/HER HEALTH?			
PN11. DID SUCH A CHECK ON (name) HAPPEN ONLY ONCE, OR MORE THAN ONCE?	Once	1	1 PN12A
	More than once	2	2 PN12B

POST-NATAL HEALTH CHECKS (cont'd)		PN	
PN12A. HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN?	Hours	1 ___	
PN12B. HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN?	Days	2 ___	
	Weeks	3 ___	
If less than one hour, record '00' for Hours If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.	Don't know / remember	998	
PN13. WHO CHECKED ON (name)'S HEALTH AT THAT TIME?	Health professional		
Probe:	Doctor	A	
ANYONE ELSE?	Nurse / Midwife	B	
	Auxiliary midwife	C	
	Other person		
	Traditional birth attendant	F	
	Community health worker	G	
	Relative / Friend	H	
Probe for the type of person seen and circle all answers given.	Other (specify)	X	
PN14. WHERE DID THIS CHECK TAKE PLACE?	Home		
Probe to identify the type of source.	Your home	11	
	Other home	12	
If unable to determine whether public or private, write the name of the place.	Public sector		
(Name of place)	Govt. hospital/Polyclinic	21	
	Govt. clinic / health centre	22	
	Govt. health post//CHPS compound	23	
	Other public (specify)	26	
	Private medical sector		
	Private hospital	31	
	Private clinic	32	
	Private maternity home	33	
	Other private medical (specify)	36	
	Other (specify)	96	
<p>PN15. Check MN18: Was the child delivered in a health facility?</p> <p><input type="checkbox"/> Yes, the child was delivered in a health facility (MN18=21-26 or 31-36) Continue with PN16</p> <p><input type="checkbox"/> No, the child was not delivered in a health facility (MN18=11-12 or 96) Go to PN17</p>			
PN16. AFTER YOU LEFT (name or type of facility in MN18), DID ANYONE CHECK ON YOUR HEALTH?	Yes	1	1 PN20
	No	2	2 Next Module
<p>PN17. Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?</p> <p><input type="checkbox"/> Yes, delivery assisted by a health professional or other health worker (MN17=A-G) Continue with PN18</p> <p><input type="checkbox"/> No, delivery not assisted by a health professional or other health worker (A-G not circled in MN17) Go to PN19</p>			
PN18. AFTER THE DELIVERY WAS OVER AND (person or persons in MN17) LEFT, DID ANYONE CHECK ON YOUR HEALTH?	Yes	1	1 PN20
	No	2	2 Next Module
PN19. AFTER THE BIRTH OF (name), DID ANYONE CHECK ON YOUR HEALTH?	Yes	1	
	No	2	2 Next Module
I MEAN SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.			

POST-NATAL HEALTH CHECKS (cont'd)		PN	
PN20. DID SUCH A CHECK HAPPEN ONLY ONCE, OR MORE THAN ONCE?	Once	1	1 PN21A
	More than once	2	2 PN21B
PN21A. HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN?	Hours	1 ___	
PN21B. HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN? If less than one hour, record '00' for Hours If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.	Days	2 ___	
	Weeks	3 ___	
	Don't know / remember	998	
PN22. WHO CHECKED ON YOUR HEALTH AT THAT TIME? Probe: ANYONE ELSE? Probe for the type of person seen and circle all answers given.	Health professional		
	Doctor	A	
	Nurse / Midwife	B	
	Auxiliary midwife	C	
	Other person		
	Traditional birth attendant	F	
	Community health worker	G	
	Relative / Friend	H	
	Other (specify)	X	
PN23. WHERE DID THIS CHECK TAKE PLACE? Probe to identify the type of source. If unable to determine whether public or private, write the name of the place. (Name of place)	Home		
	Your home	11	
	Other home	12	
	Public sector		
	Govt. hospital/Polyclinic	21	
	Govt. clinic / health centre	22	
	Govt. health post/CHPS compound	23	
	Other public (specify)	26	
	Private medical sector		
	Private hospital	31	
	Private clinic	32	
	Private maternity home	33	
	Other private medical (specify)	36	
	Other (specify)	96	

ILLNESS SYMPTOMS		IS	
IS1. Check Household Listing, column HL9			
Is the respondent the mother or caretaker of any child under age 5?			
<input type="checkbox"/> Yes Continue with IS2.			
<input type="checkbox"/> No Go to Next Module.			
IS2. SOMETIMES CHILDREN HAVE SEVERE ILLNESSES AND SHOULD BE TAKEN IMMEDIATELY TO A HEALTH FACILITY. WHAT TYPES OF SYMPTOMS WOULD CAUSE YOU TO TAKE YOUR CHILD TO A HEALTH FACILITY RIGHT AWAY? Probe: ANY OTHER SYMPTOMS? Keep asking for more signs or symptoms until the mother/caretaker cannot recall any additional symptoms. Circle all symptoms mentioned, but do NOT prompt with any suggestions	Child not able to drink or breastfeed	A	
	Child becomes very sick	B	
	Child develops a fever	C	
	Child has fast breathing	D	
	Child has difficulty breathing	E	
	Child has blood in stool	F	
	Child is drinking poorly	G	
	Child has diarrhoea	H	
	Child incessant crying for no reason	I	
	Child not eating well	J	
		Other (specify)	X
	Other (specify)	Y	
	Other (specify)	Z	

CONTRACEPTION		CP	
CP1. I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING. ARE YOU PREGNANT NOW?	Yes, currently pregnant	1	1 Next Module
	No	2	
	Unsure or DK	8	
CP2. COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY. ARE YOU OR YOUR PARTNER CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes	1	2 Next Module 8 Next Module
	No	2	
	Don't know	8	
CP3. WHAT ARE YOU OR YOUR PARTNER DOING TO DELAY OR AVOID A PREGNANCY? Do not prompt. If more than one method is mentioned, circle each one.	Female sterilization	A	
	Male sterilization	B	
	IUD	C	
	Injectable	D	
	Implants	E	
	Pill	F	
	Male condom	G	
	Female condom	H	
	Diaphragm	I	
	Foam / Jelly	J	
	Lactational amenorrhoea method (LAM)	K	
	Periodic abstinence / Rhythm	L	
	Withdrawal	M	
	LNG-IUS N		
Other (specify)	X		

UNMET NEED		UN	
UN1. Check CP1. Currently pregnant?			
<input type="checkbox"/> Yes, currently pregnant Continue with UN2			
<input type="checkbox"/> No, unsure or DK Go to UN5			
UN2. NOW I WOULD LIKE TO TALK TO YOU ABOUT YOUR CURRENT PREGNANCY. WHEN YOU GOT PREGNANT, DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes	1	1 UN4
	No	2	
UN3. DID YOU WANT TO HAVE A BABY LATER ON OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later	1	
	No more	2	
UN4. NOW I WOULD LIKE TO ASK SOME QUESTIONS ABOUT THE FUTURE. AFTER THE CHILD YOU ARE NOW EXPECTING, WOULD YOU LIKE TO HAVE ANOTHER CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY MORE CHILDREN?	Have another child	1	1 UN7 2 UN13 8 UN13
	No more / None	2	
	Undecided / Don't know	8	
UN5. Check CP3. Currently using "Female sterilization"?			
<input type="checkbox"/> Yes Go to UN13			
<input type="checkbox"/> No Continue with UN6			
UN6. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE FUTURE. WOULD YOU LIKE TO HAVE (A/ANOTHER) CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY (MORE) CHILDREN?	Have (a/another) child	1	2 UN9 3 UN11 8 UN9
	No more / None	2	
	Says she cannot get pregnant	3	
	Undecided / Don't know	8	

UNMET NEED (cont'd)		UN	
UN7. HOW LONG WOULD YOU LIKE TO WAIT BEFORE THE BIRTH OF (A/ANOTHER) CHILD?	Months	1 ___	994 UN11
	Years	2 ___	
	Soon / Now	993	
	Says she cannot get pregnant	994	
	After marriage	995	
	Other (specify)	996	
	Don't know	998	
UN8. Check CP1. Currently pregnant?			
<input type="checkbox"/> Yes, currently pregnant Go to UN13 <input type="checkbox"/> No, unsure or DK Continue with UN9			
UN9. Check CP2. Currently using a method?			
<input type="checkbox"/> Yes Go to UN13 <input type="checkbox"/> No Continue with UN10			
UN10. DO YOU THINK YOU ARE PHYSICALLY ABLE TO GET PREGNANT AT THIS TIME?	Yes	1	1 UN13
	No	2	
	DK	8	8 UN13
UN11. WHY DO YOU THINK YOU ARE NOT PHYSICALLY ABLE TO GET PREGNANT?	Infrequent sex / No sex	A	
	Menopausal	B	
	Never menstruated	C	
	Hysterectomy (surgical removal of uterus)	D	
	Has been trying to get pregnant for 2 years or more without result	E	
	Postpartum amenorrhoeic	F	
	Breastfeeding	G	
	Too old	H	
	Fatalistic	I	
	Other (specify)	X	
Don't know	Z		
UN12. Check UN11. "Never menstruated" mentioned?			
<input type="checkbox"/> Mentioned Go to Next Module <input type="checkbox"/> Not mentioned Continue with UN13			
UN13. WHEN DID YOUR LAST MENSTRUAL PERIOD START?	Days ago	1 ___	
	Weeks ago	2 ___	
	Months ago	3 ___	
	Years ago	4 ___	
	In menopause / Has had hysterectomy	994	
	Before last birth	995	
	Never menstruated	996	

FEMALE GENITAL MUTILATION/CUTTING		FG	
FG1. HAVE YOU EVER HEARD OF FEMALE CIRCUMCISION?	Yes	1	1 FG3
	No	2	
FG2. IN SOME COMMUNITIES, THERE IS A PRACTICE IN WHICH A GIRL MAY HAVE PART OF HER GENITALS CUT. HAVE YOU EVER HEARD ABOUT THIS PRACTICE?	Yes	1	2 Next Module
	No	2	
FG3. HAVE YOU YOURSELF EVER BEEN CIRCUMCISED?	Yes	1	2 FG9
	No	2	
FG4. NOW I WOULD LIKE TO ASK YOU WHAT WAS DONE TO YOU AT THAT TIME.	Yes	1	1 FG6
	No	2	
WAS ANY FLESH REMOVED FROM THE GENITAL AREA?	DK	8	
FG5. WAS THE GENITAL AREA JUST NICKED/CUT WITHOUT REMOVING ANY FLESH?	Yes	1	
	No	2	
	DK	8	
FG6. WAS THE GENITAL AREA SEWN/STITCH CLOSED?	Yes	1	
	No	2	
If necessary, probe: WAS IT SEALED?	DK	8	
FG7. HOW OLD WERE YOU WHEN YOU WERE CIRCUMCISED?	Age at circumcision ___		
	If the respondent does not know the exact age, probe to get an estimate DK / Don't remember / Not sure	98	
FG8. WHO PERFORMED THE CIRCUMCISION?	Health professional		
	Doctor	11	
	Nurse/Midwife	12	
	Other health professional (specify)	16	
	Traditional persons		
	Traditional 'circumciser'	21	
	Traditional birth attendant	22	
Other traditional (specify)	26		
DK	98		
FG9. Check CM5 for Number of daughters at home and CM7 for Number of daughters elsewhere, and sum the answers here	Total number of living daughters ___		
FG10. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE (total number in FG9) LIVING DAUGHTERS. IS THIS CORRECT?	<input type="checkbox"/> Yes		
	<input type="checkbox"/> One or more living daughters Continue with FG11		
	<input type="checkbox"/> Does not have any living daughters Go to FG22		
	<input type="checkbox"/> No Check responses to CM1 – CM10 and make corrections as necessary, until FG10 = Yes		
FG11. Ask the respondent to tell you the name(s) of her daughter(s), beginning with the youngest daughter (if more than one daughter). Write down the name of each daughter in FG12. Then, ask questions FG13 to FG20 for each daughter at a time.			
The total number of daughters in FG12 should be equal to the number in FG9			
If more than 4 daughters, use additional questionnaires			

	Daughter #1	Daughter #2	Daughter #3	Daughter #4
FG12. Name of daughter				
FG13. HOW OLD IS (name)?	Age ___	Age ___	Age ___	Age ___

FEMALE GENITAL MUTILATION/CUTTING (cont'd)				FG
FG14. Is (name) younger than 15 years of age?	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22
FG15. IS (name) CIRCUMCISED?	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22	Yes 1 No 2 If "No", go to FG13 for next daughter. If no more daughters, go to FG22
FG16. HOW OLD WAS (name) WHEN THIS OCCURRED?				
If the respondent does not know the age, probe to get an estimate.	Age ____ DK 98	Age ____ DK 98	Age ____ DK 98	Age ____ DK 98
FG17. NOW I WOULD LIKE TO ASK YOU WHAT WAS DONE TO (name) AT THAT TIME.	Yes 1 FG19 No 2 DK 8			
WAS ANY FLESH REMOVED FROM THE GENITAL AREA?				
FG18. WAS HER GENITAL AREA JUST NICKED WITHOUT REMOVING ANY FLESH?	Yes 1 No 2 DK 8			
FG19. WAS HER GENITAL AREA SEWN CLOSED?	Yes 1 No 2 DK 8			
If necessary, probe: WAS IT SEALED?				

FEMALE GENITAL MUTILATION/CUTTING (cont'd)				FG
FG20. WHO PERFORMED THE CIRCUMCISION?	Health professional Doctor 11 Nurse/midwife 12 Other health professional (specify) 16 Traditional persons Traditional 'circumciser' 21 Traditional birth attendant 22 Other traditional (specify) 26 DK 98	Health professional Doctor 11 Nurse/midwife 12 Other health professional (specify) 16 Traditional persons Traditional 'circumciser' 21 Traditional birth attendant 22 Other traditional (specify) 26 DK 98	Health professional Doctor 11 Nurse/midwife 12 Other health professional (specify) 16 Traditional persons Traditional 'circumciser' 21 Traditional birth attendant 22 Other traditional (specify) 26 DK 98	Health professional Doctor 11 Nurse/midwife 12 Other health professional (specify) 16 Traditional persons Traditional 'circumciser' 21 Traditional birth attendant 22 Other traditional (specify) 26 DK 98
FG21.	Go back to FG13 for next daughter. If no more daughters, go to FG22	Go back to FG13 for next daughter. If no more daughters, go to FG22	Go back to FG13 for next daughter. If no more daughters, go to FG22	Go back to FG13 in first column of additional questionnaire for next daughter. If no more daughters, go to FG22
				Check box if additional questionnaire used
FG22. DO YOU THINK THIS PRACTICE SHOULD BE CONTINUED OR SHOULD IT BE DISCONTINUED?		Continued 1 Discontinued 2 Depends 3 DK 8		

BEHAVIOUR CHANGE COMMUNICATION ON MALARIA			BC
BC1. NOW I WOULD LIKE YOU TO TALK ABOUT MALARIA	Eating sweet foods Standing/ working in the sun Eating contaminated food Mosquito bites Malaria parasite(p. falciparum) Hereditary Dirty surroundings Weedy surroundings and stagnant water Other (specify) DK	A B C D E F G H X Z	
IN YOUR OPINION, WHAT CAUSES MALARIA?			
Probe: WHAT ELSE?			
BC2. HOW WOULD YOU KNOW THAT SOMEONE HAS MALARIA?	Hot body fever Vomiting/Diarrhea Strong headaches/Dizziness Loss of appetite Weakness of the body Cough Chills Bitterness in the mouth Other (specify) DK	A B C D E F G H X Z	
Probe: WHAT ELSE?			

BEHAVIOUR CHANGE COMMUNICATION ON MALARIA (cont'd)			BC
BC3. HOW CAN ONE PROTECT HIM/HERSELF AGAINST MALARIA?	Sleep under a mosquito net	A	
	Sleep under a insecticide treated mosquito net	B	
	Use Mosquito repellent	C	
	Avoid mosquito bites	D	
	Clear Weeds around the house	E	
	Fill in Stagnant waters (puddles)	F	
	Keep surrounding clean	G	
	Put mosquito screen window	H	
Other (specify)	X		
DK	Z		
BC4. CAN MALARIA BE TREATED?	Yes	1	
	No	2	
	DK	8	
BC5. IN THE PAST SIX MONTHS, HAVE YOU SEEN OR HEARD ANY MALARIA MESSAGES?	Yes	1	2 BC10
	No	2	

BC6. WHAT MESSAGES ABOUT MALARIA HAVE YOU SEEN OR HEARD IN THE PAST 6 MONTHS ? Probe: WHAT ELSE? Circle all that mentioned	If have fever go to health facility	A					
	Sleep under a insecticide treated mosquito net	B					
	Pregnant women should take drugs to prevent malaria	C					
	Malaria kills	D					
	Other (specify)	X					
	None	Y					
DK/Don't remember	Z						
BC7. IN THE PAST SIX MONTHS, HAVE YOU SEEN/HEARD ANY OF THE FOLLOWING MALARIA MESSAGES ON TELEVISION OR RADIO:	Yes on TV	Yes on radio	Yes on both	No			
	[A] NANA BORO'S "AHA YE DE-NTONTOM BE WU" MUSIC VIDEO/ SONG?	A	1	2		3	4
	[B] ADVERT WHERE WOMAN DOESN'T WANT TO STAY THE NIGHT WITH THE MAN UNLESS HE HAS A TREATED NET?	B	1	2		3	4
	[C] SHORT DOCUMENTARIES FEATURING THE TRUE STORIES OF GHANAIAI FAMILIES CHILDREN SUFFERING EPILEPSY AND LEARNING DISABILITIES DUE TO SEVERE MALARIA?	C	1	2		3	4
	(D) ADVERT WHERE PEOPLE FROM ALL WALKS OF LIFE ARE SLEEPING UNDER TREATED NETS?	D	1	2		3	4
BC8 DURING THE PAST 6 MONTHS, HAVE YOU SEEN/HEARD ANY ADVERT ON THE USE OF ACT WITH GREEN LEAF?	Yes	1	2 BC10				
	No	2					
BC9. WHERE DID YOU SEE/HEAR THE ADVERT ON THE USE OF ACT WITH GREEN LEAF? Probe: ANY OTHER MEDIA?	TV	A					
	Radio	B					
	Newspaper/Magazine	C					
	Poster /Leaflets	D					
	Billboard	E					
	Other (specify)	X					
	DK/Don't remember	Z					
BC10. HAVE YOU PARTICIPATED IN ANY COMMUNITY EVENT EDUCATING COMMUNITY MEMBERS ON PREVENTION AND CONTROL OF MALARIA?	Yes	1					
	No	2					

ATTITUDES TOWARD DOMESTIC VIOLENCE				DV	
DV1. SOMETIMES A HUSBAND IS ANNOYED OR ANGERED BY THINGS THAT HIS WIFE DOES. IN YOUR OPINION, IS A HUSBAND JUSTIFIED IN HITTING OR BEATING HIS WIFE IN THE FOLLOWING SITUATIONS:		Yes	No	DK	
[A]	IF SHE GOES OUT WITHOUT TELLING HIM?	Goes out without telling	1	2	8
[B]	IF SHE NEGLECTS THE CHILDREN?	Neglects children	1	2	8
[C]	IF SHE ARGUES WITH HIM?	Argues with him	1	2	8
[D]	IF SHE REFUSES TO HAVE SEX WITH HIM?	Refuses sex	1	2	8
[E]	IF SHE BURNS THE FOOD?	Burns food	1	2	8
[F]	IF SHE INSULTS HIM?	Insults him	1	2	8
[G]	IF SHE REFUSES TO GIVE HIM FOOD?	Refuses to give food	1	2	8
[H]	IF SHE HAS ANOTHER PARTNER?	Another partner	1	2	8
[I]	IF SHE STEALS?	Stealing	1	2	8
[J]	IF SHE GOSSIPS?	Gossiping	1	2	8
[K]	OTHER, (SPECIFY)?	Other (specify)	1	2	8

MARRIAGE/UNION			MA
MA1. ARE YOU CURRENTLY MARRIED OR LIVING TOGETHER WITH A MAN AS IF MARRIED?	Yes, currently married Yes, living with a man No, not in union	1 2 3	3 MA5
MA2. HOW OLD IS YOUR HUSBAND/PARTNER? Probe: HOW OLD WAS YOUR HUSBAND/PARTNER ON HIS LAST BIRTHDAY?	Age in years ___ __ DK 98		
MA3. BESIDES YOURSELF, DOES YOUR HUSBAND/PARTNER HAVE ANY OTHER WIVES OR PARTNERS OR DOES HE LIVE WITH OTHER WOMEN AS IF MARRIED?	Yes No	1 2	2 MA7
MA4. HOW MANY OTHER WIVES OR PARTNERS DOES HE HAVE?	Number ___ __ DK 98		MA7 98 MA7
MA5. HAVE YOU EVER BEEN MARRIED OR LIVED TOGETHER WITH A MAN AS IF MARRIED?	Yes, formerly married Yes, formerly lived with a man No	1 2 3	3 Next Module
MA6. WHAT IS YOUR MARITAL STATUS NOW: ARE YOU WIDOWED, DIVORCED OR SEPARATED?	Widowed Divorced Separated	1 2 3	
MA7. HAVE YOU BEEN MARRIED OR LIVED WITH A MAN ONLY ONCE OR MORE THAN ONCE?	Only once More than once	1 2	
MA8. IN WHAT MONTH AND YEAR DID YOU FIRST MARRY OR START LIVING WITH A MAN AS IF MARRIED?	Date of first marriage Month ___ __ DK month 98 Year ___ __ __ __ DK year 9998		Next Module
MA9. HOW OLD WERE YOU WHEN YOU STARTED LIVING WITH YOUR FIRST HUSBAND/PARTNER?	Age in years ___ __		

SEXUAL BEHAVIOUR		SB	
Check for the presence of others. Before continuing, ensure privacy.			
SB1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT SEXUAL ACTIVITY IN ORDER TO GAIN A BETTER UNDERSTANDING OF SOME IMPORTANT LIFE ISSUES.	Never had intercourse	00	
	Age in years	__ __	SB2
THE INFORMATION YOU SUPPLY WILL REMAIN STRICTLY CONFIDENTIAL.	First time when started living with (first) husband/partner	95	SB2
HOW OLD WERE YOU WHEN YOU HAD SEXUAL INTERCOURSE FOR THE VERY FIRST TIME?			
SB1A. DO YOU INTEND TO WAIT UNTIL YOU GET MARRIED TO HAVE SEXUAL INTERCOURSE FOR THE FIRST TIME?	Yes	1	1 SB16
	No	2	2 SB16
	Not Sure	3	3 SB16
SB2. THE FIRST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes	1	
	No	2	
	DK / Don't remember	8	
SB3. WHEN WAS THE LAST TIME YOU HAD SEXUAL INTERCOURSE?	Days ago	1 __ __	
Record 'years ago' only if last intercourse was one or more years ago. If 12 months or more the answer must be recorded in years.	Weeks ago	2 __ __	
	Months ago	3 __ __	
	Years ago	4 __ __	4 SB15
SB4. THE LAST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes	1	
	No	2	
SB5. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON WITH WHOM YOU LAST HAD SEXUAL INTERCOURSE?	Husband	1	
	Cohabiting partner	2	
	Boyfriend	3	3 SB7
	Casual acquaintance	4	4 SB7
	Ex-Boyfriend	5	5 SB7
Probe to ensure that the response refers to the relationship at the time of sexual intercourse			
If 'boyfriend', then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '2'. If 'no', circle '3'.	Other (specify)	6	6 SB7
SB6. Check MA1:			
<input type="checkbox"/> Currently married or living with a man (MA1 = 1 or 2) Go to SB8			
<input type="checkbox"/> Not married / Not in union (MA1 = 3) Continue with SB7			
SB7. HOW OLD IS THIS PERSON?	Age of sexual partner	__ __	
If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	DK	98	
SB8. HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes	1	
	No	2	2 SB15
SB9. THE LAST TIME YOU HAD SEXUAL INTERCOURSE WITH THIS OTHER PERSON, WAS A CONDOM USED?	Yes	1	
	No	2	
SB10. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON?	Husband	1	
	Cohabiting partner	2	
	Boyfriend	3	3 SB12
	Ex-Boyfriend	4	4 SB12
	Casual acquaintance	5	5 SB12
Probe to ensure that the response refers to the relationship at the time of sexual intercourse			
If 'boyfriend' then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '2'. If 'no', circle '3'.	Other (specify)	6	6 SB12

SEXUAL BEHAVIOUR (cont'd)		SB	
SB11. Check MA1 and MA7: <input type="checkbox"/> Currently married or living with a man (MA1 = 1 or 2) AND Married only once or lived with a man only once (MA7 = 1) Go to SB13 <input type="checkbox"/> Else Continue with SB12			
SB12. HOW OLD IS THIS PERSON?	Age of sexual partner	__ __	
If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	DK	98	
SB13. OTHER THAN THESE TWO PERSONS, HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes	1	
	No	2	2 SB15
SB14. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN THE LAST 12 MONTHS?	Number of partners	__ __	
SB15. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN YOUR LIFETIME? If a non-numeric answer is given, probe to get an estimate. If number of partners is 95 or more, write '95'.	Number of lifetime partners	__ __	
	DK	98	
SB16. DO YOU KNOW OF A PLACE WHERE A PERSON CAN GET CONDOMS?	Yes	1	2 Next Module
	No	2	
SB17. WHERE CAN YOU GET CONDOM FROM? Probe for any other source.	Public Sector		
	Govt. Hospital/Polyclinic	A	
	Govt. Clinic/ Health Center	B	
	Govt. Health Post/CHPS	C	
	Family Planning Clinic	D	
	Mobile Clinic/ Field Worker/ Outreach/ Peer Educator	E	
	Other Public (specify)	F	
	Private Medical Sector		
	Private Hospital/Clinic/Doctor	G	
	Pharmacy/ Chemical/Drug Store	H	
	FP/PPAG Clinic	I	
	Maternity Home	J	
	Other Private Medical	K	
	Other Source		
	Shop/Market	L	
	Church/ Community Volunteer	M	
	Friend/Relative	N	
	Other (specify)	X	
SB18. IF YOU WANTED TO, COULD YOU YOURSELF GET A CONDOM?	Yes	1	
	No	2	
	Don't know/Unsure	8	
HIV/AIDS		HA	
HA1. NOW I WOULD LIKE TO TALK WITH YOU ABOUT SOMETHING ELSE.	Yes	1	2 Next Module
HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?	No	2	
HA2. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER WHO HAS NO OTHER SEX PARTNERS?	Yes	1	
	No	2	
	DK	8	
HA3. CAN PEOPLE GET THE AIDS VIRUS BECAUSE OF WITCHCRAFT OR OTHER SUPERNATURAL MEANS?	Yes	1	
	No	2	
	DK	8	
HA4. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?	Yes	1	
	No	2	
	DK	8	

HIV/AIDS (cont'd)		HA			
HA5. CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?	Yes		1		
	No		2		
	DK		8		
HA6. CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS THE AIDS VIRUS?	Yes		1		
	No		2		
	DK		8		
HA7. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?	Yes		1		
	No		2		
	DK		8		
HA8. CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY:		Yes	No	DK	
		1	2	8	
	[A] DURING PREGNANCY?	1	2	8	
	[B] DURING DELIVERY?	1	2	8	
	[C] BY BREASTFEEDING?	1	2	8	
HA9. IN YOUR OPINION, IF A FEMALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA9A. IN YOUR OPINION, IF A MALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD HE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA10. WOULD YOU BUY FRESH VEGETABLES FROM A SHOPKEEPER OR VENDOR IF YOU KNEW THAT THIS PERSON HAD THE AIDS VIRUS?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA11. IF A MEMBER OF YOUR FAMILY GOT INFECTED WITH THE AIDS VIRUS, WOULD YOU WANT IT TO REMAIN A SECRET?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA12. IF A MEMBER OF YOUR FAMILY BECAME SICK WITH AIDS, WOULD YOU BE WILLING TO CARE FOR HER OR HIM IN YOUR OWN HOUSEHOLD?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA13. Check CM13: Any live birth in last 2 years?					
<input type="checkbox"/> No live birth in last 2 years Go to HA24					
<input type="checkbox"/> One or more live births in last 2 years Continue with HA14					
HA14. Check MN1: Received antenatal care?					
<input type="checkbox"/> Received antenatal care Continue with HA15					
<input type="checkbox"/> Did not receive antenatal care Go to HA24					
HA15. DURING ANY OF THE ANTENATAL VISITS FOR YOUR PREGNANCY WITH (name),		Y	N	DK	
	[A] WERE YOU GIVEN ANY INFORMATION ABOUT: BABIES GETTING THE AIDS VIRUS FROM THEIR MOTHER?	AIDS from mother	1	2	8
	[B] THINGS THAT YOU CAN DO TO PREVENT GETTING THE AIDS VIRUS?	Things to do	1	2	8
	[C] GETTING TESTED FOR THE AIDS VIRUS?	Tested for AIDS	1	2	8
	[D] WERE YOU: OFFERED A TEST FOR THE AIDS VIRUS?	Offered a test	1	2	8

HIV/AIDS (cont'd)		HA	
HA16. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS AS PART OF YOUR ANTENATAL CARE?	Yes	1	
	No	2	2 HA19
	DK	8	8 HA19
HA17. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes	1	
	No	2	2 HA22
	DK	8	8 HA22
HA18. REGARDLESS OF THE RESULT, ALL WOMEN WHO ARE TESTED ARE SUPPOSED TO RECEIVE COUNSELLING AFTER GETTING THE RESULT.	Yes	1	1 HA22
	No	2	2 HA22
	DK	8	8 HA22
AFTER YOU WERE TESTED, DID YOU RECEIVE COUNSELLING?			
HA19. Check MN17: Birth delivered by health professional (A, B or C)?			
<input type="checkbox"/> Yes, birth delivered by health professional Continue with HA20			
<input type="checkbox"/> No, birth not delivered by health professional Go to HA24			
HA20. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS BETWEEN THE TIME YOU WENT FOR DELIVERY AND BEFORE THE BABY WAS BORN?	Yes	1	
	No	2	2 HA24
HA21. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes	1	
	No	2	
HA22. HAVE YOU BEEN TESTED FOR THE AIDS VIRUS SINCE THAT TIME YOU WERE TESTED DURING YOUR PREGNANCY?	Yes	1	1 HA25
	No	2	
HA23. WHEN WAS THE MOST RECENT TIME YOU WERE TESTED FOR THE AIDS VIRUS?	Less than 12 months ago	1	1 Next Module
	12-23 months ago	2	2 Next Module
	2 or more years ago	3	3 Next Module
HA24. I DON'T WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes	1	
	No	2	2 HA27
HA25. WHEN WAS THE MOST RECENT TIME YOU WERE TESTED?	Less than 12 months ago	1	
	12-23 months ago	2	
	2 or more years ago	3	
HA26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes	1	1 Next Module
	No	2	2 Next Module
HA27. DO YOU KNOW OF A PLACE WHERE PEOPLE CAN GO TO GET TESTED FOR THE AIDS VIRUS?	Yes	1	
	No	2	

NATIONAL HEALTH INSURANCE		NH	
NH1. HAVE YOU EVER REGISTERED WITH ANY HEALTH INSURANCE SCHEME?	Yes No	1 2	1 NH9 2 NH10
NH2. WHAT TYPE OF HEALTH INSURANCE DO YOU HAVE? Probe: ANY OTHER?	National/District Health Insurance (NHIS) Mutual Health Organization/ Community-based Health Insurance Other Privately Purchased Commercial Health Insurance Other Health Insurance (specify)	A B C X	
NH3. Check NH2: <input type="checkbox"/> NHIS NOT CHECKED. Go to NH11			
NH4. HOW WAS YOUR MEMBERSHIP OF THE NHIS ACHIEVED?	Paid premium myself Premium paid by a relative or friend Premium paid by employers Premium paid by SSNIT Exempt as indigent Free Maternal Service Other (specify)	01 02 03 04 05 06 96	
NH5. DO YOU HOLD A VALID NATIONAL HEALTH INSURANCE SCHEME (NHIS) CARD? If person has valid insurance card, request to see it. Check to make sure it is valid for 2011	Yes, card seen Yes, card not seen No	1 2 3	1 NH9 2 NH9
NH6. WHY DO YOU NOT HAVE A VALID NHIS CARD?	Registered, but not fully paid yet Registered/Renewed, card not received Registered, in waiting period Registration not renewed Lost NHIS card Other (specify)	1 2 3 4 5 6	1 NH9 2 NH9 3 NH9 5 NH9 6 NH9
NH7. DO YOU PLAN TO RENEW THE NHIS REGISTRATION?	Yes No Don't know/ Not sure	1 2 8	1 NH9 8 NH9

NH8. WHY DO YOU NOT WANT TO RENEW THE NHIS REGISTRATION? Probe: ANY OTHER REASON?	Have not been sick Premium too expensive Still pay out of pocket Poor quality care with card Waiting time for card too long Desired services not covered Clinics used/ traditional services not Covered by NHIS Other (specify)	A B C D E F G X	
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NATIONAL HEALTH INSURANCE (cont'd)		NH	
NH9. IN YOUR OPINION, DO NHIS CARD HOLDERS GET BETTER/ SAME/WORSE SERVICES WHEN THEY ATTEND HEALTH CARE FACILITIES?	Better Same Worse Never used Don't know	1 2 3 4 8	1 WM11 2 WM11 3 WM11 4 WM11 8 WM11
NH10. WHY HAVE YOU NOT REGISTERED OR RENEWED REGISTRATION WITH THE NHIS? Probe: ANY OTHER REASON?	Not heard of NHIS Premium too expensive Do not trust NHIS Do not know where to register Registration office too far Do not need health insurance NHIS does not cover the services I need NHIS does not cover the facilities I use H Other (specify)	A B C D E F G X	A WM11 B WM11 C WM11 D WM11 E WM11 F WM11 G WM11 H WM11 X WM11
NH11. IS YOUR INSURANCE CURRENTLY VALID FOR 2011?	Yes No Don't know/ Not sure	1 2 8	
WM11. Record the time.	Hour and minutes ___ : ___		
WM12. Check Household Listing Form, column HL9. Is the respondent the mother or caretaker of any child age 0-4 living in this household?			
<input type="checkbox"/> Yes Go to QUESTIONNAIRE FOR CHILDREN UNDER FIVE for that child and start the interview with this respondent.			
<input type="checkbox"/> No End the interview with this respondent by thanking her for her cooperation. Check for the presence of any other eligible woman, or children under-5 in the household. If none, check for the presence of any eligible male 15-59 years in the household (i.e. in Households where the Male Questionnaire is to be administered).			

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

QUESTIONNAIRE FOR CHILDREN UNDER FIVE
GHANA 2011

UNDER-FIVE CHILD INFORMATION PANEL

UF

This questionnaire is to be administered to all mothers or caretakers (see Household Listing Form, column HL9) who care for a child that lives with them and is under the age of 5 years (see Household Listing Form, column HL6). A separate questionnaire should be used for each eligible child.

UF1. Cluster Number: _____

UF2. Household number: _____

UF3. Child's name:

UF4. Child's line number:

Name _____

UF5. Mother's / Caretaker's name:

UF6. Mother's / Caretaker's line number:

Name _____

UF7. Interviewer name and number: _____

UF8. Day / Month / Year of interview:

Name _____

____ / ____ / 2011

Name of Region _____

Name of District: _____

Repeat greeting if not already read to this respondent:

If greeting at the beginning of the household questionnaire has already been read to this woman, then read the following:

WE ARE FROM GHANA STATISTICAL SERVICE. WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT (name)'S HEALTH AND WELL-BEING. THE INTERVIEW WILL TAKE ABOUT 20 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.

NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT (child's name from UF3)'S HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 20 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.

MAY I START NOW?

 Yes, permission is given Go to UF12 to record the time and then begin the interview.

If yes ask for child's immunization card, birth certificate, antenatal card, baptismal card and any other card on which the child's records are written.

 No, permission is not given Complete UF9. Discuss this result with your supervisor.

UF9. Result of interview for children under 5

Completed	01
Not at home	02
Refused	03
Partly completed	04
Incapacitated	05
Other (specify)	96

Codes refer to mother/caretaker.

UF10. Field edited by (Name and number):

UF11. Data entry clerk (Name and number):

Name _____

Name _____

UF12. Record the time.

Hour and minutes ____ : ____

AGE

AG

AG1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE HEALTH OF (name).

Date of birth
Day _____

IN WHAT MONTH AND YEAR WAS (name) BORN?

DK day 98

Probe:

WHAT IS HIS / HER BIRTHDAY?

Month _____

If the mother/caretaker knows the exact birth date, also enter the day; otherwise, circle 98 for day

Year _____

Month and year must be recorded.

AGE (cont'd)		AG
AG2. HOW OLD IS (name)?	Age (in completed years) ___	
Probe: HOW OLD WAS (name) AT HIS / HER LAST BIRTHDAY?		
Record age in completed years.		
Record '0' if less than 1 year.		
Compare and correct AG1 and/or AG2 if inconsistent.		

BIRTH REGISTRATION		BR
BR1. DOES (NAME) HAVE A BIRTH CERTIFICATE?	Yes, seen 1	1 BR2A
If yes, ask: MAY I SEE IT?	Yes, not seen 2	2 BR2A
	No 3	
	DK 8	
BR2 HAS (NAME)'S BIRTH BEEN REGISTERED WITH THE BIRTHS AND DEATHS REGISTRY?	Yes 1	
	No 2	2 BR2B
	DK 8	8 BR2B
BR2A. WAS (NAME)'S BIRTH REGISTERED WITHIN THE FIRST YEAR OF BIRTH?	Yes 1	1 BR4
	No 2	2 BR4
	DK 8	8 BR4
BR2B. WHAT IS THE MAIN REASON WHY (NAME)'S BIRTH IS NOT REGISTERED?	Costs too much 1	6 BR4
	Must travel too far 2	
	Did not know it should be registered 3	
	Did not want to pay fine 4	
	Did not find important 5	
	Do not know where to register 6	
	Other (specify) 7	
	DK 8	
BR3. DO YOU KNOW WHERE TO REGISTER YOUR CHILD'S BIRTH?	Yes 1	
	No 2	
BR4. HOW MUCH DOES IT COST TO REGISTER A CHILD WITH THE BIRTHS AND DEATHS REGISTRY IF THE CHILD IS UNDER 1 YEAR OLD?	Free 1	
	Less than GH¢10 2	
	GH¢10 3	
	More than GH¢10 4	
	DK 8	

EARLY CHILDHOOD DEVELOPMENT		EC
EC1. HOW MANY CHILDREN'S BOOKS OR PICTURE BOOKS DO YOU HAVE FOR (name)?	None 00	
	Number of children's books 0 ___	
	Ten or more books 10	

EARLY CHILDHOOD DEVELOPMENT (cont'd)		EC
EC2. I AM INTERESTED IN LEARNING ABOUT THE THINGS THAT (name) PLAYS WITH WHEN HE/SHE IS AT HOME.		
DOES HE/SHE PLAY WITH:		
[A] HOMEMADE TOYS (SUCH AS DOLLS, CARS, OR OTHER TOYS MADE AT HOME)?	Y N DK	
	Homemade toys 1 2 8	
[B] TOYS FROM A SHOP OR MANUFACTURED TOYS?		
	Toys from a shop 1 2 8	
[C] HOUSEHOLD OBJECTS (SUCH AS BOWLS OR POTS) OR OBJECTS FOUND OUTSIDE (SUCH AS STICKS, ROCKS, ANIMAL SHELLS OR LEAVES)?		
	Household objects or outside objects 1 2 8	
If the respondent says "YES" to any of the categories above, then probe to learn specifically what the child plays with to ascertain the response		
EC3. SOMETIMES ADULTS TAKING CARE OF CHILDREN HAVE TO LEAVE THE HOUSE TO GO SHOPPING, WASH CLOTHES, OR FOR OTHER REASONS AND HAVE TO LEAVE YOUNG CHILDREN.		
ON HOW MANY DAYS IN THE PAST WEEK WAS (name):		
[A] LEFT ALONE FOR MORE THAN AN HOUR?		Number of days left alone for more than an hour ___
[B] LEFT IN THE CARE OF ANOTHER CHILD, THAT IS, SOMEONE LESS THAN 10 YEARS OLD, FOR MORE THAN AN HOUR?		Number of days left with other child for more than an hour ___
If 'none' enter '0'. If 'don't know' enter '8'		
EC4. Check AG2: Age of child		
<input type="checkbox"/> Child age 3 or 4 Continue with EC5		
<input type="checkbox"/> Child age 0, 1 or 2 Go to Next Module		
EC5. DOES (name) ATTEND ANY ORGANIZED LEARNING OR EARLY CHILDHOOD EDUCATION PROGRAMME, SUCH AS A PRIVATE OR GOVERNMENT FACILITY, INCLUDING KINDERGARTEN OR COMMUNITY CHILD CARE?	Yes 1	
	No 2	2 EC7
	DK 8	8 EC7
EC6. WITHIN THE LAST SEVEN DAYS, ABOUT HOW MANY HOURS DID (name) ATTEND?		Number of hours ___
EC7. IN THE PAST 3 DAYS, DID YOU OR ANY HOUSEHOLD MEMBER 15 YEARS OLDER ENGAGE IN ANY OF THE FOLLOWING ACTIVITIES WITH (name):		
If yes, ask: WHO ENGAGED IN THIS ACTIVITY WITH (name)?		
Circle all that apply.		
[A] READ BOOKS TO OR LOOKED AT PICTURE BOOKS WITH (name)?	Mother A Father B Other X No one Y	Read books
[B] TOLD STORIES TO (name)?	A B X Y	Told stories
[C] SANG SONGS TO (name) OR WITH (name), INCLUDING LULLABIES?	A B X Y	Sang songs
[D] TOOK (name) OUTSIDE THE HOME, COMPOUND, YARD OR ENCLOSURE?	A B X Y	Took outside
[E] PLAYED WITH (name)?	A B X Y	Played with
[F] NAMED, COUNTED, OR DREW THINGS TO OR WITH (name)?	A B X Y	Named/counted

EARLY CHILDHOOD DEVELOPMENT		EC	
EC8. I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE HEALTH AND DEVELOPMENT OF YOUR CHILD. CHILDREN DO NOT ALL DEVELOP AND LEARN AT THE SAME RATE. FOR EXAMPLE, SOME WALK EARLIER THAN OTHERS. THESE QUESTIONS ARE RELATED TO SEVERAL ASPECTS OF YOUR CHILD'S DEVELOPMENT.	Yes No	1 2	
CAN (name) IDENTIFY OR NAME AT LEAST TEN LETTERS OF THE ALPHABET?	DK	8	
EC9. CAN (name) READ AT LEAST FOUR SIMPLE, POPULAR WORDS?	Yes No	1 2	
	DK	8	
EC10. DOES (name) KNOW THE NAME AND RECOGNIZE THE SYMBOL OF ALL NUMBERS FROM 1 TO 10?	Yes No	1 2	
	DK	8	
EC11. CAN (name) PICK UP A SMALL OBJECT WITH TWO FINGERS, LIKE A STICK OR A ROCK (STONE) FROM THE GROUND?	Yes No	1 2	
	DK	8	
EC12. IS (name) OFTEN TOO SICK TO PLAY?	Yes No	1 2	
	DK	8	

EARLY CHILDHOOD DEVELOPMENT		EC	
EC13. DOES (name) FOLLOW SIMPLE DIRECTIONS ON HOW TO DO SOMETHING CORRECTLY?	Yes No	1 2	
	DK	8	
EC14. WHEN GIVEN SOMETHING TO DO, IS (name) ABLE TO DO IT INDEPENDENTLY?	Yes No	1 2	
	DK	8	
EC15. DOES (name) GET ALONG WELL WITH OTHER CHILDREN?	Yes No	1 2	
	DK	8	
EC16. DOES (name) KICK, BITE, OR HIT OTHER CHILDREN OR ADULTS?	Yes No	1 2	
	DK	8	
EC17. DOES (name) GET DISTRACTED EASILY?	Yes No	1 2	
	DK	8	

BREASTFEEDING		BF	
BF1. HAS (NAME) EVER BEEN BREASTFED?	Yes No	1 2	2 BF3
	DK	8	8 BF3
BF2. IS (NAME) STILL BEING BREASTFED?	Yes No	1 2	
	DK	8	

BREASTFEEDING (cont'd)		BF	
BF10. DID (name) DRINK OR EAT VITAMIN OR MINERAL SUPPLEMENTS OR ANY MEDICINES YESTERDAY, DURING THE DAY OR NIGHT?	Yes No	1 2	
	DK	8	
BF11. DID (name) DRINK ORS (ORAL REHYDRATION SOLUTION) YESTERDAY, DURING THE DAY OR NIGHT?	Yes No	1 2	
	DK	8	
BF18. YESTERDAY, DURING THE DAY OR NIGHT, DID (name) DRINK ANYTHING FROM A BOTTLE WITH A NIPPLE?	Yes No	1 2	
	DK	8	

DIET DIVERSITY		DD	
NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS AND FOODS THAT (NAME) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.			

DD1. DID (NAME) DRINK/EAT (NAME OF FOOD) DURING THE DAY OR THE NIGHT BEFORE:	Yes	No	DK	DD2 HOW MANY TIMES DID (name) DRINK
A. MILK SUCH AS TINNED, POWDERED OR FRESH ANIMAL MILK?				
B. INFANT FORMULA (SMA, LACTOGEN...)?				
C. BABY CEREAL (NESTLE CERELAC, FRESOCREM...)?	1	2	8	
D. TEA OR COFFEE?	1	2	8	
E. ANY OTHER LIQUIDS (JUICE, COCOA, COCONUT WATER...)?	1	2	8	
F. BREAD, RICE, NOODLES OR OTHER FOODS MADE FROM GRAIN (KENKEY, BANKU, KOKO, TUO ZAAFI, AKPLE, WEANIMIX...)?	1	2	8	
	1	2	8	
G. PUMPKIN, RED OR YELLOW YAMS, CARROTS, AND ORANGE OR YELLOW SWEET POTATOES...?	1	2	8	
	1	2	8	
H. WHITE POTATOES, WHITE YAMS, MANIOC, CASSAVA, COCOYAM, FUFU OR ANY OTHER FOODS MADE FROM ROOTS, TUBERS OR PLANTAIN?	1	2	8	
	1	2	8	
I. ANY DARK GREEN LEAFY VEGETABLES (KONTOMIRE, ALEEFU, AYOYO, KALE, CASSAVA LEAVES)?	1	2	8	
	1	2	8	
J. RIPE MANGOES, PAWPAW?	1	2	8	
K. ANY OTHER FRUITS OR VEGETABLES (BANANAS, AVOCADOS, TOMATOES, ORANGES, APPLES...)?	1	2	8	
	1	2	8	
L. LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS?	1	2	8	
M. ANY MEAT SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN OR DUCK?	1	2	8	
N. EGGS?	1	2	8	
O. FRESH OR DRIED FISH OR SHELLFISH (PRAWNS, LOBSTERS...)?	1	2	8	
P. ANY FOODS MADE FROM BEANS, PEAS, LENTILS OR NUTS?	1	2	8	
Q. CHEESE, YOGURT OR OTHER MILK PRODUCTS?	1	2	8	
R. ANY OIL, FATS OR BUTTER, OR FOODS MADE WITH ANY OF THIS?	1	2	8	
S. ANY SUGARY FOODS AS CHOCOLATE, SWEET CANDIES, PASTRIES, CAKES OR BISCUITS?				
T. ANY OTHER SOLID OR SEMI-SOLID FOODS?				

CHECK DD1 : FOOD CONSUMED DURING THE DAY OR NIGHT BEFORE

 At least one Yes in F to T Continue with BF17 Not a single Yes in F to T Go to next module

BF17. HOW MANY TIMES DID (name) EAT SOLID OR SEMI-SOLID (SOFT, MUSHY) FOOD YESTERDAY, DURING THE DAY OR NIGHT?	Number of times ___
--	---------------------

CA1. IN THE LAST TWO WEEKS, HAS (name) HAD DIARRHOEA?	Yes No	1 2	2 CA7
	DK	8	8 CA7

CARE OF ILLNESS		CA
CA2. I WOULD LIKE TO KNOW HOW MUCH (name) WAS GIVEN TO DRINK DURING THE DIARRHOEA (INCLUDING BREASTMILK). DURING THE TIME (name) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO DRINK, ABOUT THE SAME AMOUNT, OR MORE THAN USUAL? If less, probe: WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO DRINK, OR SOMEWHAT LESS?	Much less Somewhat less About the same More Nothing to drink DK	1 2 3 4 5 8
CA3. DURING THE TIME (name) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO EAT, ABOUT THE SAME AMOUNT, MORE THAN USUAL, OR NOTHING TO EAT? If "less", probe: WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO EAT OR SOMEWHAT LESS?	Much less Somewhat less About the same More Stopped food Never gave food DK	1 2 3 4 5 6 8
CA4. DURING THE EPISODE OF DIARRHOEA, WAS (name) GIVEN TO DRINK ANY OF THE FOLLOWING: Read each item aloud and record response before proceeding to the next item.		Y N DK
[A] A FLUID MADE FROM A SACHET ORS?	Fluid from ORS sachet	1 2 8
[B] A PRE-PACKAGED ORS FLUID FOR DIARRHOEA?	Pre-packaged ORS fluid	1 2 8
[C] COCONUT WATER?	Coconut Water	1 2 8
[D] RICE WATER?	Rice Water	1 2 8
[E] MASHED KENKEY?	Mashed Kenkey	1 2 8
CA4F. Check CA4: ORS sachet or Pre-Packaged ORS given <input type="checkbox"/> [A]=1 or [B]=1 Continue with CA4G <input type="checkbox"/> Else CA5		
CA4G. WHERE DID YOU GET THE (ORS SACHET/PRE-PACKAGED ORS) FROM? Probe: ANYWHERE ELSE? Circle all providers mentioned, but do NOT prompt with any suggestions.	Public sector Govt. hospital/Polyclinic Govt. clinic/health centre Govt. health post/CHPS compound Community health worker Mobile / Outreach clinic Other public (specify) Private medical sector Private hospital / clinic/ physician Private pharmacy/Chemical shop Mobile / Outreach clinic Herbal centre/Herbal clinic Other private medical (specify) Other source Relative / Friend Shop Traditional practitioner Other (specify)	A B C D E H I K L M O P Q R X
CA4H. HOW MUCH DID YOU PAY FOR THE ORS?	Cedis	____.____ ____ DK 998
CA5. WAS ANYTHING (ELSE) GIVEN TO TREAT THE DIARRHOEA?	Yes No DK	1 2 8
		2 CA7 8 CA7

CARE OF ILLNESS (cont'd)		CA
CA6. WHAT (ELSE) WAS GIVEN TO TREAT THE DIARRHOEA? Probe: ANYTHING ELSE? Record all treatments given. Write brand name(s) of all medicines mentioned. (Name)	Pill or Syrup Antibiotic Antimotility (anti-diarrhoeal) Zinc Other (Not antibiotic, antimotility or zinc) Unknown pill or syrup Injection Antibiotic Non-antibiotic Unknown injection Intravenous Home remedy / Herbal medicine Other (specify)	A B C G H L M N O Q X
CA7. AT ANY TIME IN THE LAST TWO WEEKS, HAS (name) HAD AN ILLNESS WITH A COUGH?	Yes No DK	1 2 8
		2 CA14 8 CA14
CA8. WHEN (name) HAD AN ILLNESS WITH A COUGH, DID HE/SHE BREATHE FASTER THAN USUAL WITH SHORT, RAPID BREATHS OR HAVE DIFFICULTY BREATHING?	Yes No DK	1 2 8
		2 CA10 8 CA10
CA9. WAS THE FAST OR DIFFICULT BREATHING DUE TO A PROBLEM IN THE CHEST OR A BLOCKED OR RUNNY NOSE?	Problem in chest only Blocked or runny nose only Both Other (specify) DK	1 2 3 6 8
		2 CA14 6 CA14
CA10. DID YOU SEEK ANY ADVICE OR TREATMENT FOR THE ILLNESS FROM ANY SOURCE?	Yes No DK	1 2 8
		2 CA12 8 CA12
CA11. FROM WHERE DID YOU SEEK ADVICE OR TREATMENT? Probe: ANYWHERE ELSE? Circle all providers mentioned, but do NOT prompt with any suggestions. Probe to identify each type of source. If unable to determine if public or private sector, write the name of the place. (Name of place)	Public sector Govt. hospital/Polyclinic Govt. clinic/health centre Govt. health post/CHPS compound Community health worker Mobile / Outreach clinic Other public (specify) Private medical sector Private hospital / clinic / physician Private pharmacy/Chemical shop Mobile/Outreach clinic Herbal Centre/Clinic Other private medical (specify) Other source Relative / Friend Shop Traditional practitioner Other (specify)	A B C D E H I K L M O P Q R X
CA12. WAS (name) GIVEN ANY MEDICINE TO TREAT THIS ILLNESS?	Yes No DK	1 2 8
		2 CA14 8 CA14

CARE OF ILLNESS (cont'd)		CA	
CA13. WHAT MEDICINE WAS (name) GIVEN?	Antibiotic		
Probe:	Pill / Syrup	A	
ANY OTHER MEDICINE?	Injection	B	
Circle all medicines given. Write brand name(s) of all medicines mentioned.	Anti-malarials	M	M CA14
(Names of medicines)	Paracetamol / Panadol / Acetaminophen	P	P CA14
	Aspirin	Q	Q CA14
	Ibuprofen	R	R CA14
	Other (specify)	X	X CA14
	DK	Z	Z CA14
CA13A. FROM WHERE DID YOU GET THE ANTIBIOTIC (PILL/SYRUP OR INJECTION)?	Public sector		
Probe:	Govt. hospital/Polyclinic	A	
ANYWHERE ELSE?	Govt. clinic/health centre	B	
	Govt. health post/CHPS Compound	C	
	Community health worker	D	
	Mobile / Outreach clinic	E	
	Other public (specify)	H	
	Private medical sector		
	Private hospital / clinic/ physician	I	
	Private pharmacy/Chemical shop	K	
	Mobile/Outreach clinic	L	
	Herbal Centre/HerbalClinic	M	
	Other private (specify)	O	
	Other source		
	Relative / Friend	P	
	Shop	Q	
	Traditional practitioner	R	
	Other (specify)	X	
CA14. Check AG2: Child aged under 3?			
<input type="checkbox"/> Yes Continue with CA15			
<input type="checkbox"/> No Go to Next Module			
CA15. THE LAST TIME (name) PASSED STOOLS, WHAT WAS DONE TO DISPOSE OF THE STOOLS?	Child used toilet / latrine	01	
	Put / Rinsed into toilet or latrine	02	
	Put / Rinsed into drain or ditch	03	
	Thrown into garbage (solid waste)	04	
	Buried	05	
	Left in the open	06	
	Other (specify)	96	
	DK	98	

MALARIA		ML	
ML1. IN THE LAST TWO WEEKS, HAS (name) BEEN ILL WITH A FEVER AT ANY TIME?	Yes	1	
	No	2	2 Next Module
	DK	8	8 Next Module
ML2. AT ANY TIME DURING THE ILLNESS, DID (name) HAVE BLOOD TAKEN FROM HIS/HER FINGER OR HEEL FOR TESTING?	Yes	1	
	No	2	
	DK	8	

MALARIA (cont'd)		ML	
ML3. DID YOU SEEK ANY ADVICE OR TREATMENT FOR THE ILLNESS FROM ANY SOURCE?	Yes	1	
	No	2	2 ML8
	DK	8	8 ML8
ML4. WAS (name) TAKEN TO A HEALTH FACILITY DURING THIS ILLNESS?	Yes	1	
	No	2	2 ML8
	DK	8	8 ML8
ML4A. WHERE WAS (name) TAKEN DURING THIS ILLNESS?	Public sector		
	Govt. Hospital	11	
	Govt. clinic Health center	12	
	Govt. Health post/CHPS compound	13	
	Village health worker/CBA	14	
	Mobile/outreach clinic	15	
	Other (specify)	16	
	Private medical sector		
	Private hospital/clinic	21	
	Private physician	22	
	Private pharmacy/Chemical shop	23	
	Mobile/Outreach clinic	24	
	Other (specify)	26	
	Other source		
	Relative or Friend	31	
	Shop	32	
	Traditional practitioner	33	
	Drug peddlers	34	
	Other (specify)	96	
	DK	98	
ML5. WAS (name) GIVEN ANY MEDICINE FOR FEVER OR MALARIA AT THE HEALTH FACILITY?	Yes	1	
	No	2	2 ML7
	DK	8	8 ML7
ML6. WHAT MEDICINE WAS (name) GIVEN?	Anti-malarials:		
Probe:	SP / Fansidar	A	
ANY OTHER MEDICINE?	Chloroquine	B	
	Amodiaquine	C	
	Quinine	D	
	Artemisinin-based Combination	E	
	ACT with the green leaf	F	
	Other anti-malarial (specify)	H	
Circle all medicines mentioned. Write brand name(s) of all medicines, if given.	Antibiotic drugs		
(Name)	Pill / Syrup	I	
	Injection	J	
	Other medications:		
	Paracetamol/ Panadol / Acetaminophen	P	
	Aspirin	Q	
	Ibuprofen	R	
	Other (specify)	X	
	DK	Z	
ML7. WAS (name) GIVEN ANY MEDICINE FOR THE FEVER OR MALARIA BEFORE BEING TAKEN TO THE HEALTH FACILITY?	Yes	1	1 ML9
	No	2	2 ML10
	DK	8	8 ML10
ML8. WAS (name) GIVEN ANY MEDICINE FOR FEVER OR MALARIA DURING THIS ILLNESS?	Yes	1	
	No	2	2 ML10
	DK	8	8 ML10

MALARIA (cont'd)		ML
<p>ML9. WHAT MEDICINE WAS (name) GIVEN?</p> <p>Probe: ANY OTHER MEDICINE?</p> <p>Circle all medicines mentioned. Write brand name(s) of all medicines, if given.</p> <p>(Name)</p>	<p>Anti-malarials:</p> <p>SP / Fansidar A</p> <p>Chloroquine B</p> <p>Amodiaquine C</p> <p>Quinine D</p> <p>Artemisinin-based Combination E</p> <p>ACT with the green leaf F</p> <p>Other anti-malarial (specify) H</p> <p>Antibiotic drugs</p> <p>Pill / Syrup I</p> <p>Injection J</p> <p>Other medications:</p> <p>Paracetamol/ Panadol/ Acetaminophen P</p> <p>Aspirin Q</p> <p>Ibuprofen R</p> <p>Other (specify) X</p> <p>DK Z</p>	
<p>ML10. Check ML6 and ML9: Anti-malarial mentioned (codes A - H)?</p> <p><input type="checkbox"/> Yes Continue with ML11</p> <p><input type="checkbox"/> No Go to Next Module</p>		
<p>ML11. HOW LONG AFTER THE FEVER STARTED DID (name) FIRST TAKE (name of anti-malarial from ML6 or ML9)?</p> <p>If multiple anti-malarials mentioned in ML6 or ML9, name all anti-malarial medicines mentioned.</p>	<p>Same day 0</p> <p>Next day 1</p> <p>2 days after the fever 2</p> <p>3 days after the fever 3</p> <p>4 or more days after the fever 4</p> <p>DK 8</p>	

IMMUNIZATION		IM
<p>If an immunization card is available, copy the dates in IM3 for each type of immunization recorded on the card. IM6-IM17 are for registering vaccinations that are not recorded on the card. IM6-IM17 will only be asked when a card is not available.</p>		
<p>IM1. DO YOU HAVE A CARD WHERE (name)'S VACCINATIONS ARE WRITTEN DOWN?</p> <p>(If yes) MAY I SEE IT PLEASE?</p>	<p>Yes, seen 1</p> <p>Yes, not seen 2</p> <p>No card 3</p>	<p>1 IM3</p> <p>2 IM6</p>
<p>IM2. DID YOU EVER HAVE A VACCINATION CARD FOR (name)?</p>	<p>Yes 1</p> <p>No 2</p>	<p>1 IM6</p> <p>2 IM6</p>

IMMUNIZATION (cont'd)				IM
<p>IM3. (a) Copy dates for each vaccination from the card. (b) Write '44' in day column if card shows that vaccination was given but no date recorded.</p>	<p>Date of Immunization</p> <p>Day Month Year</p>			
BCG BCG				
POLIO AT BIRTH OPV0				
POLIO 1 OPV1				
POLIO 2 OPV2				
POLIO 3 OPV3				
PENTA1 (DPT/HEPB/INFL1) PEN1				
PENTA2 (DPT/HEPB/INFL2) PEN2				
PENTA3 (DPT/HEPB/INFL3) PEN3				
MEASLES MEASLES				
YELLOW FEVER YF				
VITAMIN A (1) (MOST RECENT) VITA1				
VITAMIN A (2) (2ND MOST RECENT) VITA2				
<p>IM4. Check IM3. Are all vaccines (BCG to Yellow Fever) recorded?</p> <p><input type="checkbox"/> Yes Go to IM18</p> <p><input type="checkbox"/> No Continue with IM5</p>				

<p>IM5. IN ADDITION TO WHAT IS RECORDED ON THIS CARD, DID (name) RECEIVE ANY OTHER VACCINATIONS – INCLUDING VACCINATIONS RECEIVED IN CAMPAIGNS OR IMMUNIZATION DAYS?</p> <p>Record 'Yes' only if respondent mentions vaccines shown in the table above.</p>	<p>Yes (Probe for vaccinations and write '66' in the corresponding day column for each vaccine mentioned. Then skip to IM18)</p> <p>No 2</p> <p>DK 8</p>	<p>1</p> <p>2 IM18</p> <p>8 IM18</p>
<p>IM6. HAS (name) EVER RECEIVED ANY VACCINATIONS TO PREVENT HIM/HER FROM GETTING DISEASES, INCLUDING VACCINATIONS RECEIVED IN A CAMPAIGN OR IMMUNIZATION DAY?</p>	<p>Yes</p> <p>No 2</p> <p>DK 8</p>	<p>1</p> <p>2 IM18</p> <p>8 IM18</p>
<p>IM7. HAS (name) EVER RECEIVED A BCG VACCINATION AGAINST TUBERCULOSIS – THAT IS, AN INJECTION IN THE ARM OR SHOULDER THAT USUALLY CAUSES A SCAR?</p>	<p>Yes</p> <p>No 2</p> <p>DK 8</p>	<p>1</p>
<p>IM8. HAS (name) EVER RECEIVED ANY "VACCINATION DROPS IN THE MOUTH" TO PROTECT HIM/HER FROM GETTING DISEASES – THAT IS, POLIO?</p>	<p>Yes</p> <p>No 2</p> <p>DK 8</p>	<p>1</p> <p>2 IM11</p> <p>8 IM11</p>
<p>IM9. WAS THE FIRST POLIO VACCINE RECEIVED IN THE FIRST TWO WEEKS AFTER BIRTH OR LATER?</p>	<p>First two weeks</p> <p>Later</p>	<p>1</p> <p>2</p>
<p>IM10. HOW MANY TIMES WAS THE POLIO VACCINE RECEIVED?</p>	<p>Number of times ___</p>	

IMMUNIZATION (cont'd)		IM	
IM11. HAS (name) EVER RECEIVED A PENTA (DPT/HEPB/INFL) VACCINATION – THAT IS, AN INJECTION IN THE THIGH OR BUTTOCKS – TO PREVENT HIM/HER FROM GETTING TETANUS, WHOOPING COUGH, OR DIPHTHERIA? Probe by indicating that PENTA vaccination is sometimes given at the same time as Polio	Yes No DK	1 2 8	1 2 IM16 8 IM16
IM12. HOW MANY TIMES WAS A PENTA (DPT/HEPB/INFL) VACCINE RECEIVED?	Number of times ____		
IM16. HAS (name) EVER RECEIVED A MEASLES INJECTION – THAT IS, A SHOT IN THE ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING MEASLES? Probe by indicating that the yellow fever vaccine is sometimes given at the same time as the measles vaccine	Yes No DK	1 2 8	
IM17. HAS (name) EVER RECEIVED THE YELLOW FEVER VACCINATION – THAT IS, A SHOT IN THE ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING YELLOW FEVER? Probe by indicating that the yellow fever vaccine is sometimes given at the same time as the measles vaccine	Yes No DK	1 2 8	
IM18. HAS (name) RECEIVED A VITAMIN A DOSE LIKE (THIS/ANY OF THESE) WITHIN THE LAST 6 MONTHS? Show common types of ampules / capsules / syrups	Yes No DK	1 2 8	
IM19. Please tell me if (name) has participated in any of the following campaigns over the course of the year:		Y N DK	
[A] POLIO IMMUNIZATION PHASE I (MARCH 2011)	POLIO IMMUNIZATION PHASE I	1 2 8	
[B] POLIO IMMUNIZATION PHASE II (MAY 2011)	POLIO IMMUNIZATION PHASE II	1 2 8	
[C] POLIO IMMUNIZATION PHASE III (AUGUST 2011)	POLIO IMMUNIZATION PHASE III	1 2 8	
[D] POLIO IMMUNIZATION PHASE IV (NOVEMBER 2011)	POLIO IMMUNIZATION PHASE IV	1 2 8	

NATIONAL HEALTH INSURANCE		HI	
HI1. HAS (name) EVER BEEN REGISTERED WITH ANY HEALTH INSURANCE SCHEME?	Yes No	1 2	2 HI10
HI2. WHAT TYPE OF HEALTH INSURANCE DOES (NAME) HAVE? Probe: ANY OTHER?	National/District Health Insurance (NHIS) Mutual Health Organization/ Community-based Health Insurance Other Privately Purchased Commercial Health Insurance Other Health Insurance (specify)	A B C X	
HI3. Check HI2: <input type="checkbox"/> NHIS NOT CHECKED. Go to HI11			
HI3A. IN WHICH YEAR WAS (NAME) FIRST REGISTERED WITH THE NATIONAL HEALTH INSURANCE SCHEME (NHIS)?	(YYYY) _____ DK.....998		
HI4. HOW WAS (NAME'S) MEMBERSHIP OF THE NHIS ACHIEVED?	Paid premium myself Premium paid by a relative or friend Free Child Health Service Other (specify)	01 02 07 96	

NATIONAL HEALTH INSURANCE (cont'd)		HI	
HI5. DOES (NAME) HOLD A VALID NATIONAL HEALTH INSURANCE SCHEME (NHIS) CARD? If child has valid insurance card, request to see it. Check to make sure it is valid for 2011	Yes, card seen Yes, card not seen No	1 2 3	1 HI9 2 HI9
HI6. WHY DOES (NAME) NOT HAVE A VALID NHIS CARD?	Registered/Renewed, card not received Registered, in waiting period Registration not renewed Lost NHIS card Not aware of need to renew the card Other (specify)	2 3 4 5 7 6	2 HI9 3 NI9 5 HI9 6 HI9
HI7. DO YOU PLAN TO RENEW (NAME'S) NHIS REGISTRATION?	Yes No Don't know/ Not sure	1 2 8	1 HI9 8 HI9

HI8. WHY DO YOU NOT WANT TO RENEW (NAME'S) NHIS REGISTRATION? Probe: ANY OTHER REASON?	Has not been sick Still pay out of pocket Poor quality care with card Waiting time for card too long Desired services not covered Clinics used/ traditional services not Covered by NHIS Not aware that card is renewable Other (specify)_____	A C D E F G H X	
HI9. IN YOUR OPINION, DOES A CHILD WITH THE NHIS CARD GET BETTER/SAME/WORSE SERVICES WHEN THEY VISIT HEALTH CARE FACILITIES?	Better Same Worse Never used Don't know	1 2 3 4 8	1 UF13 2 UF13 3 UF13 4 UF13 8 UF13
HI10. WHY HAVE YOU NOT REGISTERED OR RENEWED REGISTRATION FOR (NAME) WITH THE NHIS? Probe: ANY OTHER REASON?	Not heard of NHIS Do not trust NHIS Do not know where to register Registration office too far Do not need health insurance NHIS does not cover the services needed NHIS does not cover the facilities used Not aware that card is renewable Other (specify)_____	A C D E F G H I X	A UF13 C UF13 D UF13 E UF13 F UF13 G UF13 H UF13 X UF13
HI11. IS (NAME'S) INSURANCE CURRENTLY VALID FOR 2011?	Yes No Don't know/ Not sure	1 2 8	

UF13. Record the time.	Hour and minutes ____ : ____	
UF14. Is the respondent the mother or caretaker of another child age 0-4 living in this household?	<input type="checkbox"/> Yes Indicate to the respondent that the health technician will need to measure the weight and height of the child later. Go to the next QUESTIONNAIRE FOR CHILDREN UNDER FIVE to be administered to the same respondent <input type="checkbox"/> No End the interview with this respondent by thanking him/her for his/her cooperation and tell her/him that the health technician will need to measure the weight and height of the child Check to see if there are other woman's, under-5's or man's questionnaires to be administered in this household. Move to another woman's, under-5 or man's questionnaire, or start making arrangements for anthropometric measurements of all eligible children in the household.	

ANTHROPOMETRY		AN	
After questionnaires for all children are complete, the measurer weighs and measures each child. Record weight and length/height below, taking care to record the measurements on the correct questionnaire for each child. Check the child's name and line number on the household listing before recording measurements. Also observe and record whether the child has oedema or not.			
AN1. Measurer's name and number:	Name	_____	
AN2. Result of height / length and weight measurement	Either or both measured	1	
	Child not present	2	2 AN6
	Child or caretaker refused	3	3 AN6
	Other (specify)	6	6 AN6
AN3. Child's weight	Kilograms (kg)	____.____	
	Weight not measured	99.9	
AN4. Child's length or height	Check age of child in AG2:		
<input type="checkbox"/> Child under 2 years old. Measure length (lying down).	Length (cm) Lying down	1 _____ . ____	
	Height (cm) Standing up	2 _____ . ____	
<input type="checkbox"/> Child age 2 or more years. Measure height (standing up).	Length / Height not measured	9999.9	
	AN5. Oedema		
EXAMINE AND RECORD.	Checked		
	Oedema present	1	
	Oedema not present	2	
	Unsure	3	
	Not checked (specify reason)	7	
AN6. Is there another child in the household who is eligible for measurement?			
<input type="checkbox"/> Yes Record measurements for next child.			
<input type="checkbox"/> No End measurement with this household by thanking all participants for their cooperation. Health technician will then proceed to the anemia and malaria testing for eligible children in the house hold.			

ANAEMIA AND MALARIA TESTING FOR CHILDREN UNDER FIVE		AM	
After weighing and measuring the child, the health technician will request to do the anaemia and malaria testing.			
AM1. Check AG1:	Yes	1	
Was child born in month of interview or five previous months?	No	2	1 END
AM2. Ask consent for anaemia test from mother or caretaker:			
AS PART OF THIS SURVEY, WE ARE ASKING THAT CHILDREN ALL OVER THE COUNTRY TAKE AN ANAEMIA TEST. ANAEMIA IS A SERIOUS HEALTH PROBLEM THAT USUALLY RESULTS FROM POOR NUTRITION, INFECTION, OR DISEASE. THIS SURVEY WILL HELP THE GOVERNMENT TO DEVELOP PROGRAMS TO PREVENT AND TREAT ANAEMIA.			
WE ASK THAT ALL CHILDREN AGE 6 MONTHS TO 5 YEARS PARTICIPATE IN THE ANAEMIA TESTING PART OF THIS SURVEY AND GIVE A FEW DROPS OF BLOOD FROM A FINGER. THE EQUIPMENT USED TO TAKE THE BLOOD IS CLEAN AND COMPLETELY SAFE. IT HAS NEVER BEEN USED BEFORE AND WILL BE THROWN AWAY AFTER EACH TEST. YOUR CHILD WILL FEEL SOME PAIN THAT LASTS A FEW SECONDS WHEN HIS/HER FINGER IS PRICKED. THERE IS ALSO A SLIGHT RISK OF BLEEDING AND INFECTION WHERE THE FINGER IS PRICKED, BUT WE TAKE PRECAUTIONS TO REDUCE THIS RISK.			
THE BLOOD WILL BE TESTED FOR ANAEMIA IMMEDIATELY AND THE RESULT WILL BE MADE KNOWN TO YOU RIGHT AWAY. THE RESULT WILL BE KEPT CONFIDENTIAL AND WILL NOT BE SHARED WITH ANYONE OTHER THAN MEMBERS OF OUR SURVEY TEAM.			
DO YOU HAVE ANY QUESTIONS? YOU CAN SAY YES TO THE TEST OR YOU CAN SAY NO. IT IS UP TO YOU TO DECIDE.			
WILL YOU ALLOW (NAME OF CHILD) TO PARTICIPATE IN THE ANAEMIA TEST?			
AM3. Anaemia testing consent outcome.	Granted	1	
	_____ (mother/caretaker's signature or thumbprint)		
	_____ (health tech's signature as witness)		
	Refused	2	
	Child not present	5	
	Other	6	
AM4. Ask consent for malaria test from mother or caretaker:			
AS PART OF THIS SURVEY, WE ARE ASKING THAT CHILDREN ALL OVER THE COUNTRY TAKE A MALARIA TEST. MALARIA IS A SERIOUS ILLNESS CAUSED BY A PARASITE TRANSMITTED BY A MOSQUITO BITE. THIS SURVEY WILL HELP THE GOVERNMENT TO DEVELOP PROGRAMS TO PREVENT MALARIA.			
WE ASK THAT ALL CHILDREN AGE 6 MONTHS TO 5 YEARS PARTICIPATE IN THE MALARIA TESTING PART OF THIS SURVEY AND GIVE A FEW DROPS OF BLOOD FROM A FINGER. THE EQUIPMENT USED TO TAKE THE BLOOD IS CLEAN AND COMPLETELY SAFE. IT HAS NEVER BEEN USED BEFORE AND WILL BE THROWN AWAY AFTER EACH TEST. YOUR CHILD WILL FEEL SOME PAIN THAT LASTS A FEW SECONDS WHEN HIS/HER FINGER IS PRICKED. THERE IS ALSO A SLIGHT RISK OF BLEEDING AND INFECTION WHERE THE FINGER IS PRICKED, BUT WE TAKE PRECAUTIONS TO REDUCE THIS RISK. WE WILL USE BLOOD FROM THE SAME FINGER PRICK MADE FOR THE ANAEMIA TEST.			
ONE BLOOD DROP WILL BE TESTED FOR MALARIA IMMEDIATELY AND THE RESULT WILL BE MADE KNOWN TO YOU RIGHT AWAY. ANOTHER DROP WILL BE COLLECTED ON A SLIDE AND TAKEN TO A LABORATORY FOR TESTING. YOU WILL NOT BE TOLD THE RESULTS OF THE LABORATORY TESTING. ALL RESULTS WILL BE KEPT CONFIDENTIAL AND WILL NOT BE SHARED WITH ANYONE OTHER THAN MEMBERS OF OUR SURVEY TEAM.			
DO YOU HAVE ANY QUESTIONS? YOU CAN SAY YES TO THE TEST OR YOU CAN SAY NO. IT IS UP TO YOU TO DECIDE.			
WILL YOU ALLOW (NAME OF CHILD) TO PARTICIPATE IN THE MALARIA TESTING?			

ANAEMIA AND MALARIA TESTING FOR CHILDREN UNDER FIVE (cont'd)		AM
AM5. Malaria testing consent outcome.	Granted 1 _____ (mother/caretaker's signature or thumbprint) _____ (health tech's signature as witness) Refused 2 Child not present 5 Other 6	
AM6. Prepare supplies for the tests for which consent was granted and proceed with the tests.		
AM7. Bar code label. Put the first bar code label here, the 2nd on the RDT, the 3rd on the slide and the 4th and 5th on the transmittal forms.	PASTE THE 1st BAR CODE LABEL HERE Refused 9994 Child not present 9995 Other 9996	
AM8. Haemoglobin level. Record the haemoglobin level here and in the anaemia and malaria brochure.	G/DL __ __ . __ Refused 994 Child not present 995 Other 996	
AM9. Malaria rapid test outcome.	Tested 1 Refused 2 Child not present 3 Other 6	2 AM11 3 AM11 6 AM11
AM10. Malaria rapid test result. Record the result of the RDT here and in the anaemia and malaria brochure.	Positive, falciparum only (Pf) 1 Positive, other species (O,M,V) 2 Positive, both falciparum and OMV 3 Negative 4 Other 6	1 AM13 2 AM13 3 AM13
AM11. Check AM8: Haemoglobin result	Below 7.0 g/dl, severe anaemia 1 7.0 g/dl or above 2 Refused 3 Child not present 4 Other 6	2 END 3 END 4 END 6 END
AM12. Severe anaemia referral THE ANAEMIA TEST SHOWS THAT (NAME OF CHILD) HAS SEVERE ANAEMIA. YOUR CHILD IS VERY ILL AND MUST BE TAKEN TO A HEALTH FACILITY IMMEDIATELY.		END
AM13. DOES (NAME) SUFFER FROM ANY OF THE FOLLOWING ILLNESSES OR SYMPTOMS: EXTREME WEAKNESS? HEART PROBLEMS? FAINTING, LOSS OF CONSCIOUSNESS? RAPID OR DIFFICULT BREATHING? SEIZURES? ABNORMAL BLEEDING? JAUNDICE (YELLOW SKIN)? DARK URINE?	Extreme weakness A Heart problems B Fainting, loss of consciousness C Rapid or difficult breathing D Seizures E Abnormal bleeding F Jaundice G Dark urine H	
AM14. Check AM13: Any code circled?	No code circled 1 Any code circled 2	2 AM 17
AM15. Check AM8: Haemoglobin result	Below 6.0 g/dl, severe anaemia 1 6.0 g/dl or above 2 Refused 3 Child not present 4 Other 6	1 AM 17
AM16. IN THE PAST 2 WEEKS HAS (NAME) TAKEN ANY MEDICINE GIVEN BY A DOCTOR OR HEALTH CENTER TO TREAT THE MALARIA? Check if it is AL/AS-AQ by asking to see the medicine. Circle '1' only if it is AL or AS-AQ.	Yes 1 No 2	1 AM 18 2 AM 19

ANAEMIA AND MALARIA TESTING FOR CHILDREN UNDER FIVE (cont'd)		AM
AM17. Severe malaria referral THE MALARIA TEST SHOWS THAT (NAME OF CHILD) HAS MALARIA. YOUR CHILD ALSO HAS SYMPTOMS OF SEVERE MALARIA. THE MALARIA TREATMENT I HAVE WILL NOT HELP YOUR CHILD, AND I CANNOT GIVE YOU THE MEDICATION. YOUR CHILD IS VERY ILL AND MUST BE TAKEN TO A HEALTH FACILITY RIGHT AWAY.		END
AM18. Referral for those who are already taking AL or AS-AQ YOU HAVE TOLD ME THAT (NAME OF CHILD) HAS ALREADY RECEIVED MEDICATION FOR MALARIA. THEREFORE, I CANNOT GIVE YOU ADDITIONAL MEDICATION. HOWEVER, THE TEST SHOWS THAT HE/SHE IS POSITIVE FOR MALARIA. IF YOUR CHILD HAS A FEVER FOR TWO DAYS AFTER THE LAST DOSE OF MEDICATION, YOU SHOULD TAKE THE CHILD TO THE NEAREST HEALTH FACILITY FOR FURTHER EXAMINATION.		END
AM19. Consent for malaria treatment THE MALARIA TEST SHOWS THAT YOUR CHILD HAS MALARIA. WE CAN GIVE YOU FREE MEDICINE. THE MEDICINE IS CALLED AS-AQ. IT IS VERY EFFECTIVE AND IN A FEW DAYS IT SHOULD GET RID OF THE FEVER AND OTHER SYMPTOMS. YOU DO NOT HAVE TO GIVE THE CHILD THE MEDICINE. IT IS UP TO YOU TO DECIDE. PLEASE TELL ME IF YOU ACCEPT THE MEDICINE OR NOT.		
AM20. Accepted medicine?	Accepted medicine 1 Refused medicine 2 Other 6	

TABLE 1A: ARTESUNATE + AMODIAQUINE FIXED DOSE COMBINATION STANDARD REGIMEN, USING THE 3 AVAILABLE DOSING STRENGTHS

Artesunate + Amodiaquine Fixed Dose Combination*					
Weight (kg)	Age	Tablet Dosing Strength	Day 1	Day 2	Day 3
≤ 8 kg	2-11 mos. "Infants"	AS: 25 mg AQ: 67.5 mg	1 tablet	1 tablet	1 tablet
9-17 kg	1-5 years "Young Children"	AS: 50 mg AQ: 135 mg	1 tablet	1 tablet	1 tablet
18-35 kg	6-13 years "Children"	AS: 100 mg AQ: 270 mg	1 tablet	1 tablet	1 tablet
≥ 36 kg	> 13 years "Adolescents & Adults"	AS: 100 mg AQ: 270 mg	2 tablet	2 tablet	2 tablet

* Each tablet contains both Artesunate (AS) and Amodiaquine (AQ), at the dosages indicated. The product packaging clearly indicates which dosing strength applies to which age group.

TABLE 1B: ARTESUNATE + AMODIAQUINE CO-BLISTERED FORMULATION REGIMEN FOR ONCE DAILY DOSING

Weight (kg)	Age (yr)	Artesunate 50 mg tablets			Amodiaquine 150 mg base tablets		
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
5-10 kg	Under 1	½ tab	½ tab	½ tab	½ tab	½ tab	½ tab
11-24 kg	1-6	1 tab	1 tab	1 tab	1 tab	1 tab	1 tab
24-50 kg	7-13	2 tabs	2 tabs	2 tabs	2 tabs	2 tabs	2 tabs
50-70 kg	14-18	3 tabs	3 tabs	3 tabs	3 tabs	3 tabs	3 tabs
≥70 kg	≥18	4 tabs	4 tabs	4 tabs	4 tabs	4 tabs	4 tabs

Note: The dose in mg/body weight is: Amodiaquine 10mg/kg body weight + Artesunate 4mg/ kg body weight, taken as a SINGLE DOSE daily for three (3) days, after meals.

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

MAN'S INFORMATION PANEL		QUESTIONNAIRE FOR INDIVIDUAL MEN GHANA 2011
MAN'S INFORMATION PANEL		MM
This questionnaire is to be administered to all men age 15 through 59 (see column HL7A of Household Listing Form). Fill in one form for each eligible man.		
MM1. Cluster Number: _____	MM2. Household number: _____	
MM3. Man's name: _____	MM4. Man's line number: _____	
MM5. Interviewer name and number: _____	MM6. Day / Month / Year of interview:	
Name _____	____ / ____ / 2011	
Name of Region: _____	Name of District: _____	
Repeat greeting if not already read to this man: WE ARE FROM THE GHANA STATISTICAL SERVICE. WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT 30 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.		If greeting at the beginning of the household questionnaire has already been read to this man, then read the following: NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 30 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.
MAY I START NOW?		
<input type="checkbox"/> Yes, permission is given Go to MM10 to record the time and then begin the interview.		
<input type="checkbox"/> No, permission is not given Complete MM7. Discuss this result with your supervisor.		
MM7. Result of man's interview	Completed Not at home Refused Partly completed Incapacitated Other (specify)	01 02 03 04 05 96
MM8. Field edited by (Name and number): Name _____	MM9. Data entry clerk (Name and number): Name _____	
MM10. Record the time.	Hour and minutes ____ : ____	
MAN'S BACKGROUND		MB
MB1. IN WHAT MONTH AND YEAR WERE YOU BORN?	Date of birth Month ____ DK month 98 Year ____ DK year 9998	
MB2. HOW OLD ARE YOU? Probe: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?	Age (in completed years) ____	
Compare and correct MB1 and/or MB2 if inconsistent		
MB3. HAVE YOU EVER ATTENDED SCHOOL? (INCLUDING PRESCHOOL)	Yes 1 No 2	2 MB7

MAN'S BACKGROUND (cont'd)		MB
MB4. WHAT IS THE HIGHEST LEVEL OF SCHOOL YOU ATTENDED?	Preschool Primary Middle/JSS/JHS Secondary/SSS/SHS Voc/Comm/Tech Post Secondary (Nursing/Teacher Trg) Tertiary	0 1 2 3 4 5 6
MB5. WHAT IS THE HIGHEST CLASS/YEAR YOU COMPLETED AT THAT LEVEL?	Class/Year —	0 MB7
If no class/year completed at that level, enter "0"		
MB6. Check MB4:		
<input type="checkbox"/> Secondary or Higher (MB4=3 or MB4=4 or MB4=5 or MB4=6) Go to MB8		
<input type="checkbox"/> Primary /Middle/JSS/JHS (MB4=1 or MB4=2) Continue with MB7		
MB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME.	Cannot read at all Able to read only parts of sentence Able to read whole sentence	1 2 3
Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe:		
CAN YOU READ PART OF THE SENTENCE TO ME?	No sentence in required language (specify language)	4
	Blind/mute, visually/speech impaired	5

MB8. WHAT IS YOUR RELIGION?	Catholic Protestant Pentecostal/Charismatic Deeper Life Jehovah Witness SDA Other Christian Moslem Traditional Spiritualist Other religion (specify) No Religion	11 12 13 14 15 16 17 21 31 32 96 97
MB9. TO WHAT ETHNIC GROUP DO YOU BELONG?	Akan Ga/Dangme Ewe Guan Gruma Mole Dagbani Grusi Mande Non-Ghanaian Other ethnic group (specify)	11 12 13 14 15 21 22 23 24 96

ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY		AC
AC1. Check MB7:		
<input type="checkbox"/> Question left blank (Respondent has Secondary or Higher education) Continue with AC2		
<input type="checkbox"/> Able to read or no sentence in required language (codes 2, 3 or 4) Continue with AC2		
<input type="checkbox"/> Cannot read at all or blind (codes 1 or 5) Go to AC3		
AC2. DO YOU READ A NEWSPAPER OR MAGAZINE ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4
AC3. DO YOU LISTEN TO THE RADIO ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4
AC4. DO YOU WATCH TELEVISION ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4
AC6. HAVE YOU EVER USED A COMPUTER?	Yes No	1 2
		2 AC9
AC7. HAVE YOU EVER USED A COMPUTER IN THE LAST 12 MONTHS?	Yes No	1 2
		2 AC9
AC8. DURING THE LAST ONE MONTH, DID YOU USE A COMPUTER ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4
AC9. HAVE YOU EVER USED THE INTERNET?	Yes No	1 2
		2 NEXT MODULE

AC10. HAVE YOU EVER USED THE INTERNET IN THE LAST 12 MONTHS?	Yes No	1 2	2 NEXT MODULE
If necessary, probe for use from any location, with any device			
AC11. DURING THE LAST ONE MONTH, DID YOU USE THE INTERNET ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	

MARRIAGE/UNION MU

MU1. ARE YOU CURRENTLY MARRIED OR LIVING TOGETHER WITH A WOMAN AS IF MARRIED?	Yes, currently married Yes, cohabiting with a woman No, not in union	1 2 3	2 MU1B 3 MU5
MU1A. WHAT TYPE OF MARRIAGE?	Consensual union Customary marriage only Customary and religious Civil marriage only Customary and civil Customary, religious and civil Betrothed(incl. customary not completed) Other (specify) DK	01 02 03 04 05 06 07 96 98	
MU1B. HOW MANY WOMEN DO YOU CURRENTLY LIVE WITH (MARRIED OR AS IF MARRIED)?	Number of women	___	

MARRIAGE/UNION (cont'd) MU

If only one wife MU2. HOW OLD IS YOUR WIFE/PARTNER?	Age in years	___	MU8
Probe: HOW OLD WAS YOUR WIFE/PARTNER ON HER LAST BIRTHDAY?	DK	98	MU8
If more than one wife MU2A. HOW OLD IS YOUR YOUNGEST WIFE/PARTNER (RANK)?	Probe: HOW OLD WAS YOUR YOUNGEST WIFE/PARTNER ON HER LAST BIRTHDAY?		
MU5. HAVE YOU EVER BEEN MARRIED OR LIVED TOGETHER WITH A WOMAN AS IF MARRIED?	Yes, formerly married Yes, formerly lived with a woman No	1 2 3	3 Next Module
MU6. WHAT IS YOUR MARITAL STATUS NOW: ARE YOU WIDOWED, DIVORCED OR SEPARATED?	Widowed Divorced Separated	1 2 3	
MU7. HAVE YOU BEEN MARRIED OR LIVED WITH A WOMAN ONLY ONCE OR MORE THAN ONCE?	Only once More than once	1 2	
MU8. IN WHAT MONTH AND YEAR DID YOU FIRST MARRY OR START LIVING WITH A WOMAN AS IF MARRIED?	Date of first marriage Month ___ DK month 98 Year _____ DK year 9998		Next Module
MU9. HOW OLD WERE YOU WHEN YOU STARTED LIVING WITH YOUR FIRST WIFE/PARTNER?	Age in years	___	

ATTITUDE TOWARDS CONTRACEPTION MR

MR1. I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING.			
MR2. COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY.	Yes No	1 2	2 MR4
ARE YOU OR (ANY OF) YOUR WIFE(S)/PARTNER(S) CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID HER GETTING PREGNANT?	DK	8	8 MR4
MR3. WHAT ARE YOU / ANY OF YOUR WIFE(S)/PARTNER(S) DOING TO DELAY OR AVOID A PREGNANCY?	Female sterilization Male sterilization IUD Injectables Implants Pill Male condom Female condom Diaphragm Foam / Jelly Lactational amenorrhoea method (LAM) Periodic abstinence / Rhythm Withdrawal LNG-IUS Other (specify)	A B C D E F G H I J K L M N X	NEXT MODULE
Do not prompt. If more than one method is mentioned, circle each one.			

ATTITUDE TOWARDS CONTRACEPTION (cont'd) MR

MR4. WOULD YOU YOURSELF USE OR WOULD YOU ALLOW (ANY OF) YOUR WIFE(S)/PARTNER(S) TO USE ANY SUCH METHODS?	Yes No DK / not sure / depends	1 2 8	1 NEXT MODULE 8 NEXT MODULE
MR5. WHY WOULDN'T YOU ALLOW YOUR WIFE(S)/PARTNER(S) TO USE ANY SUCH METHODS?	Religious beliefs Partner refuses Can't afford / expensive Side effects Not sexually active Do not wish to avoid pregnancy Encourages promiscuity Other (specify)	A B C D E F G X	
Probe: ANY OTHER REASON? Record all reasons mentioned.			

BEHAVIOUR CHANGE COMMUNICATION ON MALARIA MC

MC1. NOW I WOULD LIKE YOU TO TALK ABOUT MALARIA	Eating sweet foods Standing/ working in the sun Eating contaminated food Mosquito bites Malaria parasite (p. falciparum) Hereditary Dirty surroundings Weedy surroundings and stagnant water Other (specify) DK	A B C D E F G H X Z	
IN YOUR OPINION, WHAT CAUSES MALARIA?			
Probe: WHAT ELSE?			

MC2. HOW WOULD YOU KNOW THAT SOMEONE HAS MALARIA?	Hot body fever Vomiting/Diarrhea Strong headaches/Dizziness Loss of appetite Weakness of the body Cough Chills Bitterness in the mouth Other (specify) DK	A B C D E F G H X Z	
MC3. HOW CAN ONE PROTECT HIM/HERSELF AGAINST MALARIA?	Sleep under a mosquito net Sleep under a insecticide treated mosquito net Use Mosquito repellent Avoid mosquito bites Clear Weeds around the house Fill in Stagnant waters (puddles) Keep surrounding clean Put mosquito screen window Other (specify) DK	A B C D E F G H X Z	
MC4. CAN MALARIA BE TREATED?	Yes No DK	1 2 8	
MC5. IN THE PAST SIX MONTHS, HAVE YOU SEEN OR HEARD ANY MALARIA MESSAGES?	Yes No	1 2	2 MC10
BEHAVIOUR CHANGE COMMUNICATION ON MALARIA			MC
MC6. WHAT MESSAGES ABOUT MALARIA HAVE YOU SEEN OR HEARD IN THE PAST 6 MONTHS?	If have fever go to health facility Sleep under a insecticide treated mosquito net Pregnant women should take drugs to prevent malaria Malaria kills Other (specify) None DK/Don't remember	A B C D X Y Z	

MC7. IN THE PAST SIX MONTHS, HAVE YOU SEEN/HEARD ANY OF THE FOLLOWING MALARIA MESSAGES ON TELEVISION OR RADIO:	Yes on TV	Yes on radio	Yes on both	No	
[A] NANA BORO'S "AHA YE DE-NTONTOM BE WU" MUSIC VIDEO/ SONG?	1	2	3	4	
[B] ADVERT WHERE WOMAN DOESN'T WANT TO STAY THE NIGHT WITH THE MAN UNLESS HE HAS A TREATED NET?	1	2	3	4	
[C] SHORT DOCUMENTARIES FEATURING THE TRUE STORIES OF GHANAIAN FAMILIES CHILDREN SUFFERING EPILEPSY AND LEARNING DISABILITIES DUE TO SEVERE MALARIA?	1	2	3	4	
[D] ADVERT WHERE PEOPLE FROM ALL WALKS OF LIFE ARE SLEEPING UNDER TREATED NETS?	1	2	3	4	
MC8 DURING THE PAST 6 MONTHS, HAVE YOU SEEN/HEARD ANY ADVERT ON THE USE OF ACT WITH GREEN LEAF?	Yes 1 No 2				2 MC10
MC9. WHERE DID YOU SEE/HEAR THE ADVERT ON THE USE OF ACT WITH GREEN LEAF?	TV Radio Newspaper/Magazine Poster /Leaflets Billboard Other (specify) DK/Don't remember		A B C D E X Z		
MC10. HAVE YOU PARTICIPATED IN ANY COMMUNITY EVENT EDUCATING COMMUNITY MEMBERS ON PREVENTION AND CONTROL OF MALARIA?	Yes No		1 2		
ATTITUDE TOWARDS DOMESTIC VIOLENCE					MD
MD1. SOMETIMES A HUSBAND IS ANNOYED OR ANGERED BY THINGS THAT HIS WIFE DOES. IN YOUR OPINION, IS A HUSBAND JUSTIFIED IN HITTING OR BEATING HIS WIFE IN THE FOLLOWING SITUATIONS:		Yes	No	DK	
[A] IF SHE GOES OUT WITHOUT TELLING HIM?	Goes out without telling	1	2	8	
[B] IF SHE NEGLECTS THE CHILDREN?	Neglects children	1	2	8	
[C] IF SHE ARGUES WITH HIM?	Argues with him	1	2	8	
[D] IF SHE REFUSES TO HAVE SEX WITH HIM?	Refuses sex	1	2	8	
[E] IF SHE BURNS THE FOOD?	Burns food	1	2	8	
[F] IF SHE INSULTS HIM?	Insults him	1	2	8	
[G] IF SHE REFUSES TO GIVE HIM FOOD?	Refuses to give food	1	2	8	
[H] IF SHE HAS ANOTHER PARTNER?	Another partner	1	2	8	
[I] IF SHE STEALS?	Stealing	1	2	8	
[J] IF SHE GOSSIPS?	Gossiping	1	2	8	
[K] OTHER, (SPECIFY)?	Other (specify)	1	2	8	

SEXUAL BEHAVIOUR		MS
Check for the presence of others. Before continuing, ensure privacy.		
MS1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT SEXUAL ACTIVITY IN ORDER TO GAIN A BETTER UNDERSTANDING OF SOME IMPORTANT LIFE ISSUES. THE INFORMATION YOU SUPPLY WILL REMAIN STRICTLY CONFIDENTIAL. HOW OLD WERE YOU WHEN YOU HAD SEXUAL INTERCOURSE FOR THE VERY FIRST TIME?	Never had intercourse 00 Age in years ___ First time when started living with (first) wife/partner 95	00 Next Module
MS2. THE FIRST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes 1 No 2 DK / Don't remember 8	2 MS3 8 MS3
MS2A. WHAT WAS THE MAIN REASON WHY YOU USED THE CONDOM?	To prevent STD/HIV 1 To prevent pregnancy 2 To prevent both STD/HIV and pregnancy 3 Partner requested/insisted 4 Other (specify) 6	
MS3. WHEN WAS THE LAST TIME YOU HAD SEXUAL INTERCOURSE? Record 'years ago' only if last intercourse was one or more years ago. If 12 months or more the answer must be recorded in years.	Days ago 1 ___ Weeks ago 2 ___ Months ago 3 ___ Years ago 4 ___	4 MS15
MS4. THE LAST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes 1 No 2	2 MS5
SEXUAL BEHAVIOUR (cont'd)		MS
MS4A. WHAT WAS THE MAIN REASON WHY YOU USED THE CONDOM?	To prevent STD/HIV 1 To prevent pregnancy 2 To prevent both STD/HIV and pregnancy 3 Partner requested/insisted 4 Other (specify) 5	
MS5. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON WITH WHOM YOU LAST HAD SEXUAL INTERCOURSE? Probe to ensure that the response refers to the relationship at the time of sexual intercourse If 'girlfriend', then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '02'. If 'no', circle '03'.	Spouse 01 Cohabiting partner/concubine 02 Girlfriend/fiancée 03 Casual acquaintance 04 Ex-girlfriend/fiancée 05 Commercial sex worker 06 Other (specify) 96	
MS6. Check MU1: <input type="checkbox"/> Currently married or living with a woman (MU1 = 1 or 2) Go to MS8 <input type="checkbox"/> Not married / Not in union (MU1 = 3) Continue with MS7		

MS7. HOW OLD IS THIS PERSON? If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	Age of sexual partner ___ DK 98	
MS8. HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes 1 No 2	2 MS14B
MS9. THE LAST TIME YOU HAD SEXUAL INTERCOURSE WITH THIS OTHER PERSON, WAS A CONDOM USED?	Yes 1 No 2	
MS10. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON? Probe to ensure that the response refers to the relationship at the time of sexual intercourse If 'girlfriend', then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '02'. If 'no', circle '03'.	Spouse 01 Cohabiting partner/concubine 02 Girlfriend/fiancée 03 Casual Acquaintance 04 Ex-Girlfriend/fiancée 05 Commercial Sex Worker 06 Other (Specify) 96	
MS11. Check MU1 and MU7: • Currently married or living with a woman (MU1 = 1 or 2) AND Married only once or lived with a woman only once (MU7 = 1) Go to MS13 • Else Continue with MS12		
MS12. HOW OLD IS THIS PERSON? If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	Age of sexual partner ___ DK 98	
MS13. OTHER THAN THESE TWO PERSONS, HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes 1 No 2	2 MS14B
MS14. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN THE LAST 12 MONTHS?	Number of partners ___	
MS14A. WAS A CONDOM USED EVERY TIME YOU HAD SEXUAL INTERCOURSE IN THE LAST 12 MONTHS?	Yes 1 No 2	
MS14B. HAVE YOU EVER HAD SEX WITH A COMMERCIAL SEX WORKER?	Yes 1 No 2	2 MS15
SEXUAL BEHAVIOUR (cont'd)		MS
MS14C. WHEN WAS THE LAST TIME YOU HAD SEXUAL INTERCOURSE WITH A COMMERCIAL SEX WORKER? Record 'years ago' only if last intercourse was one or more years ago. If 12 months or more the answer must be recorded in years.	Days ago 1 ___ Weeks ago 2 ___ Months ago 3 ___ Years ago 4 ___	
MS15. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN YOUR LIFETIME? If a non-numeric answer is given, probe to get an estimate. If number of partners is 95 or more, write '95'.	Number of lifetime partners ___ DK 98	

HIV/AIDS		MH
MH1. NOW I WOULD LIKE TO TALK WITH YOU ABOUT SOMETHING ELSE.	Yes 1	2 Next Module
HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?	No 2	
MH2. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER WHO HAS NO OTHER SEX PARTNERS?	Yes 1 No 2 DK 8	
MH3. CAN PEOPLE GET THE AIDS VIRUS BECAUSE OF WITCHCRAFT OR OTHER SUPERNATURAL MEANS?	Yes 1 No 2 DK 8	

MH4. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?	Yes No DK	1 2 8	
MH5. CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?	Yes No DK	1 2 8	
MH6. CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS AIDS?	Yes No DK	1 2 8	
MH7. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?	Yes No DK	1 2 8	
MH8. CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY:	Yes No DK	1 2 8	
[A] DURING PREGNANCY?	Yes No	1 2	8
[B] DURING DELIVERY?	Yes No	1 2	8
[C] BY BREASTFEEDING?	Yes No	1 2	8
MH9. IN YOUR OPINION, IF A FEMALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes No DK/Not sure/Depends	1 2 8	
MH9A. IN YOUR OPINION, IF A MALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD HE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes No DK / Not sure / Depends	1 2 8	
MH10. WOULD YOU BUY FRESH VEGETABLES FROM A SHOPKEEPER OR VENDOR IF YOU KNEW THAT THIS PERSON HAD THE AIDS VIRUS?	Yes No DK / Not sure / Depends	1 2 8	

HIV/AIDS (cont'd)			MH
MH11. IF A MEMBER OF YOUR FAMILY GOT INFECTED WITH THE AIDS VIRUS, WOULD YOU WANT OTHER PEOPLE TO KNOW ABOUT IT?	Yes No DK / Not sure / Depends	1 2 8	
MH12. IF A MEMBER OF YOUR FAMILY BECAME SICK WITH AIDS, WOULD YOU BE WILLING TO CARE FOR HER OR HIM IN YOUR OWN HOUSEHOLD?	Yes No DK / Not sure / Depends	1 2 8	
MH12A. IN YOUR OPINION, CAN THE HIV VIRUS BE TRANSMITTED THROUGH ORAL SEX?	Yes No DK / Not sure / Depends	1 2 8	
MH12B. IN YOUR OPINION, CAN THE HIV VIRUS BE TRANSMITTED THROUGH ANAL SEX?	Yes No DK / Not sure / Depends	1 2 8	
MH12C. IN YOUR OPINION, CAN HIV/AIDS BE CURED?	Yes No DK / Not sure	1 2 8	2 MH24 8 MH24
MH12D. IN YOUR OPINION, CAN A MAN INFECTED WITH HIV/AIDS BE CURED BY HAVING SEX WITH A VIRGIN WOMAN?	Yes No DK / Not sure	1 2 8	

MH24. I DON'T WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes No	1 2	2 MH27
MH 25. I DON'T WANT TO KNOW THE RESULTS BUT, WHEN WAS THE MOST RECENT TIME YOU WERE TESTED?	Less than 12 months ago 12-23 months ago 2 or more years ago	1 2 3	
MH25A. DID YOU, YOURSELF, ASK FOR THE TEST, WAS IT OFFERED AND YOU ACCEPTED, OR WAS IT REQUIRED?	Asked for the test Offered and accepted Required	1 2 3	

MH25B. WHERE DID YOU GO FOR THE TEST?	Public sector Govt. hospital Govt. health centre Govt. clinic/PHU Govt. VCT Centre Other public (specify)	11 12 13 14 16	
Probe to identify the type of source. If unable to determine whether public or private, write the name of the place. (NAME OF PLACE)	Private Medical Sector Private hospital Private clinic Other private medical (specify)	21 22 26	
	Other sources NGO VCT Centre Mission hospital	31 32	
	Other (specify)	96	
	DK	98	

HIV/AIDS (cont'd)			MH
MH 26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes No	1 2	1 Next Module 2 Next Module
MH 26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes No	1 2	1 Next Module 2 Next Module
MH 27. DO YOU KNOW OF A PLACE WHERE PEOPLE CAN GO TO GET TESTED FOR THE AIDS VIRUS?	Yes No	1 2	

NATIONAL HEALTH INSURANCE			NI
NI1. HAVE YOU EVER REGISTERED WITH ANY HEALTH INSURANCE SCHEME?	Yes No	1 2	2 NI10
NI2. WHAT TYPE OF HEALTH INSURANCE DO YOU HAVE? RECORD ALL MENTIONED	National/District Health Insurance (NHIS) Mutual Health Organization/ Community-based Health Insurance Other privately purchased commercial Health Insurance Other Health Insurance (specify)	A B C X	
NI3. Check NI2: <input type="checkbox"/> NHIS NOT CHECKED. Go to NI11.			

NI4. HOW WAS YOUR MEMBERSHIP OF THE NHIS ACHIEVED?	Paid premium myself Premium paid by a relative or friend Premium paid by employers Premium paid by SSNIT Exempt as indigent Other (specify)	01 02 03 04 05 96	
NI5. DO YOU HAVE A VALID NATIONAL HEALTH INSURANCE SCHEME (NHIS) CARD? If person has valid insurance card, request to see it. Check to make sure it is valid for 2011	Yes, card seen Yes, card not seen No	1 2 3	1 NI9 2 NI9
NI6. WHY DO YOU NOT HAVE A VALID NHIS CARD?	Registered, but not fully paid yet Registered/Renewed, card not received Registered, in waiting period Registration not renewed Lost NHIS card Other (specify)	1 2 3 4 5 6	1 NI9 2 NI9 3 NI9 5 NI9 6 NI9
NI7. DO YOU PLAN TO RENEW THE NHIS REGISTRATION?	Yes No Don't know/ Not sure	1 2 8	1 NI9 8 NI9
NI8. WHY DO YOU NOT WANT TO RENEW THE NHIS REGISTRATION?	Have not been sick Premium too Expensive Still pay out of pocket Poor quality care with card Waiting time for card too long Desired services not covered Clinics used/ traditional services not Covered by NHIS Other (specify)	A B C D E F G X	
NATIONAL HEALTH INSURANCE (cont'd)			NI
NI9. IN YOUR OPINION, DO NHIS CARD HOLDERS GET BETTER/ SAME/WORSE SERVICES WHEN THEY ATTEND HEALTH CARE FACILITIES?	Better Same Worse Never used Don't know	1 2 3 4 8	1 MM11 2 MM11 3 MM11 4 MM11 8 MM11
NI10. WHY HAVE YOU NOT REGISTERED OR RENEWED REGISTRATION WITH THE NHIS?	Not heard of NHIS Premium too Expensive Do not trust NHIS Do not know where to register Registration office too far Do not need health insurance NHIS does not cover the services I need NHIS does not cover the facilities I use Other	A B C D E F G H X	A MM11 B MM11 C MM11 D MM11 E MM11 F MM11 G MM11 H MM11 X MM11
NI11. IS YOUR INSURANCE CURRENTLY VALID FOR 2011?	Yes No Don't know / Not sure	1 2 8	
MM11. Record the time.	Hour and minutes ____ : ____		
MM12. End the interview with this respondent by thanking him for his cooperation. Check for the presence of any other eligible man in the household.			

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

Ghana

**Multiple Indicator Cluster Survey
with an Enhanced Malaria Module and Biomarker, 2011**

Multiple Indicator Cluster Survey with an enhanced Malaria Module and Biomarker
2011

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MICS is an international household survey programme developed by UNICEF. The Ghana MICS was conducted as part of the fourth global round of MICS surveys (MICS4). MICS provides up-to-date information on the situation of children and women and measures key indicators that allow countries to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments. Additional information on the global MICS project may be obtained from www.childinfo.org.

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Dr. Philomena Nyarko

Ag. Government Statistician

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ACT	Artemisinin Combination Therapy
AIDS	Acquired Immune Deficiency Syndrome
AMFm	Affordable Medicines Facility for Malaria
ANC	Antenatal Care
BCG	Bacillus-Cereus-Geuerin (Tuberculosis)
CDC	Centers for Disease Control and Prevention
CSPro	Census and Survey Processing System
DHS	Demographic and Health Survey
DPT	Diphtheria Pertussis Tetanus
ECCD	Early Childhood Care and Development
ECDI	Early Child Development Index
eMTCT	elimination of mother-to-child transmission of HIV
EPI	Expanded Programme on Immunization
FGM/C	Female genital mutilation/cutting
GAR	Gross Attendance Ratio
GHS	Ghana Health Service
GPI	Gender Parity Index
GPRS	Ghana Poverty Reduction Strategy
GSGDA	Ghana Shared Growth and Development Agenda
GSS	Ghana Statistical Service
HIV	Human Immunodeficiency Virus
HSMTDP	Health Sector Medium-term Development Plan
ICT	Information and Communications Technology
IDD	Iodine Deficiency Disorders
IRS	Indoor Residual Spraying
IPTp	Intermittent Preventative Treatment by women during Pregnancy
ITN	Insecticide Treated Net
IUD	Intrauterine Device
JMP	Joint Monitoring Programme
JSS	Junior Secondary School
LAM	Lactational Amenorrhea Method
LLIN	Long-Lasting Insecticidal Net
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MoH	Ministry of Health
NAR	Net Attendance Rate
NHIS	National Health Insurance Scheme
NHRC	Navrongo Health Research Centre
NMCP	National Malaria Control Programme
NMR	Neonatal Mortality Rate
ORT	Oral rehydration treatment
PMI	President's Malaria Initiative
PNC	Post-natal Care
PNMR	Post-neonatal Mortality Rate

ppm	Parts Per Million
RDT	Rapid Diagnostic Test
SPSS	Statistical Package for Social Sciences
TFR	Total Fertility Rate
UNAIDS	United Nations Programme on HIV/AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNGASS	United Nations General Assembly Special Session on HIV/AIDS
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VIP	Ventilated Improved Pit
WFFC	World Fit For Children
WHO	World Health Organization

Multiple Indicator Cluster Surveys (MICS) and Millennium Development Goals (MDG)
Indicators, Ghana, 2011

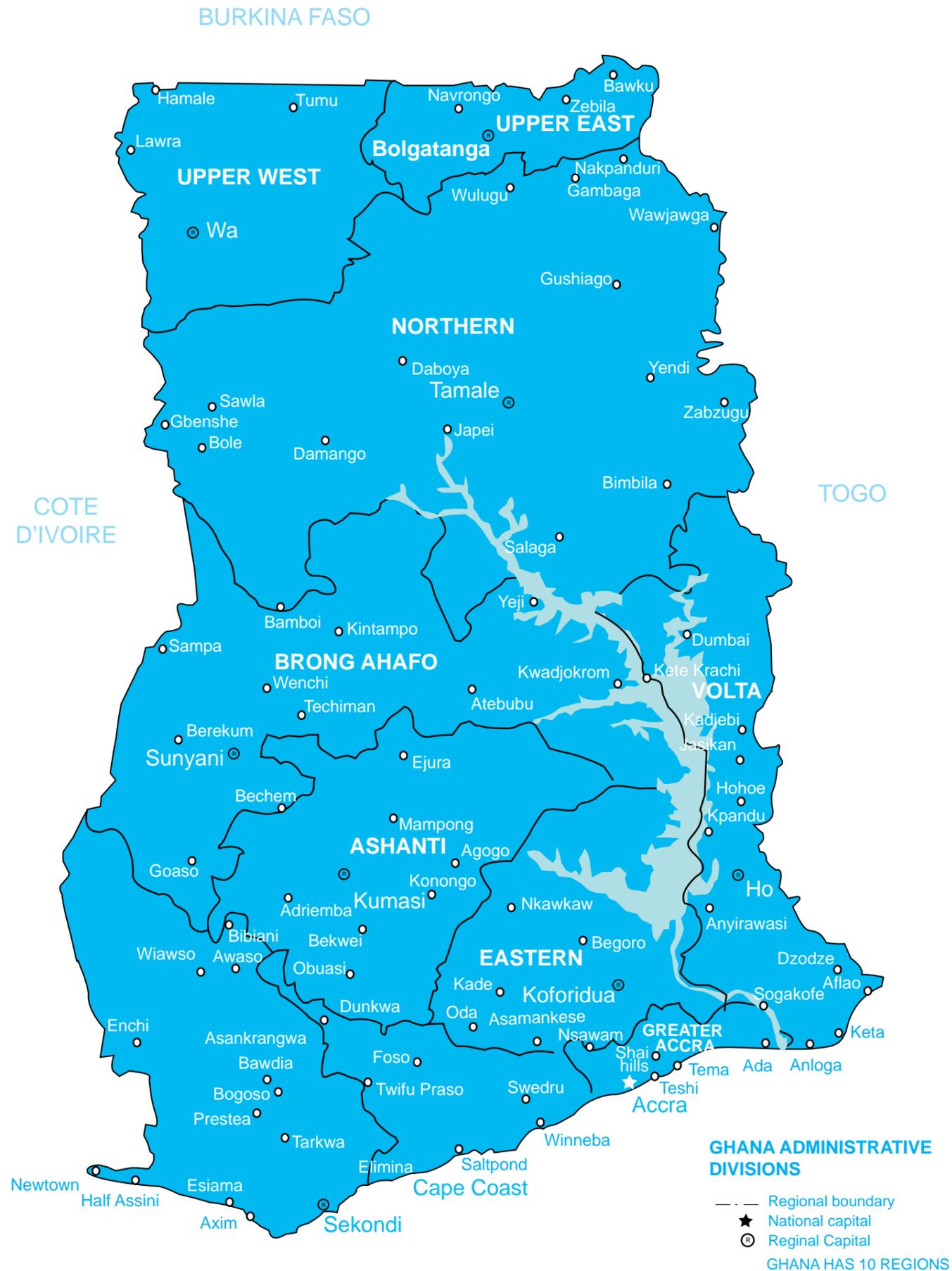
Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
CHILD MORTALITY				
Child Mortality	1.1	4.1	Under-five mortality rate	82.0 percent
	1.2	4.2	Infant mortality rate	53.0 percent
	1.3		Neonatal mortality rate	32.0 percent
	1.4		Post-neonatal mortality rate	21.0 percent
	1.5		Child mortality rate	31.0 percent
NUTRITION				
Nutritional status		1.8	Underweight prevalence	
	2.1a		Moderate and Severe (- 2 SD)	13.4 percent
	2.1b		Severe (- 3 SD)	2.6 percent
			Stunting prevalence	
	2.2a		Moderate and Severe (- 2 SD)	22.7 percent
	2.2b		Severe (- 3 SD)	6.8 percent
			Wasting prevalence	
	2.3a		Moderate and Severe (- 2 SD)	6.2 percent
	2.3b		Severe (- 3 SD)	1.4 percent
	Breastfeeding and infant feeding	2.4		Children ever breastfed
2.5			Early initiation of breastfeeding	45.9 percent
2.6			Exclusive breastfeeding under 6 months	45.7 percent
2.7			Continued breastfeeding at 1 year	90.7 percent
2.8			Continued breastfeeding at 2 years	37.4 percent
2.9			Predominant breastfeeding under 6 months	71.0 percent
2.10			Duration of breastfeeding	20.5 months
2.11			Bottle feeding	13.7 percent
2.12			Introduction of solid, semi-solid or soft foods	74.8 percent
2.13			Minimum meal frequency	57.3 percent
2.14		Age-appropriate breastfeeding	63.9 percent	
2.15		Milk feeding frequency for non-breastfed children	13.2 percent	
Salt iodization	2.16		Iodized salt consumption	34.5 percent
Vitamin A	2.17		Vitamin A supplementation (children under age 5)	73.7 percent
Low birth weight	2.18		Low-birth weight infants	10.7 percent
	2.19		Infants weighed at birth	54.0 percent
CHILD HEALTH				
Vaccinations	3.1		Tuberculosis immunization coverage	97.8 percent
	3.2		Polio immunization coverage	90.7 percent
	3.3		Immunization coverage for diphtheria, pertussis and tetanus (DPT)	92.1 percent
	3.4	4.3	Measles immunization coverage	88.5 percent
	3.5		Hepatitis B immunization coverage	92.1 percent
	3.6		Yellow fever immunization coverage	88.3 percent
Tetanus toxoid	3.7		Neonatal tetanus protection	70.3 percent
Care of illness	3.8		Oral rehydration therapy with continued feeding	43.9 percent
	3.9		Care seeking for suspected pneumonia	41.3 percent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
	3.10		Antibiotic treatment of suspected pneumonia	55.7 percent
Solid fuel use	3.11		Solid fuels	81.2 percent
WATER AND SANITATION				
Water and sanitation	4.1	7.8	Use of improved drinking water sources	79.3 percent
	4.2		Water treatment	17.2 percent
	4.3	7.9	Use of improved sanitation facilities	15.0 percent
	4.4		Safe disposal of child's faeces	36.0 percent
	4.5		Place for hand washing	50.0 Percent
	4.6		Availability of soap	63.6 Percent
REPRODUCTIVE HEALTH				
Contraception and unmet need	5.1	5.4	Adolescent birth rate	60 per 1,000
	5.2		Early childbearing	16.2 percent
	5.3	5.3	Contraceptive prevalence rate	34.7 percent
	5.4	5.6	Unmet needs	26.4 percent
Maternal and newborns health		5.5	Antenatal care coverage	
	5.5a		At least once by skilled personnel	96.4 percent
	5.5b	5.2	At least four times by any provider	86.6 percent
	5.6		Content of antenatal care	88.8 percent
	5.7		Skilled attendant at delivery	68.4 percent
	5.8		Institutional deliveries	67.4 percent
	5.9		Caesarean section	11.4 Percent
Post-Natal checks			Post-natal health checks for newborns	83.3 percent
			Post-natal health checks for mothers	82.5 percent
			Post-partum stay in health facility	73.8 percent
CHILD DEVELOPMENT				
Child development	6.1		Support for learning	39.8 percent
	6.2		Father's support for learning	29.6 percent
	6.3		Learning materials: children's books	6.2 percent
	6.4		Learning materials: playthings	41.1 percent
	6.5		Inadequate care	20.7 percent
	6.6		Early child development index	73.7 percent
	6.7		Attendance to early childhood education	68.2 percent
EDUCATION				
Literacy and education	7.1	2.3	Literacy rate among young women	61.4 percent
			Literacy among young men	71.3 percent
	7.2		School readiness	80.3 percent
	7.3		Net intake rate in primary education	31.8 percent
Literacy and education	7.4	2.1	Primary school net attendance rate (adjusted)	73.0 percent
	7.5		Secondary school net attendance rate (adjusted)	41.6 percent
	7.6	2.2	Children reaching last grade of primary	95.4 percent
	7.7		Primary completion rate	89.9 percent
	7.8		Transition rate to secondary school	75.0 percent
	7.9		Gender parity index (primary school)	1.02 ratio
	7.10		Gender parity index (secondary school)	1.10 ratio

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
CHILD PROTECTION				
Birth registration	8.1		Birth registration	62.5 percent
Child Discipline	8.5		Violent discipline	93.6 percent
Early marriage and polygyny	8.6		Marriage before age 15	5.8 percent
	8.7		Marriage before age 18	27.0 percent
	8.8		Young women age 15-19 currently married or in union	7.0 percent
	8.9		Polygyny	18.3 percent
			Spousal age difference	
	8.10a		Women age 15-19	16.4 percent
	8.10b		Women age 20-24	19.1 percent
Female genital mutilation/cutting	8.11		Approval for female genital mutilation/cutting (FGM/C)	1.5 percent
	8.12		Prevalence of female genital mutilation/cutting (FGM/C) among women	3.8 percent
	8.13		Prevalence of female genital mutilation/cutting (FGM/C) among girls	0.4 percent
Domestic violence	8.14		Attitudes towards domestic violence for women	59.8 percent
			Attitude towards domestic violence for men	35.9 percent
Orphan			Prevalence of children with at least one parent dead	7.7 percent
			Children's living arrangements	17.1 percent
HIV/AIDS, SEXUAL BEHAVIOUR				
HIV/AIDS knowledge and attitudes	9.1		Comprehensive knowledge about HIV prevention for women	33.8 percent
			Comprehensive knowledge about HIV prevention for men	39.1 percent
	9.2	6.3	Comprehensive knowledge about HIV prevention among young women	36.8 percent
			Comprehensive knowledge about HIV prevention among young men	38.6 percent
	9.3		Knowledge of mother-to-child transmission of HIV for women	57.2 percent
			Knowledge of mother-to-child transmission of HIV for men	57.3 percent
	9.4		Accepting attitude towards people living with HIV for women	6.3 percent
			Accepting attitude towards people living with HIV for men	15.2 percent
	9.5		Women who know where to be tested for HIV	74.0 percent
			Men who know where to be tested for HIV	73.1 percent
	9.6		Women who have been tested for HIV and know the results	16.8 percent
			Men who have been tested for HIV and know the results	10.0 percent
	9.7		Sexually active young women who have been tested for	
			HIV and know the results	17.3 percent
			Sexually active young men who have been tested for	
		HIV and know the results	8.4 percent	

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value
HIV/AIDS knowledge and attitudes	9.8		HIV counselling during antenatal care	58.9 percent
	9.9		HIV testing during antenatal care	54.6 percent
Sexual behaviour	9.10		Young women who have never had sex	52.3 percent
			Young men who have never had sex	61.3 percent
	9.11		Sex before age 15 among young women	9.7 percent
			Sex before age 15 among young men	4.9 percent
	9.12		Age-mixing among sexual partners for women	12.1 percent
			Age-mixing among sexual partners for men	0.0 percent
	9.13		Sex with multiple partners for women	1.9 percent
			Sex with multiple partners for men	13.8 percent
	9.14		Condom use during sex with multiple partners	
			Women	23.1 percent
			Men	12.7 percent
	9.15		Sex with multiple partners for young people	
			Women	3.3 percent
			Men	6.3 percent
			Condom use during sex with multiple partners for young people	
			Women	27.2 percent
			Men	39.3 percent
			Sex with non-regular partners	
			Women	56.4 percent
			Men	88.0 percent
9.16	6.2	Condom use with non-regular partners		
		Women	40.9 percent	
		Men	52.8 percent	
MALARIA AND BIOMARKER				
	3.12		Household availability of insecticide-treated nets (ITNs)	48.9 percent
	3.14		Children under age 5 sleeping under any mosquito net	41.6 percent
	3.13		Indoor residual spraying against mosquitoes and availability of ITNs	51.3
	3.15	6.7	Children under age 5 sleeping under insecticide-treated nets (ITNs)	39.0 percent
	3.16		Malaria diagnostics usage	15.9 percent
	3.17		Antimalarial treatment of children under 5 the same or next day	34.9 percent
	3.18	6.8	Antimalarial treatment of children under age 5	52.6 percent
	3.19		Pregnant women sleeping under insecticide-treated nets (ITNs)	32.6 percent
	3.20		Intermittent preventive treatment for malaria	64.6 percent
			Prevalence of malaria in children under- five	
			Rapid diagnostic test (RDT)	48.0 Percent
			Microscopy	28.0 Percent
			Anaemia	7.4 percent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value	
NATIONAL HEALTH INSURANCE SCHEME (NHIS)					
Membership			Registration with NHIS		
			Women	68.8 percent	
			Men	55.9 percent	
Card validity			Children	53.8 percent	
			NHIS valid cards seen		
			Women	40.3 percent	
			Men	34.4 percent	
		Children	51.0 percent		
ACCESS TO MASS MEDIA AND ICT					
Access to mass media	MT.1		Young women with exposure to newspaper, radio and TV at least once a week	8.3 percent	
			Young men with exposure to newspaper, radio and TV at least once a week	16.8 percent	
			Young women who used a computer during the last 12 months	25.1 percent	
Use of computers	MT.2		Young men who used a computer during the last 12 months	39.2 percent	
		MT.3		Young women who used the internet during the last 12 months	14.7 percent
				Young women who used the internet during the last 12 months	28.8 percent



The Ghana Multiple Indicator Cluster Survey (MICS) 2011, the fourth of its kind, is a nationally representative sample survey of households, women aged 15-49 years, children aged 0-5 years and men aged 15-59 years. In addition to applying the customized version of the MICS4 Questionnaires, an enhanced Malaria Module and Biomarker (for Anaemia and parasitemia in children aged 6-59 months) was included.

The Survey was carried out in 2011 by the Ghana Statistical Service with financial and technical support from UNICEF, USAID/CDC, UNFPA, the Japanese Government, and the Ministry of Health/National Malaria Control Programme. ICF/MACRO and the Navrongo Research Centre provided technical support particularly for the malaria module and biomarker component. The results pertain to September-December 2011, when the field work was conducted.

Household Characteristics

Of the 12,150 households selected for the sample, 11,970 were contacted for interviews. Of these, 11,925 were interviewed, giving a response rate of about 100 percent. In the households interviewed, 10,963 women aged 15-49 years were identified. Of these, 10,627 were duly interviewed, producing a response rate of 97 per cent. Concerning children under the age of 5 years, 7,626 were identified, for whom responses were obtained from their mother or caregiver in 7,550 complete interviews, giving a response rate of 99 percent. For the male survey, 3,511 men aged 15-59 years were identified, and 3,321 successfully interviewed, yielding a response rate of 95 percent.

Overall, the survey found that 31 percent of households in Ghana are headed by women. Children less than 15 years constitute 42 percent of the total population. Furthermore, 33 percent of households in urban areas, and 44 percent of households in rural areas have at least one child aged less than five years. The mean household size is 3.5 in urban areas, and 4.3 in rural areas. The most common household size is 2-3 household members (30 percent), followed by 4-5 household members with 27 percent.

Characteristics of Respondents

The MICS 2011 data show that for both sexes, the largest population age-group is 15-24 years. For women 34 percent are in this category, while for men it is 31 percent. In addition, 3 in 5 women and about half of men are currently married/in union, while 30 percent of women and 40 percent of men have never been married/in union.

In Ghana, 70 percent of women have given birth at least once, and 24 percent gave birth in the last two years. Nearly half of the men (46%) and women (47%) live in rural areas; while for children, about 57 percent live in rural areas compared to 44 percent in urban areas. With respect to educational level, 21 percent of women and 13 percent of men have no education; 19 percent of women and 13 percent of men have only primary education; 41 percent of women and 45 percent of men have middle/JSS education; and 19 percent of women and 30 percent of men have secondary or higher levels of education.

For children under five, Ghana has roughly the same proportion of girls and boys but there are more children in rural areas than in urban areas (57% against 44%) and they are also slightly more likely to live in the poorest households: 23% of the children under age five live in the poorest households while 17% live in the richest.

Child Mortality

The Ghana MICS4 was conducted from Mid-September to Mid-December 2011 and childhood mortality rates were estimated using the direct method. The reference point (mid-point interval) for the childhood mortality for the most recent five year period is Mid-March 2009. The results estimate Ghana's under-five mortality rate at 82 deaths per 1,000 live births. This means that one in every 12 children dies before reaching his or her fifth birthday. The child mortality rate is estimated at 31 deaths per 1,000 children aged 1 year, while the infant mortality rate is estimated at 53 deaths per 1,000 live births. Post neonatal and neonatal mortality rates are estimated at 21 and 32 deaths per 1000 live births, respectively, for the same period.

Neonatal mortality rate represents 60 percent of the infant mortality rate in Ghana, meaning that 60 percent of deaths in infancy occur during the first 28 days of a child's life. This is consistent with the DHS 2008 findings.

Children living in rural areas experience higher levels of infant and under-five mortality (56 and 94 deaths per 1,000 live births respectively), compared to those living in urban areas (46 and 72 deaths per 1000 live births respectively).

Significant variations are also observed in wealth quintiles for infant and under-five mortality rates. The infant mortality rate is estimated at 61 deaths per 1000 live births for children from the poorest wealth quintile, and 38 deaths per 1000 live births for children in the richest wealth quintile; and the under-5 mortality rate is estimated at 106 deaths per 1,000 live births for children from the poorest households, compared to 52 deaths per 1,000 live births for children belonging to the richest households.

Nutrition Status

Almost one in seven children (13%) under the age of five years is moderately or severely underweight and 3 percent are classified as severely underweight. The results also reveal that nearly 1 in every 4 children (23%) is moderately or severely stunted, and 7 percent are severely stunted. Six percent of the children are moderately or severely wasted, and 1 percent can be considered severely wasted. Children whose mothers have secondary or higher education are less likely to be underweight (9%) and stunted (13%) compared to children whose mothers have no education (17% and 29%, respectively).

Breastfeeding and Infant and Young Child Feeding

Less than half (46%) of all children aged 0–6 months in Ghana are exclusively breastfed, a level considerably lower than that recommended by WHO/UNICEF. For children aged 0–35 months, the mean duration for any breastfeeding is 20.5 months, 2.7 months for exclusive breastfeeding, and 5.1 months for predominant breastfeeding. The MICS results also reveal that less than half (46%) of newborn children are breastfed within the recommended period (within one hour after birth); while 84 percent are breastfed in the first day of life. In addition, 74 percent of children aged 6–8 months are currently breastfed and receiving solid, semi-solid or soft foods, and 64 percent of children aged 6–23 months are appropriately breastfed.

The results also show that, for children aged 6–23 months currently breastfeeding, 57 percent are receiving solid, semi-solid and soft foods the recommended minimum number of times. For children 6–23 months

not currently breastfeeding, 58 percent are receiving solid, semi-solid and soft foods the recommended minimum number of times.

Fourteen percent of children aged 0–23 months and 20 percent of children aged 6–11 months are fed using a bottle with a nipple. Results also show that bottle feeding is generally an affluent household phenomenon, with children living in the Greater Accra region (35%), those living in urban areas (21%), those children whose mothers have secondary education (34%) and children from the wealthiest households (33%) being the most likely to be bottle-fed.

Salt Iodization

Salt used for household cooking was tested in the MICS in two ways: through the use of Rapid Salt Kits, and further testing in a lab using Titration. Use of Titration for iodine testing is considered most accurate. Results from the Rapid Salt Kits reveal that only 35 percent of households were using salt that was adequately iodated (≥ 15 ppm), while in 22 percent of households, salt had no iodine. Households in urban areas are more likely to use adequately iodated salt (45%), compared to households in rural areas (23%). Titration results show that 29 percent of households were using adequately iodated salt (≥ 15 ppm), thus, the Rapid Test Kits overestimated the proportion of adequately iodised salt by 6 percent.

Vitamin A Supplement

Approximately 3 out of 4 children (74%) aged 6–59 months received a high dose of Vitamin A supplement six months prior to the survey. At 58 percent, Ashanti region had the lowest Vitamin A supplementation coverage, while all other regions had Vitamin A supplementation of over 68 percent. Vitamin A supplementation coverage was highest in Upper East region and Brong Ahafo, both reporting 90 percent coverage, followed by Greater Accra at 84 percent.

Low Birth Weight

The data from the MICS 2011 show that 54 percent of newborns were weighed at birth. Children from Greater Accra region are most likely to be weighed at birth (82%), and those from Northern region the least likely to be weighed at birth (25%). Children from rural households, those from the poorest households and those whose mothers have no education are less likely to be weighed at birth. It is estimated that 11 percent of children born in Ghana weigh less than 2,500 grams.

Immunization

According to UNICEF and WHO guidelines, a child should receive a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against diphtheria, pertussis, and tetanus, three doses of polio vaccine, and a measles vaccination by the age of 12 months. In Ghana, the MICS results show that 77 percent of children aged 12–23 months are fully immunized before their first birthday. Furthermore, the coverage rate for all vaccination for children aged 12–23 months is 84 percent, while less than 1 percent of children have not received any vaccinations.

Approximately 98 percent of children aged 12–23 months received a BCG vaccination by their first birthday, 89 percent were immunized against measles by their first birthday, and 92 percent received 3 doses of DPT/HepB/INFL. Also, 91 percent of children aged 12–23 months had received 3 doses of polio, and 94 percent had been immunized against yellow fever.

Tetanus toxoid

Seventy percent of women who gave birth in the last two years are protected against tetanus. The majority of them (55%) are protected because they received at least two doses of tetanus toxoid injection during their most recent pregnancy, while 15 per cent of women are protected because they received at least two doses of the vaccine in the last three years. More women in urban areas received the 2 doses during their last pregnancy (61%), compared to their rural counterparts (50%). The Central region has the highest percentage of women who received at least 2 doses of tetanus vaccination during their last pregnancy (66%), while 4 regions have a coverage level of below 50 percent (Brong Ahafo 42%, Volta 45%, Upper East 46%, and Northern 47%).

Oral rehydration treatment

Thirteen percent of children under-five had diarrhoea in the two weeks prior to the survey. Around one third (35%) of children with diarrhoea were treated with ORS (fluid made with an ORS packet or pre-packaged ORS fluids), and 20 percent received recommended home-prepared fluids. More than half (59%) of children with diarrhea in the two weeks prior to the survey received oral rehydration treatment (ORT), meaning that they received either ORS, or the recommended home-prepared liquids, or increase of fluids. The rate of use of ORT is higher in urban areas (64%) than in rural areas (56%). However, 12 percent of children who had diarrhoea during the last two weeks preceding the survey were not given any treatment or drug, and the highest level was recorded in age-group of 0-11 months (19%). The data also show that 44 percent of children received ORT and, at the same time, feeding was continued, as recommended.

Care-seeking and antibiotic treatment of pneumonia

Only 3 percent of children aged 0–59 months were reported as presenting symptoms suggestive of pneumonia in the two weeks prior to the survey. Of the children with suspected pneumonia, only 41 percent were taken to an appropriate health provider. In addition, 56 percent of children with suspected pneumonia received antibiotics. Results also show that only 1 percent of mothers and caregivers of children age 0-59 months know the two danger signs of pneumonia – fast and difficult breathing.

Malaria and Anaemia

More than half of all households (51%) own at least one mosquito net, treated or untreated and 49 percent of all households have an insecticide treated net (ITN), the large majority of which (48%) have a long-lasting insecticidal net (LLIN). The average number of LLIN in households in Ghana is 1. About 1 in every 4 households in Ghana has at least one LLIN net for every two persons who stayed in the household the night prior to the survey. The availability of LLIN is higher in rural areas (60%), than in urban areas (38%). Regions where the LLIN hang-up campaign has already taken place are more likely to have higher LLIN coverage, than those regions where distribution has not taken place. For example, 85 percent of households in Volta region, and 79 percent of households in Eastern region own at least one LLIN. All districts in these regions had fully completed their distribution campaigns 3-12 months prior to the MICS data collection.

Almost 40 percent of children under-five in all households slept under an LLIN the night prior to the survey. The use of LLINs is more common in rural areas (46%) than in urban areas (29%). Almost two-thirds (63%) of children under-five in households with at least one ITN slept under an ITN, while 48 percent of persons in households with at least one ITN slept under an ITN. In total, 33 percent of pregnant women slept under an

ITN the night prior to the survey and among pregnant women aged 15-49 in households with at least one ITN, 58 percent slept under an ITN. For all household members, children and pregnant women, the use of ITNs is higher in rural areas than in urban areas. The MICS data also show that 42 percent of the ITNs were acquired during a public campaign. Also, only 5 percent of households had undergone indoor residual spraying (IRS) in the past 12 months.

The MICS data also reveal that nearly 1 in 5 children under-five (19%) had fever in the two weeks preceding the survey, and 53 percent of them took antimalarial drugs; just over a third of them (35%) took the antimalarial drugs the same or next day.

The national malaria microscopy-based prevalence was estimated at 28 percent among children aged 6-59 months. Large variations were observed: Greater Accra had the lowest prevalence rate at 4 percent compared to 51 percent in the Upper West region. The savannah zone has the highest prevalence with 44 percent compared to just 14 percent in the coastal zone. In urban areas the prevalence was 13 percent while rural areas recorded 39 percent. The prevalence for children whose mothers/caretakers have secondary school and higher was only 5 percent compared to 43 percent of children whose mothers/caretakers have no education. Malaria prevalence was estimated at 3 percent for children in the richest wealth quintile, and rose to 52 percent for children in the poorest wealth quintile.

Overall, 7 percent of children aged 6-59 months were anaemic. The Eastern region had the lowest prevalence rate of 2 percent compared to 19 percent in the Northern region. The savannah zone had the highest prevalence with 15 percent compared to 4 percent in the coastal zone. In urban areas the prevalence was 4 percent while the rural areas recorded 10 percent. The prevalence for children whose mothers/caretakers have secondary school and higher was only 2 percent compared to 13 percent of children whose mothers/caregivers have no education. In the richest households, anaemia prevalence was only 1 percent, compared to 16 percent in the poorest households.

Water and Sanitation

Nearly 80 percent of household members in Ghana are using improved sources of drinking water, which means that Ghana has already achieved the 2015 MDG 7 target of 78 percent of the population using improved drinking water. However, wide variations exist between areas of residence with 91 percent coverage in urban areas and only 69 percent in rural areas. Variations are also noted among regions: with 91 percent of household members in Ashanti using an improved source of drinking water, while only 62 percent of household population in Volta region do so.

The great majority of households (91%) do not use any method for treating water. Regarding households with unimproved sources of water, 17 percent of them treat their water using appropriate water treatment method before they drink it. Concerning access to water for those households without water on the premises, for about 44 percent of all households that use an improved drinking water source, it takes less than 30 minutes for the round trip to fetch water, while 9 percent of households spend 30 minutes or more.

In the majority of households (64%), the person who fetches water is an adult woman. Adult men collect water in only 19 percent of cases, while for the rest of the households, female or male children under age 15 collect water (11% and 6% respectively).

The MDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify households as using an unimproved sanitation facility if they are using otherwise acceptable sanitation facilities but sharing a facility between two or more households or using a public toilet facility. Taking into account this definition, only 15 percent of household members were using an improved and not shared sanitation facility. Nearly 1 out of 4 (23%) of households in Ghana practices open defecation or have no toilet facility, and this was more pronounced in rural areas (35%) than urban areas (10%).

Fertility

The adolescent birth rate and total fertility rate (TFR) are respectively 60 per 1000 live births and 4.3 children per woman. The average is 3.3 children per woman in urban areas and 5.5 children per woman in rural areas. Regional variations are also observed with the highest TFR (6.2) in Northern region compared to the lowest TFR (3.2) in Greater Accra. The TFR decreases with educational level and by wealth index quintiles. The lower TFR is observed among women with secondary or higher education (3.1) and in the richest quintile (2.9).

Ten percent of women aged 15-19 years had already given birth, 2 percent were pregnant with their first child, so, in total, 12 percent had begun childbearing. Furthermore, 1 percent has had a live birth before the age of 15 and about 16 percent of women aged 20-24 years have had a live birth before age 18.

Contraception use and unmet need

Only 1 in 3 women (35%) currently married or in union reported using any method of contraception: 24 percent of all women use modern methods and 11 percent use traditional methods. The most popular modern methods are the injectable (9%) and the pill (8%). There is a slight difference in contraceptive use depending on the area of residence, with 37 percent of users in urban areas against 32 percent in rural areas.

The unmet need for contraception refers to fecund women who are not using any method of contraception, but who wish to postpone the next birth (spacing) or who wish to stop childbearing altogether (limiting). Overall, 26 percent of women aged 15-49 years have an unmet need for contraception. Sixteen percent have an unmet need for spacing and 10 percent have an unmet need for limiting.

Antenatal care

Ninety-six percent of women aged 15-49 years who gave birth in the 2 years preceding the survey received at least one antenatal care (ANC) visit by skilled health personnel and 87 percent had 4 or more antenatal care visits. Eastern and Greater Accra regions recorded the highest proportions of pregnant women who attended 4 or more antenatal care visits – 93 percent and 92 percent respectively. The Northern region recorded the lowest proportion of pregnant women that had at least 4 antenatal care visits (75%). During their antenatal care, 89 percent of the women had blood pressure measured, a urine specimen taken and a blood test.

Assistance at delivery

Around two-thirds (68%) of women aged 15-49 years who gave birth in the last two years were assisted by skilled personnel during the delivery. This percentage is highest in Greater Accra Region at 90 percent and lowest in Northern Region at 37 percent. The data also show that 2 in 3 women (67%) delivered in health facilities, and 11 percent had a C-section. Deliveries by C-section are highest among women in the

Greater Accra region, where nearly 1 out of 4 women (23%) had a C-section. The Volta (15%), Ashanti (12%), Eastern (12%) and Central (11%) regions all have C-section rates of above 10 percent. Eighty-six percent of newborns and mothers received a post-natal health check.

Child Development

About 68 percent of children aged 36-59 months in Ghana were attending pre-school, with children in urban areas more likely to attend (81%) than children in rural areas (59%). For 40 percent of children under five, an adult in the household had engaged in activities that promote learning and school readiness during the three days prior to the survey. For about 30 percent of children, their father was involved in this type of activity. In contrast, 30 percent of children are not living with their biological father. Three or more children's books were available in only 6 percent of households for all children under-five. The data also show that 41 percent of children aged 0-59 months had 2 or more playthings in their homes. However, 1 in 5 children under-five years (21%) was left with inadequate care in the previous week. Finally, the early child development index score for children aged 36-59 months is 74.

Literacy and Education

Sixty-one percent of young women (aged 15-24 years) and 71 percent of young men (aged 15-24 years) are literate. In the richest wealth quintile, 85 percent and 93 percent of young women and men respectively are literate while in the poorest wealth quintile only 31 percent and 41 percent of young women and men are respectively literate.

Eighty percent of children attending first grade attended preschool in the previous year. Only 32 percent of children of primary school entry age entered grade 1, which means that a large proportion of children enter the education system late. Timely entry into school is greater in urban (39%) than in rural areas (26%). The Ghana MICS shows that there is a relationship between timely entry into grade 1 and the educational level of the mother and the household's economic situation.

The primary school net attendance rate (adjusted) is 73 percent. In urban areas, the net attendance rate (adjusted) is 80 percent compared to 68 percent in rural areas. The secondary school net attendance rate (adjusted) is 42 percent, which is 51 percent in urban areas compared to 34 percent in rural areas. In addition, 95 percent of children who enter grade 1 reach grade 6. The primary school completion rate is 90 percent while the transition rate to secondary school is 75 percent. The gender parity ratio for net attendance rate (adjusted) is 1.02 in primary school and 1.10 in secondary school.

Birth registration

The births of 63 percent of children under-five years have been registered with civil authorities. Seventy-two percent of children in urban areas are registered, compared to 55 percent of children in rural areas. Across regions, children in the Greater Accra region are more likely to be registered (77%), followed by children in the Upper West Region (72%), while those in the Western region are the least likely to be registered (49%). Among children whose births are registered, 58 percent have birth certificates. While birth registration is fully subsidized for children below 12 months, less than half (45%) of children in this age-group are registered, meaning that some parents are still not taking advantage of free registration.

Child Discipline

The Ghana MICS results show that 94 percent of children aged 2-14 years were subjected to some form of violent (physical and/or psychological) disciplinary method. Fourteen percent of children aged 2-14 years were subjected to severe physical punishment and 73 percent to minor punishment. Results also show that about 50 percent of respondents believe that a child needs to be physically punished to bring them up properly.

Early marriage, polygamy and spousal age difference

The MICS data show that the proportion of women aged 15-49 years married before the age of 15 and 18 are respectively 6 percent and 27 percent. Such marriages (before age 15) are higher in rural areas (8%) than in urban areas (4%). Women with higher education and from wealthiest households are less likely to get married before the age of 15 years. For men aged 15-59 years, only 1 percent was married before age 15, and 5 percent before age 18. By the age of 25, 72 percent of women are married or living with a man while at 30 years old, 87 percent of them are married or in union. By age 25, half of men are married or living with a partner while at 30 years old, 79 percent of them are married/in union.

The MICS 2011 also show that 18 percent of women aged 15-49 years are in polygynous marriages/unions while 9 percent of men aged 15-59 years are in polygynous marriages/unions. In addition, 16 percent of women aged 15-19 years, and 19 percent of women aged 20-24 years who are currently married/in union, have a spouse who is 10 or more years older than them.

Female Genital Mutilation/Cutting

Overall, 4 percent of women aged 15-49 years in Ghana have had any form of FGM/C. This practice was found to be most prevalent in Upper West (41%) and Upper East (28%) regions. Only 2 percent of women aged 15-49 years approve of FGM/C practice, while 94 percent of them believe that it should be discontinued. Among their daughters (0-14 years), FGM/C prevalence is less than 1 percent.

Domestic violence

The MICS 2011 results reveal that 60 percent of women think that a husband is justified in beating his wife for at least one of the following reasons: when the woman goes out without telling him, if she neglects the children, if she argues with him, if she refuses to have sex with him, if she burns the food, if she insults him, if she refuses to give him food, if she has another partner, if she steals and if she gossips. The highest proportion (84%) is recorded in Northern and Upper West regions, while the lowest proportion (40%) is found in the Greater Accra region. The acceptance of domestic violence is higher in rural areas (70%) than in urban areas (51%). Attitudes of acceptance decrease with women's educational levels. Overall, men are less likely than women to believe that domestic violence is justified: 36 percent of men agree that it is justifiable to beat their wives/partners for any of the given reasons.

Children's living arrangements and orphanhood

Overall, 57 percent of children aged 0-17 years in Ghana live with both their parents, but 17 percent are not living with a biological parent. Eight percent of children in Ghana are orphans of one or both parents, and about 1 percent of the children aged 0-17 years are double orphans. While about 17 percent live with their mother only, just 5 percent live with their father only. For children living with neither of their biological parents, 14 percent have both parents alive, 1 percent has only their father alive, 2 percent have only their

mother alive, and for about 1 percent both parents are dead. For children living with their mother only, 17 percent have their father alive, while for 3 percent of them their father is dead. For the 5 percent of all children aged 0-17 years living with only their father, their mothers are dead in almost one in five cases.

HIV/AIDS and Sexual Behaviour

The MICS 2011 shows that 98 percent of women and 99 percent of men have heard about AIDS, but only 34 percent of women aged 15-49 years and 39 percent of men aged 15-59 years have comprehensive knowledge of AIDS. Specifically, 42 percent of women and 47 percent of men reject the two most common misconceptions about AIDS and know that a healthy looking person can have the AIDS virus.

Ninety-eight percent of young women and men (aged 15-24 years) have heard of AIDS, while 37 percent of young women and 39 percent of young men have comprehensive knowledge of the disease. Forty-six percent of young women and 49 percent of young men reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus.

Ninety-one percent of both women and men know that HIV can be transmitted from mother to child, and 57 percent of both sexes know all three means of transmission of AIDS from mother to child. Only 6 percent of women 15-49 years and 15 percent of men 15-59 years express accepting attitudes toward people living with HIV/AIDS on all four indicators analysed in the MICS. For both sexes, a positive attitude towards people living with HIV/AIDS is strongly correlated with educational levels, household wealth, and area of residence. This is also true for knowledge of a place for HIV testing. At the national level, 74 percent of interviewed women and 73 percent of men know a place for HIV testing.

Among women aged 15-49 years who gave birth in the last 2 years, 59 percent received HIV counselling during antenatal care; and 55 percent were offered an HIV test and were tested for HIV during antenatal care, and received the results.

For young women and men who are sexually active, 75 percent of young women know where to get HIV testing, 43 percent have been tested, 20 percent were tested in the 12 months prior to the survey, and 17 percent were told their results. For men, nearly 70 percent of young men know where to get tested, 18 percent have been tested, 10 percent were tested in the 12 months prior to the survey, and about 8 percent were also told their results.

Women aged 15-24 years are twice as likely (10%) to have sex before the age of 15 compared to their male counterparts (5%). Twelve percent of young women (aged 15-24) had sex in the last 12 months with a man 10 years or older. On the other hand, virtually none of the young men in the sample had sex with a woman 10 years or older. The results also show that about 2 percent of women aged 15-49 years and 14 percent of men aged 15-59 years had sex with more than one partner in last 12 months. Among those, 23 percent of women used a condom for higher risk sex, while 13 percent of men did so. For young women and men aged 15-24 years, the proportions of having sex with more than one partner in the last 12 months are respectively 3 percent and 6 percent, and among them, 27 percent of young women and 39 percent of the young men used a condom.

Access to Mass Media and ICT

About 8 percent of women aged 15-49 years and 17 percent of men aged 15-59 years are exposed to all three media (newspaper, radio and TV) at least once a week. For both sexes, radio is the most predominant media for 69 percent of women and 80 percent of men.

Twenty-five percent of young women and 39 percent of young men aged 15-24 years used a computer during the 12 months prior to the survey. There are some differences in the use of internet in the week preceding the survey between young women (11%) and young men (19%).

For both sexes, the exposure to all three media and the use of computer and internet are strongly correlated with educational level, wealth index quintiles and urban residence.

National Health Insurance

At the national level 69 percent of women aged 15-49 years, 56 percent of men aged 15-59 years and 54 percent of children under-five years have ever been registered with the National Health Insurance Scheme (NHIS). The proportions of valid cards seen are respectively 40 percent, 34 percent and 51 percent.

The achievement of membership was mainly done through the following two options: premium paid by a relative or friend (60% for both women and men), and premium paid by self (29% for women and 31% for men). Only 8% of women get free access to NHIS through the free Maternal Care Service.

For NHIS card holders, 42 percent of women aged 15-49 years and 39 percent of men aged 15-59 years think that NHIS provides a better quality service when they attend health care facilities, while 26 percent of the women and 22 percent of the men indicate that the quality of services provided was the same as that provided to non-NHIS card holders. Finally, 1 in 5 women and men indicate that the quality of services provided to NHIS card holders is worse while 10 percent of women and 18 percent of men have not used the health services since acquiring their NHIS cards.





Background

This report is based on the Ghana Multiple Indicator Cluster Survey, conducted in 2011 by the Ghana Statistical Service (GSS). The survey provides valuable information on the situation of children, women and men in Ghana, and was based, in large part, on the need to monitor progress towards goals and targets emanating from recent international agreements: The Millennium Declaration, adopted by all 191 United Nations Member States in September 2000, and the Plan of Action of A World Fit For Children, adopted by 189 Member States at the United Nations Special Session on Children in May 2002. Both of these commitments build upon promises made by the international community at the 1990 World Summit for Children.

A Commitment to Action: National and International Reporting Responsibilities

The governments that signed the Millennium Declaration and the World Fit for Children Declaration and Plan of Action also committed themselves to monitoring progress towards the goals and objectives they contained:

"We will monitor regularly at the national level and, where appropriate, at the regional level and assess progress towards the goals and targets of the present Plan of Action at the national, regional and global levels. Accordingly, we will strengthen our national statistical capacity to collect, analyse and disaggregate data, including by sex, age and other relevant factors that may lead to disparities, and support a wide range of child-focused research. We will enhance international cooperation to support statistical capacity-building efforts and build community capacity for monitoring, assessment and planning." (A World Fit for Children, paragraph 60).

"...We will conduct periodic reviews at the national and subnational levels of progress in order to address obstacles more effectively and accelerate actions..." (A World Fit for Children, paragraph 61)

The Plan of Action (paragraph 61) also calls for the specific involvement of UNICEF in the preparation of periodic progress reports:

"... As the world's lead agency for children, the United Nations Children's Fund is requested to continue to prepare and disseminate, in close collaboration with Governments, relevant funds, programmes and the specialized agencies of the United Nations system, and all other relevant actors, as appropriate, information on the progress made in the implementation of the Declaration and the Plan of Action."

Similarly, the Millennium Declaration (paragraph 31) calls for periodic reporting on progress:

"...We request the General Assembly to review on a regular basis the progress made in implementing the provisions of this Declaration, and ask the Secretary-General to issue periodic reports for consideration by the General Assembly and as a basis for further action."

In signing these international agreements, governments committed themselves to improving conditions for their children and to monitoring progress towards that end. UNICEF was assigned a supporting role in this task (see text box on previous page).

Over the past decades, the government of Ghana has embarked on various plans and strategies aiming at improving the living conditions of its citizenry- the Ghana Poverty Reduction Strategy (GPRS) in 2000, the Growth and Poverty Reduction Strategy (GPRS II) in 2006 and the Ghana Shared Growth and Development Agenda (GSGDA), 2010-2013. Findings from the Multiple Indicator Cluster Survey (MICS 4) would provide up to date information for the formation of informed policies towards the achievement of the established goals.

All these policy frameworks require monitoring and assessment of progress. The fourth round of the Multiple Indicator Cluster Survey represents a large source of data for reporting on progress towards the aforementioned goals. The survey provides a rich foundation of comparative data for comprehensive progress reporting, especially regarding the situation of the most vulnerable children, including those from the poorest households, those living in deprived localities, etc. It also provides important information for the new UNICEF Country Programme 2012-2016 as well as the UNDAF 2011-2015.

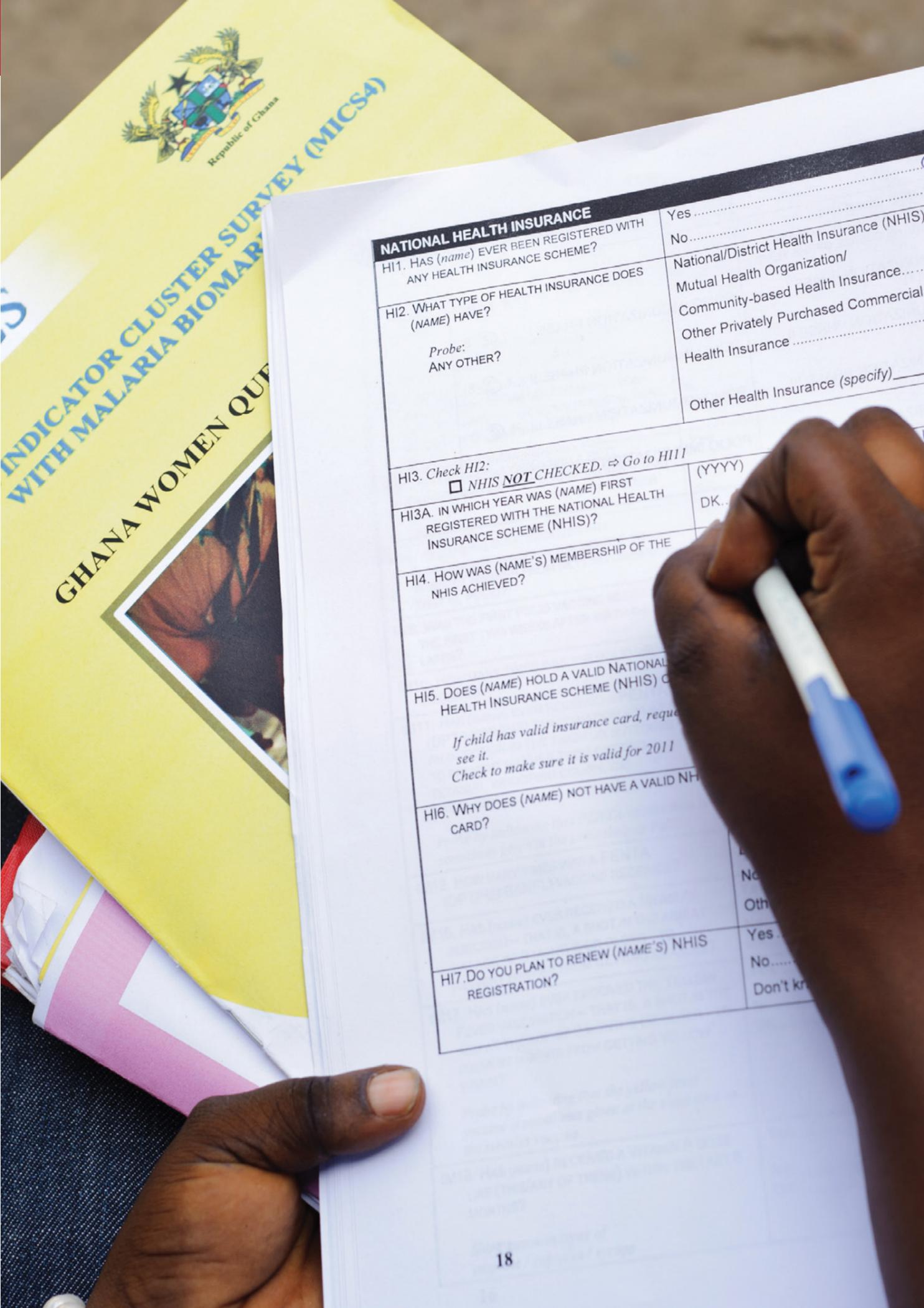
This final report presents the results of the indicators and topics covered in the survey.

Survey Objectives

The 2011 Ghana Multiple Indicator Cluster Survey has as its primary objectives the following:

- To provide more current information for assessing the situation of children, women and men, and reporting on country progress in achieving the GSGDA goals/targets and the MDGs, meet the reporting requirements of other local and international development declarations and agenda, and form the basis for future action;
- To provide much-needed data on practices used to treat malaria among children under-five and the use of specific anti-malarial medications, bednet coverage and use, coverage of Intermittent Preventive Treatment for pregnant women, treatment practices for childhood fever, and prevalence of malaria and anaemia among children aged 6-59 months;
- To present the current level of knowledge and behavioral indicators regarding HIV and AIDS in Ghana;
- To provide a mid-term snapshot on progress on key Health Sector Medium-term Development Plan (HSMTDP) 2010-2013 strategic objectives, and provide nationally and regionally representative data that can inform the development of the next Health Sector Medium-term Plan;
- To contribute to the improvement of data and monitoring systems in Ghana and to strengthen technical expertise in the design, implementation, and analysis of such systems; and
- To generate data on the situation of children, women and men, including the identification of vulnerable groups and of disparities, which will inform social inclusion and poverty reduction policies and interventions.





Sample Design

The sample for the Ghana Multiple Indicator Cluster Survey (MICS) was designed to provide estimates for a large number of indicators on the situation of children and women at the national level, for urban and rural areas, and for 10 regions: Western, Central, Greater Accra, Volta, Ashanti, Brong Ahafo, Northern, Eastern, Upper East and Upper West regions. The urban and rural areas within each region were identified as the main sampling strata and the sample was selected in two stages. Within each stratum, a specified number of census enumeration areas were selected systematically with probability proportional to size. Since the sampling frame (the 2000 Ghana Population Census) was up-to-date, a new listing of households was not conducted in all the sample enumeration areas prior to a systematic sample selection of 15 households in each selected cluster. The sample was stratified by region, urban and rural areas, and is not self-weighting since Central, Northern, Upper East and Upper West regions were over-sampled. For reporting national level results, sample weights are used. A more detailed description of the sample design can be found in Appendix A.

Questionnaires

Four sets of questionnaires were used in the survey: 1) a household questionnaire which was used to collect information on all de jure household members (usual residents), the household, and the dwelling; 2) a women’s questionnaire administered in each household to all women aged 15-49 years; 3) an under-5 questionnaire administered to mothers or caretakers for all children under 5 living in the household; and 4) a men’s questionnaire administered in each third household to all men aged 15-59 years. The contents of the questionnaires are indicated below:

The Household Questionnaire included the following modules:

- Household Listing Form
- Education
- Water and Sanitation
- Household Characteristics
- Insecticide Treated Nets
- Indoor Residual Spraying
- Child Labour
- Child Discipline
- Handwashing
- Salt Iodization

The Questionnaire for Individual Women was administered to all women aged 15-49 years living in the household, and included the following modules:

- Women’s Background
- Access to Mass Media and Use of Information/Communication Technology
- Child Mortality
- Desire for Last Birth
- Maternal and Newborn Health
- Post-natal Health Checks
- Illness Symptoms
- Contraception
- Unmet Need
- Female Genital Mutilation/Cutting

- Behaviour Change Communication on Malaria
- Attitudes Towards Domestic Violence
- Marriage/Union
- Sexual Behaviour
- HIV/AIDS
- National Health Insurance

The Questionnaire for Children Under-Five was administered to mothers or caretakers of children under - 5 years of age¹ living in the households. Normally, the questionnaire was administered to mothers of under-5 children; in cases where the mother was not listed in the household roster, a primary caretaker for the child was identified and interviewed. The questionnaire included the following modules:

- Age
- Birth Registration
- Early Childhood Development
- Breastfeeding
- Diet Diversity
- Care of Illness
- Malaria
- Immunization
- National Health Insurance
- Anthropometry
- Anaemia and Malaria Testing

The Questionnaire for Individual Men was administered to all men aged 15-59 years living in each third household, and included the following modules:

- Men's Background
- Access to Mass media and use of Information/Communication Technology
- Marriage/Union
- Attitude Towards Contraception
- Behaviour Change Communication on Malaria
- Attitudes Towards Domestic Violence
- Sexual Behaviour
- HIV/AIDS
- National Health Insurance

The questionnaires are based on the English version of the MICS4 model questionnaire². From the MICS4 model, the Ghana questionnaires were customized and pre-tested in two districts: Ga West district in Greater Accra region and Akwapim South district in Eastern region during the period 2 - 5 August 2011. Based on the results of the pre-test, modifications were made to the wording of the questionnaires. A copy of the Ghana MICS4 questionnaires is provided in Appendix F.

In addition to the administration of questionnaires, fieldwork teams tested the salt used for cooking in the households for iodine content, collected a sample in each male survey household for titration, observed

¹ The terms "children under 5", "children age 0-4 years", and "children aged 0-59 months" are used interchangeably in this report.

² The model MICS4 questionnaires can be found at www.childinfo.org

the place for handwashing and measured the weights and heights of children age under 5 years. Details and findings of these measurements are provided in the respective sections of the report.

Training and Fieldwork

Training for the fieldwork was conducted for 14 days, from 29 August to 11 September 2011. The data entry clerks attended the first week of interviewer training in order to get a better understanding of questionnaires and survey techniques. The training included lectures on interviewing techniques and the contents of the questionnaires, blood testing for malaria and anaemia, and mock interviews between trainees to gain practice in asking questions. All fieldworkers also trained in testing iodine in salt found in selected households as well as taking measurements of weight and height for children under 5 years.

The Ghana MICS4 2011 incorporated three "malaria biomarkers," namely: anaemia testing, malaria testing using rapid diagnostic tests (RDTs), and thick blood smear samples prepared on microscope slides. After obtaining informed consent from caregivers, blood samples were obtained from a heel- or finger-prick from children aged 6 to 59 months to perform on-the-spot anaemia and malaria tests, and to prepare thick blood smears that were later transported and read in the laboratory at NHRC to determine the presence of malaria parasites. The microscopy was used as the gold standard to obtain prevalence rates. The rapid diagnostic test was utilized primarily for ethical reasons, in order to identify and treat malaria in participating children while in the field.

The biomarker training was led by a DHS biomarker specialist with assistance from NHRC, NMCP and PMI staff. Towards the end of the training period, trainees spent several hours during 2 half-days in practicing interviews and blood testing in Sunyani East and Sunyani West areas.

The data were collected by 20 teams; each team was comprised of 3 interviewers, one driver, one editor, one measurer (health technician) and a supervisor. Fieldwork began on 15 September 2011 and concluded on 14 December 2011. The field monitoring, for quality assurance, was conducted by staff from ICF Macro, USAID, President Malaria Initiative (PMI), NHRC, UNICEF, GSS and NMCP.

As described above, each of the 20 field team in the 2011 Ghana MICS4 included a health technician, who was responsible for completing the anthropometry and biomarker portions of the Children Under-Five Questionnaire, and conducting the biomarker tests. In accordance with the Ghana MICS4 biomarker testing protocol pre-approved by the Ghana Health Service Institution Review Board, the health technicians were responsible for ensuring that informed consent was obtained from the children's caregivers; administering medications for uncomplicated malaria in the field when indicated; and providing medical referrals for clinically severe malaria, severe anaemia, and other conditions when indicated.

Data Processing

Data were entered using the CSPro software. The data were entered on 20 microcomputers and carried out by 20 data entry operators and 3 data entry supervisors. In order to ensure quality control, all questionnaires were double entered and internal consistency checks were performed. Procedures and standard programs developed under the global MICS4 programme and adapted to the Ghana questionnaire were used throughout. Data capture began in October 2011 and was completed in January 2012. Data were analysed using the Statistical Package for Social Sciences (SPSS) software program, Version 18, and the model syntax and tabulation plans developed by UNICEF were used for this purpose.

Sample Coverage and Response Rates

Of the 12,150 households selected for the sample, 11,970 were found to be occupied. Of these, 11,925 were successfully interviewed for a household response rate of about 100 percent. In the interviewed households, 10,963 women (aged 15-49 years) were identified. Of these, 10,627 were successfully interviewed, yielding a response rate of 97 percent within interviewed households. Also 7,626 children under age five were listed in the household questionnaire. Questionnaires were completed for 7,550 of these children, which corresponds to a response rate of 99 percent within interviewed households. In addition, a men's questionnaire was used in every third household of the selected sample. For the male survey, 3,511 men aged 15-59 years were identified. Of these, 3,321 were successfully interviewed, yielding a response rate of 94 percent within interviewed households for the male survey. The overall response rate for women (96 percent), for children under- 5 years (98%) and for men (94%) are calculated respectively in Table HH.1.

At the regional level, the response rates for household interviews, eligible women, eligible men and children were around 90 percent or higher. Apart from the Western region with men's overall response rate of 90 percent, all the remaining nine regions recorded response rates of over 92 percent. Also, Eastern region had an overall response rate of 99 percent for both men and women. Table HH.1 also shows that the response rates in the rural areas are higher than that of the urban areas. The under-5's response rates are similar across all regions and residence.



Other vaccines:

DOSE	1 st (12 weeks)	2 nd (1 1/2 years)	3 rd (2 years)	4 th (2 1/2 years)	5 th (3 years)	6 th (3 1/2 years)	7 th (4 years)	8 th (4 1/2 years)	9 th (5 years)	10 th (5 years)
DATE										

VACCINE	DATE	DATE OF NEXT VISIT	BATCH NO.	PLACE GIVEN	Date of Immunization	
					Month	Year
BCG						
POLIO AT BIRTH						
POLIO 1						
POLIO 2						
POLIO 3						
PENTA1 (DPT/HEP/B/INFL1)						
PENTA2 (DPT/HEP/B/INFL2)						
PENTA3 (DPT/HEP/B/INFL3)						
MEASLES						
YELLOW FEVER						
VITAMIN A (1) (MOST RECENT)						
VITAMIN A (2) (2 nd MOST RECENT)						

Table HH.1: Results of household, women's, men's and under-5 interviews
Number of households, women, men, and children under 5 by results of the household, women's, men's and under-5's interviews, and household, women's, men's and under-5's response rates, Ghana, 2011

Background Characteristics	Residence		Region										Total
	Urban	Rural	Western	Central	Greater Accra	Volta	Eastern	Ashanti	Brong Ahafo	Northern	Upper East	Upper West	
Households Sampled	4,635	7,515	780	2,010	1,005	780	780	1,005	780	2,010	1,500	1,500	12,150
Households Occupied	4,570	7,400	760	1,994	999	772	768	996	726	1,979	1,480	1,496	11,970
Households Interviewed	4,545	7,380	757	1,989	989	771	767	993	718	1,972	1,475	1,494	11,925
Household response rate	99.5	99.7	99.6	99.7	99.0	99.9	99.9	99.7	98.9	99.6	99.7	99.9	99.6
Women Eligible	4,183	6,780	675	1,595	862	605	601	829	690	2,025	1,456	1,625	10,963
Women Interviewed	4,056	6,571	640	1,571	829	593	596	813	658	1,938	1,412	1,577	10,627
Women's response rate	97.0	96.9	94.8	98.5	96.2	98.0	99.2	98.1	95.4	95.7	97.0	97.0	96.9
Women's overall response rate	96.4	96.7	94.4	98.2	95.2	97.9	99.0	97.8	94.3	95.4	96.7	96.9	96.6
Men Eligible	1,273	2,238	243	467	278	203	181	271	209	656	458	545	3,511
Men Interviewed	1,189	2,132	219	451	260	198	180	252	195	617	432	517	3,321
Men's response rate	93.4	95.3	90.1	96.6	93.5	97.5	99.4	93.0	93.3	94.1	94.3	94.9	94.6
Men's overall response rate	92.9	95.0	89.8	96.3	92.6	97.4	99.3	92.7	92.3	93.7	94.0	94.7	94.2
Children under 5 Eligible	2,145	5,481	421	1,009	400	402	346	476	410	2,008	997	1,157	7,626
Children under 5 Mother/Caretaker Interviewed	2,117	5,433	414	999	393	400	345	472	407	1,989	988	1,143	7,550
Under-5's response rate	98.7	99.1	98.3	99.0	98.3	99.5	99.7	99.2	99.3	99.1	99.1	98.8	99.0
Under-5's overall response rate	98.2	98.9	97.9	98.8	97.3	99.4	99.6	98.9	98.2	98.7	98.8	98.7	98.6

Characteristics of Households

The weighted age and sex distribution of the survey population is provided in Table HH.2. This distribution is also used to produce the population pyramid in Figure HH.1. In the 11,925 households successfully interviewed in the survey, 46,093 household members were listed. Of these, 22,353 were males and 23,739 were females. The estimated sex ratio is 94 compared to the 95 recorded in the MICS 2006.

With respect to children below 15 years (42%), the results are similar to those from the 1984 and 2000 censuses, which indicate that the proportion of children less than 15 years was higher than 40 percent: 45 percent in the 1984 census and 41 percent in the 2000 census. However, the results from Ghana 2010 census show a decline in the proportion of children less than 15 years, with only 35 percent of the population in that age group. The proportion of the aged (65 years and older) is 4 percent compared to 5 percent in the MICS 2011 results.

Data from the population censuses (1984 (49%), 2000 (47%) and 2010 (43%), and the MICS 2006 (45%)) indicate a consistent decline in the dependent population (aged 0-14 years and 65+). In contrast, MICS 2011 shows an increase

(47%) in the dependent population and therefore a decrease in the proportion of the active population (aged 15-65 years). The children under 18 years represent 48 percent of Ghanaian population, compared to 47 percent in MICS 2006 and 45 percent in Ghana census 2010. This reflects the fact that Ghanaian population has a young age structure.

Also some discrepancies are observed between data from the Ghana 2010 Population and Housing Census and those from MICS 2011 on age distribution for the age-groups from 0-4 years to 30-34 years. Although these discrepancies are not necessarily statistically significant, they need, however, to be investigated and documented.

Table HH.2: Household age distribution by sex
Percent and frequency distribution of the household population by five-year age groups, dependency age groups, and by child (age 0-17 years) and adult populations (age 18 or more), by sex, Ghana, 2011

Background Characteristics	Males		Females		Total	
	Number	Percent	Number	Percent	Number	Percent
Age-group						
0-4	3,105	13.9	3,134	13.2	6,239	13.5
5-9	3,369	15.1	3,262	13.7	6,631	14.4
10-14	3,250	14.5	3,258	13.7	6,508	14.1
15-19	2,254	10.1	1,860	7.8	4,114	8.9
20-24	1,477	6.6	1,625	6.8	3,102	6.7
25-29	1,354	6.1	1,706	7.2	3,060	6.6
30-34	1,286	5.8	1,573	6.6	2,858	6.2
35-39	1,273	5.7	1,372	5.8	2,644	5.7
40-44	1,033	4.6	1,173	4.9	2,206	4.8
45-49	978	4.4	998	4.2	1,976	4.3
50-54	788	3.5	1,184	5.0	1,972	4.3
55-59	587	2.6	696	2.9	1,283	2.8
60-64	526	2.4	534	2.2	1,059	2.3
65-69	317	1.4	342	1.4	659	1.4
70-74	323	1.4	357	1.5	681	1.5
75-79	207	0.9	274	1.2	481	1.0
80-84	92	0.4	178	0.7	270	0.6
85+	131	0.6	204	0.9	335	0.7
Missing/DK	6	0.0	8	0.0	14	0.0
Dependency age groups						
0-14	9,723	43.5	9,655	40.7	19,378	42.0
15-64	11,554	51.7	12,721	53.6	24,275	52.7
65+	1,070	4.8	1,355	5.7	2,425	5.3
Missing/DK	6	0.0	8	0.0	14	0.0
Children and adult populations						
Children age 0-17 years	11,132	49.8	10,873	45.8	22,005	47.7
Adults age 18+ years	11,215	50.2	12,859	54.2	24,074	52.2
Missing/DK	6	0.0	8	0.0	14	0.0
Total	22,353	100.0	23,739	100.0	46,093	100.0

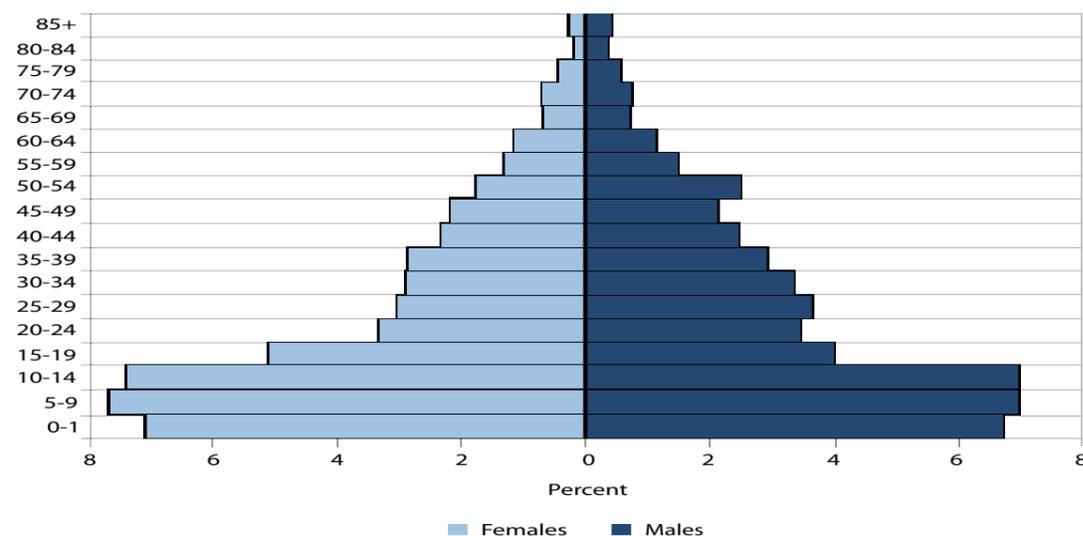
Figure HH.1 shows an excess of children aged 5-9 years compared to those aged 0-4 years. This was also the case for MICS 2006. It is probably due to a preference for reporting age 5 and therefore, under-reporting for age-group 0-4 years. The same situation (under-reporting) is observed for women aged 45-49 years compared to those aged 50-54 years). Another explanation is that the person providing the age of each household member (within the household questionnaire) might have “genuinely” rounded ages. Indeed data from the Ghana 2010 Population and Housing Census provide a different structure for age-groups 0-4 years and 5-9 years: for both sexes, the number of children aged 0-4 years exceeds that of children aged 5-9 years. Further indications on these irregularities can be seen in the single year age distribution in Table DQ.1 in Appendix D, Data Quality Tables.

Tables HH.3 to HH.5 provide basic information on the households, female respondents aged 15-49 years, children under-5 years and male respondents aged 15-59 years by presenting the unweighted, as well as the weighted numbers. Information on the basic characteristics of households, women, children under-5 and men interviewed in the survey is essential for the interpretation of findings presented later in the report. It also can provide an indication of the representativeness of the survey. The remaining tables in this report are presented only with weighted numbers. See Appendix A for more details about the weighting.

Table HH.3 provides basic background information on the households. Within the households, the sex of the household head, region, residence, number of household members, education of household head, respondents and children under 18 years, and ethnicity¹ of the household head are shown in the table. These background characteristics are used in subsequent tables in this report; the figures in the table are also intended to show the numbers of observations by major categories of analysis in the report.

Table HH.3 also shows the proportions of households with at least one child under 18 years, at least one child under 5 years, at least one eligible woman aged 15-49 years and at least one eligible man aged 15-59 years. The weighted and unweighted numbers of households are equal, since the sample weights were normalized (See Appendix A).

Figure HH.1: Age and sex distribution of household population. Ghana 2011



¹ This was determined by asking : To what ethnic group does the head of this household belong?

Generally, the head of household is considered as the key person because he/she ensures that the needs and well-being of the members are addressed in the household. In Ghana, the proportion of female heads of household is 31 percent while that of males is 69 percent. The proportion of the female heads of household is consistent with MICS 2006 (29%), and the 2000 Ghana Population and Housing Census (31%). However, there is a slight difference with the 2010 Ghana Population and Housing Census (35%). Ashanti and Greater Accra regions constitute about two-fifth of the entire household population in Ghana for both MICS 2011 and the 2010 Ghana Population and Housing Census.

The results also show that 20 percent of the population is more likely to live as a single-member household. The most common household size now is 2-3 household members (30%), followed by 4-5 household members (27%). On the other hand, the proportion of households with ten or more members declined from 10 percent in the 2000 Ghana Population Census, 4 percent in MICS 2006, 6 percent in Ghana population census 2010 to 3 percent in 2011. This trend suggests that the population is moving towards a smaller household size.

The education of the head of household has an impact on the welfare of the household members. The proportion of heads of households who have never attended any formal education declined from 39 percent in the 2000 population and housing census to 25 percent in MICS 2011. Furthermore, a higher proportion of the household heads have attended only basic education comprising Middle/JSS (39%) and Primary (13%). Only 23 percent of household heads attended secondary school or higher levels of education.

The weighted percent of households and respondents received in Table HH.3 was also compared to the data from MICS 2006 and the 2010 Ghana Population and Housing Census. Although not proven to be statistically significant, the main discrepancies observed are the following:

- The current share (6%) of Northern region is lower compared to that of MICS 2006 (11 %) and Ghana 2010 population census (10%);
- The current share (20%) of Greater Accra region is higher than what was recorded in MICS 2006 (17%) and 2010 Ghana population census (16%);
- The distribution of population by residence is 53 percent for urban areas and 47 percent for rural areas, compared to 56 percent and 44 percent respectively in the 2000 Ghana Population and Housing Census.

In terms of ethnicity, the results indicate that the Akan group (49%) constitutes the largest proportion of Ghanaian households, followed by Ewes (15%) and Mole Dagbanis (14%).

Table HH.3: Household composition			
Percent distribution of households by selected characteristics, Ghana, 2011			
Weighted percent	Number of households		
	Weighted	Unweighted	
Sex of household head			
Male	69.1	8234	8746
Female	30.9	3691	3179
Region			
Western	9.4	1116	757
Central	10.4	1236	1989
Greater Accra	19.5	2321	989
Volta	8.3	992	771
Eastern	12.9	1533	767
Ashanti	19.5	2321	993
Brong Ahafo	8.5	1011	718
Northern	6.1	727	1972
Upper East	3.5	414	1475
Upper West	2.1	253	1494
Residence			
Urban	53.3	6358	4545
Rural	46.7	5567	7380
Number of household members			
1	20.3	2424	1860
2	13.6	1617	1351
3	16.3	1946	1663
4	14.3	1708	1644
5	12.4	1479	1566
6	9.5	1135	1302
7	6.1	733	944
8	3.1	370	575
9	1.7	203	344
10+	2.6	310	676
Education of household head			
None	25.1	2997	4989
Primary	13.1	1560	1546
Middle/JSS	38.5	4590	3372
Secondary +	23.3	2775	2017
Missing/DK	.0	3	1
Ethnicity of household head			
Akan	48.6	5797	4191
Ga/Dangme	9.3	1111	569
Ewe	14.9	1779	1213
Guan	3.6	427	449
Gruma	3.5	420	659
Mole Dagbani	13.9	1658	3728
Grusi	2.8	331	641
Mande	1.1	136	190
Non-Ghanaian	1.6	193	186
Others	.6	73	99
Total	100.0	11925	11925

Table HH.3a shows that 38 percent of households have at least one child aged 0-4 years, 68 percent have at least one child aged 0-17 years, 67 percent have at least one woman aged 15-49 years, and 23 percent have at least one man aged 15-59 years. The mean household size at the national level is 3.9 persons.

Table HH.3a: Household composition			
Percent distribution of households by selected characteristics, Ghana, 2011			
Background Characteristics	Number of households		
	Weighted percent	Weighted	Unweighted
Households with at least: one child age 0-4 years	38.0	11925	11925
Households with at least: one child age 0-17 years	68.4	11925	11925
Households with at least: one woman age 15-49 years	67.2	11925	11925
Households with at least: one man age 15-59 years	22.5	11925	11925
Mean household size	3.9	11925	11925

The data in Table HH.3a were broken down by residence and Table HH.3b shows that households in urban areas have lower proportions of children (aged 0-4 and 0-17 years), males aged 15-59 years and are smaller (3.5 persons per household) compared to their rural counterparts (with 4.3 people per household). However, there are equal proportions of households with at least one woman aged 15-49 years in urban and rural areas (67%).

Table HH.3b: Household composition by residence						
Percent distribution of households by selected characteristics, Ghana, 2011						
Background Characteristics	Residence					
	Urban			Rural		
	Weighted percent	Weighted	Unweighted	Weighted percent	Weighted	Unweighted
Households with at least: one child age 0-4 years	33.1	6,358	4,545	43.6	5,567	7,380
Households with at least: one child age 0-17 years	63.5	6,358	4,545	74.1	5,567	7,380
Households with at least: one woman age 15-49 years	67.4	6,358	4,545	67.1	5,567	7,380
Households with at least: one man age 15-59 years	22.3	6,358	4,545	22.7	5,567	7,380
Mean household size	3.5	6,358	4,545	4.3	5,567	7,380

Characteristics of Female Respondents aged 15-49 years, Children Under-5 and Male respondents aged 15-59 years

Tables HH.4, HH.4M and HH.5 provide information on the background characteristics of female respondents aged 15-49 years, children under age 5 and male respondents aged 15-59 years. In all these tables, the total numbers of weighted and unweighted observations are equal, since sample weights have been normalized (standardized). In addition to providing useful information on the background characteristics of women and children, the tables are also intended to show the number of observations in each background category. These categories are used in the subsequent tabulations of this report.

Tables HH.4 and HH.4M provides background characteristics of female respondents aged 15-49 years and male respondents aged 15-59 years. The tables include information on the distribution of women and men according to region, residence, age, marital status, motherhood status, births in last the two years, education, wealth index quintiles and ethnicity.

The age distribution of the respondents shows that 1 in 3 females (34%) and males (31%) are in the 15-24 years age-group. For both sexes, the largest proportion is in the 15-19 years age-group, while the lowest are in the 45-49 years age-group for women and 54-59 years age-group for men. The data also show that 62 percent of women and 56 percent of men are currently married or are in union, while 30 percent and 40 percent respectively have never been married. Seventy percent of women have given birth at least once and 24 percent gave birth in the last two years.

The distribution of respondents by residence shows that 54 percent of women and 53 percent of men live in urban areas. Regionally, the distribution of respondents varies significantly. For example, for both sexes, one-fifth of respondents are from Greater Accra (20%) while Upper West region has the lowest proportion (3%).

The data show that 21 percent of women and 12 percent of men have no education. The proportions of women and men with basic education are respectively 60 percent and 57 percent. At the same time, 19 percent of women and 30 percent of men have secondary or higher education respectively. Twenty-five percent of women and 26 percent of men are in the richest wealth quintiles while 16 percent of women and men are in the poorest category.

The distribution of the respondents by ethnic groupings indicates that the Akans (46% for women and 43% for men) form the largest group, followed by Mole Dagbani (16% for women and 17% for men) and Ewes (14% percent for both men and women).

The discrepancies between the data from MICS 2011 and previous censuses and surveys identified in Table HH.3 are also found in Tables HH.4 and HH.4M. However, these seem not to be statistically significant.

Table HH.4: Women's background characteristics
Percent and frequency distribution of women age 15-49 years by selected characteristics, Ghana, 2011

Background Characteristics	Weighted percent	Number of women	
		Weighted	Unweighted
Region			
Western	9.6	1022	640
Central	9.8	1044	1571
Greater Accra	19.5	2074	829
Volta	7.7	821	593
Eastern	11.6	1237	596
Ashanti	18.7	1983	813
Brong Ahafo	9.5	1005	658
Northern	7.1	754	1938
Upper East	3.8	404	1412
Upper West	2.7	282	1577
Residence			
Urban	54.3	5770	4056
Rural	45.7	4857	6571
Age			
15-19	17.9	1899	2028
20-24	15.8	1674	1503
25-29	16.6	1768	1650
30-34	15.4	1638	1616
35-39	13.5	1431	1487
40-44	11.2	1195	1231
45-49	9.6	1023	1112
Marital/Union status			
Currently married/in union	61.9	6574	6926
Widowed	2.1	221	270
Divorced	3.3	354	254
Separated	3.0	323	278
Never married/in union	29.7	3156	2899
Motherhood status			
Ever gave birth	70.0	7434	7688
Never gave birth	30.0	3193	2939
Births in last two years			
Had a birth in last two years	23.8	2528	2872
Had no birth in last two years	76.2	8099	7755
Education			
None	20.9	2224	3945
Primary	19.1	2026	1932
Middle/JSS	40.7	4328	3327
Secondary +	19.3	2049	1423
Wealth index quintiles			
Poorest	15.6	1659	3860
Second	17.7	1877	2009
Middle	19.8	2101	1640
Fourth	22.1	2345	1616
Richest	24.9	2646	1502

Background Characteristics	Number of women		
	Weighted percent	Weighted	Unweighted
Ethnicity of household head			
Akan	46.3	4918	3316
Ga/Dangme	9.8	1040	513
Ewe	14.0	1485	959
Guan	3.6	380	406
Gruma	3.8	405	630
Mole Dagbani	16.0	1700	3714
Grusi	3.0	322	602
Mande	1.2	124	220
Non-Ghanaian	1.7	179	170
Others	.7	73	97

Background Characteristics	Number of women		
	Weighted percent	Weighted	Unweighted
Region			
Western	10.6	352	219
Central	8.9	296	451
Greater Accra	20.3	676	260
Volta	7.6	252	198
Eastern	10.8	358	180
Ashanti	19.2	638	252
Brong Ahafo	8.9	296	195
Northern	7.3	243	617
Upper East	3.6	120	432
Upper West	2.7	91	517
Residence			
Urban	52.6	1746	1189
Rural	47.4	1575	2132
Age of man			
15-19	19.8	657	767
20-24	11.4	379	393
25-29	13.7	456	411
30-34	13.3	442	363
35-39	10.9	363	371
40-44	8.7	288	303
45-49	9.4	313	293
50-54	6.7	221	215
55-59	6.1	204	205
Marital/Union status			
Currently married/in union	55.9	1856	1787
Widowed	.8	26	27
Divorced	1.6	54	47
Separated	2.2	72	53
Never married/in union	39.6	1314	1407

Background Characteristics	Number of women		
	Weighted percent	Weighted	Unweighted
Education			
None	12.5	417	808
Primary	12.5	416	549
Middle/JSS	44.6	1483	1229
Secondary +	30.3	1006	735
Wealth index quintiles			
Poorest	15.6	518	1217
Second	16.8	557	652
Middle	18.7	621	480
Fourth	23.4	779	524
Richest	25.5	847	448
Ethnicity of household head			
Akan	43.0	1428	970
Ga/Dangme	10.5	349	154
Ewe	13.8	459	331
Guan	4.1	135	128
Gruma	4.0	133	175
Mole Dagbani	16.9	562	1206
Grusi	3.6	121	193
Mande	1.6	53	63
Non-Ghanaian	1.9	62	66
Others	.5	18	35
Total	100.0	3321	3321

Some background characteristics of children under 5 are presented in Table HH.5. These include the distribution of children by sex, region, residence, age, mothers/caretakers education and household wealth index quintiles.

The results in Table HH.5 show that the proportions of girls (50%) and boys (50%) among children under 5 years were equal. The proportions of children are evenly divided in each of the 5 age- groups (one-fifth in each), and this is consistent with MICS 2006. The first age-group (0-11 months) has been split into two (<6 and 6-11 months) and these accounted for 11 percent and 10 percent respectively.

The proportion of children under five years living in the rural areas has decreased from 64 percent in MICS 2006 to 57 percent in MICS 2011. On the other hand, the proportion of children under five living in the urban areas has increased from 36 to 43 percent during this period. The largest proportion of children under five reside in the Ashanti region (19%) followed by the Greater Accra region (15%), while the smallest proportion is found in the Upper West region (3%).

About one third (33%) of mothers/caretakers of children under five have no education while 22 percent have only primary education. The results also show that 34 percent have attained middle/JSS education and only 12 percent of mothers/caretakers of these children have attained secondary or higher education. Furthermore, only 17 percent of children live in the richest households, while 43 percent come from households in the poorest (23%) and the second (20%) wealth index quintiles.

Table HH.5: Under-5's background characteristics
Percent and frequency distribution of children under five years of age by selected characteristics, Ghana, 2011

Background Characteristics	Weighted percent	Number of children	
		Weighted	Unweighted
Sex			
Male	49.8	3757	3859
Female	50.2	3793	3691
Region			
Western	10.0	758	414
Central	9.8	740	999
Greater Accra	15.1	1142	393
Volta	8.0	601	400
Eastern	11.0	827	345
Ashanti	18.7	1411	472
Brong Ahafo	8.9	671	407
Northern	11.3	852	1989
Upper East	4.3	325	988
Upper West	3.0	223	1143
Residence			
Urban	43.5	3283	2117
Rural	56.5	4267	5433
Age			
0-5	10.8	818	792
6-11	9.6	725	720
12-23	19.2	1453	1451
24-35	20.6	1553	1518
36-47	20.9	1576	1599
48-59	18.9	1426	1470
Mother's education			
None	32.5	2455	4081
Primary	21.6	1628	1363
Middle/JSS	34.1	2578	1565
Secondary +	11.8	889	541
Wealth index quintiles			
Poorest	22.9	1730	3528
Second	20.5	1551	1499
Middle	20.6	1559	1045
Fourth	18.5	1397	836
Richest	17.4	1313	642
Total	100.0	7550	7550

The results (percentage by age-group of total population) shown in Table HH.6 present some discrepancies compared to the data from the 2010 Ghana Population and Housing Census, especially for the first seven age-groups. This observation has already been made on Table HH.2.

Table HH.6: Household age distribution by sex and residence
Percent distribution of the household population by five-year age groups, by sex and residence, Ghana, 2011

Background Characteristics	Residence								Total		Ghana census 2010
	Urban				Rural				Number	Percent	
	Males		Females		Males		Females				
Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Percent	
Age											
0-4	1339	12.6	1372	11.8	1766	15.0	1763	14.6	6239	13.5	12.3
5-9	1418	13.4	1400	12.0	1951	16.6	1863	15.4	6631	14.4	11.1
10-14	1400	13.2	1557	13.3	1850	15.7	1702	14.1	6508	14.1	11.1
15-19	1008	9.5	952	8.2	1246	10.6	908	7.5	4114	8.9	10.9
20-24	835	7.9	937	8.0	641	5.5	688	5.7	3102	6.7	10.8
25-29	781	7.4	991	8.5	573	4.9	715	5.9	3060	6.6	9.5
30-34	768	7.2	852	7.3	517	4.4	721	6.0	2858	6.2	7.6
35-39	692	6.5	700	6.0	581	4.9	671	5.6	2644	5.7	6.2
40-44	505	4.8	641	5.5	528	4.5	532	4.4	2206	4.8	5.0
45-49	505	4.8	518	4.4	472	4.0	480	4.0	1976	4.3	3.9
50-54	392	3.7	571	4.9	396	3.4	613	5.1	1972	4.3	3.4
55-59	309	2.9	334	2.9	278	2.4	362	3.0	1283	2.8	2.2
60-64	233	2.2	236	2.0	293	2.5	298	2.5	1059	2.3	1.8
65-69	125	1.2	168	1.4	192	1.6	174	1.4	659	1.4	1.1
70-74	141	1.3	145	1.2	183	1.6	213	1.8	681	1.5	1.2
75-79	82	.8	119	1.0	126	1.1	155	1.3	481	1.0	0.7
80-84	23	.2	81	.7	69	.6	96	.8	270	.6	0.5
85+	46	.4	83	.7	85	.7	121	1.0	335	.7	0.6
Missing/DK	5	.0	3	.0	1	.0	6	.0	14	.0	0
Total	10607	100.0	11660	100.0	11747	100.0	12080	100.0	46093	100.0	100

Overall, 58 percent of households have 1 sleeping room, 26 percent have 2 sleeping rooms and 16 percent have 3 or more sleeping rooms (Table HH.7). At residence level, 63 percent of households in urban areas have 1 sleeping room compared to 52 percent in rural areas. In contrast, more households in rural areas have 2 sleeping rooms (28%) and 3 or more sleeping rooms (20%) compared to urban areas, which have 25 and 13 percent respectively.

Table HH.7: Housing characteristics
Percent and weighted number distribution of households by selected housing characteristics, by residence, Ghana, 2011

Background Characteristics	Residence				Total	
	Urban		Rural		Number	Percent
	Number	Percent	Number	Percent		
Sleeping Rooms						
1 room	3988	62.7	2904	52.2	6892	57.8
2 rooms	1565	24.6	1572	28.2	3137	26.3
3+ rooms	806	12.7	1090	19.6	1896	15.9
Total	6358	100.0	5567	100.0	11925	100.0



Nutritional Status

Children's nutritional status is a reflection of their overall health. When children have access to an adequate food supply, are not exposed to repeated illness, and are well cared for, they reach their growth potential.

Malnutrition is associated with more than half of all child deaths worldwide. Undernourished children are more likely to die from common childhood ailments, and for those who survive, have recurring sicknesses and faltering growth. Three-quarters of the children who die from causes related to malnutrition were only mildly or moderately malnourished – showing no outward sign of their vulnerability. The Millennium Development target is to reduce by half the proportion of people who suffer from hunger between 1990 and 2015. A reduction in the prevalence of malnutrition will also assist in the goal to reduce child mortality.

In a well-nourished population, the distribution of height and weight for children under age five is similar to that of a reference population. Hence under-nourishment in a population can be gauged by comparing children's anthropometric measurements with that of a reference population. The reference population used in this report is based on new WHO growth standards¹. Each of the three nutritional status indicators can be expressed in standard deviation units (z-scores) from the median of the reference population.

Weight-for-age is a measure of both acute and chronic malnutrition. Children whose weight-for-age is more than two standard deviations below the median of the reference population are considered moderately or severely underweight while those whose weight-for-age is more than three standard deviations below the median are classified as severely underweight.

Height-for-age is a measure of linear growth. Children whose height-for-age is more than two standard deviations below the median of the reference population are considered short for their age and are classified as moderately or severely stunted. Those whose height-for-age is more than three standard deviations below the median are classified as severely stunted. Stunting is a reflection of chronic malnutrition as a result of failure to receive adequate nutrition over a long period and recurrent or chronic illness.

Finally, children whose weight-for-height is more than two standard deviations below the median of the reference population are classified as moderately or severely wasted, while those who fall more than three standard deviations below the median are classified as severely wasted. Wasting is usually the result of a recent nutritional deficiency. The indicator may exhibit significant seasonal shifts associated with changes in the availability of food or disease prevalence.

In Ghana MICS4, weights and heights of all children under 5 years of age were measured using anthropometric equipment recommended by UNICEF (www.childinfo.org). Findings in this section are based on the results of these measurements.

¹ http://www.who.int/childgrowth/standards/second_set/technical_report_2.pdf

Table NU.1 shows percentages of children classified into each of these categories, based on the anthropometric measurements that were taken during fieldwork. Additionally, the table includes the percentage of children who are overweight, which takes into account those children whose weight for height is above 2 standard deviations from the median of the reference population, and mean z-scores for all three anthropometric indicators.

Children whose full birth date (month and year) were not obtained, and children whose measurements are outside the plausible range are excluded from Table NU.1. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured, whichever is applicable. For example, if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting. Percentages of children by age and reasons for exclusion are shown in the Data Quality Tables DQ.6 and DQ.7 in Appendix D. Overall, 99 percent of children had both their weights and heights measured (Table DQ.6). Less than two percent did not have their weight measured. One percent of children did not have their months of birth recorded. However, there was no case of children with neither year nor month missing. Table DQ.7 shows that due to incomplete dates of birth, implausible measurements, and missing weight and/or height, 3 percent of children have been excluded from the calculations of the weight-for-height indicator.

Thirteen percent of children under age five in Ghana are moderately or severely underweight and 3 percent are classified as severely underweight (Table NU.1). Twenty-three percent of the children are moderately or severely stunted or too short for their age, and 7 percent are severely stunted. Also, 6 percent of the children under five are moderately or severely wasted or too thin for their height, while 1 percent is severely wasted.

Children in Northern and Upper East regions are more likely to be underweight and stunted than children in other regions (see Table NU.1). In contrast, the percentage of wasting is highest in Upper West and Volta regions (9% for each region). Furthermore, the percentage of children who are underweight and stunted are higher in the rural than the urban area. Those children whose mothers have secondary or higher education are less likely to be underweight (9%) and stunted (13%) compared to children whose mothers have no education (17% and 29%, respectively). Boys appear more likely to be underweight (15%), stunted (25%), and wasted (7%) than girls (11%, 20% and 5% respectively). The age pattern shows that children aged 12-23 months are more likely to be underweight, in comparison to children who are younger and older; children aged 24-35 months are more likely to be stunted in comparison to children who are younger or older; and children aged 0-11 months are more likely to be wasted in comparison to children who are older (Figure NU.1). This pattern is expected for underweight and stunting as it is related to the ages at which many children cease to be breastfed and are exposed to contamination in water, food, and the environment.

Table NU.1: Nutritional status of children

Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height
Ghana, 2011

Background Characteristics	Weight for age:	Weight for age:	Weight for age:	Weight for age:	Height for age:	Height for age:	Height for age:	Height for age:	Weight for height:				
	% below -2 sd [1]	% below -3 sd [2]	Mean Z-Score (SD)	Number of children	% below -2 sd [3]	% below -3 sd [4]	Mean Z-Score (SD)	Number of children	% below -2 sd [5]	% below -3 sd [6]	% above +2 sd	Mean Z-Score (SD)	Number of children
Sex													
Male	15.4	3.1	-9	3665	25.3	8.3	-1.1	3636	7.2	1.9	2.7	-4	3665
Female	11.3	2.1	-7	3710	20.3	5.3	-1.0	3703	5.2	.9	2.5	-3	3716
Residence													
Urban	10.5	1.6	-7	3196	18.1	4.2	-9	3194	5.7	1.5	2.4	-3	3191
Rural	15.5	3.4	-9	4178	26.3	8.8	-1.2	4145	6.6	1.4	2.8	-3	4190
Region													
Western	14.3	2.9	-8	718	22.6	7.0	-1.1	713	7.7	1.8	3.0	-3	722
Central	13.5	3.1	-9	727	23.1	7.3	-1.1	723	5.4	1.6	1.4	-3	727
Greater Accra	8.3	.7	-6	1110	13.7	3.7	-7	1110	3.1	.4	3.2	-3	1119
Volta	10.9	1.6	-8	590	22.2	6.7	-9	589	8.5	1.9	2.1	-5	597
Eastern	10.5	1.9	-7	816	21.3	4.4	-9	812	6.8	.7	2.4	-3	812
Ashanti	11.9	2.1	-7	1377	21.7	6.6	-1.0	1370	6.6	2.4	4.6	-2	1366
Brong Ahafo	11.8	1.7	-8	660	19.3	4.9	-1.1	655	3.2	.5	1.7	-2	662
Northern	24.2	6.2	-1.3	836	37.4	13.3	-1.7	834	8.1	1.7	1.1	-4	840
Upper East	20.0	4.9	-1.2	323	31.5	9.8	-1.5	318	7.2	1.2	1.6	-5	319
Upper West	15.0	3.4	-1.0	219	23.1	7.5	-1.1	215	9.2	1.8	2.0	-5	215
Age													
0-5	6.7	1.7	-2	800	7.8	1.9	.0	795	11.4	3.6	4.7	-4	795
6-11	15.8	2.1	-8	716	12.5	2.3	-4	714	11.3	1.9	2.1	-8	714
12-23	16.5	3.4	-9	1422	26.5	9.0	-1.2	1411	7.7	1.9	3.4	-4	1418
24-35	13.5	2.8	-9	1519	28.2	8.7	-1.3	1515	4.7	1.0	2.4	-2	1520
36-47	13.7	3.1	-9	1534	27.9	8.5	-1.3	1522	2.8	.4	2.0	-2	1531
48-59	12.2	1.8	-1.0	1384	21.3	5.7	-1.2	1382	4.6	1.0	1.7	-3	1403
Mother's education													
None	17.3	4.3	-1.0	2403	29.2	10.6	-1.3	2390	7.8	1.8	2.3	-4	2405
Primary	13.7	2.6	-8	1603	25.2	6.1	-1.2	1590	5.1	1.1	3.3	-3	1605
Middle/JSS	10.8	1.4	-7	2524	18.2	5.1	-9	2515	5.2	1.5	2.0	-3	2526
Secondary +	9.2	1.1	-5	845	13.2	2.7	-6	844	6.6	.7	3.9	-3	844
Wealth index quintile													
Poorest	20.0	4.9	-1.1	1687	33.2	12.5	-1.5	1670	7.6	1.3	2.6	-4	1694
Second	14.8	3.6	-9	1532	26.7	8.4	-1.2	1522	7.3	1.8	3.3	-3	1531
Middle	13.2	2.6	-9	1526	22.8	6.9	-1.1	1528	6.0	2.1	2.2	-3	1529
Fourth	10.3	.9	-7	1372	15.8	2.8	-8	1364	4.8	.9	.9	-4	1372
Richest	6.3	.3	-4	1258	11.6	1.5	-5	1256	4.8	.8	4.2	-2	1254
Total	13.4	2.6	-8	7375	22.7	6.8	-1.1	7338	6.2	1.4	2.6	-3	7381

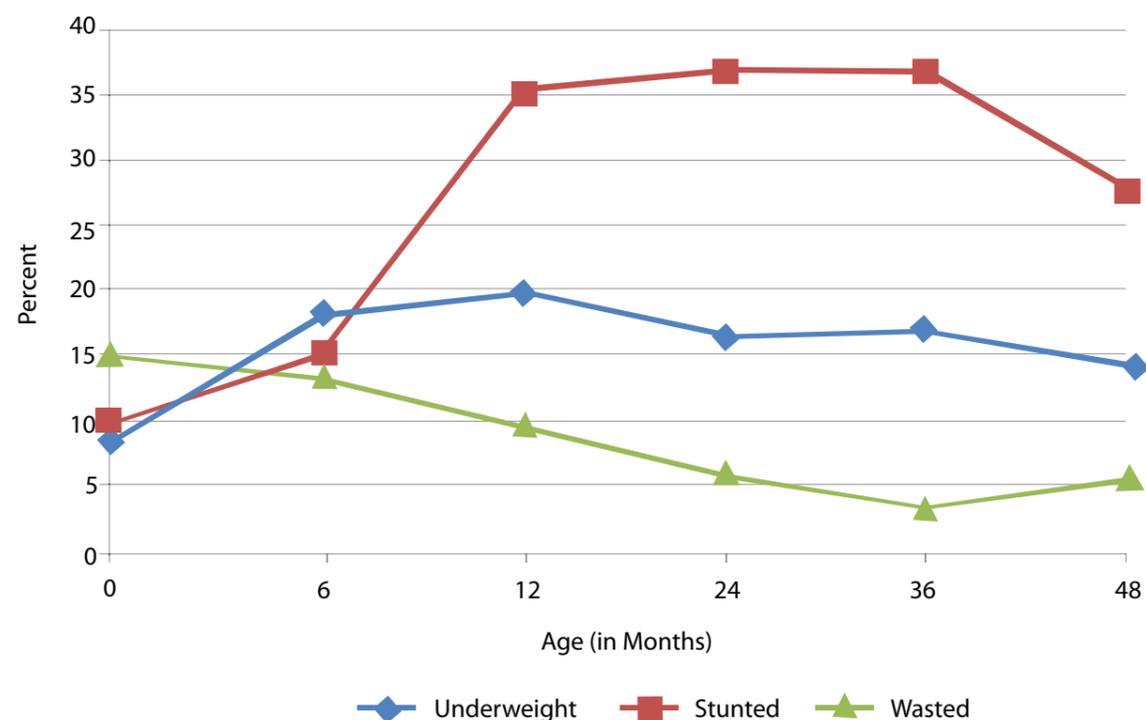
[1] MICS indicator 2.1a and MDG indicator 1.8

[2] MICS indicator 2.1b

[3] MICS indicator 2.2a, [4] MICS indicator 2.2b

[5] MICS indicator 2.3a, [6] MICS indicator 2.3b

Figure NU.1: Percentage of Children under-5 who are underweight, stunted and wasted Ghana, 2011



Marked differences are observed in all three indices with regard to the wealth status of households. For example, one in three (33%) children from the poorest households is stunted, compared to 12 percent of children from the richest households. Also, while 20 percent of children from the poorest wealth quintile are underweight, this reduces to 14 percent for children in the middle wealth quintile, and to 7 percent for children in the richest wealth quintile. Children from the poorest households are at least twice more likely to be underweight, stunted or wasted in comparison with children from the wealthiest households.

Overweight is not a big problem among children under five in Ghana. Overall, about 3 percent of the children were found to be overweight – these are the children whose weight for height is above 2 standard deviations from the median of the reference population (Table NU.1).

Breastfeeding and Infant and Young Child Feeding

Breastfeeding for the first few years of life protects children from infection, provides an ideal source of nutrients, and is economical and safe. However, many mothers stop breastfeeding too soon and there are often pressures to switch to infant formula, which can contribute to growth faltering and micronutrient malnutrition and is unsafe if clean water is not readily available.

WHO/UNICEF have the following feeding recommendations:

- Early initiation of breastfeeding within the first hour of birth;
- Exclusive breastfeeding for the first six months;
- Continued breastfeeding for two years or more;
- Safe, appropriate and adequate complementary foods beginning at 6 months; and
- Frequency of complementary feeding: 2 times per day for 6-8 month olds; 3 times per day for 9-11 month olds.

The indicators related to recommended child feeding practices are as follows:

- Early initiation of breastfeeding (within 1 hour of birth);
- Exclusive breastfeeding rate (< 6 months);
- Predominant breastfeeding (< 6 months);
- Continued breastfeeding rate (at 1 year and at 2 years);
- Duration of breastfeeding
- Age-appropriate breastfeeding (0-23 months)
- Introduction of solid, semi-solid and soft foods (6-8 months)
- Minimum meal frequency (6-23 months)
- Minimum diet diversity (6-23 months)
- Minimum acceptable diet (frequency and diet diversity)
- Milk feeding frequency for non-breastfeeding children (6-23 months)
- Bottle feeding (0-23 months)

Table NU.2 provides the proportion of children born in the last two years who were ever breastfed, those who were first breastfed within one hour and one day of birth, and those who received a prelacteal feed. Although a very important step in the management of lactation and establishment of a physical and emotional relationship between the baby and the mother, less than half (46%) of babies are breastfed for the first time within one hour of birth, while 84 percent of new-borns in Ghana start breastfeeding within one day of birth. Initiation of breastfeeding varies among regions. The proportion of infants that are breastfed within one hour of birth is higher in the Western and Upper West Regions at just over 60 percent, and lower in Greater Accra Region (29%). Greater Accra Region again has the lowest percentage of infants who started breastfeeding within one day of birth (68%). Ashanti, Upper East, Upper West and Eastern regions all have the highest proportion of newborns first breastfeeding within one day of birth (about 90%).

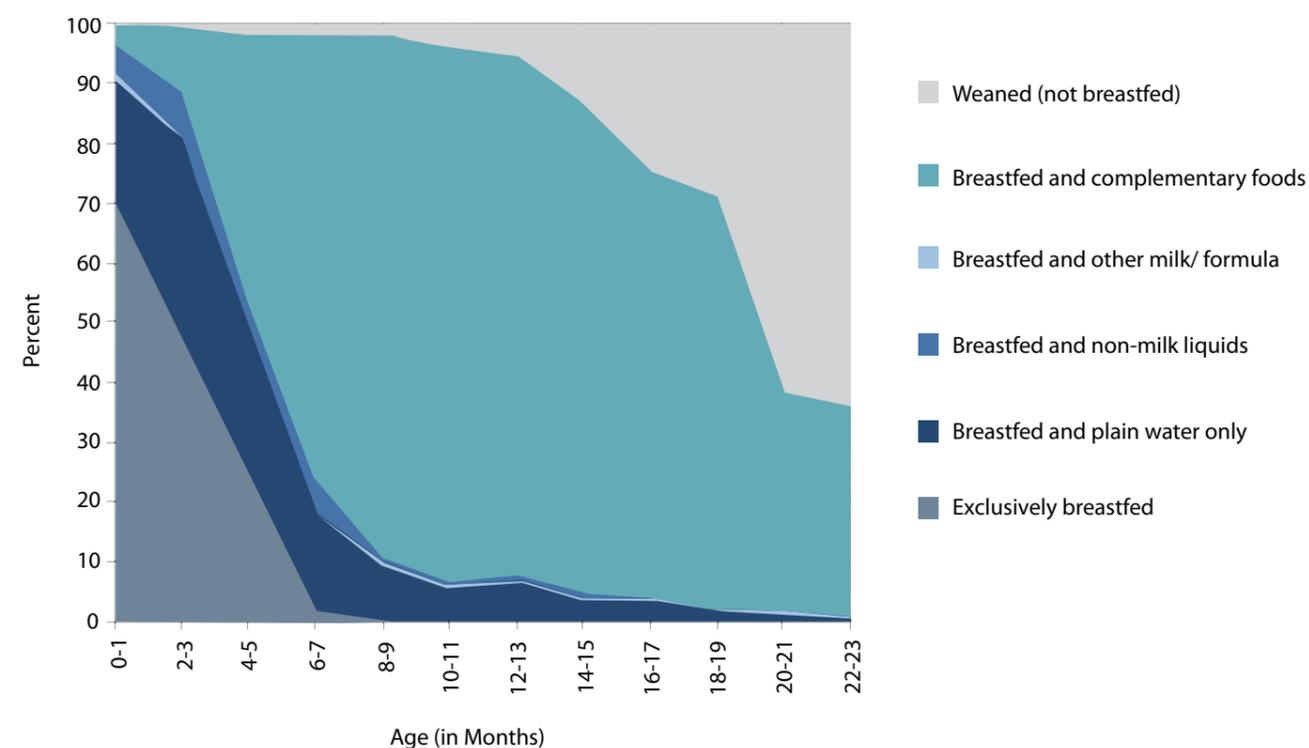
Little differences are observed by education background of the mothers with respect to breastfeeding their children within one hour or one day of birth. An irregular pattern is observed in initial breastfeeding and household wealth. For example, 50 percent of mothers in the second wealth quintile breastfed their infants within one hour of birth, compared to 43 percent of mothers in the poorest wealth quintile, and 42 percent of mothers in the richest wealth quintile. Similarly, mothers from the poorest and richest wealth quintiles are less likely to breastfeed their babies within one day of birth, compared to mothers from the other wealth categories. Also, infants delivered in a public sector health facility are more likely to be breastfed within one hour of birth (51%) and within one day of birth (87%) than infants delivered in a private sector health facility, at home, or other places.

Table NU.2: Initial breastfeeding Percentage of last-born children in the 2 years preceding the survey who were ever breastfed, percentage who were breastfed within one hour of birth and within one day of birth, and percentage who received a prelacteal feed, Ghana, 2011

Background Characteristics	Percentage ever breastfed [1]	Percentage who were first breastfed: Within one hour of birth [2]	Percentage who were first breastfed: Within one day of birth	Percentage who received a prelacteal feed	Number of last-born children in the two years preceding the survey
Region					
Western	99.5	61.9	89.3	20.5	270
Central	98.4	53.2	84.4	19	246
Greater Accra	99.6	28.6	67.9	26.6	397
Volta	99.2	41.7	89.7	4.9	189
Eastern	98.5	49.7	83.7	9.7	288
Ashanti	99	51.3	90.9	26	449
Brong Ahafo	97.5	36.3	78.2	22.4	227
Northern	98.5	39	84.2	14.6	283
Upper East	99.6	55.6	90.9	15	105
Upper West	98.4	61.1	90.9	6.8	75
Residence					
Urban	99.3	44.9	84.4	17.8	1068
Rural	98.5	46.6	83.2	19.4	1460
Months since last birth					
0-11 months	98.5	46.1	84	17.6	1077
12-23 months	99.3	48.7	85.7	17.3	907
Assistance at delivery					
Skilled attendant	99.2	48.3	85.6	15.8	1729
Traditional birth attendant	99.1	47.1	82.9	32.2	403
Other	98.9	33.5	79.6	16.7	314
Missing	90.8	35.5	64	22.9	83
Place of delivery					
Public sector health facility	99.2	50.7	86.6	13.9	1434
Private sector health facility	99.2	38.7	82.7	24.2	269
Home	99	40.3	80	25.3	793
Other/Missing	(76.2)	(29.1)	(56)	(29.5)	32
Mother's education					
None	98.6	44.9	83.4	17.7	733
Primary	99.5	45.8	82.3	17.6	565
Middle/JSS	98.4	46.7	85.2	18.7	886
Secondary +	99.6	45.8	82.7	23	344
Wealth index quintiles					
Poorest	99.4	42.5	80.7	16.8	560
Second	97.4	50.4	86.6	20.9	546
Middle	98.6	47.9	88.4	13.2	500
Fourth	99.5	45.4	83.7	19.5	455
Richest	99.6	43	78.9	23.9	467
Total	98.9	45.9	83.7	18.8	2528

[1] MICS indicator 2.4
 [2] MICS indicator 2.5
 Figures in parentheses '()' are based on 25-49 unweighted cases

Figure NU.2: Infant feeding patterns by age
Percentage distribution of children aged under 3 years by feeding pattern by age group, Ghana, 2011



In Table NU.3, breastfeeding status is based on the reports of mothers/caretakers of children's consumption of food and fluids in the 24 hours prior to the interview. Exclusively breastfed refers to infants who received only breast milk (and vitamins, mineral supplements, or medicine). The table shows exclusive breastfeeding of infants during the first six months of life, as well as continued breastfeeding of children at ages 12-15 and 20-23 months of age.

Table NU.3: Breastfeeding

Percentage of living children according to breastfeeding status at selected age groups, Ghana, 2011

Background Characteristics	Children 0-5 months			Children 12-15 months		Children 20-23 months	
	Percent exclusively breastfed [1]	Percent predominantly breastfed [2]	Number of children	Percent breastfed (Continued breastfeeding at 1 year) [3]	Number of children	Percent breastfed (Continued breastfeeding at 2 years) [4]	Number of children
Sex							
Male	46.2	72.1	418	86.6	234	38.1	227
Female	45.1	69.8	400	94.1	288	36.7	205
Region							
Western	(46.8)	(76.7)	72	(98.5)	62	*	40
Central	39.5	66.7	73	89.8	40	35.1	57
Greater Accra	(21.1)	(38.1)	110	(75.0)	93	*	62
Volta	(49.1)	(80.3)	64	*	34	*	19
Eastern	(42.6)	(74.0)	107	*	42	*	46
Ashanti	39.0	61.9	172	(90.9)	108	(25.9)	81
Brong Ahafo	69.8	91.1	82	*	47	(41.4)	42
Northern	63.6	90.4	79	98.3	63	85.1	49
Upper East	(58.4)	(92.0)	35	95.5	19	76.6	22
Upper West	67.0	81.6	23	91.2	14	87.7	15
Residence							
Urban	48.9	68.5	344	85.9	242	20.5	177
Rural	43.3	72.7	473	94.9	280	49.3	255
Mother's education							
None	55.0	82.6	234	96.4	143	64.9	145
Primary	43.1	75.4	177	93.7	118	38.1	87
Middle/JSS	39.9	63.4	307	89.9	201	18.4	161
Secondary +	46.1	59.3	100	(74.5)	60	(13.2)	40
Wealth index quintile							
Poorest	53.7	80.4	169	96.5	109	78.9	97
Second	39.7	73.8	163	98.3	126	39.8	113
Middle	45.1	73.0	186	95.3	113	18.1	75
Fourth	41.7	62.8	135	91.0	80	28.6	84
Richest	47.2	62.8	164	(68.3)	94	(4.6)	64
Total	45.7	71.0	818	90.7	522	37.4	432

[1] MICS indicator 2.6

[2] MICS indicator 2.9

[3] MICS indicator 2.7

[4] MICS indicator 2.8

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses '()' are based on 25-49 unweighted cases.

Approximately 46 percent of children aged less than six months are exclusively breastfed, a level considerably lower than that recommended by the WHO/UNICEF. By age 12-15 months, 91 percent of children are still being breastfed, and by age 20-23 months, 37 percent are still breastfed. Little differences are observed in exclusive breastfeeding by sex of the child - 46 percent for boys and 45 percent for girls. In contrast, girls aged 12 - 15 months (94%) are more likely to continue breastfeeding at one year than boys (87%). Given the small number of children in the sample, it is not possible to have meaningful comparisons for all 10 regions.

In terms of area of residence, infants aged 0-5 months in urban area (49%) are more likely to be exclusively breastfed than their counterparts in rural areas (43%). The reverse is true for infants in the 12-15 months and 20-23 months age-groups, where children in the urban areas are less likely to receive continued breastfeeding at year one and two. In all age categories and breastfeeding status, breastfeeding decreases with the mother's educational level. For example, children 0-5 months whose mothers have no education are more likely to be exclusively breastfed (55%), compared to children whose mothers have secondary or higher education (46%). However, no conclusion can be made for continued breastfeeding at 2 years for children aged 20-23 months, due to the small number with secondary and higher education.

Figure NU.2 shows the detailed pattern of breastfeeding by the child's age in months. Even at the youngest ages, the majority of children are receiving liquids or foods other than breast milk. By the end of the sixth month, the percentage of children exclusively breastfed is below three percent. Only about 35 percent of children are receiving breast milk after 2 years.

As already shown in the Table NU.3, and contrary to the WHO/UNICEF recommendation, all children under 6 months in Ghana are not exclusively breastfed. The figure NU.2 indicates that the percentage of "Exclusively breastfed" decreases rapidly from 71 percent (aged 0-1 month) to 49 percent (age 2-3 months), 24 percent (age 4-5 months); and above the age of 6 months, less than 3 percent of the children are still "exclusively breastfed". For the age-groups 6-7 to 18-19 months, breastfeeding and complementary foods is the predominant infant feeding pattern, with percentages ranging between 69 percent and 89 percent. For age-groups 20-21 and 22-23 months, this proportion is halved due to the huge increase in the percentage of "weaned" children. The percentage of "weaned" increases with age and approximately 64 percent of the children are weaned before turning 2 years old.

Table NU.4 shows the median duration of breastfeeding by selected background characteristics. Among children 0-35 months, the median duration is 20.4 months for any breastfeeding, 2.2 months for exclusive breastfeeding, and 4.2 months for predominant breastfeeding. The median duration of breastfeeding varies among regions for children aged 0-35 months. Greater Accra region has the lowest median duration of breastfeeding for any breastfeeding (17.5 months), exclusive breastfeeding (1.1 months), and predominant breastfeeding (1.7 months). On the other hand, Upper West region has the highest median duration of breastfeeding for any breastfeeding (26.2 months), Brong Ahafo region has the highest median duration for exclusive breastfeeding (4.0 months), and Upper East region has the highest median duration for predominant breastfeeding (7.0 months).

In terms of area of residence, the median duration of any breastfeeding is higher for rural areas (21.6 months), than urban areas (18.6 months). Little variation is found between urban and rural areas in the median duration of exclusive breastfeeding and predominant breastfeeding. For all breastfeeding categories, the median duration of breastfeeding decreases with mother's education level: for example, for any breastfeeding, the median duration is 23.5 months for mothers with no education, compared to 18.0 months for mothers with middle/JSS and Secondary or higher education. For exclusive breastfeeding, the median duration is 2.9 months for mothers with no education, compared to 1.8 months for mothers with Middle/JSS or Secondary and higher education. The median duration decreases with wealth index quintile. The median duration of 25.7 months for any breastfeeding, 2.8 months for exclusive breastfeeding, and 5.7 months for predominant breastfeeding for the poorest wealth quintile is the highest compared to all other wealth quintile groups.

Table NU.4: Duration of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children age 0-35 months, Ghana, 2011

Background Characteristics	Median duration (in months) of			Number of children age 0-35 months
	Any breastfeeding [1]	Exclusive breastfeeding	Predominant breastfeeding	
Sex				
Male	20.3	2.3	4.3	2233
Female	20.5	2.1	4.2	2315
Region				
Western	20.8	2.3	4.0	447
Central	19.6	1.2	3.7	454
Greater Accra	17.4	1.1	1.7	673
Volta	22.1	2.5	5.4	338
Eastern	18.0	2.0	4.0	520
Ashanti	17.9	1.6	3.9	895
Brong Ahafo	21.1	4.0	6.4	411
Northern	25.1	3.5	6.8	491
Upper East	25.5	3.4	7.0	184
Upper West	26.2	3.8	5.9	135
Residence				
Urban	18.6	2.4	4.0	1978
Rural	21.6	2.1	4.5	2570
Mother's education				
None	23.5	2.9	5.8	1355
Primary	21.1	2.1	4.8	1007
Middle/JSS	18.0	1.8	3.5	1607
Secondary+	18.0	1.8	3.3	579
Wealth index quintile				
Poorest	25.7	2.8	5.7	1011
Second	20.7	1.6	4.4	917
Middle	19.6	2.3	4.8	936
Fourth	18.5	2.1	3.2	868
Richest	15.9	2.1	3.8	815
Median	20.4	2.2	4.2	4548
Mean for all children (0-35 months)	20.5	2.7	5.1	4548

[1] MICS indicator 2.10

The adequacy of breastfeeding in children aged 0-23 months is provided in Table NU.5. Different criteria of adequate feeding are used depending on the age of the child. For infants aged 0-5 months, exclusive breastfeeding is considered as adequate feeding, while infants aged 6-23 months are considered to be adequately fed if they are fed the minimum number of times according to age. For children aged 0-5 months, little differences are observed among male and female children. For children aged 6-23 months, 69 percent males and 73 percent females are currently breastfed and receiving solid, semi-solid or soft foods. Some regional variations are also observed. About 70 percent of children aged 0-5 months are being adequately fed in Brong Ahafo region, the highest proportion compared to about a fifth (21%) for Greater Accra, which has the lowest. Upper West has the highest proportion of children aged 6-23 months (86%) and children aged 0-23 months (81%) that can be considered adequately fed, compared to Greater Accra, which has the lowest at 60 percent of children aged 6-23 months and 51 percent of children aged 0-23 months that are adequately fed. With regard to other background characteristics of the mother, those with no education, and those with primary education are more likely to feed their children adequately compared to mothers with other levels of education. Consequently, only 71 percent of children aged 6-23 months and 64 percent of children aged 0-23 months can be said to be adequately fed.

Background Characteristics	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Percent exclusively breastfed [1]	Number of children	Percent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Percent appropriately breastfed [2]	Number of children
Sex						
Male	46.2	418	69.0	1077	62.6	1495
Female	45.1	400	72.6	1100	65.3	1500
Region						
Western	(46.8)	72	77.3	243	70.3	315
Central	39.5	73	68.6	236	61.7	309
Greater Accra	(21.1)	110	60.3	367	51.3	477
Volta	(49.1)	64	77.3	157	69.1	220
Eastern	42.6	107	65.9	245	58.8	352
Ashanti	39.0	172	64.9	346	56.3	518
Brong Ahafo	69.8	82	73.5	177	72.3	259
Northern	63.6	79	80.6	256	76.6	334
Upper East	(58.4)	35	82.9	88	75.9	123
Upper West	67.0	23	85.9	64	80.8	87
Residence						
Urban	48.9	344	65.7	932	61.2	1276
Rural	43.3	473	74.6	1246	66.0	1719
Mother's education						
None	55.0	234	76.7	643	70.9	877
Primary	43.1	177	74.7	488	66.3	665
Middle/JSS	39.9	307	66.3	743	58.6	1050
Secondary +	46.1	100	63.0	303	58.8	403
Wealth index quintile						
Poorest	53.7	169	82.9	487	75.4	656
Second	39.7	163	72.0	486	63.9	649
Middle	45.1	186	72.5	406	63.9	592
Fourth	41.7	135	68.4	406	61.8	541
Richest	47.2	164	54.9	393	52.6	557
Total	45.7	818	70.8	2177	63.9	2995

[1] MICS indicator 2.6
[2] MICS indicator 2.14
Figures in parentheses (') are based on 25-49 unweighted cases.

Adequate complementary feeding of children from 6 months to two years of age is particularly important for growth and development and the prevention of under-nutrition. Continued breastfeeding beyond six months should be accompanied by consumption of nutritionally adequate, safe and appropriate complementary foods that help meet nutritional requirements when breast milk is no longer sufficient. This requires that for breastfed children, two or more meals of solid, semi-solid or soft foods are needed if they are six to eight months old, and three or more meals if they are aged 9-23 months of age. For children aged 6-23 months and older who are not breastfed, four or more meals of solid, semi-solid or soft foods or milk feeds are needed.

Overall, 75 percent of all infants aged 6-8 months received solid, semi-solid, or soft foods (Table NU.6). Among currently breastfeeding infants, figure is 74 percent. Table NU.6 also shows that infants aged 6-8 months in urban areas (80%) are more likely to receive solid, semi-solid, or soft foods, compared to those in rural areas (71%).

Background Characteristics	Currently breastfeeding		Currently not breastfeeding		All	
	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods	Number of children age 6-8 months	Percent receiving solid, semi-solid or soft foods [1]	Number of children age 6-8 months
Sex						
Male	74.0	203	*	3	74.4	206
Female	74.6	192	*	5	75.3	197
Residence						
Urban	79.8	169	*	3	80.1	172
Rural	70.2	226	*	5	70.9	231
Total	74.3	395	100.0	8	74.8	403

[1] MICS indicator 2.12
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Table NU.7 presents the proportion of children aged 6-23 months who received semi-solid or soft foods the minimum number of times or more during the previous day according to breastfeeding status (see the note in Table NU.7 for a definition of minimum number of times for different age groups). Overall, more than half of the children aged 6-23 months (57%) were receiving solid, semi-solid and soft foods the minimum number of times. A slightly higher proportion of male children (59%) were enjoying the minimum meal frequency compared to female children (56%).

Among currently breastfed children aged 6-23 months, 57 percent were receiving solid, semi-solid and soft foods the minimum number of times and this proportion was higher among male children (59%) compared to females (56%). Among non-breastfeeding children, 58 percent received solid, semi-solid and soft foods or milk feeds 4 times or more.

Table NU.7: Minimum meal frequency

Percentage of children aged 6-23 months who received solid, semi-solid, or soft foods (and milk feeds for non-breastfeeding children) the minimum number of times or more during the previous day, according to breastfeeding status, Ghana, 2011

Background Characteristics	Currently breastfeeding		Currently not breastfeeding			All	
	Percent receiving solid, semi-solid and soft foods the minimum number of times	Number of children age 6-23 months	Percent receiving at least 2 milk feeds [1]	Percent receiving solid, semi-solid and soft foods or milk feeds 4 times or more	Number of children age 6-23 months	Percent with minimum meal frequency [2]	Number of children age 6-23 months
Sex							
Male	59.1	824	13.3	58.8	254	59.0	1077
Female	55.5	883	13.2	56.2	217	55.6	1100
Age							
6-8 months	59.4	395	64.5	*	8	59.5	403
9-11 months	53.2	313	62.9	*	9	54.5	322
12-17 months	54.7	668	19.5	61.1	112	55.7	780
18-23 months	63.6	331	8.6	55.1	342	59.3	673
Region							
Western	46.6	204	3.6	*	39	45.6	243
Central	62.4	173	6.1	57.4	63	61.1	236
Greater Accra	59.2	244	13.2	(59.2)	122	59.2	367
Volta	50.5	134	28.0	*	23	52.4	157
Eastern	55.5	175	10.5	(23.1)	70	46.2	245
Ashanti	73.6	242	22.0	(80.7)	104	75.8	346
Brong Ahafo	61.1	148	8.7	*	29	65.8	177
Northern	49.1	245	13.9	*	11	48.4	256
Upper East	47.7	81	.0	*	7	45.7	88
Upper West	61.0	60	14.5	*	4	60.2	64
Residence							
Urban	58.2	676	16.7	60.2	255	58.8	932
Rural	56.6	1030	9.2	54.5	216	56.3	1246
Mother's education							
None	55.0	563	7.9	50.0	81	54.4	643
Primary	52.8	401	2.7	43.4	87	51.1	488
Middle/JSS	59.2	525	15.5	63.9	218	60.6	743
Secondary +	66.4	218	23.2	(63.2)	85	65.5	303
Wealth index quintile							
Poorest	53.0	451	.0	45.3	36	52.4	487
Second	55.5	390	6.3	45.8	96	53.6	486
Middle	59.8	321	9.0	65.6	85	61.0	406
Fourth	58.2	297	21.9	64.0	109	59.7	406
Richest	63.3	247	17.1	59.0	146	61.7	393
Total	57.2	1707	13.2	57.6	471	57.3	2177

[1] MICS indicator 2.15

[2] MICS indicator 2.13

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

Infant and young child feeding (IYCF) practices directly affect the nutritional status of children under two years of age and, ultimately, impact child survival². Improving infant and young child feeding practices in children aged 6–23 months of age is therefore critical to improved nutrition, health and development of children. Additional to the minimum meal frequency for children aged 6-23 months, the national MICS also included questions on the minimum dietary diversity by asking mothers/caretakers of children aged 6-23 months, if the child had consumed any food items in the following 7 food groups, on the day or night preceding the survey:

- grains, roots and tubers
- legumes and nuts
- dairy products (milk, yogurt, cheese)
- flesh foods (meat, fish, poultry and liver/organ meats)
- eggs
- vitamin-A rich fruits and vegetables
- other fruits and vegetables

As per WHO/UNICEF guidelines on feeding practices for children aged 6-23 months, the cut-off of at least 4 of the 7 food groups above was selected because it is associated with better quality diets for both breastfed and non-breastfed children. Consumption of foods from at least 4 food groups on the previous day would also mean that many of the children had a high likelihood of consuming at least one animal-source food and at least one fruit or vegetable, in addition to a staple food (grain, root or tuber). For the Ghana MICS survey, it should be noted that although the quantity of food consumed matters and influences nutrition status, due to measurement challenges, the survey only recorded whether or not the food items were consumed and not the amounts.

Table NU.8 presents the percentage of children aged 6-23 months who received at least 4 groups of food the day or night preceding the survey and the percentage of those who received at least four groups and at least the minimum times of feeding according to age. Table NU.8 reveals that for children aged 6-23 months currently breastfeeding, 46 percent consumed food items from at least 4 food groups, and 34 percent consumed food items from 4 or more food groups and were fed the minimum number of times. Consumption of food items from at least 4 food groups increases with age – from 17 percent for children aged 6-8 months, 46 percent for children aged 9-11 months, 57 percent for children aged 12-17 months, and nearly 60 percent for children aged 18-23 months. This age pattern is noteworthy, and although varied food items were available in the households, the younger infants (6-8 months) received much less varied diets compared to older children.

Overall, the results show that 31 percent of all children 6-23 months were fed according to the three IYCF practices the day and night prior to the survey, i.e. they received breast milk or milk product, they were fed the minimum number of times according to age, and they received at least four different food groups. Brong Ahafo (41%), Ashanti (39%), Upper West and Volta (38% each) had the highest percentages of children 6-23 months who were fed according to the three IYCF practices, while Northern and Western region had the lowest percentages (21% and 15% respectively).

² WHO, Indicators for assessing infant and young child feeding practices, Part 1, Definitions, Conclusions of a consensus meeting held 6-8 November 2007, and attended by: WHO, USAID, AED, FANTA, UCDAVIS, IFPRI and UNICEF

Table NU.8: Infant and young child feeding (IYCF) practices (based on 4 food groups)

Percentage of children aged 6-23 months who are fed according to the three IYCF feeding practices, by breastfeeding status, number of food groups consumed and number of times they were fed during the day and night preceding the survey, Ghana, 2011

Background Characteristics	Currently breastfeeding				All				
	4+ food groups	Minimum times or more	Both 4+ food groups and minimum times or more	Number of children age 6-23 months	Breast milk or milk product	4+ food groups	Minimum times or more	With all 3 IYCF practices	Number of children age 6-23 months
Sex									
Male	44.6	59.1	32.0	824	85.4	45.3	59.0	29.4	1077
Female	47.0	55.5	35.4	883	87.9	47.7	55.6	32.6	1100
Age (in months)									
6-8	16.6	59.4	14.9	395	99.3	16.3	59.5	14.6	403
9-11	46.3	53.2	34.0	313	99.9	46.2	54.5	34.2	322
12-17	56.5	54.7	39.5	668	93.3	55.6	55.7	37.9	780
18-23	58.9	63.6	44.5	331	65.0	54.3	59.3	31.4	673
Region									
Western	31.6	46.6	16.5	204	86.6	33.4	45.6	15.3	243
Central	52.6	62.4	40.9	173	80.9	51.7	61.1	35.7	236
Greater Accra	48.8	59.2	36.6	244	86.2	50.7	59.2	34.7	367
Volta	66.2	50.5	37.5	134	92.4	66.2	52.4	37.9	157
Eastern	38.0	55.5	29.0	175	81.4	36.3	46.2	23.1	245
Ashanti	48.7	73.6	44.7	242	82.2	49.3	75.8	38.5	346
Brong Ahafo	52.9	61.1	46.8	148	85.2	53.9	65.8	40.7	177
Northern	33.3	49.1	21.4	245	96.8	33.3	48.4	21.3	256
Upper East	53.3	47.7	34.1	81	92.1	54.0	45.7	31.6	88
Upper West	52.8	61.0	39.6	60	95.4	51.9	60.2	38.3	64
Residence									
Urban	47.3	58.2	35.8	676	87.3	49.8	58.8	34.8	932
Rural	44.9	56.6	32.4	1030	86.1	44.1	56.3	28.2	1246
Mother's education									
None	42.6	55.0	29.6	563	89.4	41.8	54.4	27.0	643
Primary	45.0	52.8	31.2	401	86.0	43.8	51.1	26.9	488
Middle/JSS	51.6	59.2	38.5	525	82.5	50.8	60.6	34.5	743
Secondary +	42.1	66.4	37.9	218	91.7	50.5	65.5	37.8	303
Wealth index quintile									
Poorest	44.7	53.0	30.1	451	93.4	46.0	52.4	28.6	487
Second	48.1	55.5	34.0	390	83.3	46.4	53.6	28.9	486
Middle	45.4	59.8	34.7	321	83.2	43.0	61.0	30.0	406
Fourth	42.7	58.2	30.8	297	85.5	45.0	59.7	30.5	406
Richest	48.9	63.3	42.4	247	87.1	52.7	61.7	38.4	393
Total	45.9	57.2	33.8	1707	86.6	46.5	57.3	31.0	2177

Children living in urban areas (35%) were also more likely than their rural counterparts (28%) to have been fed according to the three IYCF practices. Also, there is a direct relationship between the proportion of children who are fed according to the IYCF practices and mother's level of education. For example, only 27 percent of children whose mothers have no education or primary education are fed according to the IYCF practices. This increases to 35 percent for children whose mothers have middle/JSS education, and to 38 percent for children whose mothers have secondary or higher education. Although there is little or no difference in the first 4 wealth quintiles (about 30%), the frequency and diet diversity rates for children in the richest wealth quintile were much higher than the rest (38%). Another notable finding in this survey is the sharp drop in consumption of breastmilk or milk product from above 90% in infants aged 6-17 months to 65% in those aged 18-23 months. Milk is essential for child nutrition during the first 23 months. WHO and UNICEF recommend continued breastfeeding for two years and beyond. This sudden drop may be influenced by weaning observed at ages 12-17 months and 18-23 months.

The continued practice of bottle-feeding is a concern because of the possible contamination due to unsafe water and lack of hygiene in the preparation of the feed. Table NU.9 shows that 14 percent of children aged 0-23 months, and 20 percent of children aged 6-11 months are fed using a bottle with a nipple. The results also show that for children aged 0-23 months fed with a bottle with a nipple, the percentage is higher for female children (15%) than male children (12%). Bottle feeding is generally an affluent household phenomenon, and it is likely that mothers who resorted to bottle feeding are working women, who have to be away from their children for long hours. For example, children living in Greater Accra region (35%), those living in urban areas (21%), those children whose mothers have secondary education (34%) and children from the wealthiest households (33%) are more likely to be fed with a bottle with a nipple, than children from other backgrounds. The identification of reasons behind the current trends in bottle feeding would reinforce interventions to encourage breastfeeding and to reduce bottle feeding practices so that child morbidity and mortality can be reduced.

Table NU.9: Bottle feeding		
Percentage of children aged 0-23 months who were fed with a bottle with a nipple during the previous day, Ghana, 2011		
Background Characteristics	Percentage of children age 0-23 months fed with a bottle with a nipple [1]	Number of children age 0-23 months:
Sex		
Male	12.1	1495
Female	15.2	1500
Age		
0-5 months	18.6	818
6-11 months	20.4	725
12-23 months	7.5	1453
Region		
Western	5.8	315
Central	11.4	309
Greater Accra	35.4	477
Volta	8.2	220
Eastern	17.9	352
Ashanti	14.3	518
Brong Ahafo	4.1	259
Northern	3.5	334
Upper East	5.1	123
Upper West	3.1	87
Residence		
Urban	20.8	1276
Rural	8.4	1719
Mother's education		
None	4.6	877
Primary	10.8	665
Middle/JSS	15.1	1050
Secondary +	34.3	403
Wealth index quintiles		
Poorest	4.1	656
Second	7.1	649
Middle	11.2	592
Fourth	16.0	541
Richest	32.9	557
Total	13.7	2995
[1] MICS indicator 2.11		

Salt Iodization

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable mental retardation and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes cretinism. It also increases the risk of stillbirth and miscarriage in pregnant women. Iodine deficiency is most commonly and visibly associated with goitre. IDD takes its greatest toll in impaired mental growth and development, contributing in turn to poor school performance, reduced intellectual ability, and impaired work performance. The indicator is the percentage of households consuming adequately iodized salt (>15 parts per million).

The Universal Salt Iodisation (USI) regulations mandate salt for human and animal consumption to be iodized. In Ghana, non-iodized salt is banned from sale when it is intended for consumption and people found selling or using non-iodized salt are liable to arrest. Campaigns on iodized salt consumption have also been on-going for several years and iodized salt is readily accessible, at least, in all urban areas.

In the Ghana MICS 2011 testing for iodine content in salt used for cooking was done in two ways: using Rapid Test Kits (RTKs), and through Titration in a lab. In the case of titration, a sample of salt was collected in 5 out of 15 households in each cluster, and a titration test was carried out by the Department of Nutrition and Food Science, University of Ghana. The results of the two tests are highlighted below. Additionally, the results from titration were compared to those obtained through the Rapid Test Kits.

Rapid Test Kits results

In 89 percent of households, salt used for cooking was tested for iodine content by using salt test kits to test for the presence of potassium iodate. Table NU.10 shows that in 10 percent of households there was no salt available. In 35 percent of households, salt was found to be adequately iodated (i.e. 15+ ppm). Use of adequately iodized salt was lowest in Northern (15%), followed by Volta (18%), and Upper East (18%) regions, and was highest in Greater Accra (56%), followed by Brong Ahafo (45%) and Western (44%). Also, households in urban areas are more likely to use adequately iodated salt (45%), compared to households in rural areas (23%).

There is a marked variation by household wealth in terms of adequately iodized salt consumption. About 66 percent of the households in the richest wealth quintile use adequately iodated salt compared to 37 percent of households in the fourth wealth quintile, 24 percent for the households in middle wealth quintile, 19 percent households in the second wealth quintile, and 15 percent for households in the poorest wealth quintile. It is also interesting to note that more than one in five households (22%) use salt that was not iodized, and 34 percent used inadequately iodated salt (>0 and <15 ppm). Households in Volta (59%) and those in Northern (56%) are also more likely to use inadequately iodated salt, compared to households in the other regions.

Table NU.10: Iodized salt consumption
Percent distribution of households by consumption of iodized salt, Ghana, 2011

Background Characteristics	Percent of households in which salt was tested	Number of households	Percent of households with salt test result				Total	Number of households in which salt was tested or with no salt
			Percent of households with no salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]		
			Percent of households with no salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]		
Region								
Western	86.6	1116	12.8	14.5	28.6	44.0	100.0	1108
Central	88.4	1236	10.7	37.3	27.9	24.1	100.0	1225
Greater Accra	87.9	2321	11.5	12.5	19.9	56.1	100.0	2304
Volta	95.6	992	3.8	20.0	58.5	17.7	100.0	986
Eastern	89.4	1533	10.0	32.3	30.4	27.3	100.0	1523
Ashanti	88.8	2321	10.5	25.6	33.8	30.0	100.0	2304
Brong Ahafo	87.3	1011	12.3	10.2	32.2	45.3	100.0	1007
Northern	95.4	727	4.4	23.8	56.4	15.4	100.0	725
Upper East	88.2	414	5.3	29.2	47.3	18.2	100.0	386
Upper West	95.7	253	3.4	21.7	42.9	32.0	100.0	250
Residence								
Urban	87.7	6358	11.6	16.6	26.9	44.9	100.0	6303
Rural	91.4	5567	7.7	28.6	41.1	22.5	100.0	5516
Wealth index quintiles								
Poorest	94.8	1763	4.3	32.6	48.4	14.6	100.0	1746
Second	89.8	2244	9.4	29.5	42.2	18.9	100.0	2226
Middle	87.6	2450	11.6	28.0	36.9	23.5	100.0	2429
Fourth	86.3	2639	13.1	19.2	30.4	37.3	100.0	2620
Richest	90.3	2829	8.8	7.8	17.3	66.1	100.0	2799
Total	89.4	11925	9.8	22.2	33.5	34.5	100.0	11819

[1] MICS indicator 2.16

Salt Titration

Salt sample for analysis

Among the 11,925 households interviewed in the MICS 2011, 10 percent had no salt at the time of survey (Table NU.10). About 90 percent of households provided salt samples for iodine testing using the Rapid Test Kits. As indicated above, one-third of households in each cluster were requested to provide an additional salt sample for further iodine testing using the titration method. A total of 3,439 of these salt samples were delivered to the Department of Nutrition and Food Science, University of Ghana, for titrimetric analysis, and this was equivalent to one in three of all salt samples, which had earlier been tested using the Rapid Test Kits.

Some of these salt samples were insufficient in quantity (< 20 or <10gm) and could not be analysed, leaving 3,325 for the titrimetric analysis. After analysis, 62 of the results were identified as duplicates from some households where two different salt samples were collected at the time of survey. Since only one salt sample was to be analysed per household, these 62 extra results were dropped by random sampling, leaving a total of 3,263 samples for the titration analysis. This number is equivalent to 30 percent of the samples tested by

the Rapid Test Kits. The method of Sullivan et al³ was used for the titrimetry. The results of salt titration are not provided by any other background characteristics in this report (regional, area of residence, education of head of household and wealth index quintile). A stand-alone report will be prepared and this will provide more details of the results and comparisons between the two methods for iodine testing.

Table NU.11 provides results of salt iodine content using Titrimetry for Ghana. In line with Pieter's recommendation, non-iodised salt was that with 0-2 ppm⁴. Accordingly, results reveal that no salt was found to be totally devoid of iodine (i.e 0-2 ppm iodine). The results also reveal that 29 percent of households had adequately iodised salt (≥ 15 ppm), while the remaining 71 percent of households used inadequately iodated salt (<15 ppm).

Considering that the recommended level of salt iodisation at the factory in Ghana is 50 ppm, and the recommended cut-off for human consumption is ≥ 15 ppm, the optimum or desirable range of iodised salt concentration in Ghana is 15 -50 ppm. Table NU.11 shows that 20 percent of the titrated salt is in this range. However, 5 percent of the salt used for cooking had very high levels of iodine concentration (≥ 60 ppm), which points to excessive iodisation.

Table NU.11: Iodized salt consumption using Titration Method
Percent distribution of households by consumption of iodized salt, Ghana, 2011

	Percent of households in which salt was tested	Number of households	Percent of households with salt test result					Number of households in which salt was tested for iodine using Titration method	
			Percent of households with no salt	Salt with no iodine (0 ppm)	>0 and 15 ppm Inadequately iodized salt	≥15 ppm Adequately iodized salt	15 and 50 ppm Optimum iodized salt Concentration range for Ghana		>60 ppm Excessive Iodine.
Total	89.4	11,925	9.8	0.0	70.7	29.3	20.3	5.0	3,263

Results of the Rapid Test Kits with matching titration results were identified and extracted for comparison with the titration results (Table NU.12). The percent efficiency of the Rapid Test Kits in correctly identifying adequately iodised salts was examined by comparing its results with the titration results. The following results were compared between the two methods:

- % salt without iodine (0 ppm)
- % inadequately iodised salt (> 0 and < 15 ppm)
- % adequately iodised salt (≥ 15 ppm)

For salt without iodine, the Rapid Test Kits identified 25 percent of the salt samples as non-iodised, while the titration method found no salt samples as devoid of iodine.

The Rapid Test Kits reported 62 percent of salt as inadequately iodised (< 15 ppm) – in this case, 25 percent of salt without iodine (0 ppm), and 37 percent of inadequately iodated salt (>0 and <15 ppm) were combined to give 62 percent. The titration method, on the other hand, identified 71 percent of salt

3 UNICEF, PAMM, MI, ICCIDD, WHO. Sullivan KM et al., eds. Monitoring universal salt iodization programmes. Atlanta, PAMM, MI, ICCIDD, 1995.

4 Pieter LJ, Emmerentia S.(2010): Methods for determining Iodine in Urine and Salt. Best Practice & Research Clinical Endocrinology & Metabolism 24 (2010), 77-88

samples as inadequately iodised (>0 and <15 ppm). For households with salt, the Rapid Test Kits reported 38 percent of salt samples as adequately iodised (≥ 15 ppm), while titration reported 29 percent as adequately iodised⁵. Thus, the Rapid Test Kits reported approximately 9 percent more salts as adequately iodised in comparison to titration. This represents inadequately iodised salt erroneously reported as adequately iodised, and could paint the erroneous picture that more households are consuming adequately iodised salt.

	Percent of households with salt for Analysis	Number of households	Percent of households with salt test result using Rapid Test Kit			Percent of households with salt test result using Titration Method			Number of households in which salt was tested for iodine using Titration method
			Salt with no iodine (0 ppm)	0 and 15 ppm Inadequately iodized salt	15+ PPM Adequately iodized salt	Salt with no iodine (0 ppm)	0 and 15 ppm Inadequately iodized salt	15+ PPM Adequately iodized salt	
Total	90.2	10,752	24.6	37.2	38.2	0.0	70.7	29.3	3,263

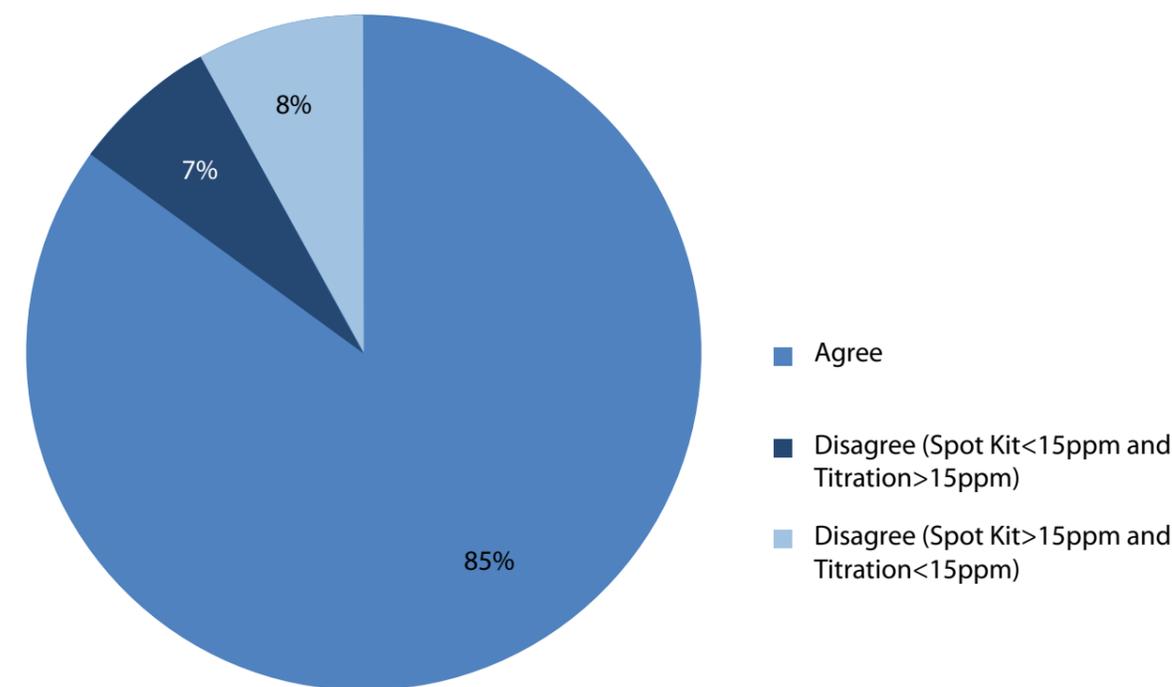
Agreement between Rapid Test Kits and Titration in identifying adequately and Inadequately Iodized salts

While results from a much larger Rapid Test Kits sample size (10,752) was compared to 3,263 titration results in Table NU.12, only 3,215 salt samples were compared in checking the percentage agreement between the two methods. The summary of results of this comparison is shown in Figure NU.3, while comprehensive results will be included in the stand-alone report. As shown above, titrimetry did not detect any of the salt samples as being completely devoid of iodine (0 ppm), and various studies have shown that this is more reliable than the 22 percent reported by the Rapid Test Kits. Natural salts, completely devoid of iodine may, in fact, be difficult to find in Ghana. The titration results of this survey confirmed the presence of traces of iodine in all salt samples tested. The rather high concentration (22%) of non-iodised salts (0 ppm) found through the Rapid Test Kits suggests that, at low iodine concentration levels, the Rapid Test Kits are unable to adequately distinguish between different levels of concentration of iodine in salts. As studies have shown, the Rapid Test Kits are less sensitive than titrimetry.

Table NU.12 also shows that the Rapid Test Kits reported that 38 percent of sampled salts were adequately iodised, compared to 29 percent reported by titration. This suggests that the Rapid Test Kits are likely to report about 10 percent of households to be consuming adequately iodised salt while they are, in fact, consuming inadequately iodised salt. The Rapid Test Kit reported a higher percentage of adequately iodised salts by a margin of about 10 percent above titration.

⁵ Note should be taken of the fact that all RTK results in Table NU.12 are calculated in comparison with the total number of available household salts (n = 10,752), rather than in comparison with the total number of households in the study (n = 11,925) as done in the Table NU.10. The percentages under RTK here are slightly higher in Table .NU.12 than in Table NU.10

Figure NU.3: Agreement and disagreement between salt iodization results obtained using the Rapid Test Kit and the results obtained using salt titration, Ghana, 2011



Children's Vitamin A Supplementation

Vitamin A is essential for eye health and proper functioning of the immune system. It is found in foods such as milk, liver, eggs, red and orange fruits, red palm oil and green leafy vegetables, although the amount of vitamin A readily available to the body from these sources varies widely. In developing areas of the world, where vitamin A is largely consumed in the form of fruits and vegetables, daily per capita intake is often insufficient to meet dietary requirements. Inadequate intakes are further compromised by increased requirements for the vitamin as children grow or during periods of illness, as well as increased losses during common childhood infections. As a result, vitamin A deficiency is quite prevalent in the developing world and particularly in countries with the highest burden of under-five deaths.

The 1990 World Summit for Children set the goal of virtual elimination of vitamin A deficiency and its consequences, including blindness, by the year 2000. This goal was also endorsed at the Policy Conference on Ending Hidden Hunger in 1991, the 1992 International Conference on Nutrition, and the UN General Assembly's Special Session on Children in 2002. The critical role of vitamin A for child health and immune function also makes control of deficiency a primary component of child survival efforts and therefore critical to the achievement of the fourth Millennium Development Goal: a two-thirds reduction in under-five mortality rate by the year 2015.

For countries with vitamin A deficiency problems, current international recommendations call for high-dose vitamin A supplementation every four to six months, targeted to all children between the ages of six to 59 months living in affected areas. Providing young children with two high-dose vitamin A capsules

a year is a safe, cost-effective, efficient strategy for eliminating vitamin A deficiency and improving child survival. Giving vitamin A to new mothers who are breastfeeding helps protect their children during the first few months of life and helps to replenish the mother's stores of vitamin A, which are depleted during pregnancy and lactation. For countries with vitamin A supplementation programs, the definition of the indicator is the percent of children 6-59 months of age receiving at least one high dose vitamin A supplement in the last six months.

Based on UNICEF/WHO guidelines, the Ghana Ministry of Health recommends that children aged 6-11 months be given one high dose of vitamin A capsules and children aged 12-59 months given a vitamin A capsule every 6 months. In Ghana, vitamin A capsules are linked to immunization services and are given when the child has contact with these services after six months of age. It is also recommended that mothers take a vitamin A supplement within eight weeks of giving birth due to increased vitamin A requirements during pregnancy and lactation.

Within the six months prior to the survey, 74 percent of children aged 6-59 months received a high dose of vitamin A supplement (Table NU.13). Overall, 10 percent were based on the Child health book/card/vaccination card, while 72 percent were based on the mother's report. At 58 percent, Ashanti region has the lowest vitamin A supplementation coverage, while all other regions have vitamin A supplementation of over 68 percent. For example, vitamin A supplementation coverage is highest in Upper East region and Brong Ahafo, both reporting 90 percent coverage, followed by Greater Accra with 84 percent.

The vitamin A supplementation in the last six months shows a general decrease with age: about 78 percent among children aged 6-11 months, and aged 12-23 months, 72 percent among children aged 36-47 months, and 68 percent among children aged 48-59 months.

Minimal differentials are noted by other background variables, including residence, mother's education and household wealth.

Table NU.13: Children's vitamin A supplementation

Percent distribution of children aged 6-59 months by receipt of a high dose vitamin A supplement in the last 6 months, Ghana, 2011

Background Characteristics	Percentage who received vitamin A according to:		Percentage of children who received vitamin A during the last 6 months [1]	Number of children age 6-59 months
	Child health book/card/vaccination card	Mother's report		
Sex				
Male	9.3	70.7	72.4	3339
Female	10.1	73.7	75.0	3393
Region				
Western	11.6	69.4	73.1	685
Central	8.6	67.0	68.9	667
Greater Accra	9.5	83.6	84.3	1032
Volta	14.6	73.1	75.4	538
Eastern	15.2	67.5	69.4	721
Ashanti	5.0	57.0	58.3	1238
Brong Ahafo	10.9	89.6	89.9	589
Northern	7.9	72.2	73.3	773
Upper East	9.1	90.0	90.4	289
Upper West	8.9	72.0	72.8	200
Residence				
Urban	8.9	71.8	73.2	2938
Rural	10.3	72.5	74.1	3794
Age				
6-11	44.9	67.6	77.8	725
12-23	14.3	77.3	78.7	1453
24-35	4.7	74.1	74.1	1553
36-47	2.1	71.7	72.1	1576
48-59	1.1	67.8	67.8	1426
Mother's education				
None	8.5	72.2	73.8	2221
Primary	9.5	73.0	74.1	1451
Middle/JSS	9.3	70.5	72.1	2271
Secondary +	14.9	75.7	77.0	789
Wealth index quintiles				
Poorest	9.2	73.8	74.9	1561
Second	10.7	72.2	74.1	1387
Middle	9.9	69.1	71.4	1372
Fourth	7.8	70.0	71.4	1262
Richest	11.0	75.6	76.9	1151
Total	9.7	72.2	73.7	6732

[1] MICS indicator 2.17

Low Birth Weight

Weight at birth is a good indicator not only of a mother's health and nutritional status but also the newborn's chances of survival, growth, long-term health and psychosocial development. Low birth weight (less than 2,500 grams) carries a range of grave health risks for children. Babies who were undernourished in the womb face a greatly increased risk of dying during their early months and years. Those who survive have impaired immune function and increased risk of disease; they are likely to remain undernourished, with reduced muscle strength, throughout their lives, and suffer a higher incidence of diabetes and heart disease in later life. Children born underweight also tend to have a lower IQ and cognitive disabilities, affecting their performance in school and their job opportunities as adults.

In the developing world, low birth weight stems primarily from the mother's poor health and nutrition. Three factors have most impact: the mother's poor nutritional status before conception, short stature (due mostly to under nutrition and infections during her childhood), and poor nutrition during the pregnancy. Inadequate weight gain during pregnancy is particularly important since it accounts for a large proportion of foetal growth retardation. Moreover, diseases such as diarrhoea and malaria, which are common in many developing countries, can significantly impair foetal growth if the mother becomes infected while pregnant.

In the industrialized world, cigarette smoking during pregnancy is the leading cause of low birth weight. In developed and developing countries alike, teenagers who give birth when their own bodies have yet to finish growing run the risk of bearing underweight babies.

One of the major challenges in measuring the incidence of low birth weight is the fact that more than half of infants in the developing world are not weighed. In the past, most estimates of low birth weight for developing countries were based on data compiled from health facilities. However, these estimates are biased for most developing countries because the majority of new-borns are not delivered in health facilities, and those who are represent only a selected sample of all births.

Because many infants are not weighed at birth and those who are weighed may be a biased sample of all births, the reported birth weights usually cannot be used to estimate the prevalence of low birth weight among all children. Therefore, the percentage of births weighing below 2500 grams is estimated from two items in the questionnaire: the mother's assessment of the child's size at birth (i.e., very small, smaller than average, average, larger than average, very large) and the mother's recall of the child's weight or the weight as recorded on a health card if the child was weighed at birth⁶.

Overall, 54 percent of births were weighed at birth and approximately 11 percent of infants are estimated to weigh less than 2500 grams at birth (Table NU.14).

Children from Greater Accra region are most likely to be weighed at birth (82%), and those from Northern region the least likely to be weighed at birth (25%). Children from rural households, those from the poorest households and those whose mothers have no education are also less likely than more advantaged children to be weighed at birth. For example, 73 percent of children in urban households were weighed at birth, compared to 40 percent of children in rural households. Also, children from the wealthiest

⁶ For a detailed description of the methodology, see Boerma, J. T., Weinstein, K. I., Rutstein, S.O., and Sommerfelt, A. E., 1996. Data on Birth Weight in Developing Countries: Can Surveys Help? Bulletin of the World Health Organization, 74(2), 209-16.

households are more likely to be weighed at birth (91%), compared to children from poorest households (25%). Additionally, the possibility that children are weighed at birth increases with mother's education – 28 percent for children whose mothers have no education, to 51 percent for children whose mothers have primary education, to 64 percent for children whose mothers have middle/JSS education, and to 90 percent for children whose mothers have secondary or higher education.

Brong Ahafo region has the lowest proportion (8%) of children weighing below 2,500 grams. All other regions have low birth weight ranging from 10 – 15 percent. Minimal differentials on low birth weight are recorded for other background variables, including residence, mother's education and household wealth.

Table NU.14: Low birth weight infants

Percentage of last-born children in the 2 years preceding the survey that are estimated to have weighed below 2500 grams at birth and percentage of live births weighed at birth, Ghana, 2011

Background Characteristics	Percent of live births:		Number of last-born children in the two years preceding the survey
	Below 2500 grams [1]	Weighed at birth [2]	
Region			
Western	10.7	50.4	270
Central	10.5	46.1	246
Greater Accra	9.9	82.4	397
Volta	10.5	49.7	189
Eastern	10.6	62.6	288
Ashanti	11.4	53.9	449
Brong Ahafo	8.2	51.8	227
Northern	11.9	25.0	283
Upper East	14.5	49.5	105
Upper West	9.5	44.5	75
Residence			
Urban	10.9	72.7	1068
Rural	10.5	40.4	1460
Mother's education			
None	11.2	28.2	733
Primary	10.5	50.6	565
Middle/JSS	10.1	63.8	886
Secondary +	11.4	89.6	344
Wealth index quintiles			
Poorest	11.6	25.1	560
Second	10.3	42.7	546
Middle	11.2	50.6	500
Fourth	10.4	69.0	455
Richest	9.7	91.2	467
Total	10.7	54.0	2528
[1] MICS indicator 2.18			
[2] MICS indicator 2.19			

Anaemia and Diet Diversity in Children aged 6-59 months

Table NU.15 shows prevalence of anemia in children 6-59 months old by age group, sex, residence, region, ecological zone, mother's education and wealth quintile. Overall, the prevalence of any anaemia was 57 percent, a significant decline compared to 78 percent in DHS 2008. Children aged 12-23 months had much higher levels at 71 percent, compared to the rest in this age group, while the prevalence in the 48-59 months old group was 48 percent. Male children had a slightly higher level of anemia (60%) than female children (53%). Children living in urban areas had a lower rate of anemia (48%) compared to children living in rural areas (64%).

Although there is a notable improvement since 2008, these rates are still above 40 percent, the WHO cut-off point for a severe public health problem. The rates in the three Northern regions are above 75 percent, while in the remaining regions the rates are below 65 percent. The three Northern regions have one rainy season and this negatively affects food security.

Besides the strong influence of region, educational level of the mother and wealth quintile, are two other major determinants. The rate of anemia in children whose mothers had secondary or higher education, and/or belonged to the richest wealth quintile was 36 percent. These are the groups that have a moderate level while the rest have a severe level of public health significance.

About half of the anemia problem is related to dietary practices, especially consumption of iron rich sources. While many foods contain iron, the bioavailability value is low. Suitable iron-rich or iron-fortified foods include fresh foods such as red organ meat, other red meat, commercially fortified foods specially designed for infants and young children which contain iron, or foods fortified in the home with a micronutrient powder containing iron or a lipid-based nutrient supplement containing iron.

Table NU. 15: Prevalence of Anaemia in children

Percentage of children age 6-59 months classified as having Anaemia, by background characteristics, Ghana
MICS4, 2011

Background Characteristics	Anaemia status by haemoglobin level			Any Anaemia	Number of children
	Mild (10.0-10.9 g/dL)	Moderate (7.0-9.9 g/dL)	Severe (below 7.0 g/dL)		
Age in months					
6-8	25.7	34.1	4.3	64.1	258
9-11	20.4	40.2	3.8	64.4	224
12-17	24.4	43.2	3.7	71.3	515
18-23	29.0	33.9	3.9	66.8	455
24-35	21.8	30.4	3.7	55.8	1,033
36-47	21.8	29.6	1.1	52.5	1,063
48-59	21.0	25.3	1.0	47.4	969
Sex					
Male	24.1	33.0	3.4	60.6	2,224
Female	21.5	30.3	1.7	53.5	2,292
Residence					
Urban	23.6	22.9	1.2	47.7	1,979
Rural	22.1	38.4	3.7	64.2	2,538
Region					
Western	23.7	32.1	.7	56.5	458
Central	23.5	30.1	3.7	57.2	455
Greater Accra	25.2	22.1	.5	47.8	683
Volta	22.6	33.7	1.8	58.1	364
Eastern	24.2	21.7	.3	46.2	490
Ashanti	20.0	22.3	1.7	44.0	830
Brong Ahafo	21.6	39.5	2.2	63.3	400
Northern	22.5	50.8	7.8	81.2	508
Upper East	22.9	48.1	6.4	77.5	195
Upper West	22.2	52.1	7.2	81.5	135
Mother's education					
None	21.9	39.6	3.9	65.4	1,786
Primary	24.5	32.1	2.5	59.2	977
Middle/JSS	22.6	24.8	1.4	48.9	1,540
Secondary +	23.3	12.3	.2	35.8	214
Wealth index quintile					
Poorest	21.7	47.3	6.1	75.1	1,032
Second	22.6	38.9	2.5	64.0	944
Middle	21.1	33.4	2.0	56.5	920
Fourth	26.4	19.4	1.2	46.9	877
Richest	22.4	13.0	.2	35.6	745
Total	22.8	31.6	2.6	57.0	4,517

Note: Table is based on children who stayed in the household the night before the interview. Hemoglobin levels are adjusted for altitude using CDC formulas (CDC, 1998). Hemoglobin is measured in grams per deciliter (g/dL).



Vaccinations

The Millennium Development Goal (MDG) 4 is to reduce child mortality by two thirds between 1990 and 2015. Immunization plays a key part in this goal. Immunizations have saved the lives of millions of children in the three decades since the launch of the Expanded Programme on Immunization (EPI) in 1974. Worldwide there are still 27 million children overlooked by routine immunization and as a result, vaccine-preventable diseases cause more than 2 million deaths every year.

A World Fit for Children goal is to ensure full immunization of children less than one year of age at 90 percent nationally, with at least 80 percent coverage in every district or equivalent administrative unit. According to UNICEF and WHO guidelines, a child should receive a BCG vaccination to protect against tuberculosis, three doses of DPT to protect against diphtheria, pertussis, and tetanus, three doses of polio vaccine, and a measles vaccination by the age of 12 months.

Since 2007, children in Ghana receive DPT as part of a combined Pentavalent (PENTA) dose which also contains Hepatitis B and Influenza vaccination. In Ghana the vaccination scheduled for children under five years therefore covers BCG, Polio 0, Polio 1, Polio2, Polio3, DPT/HepB/INFL 1, DPT/HepB/INFL2, DPT/HepB/INFL3, Measles and Yellow Fever. Two new vaccines, pneumococcal and rotavirus were launched in Ghana in 2012, and will now be part of the immunization schedule. These immunizations will simultaneously tackle pneumonia and diarrhoea – two of the biggest killers of Ghanaian children. The Rotavirus vaccine is being given at 6 weeks and 10 weeks of age, while the Pneumococcal vaccine is given at 6 weeks, 10 weeks and 14 weeks of age. However, these are not included in the 2011 Ghana MICS Survey.

Mothers were asked to provide vaccination cards for children under the age of five. Interviewers copied vaccination information from the cards onto the MICS questionnaire. Where vaccination cards were not available, mothers/caregivers were asked to recall whether or not the child had received each of the vaccinations and, for DPT /HepB/INFL and Polio, how many times. Overall, 89 percent of children had health cards (Table CH.2).

The percentage of children aged 12 to 23 months who received each of the vaccinations is shown in Table CH.1. The denominator for the Table is comprised of children aged 12-23 months so that only children who are old enough to be fully vaccinated are counted. In the three first columns, the numerator includes all children who were vaccinated at any time before the survey according to the vaccination card or the mother's report. In the last column, only those who were vaccinated before their first birthday, as recommended, are included. For children without vaccination cards, the proportion of vaccinations given before the first birthday is assumed to be the same as for children with vaccination cards.

Overall, 98 percent of children aged 12-23 months received a BCG vaccination by the age of 12 months and the first dose of DPT/HepB/INFL was given to 98 percent of the children. The percentage declines for subsequent doses of DPT/HepB/INFL to 97 percent for the second dose, and to 92 percent for the third dose (Figure CH.1). Similarly, 98 percent of children received the first dose of vaccine against polio (Polio 1) by age 12 months and this declines to 91 percent by the third dose. The coverage for measles vaccine by 12 months is 89 percent. Overall, 84 percent of children aged 12-23 months are fully immunized in Ghana and the percent of children who have received all the recommended vaccinations by their first birthday account to 77 percent.

Table CH.1: Vaccinations in first year of life
Percentage of children age 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, Ghana, 2011

Background characteristics	Vaccinated at any time before the survey according to: Vaccination card	Vaccinated at any time before the survey according to: Mother's report	Vaccinated at any time before the survey according to: Either	Vaccinated by 12 months of age
BCG [1]	86,4	11,7	98,1	97,8
Polio 0	64,1	16,4	80,5	80,4
Polio 1	87,1	11,5	98,6	98,0
Polio 2	86,6	10,4	97,0	96,5
Polio 3 [2]	84,9	6,4	91,2	90,7
DPT/HepB/INFL1	87,6	10,8	98,4	97,7
DPT/HepB/INFL2	87,0	10,3	97,4	96,7
DPT/HepB/INFL3 [3] [5]	85,3	7,6	92,9	92,1
Measles [4]	80,7	13,1	93,7	88,5
Yellow fever [6]	81,2	12,5	93,8	88,3
All vaccinations	81,4	3,1	84,4	77,3
No vaccinations	,0	,4	,5	,5
Number of children age 12-23 months	1453	1453	1453	1453

[1] MICS indicator 3.1
[2] MICS indicator 3.2
[3] MICS indicator 3.3
[4] MICS indicator 3.4; MDG indicator 4.3
[5] MICS indicator 3.5
[6] MICS indicator 3.6

Figure CH.1: Vaccinations in first year of life, Percentage of children age 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, Ghana, 2011

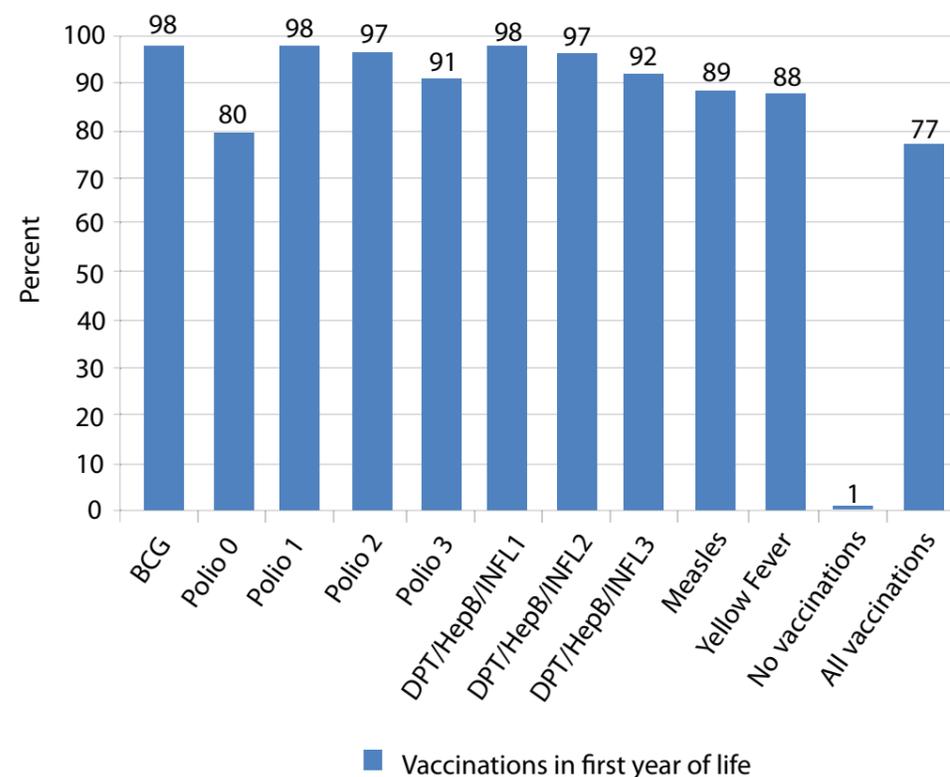


Table CH.2 also shows vaccination coverage rates among children aged 12-23 months by background characteristics. The figures indicate children receiving the vaccinations at any time up to the date of the survey, and are based on information from both the vaccination cards and mothers'/caretakers' reports.

BCG Vaccination coverage is 98 percent, and little variation is observed in BCG coverage according to the different background variables. Coverage for Polio at birth is 81 percent, with an Urban-Rural variation of 90 percent and 70 percent, respectively. The Greater Accra region has the highest coverage of 89 percent, while the Northern region has the lowest coverage of 71 percent. Wide differences are also observed by educational background of the mother/caretaker; the highest coverage of 95 percent was recorded for children born to mothers with secondary or higher education, compared to 70 percent for children born to mothers with no education. Also, children born in the wealthiest households are more likely to have received Polio vaccination at birth (98%), compared to 65 percent of children from the poorest households.

The coverage for Polio 1 vaccination is 99 percent. Minor differences are observed by residence, educational background of the mother and wealth index quintile. Also, all regions recorded vaccination coverage of over 96 percent. For Polio 2, the vaccination coverage is 97 percent with a Rural/Urban variation of 94 percent and 98 percent respectively. The Western region has the highest coverage at 99 percent, while Central region has the lowest at 96 percent. The coverage for Polio 3 vaccination is 91 percent with an Urban/Rural variation of 88 percent and 94 percent respectively. Also, Upper East region has the highest coverage of Polio 3 vaccination at 98 percent, while Greater Accra region has the lowest at 84 percent.

The first dose DPT/HepB/Infl vaccination coverage is 98 percent, second dose is 97 percent and 93 percent for the third dose. For the 3rd dose DPT/HepB/INFL, the data indicated an Urban/Rural small variation of 92 percent and 94 percent respectively. Regional variation for the 3rd dose DPT/HepB/INFL, indicates that the Upper East region has the highest coverage of 98 percent, while Volta region has the lowest at 83 percent. Slight differences are also noted by educational level of the mother.

The coverage for Measles vaccination is 94 percent with Urban/Rural variation of 97 percent and 92 percent respectively. Regional variation for Measles vaccination reveals that Brong Ahafo has the highest vaccination coverage (100%), while Volta region has the lowest, at 86 percent. Also, children born to mothers with secondary or higher education are more likely to have received the measles vaccination compared to children of mothers with lower levels of education.

The coverage for Yellow Fever vaccination is 94 percent. The data indicate Urban/Rural variation of 97 percent and 92 percent respectively. Regional variation for Yellow Fever vaccination reveals that Brong Ahafo has the highest coverage (100%), while Volta has the lowest Yellow Fever vaccination coverage of 87 percent. Also, nearly all children whose mothers have secondary or higher education have received the Yellow Fever vaccination, compared to children of mothers with lower levels of education. The coverage for all vaccination for children aged 12-23 months is 84 percent, while less than 1 percent of children in Ghana have not received any vaccinations.

Table CH.2: Vaccinations by background characteristics

Percentage of children age 12-23 months currently vaccinated against childhood diseases, Ghana, 2011

Background Characteristics	Percentage of children who received:													Percentage with vaccination card seen	Number of children age 12-23 months
	BCG	Polio at birth	Polio 1	Polio 2	Polio 3	DPT/ HepB/ INFL1	DPT/ HepB/ INFL2	DPT/ HepB/ INFL3	Measles	Yellow fever	None	All			
Sex															
Male	98.6	80.9	98.5	96.3	89.7	98.4	96.7	92.7	93.3	93.2	.2	83.2	88.1	715	
Female	97.6	80.1	98.7	97.6	92.7	98.4	98.0	93.0	94.1	94.4	.8	85.7	89.0	737	
Region															
Western	99.1	74.2	99.1	99.1	95.1	99.1	99.1	98.1	96.4	96.4	.9	91.4	87.1	151	
Central	96.0	82.3	98.0	96.1	88.2	97.2	92.0	85.3	90.6	90.8	.4	78.4	83.7	154	
Greater Accra	97.7	89.3	95.5	94.5	84.4	96.9	95.4	89.1	94.2	94.1	1.2	78.3	82.0	237	
Volta	97.4	78.1	99.6	98.8	92.7	95.3	95.3	83.4	86.2	86.9	.4	71.8	81.9	108	
Eastern	100.0	81.9	98.1	96.9	96.9	98.1	98.1	94.5	92.7	92.7	.0	88.0	86.9	141	
Ashanti	98.1	79.1	100.0	96.5	90.9	100.0	100.0	97.6	95.6	95.6	.0	86.8	96.8	262	
Brong Ahafo	99.4	79.4	100.0	97.9	95.6	100.0	100.0	97.5	99.6	99.6	.0	94.9	92.7	122	
Northern	97.1	71.3	98.9	97.3	88.3	98.9	97.3	91.7	89.8	89.9	.8	80.2	89.7	173	
Upper East	99.3	86.5	100.0	98.8	97.7	99.2	99.5	97.7	97.8	97.0	.0	94.6	95.5	61	
Upper West	98.6	88.5	99.1	98.7	96.1	99.5	98.5	97.4	97.2	97.5	.3	93.4	93.0	45	
Residence															
Urban	98.2	94.3	98.5	96.2	87.7	98.7	97.7	91.6	96.6	96.6	.1	81.7	82.9	619	
Rural	98.0	70.2	98.6	97.6	93.9	98.2	97.1	93.8	91.6	91.7	.8	86.5	92.7	833	
Mother's education															
None	96.9	70.2	96.5	93.0	87.7	96.4	94.8	91.9	92.1	92.2	1.6	82.6	89.7	433	
Primary	98.6	77.8	99.2	98.1	92.0	98.5	97.5	90.4	89.1	88.7	.0	80.5	88.4	345	
Middle/JSS	98.5	86.2	99.4	99.2	93.9	99.7	99.0	94.7	96.4	96.8	.0	87.5	88.8	512	
Secondary +	99.2	95.3	100.0	98.4	90.8	99.4	99.0	94.8	99.4	99.4	.0	88.3	85.2	162	
Wealth index quintile															
Poorest	96.6	62.4	98.8	97.9	92.6	97.9	97.2	93.0	90.9	91.3	.9	83.8	91.0	336	
Second	97.3	76.8	98.9	95.4	89.6	98.5	97.4	93.2	93.4	93.3	1.0	84.8	85.6	329	
Middle	98.6	85.3	98.5	96.7	95.1	98.0	96.0	90.1	94.0	93.7	.1	83.5	91.4	279	
Fourth	99.2	88.7	97.3	96.1	92.5	97.7	97.2	94.0	93.3	93.5	.0	85.8	89.5	273	
Richest	99.6	96.4	99.4	99.4	85.9	100.0	99.4	94.4	98.3	98.3	.0	84.5	84.8	235	
Total	98.1	80.5	98.6	97.0	91.2	98.4	97.4	92.9	93.7	93.8	.5	84.4	88.6	1453	

of tetanus toxoid vaccine. However, if women have not received two doses of the vaccine during the pregnancy, they (and their newborns) are also considered to be protected if the following conditions are met:

- Received at least two doses of tetanus toxoid vaccine, the last within the prior 3 years;
- Received at least 3 doses, the last within the prior 5 years;
- Received at least 4 doses, the last within 10 years;
- Received at least 5 doses during lifetime.

Table CH.3 shows the protection status from tetanus of women who have had a live birth within the last 2 years. Figure CH.2 shows the protection of women against neonatal tetanus by major background characteristics. Table CH.3 indicate that 55 percent of women received at least 2 doses of tetanus vaccination during the last pregnancy, with women in urban areas more likely to receive the 2 doses (61%), than their rural counterparts (50%). Overall, Table CH.3 and Figure CH.2 show that the percentage of women 15-49 years who had a live birth in the last 2 years, and who were protected against neonatal tetanus is 70 percent. Greater Accra region has the highest protection level of 82 percent and the Upper East region has the lowest level of 57 percent. It is worth noting that Greater Accra, Central, Eastern and Ashanti regions have protection levels above the national average of 70 percent. The percentage of protection against tetanus is correlated with residence, education and wealth index quintile: it is much higher in the urban areas (78%) than in rural areas (65%), and it increases from 61 percent for women with no education, to 86 percent for women with secondary or higher education, and from 59 percent for women from the poorest wealth quintile, to 88 percent for women belonging to the richest wealth quintile.

Neonatal Tetanus Protection

One of the MDGs is to reduce by three quarters the maternal mortality ratio, with one strategy to eliminate maternal tetanus. Another goal is to reduce the incidence of neonatal tetanus to less than 1 case of neonatal tetanus per 1000 live births in every district. A World Fit for Children goal is to eliminate maternal and neonatal tetanus by 2005.

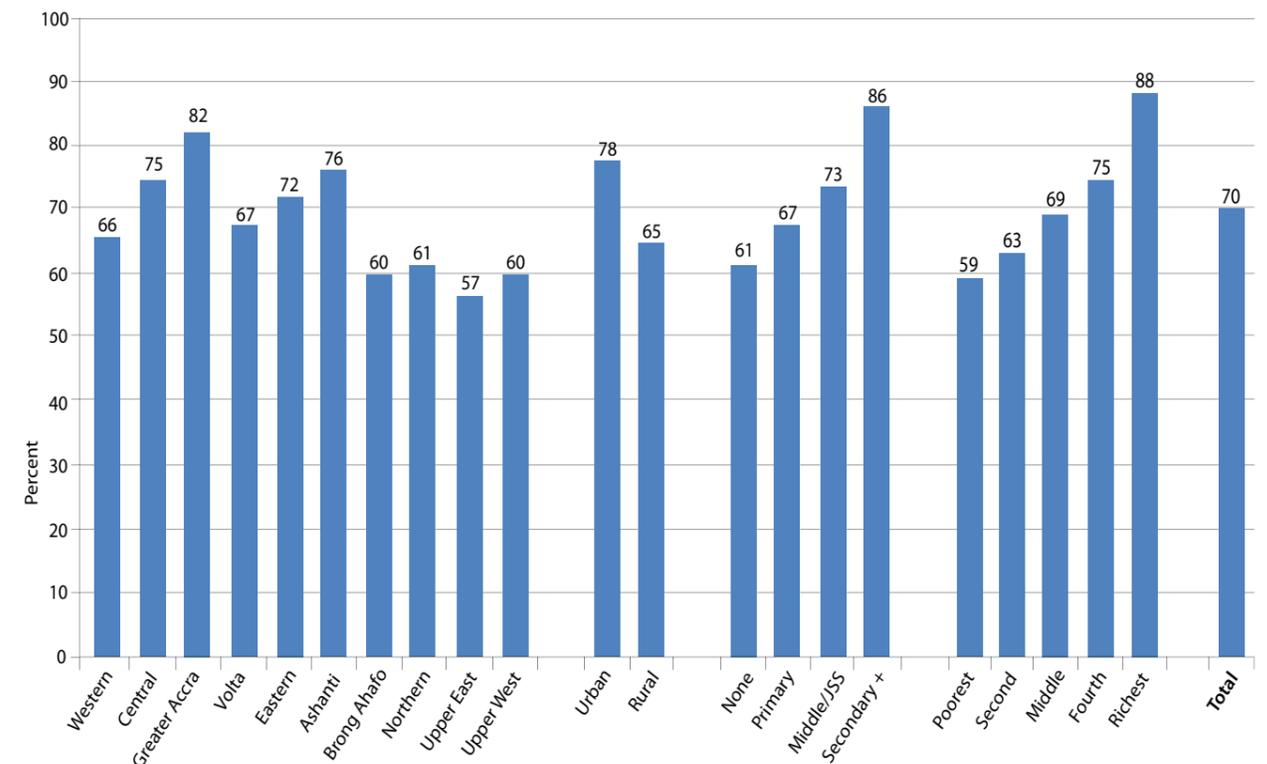
Prevention of maternal and neonatal tetanus is to ensure that all pregnant women receive at least two doses

Table CH.3: Neonatal tetanus protection
Percentage of women age 15-49 years with a live birth in the last 2 years protected against neonatal tetanus, Ghana, 2011

Background Characteristics	Percentage of women who received at least 2 doses during last pregnancy	Percentage of women who did not receive two or more doses during last pregnancy but received:				Protected against tetanus [1]	Number of women with a live birth in the last 2 years
		2 doses, the last within prior 3 years	3 doses, the last within prior 5 years	4 doses, the last within prior 10 years	5 or more doses during lifetime		
Residence							
Urban	60.9	16.2	.5	.0	.0	77.5	1068
Rural	50.1	14.0	.7	.0	.2	65.0	1460
Region							
Western	49.8	14.1	1.4	.0	.3	65.6	270
Central	66.1	8.1	.3	.0	.0	74.6	246
Greater Accra	63.8	17.9	.3	.0	.0	82.1	397
Volta	44.8	22.5	.0	.0	.0	67.3	189
Eastern	65.1	7.0	.0	.0	.0	72.1	288
Ashanti	54.2	21.5	.5	.0	.0	76.2	449
Brong Ahafo	41.5	15.4	2.0	.0	1.0	59.9	227
Northern	47.1	13.0	1.1	.0	.1	61.3	283
Upper East	46.4	10.1	.0	.0	.0	56.5	105
Upper West	52.6	7.5	.2	.0	.0	60.3	75
Education							
None	46.0	14.2	1.0	.0	.2	61.3	733
Primary	51.8	14.8	.9	.0	.0	67.5	565
Middle/JSS	57.2	15.6	.3	.0	.3	73.3	886
Secondary +	70.9	14.8	.3	.0	.0	86.0	344
Wealth index quintiles							
Poorest	45.8	12.6	.8	.0	.0	59.2	560
Second	47.6	14.1	1.1	.0	.5	63.3	546
Middle	52.7	16.0	.4	.0	.0	69.1	500
Fourth	59.0	16.2	.0	.0	.2	75.3	455
Richest	71.3	16.2	.7	.0	.0	88.2	467
Total	54.6	14.9	.6	.0	.1	70.3	2528

[1] MICS indicator 3.7

Figure CH.2: Percentage of women age 15-49 years with a live birth in the last 2 years protected against neonatal tetanus, Ghana, 2011



Oral Rehydration Treatment

Diarrhoea is the second leading cause of deaths among children under five worldwide. Most diarrhoea-related deaths in children are due to dehydration from loss of large quantities of water and electrolytes from the body in liquid stools. Management of diarrhoea – either through oral rehydration salts (ORS) or a recommended home fluid (RHF) - can prevent many of these deaths. Preventing dehydration and malnutrition by increasing fluid intake and continuing to feed the child are also important strategies for managing diarrhoea.

The goals are to: 1) reduce by one half death due to diarrhoea among children under five by 2010 compared to 2000 (A World Fit for Children); and 2) reduce by two thirds the mortality rate among children under five by 2015 compared to 1990 (Millennium Development Goals). In addition, the World Fit for Children calls for a reduction in the incidence of diarrhoea by 25 percent.

The indicators are:

- Prevalence of diarrhoea
- Oral rehydration therapy (ORT)
- Home management of diarrhoea
- ORT with continued feeding

In the MICS questionnaire, mothers (or caretakers) were asked to report whether their child had had

diarrhoea in the two weeks prior to the survey. If so, the mother was asked a series of questions about what the child had to drink and eat during the episode and whether this was more or less than the child usually ate and drank.

Overall, 13 percent of under- five children had diarrhoea in the two weeks preceding the survey (Table CH.4). Regional variations were noticed with a higher diarrhoea prevalence rate in Northern region (21%) and the lowest in the Eastern region (7%). The peak of diarrhoea prevalence occurs in the weaning period, among children aged 12-23 months, with a prevalence of 18 percent.

Table CH.4 also shows the percentage of children receiving various types of recommended fluids during episodes of diarrhoea. Since mothers were able to name more than one type of fluids, the percentages do not necessarily add to 100. Figure CH.3 presents, in particular, the percentage of children who received an oral rehydration treatment (using ORS). About a third of the children (35%) received fluids from ORS packets or pre-packaged ORS fluids and 20 percent received recommended homemade fluids. Approximately 48 percent of children with diarrhoea received one or more of the recommended home treatments (i.e., were treated with ORS or any recommended homemade fluid). Children with diarrhoea and from Ashanti region were more likely (63%) to receive ORS or any recommended homemade fluid compared to those living in Northern region (32%). The percentage of ORS or any recommended homemade fluid administration increases with mother's educational level, but not necessarily with the wealth index quintiles.

Figure CH.3: Percentage of children age 0-59 months with diarrhoea in the last two weeks, and who received oral rehydration treatment, Ghana, 2011

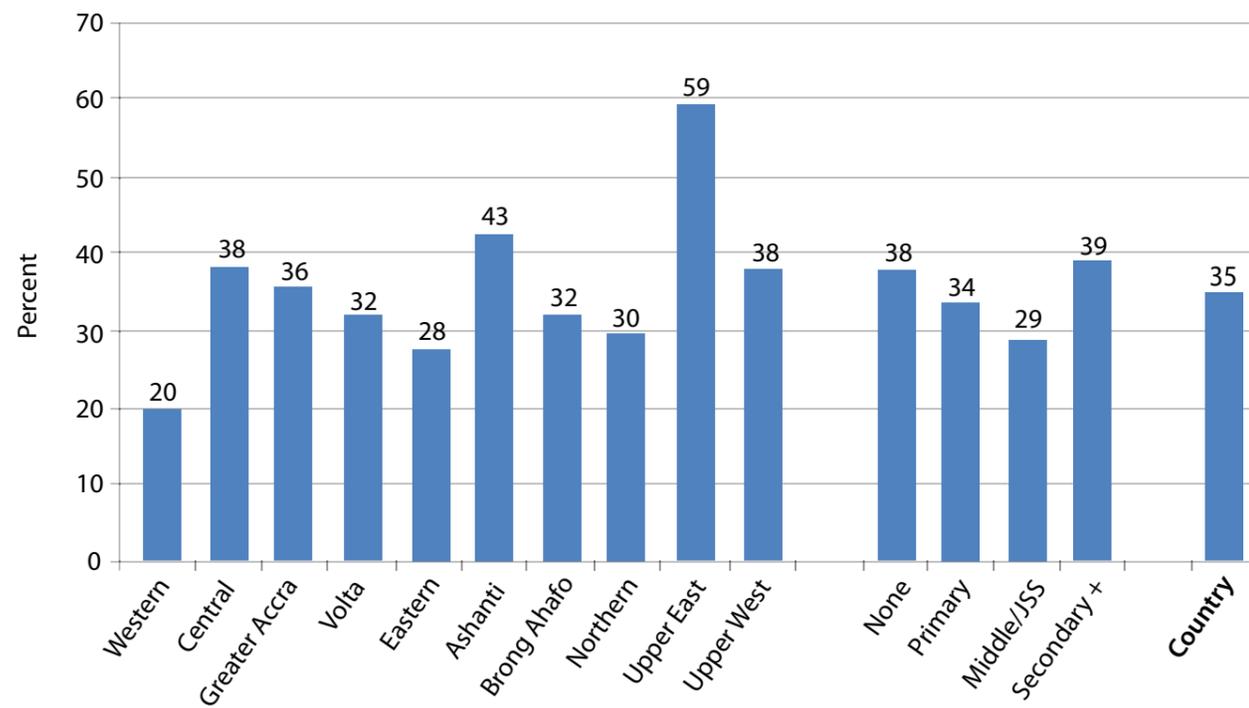


Table CH.4: Oral rehydration solutions and recommended homemade fluids
Percentage of children age 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration solutions and recommended homemade fluids, Ghana, 2011

Background Characteristics	Had diarrhoea in last two weeks	Number of children age 0-59 months	Children with diarrhoea who received:					Number of children aged 0-59 months with diarrhoea	
			ORS (Fluid from ORS packet or pre-packaged ORS fluid)	Recommended homemade fluids					
				Coconut water	Rice water	Mashed Kenkey	Any recommended homemade fluid		ORS or any recommended homemade fluid
Sex									
Male	12.9	3757	34.8	10.4	6.7	12.8	23.3	49.5	484
Female	12.4	3793	35.1	4.7	4.2	10.2	16.4	46.0	471
Region									
Western	13.7	758	20.2	8.9	5.8	10.8	22.0	40.8	104
Central	11.9	740	38.4	12.5	1.2	8.0	19.8	51.0	88
Greater Accra	7.9	1142	(35.8)	(6.0)	(15.0)	(10.4)	(21.0)	(54.9)	91
Volta	7.6	601	32.0	5.9	3.2	7.7	16.9	43.2	45
Eastern	6.5	827	(27.5)	(3.1)	(7.1)	(6.2)	(13.3)	(37.7)	54
Ashanti	14.5	1411	42.5	15.8	8.9	22.7	36.5	62.6	204
Brong Ahafo	16.2	671	32.2	8.1	3.5	16.2	24.1	47.3	108
Northern	21.4	852	30.1	.4	1.5	3.0	4.4	31.7	182
Upper East	15.8	325	59.3	.6	1.4	6.6	7.3	60.0	51
Upper West	12.5	223	37.9	.5	3.1	8.9	11.7	44.1	28
Residence									
Urban	10.4	3283	37.0	11.5	8.5	14.0	26.5	53.9	343
Rural	14.4	4267	33.8	5.4	3.7	10.1	16.2	44.4	613
Age									
0-11	11.6	1543	26.7	1.4	.4	8.4	8.8	33.3	180
12-23	18.0	1453	39.8	8.6	6.1	15.0	23.4	54.6	262
24-35	14.6	1553	37.2	13.5	4.9	15.2	24.8	52.9	227
36-47	11.6	1576	33.5	4.9	8.5	5.2	17.7	43.9	183
48-59	7.3	1426	34.8	7.3	8.3	10.9	23.2	51.3	103
Mother's education									
None	16.9	2455	38.3	3.2	5.0	5.3	11.2	45.1	414
Primary	13.4	1628	33.7	4.5	10.3	18.0	24.4	47.7	218
Middle/JSS	9.6	2578	29.3	12.8	2.8	18.1	28.3	49.9	248
Secondary +	8.5	889	39.2	23.0	2.3	5.0	26.6	55.7	76
Wealth index quintiles									
Poorest	16.9	1730	44.3	1.4	1.6	8.9	10.9	49.9	293
Second	14.6	1551	33.5	4.6	3.7	9.9	16.1	44.9	226
Middle	11.9	1559	33.1	9.3	11.3	13.5	27.3	47.7	186
Fourth	11.6	1397	26.6	13.8	9.4	18.7	30.2	51.8	162
Richest	6.8	1313	27.0	20.3	3.0	6.9	24.8	40.9	89
Total	12.7	7550	35.0	7.6	5.5	11.5	19.9	47.8	956

Figures in parentheses '()' are based on 25-49 unweighted cases.

Overall, Table CH.5 shows that 23 percent of under fives with diarrhoea drank more than usual while 42 percent drank same quantity of fluid, 15 percent of children were given much less to drink and 3 percent were given nothing to drink; while, 32 percent of children were given somewhat less to eat, 37 percent were given about the same quantity of food, 5 percent were given more, 4 percent stopped food and 4 percent were not given food to eat. Caretakers in rural areas are more likely to give less drink or nothing to drink compared to their urban counterparts who are more likely to give about the same or more drink to children.

Table CH.5: Feeding practices during diarrhoea

Percent distribution of children age 0-59 months with diarrhoea in the last two weeks by amount of liquids and food given during episode of diarrhea, Ghana, 2011

Background Characteristics	Had diarrhoea in last two weeks	Number of children age 0-59 months	Drinking practices during diarrhoea:						Eating practices during diarrhoea:						Number of children aged 0-59 months with diarrhoea	
			Given much less to drink	Given somewhat less to drink	Given about the same to drink	Given more to drink	Given nothing to drink	Total	Given much less to eat	Given somewhat less to eat	Given about the same to eat	Given more to eat	Stopped food	Had never been given food		Total
Sex																
Male	12.9	3757	16.8	17.1	39.3	24.6	2.2	100.0	16.8	34.4	38.4	2.4	4.2	3.8	100.0	484
Female	12.4	3793	12.9	17.4	45.1	21.7	2.9	100.0	18.5	30.2	35.3	7.9	3.2	4.8	100.0	471
Region																
Western	13.7	758	31.2	7.2	34.9	20.2	6.5	100.0	36.2	17.3	36.3	4.7	2.3	3.1	100.0	104
Central	11.9	740	8.9	28.8	39.2	17.7	5.4	100.0	10.2	41.1	36.1	5.9	3.7	3.0	100.0	88
Greater Accra	7.9	1142	(19.9)	(24.4)	(33.9)	(19.8)	(2.0)	100.0	(12.6)	(58.6)	(24.0)	(4.8)	(.0)	(.0)	100.0	91
Volta	7.6	601	27.4	21.4	29.5	18.4	3.3	100.0	35.4	24.9	28.8	7.1	.0	3.8	100.0	45
Eastern	6.5	827	(6.9)	(34.0)	(33.4)	(25.7)	(.0)	100.0	(15.9)	(47.8)	(31.1)	(3.1)	(2.1)	(.0)	100.0	54
Ashanti	14.5	1411	9.3	7.6	51.8	31.4	.0	100.0	15.7	30.9	39.5	5.0	1.7	7.2	100.0	204
Brong Ahafo	16.2	671	15.0	17.0	47.6	16.5	3.9	100.0	16.2	28.8	40.8	7.6	3.4	3.2	100.0	108
Northern	21.4	852	11.6	16.0	42.7	27.7	1.9	100.0	13.7	24.8	41.7	4.9	9.7	5.3	100.0	182
Upper East	15.8	325	10.6	27.2	41.9	20.4	.0	100.0	14.5	39.0	30.9	4.5	5.6	5.5	100.0	51
Upper West	12.5	223	20.3	17.6	48.7	7.1	6.3	100.0	15.6	18.2	53.1	.8	3.3	8.8	100.0	28
Residence																
Urban	10.4	3283	14.3	13.0	45.1	25.6	2.1	100.0	15.2	37.4	39.4	5.2	1.3	1.6	100.0	343
Rural	14.4	4267	15.2	19.7	40.5	21.8	2.8	100.0	19.1	29.5	35.5	5.1	5.1	5.7	100.0	613
Age																
0-11	11.6	1543	10.4	20.3	48.4	14.9	6.0	100.0	12.9	24.6	35.5	6.0	2.1	18.8	100.0	180
12-23	18.0	1453	21.3	18.1	41.2	17.6	1.7	100.0	23.2	31.4	35.0	2.7	5.2	2.5	100.0	262
24-35	14.6	1553	13.7	12.8	39.5	32.4	1.6	100.0	11.6	39.5	39.4	5.9	3.6	.0	100.0	227
36-47	11.6	1576	14.2	12.8	42.5	28.5	2.1	100.0	22.0	29.9	40.8	4.1	3.0	.2	100.0	183
48-59	7.3	1426	9.9	27.6	39.2	21.8	1.5	100.0	17.7	36.5	31.7	9.9	4.2	.0	100.0	103
Mother's education																
None	16.9	2455	18.2	19.1	37.7	22.3	2.7	100.0	19.9	29.8	36.6	4.8	4.8	4.2	100.0	414
Primary	13.4	1628	14.2	11.7	51.3	22.3	.5	100.0	17.0	35.2	35.2	4.2	2.8	5.5	100.0	218
Middle/JSS	9.6	2578	8.1	19.3	41.5	28.3	2.9	100.0	11.8	36.2	36.9	7.3	3.5	4.4	100.0	248
Secondary +	8.5	889	20.6	16.9	42.4	13.6	6.5	100.0	27.0	25.0	43.5	2.5	1.2	.8	100.0	76
Wealth index quintiles																
Poorest	16.9	1730	15.6	20.9	40.8	20.1	2.6	100.0	18.2	24.8	40.5	4.2	6.5	5.9	100.0	293
Second	14.6	1551	18.4	18.0	41.1	20.1	2.5	100.0	20.0	29.7	35.7	6.0	4.7	4.5	100.0	230
Middle	11.9	1559	16.6	15.4	40.6	26.6	.8	100.0	21.2	37.3	35.7	4.4	.7	.4	100.0	186
Fourth	11.6	1397	8.3	16.5	45.9	25.9	3.3	100.0	9.8	44.9	29.9	8.8	2.7	5.0	100.0	166
Richest	6.8	1313	11.6	8.7	46.1	29.0	4.6	100.0	17.1	29.7	44.1	.0	.0	5.0	100.0	82
Total	12.7	7550	14.9	17.3	42.2	23.2	2.5	100.0	17.7	32.3	36.9	5.1	3.7	4.3	100.0	956

Figures in parentheses '()' are based on 25-49 unweighted cases.

Table CH.6: Oral rehydration therapy with continued feeding and other treatments

Percentage of children age 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, and percentage of children with diarrhoea who received other treatments, Ghana, 2011

Background Characteristics	Children with diarrhoea who received:		Other treatment:										Number of children aged 0-59 months with diarrhoea					
	ORT (ORS or homemade fluids or increased fluids)	ORT with continued feeding [1]	Antibiotic	Pill or syrup	Antimotility	Pill or syrup	Zinc	Pill or syrup	Other	Intravenous	Injection: Unknown	Injection: Antibiotic		Injection: Non-antibiotic	Home remedy/ Herbal medicine	Not given any treatment or drug		
Sex																		
Male	50.7	60.7	44.5	28.9	18.7	2.0	6.4	3.5	3.8	2.2	2.0	6.4	3.5	3.8	4.3	6.6	11.1	484
Female	48.1	56.2	43.3	28.5	14.1	2.8	7.5	3.8	7.5	2.8	2.8	7.5	3.8	7.5	4.7	7.7	12.2	471
Region																		
Western	39.6	55.2	34.3	34.8	10.3	2.2	2.8	4.9	2.8	2.2	2.2	2.8	4.9	2.8	.8	12.3	13.0	104
Central	49.5	58.5	47.5	25.4	12.5	1.2	8.6	1.9	8.6	.7	.7	8.6	1.9	.7	9.5	8.8	9.1	88
Greater Accra	(43.5)	(62.6)	(55.1)	(22.6)	(8.4)	(.0)	(18.7)	(3.9)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(8.9)	(3.1)	(9.9)	91
Volta	39.0	50.1	28.2	37.2	12.6	.0	3.8	.0	3.8	.0	2.0	3.8	.0	.0	16.6	6.6	11.3	45
Eastern	(50.2)	(55.1)	(37.1)	(65.9)	(3.4)	(.0)	(3.4)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(.0)	(8.6)	(8.5)	54
Ashanti	60.1	70.8	57.1	23.6	28.4	.0	4.1	1.0	28.4	.0	4.1	5.6	1.0	.0	3.4	4.9	9.4	204
Brong Ahafo	45.3	56.4	42.7	12.8	20.7	.0	6.1	16.1	20.7	.0	6.1	6.7	16.1	.0	3.5	4.2	11.1	108
Northern	47.7	48.8	34.8	36.3	12.4	2	4.6	1.6	12.4	2	4.6	4.6	1.6	3	2.7	6.1	16.7	182
Upper East	64.1	64.8	47.6	20.1	27.6	.0	1.7	2.9	27.6	.0	1.7	12.8	2.9	.0	3.0	13.8	9.3	51
Upper West	41.3	47.5	31.2	14.6	12.0	.0	1.1	7.1	12.0	.0	1.1	7.1	2.2	.0	3.8	15.5	18.5	28
Residence																		
Urban	51.5	63.6	51.2	30.4	19.7	.0	1.9	4.8	19.7	.0	1.9	4.8	4.9	2	3.3	4.7	11.2	343
Rural	48.2	55.7	39.8	27.7	14.6	2	2.6	8.2	14.6	2	2.6	8.2	2.9	3	5.2	8.4	11.9	613
Age																		
0-11	35.0	41.5	28.5	20.2	13.2	2	3.3	6.6	13.2	2	3.3	6.6	2.5	3	6.3	8.3	18.5	180
12-23	50.4	63.6	42.4	31.7	14.1	.0	.9	6.9	14.1	.0	.9	6.9	4.2	.0	6.2	7.4	10.4	262
24-35	57.9	65.7	55.4	27.6	19.7	.0	2.8	5.4	19.7	.0	2.8	5.4	5.1	.1	4.3	6.3	9.2	227
36-47	51.9	57.3	43.0	29.7	16.0	2	3.4	11.2	16.0	2	3.4	11.2	2.4	3	2.2	4.8	13.2	183
48-59	48.8	61.5	50.8	36.1	21.7	7	1.8	3.8	21.7	7	1.8	3.8	3.3	6	1.8	10.2	5.9	103
Mother's education																		
None	52.4	56.7	40.1	24.7	12.5	.1	1.6	8.9	12.5	.1	1.6	8.9	4.0	.4	4.8	8.1	11.4	414.4
Primary	47.6	58.2	46.5	26.0	17.0	3	2.6	6.6	17.0	3	2.6	6.6	2.8	3	7.3	5.1	12.8	217.5
Middle/JSS	47.1	62.2	48.6	39.2	20.9	.1	2.6	4.6	20.9	.1	2.6	4.6	3.8	.0	3.0	7.5	10.2	248.0
Secondary +	45.6	57.0	41.9	23.5	22.5	.0	5.1	5.1	22.5	.0	5.1	5.1	3.8	.0	.0	6.1	14.9	75.6
Wealth index quintiles																		
Poorest	57.1	62.0	44.7	25.1	15.8	.1	2.7	8.1	15.8	.1	2.7	8.1	3.4	3	3.1	8.2	12.7	293
Second	46.1	55.3	40.8	23.1	10.9	2	2.3	6.8	10.9	2	2.3	6.8	2.8	5	5.6	8.2	11.6	230
Middle	47.7	56.5	43.6	36.5	16.2	4	.7	8.9	16.2	4	.7	8.9	4.8	.0	5.3	6.2	11.1	186
Fourth	41.7	58.4	50.7	37.0	24.4	.0	1.5	5.2	24.4	.0	1.5	5.2	4.1	.0	4.6	6.4	8.7	166
Richest	49.9	59.5	37.6	23.1	19.2	.0	6.4	2.8	19.2	.0	6.4	2.8	3.2	.0	4.5	3.7	15.6	82
Total	49.4	58.5	43.9	28.7	16.5	.1	2.4	7.0	16.5	.1	2.4	7.0	3.6	.2	4.5	7.1	11.7	956

[1] MICS indicator 3.8. Figures in parentheses '()' are based on 25-49 unweighted cases.

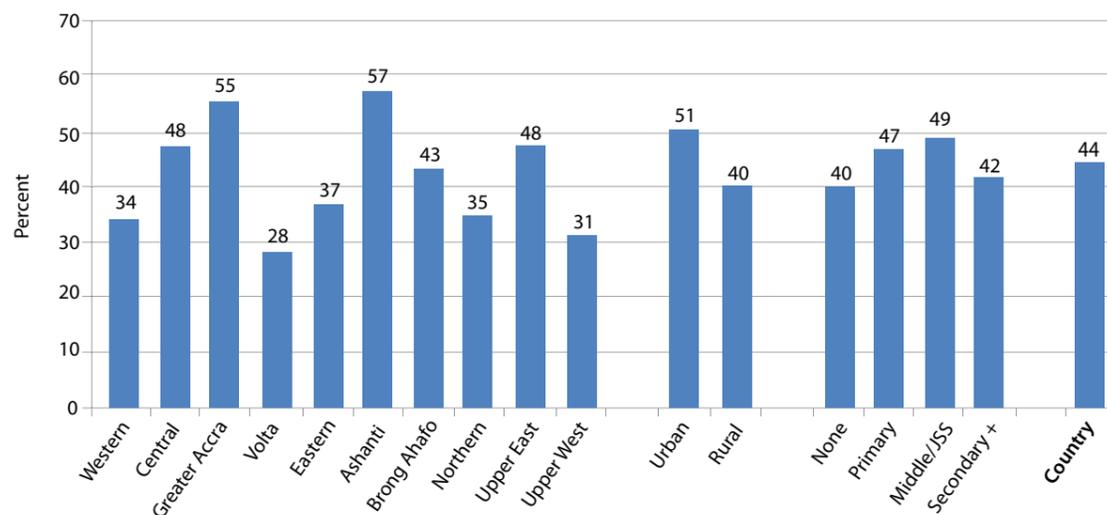
Table CH.6 provides the proportion of children aged 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, and percentage of children with diarrhoea who received other treatments. Overall, half of children (49%) with diarrhoea received ORS or increased fluids and 59 percent received ORT (ORS or recommended homemade fluids or increased fluids). Combining the information in Table CH.5 with those in Table CH.4 on oral rehydration therapy, it is observed that 44 percent of children received ORT and, at the same time, feeding was continued, as is the recommendation.

There are significant differences in the home management of diarrhoea by background characteristics as shown in Figure CH.4. For example, in Volta region, only 28 percent of children received ORT and continued feeding, while the coverage is 57 percent in Ashanti region. Also, urban areas have coverage of 51 percent compared to 40 percent in rural areas. Differences by age groups are also observed – for age-group 0-11 months, the coverage is 29 percent, while the coverage for the 24-35 months age-group is 55 percent. For both educational background and wealth quintile of the household, uneven patterns are observed.

The survey revealed that other orthodox treatments were used to treat diarrhoea in children, and included intravenous infusion, anti-motility, herbal remedy, antibiotic and zinc. These treatments were administered in syrup, pill, herbal medicine and injection forms. Overall, nearly 30 percent received antibiotic in pill or syrup, 17 percent were given antimotility, 4 percent antibiotic injection, 2 percent other pill or syrup, 5 percent with herbal medicine, 7 percent unknown pill or syrup and 7 percent received other treatment (Table CH.6).

Table CH.6 also shows that 12 percent of children who had diarrhoea during the last two weeks preceding the survey were not given any treatment or drug, and the highest was recorded in age-group of 0-11 months (19%).

Figure CH.4: Percentage of children age 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, Ghana 2011



Care Seeking and Antibiotic Treatment of Pneumonia

Pneumonia is the leading cause of death in children and the use of antibiotics in under-5s with suspected pneumonia is a key intervention. A World Fit for Children goal is to reduce by one-third the deaths due to acute respiratory infections.

Children with suspected pneumonia are those who had an illness with a cough accompanied by rapid or difficult breathing and whose symptoms were NOT due to a problem in the chest and a blocked nose.

The indicators are:

- Prevalence of suspected pneumonia
- Care seeking for suspected pneumonia
- Antibiotic treatment for suspected pneumonia
- Knowledge of the danger signs of pneumonia

Table CH.7 presents the prevalence of suspected pneumonia and, if care was sought outside the home, the source of care. Overall, only 3 percent of children aged 0-59 months were reported to have had symptoms of pneumonia during the two weeks preceding the survey, and 41 percent of them were taken to an appropriate provider. Also, 56 percent of children with suspected pneumonia in the last two weeks received antibiotics. The table shows that children with suspected pneumonia were mainly taken to public health facilities (18% were taken to public hospital, 12% to public health centres), while a smaller proportion were taken to private hospital or clinic (7%).

Due to the small number of children reported to have had symptoms of pneumonia in the last two weeks, the analysis of the use of antibiotics and health care providers by background variables will be limited to sex of the child only. Table CH.7 shows that male children are more likely to be taken to any appropriate provider (49%) or receiving antibiotics (69%) compared to female children with 34 percent and 43 percent, respectively.

Table CH.7: Care seeking for suspected pneumonia and antibiotic use during suspected pneumonia

Percentage of children age 0-59 months with suspected pneumonia in the last two weeks who were taken to a health provider and percentage of children who were given antibiotics, Ghana, 2011

Back-ground Characteristics	Had suspected pneumonia in the last two weeks	Number of children age 0-59 months	Children with suspected pneumonia who were taken to:									Percentage of children with suspected pneumonia who received antibiotics in the last two weeks [2]	Number of children age 0-59 months with suspected pneumonia in the last two weeks
			Public sector: Government hospital	Public sector: Government health center	Other public	Private hospital / clinic	Private pharmacy	Other private medical	Relative / Friend	Other	Any appropriate provider [1]		
Sex													
Male	2,9	3757	23,4	14,3	3,5	7,3	9,8	,3	6,0	3,5	48,8	69,0	109
Female	3,0	3793	12,4	9,8	2,3	7,1	15,4	2,3	1,8	4,3	33,9	42,8	112
Region													
Western	1,9	758	*	*	*	*	*	*	*	*	*	*	14
Central	2,9	740	(20,8)	(7,5)	(2,4)	(,0)	(14,9)	(1,4)	(,0)	(4,1)	(32,1)	(51,5)	22
Greater Accra	,6	1142	*	*	*	*	*	*	*	*	*	*	7
Volta	2,1	601	*	*	*	*	*	*	*	*	*	*	12
Eastern	4,2	827	*	*	*	*	*	*	*	*	*	*	34
Ashanti	2,9	1411	*	*	*	*	*	*	*	*	*	*	41
Brong Ahafo	3,6	671	*	*	*	*	*	*	*	*	*	*	24
Upper East	6,3	852	13,0	25,1	9,1	,0	12,5	2,3	,0	8,9	49,5	59,8	53
Upper West	2,3	325	*	*	*	*	*	*	*	*	*	*	7
Residence													
Urban	1,8	3283	(36,6)	(11,6)	(,9)	(12,1)	(10,0)	(,0)	(3,3)	(,9)	(61,2)	(73,0)	60
Rural	3,8	4267	10,9	12,2	3,7	5,3	13,6	1,8	4,1	5,0	33,9	49,2	161
Age													
0-11	2,6	1543	15,6	10,4	2,8	8,8	12,1	5,0	7,1	10,4	42,7	49,0	40
12-23	3,5	1453	29,5	7,2	6,0	9,0	10,7	,0	,0	,0	51,7	58,9	51
24-35	2,9	1553	(26,3)	(15,8)	(,9)	(3,4)	(12,2)	(,0)	(9,8)	(5,5)	(46,4)	(55,5)	46
36-47	2,1	1576	6,9	22,2	5,3	,0	13,4	,9	,0	4,7	35,2	67,1	32
48-59	3,7	1426	7,7	8,3	,3	12,0	14,8	1,1	2,5	,9	29,5	50,6	53
Mother's education													
None	4,0	2455	13,1	15,9	3,6	2,1	7,3	1,2	5,3	6,9	36,0	49,9	99
Primary	2,0	1628	(24,4)	(11,0)	(6,2)	(14,2)	(7,0)	(4,1)	(4,0)	(2,8)	(59,9)	(69,4)	32
Middle/JSS	2,9	2578	21,1	9,0	1,2	9,8	20,1	,4	2,6	1,2	41,4	60,4	76
Secondary +	1,5	889	(19,4)	(2,6)	(,0)	(12,9)	(23,7)	(,0)	(,0)	(,0)	(34,9)	(39,1)	13
Wealth index quintile													
Poorest	4,4	1730	7,2	15,3	7,1	1,1	10,1	3,7	1,9	6,5	34,4	53,1	77
Second	3,7	1551	13,9	15,3	,0	11,5	9,0	,0	9,0	5,3	40,8	44,7	57
Middle	2,5	1559	(10,6)	(13,9)	(2,6)	(14,7)	(17,3)	(,0)	(,0)	(1,4)	(41,9)	(61,7)	39
Fourth	2,1	1397	*	*	*	*	*	*	*	*	*	*	30
Richest	1,4	1313	*	*	*	*	*	*	*	*	*	*	18
Total	2,9	7550	17,9	12,0	2,9	7,2	12,6	1,3	3,9	3,9	41,3	55,7	221

[1] MICS indicator 3.9

[2] MICS indicator 3.10

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed. Figures in parentheses (') are based on 25-49 unweighted cases.

The issues related to the knowledge of danger signs of pneumonia are presented in Table CH.8. Obviously, mothers' knowledge of the danger signs is an important determinant of care-seeking behaviour. Only 1 percent of the mothers and caretakers of children aged 0-59 months know the two danger signs of pneumonia – fast and difficult breathing.

Table CH.8: Knowledge of the two danger signs of pneumonia

Percentage of mothers and caretakers of children age 0-59 months by symptoms that would cause them to take the child immediately to a health facility, and percentage of mothers who recognize fast and difficult breathing as signs for seeking care immediately, Ghana, 2011

Background Characteristics	Percentage of mothers/caretakers who think that a child should be taken immediately to a health facility if the child:										Mothers/caretakers who recognize the two danger signs of pneumonia	Number of mothers/caretakers of children age 0-59 months	
	Is not able to drink or breastfeed	Becomes sicker	Develops a fever	Has fast breathing	Has difficulty breathing	Has blood in stool	Is drinking poorly	Child has diarrhoea	Child incessant crying for no reason	Child not eating well			Has other symptoms
Region													
Western	13,8	53,6	58,2	5,8	9,4	11,1	1,7	25,3	21,9	28,7	18,7	2,7	455
Central	4,9	46,3	66,8	1,9	3,8	3,0	1,5	33,6	13,6	22,6	26,0	,1	435
Greater Accra	6,3	40,1	82,0	1,7	3,6	3,6	3,4	40,3	20,3	30,3	41,9	,8	714
Volta	10,9	40,9	75,7	1,4	6,2	2,8	,6	28,5	22,4	30,3	44,1	,7	357
Eastern	5,2	63,4	67,0	2,7	3,9	2,5	2,7	39,1	18,1	28,9	20,6	,7	520
Ashanti	5,2	37,7	84,5	1,7	1,2	6,3	2,5	31,3	18,7	23,5	45,7	,0	863
Brong Ahafo	7,9	27,3	84,2	2,4	6,9	3,4	,4	28,1	23,3	26,6	45,4	1,6	439
Northern	12,1	45,9	81,9	1,6	4,4	3,0	3,1	38,5	22,1	25,9	25,0	,1	495
Upper East	8,9	55,8	76,4	3,7	6,2	4,6	3,0	34,3	12,3	8,3	18,5	,8	214
Upper West	20,7	35,7	73,1	5,0	9,1	6,9	7,2	36,9	27,4	39,2	27,1	1,9	143
Residence													
Urban	6,3	43,9	78,3	2,8	5,1	4,0	2,6	35,5	18,5	27,6	38,2	,9	2100
Rural	9,9	44,5	74,5	2,1	4,3	5,2	2,2	32,3	20,8	25,4	29,8	,7	2535
Education													
None	10,0	46,3	75,8	1,6	4,2	5,2	2,1	31,0	18,1	24,0	28,6	,5	1406
Primary	7,1	44,8	76,0	1,9	4,2	4,8	1,4	34,7	21,1	27,3	28,9	,7	1010
Middle/JSS	7,8	42,7	75,3	2,6	4,3	3,6	2,8	34,5	19,5	27,8	37,7	,7	1630
Secondary +	7,4	42,7	80,1	4,8	7,4	6,1	3,7	36,7	22,3	27,0	42,3	2,1	588
Wealth index quintiles													
Poorest	10,9	45,5	78,4	1,7	4,6	5,0	2,0	34,0	17,9	21,3	27,6	,4	1008
Second	9,2	44,6	70,7	1,8	4,9	4,2	2,2	29,9	22,1	25,8	27,0	,4	919
Middle	7,3	42,1	74,9	3,6	5,1	4,3	2,0	31,5	20,2	30,0	34,6	1,4	947
Fourth	6,0	48,3	75,5	2,1	3,1	4,9	2,2	34,4	20,2	29,3	40,4	,6	908
Richest	7,5	40,3	81,7	3,1	5,7	4,9	3,5	39,3	18,5	26,2	39,4	1,2	852
Total	8,2	44,2	76,2	2,5	4,7	4,7	2,4	33,7	19,8	26,4	33,6	,8	4635

The most commonly identified symptom for taking a child to a health facility is developing a fever (76%), while 44 percent of mothers indicated that a child should be taken immediately to a health facility if the child becomes sicker. Also, 34 percent and 26 percent of mothers indicated that the child should be taken to a health facility if he/she has diarrhoea, or if child is not eating well, respectively. In contrast, only 3 percent and 5 percent of mothers/caretakers identified respectively fast breathing and difficult breathing as symptoms for taking children immediately to a health care provider.

Solid Fuel Use

More than 3 billion people around the world rely on solid fuels (biomass and coal) for their basic energy needs, including cooking and heating. Cooking and heating with solid fuels leads to high levels of indoor smoke, a complex mix of health-damaging pollutants. The main problem with the use of solid fuels is products of incomplete combustion, including carbon monoxide, polyaromatic hydrocarbons, sulphur dioxide, and other toxic elements. Use of solid fuels increases the risk of acute respiratory illness, pneumonia, chronic obstructive lung disease, cancer, and possibly tuberculosis, low birth weight, cataracts, and asthma. The primary indicator is the proportion of the population using solid fuels as the primary source of domestic energy for cooking.

As shown by Table CH.9, overall, more than three quarters (81%) of all households in Ghana are using solid fuels for cooking. As can be expected, use of solid fuels is lower in urban areas (66%) than in rural areas, where almost all household members are using solid fuels (96%).The findings show that less than 50 percent of households in Accra use solid fuels for cooking, compared to over 80 percent of households in all other regions. The three northern regions have the highest percentage of households using solid fuels for cooking (about 98%).

One in every two households in all ten regions use wood/firewood for cooking (50%), while nearly 30 percent of the households use charcoal and a further 17 percent use Liquefied Petroleum Gas (LPG). Households in Accra are more likely to use LPG than households in other regions (50%).

Differentials with respect to household wealth and educational level of the household head are quite significant. The use of solid fuels decreases with educational level and wealth index quintile. The results reveal that households where the head has no education are more than twice as likely to use solid fuels (98%), compared to households where the head has secondary or higher education (45%). Also, virtually all households at the bottom 40 percent wealth quintiles use solid fuels, compared to 24 percent of the richest 20 percent of the households.

Solid fuel use alone is a poor proxy for indoor air pollution, since the concentration of the pollutants is different when the same fuel is burnt in different stoves or fires. Use of closed stoves with chimneys minimizes indoor pollution, while open stove or fire with no chimney or hood means that there is no protection from the harmful effects of solid fuels. Solid fuel use by place of cooking is depicted in Table CH.10. For about a quarter (26%) of those households using solid fuels, cooking is done in a separate room used as a kitchen. For a further 25 percent of households using solid fuels, cooking is done elsewhere in the house, while 15 percent of the households use a separate building. Also, about one in three of the households (34%) cook outdoors.

Table CH.9: Solid fuel use
Percent distribution of household members according to type of cooking fuel used by the household, and percentage of household members living in households using solid fuels for cooking, Ghana, 2011

Background Characteristics	Percentage of household members in households using:										Solid fuels for cooking [1]
	Electricity	Liquefied Petroleum Gas (LPG)	Biogas	Kerosene	Charcoal	Wood/ Firewood	Straw / Shrubs / Grass	Agricultural crop residue/ Sawdust	No food cooked in household	Total	
Region											
Western	.1	17.5	.0	.2	20.3	60.9	.0	.0	1.0	100.0	81.3
Central	.0	12.8	.0	.1	32.2	54.2	.0	.0	.6	100.0	86.4
Greater Accra	.3	49.7	.1	.6	44.2	3.8	.0	.0	1.4	100.0	47.9
Volta	.0	6.0	.1	.1	28.3	64.6	.0	.0	.9	100.0	92.9
Eastern	1.7	13.6	.4	.0	35.4	48.1	.0	.0	.8	100.0	83.4
Ashanti	.1	17.7	.0	.0	35.8	44.3	.0	.3	1.8	100.0	80.3
Brong Ahafo	.0	6.0	.0	.0	19.1	73.6	.0	.0	1.3	100.0	92.7
Northern	.1	1.3	.0	.1	15.7	82.1	.0	.3	.4	100.0	98.2
Upper East								.1	2.5	.1	.0
Upper West	.0	1.9	.0	.0	16.3	81.4	.0	.0	.4	100.0	97.7
Residence											
Urban	.6	31.8	.1	.3	44.2	21.2	.1	.3	1.5	100.0	65.7
Rural	.0	3.6	.0	.0	15.6	77.0	.7	2.2	.7	100.0	95.6
None	.0	1.6	.0	.0	19.5	74.1	1.1	3.2	.4	100.0	97.9
Education											
Primary	.0	5.2	.0	.0	32.9	59.1	.4	1.5	.8	100.0	93.9
Middle/JSS	.2	17.3	.1	.1	36.7	44.1	.0	.3	1.3	100.0	81.1
Secondary+	1.1	50.6	.2	.5	28.3	17.5	.0	.1	1.7	100.0	45.8
Missing/DK	*	*	*	*	*	*	*	*	*	100.0	*
Wealth index quintiles											
Poorest	.0	.0	.0	.0	.7	91.6	1.8	5.7	.2	100.0	99.8
Second	.0	.0	.0	.1	8.9	89.4	.3	.6	.6	100.0	99.2
Middle	.0	1.4	.0	.0	43.1	53.7	.0	.0	1.8	100.0	96.8
Fourth	.1	12.2	.1	.3	70.6	14.9	.0	.0	1.8	100.0	85.5
Richest	1.4	72.7	.3	.3	23.8	.6	.0	.0	.9	100.0	24.4
Total	.3	17.3	.1	.1	29.4	50.0	.4	1.3	1.1	100.0	81.2

1] MICS indicator 3.11
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Table CH.10: Solid fuel use by place of cooking

Percent distribution of household members in households using solid fuels by place of cooking, Ghana, 2011

Background Characteristics	Place of cooking:						Number of household members in households using solid fuels for cooking
	In a separate room used as kitchen	Elsewhere in the house	In a separate building	Outdoors	Other	Total	
Region							
Western	29.9	25.8	23.4	20.9	.0	100.0	3510
Central	28.3	17.0	19.4	35.3	.0	100.0	3938
Greater Accra	15.4	33.0	3.1	48.5	.0	100.0	3655
Volta	7.8	11.9	31.7	48.7	.0	100.0	3666
Eastern	22.3	29.3	26.1	22.3	.0	100.0	4377
Ashanti	38.1	24.9	9.2	27.7	.0	100.0	6747
Brong Ahafo	32.8	21.9	12.0	33.1	.2	100.0	3924
Northern	10.2	31.9	4.9	52.8	.1	100.0	4182
Upper East	51.8	26.4	7.8	13.7	.2	100.0	2048
Upper West	40.2	29.4	3.7	26.7	.0	100.0	1362
Residence							
Urban	23.9	33.2	8.1	34.8	.0	100.0	14631
Rural	28.0	19.6	19.0	33.3	.0	100.0	22779
Education of households head							
None	24.5	23.7	12.3	39.5	.0	100.0	13449
Primary	22.1	27.0	16.1	34.7	.1	100.0	5821
Middle/JSS	28.0	24.3	17.5	30.1	.0	100.0	14178
Secondary +	33.7	28.1	10.9	27.3	.0	100.0	3962
Wealth index quintiles							
Poorest	25.5	20.7	13.4	40.3	.1	100.0	9200
Second	27.1	16.4	21.9	34.5	.0	100.0	9155
Middle	25.0	23.1	17.2	34.7	.0	100.0	8925
Fourth	24.9	38.7	7.9	28.4	.0	100.0	7880
Richest	38.4	35.3	5.1	21.0	.1	100.0	2251
Total	26.4	24.9	14.7	33.9	.0	100.0	37410





Introduction

This chapter presents data that are useful for assessing the implementation of malaria control strategies, including the availability, ownership and use of insecticide treated nets; the use of antimalarial drugs for prophylaxis during pregnancy and for treatment of children under age five years; indoor residual spraying of dwellings with insecticides; knowledge of malaria symptoms, cause, and prevention; and the prevalence of anaemia. Data on the above indicators have been collected in previous MICS and DHS surveys in Ghana. In addition, data on malaria parasite prevalence, based on rapid diagnostic testing (RDTs) and microscopy, are incorporated as part of the new components in the MICS 2011. These data provide a unique nationwide snapshot of peak-season malaria point-prevalence in children aged 6-59 months.

Background on Malaria in Ghana

Malaria is endemic and perennial in all parts of the country, with seasonal variations that are more pronounced in the north. All Ghana's population of 24.2 million is at risk of malaria infection, but children under five years of age and pregnant women are at higher risk of severe illness due to lowered immunity. Transmission tends to be less intense in large urban centres. According to the Ghana Health Service (GHS) health facility data, malaria is the number one cause of morbidity, accounting for about 38 percent of all outpatient illnesses, 35 percent of all admissions, and about 34 percent of all deaths in children under five years (NMCP 2010 Annual Report). Between 3.1 and 3.5 million cases of clinical malaria are reported in public health facilities each year, of which 900,000 cases are in children under five years (Ghana National Malaria Control Strategic Plan, 2008-2015). There were an estimated 21,000 deaths due to malaria for children under age 5 in 2006 (WHO, World Malaria Report 2008). Malaria is also a significant cause of adult morbidity, and the leading cause of workdays lost due to illnesses.

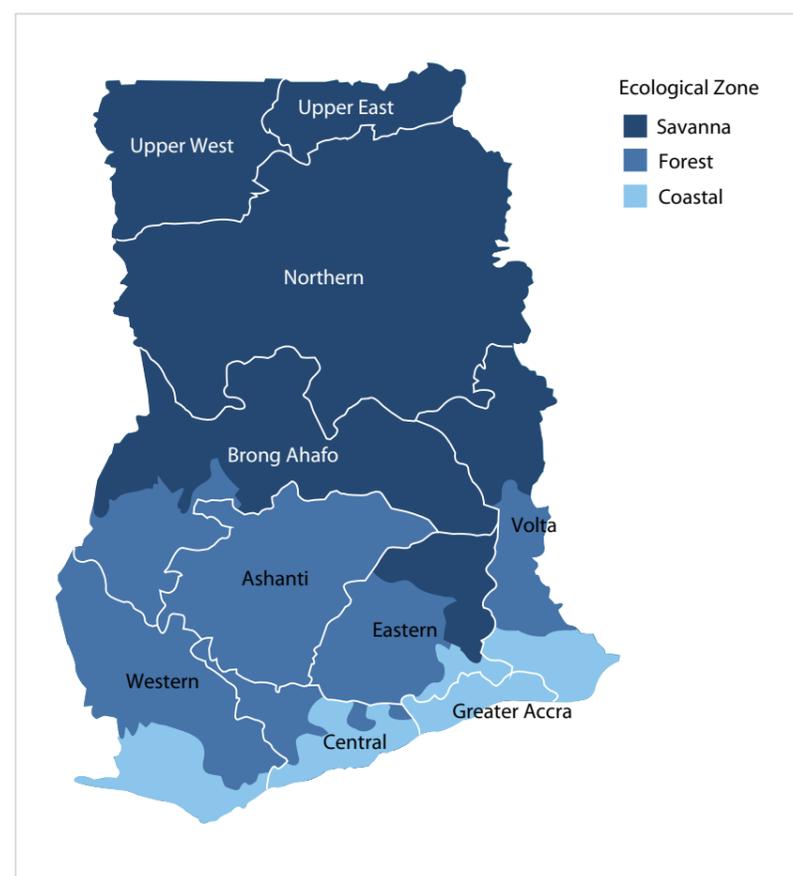
Malaria: Cause and Transmission

Malaria is caused by a single-celled parasite called Plasmodium, and is transmitted by the female Anopheles mosquito. The main parasite species causing malaria in Ghana is *P. falciparum* (over 90-95 percent of infections in most prevalence studies). *P. malariae* (<10 percent), and *P. ovale* (<2 percent) are also found. *P. vivax* is not known in Ghana. Mixed infections of *P. falciparum* and *P. malariae* are fairly common (Noguchi Memorial Institute for Medical Research, unpublished reports). The major vectors found throughout the country are *Anopheles gambiae* species complex and *A. funestus*. These species generally bite late in the night, are indoor resting, and are commonly found in the rural and peri-urban areas where socio-economic activities lead to the creation of breeding sites. Outdoor biting is more common in the northern savannah zone. *Anopheles melas* is found in the mangrove swamps of the southwest (Ghana National Malaria Control Strategic Plan 2008-2015).

Transmission is greatest during the rainy season(s) because the increase in relatively clean, temporary fresh stagnant water bodies favour the breeding of *Anopheles* mosquitoes during that period. The normal duration of the intense malaria transmission season ranges from approximately 6-7 months in the northern-most part of the country (May-October) up to 10-11 months in the forest zone. Peak levels of malaria infection and malaria-associated anaemia in the population persist for 2-3 months into the dry season. The MICS 2011 was conducted from mid-September to mid-December, a period which is presumed to coincide with the peak or average periods of malaria-associated anaemia and malaria parasitaemia in all areas of the country (Koram et al, 2001; Owusu-Agyei et al, 2002).

Ghana can be stratified into three malaria epidemiologic zones: the northern savannah; the tropical rainforest; and the coastal savannah/mangrove swamps. The boundaries of these zones have not been defined precisely, and are presumed to have shifted over recent decades with changing land use and settlement patterns. However, a fairly close approximation of the zones in contemporary Ghana is provided by the demarcations used by the Ghana Statistical Service in its periodic living standards surveys since 1998, which were based on technical input from the University of Ghana's Center for Remote Sensing (CERSGIS). (See Figure M.B.1). All selected EAs were allocated to the ecological zones they belonged to, given that GSS already had demarcation of the ecological zones.

Figure MB.1: Map of Ecological Zones and Regions, Ghana 2011



National Strategies for Malaria Control

Over the years, strategies for malaria control have evolved to take advantage of improved control methods, increasing resource levels, and revised international technical standards. The World Health Organization (WHO) launched the Roll Back Malaria Strategy in 1998, which was adopted by Ghana in the year 2000. That same year, Ghana signed the Abuja Declaration to halve the burden of the disease through:

- Distribution of insecticide-treated nets (ITNs) to cover populations at risk (especially children under the age of five and pregnant women)
- Indoor residual spraying (IRS) to reduce transmission

- Prevention of malaria among pregnant women through intermittent preventive treatment during pregnancy (IPTp)
- Prompt diagnosis and treatment with effective medicine

In 2003, a Global Fund Round 2 malaria grant ensured intensification of malaria control interventions in 20 districts across the country, improving key indicators in these districts within three years. In 2005, Ghana again received increased funds under a Round 4 Global Fund malaria grant to scale up interventions nationwide, resulting in improved indicators across the country. In 2004, Ghana adopted artemisinin-based combination therapies (ACTs) as first-line treatment for uncomplicated malaria, due to the emergence of resistance to chloroquine. In that same year, IPTp using the drug sulphadoxine-pyrimethamine (SP) was adopted as the national policy, to be implemented by the Reproductive Health Division in collaboration with the NMCP in all public health facilities, faith-based facilities, and private maternity homes.

Since 2005, Indoor Residual Spraying (IRS) has been implemented on a district-wide scale by the AngloGold Ashanti mining company in Obuasi, Ashanti Region. This was followed by IRS in nine districts in the Northern region starting in 2008 by the President's Malaria Initiative (PMI), and currently scaling up to 45 districts by 2015 under a Global Fund Round 8 grant implemented by Anglo Gold Ashanti. In addition, small-scale operations on a community-level scale have been conducted by mining companies, at plantations, tourist facilities, housing estates, and district assemblies, largely in southern Ghana.

These early successes attracted an increase in support from the Global Fund and other international partners between 2006 and 2012, including DFID, UNICEF, Japanese Government, the World Bank, the US President's Malaria Initiative (PMI), and a number of local and international NGOs. The government of China has, over the years, donated ACTs to the country, to support the malaria control program. Targeted larviciding has been implemented on a consistent basis in several focal areas, notably by AngloGold Ashanti in Obuasi and by the Cuban-supported Labiofam program in central urban neighborhoods of Accra, Kumasi and Sunyani.

Scale-up of proven malaria control intervention continues to be central to the national strategic goals outlined in the National Malaria Control Strategy 2008-2015. This strategic plan was developed by the National Malaria Control Program (NMCP) under the Ghana Health Service within the Ministry of Health, together with all stakeholders. The strategic plan calls for a 75 percent reduction in malaria mortality by the year 2015, using 2006 as the baseline (National Malaria Control Strategic Plan 2008-2015).

The key targets of the national strategy include:

1. Universal coverage with insecticide treated nets (ITNs).
Targets: 1 ITN available per 2 persons by 2015; 100 percent of household ITN ownership by 2015; 85 percent of children under five years and pregnant women, and 80 percent of the general population, sleeping under an ITN by 2015
2. Rapid scale up of IRS to cover one-third of the country
Target: 90 percent of all households' dwellings/structures in targeted districts covered
3. Universal coverage of pregnant women receiving intermittent preventive treatment (IPTp) using the drug sulphadoxine-pyrimethamine (SP)
Target: 85 percent of pregnant women receiving at least two doses of IPTp by 2011, and 100 percent by 2015

4. Early diagnosis of malaria using microscopy or rapid diagnostic test (RDT)
Target: originally allowed for clinical diagnosis for children under age 5, but amended in 2009 to aim for universal testing wherever practicable
5. Prompt and effective treatment with artemisinin-based combination therapies (ACTs)
Target: 90 percent of patients with uncomplicated malaria correctly treated using ACTs at public and private facilities by 2015

The plan also calls for strengthening health systems at all levels, with an emphasis on research, monitoring and evaluation and, creating and sustaining partnerships for malaria control. Current priority areas are focused on sustaining ITN coverage following ITN mass distribution campaigns; managing insecticide resistance; and resolving implementation bottlenecks in community and home management of malaria.

As part of the NMCP's effort to influence attitude and practice on malaria prevention and treatment, the programme has also undertaken intensive public education (IE&C/BCC) on all programme interventions. All media channels were used ranging from mass media to inter-personal communication.

Malaria Prevention

There are two main approaches to preventing malaria in Ghana. The first is integrated vector control which primarily aims at reducing man-vector contact through the use of Insecticide Treated Nets (ITNs), larviciding and Indoor Residual Spraying (IRS). The second preventive measure is Intermittent Preventive Treatment (IPT) that targets pregnant women. Larviciding was not covered in the Ghana MICS 2011, due to its highly focal targeting to date. As mentioned, larviciding on a limited basis has been implemented in central urban districts of Accra, Kumasi, and Sunyani (since 2009-11), as well as in Obuasi (since 2005).

Insecticide Treated Mosquito Nets (ITNs)

One of the most effective measures for preventing malaria is the use of insecticide-treated bed net (ITN). ITNs have been shown not only to reduce malaria transmission by as much as 90 percent under trial conditions, but also to reduce the indoor vector population (Binka et al, 1998; Hawley et al, 2003). ITNs also reduce malaria morbidity and mortality.

An insecticide-treated net (ITN) is any of the following: either a factory-treated net that does not require any further treatment (known as a "long-lasting insecticide-treated net," LLIN); a pre-treated net obtained within the past 12 months; or a net that has been soaked with insecticide within the past 12 months. 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 net must retain its effective biological activity without re-treatment for repeated washes and three years of use under field conditions (WHO 2007.) The current generation of LLINs lasts 3-5 years, after which point the net should be replaced.

The MICS 2011 included questions on net ownership, use, type and source of net. Questions were asked to determine who had slept under each net the previous night. In determining ITN usage, only persons reported to have slept under a net the night before the survey were considered users of ITNs (consistent with Roll Back Malaria international guidelines).

Community level protection against malaria is of interest because it helps to reduce the spread of the disease and offers an additional level of protection for the most vulnerable groups, children and pregnant women. Age is an important factor in determining levels of acquired immunity to malaria. It is established that for the first six months following birth, antibodies acquired from the mother during pregnancy protect children born in areas of endemic malaria. This immunity is gradually lost and children start to develop their own immunity to malaria. The pace at which immunity is developed depends on their exposure to malaria infection, and in high malaria-endemic areas, children are thought to have attained a high level of immunity by their fifth birthday. Such children may experience episodes of malaria illness but usually do not suffer from severe, life-threatening malaria. Immunity in areas of low malaria transmission is acquired more slowly and malaria illness affects all age groups of the population (Doolan et al., 2009). Unlike some other infectious diseases, immunity against malaria is not permanent, and protection from being infected requires the regular use of the protective interventions. The use of ITNs confers some protection if the child uses the net on a regular basis, and in Ghana, messaging around ITN distribution has stressed the importance of consistent use by children under five.

Brief History of ITN Distributions in Ghana

The MICS 2011 data on ITN ownership and use will be best understood if Ghana's recent history of ITN distribution is known. From 2002 to 2009, the Ghanaian Ministry of Health (MOH) embraced a mixed model of ITN distribution, in which subsidized distribution through the public and private sector, workplace and NGOs distributions, and full-cost sales all contributed. This resulted in 42 percent of ITN ownership, as reported in the 2008 Ghana Demographic and Health Survey (GDHS). In order to promote the ownership of mosquito nets, the government of Ghana, since 2002, has implemented a tax waiver policy on the importation of mosquito nets into the country. Development partners contributed by providing ITNs for distribution at subsidised costs to pregnant women and children under five in disadvantaged areas of the country through routine public health services. During 2002-2010, the NMCP, PMI, World Bank, UNICEF and Global Fund between them provided enhanced support for subsidized ITN distribution in all regions except Greater Accra. JICA continued such support in Upper West through 2011.

In 2010, Ghana Health Service, led by the NMCP, and with the support of development partners, began focusing on a "catch-up" strategy of implementing free mass distribution campaigns with the goal of achieving universal coverage of LLINs in all ten regions by 2012. This campaign provided free LLINs in door-to-door, hang-up exercises nationwide, distributing approximately 14 million LLINs over two years. The LLIN hang-up exercises were carried out through a program of door-to-door visits by community volunteers in each region.

The door-to-door, hang-up approach was tested in May 2010 in the Northern Region, through a campaign which targeted just children under five and pregnant women. The remaining campaign targeted universal coverage of the general population, defined as one net per every two persons. The NMCP goal for these campaigns was to achieve 75 percent of households owning at least one LLIN. At the time of the 2011 Ghana MICS survey data collection (Sept 15-Dec 15, 2011), universal-coverage campaigns had been completed in the Eastern, Volta, and Western regions. Central Region began its campaign toward the end of that period. The remaining regions had their campaigns in 2012, i.e. after the MICS data had already been collected. Table MB.1 outlines the timing of the various campaigns.

Time of Campaign	Region	ITN Coverage (numbers of ITNs)	Status at time of Data Collection (mid Sept-mid Dec 2011)
May 2010	Northern Region	Targeted <5, and Pregnant women 566,900	Completed
December 2010	Eastern Region, 10 districts	Universal Coverage 450,000	Completed
April 2011	Eastern Region, 11 districts	Universal Coverage 710,463	Completed
July 2011	Volta	Universal Coverage 1,064,692	Completed
November 2011	Western	Universal Coverage 1,346,900	Partly Completed
December 2011	Central	Universal Coverage 1,049,100	Partly Completed
February-March 2012	Ashanti	Universal Coverage 2,516,100	Not yet begun.
April 2012	Upper East	Universal Coverage 598,368	Not yet begun.
February-March 2012	Upper West	Universal Coverage 375,029	Not yet begun.
May 2012	Brong Ahafo,	Universal Coverage 1,378,300	Not yet begun
July-August 2012	Northern Region	Universal Coverage 1,300,000 (projected)	Not yet begun
August 2012	Greater Accra	U. Coverage (rural areas) 2,023,705 (projected)	Not yet begun

Household Ownership of Mosquito Nets

Table MB.2 presents data on the percentage of households possessing at least one mosquito net (treated or untreated), the average number of nets per household, and the percentage of households with at least one net for every two persons (household members) who stayed in the household the previous night, by background characteristics. Overall, 51 percent of households had at least one mosquito net whether treated or untreated and 49 percent had at least one ITN. We observed from the table that few ITNs in Ghana came from categories other than LLINs, since households with at least one LLIN made up 48 percent, very close to the percentage of household with at least one ITN.

In 34 percent of households, an ITN was observed hanging by the MICS team in the field. Rural households were more likely to own at least one net (63%) than urban households (41%). The findings were similar whether the net was noted to be an LLIN, or any ITN.

Background Characteristics	Percentage of households with at least one mosquito net				Average number of nets per household				Percentage of households with at least one net for every two persons who stayed in the household last night ¹				Number of households with at least one person who stayed in the household last night		
	Any mosquito net	Insecticide treated net (ITN) ² [1]	Insecticide treated net seen hanging in household	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide treated net (ITN) ²	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide treated net (ITN) ²	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide treated net (ITN) ²	Long-lasting insecticidal net (LLIN)	Number of households with at least one person who stayed in the household last night	Number of households with at least one person who stayed in the household last night
Region															
Western	44.2	42.7	26.2	42.2	0.8	0.8	0.8	22.6	21.7	21.4	21.4	21.4	1,116	1,105	
Central	33.5	32.1	20.4	31.6	0.5	0.5	0.4	13.7	12.8	12.6	12.6	12.6	1,236	1,229	
Greater Accra	29.6	25.5	11.3	24.7	0.4	0.4	0.4	2.321	10.4	10.4	10.4	10.4	2,321	2,300	
Volta	90.3	85.4	68.9	85.3	2.3	2.0	2.0	992	65.3	65.2	65.2	65.2	992	983	
Eastern	78.4	78.2	55.0	77.8	1.5	1.5	1.5	1,533	57.7	57.3	57.3	57.3	1,533	1,521	
Ashanti	42.4	39.8	29.1	39.0	0.6	0.6	0.6	2,321	16.4	16.1	16.1	16.1	2,321	2,310	
Brong Ahafo	56.5	53.4	38.8	52.4	0.9	0.8	0.8	1,011	22.2	21.4	21.4	21.4	1,011	999	
Northern	68.8	67.2	47.6	67.0	1.4	1.4	1.3	727	19.3	19.3	19.3	19.3	727	727	
Upper East	53.2	51.8	38.8	51.4	1.0	0.9	0.9	414	18.0	17.7	17.7	17.7	414	414	
Upper West	66.3	60.7	44.5	59.5	1.3	1.2	1.2	253	19.7	19.4	19.4	19.4	253	253	
Ecological Zone															
Coastal	36.8	33.5	19.4	32.9	0.7	0.6	0.6	4,297	18.0	18.0	18.0	18.0	4,297	4,255	
Forest	56.8	54.7	38.9	54.1	1.0	0.9	0.9	5,344	30.3	29.9	29.9	29.9	5,344	5,308	
Savannah	66.4	64.2	48.5	63.7	1.4	1.3	1.3	2,284	28.2	28.0	28.0	28.0	2,284	2,277	
Residence															
Urban	41.4	39.1	22.5	38.4	0.7	0.6	0.6	6,358	20.7	20.6	20.6	20.6	6,358	6,298	
Rural	62.9	60.1	46.5	59.5	1.2	1.1	1.1	5,567	30.9	30.6	30.6	30.6	5,567	5,542	
Education of household head															
None	53.9	51.3	38.4	51.0	1.0	1.0	1.0	2,997	23.5	23.2	23.2	23.2	2,997	2,984	
Primary	54.2	50.8	36.6	49.9	1.0	0.9	0.9	1,560	23.6	23.5	23.5	23.5	1,560	1,554	
Middle/JSS	51.8	49.7	34.3	49.2	1.0	0.9	0.9	4,590	26.8	26.6	26.6	26.6	4,590	4,559	
Secondary +	46.6	43.9	26.1	42.9	0.8	0.7	0.7	2,775	26.6	26.2	26.2	26.2	2,775	2,740	
Missing/DK	*	*	*	*	*	*	*	3	*	*	*	*	3	3	
Wealth index quintile															
Poorest	69.4	65.9	54.5	65.4	1.4	1.3	1.3	1,763	26.6	26.3	26.3	26.3	1,763	1,760	
Second	61.1	58.5	44.9	58.1	1.1	1.1	1.1	2,244	31.1	30.9	30.9	30.9	2,244	2,236	
Middle	55.1	52.2	37.5	51.7	1.0	0.9	0.9	2,450	28.9	28.7	28.7	28.7	2,450	2,411	
Fourth	43.7	41.0	24.7	40.5	0.7	0.7	0.6	2,639	21.5	21.3	21.3	21.3	2,639	2,625	
Richest	36.5	35.2	17.0	34.1	0.6	0.6	0.6	2,829	21.2	20.8	20.8	20.8	2,829	2,808	
Total	51.4	48.9	33.7	48.3	0.9	0.9	0.9	11,925	27.5	25.5	25.5	25.5	11,925	11,840	

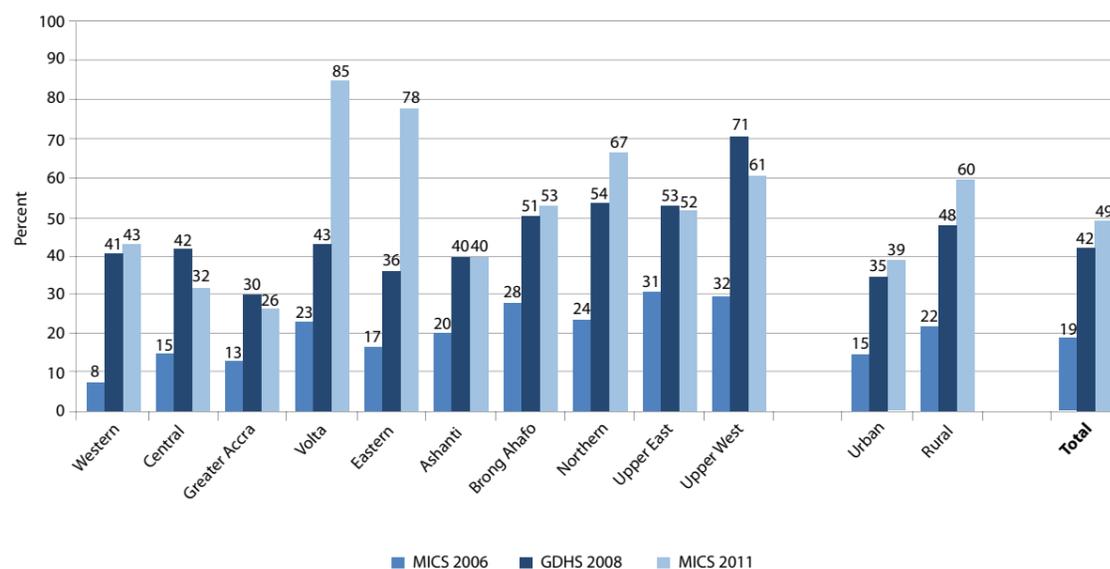
[1] MICS indicator 3.12 An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Figure MB.2 present the increasing trend in household ITN ownership from the three latest household surveys: the MICS 2006, the GDHS 2008, and the MICS 2011. The percentage of households with at least one ITN increased from 19 percent in the 2006 Ghana MICS, to 42 percent in the 2008 Ghana DHS, and most recently, to nearly 50 percent in the 2011 Ghana MICS. Figure MB.2 also shows that ITN ownership was highest in the Volta region (85%), an increase from 23 percent in 2006, and Eastern region, where ITN ownership increased from 17 percent in 2006 to 78 percent in 2011. All districts in these regions had fully completed their distribution campaigns 3-12 months prior to MICS 2011 data collection. Although net ownership may well have reached comparable levels in other regions following their respective mass distribution campaigns, the MICS could not capture those outcomes due to the timing of the campaigns (Table MB.1). Among the regions which had not yet benefited from the mass regional campaigns, Upper West had the highest ownership at 61 percent, an increase from 32 percent in 2006. The lowest percentage of net ownership was observed in the Greater Accra region (26%), which had neither enhanced support for routine distribution in 2002-2010, nor any mass distribution campaign after 2010. Table MB.2 also shows that increase in ownership of ITN has been higher in rural households, compared to urban households. For rural areas, ITN ownership increased from 22 percent in 2006, to 48 percent in 2008, and to 60 percent in 2011. For urban households, ITN ownership increased from 15 percent in 2006, to 35 percent in 2008 and to 39 percent in 2011.

Table MB.2 also reveals that the Savannah ecological zone had the highest LLIN ownership (64%), followed by the Forest (54%), and Coastal (33%) ecological zones. The results also reveal that household net ownership decreases with increasing household wealth and with increasing level of education of the household head.

The average number of mosquito nets per household was about one net per household. Also, 26 percent of households had at least one ITN for every two persons who stayed in the household the night before the survey. Volta Region, at 65 percent, was closest to the universal coverage goal of at least one net per two persons sleeping in the household.

Figure MB.2: Trends in ownership of ITNs: Percent of households with at least one ITN by region and residence, Ghana 2011



Use of Mosquito Nets by Persons in the Household

Table MB.3 presents information on the percentage of the household population (i.e. usual household members who slept in the household last night) who slept the night before the survey under a mosquito net (treated or untreated), ITN, LLIN, or in a dwelling in which the interior walls had been sprayed with indoor residual spray (IRS) in the past 12 months, by background characteristics. The results show that 31 percent of the household members slept under any mosquito net the night before the survey; 29 percent slept under an ITN; 28 percent slept under an LLIN; and 36 percent slept under an ITN or in a dwelling which has been sprayed with IRS in the past 12 months. Among households with at least one ITN, 48 percent of the household population slept under an ITN the night before the survey.

By age, 45 percent of children under age five slept under any mosquito net the night before the survey and 42 percent slept under an ITN. Among households with an ITN, 63 percent of children under age five slept under an ITN. Slightly more females slept under an ITN the night before the interview than their male counterparts (30% versus 27%, respectively). A similar pattern is observed among households with at least one ITN, where 51 percent of females slept under an ITN the night before the survey compared with 45 percent of males.

People living in rural areas were more likely to have slept under any mosquito net, an ITN, or LLIN than their urban counterparts. For example, 33 percent of people in rural households slept under an ITN compared with 19 percent of people in urban households. For households with at least one ITN, 51 percent of population in rural households and 40 percent of urban households slept under an ITN.

At the regional level, Volta Region – which finished its ITN campaign just 3 months prior to the Ghana MICS 2011 data collection – had the highest percentage of household population sleeping under ITNs and LLINs (66% for both). Greater Accra region has the lowest percentage among all the categories of nets (11% for ITNs and LLINs). The percentages of the household population who slept under an ITN the night prior to the survey ranges from 66 percent in the Volta region to 11 percent in Greater Accra. Among households with at least one ITN, the percentage of households sleeping under an ITN the night before was not as varied among the regions.

In terms of ecological zones, the Forest zone had the highest percentage of the household population who slept under an ITN last night (32%), followed by the Savannah zone (31%), and the Coastal zone (19%). The highest percentage of households who slept under an ITN or in a dwelling sprayed with IRS in the last 12 months before the interview was observed among households in the Savannah (43%), while the Coastal zone had the lowest percentage (20%).

Net usage among the household population generally decreases with an increase in wealth for each type of net. ITN usage the night prior to the survey ranged from 33 percent in the poorest 40 percent of the households to 15 percent in the richest wealth quintile.

Table MB.3 Use of mosquito nets by members in the household

Percentage of the household population¹ who slept the night before the survey under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among the de facto household population in households with at least one ITN, the percentage who slept under an ITN the night before the survey, Ghana, 2011

Background Characteristics	Household population					Number of persons in household with at least one ITN ²	
	Percentage who slept under any mosquito net last night	Percentage who slept under an ITN last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN or in a dwelling sprayed with IRS in the last 12 months	Number of persons	Percentage who slept under an ITN last night	Number of persons
Sex							
Male	28.8	26.9	26.5	35.0	25,901	45.2	15,426
Female	32.2	30.3	29.9	37.3	27,068	50.9	16,085
Region							
Western	25.7	24.0	23.7	24.9	2,831	51.2	1,327
Central	18.4	17.2	16.7	18.1	7,189	46.4	2,673
Greater Accra	13.0	10.9	10.6	11.9	3,193	32.3	1,077
Volta	72.0	65.6	65.5	65.6	2,944	71.9	2,683
Eastern	51.2	50.6	50.5	51.2	2,602	59.5	2,215
Ashanti	23.6	21.3	20.8	27.0	3,460	48.6	1,516
Brong Ahafo	29.9	27.6	26.9	28.3	2,924	49.1	1,645
Northern	28.2	26.9	26.8	57.5	11,724	37.4	8,434
Upper East	29.3	28.7	28.1	29.2	7,674	50.7	4,340
Upper West	35.8	32.6	32.0	32.6	8,428	49.1	5,601
Ecological zones							
Coastal	21.1	18.7	18.3	19.5	10,626	47.9	4,145
Forest	34.1	32.2	31.8	34.4	11,646	54.5	6,869
Savannah	32.5	30.7	30.3	42.5	30,697	46.0	20,497
Residence							
Urban	20.2	19.0	18.7	24.2	16,805	40.2	7,936
Rural	35.3	33.1	32.7	41.7	36,164	50.8	23,575
Age (in years)							
<5	43.6	41.5	41.0	48.8	7,514	63.0	4,951
5-14	26.2	24.6	24.3	33.4	16,515	40.2	10,117
15-34	27.9	26.1	25.7	32.9	13,541	45.3	7,794
35-49	34.4	32.3	31.9	38.0	7,007	54.9	4,113
50+	28.0	26.6	26.4	33.0	436	49.4	235
DK/Missing	*	*	*	*	16	*	9
Wealth index quintile							
Poorest	35.1	32.8	32.4	44.3	23,146	49.2	15,426
Second	35.3	33.3	32.9	39.1	10,460	53.2	6,552
Middle	28.0	26.1	25.6	30.7	7,513	46.5	4,211
Fourth	22.3	20.9	20.5	24.4	6,472	43.2	3,129
Richest	15.0	14.5	14.2	17.0	5,378	35.5	2,193
Total	30.5	28.6	28.2	36.1	52,969	48.1	31,511

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Use of Mosquito Nets by Children Under Five Years

Table MB.4 presents information on the use of mosquito nets by children under- five years who, the night before the survey, slept under any mosquito net, an ITN, a LLIN, and an ITN or in a dwelling in which the interior walls were treated with IRS in the past twelve months, by background characteristics. The table also presents information on the percentage of children under five who slept under an ITN last night among children who live in households with at least one ITN. Overall, 42 percent of children under five slept under any mosquito net (treated or untreated) the night before the survey; 39 percent slept under an ITN; 38 percent slept under an LLIN; and 43 percent slept under an ITN, or in a dwelling in which the interior walls were treated with IRS in the past 12 months. Among children under five years of age in households with at least one ITN, 63 percent slept under an ITN the night before the survey.

Among the regions, the percentage of children under five who slept under any mosquito net the night before the survey ranged from a low of 26 percent in Greater Accra to a high of 76 percent in Volta. The same pattern was observed by region for the percentage of children under five who slept under ITNs, LLINs, and those who slept under an ITN or in household sprayed with IRS. With respect to children under five years in households with at least one ITN, the Volta region also had the largest percentage of children who slept under an ITN the night before the survey (78%).

In terms of ecological zones, the Savannah has the highest percentage of children under- five years who slept under any net the night before the interview (48%), slept under an ITN (46%), slept under an LLIN (46%), and slept either under an ITN or in a dwelling sprayed with IRS in the 12 months preceding the survey (56%). However, with respect to the percentage of children under five years in households with at least one ITN, the Forest zone has the highest percentage of children who slept under an ITN the night before the survey (65%).

Table MB.4: Use of mosquito nets by children under 5 years of age

Percentage of children under age five who, the night before the survey, slept under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among children under five years of age in households with at least one ITN, the percentage who slept under an ITN the night before the survey, Ghana, 2011

Background Characteristics	Children under five in all households				Children under five in households with at least one ITN1		
	Percentage who slept under any net last night [1]	Percentage who slept under an ITN last night [2]	Percentage who slept under an LLIN last night	Percentage who slept under an ITN1 last night or in a dwelling sprayed with IRS in the past 12 months	Number of children	Percentage who slept under an ITN last night	Number of children
Sex							
Male	41.3	39.3	38.3	43.7	3,715	63.3	2,306
Female	41.9	38.8	38.4	42.5	3,746	63.2	2,298
Region							
Western	33.7	32.7	31.6	32.9	743	62.6	388
Central	29.0	27.7	26.8	28.1	729	60.0	337
Greater Accra	25.5	22.1	20.8	23.1	1,131	47.9	523
Volta	76.3	70.7	70.7	70.7	575	77.8	522
Eastern	60.7	60.2	59.7	60.5	819	70.5	699
Ashanti	35.5	31.2	31.0	37.2	1,407	61.2	718
Brong Ahafo	43.7	41.3	40.4	41.6	663	66.7	411
Northern	43.0	41.8	41.8	65.3	847	54.6	649
Upper East	46.8	45.0	44.1	45.3	324	72.6	201
Upper West	49.6	46.9	46.4	47.1	222	67.0	156
Ecological zones							
Coastal	32.8	29.7	28.7	30.4	2,250	59.0	1,133
Forest	43.6	40.9	40.4	43.7	3,185	65.3	1,995
Savannah	48.2	46.4	45.9	56.3	2,026	63.8	1,475
Residence							
Urban	32.0	30.1	29.2	33.3	3,253	56.4	1,737
Rural	49.0	45.9	45.5	50.7	4,208	67.4	2,867
Age							
0-11	47.7	44.5	43.1	48.1	1,531	68.9	989
12-23	47.0	44.2	43.5	48.8	1,429	71.3	885
24-35	40.1	37.0	36.6	41.2	1,531	62.0	913
36-47	37.3	34.9	34.5	38.8	1,554	57.4	946
48-59	35.8	34.6	34.4	38.8	1,415	56.4	870
Mother's education							
None	44.5	41.8	41.5	49.1	2,443	62.3	1,638
Primary	41.1	38.8	38.1	40.8	1,609	65.9	948
Middle/JSS	40.6	37.8	37.4	40.0	2,536	64.9	1,477
Secondary +	36.9	35.3	33.1	39.5	873	56.9	541
Wealth index quintile							
Poorest	53.3	49.7	49.2	57.9	1,710	69.0	1,232
Second	48.2	45.5	45.2	47.9	1,537	68.8	1,017
Middle	43.3	41.0	40.7	43.7	1,530	63.3	993
Fourth	33.8	31.0	30.2	34.7	1,382	60.1	713
Richest	24.6	23.6	22.1	26.3	1,301	47.2	649
Total	41.6	39.0	38.4	43.1	7,461	63.3	4,604

[1] MICS Indicator 3.14
[2] MICS Indicator 3.15; MDG Indicator 6.7

Figure MB.3 shows various other differentials for ITN use among children. Children aged 23 months and younger were more likely (44%) to have slept under an ITN than older children the night before the survey. There was no variation by gender. The proportion of children under five who slept under an ITN the night before is higher in rural areas (46% against 30% in urban areas), In terms of ecological zones, the Savannah has the highest ITN use among children (46%) and Coastal the lowest (30%), and ITN use among children decreases as mother's education or household wealth increases. In general, Table MB.4 shows that, for all different background variables, similar observations can be made on all of the indicators.

Figure MB.3: Differentials in ITN usage among children under 5, Ghana 2011

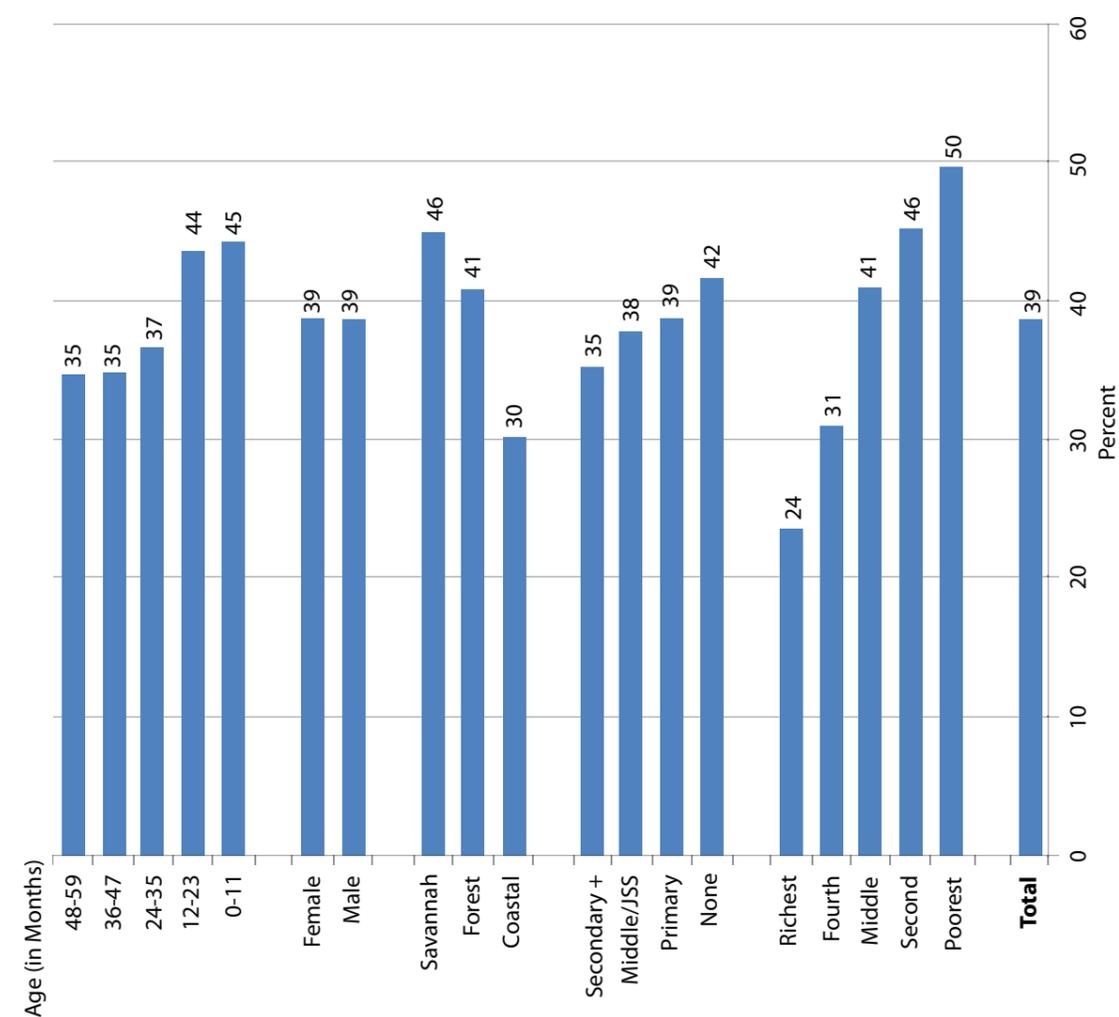
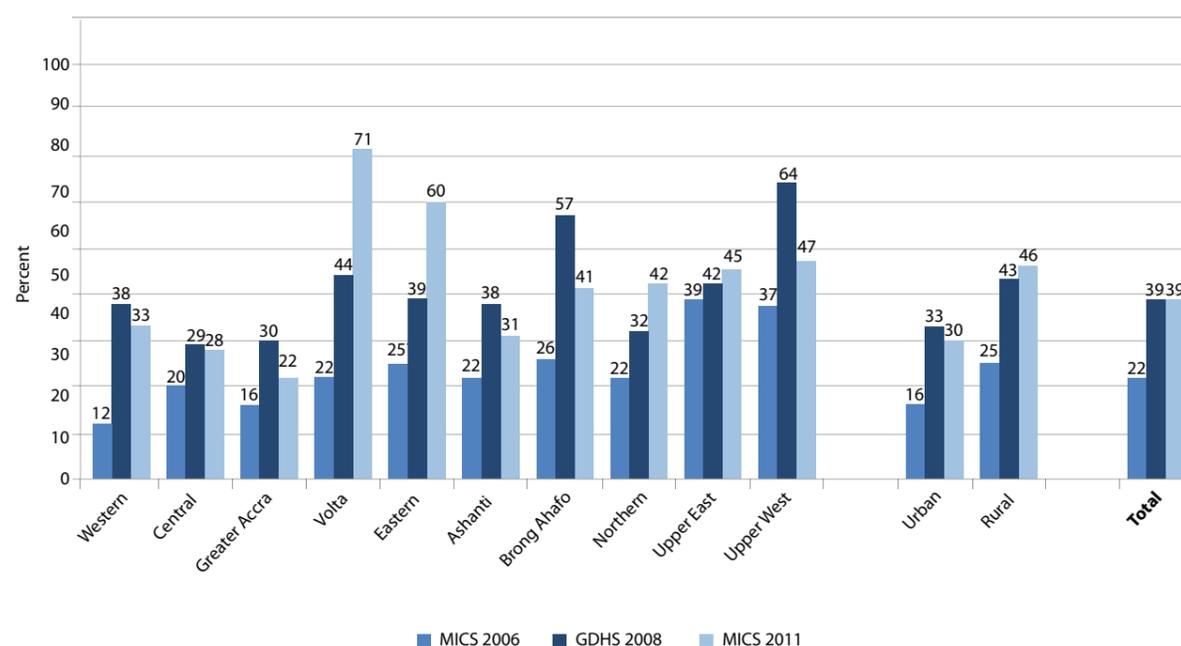


Figure MB.4 presents trends in ITN usage in the latest three surveys. ITN use among children under five has steadily increased in the 5-year period between the MICS 2006 and the MICS 2011. In 2006, 22 percent of children under 5 slept under an ITN the night before the survey. Two years later, the Ghana DHS 2008 estimated that 39 percent of children slept under an ITN the previous night. In 2011, the percent of children under 5 who slept under an ITN held steady at 39 percent. Net use at the national level is expected to have increased further, because only Volta and Eastern regions had completed their universal coverage campaigns prior to MICS 2011 data collection. Seven other regions had their campaigns during or after the data collection (Table MB.1).

Figure MB.4: Trends in proportion of children under five who slept under an ITN the previous night by region and residence, Ghana 2011



Use of Mosquito Nets by Pregnant Women

In malaria-endemic areas, adults usually have acquired some degree of immunity to severe, life-threatening malaria. However, pregnancy leads to a depression of the immune system so that pregnant women, especially those in their first pregnancy, have a higher risk of malaria. Moreover, these infections may be asymptomatic and lead to malaria-induced anaemia and may interfere with the mother-foetus exchange resulting in low weight births (WHO 1993). During pregnancy, women can reduce the risk of the adverse effects of malaria by sleeping under insecticide-treated mosquito nets.

Table MB.5 presents information on mosquito net use by pregnant women aged 15-49 years in all households, and in households with an ITN, by background characteristics. Nationally, 35 percent of pregnant women aged 15-49 years in all households slept under any mosquito net the night before the survey; 33 percent slept under an ITN; 32 percent slept under an LLIN; and 39 percent slept under an ITN or in a dwelling in which the interior walls had been sprayed against mosquitoes (IRS) in the 12 months prior to the survey. Among pregnant women age 15-49 years in households with at least one ITN, 58 percent slept under an ITN the night before the survey.

Table MB.5 also shows that use of ITN increases with women's age (from 29% for the pregnant women aged 15-24 years to 35% for women aged 35-49 years) and is more than twice larger in the rural areas than in the urban areas (44% vs. 19%). Like for children under five, ITN usage by pregnant women is highest in the Savannah zone (42%) and lowest in the Coastal zone (23%) and decreases with the educational level of the women and the wealth quintile index.

Figure MB.5 shows trends in ITN use among pregnant women for the period between the GDHS 2008 and the MICS 2011. Over the three-year period overall net use among pregnant women has increased from 27 percent to 33 percent; the increase is mostly due to an increase in use among women in rural areas. However, the results fall short of the national program's 2011 target aiming to have 65 percent of pregnant women sleeping under ITNs.

Table MB.5: Use of mosquito nets by pregnant women

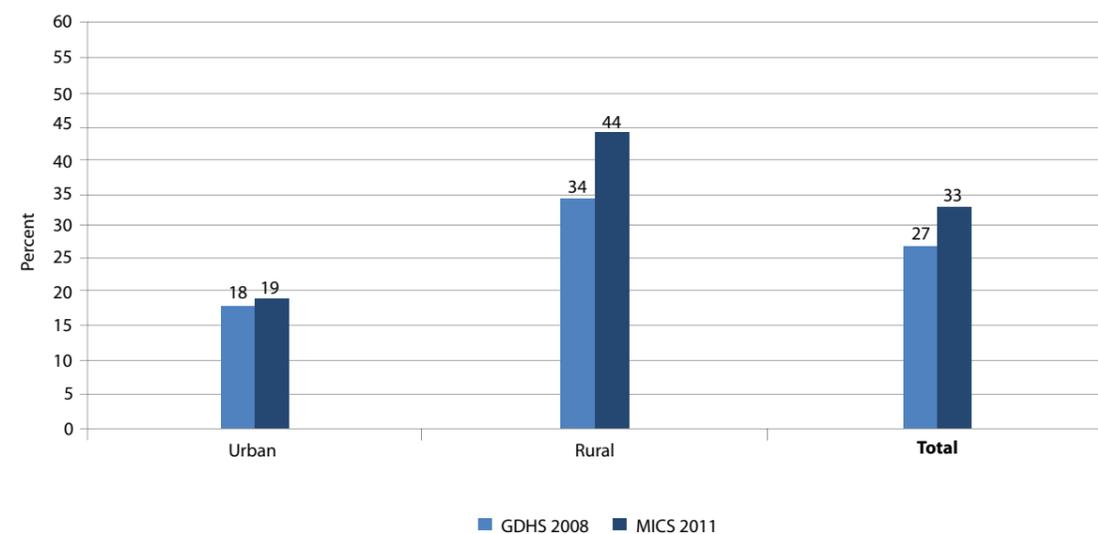
Percentages of pregnant women age 15-49 who, the night before the survey, slept under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among pregnant women age 15-49 in households with at least one ITN, the percentage who slept under an ITN the night before the survey, Ghana, 2011

Background Characteristics	Among pregnant women age 15-49 in all households				Number of women	Among pregnant women age 15-49 in households with at least one ITN	
	Percentage who slept under any net last night [1]	Percentage who slept under an ITN last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN last night or in a dwelling sprayed with IRS in the past 12 months		Percentage who slept under an ITN last night	Number of women
Region							
Western	(22.4)	(21.5)	(17.5)	(23.5)	80	*	37
Central	31.8	29.3	28.8	30.0	80	65.3	36
Greater Accra	(15.9)	(11.8)	(11.8)	(13.6)	107	*	35
Volta	65.0	57.8	57.8	57.8	74	63.5	67
Eastern	(62.3)	(62.3)	(62.3)	(62.3)	71	(78.1)	57
Ashanti	23.4	21.3	21.3	35.1	186	(51.2)	77
Brong Ahafo	37.7	36.1	34.8	38.5	72	(55.6)	47
Northern	39.6	37.9	37.9	62.2	86	49.3	66
Upper East	50.5	50.5	50.5	50.5	32	78.1	21
Upper West	44.5	41.2	40.4	41.2	22	64.8	14
Ecological zones							
Coastal	26.5	22.9	22.7	24.5	245	51.9	108
Forest	35.8	34.0	33.1	41.5	366	60.8	205
Savannah	43.9	41.8	41.2	52.3	200	57.6	145
Residence							
Urban	21.3	18.8	17.6	25.3	360	45.8	148
Rural	45.9	43.6	43.4	50.1	451	63.3	310
Age							
15-24	29.9	29.1	28.7	36.7	235	55.2	124
25-34	36.7	33.6	32.7	40.0	407	60.5	226
35-49	38.1	34.9	34.9	39.9	169	54.6	108
Education							
None	45.2	42.2	42.1	49.0	236	63.2	158
Primary	36.5	33.0	33.0	40.3	165	59.1	92
Middle/JSS	32.2	30.0	29.5	35.8	279	54.3	154
Secondary +	20.5	20.1	17.6	26.3	130	(48.5)	54
Wealth index quintile							
Poorest	53.4	51.4	51.4	59.3	185	70.6	135
Second	51.5	49.7	49.4	52.3	150	68.5	109
Middle	33.5	31.9	31.8	38.0	150	53.6	89
Fourth	18.5	12.9	12.3	19.5	166	34.7	61
Richest	16.8	15.8	13.7	24.4	160	(39.5)	64
Total	35.0	32.6	32.0	39.0	811	57.7	458

[1] MICS Indicator 3.19

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

Figure MB.5: Trends in proportion of pregnant women age 15-49 who slept under an ITN the previous night, Ghana 2011



Source, Cost and Disposal of ITNs

In the MICS 2011, households that owned nets were asked where they had obtained the nets and how much they had paid for them. Table MB.6 presents information on the source and cost of nets by background characteristics.

Overall, 28 percent of ITNs were obtained from the public health sector, while 42 percent were obtained from public “door-to-door hang-up” campaigns. A small proportion (4%) of nets was obtained from the private medical sector, while 25 percent of nets were obtained from other sources. Table MB.6 also shows that 83 percent of ITN obtained in the public sector were free, when only 17 percent of ITN obtained in the private medical sector were. Nearly half (47%) of ITN obtained from other sources were free. The average cost of ITN that had been purchased was 2.20 Ghana Cedis (GhC) for nets purchased through the public sector, 6.61 GhC for nets purchased through the private sector, and 5.53 GhC for nets purchased through other sources.

Results also show that 8 percent of households had disposed of at least one net in the 12-month period prior to the survey (results not shown in a table). Of this small number of households, almost half (47%) had kept the net for less than 2 years, 36 percent had used the net between 2 and 4 years, and 17 percent had used the net for more than 4 years. The major reason cited for disposing of the net was that the net was torn (81%), while 8 percent of households indicated that the net no longer repelled mosquitoes, and another 8 percent responded that they disposed of the net because they had a new net.

Table MB.6: Source and cost of insecticide treated nets (ITNs)

Among all ITNs, source of the ITN, percent of nets obtained for free, and median cost of ITNs by source of net, Ghana, 2011

Background Characteristics	Source of insecticide treated nets					Total	Percent free			Number of insecticide treated nets	Median cost (GhC)		
	Public sector ¹	Public campaign	Private medical sector	Other	DK,Missing		Public	Private	Other		Number of insecticide treated nets	Number of insecticide treated nets	Number of insecticide treated nets
Region													
Western	16.7	33.8	1.9	47.6	0.0	100.0	91.5	*	75.6	874	3.5	*	5.7
Central	42.9	5.5	10.2	40.5	0.9	100.0	68.0	26.4	51.8	557	2.5	5.4	5.2
Greater Accra	45.4	5.6	12.4	35.3	1.4	100.0	71.7	11.1	33.5	869	2.5	(10.5)	7.0
Volta	6.9	85.6	0.9	6.4	0.1	100.0	97.5	*	21.1	1,962	3.5	*	4.2
Eastern	10.9	80.8	1.0	5.6	1.6	100.0	81.1	*	39.4	2,346	1.0	*	(6.4)
Ashanti	36.2	6.5	5.2	49.1	2.9	100.0	63.9	(11.4)	47.3	1,311	3.0	(4.8)	5.6
Brong Ahafo	44.0	5.8	6.1	43.8	0.3	100.0	60.2	(45.6)	44.2	831	4.0	*	5.9
Northern	48.8	30.5	1.9	18.2	0.5	100.0	96.8	(9.4)	33.7	985	2.5	(4.6)	4.1
Upper East	61.5	2.3	5.2	30.3	0.6	100.0	70.1	8.7	47.2	389	2.0	5.5	4.6
Upper West	70.6	0.6	4.0	23.4	1.4	100.0	56.0	10.7	31.7	298	2.0	3.8	3.9
Ecological zones													
Coastal	26.8	43.3	6.5	22.7	0.7	100.0	85.6	11.1	39.2	2,468	2.5	8.8	6.2
Forest	20.3	46.0	3.2	29.0	1.4	100.0	80.4	26.6	56.6	5,007	2.0	5.1	5.7
Savannah	42.9	34.8	2.4	19.2	0.7	100.0	84.2	6.7	30.6	2,947	2.0	5.0	4.7
Residence													
Urban	29.4	39.3	6.4	24.0	0.9	100.0	77.5	13.4	41.4	4,109	2.5	7.3	6.4
Rural	27.5	44.1	2.1	25.3	1.1	100.0	86.1	23.3	50.7	6,313	2.0	5.0	4.9
Education of household head													
None	33.4	37.8	1.9	26.0	0.9	100.0	85.7	18.1	43.9	2,895	2.5	4.3	4.6
Primary	28.4	44.8	2.5	23.4	0.9	100.0	85.8	(13.9)	46.1	1,361	2.0	(5.6)	6.0
Middle/JSS	22.3	49.3	3.6	23.4	1.4	100.0	82.7	21.8	52.5	4,100	2.0	7.4	5.8
Secondary +	32.4	32.4	7.6	26.7	0.8	100.0	76.3	12.0	42.8	2,067	2.5	7.0	6.3
Wealth index quintile													
Poorest	38.2	36.3	1.8	23.0	0.6	100.0	86.9	11.0	36.2	2,291	2.5	4.5	5.0
Second	22.4	47.1	1.4	27.7	1.3	100.0	86.5	(27.6)	56.7	2,398	2.0	(4.4)	5.0
Middle	22.7	49.7	2.5	24.0	1.1	100.0	79.4	32.4	56.1	2,265	2.0	(5.1)	5.6
Fourth	27.3	44.8	5.5	21.5	1.0	100.0	81.9	9.2	44.7	1,727	2.5	6.7	5.3
Richest	31.2	30.7	9.5	27.4	1.3	100.0	76.7	14.6	37.6	1,741	4.0	8.1	7.1
Total	28.2	42.2	3.8	24.8	1.1	100.0	82.8	16.7	47.1	10,422	2.2	6.6	5.5

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

Indoor Residual Spraying Against Mosquitoes

Indoor residual spraying (IRS) is the spraying of the interior walls of a dwelling with insecticide that has a long-lasting effect against mosquitoes. It reduces the transmission of malaria by killing adult female mosquitoes when they rest on the walls of the dwelling after feeding. Due primarily to cost and operations constraints, IRS is not targeted to all areas of the country. Within each targeted area, however, a high coverage of structures should be achieved in order to achieve the full entomologic and epidemiologic benefits of IRS. Ghana's policy sets this target at 90%.

Prior to the MICS2011 data collection period, IRS had been implemented in Ghana on a large scale by AngloGold Ashanti in the Obuasi area of Ashanti Region, and by PMI/GHS in nine districts of Northern Region. As mentioned, small-scale operations had also been conducted, at mines, plantations, housing estates, etc. at scattered locations elsewhere in the country.

Table MB.7 shows the percentage of households in which the dwelling's interior walls had been sprayed against mosquitoes (IRS) in the past 12 months, and the percentage of households with at least one ITN and/or IRS in the past 12 months by background characteristics. In Ghana as a whole, five percent of households had received IRS in the 12 months preceding the survey. In Northern Region, more than a third of households (36%) had been treated with IRS, making it the region where IRS was used more than other regions. Ashanti Region was second at 9 percent.

Table MB.7 also provides data on household coverage of ITNs and IRS counted together, because households are considered to be covered by vector control if they own at least one ITN and/or they had the interior walls of their rooms sprayed with IRS at any time in the past 12 months. Among all households, 49 percent had at least one ITN, while 51% of all households possessed an ITN and/or had received IRS.

Of note, in order to distinguish between IRS and common aerosol bug sprays (e.g. "Doom"), this table only includes IRS in those households in which the spraying was conducted by a government agency, an NGO, or a private company (contractor).

Table MB.7: Indoor residual spraying against mosquitoes				
Percentage of households in which someone has come into the dwelling to spray the interior walls against mosquitoes (IRS) in the past 12 months, and the percentage of households with at least one ITN and/or IRS in the past 12 months, Ghana, 2011				
Background Characteristics	Percentage of households with IRS1 in the past 12 months	Percentage of households with at least one ITN2	Percentage of households with at least one ITN2 and/or received IRS in the past 12 months [1]	Number of households
Region				
Western	2.0	42.7	44.4	1,116
Central	0.8	32.1	32.8	1,236
Greater Accra	1.5	25.5	26.4	2,321
Volta	0.0	85.4	85.4	992
Eastern	1.2	78.2	78.4	1,533
Ashanti	8.7	39.8	46.8	2,321
Brong Ahafo	0.8	53.4	54.0	1,011
Northern	36.0	67.2	76.2	727
Upper East	1.0	51.8	52.2	414
Upper West	0.2	60.7	60.7	253
Ecological zones				
Coastal	1.3	33.5	34.4	4,297
Forest	4.4	54.7	58.1	5,344
Savannah	11.8	64.2	67.2	2,284
Residence				
Urban	3.9	39.1	41.5	6,358
Rural	5.7	60.1	62.4	5,567
Education of household head				
None	8.1	51.3	54.0	2,997
Primary	3.5	50.8	52.4	1,560
Middle/JSS	3.1	49.7	51.9	4,590
Secondary +	4.5	43.9	46.7	2,775
Missing/DK	*	*	*	3
Wealth index quintile				
Poorest	10.2	65.9	68.6	1,763
Second	3.4	58.5	59.7	2,244
Middle	3.9	52.2	54.5	2,450
Fourth	4.3	41.0	44.2	2,639
Richest	3.4	35.2	37.7	2,829
Total	4.7	48.9	51.3	11,925

[1] MICS indicator 3.13

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.

Intermittent Preventive Treatment of Malaria in Pregnancy

In highly malaria-endemic areas, it is often health policy that pregnant women receive prophylactic treatment with the antimalarial drug SP/Fansidar once at the beginning of the second trimester of pregnancy and once at the beginning of the third trimester, preferably during routine antenatal care. Pregnant women who take malaria medicine only to treat an existing case of malaria are not considered to have received IPTp.

In the MICS 2011, women who had a live birth within the last two years were asked if they took any antimalarial drug during pregnancy at an ANC visit. Table MB.8 presents the percent of women aged 15-49 who had a live birth in the two years preceding the survey and who, during the pregnancy preceding the last birth, took any antimalarial drug for prevention, took one dose of SP/Fansidar, and those who received at least two doses of SP/Fansidar, i.e. that received intermittent preventive treatment (IPTp), by background characteristics. Among women with a live birth in the two years preceding the survey, 84 percent reported taking some type of antimalarial medicine to prevent getting malaria during the last pregnancy. Table MB.8 also shows that 83 percent of women took SP/Fansidar at least once during their pregnancy, compared with 58 percent in GDHS 2008. Overall, 65 percent of women took SP/Fansidar two or more times during an ANC visit.

The percentage of women taking IPTp did not vary much between women living in urban and rural areas but IPTp was highest among women with a Middle/JSS education and women in the fourth wealth quintile.

Figure MB.6 shows that the percentage of women who received IPTp increased from 44 percent in 2008 to 65 percent in 2011. The results show a marked increase between the two surveys, and are high by comparison to many other countries. Yet, they do not meet the 2011 national program's target of 85 percent coverage for IPTp among pregnant women.

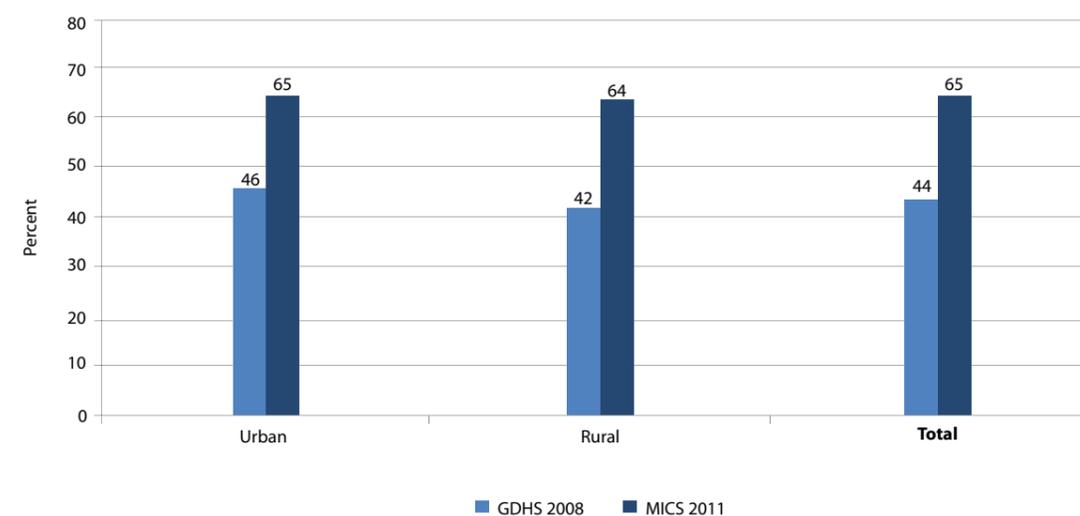
Note that, because the indicator for IPTp definition has changed over time, a direct comparison with the MICS 2006 data is not possible. In the MICS 2006, all women were asked if they took an antimalarial during pregnancy, but the information was not restricted to taking antimalarials during an ANC visit. The MICS 2011 did not collect information on women who took antimalarials during pregnancy outside of ANC visits. However, both GDHS 2008 and MICS 2011 asked women who had a birth in the two years preceding the survey, if they took antimalarial drugs during an ANC visit.

Table MB.8: Intermittent preventative treatment by women during pregnancy (IPTp)
Percentage of women age 15-49 with a live birth in the two years preceding the survey who, during an antenatal care visit preceding the last birth, received any antimalarial drug, received one or more doses of SP/Fansidar, and who received intermittent preventative treatment (IPTp), Ghana, 2011

Background Characteristics	Percentage who, during an ANC visit, took:			Number of women who had a live birth in the two years preceding the survey
	Any antimalarial drug	SP/Fansidar at least once	SP/Fansidar two or more times [1]	
Region				
Western	81.1	77.4	59.8	270
Central	85.0	82.0	65.0	246
Greater Accra	78.4	77.7	61.6	397
Volta	80.1	76.3	39.3	189
Eastern	92.5	91.5	71.4	288
Ashanti	92.6	92.6	75.0	449
Brong Ahafo	78.8	78.8	61.9	227
Northern	80.9	80.2	67.0	283
Upper East	79.2	78.5	69.4	105
Upper West	79.7	79.2	65.3	75
Ecological zones				
Coastal	80.6	79.3	61.1	754
Forest	87.3	85.7	66.8	1,095
Savannah	82.3	81.6	65.2	680
Residence				
Urban	82.9	81.7	65.3	1,068
Rural	84.7	83.4	64.2	1,460
Age				
15-24	84.5	82.8	59.4	620
25-34	85.3	84.2	68.6	1,264
35-49	80.7	79.6	62.1	645
Education				
None	77.0	76.0	60.0	733
Primary	86.2	84.2	63.1	565
Middle/JSS	88.4	87.1	69.1	886
Secondary +	83.5	82.8	65.8	344
Wealth index quintile				
Poorest	78.9	78.0	60.5	560
Second	81.3	78.5	60.1	546
Middle	86.8	86.2	63.8	500
Fourth	91.7	91.0	73.5	455
Richest	82.5	81.1	67.3	467
Total	84.0	82.7	64.6	2,528

[1] MICS Indicator 3.20

Figure MB.6: Trends in Intermittent Preventive Treatment (IPTp) by Women during Pregnancy, Ghana 2011



Prevalence, Diagnosis, and Treatment of Fever in Children Under-Five

Most fevers occur at home. When due to malaria, the fever can rapidly progress to severe illness if treatment is not received promptly. To promote effective management of febrile illness, the MOH and Ghana Health Service recommends (1) promptly evaluating and treating childhood fevers at a health facility; (2) obtaining a confirmatory blood test if the fever is suspected to be malaria; and (3) if the diagnosis is indeed malaria, treating promptly with an appropriate anti-malaria medication. Since 2004, the recommended first-line treatment for malaria has been artemisinin-based combination therapies (ACTs). ACTs are defined as antimalarial medicines that contain an artemisinin component as well as a second antimalarial drug component. The MOH/GHS has actively discouraged the use of “mono-therapies” such as chloroquine, SP/Fansidar, amodiaquine alone, or artesunate alone, due to concerns regarding clinical effectiveness and the development of drug resistance. In order to increase the availability of high-quality, affordable ACTs in the country, Ghana has since 2009 been piloting the Affordable Medicines Facility for Malaria (AMFm) program, with support from the Global Fund. All ACTs subsidized through the AMFm in Ghana are marketed under the “green leaf” label.

To assess the progress made in promoting these aspects of effective malaria treatment policy, the MICS 2011 asked women with children under age 5 a series of questions. They were asked if any of these children had a fever in the two weeks preceding the survey, and if so, whether any treatment was sought for the fever, and where the child was treated. Questions were also asked about blood testing, the types of drugs given to the child, and how soon and for how long the drugs were taken.

The Table MB.9 shows that 19 percent of children under -five years of age had a fever in the two weeks preceding the survey. It is noteworthy that the survey was conducted in the late rainy season, when malaria as well as many other types of childhood febrile illnesses, such as diarrhoeal and respiratory illnesses are common. Infants aged 0-11 months had a lower rate of two-week fever history (12%) than the older cohorts (20-22%). Also, prevalence of fever decreased steadily with increasing household wealth and mother’s education.

Among the children with a fever, treatment was sought for 50 percent of them from a health facility, health provider, or a pharmacy. Half of the children with fever were not taken anywhere for treatment. The table also shows that 16 percent of the febrile children were reported by their caregivers to have had a blood sample taken from their finger or heel for testing and 53 percent of children took an antimalarial drug, though fewer children (35%) took an antimalarial the same or next day. It follows that at least one-third of febrile children can be assumed to have been treated presumptively for malaria, without a blood test having been done.

Only 18 percent of children were recorded to have taken the recommended ACT, and 12 percent of children took the ACT the same or next day. However, due to an unresolved ambiguity in the questionnaire regarding the term "amodiaquine," it is suspected that the true rate of ACT use was significantly higher (this issue is described further in the next section). By 2015, the national objective is for 90 percent of children aged 3 months to five years with fever to receive an appropriate ACT within 24 hours.

The prevalence of fever was higher among rural children (22%) than their urban counterparts (15%), but treatment was sought from a health care provider for a larger percentage of urban children (54%) than rural children (47%) and children living in urban areas (28%) were twice as likely as their rural counterparts to have received ACT (13%). Urban children were also twice as likely as rural children to have taken an ACT the same or next day (19% and 8%, respectively). Compared to the average rate (50%), the least-educated and poorest quintiles of the population were only somewhat more likely to not have taken the child anywhere (57% and 62%, respectively).

Table MB.10 shows in detail which type of facility the febrile children had been taken to. It appears that 20 percent of children were taken to a government clinic or health centre, 12 percent were taken to a government hospital, 8 percent were taken to a private hospital or clinic, 6 percent were taken to a private pharmacy, chemical shop or other private source, and 3 percent were taken to a government health post, community-based health worker, or an outreach clinic. Urban residents were more likely than rural residents to have used a hospital (16 vs. 11%), private hospital/clinic (11% vs. 6%) or private shop (8% vs. 4%), whereas rural residents were slightly more likely to have used a government health centre (22% vs. 18%), and eight times as likely to have accessed a community-based public sector resource such as a CHPS compound (4% vs. 1%). According to the data, community-based treatment for malaria in Ghana was accessed in 6 to 13 percent of cases in the three northern regions where it has been promoted the most consistently, but was scarcely used elsewhere in the country in spite of on-going efforts to scale up this approach (Table MB.10).

Table MB.9: Prevalence, diagnosis and prompt treatment of children with fever

Percentage of children under age five years with fever in the two weeks preceding the survey; and among children under age five with fever, the percentage for whom advice or treatment was sought from a health facility, provider, or pharmacy; the percentage who had blood taken from a finger or heel, Ghana, 2011

Background Characteristics	Among children under age five years		Among children under age five years with fever						
	Percentage with fever in the two weeks preceding the survey	Number of children under age five years	Percentage for whom advice or treatment was sought from a health facility, provider or pharmacy ¹	Percentage who had blood taken from a finger or heel for testing [1]	Percentage who took ACT ^{2,3}	Percentage who took ACT same or next day ^{2,3}	Percentage who took antimalarial drugs [2]	Percentage who took antimalarial drugs same or next day ³	Number of children under age five years with fever
Sex									
Male	19.8	3,757	51.5	16.3	15.6	10.1	53.5	36.3	743
Female	18.0	3,793	47.1	15.4	21.1	13.7	51.5	33.4	685
Region									
Western	22.0	758	42.5	11.1	16.2	9.6	42.7	22.7	166
Central	20.2	740	39.3	7.4	19.3	14.4	42.8	35.6	149
Greater Accra	8.9	1,142	(55.9)	(11.4)	(30.0)	(19.1)	(63.2)	(36.9)	101
Volta	14.5	601	43.7	24.4	23.5	8.8	49.4	32.5	87
Eastern	10.5	827	(76.8)	(14.9)	(16.3)	(6.4)	(66.8)	(55.0)	87
Ashanti	16.1	1,411	51.0	16.5	21.3	15.9	65.7	42.8	227
Brong Ahafo	28.8	671	44.9	13.1	19.8	13.1	46.1	30.5	193
Northern	31.8	852	42.7	16.3	8.7	6.4	44.4	27.5	271
Upper East	24.8	325	68.8	35.9	27.3	20.8	72.7	51.3	81
Upper West	29.4	223	62.2	23.3	11.5	4.9	51.2	33.5	66
Ecological zones									
Coastal	11.6	2,296	51.5	9.2	28.9	18.5	55.2	35.9	265
Forest	17.6	3,211	46.2	15.3	16.5	11.0	53.1	36.5	566
Savannah	29.2	2,043	51.5	19.3	15.2	9.7	50.9	32.9	596
Residence									
Urban	15.1	3,283	53.9	14.2	27.6	19.0	63.6	43.7	494
Rural	21.9	4,267	47.0	16.7	13.3	8.0	46.8	30.2	933
Age in months									
0-11	11.7	1,543	44.6	13.8	7.0	5.4	36.4	24.2	180
12-23	20.4	1,453	54.9	18.2	17.7	11.2	49.7	31.8	297
24-35	22.0	1,553	48.3	15.3	23.8	15.9	60.7	38.7	342
36-47	20.3	1,576	49.5	15.8	21.0	12.6	56.4	39.6	321
48-59	20.2	1,426	47.8	15.4	16.2	10.7	51.6	35.0	288
Mother's education									
None	24.3	2,455	42.9	14.5	15.2	9.6	44.5	28.4	598
Primary	18.3	1,628	50.4	21.0	16.2	13.6	55.4	42.8	297
Middle/JSS	15.3	2,578	57.0	12.6	18.6	11.0	59.6	37.8	394
Secondary +	15.6	889	53.5	20.0	34.5	20.0	61.5	37.4	139
Wealth index quintile									
Poorest	26.0	1,730	38.1	14.2	9.5	7.0	41.4	26.7	449
Second	21.8	1,551	52.1	16.0	14.6	9.5	46.7	32.3	337
Middle	17.3	1,559	51.5	17.7	20.0	10.4	62.6	41.3	270
Fourth	16.1	1,397	60.1	16.8	29.0	20.5	63.0	44.3	225
Richest	11.1	1,313	57.4	15.8	33.9	21.3	65.8	39.6	145
Total	18.9	7,550	49.4	15.9	18.2	11.8	52.6	34.9	1,427

[1] MICS indicator 3.16

[2] MICS Indicator 3.18; MDG Indicator 6.8

[3] MICS Indicator 3.17

Figures in parentheses are based on 25-49 unweighted cases.

1 Excludes market, shop, traditional practitioner, drug peddlers, relatives or friends, other, DK, missing

2 Includes ACT and ACT with green leaf. The Affordable medicine facility for malaria (AMFm) is an internationally subsidized ACT through the Global Fund. The packaging has a hologram of a green leaf to identify the drugs as an AMFm.

3 The true proportion of ACT is suspected to be higher. Ghana's first-line ACT "Artesunate-Amodiaquine (AS/AQ)," is often referred to in popular parlance as "amodiaquine." The MICS data collection process failed to distinguish between AS/AQ and the unapproved monotherapy, "Amodiaquine." Thus a large but unknowable proportion of "Amodiaquine" responses should have been recorded as an ACT.

Table MB.10: Treatment of fever in children, by type of facility
Among children under age five years with fever in the two weeks preceding the survey, the percent distribution of the type of facility the child was taken to, Ghana, 2011

Background Characteristics	Among children under age five years with fever								
	Type of facility or person child was taken to								Number of children under age five years with fever
	Government hospital	Government clinic/ Health center	Government health post/ CHPS compound/ Other public sector	Private hospital/ clinic	Private pharmacy/ Chemical shop/ Other private	Other	Not taken anywhere	Total	
Sex									
Male	10.7	22.8	3.2	10.0	4.6	0.1	48.4	100.0	743
Female	14.2	17.8	2.9	5.7	6.5	0.5	52.4	100.0	685
Region									
Western	12.5	15.2	0.4	11.9	2.6	0.0	57.5	100.0	166
Central	19.0	9.5	0.7	3.0	7.1	0.8	60.0	100.0	149
Greater Accra	(15.1)	(16.2)	(0.0)	(9.8)	(14.8)	(0.0)	(44.1)	100.0	101
Volta	16.4	16.3	0.5	8.7	1.9	0.0	56.3	100.0	87
Eastern	(17.7)	(20.8)	(0.0)	(10.0)	(28.2)	(1.7)	(21.5)	100.0	87
Ashanti	14.7	18.7	0.0	13.7	3.9	0.0	49.0	100.0	227
Brong Ahafo	4.0	27.4	4.0	8.9	0.6	0.0	55.1	100.0	193
Northern	7.2	22.9	6.6	2.3	3.7	0.3	57.1	100.0	271
Upper East	20.9	29.6	9.6	7.9	0.8	0.6	30.6	100.0	81
Upper West	8.5	33.8	12.6	4.0	3.3	0.7	37.0	100.0	66
Ecological zones									
Coastal	17.0	15.6	0.4	9.1	9.5	0.4	48.0	100.0	265
Forest	13.0	15.6	0.1	11.8	5.6	0.0	53.8	100.0	566
Savannah	9.8	27.1	7.1	3.8	3.7	0.5	48.0	100.0	596
Residence									
Urban	15.7	18.3	0.6	11.2	8.2	0.0	46.1	100.0	494
Rural	10.6	21.6	4.4	6.3	4.1	0.5	52.6	100.0	933
Age in months									
0-11	13.1	17.4	3.4	4.7	6.1	0.0	55.4	100.0	180
12-23	14.9	20.1	2.6	12.5	4.8	0.7	44.4	100.0	297
24-35	11.1	22.8	4.9	7.2	2.3	0.4	51.3	100.0	342
36-47	10.4	21.5	2.6	7.6	7.3	0.2	50.3	100.0	321
48-59	13.2	18.7	1.7	6.6	7.6	0.2	52.1	100.0	288
Mother's education									
None	7.6	21.7	4.8	5.5	3.3	0.3	56.8	100.0	598
Primary	9.9	21.4	4.0	7.3	7.8	0.0	49.6	100.0	297
Middle/JSS	17.2	20.8	0.9	11.4	6.7	0.0	43.0	100.0	394
Secondary +	24.5	11.6	0.1	10.4	6.9	1.9	44.6	100.0	139
Wealth index quintile									
Poorest	4.6	22.7	6.2	1.9	2.6	0.3	61.5	100.0	449
Second	15.2	20.2	3.7	8.3	4.7	0.1	47.9	100.0	337
Middle	10.4	22.0	1.0	11.1	7.0	0.0	48.5	100.0	270
Fourth	19.0	20.6	0.2	13.3	7.0	0.0	39.9	100.0	225
Richest	23.6	10.9	0.0	11.8	11.2	1.8	40.8	100.0	145
Total	12.4	20.4	3.1	8.0	5.5	0.3	50.3	100.0	1,427

Figures in parentheses are based on 25-49 unweighted cases.

Type and Timing of Antimalarial Drug Use for Children

Details on the types and timing of antimalarial drugs given to children to treat fever are provided in Table MB.11. Overall, 24 percent of children under age 5 who had a fever in the two weeks preceding the survey were reported to have taken "amodiaquine," 18 percent some type of ACT, 11 percent "ACT with green leaf," 4 percent quinine, 1 percent took chloroquine, 1 percent took SP/Fansidar, and 6 percent took some other type of antimalarial drug.

The unexpectedly high figure for amodiaquine use is surprising. Taken at face value, the MICS data suggest that, of all children who took antimalarials for recent fever, 44 percent took "amodiaquine," including 55 percent of those given antimalarials at CHPS compounds, where compliance with national guidelines tends to be optimal. Unfortunately, it has emerged that the MICS data collection process did not distinguish adequately between "Artesunate-Amodiaquine," which is Ghana's widely available first-line official ACT product, on the one hand, and "Amodiaquine," which is a non-approved monotherapy, not widely favored due to perceived side effects. In popular parlance, "amodiaquine" is used as a shortened form of "Artesunate-amodiaquine," which appears to be the source of the error. Thus, analysis suggests strongly that a large, but unknown portion of the "amodiaquine" responses should have been recorded as "ACT." This would put the proportion of children with fever who took an ACT at somewhere between 18 and 42 percent.

In terms of timing of treatment, of those children who took any antimalarial, two thirds (35%/53%) took it on the same day or the day following the fever onset. This ratio applies also to those children who took ACTs (12%/18%).

Table MB.11: Type and timing of antimalarial drugs

Among children under age five years with fever in the two weeks preceding the survey, the percentage who took specific antimalarial drugs and the percentage who took each type of drug the same or next day after developing fever, Ghana, 2011

Background Characteristics	Percentage of children with fever who took antimalarial drugs, and the percentage who took antimalarial drugs the same or next day																Number of children under age five years with fever
	SP/Fansidar		Chloriquine		Amodiaquine		Quinine		Any ACT[1]		ACT with green leaf		Other antimalarial drugs		Any antimalarial drugs		
	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug	Same or next day	Took drug [1]	Same or next day[2]	
Sex																	
Male	1.4	0.6	1.0	0.9	26.6	19.8	4.4	2.4	15.6	10.1	8.9	6.2	5.9	3.4	53.5	36.3	743
Female	0.8	0.4	1.5	1.2	20.4	13.7	3.4	2.5	21.1	13.7	12.7	8.2	5.6	2.9	51.5	33.4	685
Region																	
Western	1.0	1.0	1.0	1.0	18.0	8.1	2.5	1.7	16.2	9.6	7.1	5.7	4.8	2.0	42.7	22.7	166
Central	0.6	0.6	1.3	1.3	15.8	12.9	0.8	0.8	19.3	14.4	10.0	6.5	6.5	6.1	42.8	35.6	149
Greater Accra	(0.0)	(0.0)	(0.0)	(0.0)	(13.8)	(6.9)	(0.0)	(0.0)	(30.0)	(19.1)	(27.6)	(16.7)	(21.4)	(12.9)	(63.2)	(36.9)	101
Volta	2.7	2.0	0.0	0.0	22.5	20.2	1.0	1.0	23.5	8.8	15.6	6.9	1.0	1.0	49.4	32.5	87
Eastern	(0.0)	(0.0)	(6.6)	(6.6)	(41.7)	(39.8)	(0.0)	(0.0)	(16.3)	(6.4)	(7.7)	(4.5)	(2.2)	(2.2)	(66.8)	(55.0)	87
Ashanti	1.1	0.0	0.9	0.0	29.0	23.4	5.1	2.0	21.3	15.9	15.8	10.4	8.4	1.5	65.7	42.8	227
Brong Ahafo	1.8	0.0	0.0	0.0	19.2	12.7	3.3	3.3	19.8	13.1	6.3	5.8	2.0	1.3	46.1	30.5	193
Northern	0.8	0.6	1.1	0.8	24.8	14.3	7.5	4.5	8.7	6.4	4.6	3.1	3.4	2.7	44.4	27.5	271
Upper East	2.6	1.1	3.1	3.1	30.9	22.4	9.2	6.1	27.3	20.8	15.9	13.0	5.8	2.3	72.7	51.3	81
Upper West	1.6	1.2	1.9	1.7	28.7	21.5	5.2	2.9	11.5	4.9	7.3	3.5	5.1	3.8	51.2	33.5	66
Ecological zones																	
Coastal	0.2	0.2	0.3	0.3	12.0	7.8	0.8	0.8	28.9	18.5	19.9	12.5	14.6	9.4	55.2	35.9	265
Forest	0.8	0.3	1.6	1.3	27.3	21.2	3.1	1.6	16.5	11.0	9.2	6.0	3.9	1.2	53.1	36.5	566
Savannah	1.8	0.8	1.3	1.2	25.2	16.7	6.0	3.9	15.2	9.7	8.1	5.8	3.5	2.4	50.9	32.9	596
Residence																	
Urban	0.2	0.2	1.2	1.0	21.4	17.0	4.9	2.9	27.6	19.0	19.7	14.0	9.4	4.3	63.6	43.7	494
Rural	1.6	0.7	1.3	1.1	24.7	16.7	3.3	2.2	13.3	8.0	6.0	3.5	3.8	2.6	46.8	30.2	933
Age in months																	
0-11	0.1	0.0	0.3	0.3	20.2	15.2	2.9	1.5	7.0	5.4	1.3	0.8	6.2	2.0	36.4	24.2	180
12-23	0.6	0.4	0.6	0.5	22.7	14.1	4.0	3.0	17.7	11.2	9.3	5.4	7.5	5.1	49.7	31.8	297
24-35	1.8	0.9	0.4	0.4	23.0	16.1	6.1	3.2	23.8	15.9	14.7	10.3	6.6	3.0	60.7	38.7	342
36-47	0.7	0.7	2.2	2.0	27.1	20.3	2.2	1.9	21.0	12.6	14.6	9.1	4.0	2.6	56.4	39.6	321
48-59	1.9	0.3	2.6	1.9	23.4	17.7	3.6	2.2	16.2	10.7	9.0	7.0	4.6	3.0	51.6	35.0	288
Mother's education																	
None	1.1	0.8	0.9	0.9	20.1	13.3	5.4	3.7	15.2	9.6	9.8	5.5	3.4	1.5	44.5	28.4	598
Primary	1.0	0.8	3.3	2.4	27.1	20.7	2.1	1.9	16.2	13.6	10.8	9.5	6.5	4.3	55.4	42.8	297
Middle/JSS	1.6	0.1	0.6	0.6	29.3	21.6	2.8	1.0	18.6	11.0	9.7	6.0	7.7	4.0	59.6	37.8	394
Secondary +	0.0	0.0	0.5	0.5	15.0	10.2	4.3	2.3	34.5	20.0	17.6	12.5	8.7	5.8	61.5	37.4	139
Wealth index quintile																	
Poorest	2.0	1.0	1.6	1.6	22.0	13.5	6.0	4.0	9.5	7.0	6.0	4.5	2.4	1.2	41.4	26.7	449
Second	1.9	0.7	2.4	1.8	21.5	15.6	2.0	1.5	14.6	9.5	6.6	3.4	5.5	4.4	46.7	32.3	337
Middle	0.2	0.2	1.1	0.8	35.1	28.1	3.1	0.4	20.0	10.4	8.8	4.5	3.5	1.3	62.6	41.3	270
Fourth	0.0	0.0	0.0	0.0	23.3	18.0	2.8	1.6	29.0	20.5	22.4	15.2	8.9	4.5	63.0	44.3	225
Richest	0.0	0.0	0.0	0.0	12.3	7.1	5.1	4.5	33.9	21.3	20.4	16.4	15.9	8.0	65.8	39.6	145
Total	1.1	0.5	1.3	1.1	23.6	16.8	3.9	2.4	18.2	11.8	10.7	7.1	5.7	3.2	52.6	34.9	1,427

[1] MCS Indicator 3.18; MDG Indicator 6.8

[2] MICS Indicator 3.17

Figures in parentheses are based on 25-49 unweighted cases.

Knowledge of Malaria Symptoms

To assess basic knowledge about malaria, all women and men interviewed in the MICS 2011 were asked if they could name any symptoms of malaria. The combined results are shown in Table MB.12 for women and men aged 15-49 years of age. Percentages may sum to more than 100 percent because respondents could give more than one response.

The table shows that 96 percent of the women and men aged 15-49 years were able to list at least one malaria symptom. While 60 percent of women and men stated that a person's body temperature rises and the person feels hot, 40 percent said there is weakness in the body, 35 percent of women and men listed vomiting as a symptom and 33 said that a strong headache is a symptom, 26 percent said that chills are a symptom and 25 percent said that loss of appetite is a symptom. Interestingly, with increasing wealth and education, there was only a marginal trend, if any, towards more accurate responses (such as fever as a symptom, and cough not a symptom).

Background Characteristics	Symptoms or signs of malaria infection											Number of women and men
	Hot body fever	Vomiting	Strong headache	Loss of appetite	Weakness of body	Cough	Chills	Bitterness in the mouth	Other	Any symptom	Does not know any	
Sex												
Male	60.2	33.2	35.1	27.1	39.9	3.1	26.6	19.6	18.7	96.6	3.5	5,965
Female	60.3	37.3	30.9	23.7	40.3	3.0	25.9	22.7	23.5	96.2	3.8	7,108
Region												
Western	71.7	19.0	43.1	23.5	38.1	1.1	33.1	28.8	19.2	97.8	2.4	1,317
Central	53.5	27.4	32.4	19.5	33.8	2.8	38.1	27.1	19.5	98.7	1.3	1,229
Greater Accra	60.3	43.1	41.4	35.0	43.9	4.7	34.4	25.8	17.3	97.4	2.6	2,618
Volta	46.7	47.2	45.8	20.0	34.1	1.9	25.5	13.4	26.1	98.9	1.8	1,018
Eastern	59.8	45.3	25.3	32.2	41.9	4.1	24.5	35.7	18.4	98.9	1.1	1,486
Ashanti	62.4	31.5	22.8	27.1	44.0	1.5	16.7	20.5	27.3	94.2	5.8	2,431
Brong Ahafo	52.0	34.4	23.4	20.1	34.5	3.9	24.8	8.7	22.4	89.3	10.7	1,180
Northern	64.0	28.5	31.7	10.9	42.5	2.7	19.0	5.4	23.6	95.7	4.3	948
Upper East	71.5	37.1	27.6	11.1	35.7	3.3	14.5	6.0	19.7	97.5	2.5	489
Upper West	68.3	40.2	37.2	26.8	45.1	6.0	13.4	12.5	13.7	97.6	2.5	356
Ecological zones												
Coastal	59.8	38.7	41.0	29.6	40.7	3.6	33.6	25.1	20.3	98.3	1.7	4,668
Forest	60.4	33.7	28.0	25.6	40.7	2.6	24.5	23.1	22.2	95.7	4.5	5,571
Savannah	60.7	33.5	28.8	17.2	38.3	3.1	17.3	11.3	21.1	94.9	5.2	2,834
Residence												
Urban	61.9	38.1	35.2	28.8	44.5	3.7	29.3	22.3	20.3	97.5	2.5	6,993
Rural	58.4	32.4	30.1	21.1	35.1	2.3	22.7	20.1	22.4	95.2	4.9	6,080
Age												
15-24	55.8	39.2	31.4	22.8	36.4	2.8	24.7	15.7	21.1	94.5	5.5	4,523
25-34	62.2	34.4	32.4	27.0	40.0	2.9	26.8	22.6	21.2	97.2	2.8	4,126
35-49	63.0	32.6	34.6	26.0	44.2	3.4	27.2	25.7	21.5	97.7	2.5	4,424
Education												
None	61.6	28.2	26.3	16.8	36.0	2.5	17.0	13.8	21.9	92.6	7.4	2,160
Primary	55.6	29.8	26.7	20.6	36.4	2.2	22.3	20.1	23.8	94.2	6.0	2,138
Middle/JSS	57.1	38.2	30.6	26.0	39.6	2.7	27.5	24.9	22.1	97.2	2.9	5,610
Secondary +	68.1	39.3	45.2	32.7	46.6	4.6	33.0	20.8	17.8	99.2	0.8	3,164
Wealth index quintile												
Poorest	60.0	28.1	26.6	14.7	33.4	2.6	15.7	9.4	22.4	92.7	7.6	2,035
Second	55.8	31.5	27.6	21.1	35.0	3.1	23.0	21.0	23.4	94.8	5.2	2,232
Middle	56.8	40.7	30.6	23.9	39.1	1.6	25.6	24.5	24.4	97.4	2.7	2,550
Fourth	62.1	35.3	33.2	27.5	42.1	2.1	29.7	22.5	21.2	97.3	2.7	2,964
Richest	64.5	38.7	41.5	33.4	47.0	5.2	32.1	25.2	16.8	98.2	1.8	3,293
Total	60.3	35.4	32.8	25.2	40.2	3.0	26.2	21.3	21.3	96.4	3.6	13,073

Knowledge of Causes of Malaria

Women and men were also asked during the survey if they know any causes of malaria. Those who responded that they knew any cause of malaria were asked to name specific causes. Table MB.13 shows responses provided by women and men aged 15-49 years. There are various messages and beliefs as to what causes malaria. Table MB.13 divides the responses into three categories: correct cause of malaria, partially correct causes, and incorrect beliefs in what causes malaria. In this table as well, percentages may sum to more than 100 percent because respondents could give more than one response.

Overall, 86 percent of women and men correctly identified mosquito bites as a cause of malaria, and 6 percent correctly identified the malaria parasite, *Plasmodium falciparum*, as the cause of malaria. A third (32%) of women and men state that weedy surroundings and stagnant water cause malaria.

Remarkably, more than half of women and men (56 %) stated that dirty surroundings cause malaria. This is a common misconception in Ghana. In reality, although non-malaria bearing mosquitoes, such as *Culex*

and *Aedes* may breed and be found in polluted surroundings such as urban centers, however, the malaria-bearing species *Anopheles* prefers water free of organic or chemical pollution, and does not thrive in such settings. Interestingly, the wealthiest, best-educated and urban respondents focused the most on dirty surroundings as an alleged cause of malaria.

Background Characteristics	Correct Mosquito bites	Partly correct Malaria parasite (p. falciparum)	Incorrect						Does not know any	Number of women and men
			Weedy surroundings and stagnant water	Dirty surroundings	Eating contaminated food	Standing / working in the sun	Eating sweet foods	Other		
Sex										
Male	85.7	8.7	34.2	58.4	16.2	14.2	2.8	6.3	1.6	5,965
Female	85.9	3.0	29.9	54.6	19.1	12.1	2.1	9.2	2.2	7,108
Region										
Western	89.2	1.9	31.1	57.4	15.9	6.0	3.9	7.3	0.9	1,317
Central	85.5	1.3	33.3	62.9	22.1	10.0	5.1	9.5	0.6	1,229
Greater Accra	89.2	14.1	44.0	67.4	19.2	9.2	1.4	7.6	0.6	2,618
Volta	89.8	1.1	17.4	26.5	20.8	37.3	0.9	9.1	2.2	1,018
Eastern	87.7	1.9	39.4	66.8	18.4	20.8	1.2	5.0	0.6	1,486
Ashanti	80.7	7.2	29.9	57.6	20.3	3.9	1.8	12.1	2.0	2,431
Brong Ahafo	83.5	5.4	31.4	57.3	11.3	9.1	3.8	5.8	6.4	1,180
Northern	79.8	2.8	13.7	36.5	12.3	29.7	2.1	4.1	5.3	948
Upper East	84.4	2.2	16.2	41.2	15.9	8.9	3.9	4.7	1.2	489
Upper West	90.0	2.5	35.2	50.8	10.4	14.0	1.4	7.3	1.8	356
Ecological zones										
Coastal	88.4	8.4	39.5	62.5	20.8	12.7	2.5	8.5	0.6	4,668
Forest	85.4	4.9	30.9	58.3	17.3	10.2	2.3	8.9	1.9	5,571
Savannah	82.3	2.3	21.1	42.1	13.7	19.2	2.5	5.0	4.3	2,834
Residence										
Urban	87.3	8.0	36.2	61.7	17.6	9.4	2.1	8.0	1.1	6,993
Rural	84.0	2.8	26.9	50.1	18.1	17.2	2.8	7.8	2.9	6,080
Age										
15-24	83.5	5.5	33.2	53.4	15.5	8.3	2.2	6.0	2.4	4,523
25-34	86.4	7.4	32.7	57.0	17.9	13.9	1.7	9.0	1.3	4,126
35-49	87.5	4.0	29.7	58.6	20.0	17.2	3.2	8.8	2.0	4,424
Education										
None	79.2	2.8	17.6	42.2	17.1	21.0	2.7	6.1	6.5	2,160
Primary	83.3	1.7	22.9	47.7	19.4	16.0	2.7	8.5	3.6	2,138
Middle/JSS	86.0	4.1	34.5	61.8	20.9	12.8	2.7	8.9	0.6	5,610
Secondary +	91.6	12.8	43.0	62.0	11.8	6.1	1.3	6.9	0.1	3,164
Wealth index quintile										
Poorest	79.7	1.9	17.3	37.5	14.2	21.2	2.3	4.9	5.5	2,035
Second	85.1	1.9	26.6	51.8	20.6	17.5	2.8	8.5	2.4	2,232
Middle	85.6	4.8	30.4	57.7	20.7	14.3	3.4	8.4	1.7	2,550
Fourth	87.3	6.4	32.9	59.7	19.0	11.0	2.2	9.3	1.1	2,964
Richest	88.8	10.3	44.6	66.8	14.8	5.9	1.5	7.6	0.4	3,293
Total	85.8	5.6	31.9	56.3	17.8	13.1	2.4	7.9	1.9	13,073

Knowledge of ways to avoid Malaria

Women and men were also asked if they know of ways to avoid getting malaria. Those who know ways to avoid getting malaria were further asked to name specific ways. Table MB.14 shows the responses provided by women and men aged 15 - 49 years. Respondents could give more than one response so the figures may sum to more than 100 percent.

Nationally, 48 percent of women and men said that sleeping under an ITN can help to avoid the risk of getting malaria, and 28 percent said that sleeping under any net can help a person avoid malaria. About a quarter of women and men said that filling in stagnant water and avoiding mosquito bites can reduce the risk of malaria. One in four women and men said that using repellent can help to avoid malaria.

Again, it is remarkable that such a high proportion of respondents focused on “keep surroundings clean” as a means to protect from malaria. Although, as mentioned, filth in the environment does not promote Anopheles breeding (in fact, the opposite is true), 59 percent of women and men said that keeping surroundings clean helps to avoid malaria. Once more, the wealthiest, best-educated and urban respondents were more likely to give this incorrect answer. For example, a far higher proportion of the richest Ghanaians (71%) identified “keeping surroundings clean” as a way to protect from malaria, than well established methods such as sleeping under an ITN (55%) or putting mosquito screens in the window (4%). Also of note is the seeming disconnect between the overall percentage which had earlier identified mosquito bites as a cause of malaria (89%) and the percentage who reported “avoid mosquito bites” as a means of protection (24%).

Table MB.14: Knowledge of ways to protect from Malaria											
Among women and men age 15-49 the percentage who cite specific ways to protect from malaria infection, Ghana, 2011											
Background Characteristics	More accurate										Number of women and men
	Sleep under mosquito net	Sleep under ITN	Use repellent	Avoid mosquito bites	Fill in stagnant waters	Put mosquito screen in window	Clear weeds around the house	Keep surroundings clean	Other	Does not know any	
Sex											
Male	28.2	52.7	25.2	26.9	26.4	3.9	20.2	60.3	12.9	1.7	5,965
Female	27.9	43.9	16.5	21.9	22.7	1.6	16.8	58.2	17.5	3.3	7,108
Region											
Western	25.0	46.2	16.4	16.4	12.6	1.6	15.2	58.1	9.7	0.7	1,317
Central	42.6	30.1	17.9	14.4	25.4	2.0	19.9	60.6	23.3	0.8	1,229
Greater Accra	23.5	57.8	41.3	40.0	36.6	2.7	19.6	71.1	13.9	0.8	2,618
Volta	34.5	52.9	14.8	21.8	16.7	0.2	9.9	35.4	23.2	3.2	1,018
Eastern	35.3	48.7	26.4	32.8	22.2	6.6	19.8	64.1	9.1	0.6	1,486
Ashanti	19.8	49.2	12.1	19.0	27.3	4.1	19.4	64.7	21.0	2.4	2,431
Brong Ahafo	25.7	41.1	10.7	16.8	28.3	1.1	33.6	58.7	14.4	8.2	1,180
Northern	26.7	45.8	12.2	22.1	12.2	0.7	7.1	40.0	11.7	8.5	948
Upper East	33.1	43.8	10.0	13.0	11.9	1.5	11.1	44.1	6.8	2.0	489
Upper West	33.2	51.4	8.6	22.9	23.6	1.6	15.9	53.0	11.0	1.9	356
Ecological zones											
Coastal	29.5	49.2	33.3	31.7	29.8	2.5	18.3	64.4	16.3	0.9	4,668
Forest	26.7	48.0	14.5	19.9	23.9	3.4	20.7	60.8	17.2	2.1	5,571
Savannah	28.3	45.8	11.2	20.3	16.4	1.4	13.9	47.4	10.5	6.3	2,834
Residence											
Urban	25.5	50.0	26.1	27.9	28.7	2.7	19.5	65.8	15.3	1.5	6,993
Rural	30.9	45.6	14.0	19.9	19.5	2.6	17.1	51.5	15.5	3.8	6,080
Age											
15-24	28.6	47.2	19.6	19.4	27.0	1.3	18.4	57.8	14.9	2.9	4,523
25-34	26.3	52.5	21.3	24.4	22.8	2.9	18.2	58.5	15.8	2.2	4,126
35-49	29.0	44.5	20.6	29.0	23.3	3.8	18.4	61.1	15.5	2.5	4,424
Education											
None	27.1	40.7	11.0	20.9	10.4	1.4	10.7	44.8	12.7	8.7	2,160
Primary	28.9	39.7	15.3	23.5	16.2	1.9	14.3	50.1	16.9	4.8	2,138
Middle/JSS	27.8	45.7	21.5	25.0	25.8	2.7	19.5	63.9	17.4	0.8	5,610
Secondary +	28.5	62.4	28.6	25.5	37.0	4.0	24.2	66.7	12.6	0.1	3,164
Wealth index quintile											
Poorest	30.3	42.1	7.5	17.8	13.0	1.0	13.0	40.5	12.7	8.0	2,035
Second	30.5	44.1	13.6	20.7	19.5	1.5	15.5	52.9	16.7	3.1	2,232
Middle	31.2	45.6	20.7	21.7	21.9	3.7	18.0	59.8	18.2	1.9	2,550
Fourth	26.5	49.1	23.9	25.3	26.3	2.0	20.2	62.5	15.4	1.3	2,964
Richest	23.9	55.0	29.9	31.5	35.0	4.3	22.2	71.4	14.1	0.5	3,293
Total	28.0	48.0	20.5	24.2	24.4	2.7	18.4	59.2	15.4	2.6	13,073

Specific Messages Seen or Heard about Malaria

In the Mics 2011 survey, women and men age 15–49 were asked about various media messages that address the topic of preventing and treating malaria. For respondents who had heard of any messages, they were asked specifically which messages they had heard and the source of the messages. Tables MB. 15 and MB. 16 present data related to specific messages from national communication campaigns, by the NMCP and its partners. The first set of message promoted ITNs and general knowledge about malaria. The second set of message promoted the “ACT with green leaf” type of malaria medications, which as mentioned earlier, is the marketing brand for the subsidized ACTs provided through Ghana’s AMFM pilot program (i.e., the Affordable Medicines Facility - Malaria).

Women and men aged 15–49 who had heard or seen any messages on malaria within the past six months were directly asked if they had heard or seen the following specific messages, and where they heard or seen these messages:

- Nana Boro’s (a popular singer) “Aha ye de-ntontom be wu” music video/song
- Advert (humorous) where a woman does not want to stay the night with the man unless he has a treated net
- Short documentaries featuring the true stories of Ghanaian families and children suffering epilepsy and learning disabilities due to severe malaria
- Advert where people from all walks of life are sleeping under treated nets

Table MB.15 presents data for women and men aged 15–49 who had heard or seen any of the above-mentioned messages on malaria during the six months preceding the survey, disaggregated by whether they heard or saw the messages on the television, radio, or both, by background characteristics. It appears all messages on malaria were more seen on the television than heard on the radio. Almost half (49%) of women and men reported seeing the advert “where a woman doesn’t want to stay the night with the man unless he has a treated net” on the television and 42 percent of women and men reported seeing on television the short documentaries about the effect of epilepsy and learning disabilities that severe malaria may cause. A third of the respondents (34%) reported that they saw the Nana Boro music video and the “advert where people from all walks of life sleep under a treated net”.

A smaller percentage of women and men reported hearing the same messages on the radio. For example, 13 percent of women had heard the Nana Boro song on the radio, and 4 percent of respondents had heard the remaining messages on the radio. Data are also presented for women and men who saw any of the specific malaria messages on the television, and/or heard them on the radio. The data indicate that a small percentage of women and men had seen or heard the messages on malaria on both the television and the radio. Also, 9 percent of women and men saw and heard the Nano Boro music video or song on the television and radio. Only 2 percent of women and men had both seen or heard the remaining malaria messages through both forms of media. The data indicate that these messages were seen mostly on television.

Background Characteristics	Nana Boro’s “Aha ye de-ntontom be wu” Music video/song			Advert where woman doesn’t want to stay the night with the man unless he has a treated net			Short documentaries featuring the true stories of Ghanaian families, children suffering epilepsy and learning disabilities due to severe malaria			Advert where people from all walks of life are sleeping under treated nets			Number of women and men who have seen or heard a message about malaria in the past six months
	TV	Radio	TV and radio	TV	Radio	TV and radio	TV	Radio	TV and radio	TV	Radio	TV and radio	
Sex													
Male	31.2	14.7	9.7	44.3	4.5	2.1	34.5	4.8	2.1	27.6	4.2	1.8	3,582
Female	35.6	12.1	8.5	52.7	2.7	1.1	49.3	2.6	1.1	39.6	2.5	1.3	3,915
Region													
Western	28.8	15.1	6.5	40.1	0.9	0.0	38.3	0.9	0.3	25.8	1.4	0.0	878
Central	27.5	16.1	2.5	39.4	12.3	1.0	39.4	14.0	2.0	40.3	12.5	3.3	811
Greater Accra	47.6	6.4	9.9	68.0	0.6	0.4	69.8	0.7	0.4	44.7	0.1	0.4	2,049
Volta	19.5	22.6	5.9	29.3	6.1	0.0	24.2	5.2	0.1	28.1	2.6	2.0	310
Eastern	28.2	15.3	18.1	40.6	4.6	0.8	29.0	3.7	2.3	24.4	4.8	0.9	847
Ashanti	30.0	16.0	12.8	49.0	3.2	5.9	28.2	3.7	4.4	31.2	3.5	3.8	1,581
Brong Ahafo	29.9	13.4	1.9	42.7	3.3	0.2	33.4	3.3	0.0	31.5	1.2	0.0	437
Northern	33.1	15.2	3.5	41.2	4.3	0.0	40.3	3.4	0.3	31.4	4.2	0.5	286
Upper East	20.0	20.4	2.5	23.1	5.3	0.0	19.1	4.8	0.2	18.7	1.3	0.1	162
Upper West	20.7	11.5	3.0	23.8	2.2	0.6	16.8	0.9	0.2	16.7	4.9	0.8	135
Ecological zones													
Coastal	42.8	9.2	8.4	59.9	3.3	0.4	58.9	3.8	0.7	41.9	3.2	1.0	3,341
Forest	26.2	16.1	10.9	42.0	3.1	3.0	29.0	3.5	2.9	27.5	3.4	2.4	3,162
Savannah	25.3	18.5	5.2	32.2	5.7	0.8	28.4	3.7	0.3	27.0	3.1	0.3	993
Residence													
Urban	41.2	10.1	10.0	58.2	1.7	1.4	52.3	2.1	1.2	40.3	1.5	1.4	4,800
Rural	19.9	19.1	7.4	31.6	6.9	1.9	24.4	6.3	2.3	22.3	6.4	1.8	2,697
Age													
15-24	38.3	11.3	9.9	53.4	2.6	1.4	39.5	2.5	1.1	34.2	2.6	1.2	2,311
25-34	32.8	13.7	9.9	50.1	3.9	2.0	45.8	3.0	1.6	33.6	3.3	1.5	2,579
35-49	29.9	14.8	7.5	43.0	4.0	1.3	41.1	5.4	2.0	33.8	3.8	1.8	2,607
Education													
None	17.2	20.3	5.0	24.2	6.3	0.2	24.9	6.6	0.5	18.8	6.6	0.7	647
Primary	29.9	18.2	4.1	39.2	6.7	0.0	36.0	7.6	1.3	28.0	6.2	0.8	924
Middle/JSS	31.2	14.5	9.5	47.7	2.9	2.0	41.7	3.0	1.9	34.5	3.1	1.6	3,304
Secondary +	41.6	8.4	11.3	59.2	2.5	1.9	49.5	2.4	1.5	38.8	1.7	1.8	2,622
Wealth index quintile													
Poorest	5.5	32.1	1.7	8.3	10.1	0.0	5.7	7.6	0.1	7.9	8.1	0.0	541
Second	13.5	22.4	3.0	25.4	6.3	0.1	19.3	7.0	0.2	16.6	7.0	1.0	835
Middle	27.0	17.6	7.1	37.9	5.2	1.7	27.7	6.6	3.7	27.8	5.5	2.8	1,392
Fourth	37.9	11.8	10.6	52.4	3.1	2.1	45.9	2.4	2.3	36.7	2.1	1.8	1,965
Richest	45.1	5.8	12.3	66.3	0.9	1.9	61.0	1.3	0.7	45.2	1.0	1.1	2,764
Total	33.5	13.3	9.1	48.7	3.5	1.6	42.2	3.7	1.6	33.8	3.3	1.5	7,496

Women and men aged 15-49 years were asked whether they had heard or seen any advert on the use of ACT with green leaf or not. If the respondent replied in the affirmative, the person was asked where.

Table MB.16 presents data on the percentage of women and men aged 15-49 years who had seen or heard any advert on the use of ACT with green leaf in the six months preceding the survey according to media source, and background characteristics. Since the respondent could cite more than one media source the percentage may sum to more than 100 percent. Overall, 43 percent of women and men had seen or heard an advert on the use of ACT with green leaf. The majority of women and men had seen an advert about ACT with green leaf on television (78 percent). Less than half of women and men (45%) had heard an advert about ACT with green leaf on the radio. Also, 4 percent had seen a poster, and 3 percent a billboard, while 5 percent of respondents reported other unspecified sources. Interestingly, although more respondents recalled messages on TV as compared to radio (78% vs. 45%), for the poorest quintile which has the highest malaria prevalence, TV was much less important than radio (19% vs. 77%).

Table MB.16: Knowledge of ACT with green leaf to treat malaria, and source of message											
Among women and men age 15-49 the percentage who have seen/heard any advert on the use of ACT with green leaf in the preceding six months, the percentage who cite specific media sources, Ghana, 2011											
Background Characteristics	Percentage of women and men who have seen/heard any advert on ACT with green leaf	Number of women and men	Among women and men who have seen/heard any advert on ACT with green leaf, percentage who cite the following sources:							Does not know/remember where	Number of women and men who have seen/heard any advert on ACT with green leaf
			TV	Radio	News-paper	Poster	Billboard	Other			
Sex											
Male	43.7	5,965	73.8	48.8	2.4	3.5	3.2	3.6	0.0	2,608	
Female	42.3	7,108	81.9	41.0	1.2	5.0	2.1	5.9	0.3	3,003	
Region											
Western	45.5	1,317	72.2	40.4	0.3	6.0	0.6	3.9	0.0	599	
Central	47.8	1,229	66.7	39.8	0.1	5.0	0.9	6.3	0.0	587	
Greater Accra	70.4	2,618	90.5	42.9	3.3	3.9	1.2	1.8	0.1	1,844	
Volta	17.2	1,018	72.0	52.8	1.1	3.8	2.9	3.9	0.0	175	
Eastern	41.2	1,486	73.9	55.9	2.1	4.0	2.0	2.9	0.0	612	
Ashanti	47.4	2,431	79.1	43.4	0.2	3.3	6.7	8.1	0.6	1,153	
Brong Ahafo	23.0	1,180	71.0	36.3	5.6	8.2	6.3	6.8	0.0	272	
Northern	16.5	948	68.1	37.1	0.0	4.7	0.9	11.2	0.1	157	
Upper East	24.5	489	44.8	70.0	0.2	1.8	1.6	10.0	0.0	120	
Upper West	25.9	356	51.7	66.3	0.6	0.7	0.7	9.8	0.7	92	
Ecological zones											
Coastal	59.4	4,668	86.1	41.3	2.2	4.4	1.1	2.4	0.0	2,772	
Forest	39.5	5,571	73.9	46.1	1.1	4.6	4.4	6.3	0.3	2,202	
Savannah	22.5	2,834	58.2	53.9	1.7	2.4	3.2	10.0	0.1	637	
Residence											
Urban	56.1	6,993	86.2	40.5	2.1	4.5	2.5	4.1	0.1	3,920	
Rural	27.8	6,080	59.4	54.2	0.8	3.7	2.9	6.6	0.2	1,690	
Age											
15-24	37.0	4,523	85.1	37.0	0.7	3.5	2.2	4.7	0.3	1,672	
25-34	48.3	4,126	76.9	44.1	2.7	4.8	3.4	5.1	0.2	1,995	
35-49	43.9	4,424	73.4	51.7	1.7	4.4	2.1	4.6	0.0	1,944	
Education											
None	17.5	2,160	47.2	55.9	0.1	1.9	2.7	8.0	0.0	378	
Primary	29.6	2,138	70.0	48.0	0.0	3.1	1.6	5.0	0.8	634	
Middle/JSS	41.3	5,610	75.5	44.4	0.6	4.1	2.1	4.9	0.0	2,318	
Secondary +	72.1	3,164	88.2	41.9	3.7	5.2	3.4	4.1	0.2	2,281	
Wealth index quintile											
Poorest	14.3	2,035	18.6	77.2	0.2	3.0	6.0	9.9	0.2	291	
Second	19.0	2,232	50.3	55.6	0.5	7.2	0.6	5.3	0.8	424	
Middle	34.3	2,550	63.2	48.9	0.1	3.8	1.3	5.9	0.4	874	
Fourth	52.9	2,964	83.9	39.8	0.7	3.3	3.0	4.5	0.0	1,568	
Richest	74.5	3,293	91.6	40.4	3.4	4.7	2.7	3.9	0.0	2,453	
Total	42.9	13,073	78.1	44.6	1.7	4.3	2.6	4.8	0.2	5,611	

Malaria Biomarkers: Anaemia and Malaria in Children Aged 6-59 Months

The MICS 2011 incorporated three “malaria biomarkers,” namely: anaemia testing, malaria testing using rapid diagnostic tests (RDTs), and thick blood smear samples prepared on microscope slides. After obtaining informed consent from caregivers, blood samples were obtained from a heel- or finger-prick of children aged 6- 59 months to perform on-the-spot anaemia and malaria tests, and to prepare thick blood smears that were later transported and read in the laboratory at NHRC to determine the presence of malaria parasites. The microscopy was used as the gold standard to obtain prevalence rates. Rapid diagnostic test was utilized primarily for ethical reasons, in order to identify and treat malaria in participating children while in the field. The methods used for Anaemia and Malaria testing are detailed in the Appendix B.

Coverage levels for children aged 6-59 months eligible for testing, and those actually tested for anaemia and malaria were uniformly high across most of the population. Testing coverage was somewhat lower among children whose mothers had a secondary or higher education (91% for anaemia and malaria testing coverage), and among children living in the wealthiest households (94% for anaemia and malaria testing coverage) (see Table MB.17).

Table MB.17: Coverage of testing for anaemia and Malaria in Children

Percentage of eligible children age 6-59 months who were tested for anaemia and for malaria (unweighted), Ghana, 2011

Background Characteristics	Percentage tested for:			Number of children eligible (unweighted)
	Anaemia	Malaria by microscopy	Malaria by RDT1	
Sex				
Male	98.0	97.8	97.9	2,298
Female	98.1	98.0	98.1	2,311
Region				
Western	95.9	95.9	95.9	368
Central	96.8	96.8	96.8	471
Greater Accra	95.8	95.8	95.8	355
Volta	99.7	99.7	99.7	361
Eastern	98.3	98.3	98.3	300
Ashanti	97.6	97.6	97.6	415
Brong Ahafo	97.5	97.5	97.5	359
Northern	99.1	98.9	99.2	960
Upper East	99.4	98.7	98.9	464
Upper West	98.2	98.2	98.2	556
Ecological zones				
Coastal	96.3	96.3	96.3	977
Forest	98.2	98.2	98.2	1,271
Savannah	98.6	98.4	98.6	2,361
Residence				
Urban	96.5	96.6	96.6	1,449
Rural	98.7	98.5	98.6	3,160
Age				
6-8	96.8	96.8	96.4	249
9-11	97.8	97.8	97.8	229
12-17	97.3	97.1	97.3	514
18-23	97.9	97.9	97.9	473
24-35	98.4	98.1	98.3	1,038
36-47	97.7	97.7	97.8	1,110
48-59	98.7	98.7	98.7	996
Mother's education				
None	98.5	98.3	98.5	2,242
Primary	98.7	98.6	98.6	866
Middle/JSS	97.8	97.8	97.8	1,111
Secondary +	93.8	93.8	93.8	390
Wealth index quintile				
Poorest	98.6	98.3	98.5	1,864
Second	98.5	98.5	98.5	982
Middle	98.7	98.7	98.7	681
Fourth	97.8	98.0	98.0	590
Richest	94.1	94.1	94.1	492
Total	98.0	97.9	98.0	4,609

Notes: Selection of children based on question AM1. Anaemia based on haemoglobin readings (AM8), not purely on consent. Malaria by RDT based on whether test (AM9), not purely on consent. Malaria by microscopy based on whether bar code exists (AM7), not purely on consent.

Anaemia Prevalence in Children

Table MB.18 shows the percentage of children aged 6-59 months with haemoglobin (Hb) lower than 8.0 grams per decilitre (g/dL), by background characteristics. In endemic settings, a haemoglobin level below 8.0 g/dL is often associated with malaria infection (Korenromp et al, 2004)¹. The likely cause of childhood anaemia varies, of course, depending on the area of the world in which the child lives. Overall, iron deficiency is the most common cause of anaemia. However, in developing countries, infectious diseases such as malaria, helminth infections, HIV and tuberculosis are also important (WHO, 2001; Coyer, 2005; Asobayire et al, 2001).

The results show that 7 percent of children aged 6-59 months were anaemic. Anaemia prevalence was highest among children aged 12-17 months, and thereafter, decreases with an increase in age. Among the regions, anaemia ranged from a low of 2 percent in the Eastern region to 19 percent in the Northern region. There was also a large variance in anaemia prevalence by ecological zone. Anaemia was three times higher in the Savannah zone (15%) than in the Coastal (4%) and Forest (5%) zones; but are lower than rates reported in important studies of malaria-associated anaemia a decade ago (Koram et al, 2001, Owus-Adyei et al, 2002).

The data show that anaemia prevalence was higher among children whose mothers had less education. For children whose mothers had no education, anaemia prevalence was 13 percent, and this decreased to less than 2 percent among children whose mothers have secondary or higher education.

Similar to the pattern observed with anaemia prevalence and mother's education, anaemia was highest among children in households in the poorest wealth quintile (16%), decreasing to less than 1 percent among children in households in the richest wealth quintile.

Table MB.18: Prevalence of anaemia (haemoglobin <8.0 g/dL) in children age 6-59 months

Percentage of children age 6-59 months with haemoglobin lower than 8.0 g/dL, Ghana, 2011

Background Characteristics	Haemoglobin <8.0 g/dL	Number of children
Sex		
Male	8.0	2,224
Female	6.8	2,292
Region		
Western	4.8	458
Central	7.2	455
Greater Accra	2.8	683
Volta	6.3	364
Eastern	1.7	490
Ashanti	5.1	830
Brong Ahafo	9.6	400
Northern	19.3	508
Upper East	15.9	195
Upper West	16.0	135
Ecological zones		
Coastal	3.8	1,399
Forest	5.1	1,898
Savannah	15.3	1,219
Residence		
Urban	3.8	1,979
Rural	10.2	2,538
Age in months		
6-8	10.2	258
9-11	9.5	224
12-17	13.2	515
18-23	9.7	455
24-35	8.6	1,033
36-47	5.4	1,063
48-59	3.0	969
Mother's education		
None	12.8	1,493
Primary	6.9	977
Middle/JSS	4.5	1,540
Secondary +	1.6	507
Wealth index quintile		
Poorest	15.8	1,032
Second	8.8	944
Middle	6.6	920
Fourth	2.8	877
Richest	0.6	745
Total	7.4	4,517

Note: Table is based on children who stayed in the household the night before the interview. Hemoglobin levels are adjusted for altitude using CDC formulas (CDC, 1998). Hemoglobin is measured in grams per deciliter (g/dL).

¹ Note that the cut-off value for malaria-related anaemia (8.0g/dl) differs from the standard cut-off value for severe anaemia used in nutrition analysis (7.0g/dl)

Malaria Prevalence in Children

Table MB.19 presents the prevalence of malaria parasitaemia in children aged 6-59, by background characteristics, during the testing period of mid-September through mid-December 2011. The microscopy results are used to determine malaria prevalence, as this method is the gold standard. RDTs were included in the protocol for ethical reasons (so as to be able to treat malaria cases in the field). However, RDT-based prevalence figures are also provided, and are discussed below.

While the national malaria microscopy-based prevalence was 28 percent among children aged 6-59 months, prevalence steadily increased with age from 16 percent among children aged 6-8 months to 34 percent among children aged 48-59 months, as presented in Figure MB.7.

Figure MB.8 shows that malaria prevalence varied greatly between regions, from 4 percent in Greater Accra to 51 percent in the Upper West region. Interestingly, three contiguous regions had prevalence clustering between 17 and 22 percent (Volta, Eastern and Ashanti), three regions had prevalence clustering between 32 to 37 percent (Central, Western and Brong Ahafo), while three regions had prevalence of 44 to 51 percent (Northern, Upper East, and Upper West). As depicted in Figure MB.9, children in the Savannah zone were three times as likely as children in the Coastal zone to have malaria (44 and 14%, respectively), while 28 percent of children had malaria in the Forest zone.

Clear patterns in malaria distribution were found in education, wealth and urban/rural residence, as shown in Figure MB.10. The mother's education and household wealth were both inversely associated with malaria among children: 43 percent of children whose mothers had no education had malaria, compared with only 5 percent of children whose mothers had a secondary or higher education. Likewise, more than half of children (52%) in households in the poorest wealth quintile had malaria, compared to only 3 percent of children in the richest households. Children in rural areas were three times more likely than their counterparts in urban areas to have malaria (39% compared with 13%, respectively).

Not surprisingly, the RDT-based prevalence results shown in Table MB.19 were consistently higher than the microscopy results. For example, overall prevalence was 48 percent based on RDTs, and 28 percent based on microscopy. The 20-point, 42-percent discordance found in this survey is somewhat higher than average for recent national malaria surveys. However, it is similar to the RDT-microscopy discordance found in Mozambique 2007 (25%), Zambia 2010 (40%), Senegal 2008-09 (52%), and Kenya 2007 (57%), and among other surveys (RBM 2012, Measure DHS 2012). Moreover, a district-level survey conducted in Northern Region at the same time as the MICS with exactly the same RDT product, but using different laboratory for microscopy, reassuringly found very similar results: RDT prevalence of 70 percent versus 70 percent for the MICS (Northern Region only); and microscopy prevalence of 48 versus 50 percent (Abuaku et al, 2011).

Discordance between RDT and microscopy is expected, largely because the two tests measure different things. As mentioned earlier, RDTs detect proteins (antigens) which were released into the blood by an ongoing or recently resolved malaria infection. These antigens typically remain detectable for two to four weeks, depending on an RDT product's sensitivity. On the other hand, microscopy detects parasites present in the blood at the time of testing. A child who was recently infected with malaria but was either treated successfully or cleared of the infection spontaneously would be expected to test positive for RDTs and negative for microscopy (Wongsrichanalai et al, 2007). It appears that this scenario was common in

the Ghana MICS 2011, where out of 4505 children tested, 24 percent were RDT-positive but microscopy negative. In contrast, only 2 percent were false negative (RDT negative but microscopy positive).

Again, the focus of the MICS 2011 findings is on the microscopy-based point-prevalence rates. These suggest heterogeneity in malaria burden in Ghana by region, urban/rural residence, and ecological zone that may hitherto have been underappreciated. The potential programmatic implications may be significant, and may warrant further epidemiologic and entomologic investigation and policy discussion. For example, the MICS findings have already begun to stimulate useful discussion on such topics as: the potential value of prioritizing lower-prevalence areas for increased investment in testing to discriminate between malarial and non-malarial cause of fever; the prioritization of higher-prevalence areas for increased investments in malaria prevention methods; the need to update and refine the demarcations of Ghana's major malaria transmission zones; among others.

Table MB.19: Prevalence of malaria parasitaemia in children age 6-59 months
Percentage of children age 6-59 months classified in two tests as having malaria, Ghana, 2011

Background Characteristics	Malaria prevalence according to microscopy		Malaria prevalence according to RDT1	
	Microscopy positive	Number of children tested	RDT1 positive	Number of children tested
Sex				
Male	27.1	2,221	47.8	2,224
Female	28.0	2,290	47.3	2,293
Region				
Western	36.2	458	55.6	458
Central	32.2	454	53.3	455
Greater Accra	4.1	683	9.8	683
Volta	17.3	363	32.6	364
Eastern	21.6	489	40.4	490
Ashanti	22.3	828	49.9	830
Brong Ahafo	37.3	399	58.9	400
Northern	48.3	508	70.1	509
Upper East	44.0	194	77.4	194
Upper West	51.2	135	80.6	135
Ecological zones				
Coastal	13.6	1,398	25.9	1,399
Forest	27.5	1,896	50.1	1,898
Savannah	43.5	1,218	68.2	1,219
Residence				
Urban	13.1	1,978	25.8	1,980
Rural	38.8	2,533	64.5	2,537
Age in months				
6-8	15.7	256	24.6	257
9-11	16.3	224	35.5	224
12-17	22.9	515	41.2	515
18-23	26.3	455	47.4	455
24-35	26.0	1,032	48.9	1,033
36-47	31.3	1,063	51.6	1,064
48-59	33.7	967	53.8	969
Mother's education				
None	42.6	1,491	65.8	1,493
Primary	24.5	976	46.7	976
Middle/JSS	22.1	1,538	41.2	1,540
Secondary +	5.3	507	14.3	507
Wealth index quintile				
Poorest	51.8	1,029	77.6	1,031
Second	38.6	943	63.1	944
Middle	25.1	917	48.1	920
Fourth	10.4	878	28.0	878
Richest	3.2	745	8.3	745
Total	27.5	4,512	47.5	4,517

1 RDT = Rapid Diagnostic Test (CareStart Combo Access Bio, New Jersey, USA).
Pf = Plasmodium falciparum; Pv = Plasmodium vivax; Po = Plasmodium ovale; Pm = Plasmodium malariae

Figure MB. 7: Malaria prevalence in children age 6-59 months by age group, Ghana, 2011

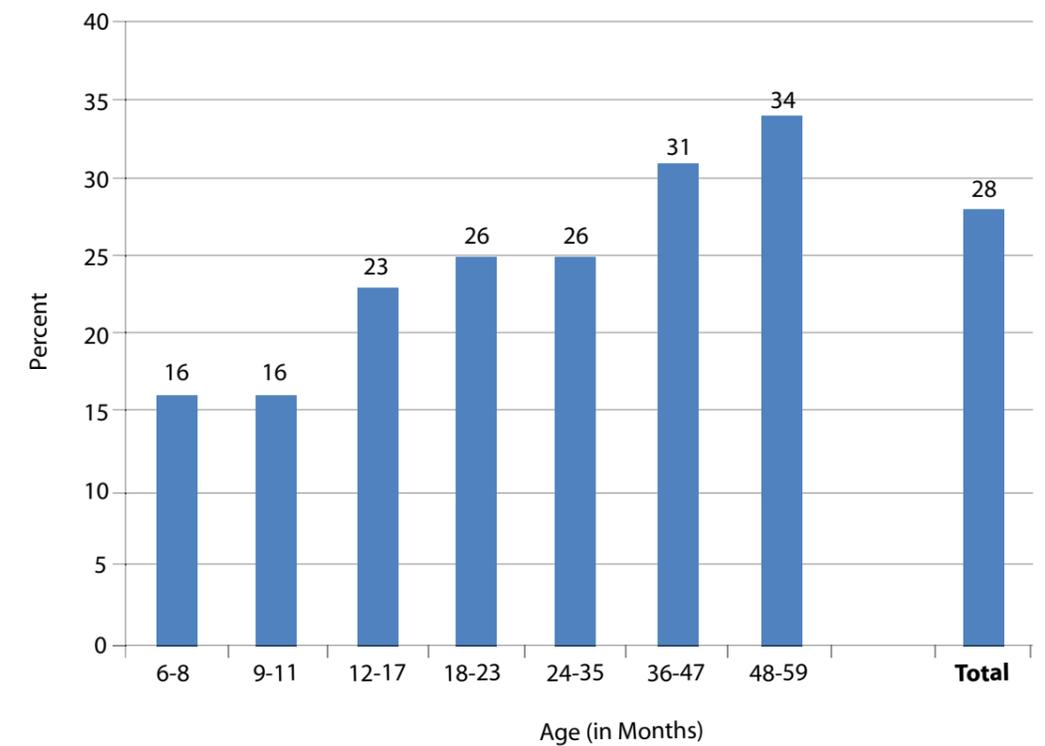


Figure MB.8: Malaria prevalence in children age 6-59 months by region, Ghana, 2011

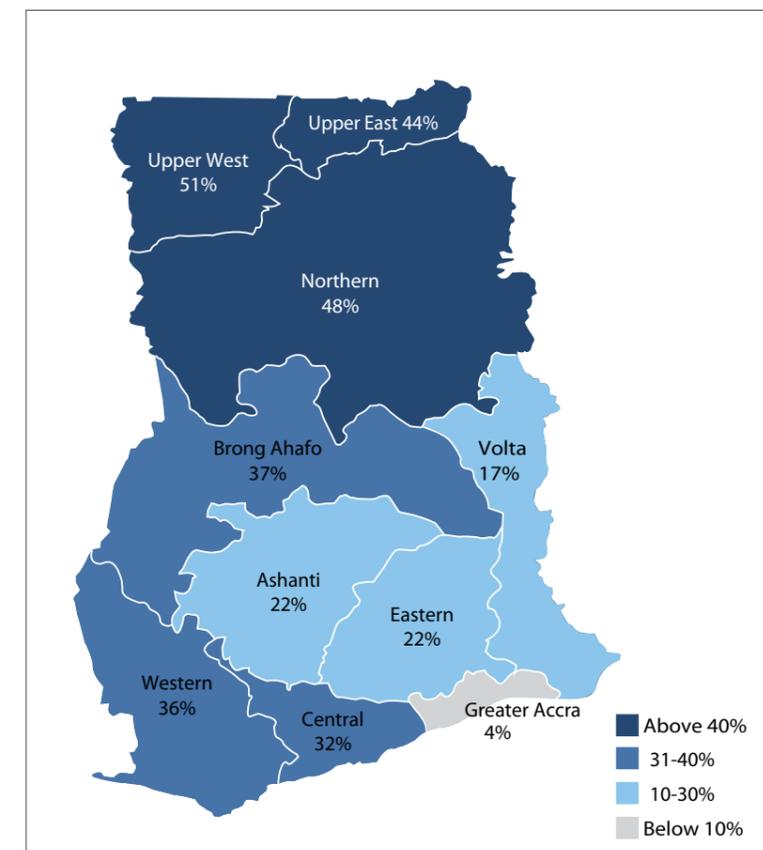


Figure MB.9: Malaria prevalence in children age 6-59 months by ecological zone, Ghana, 2011

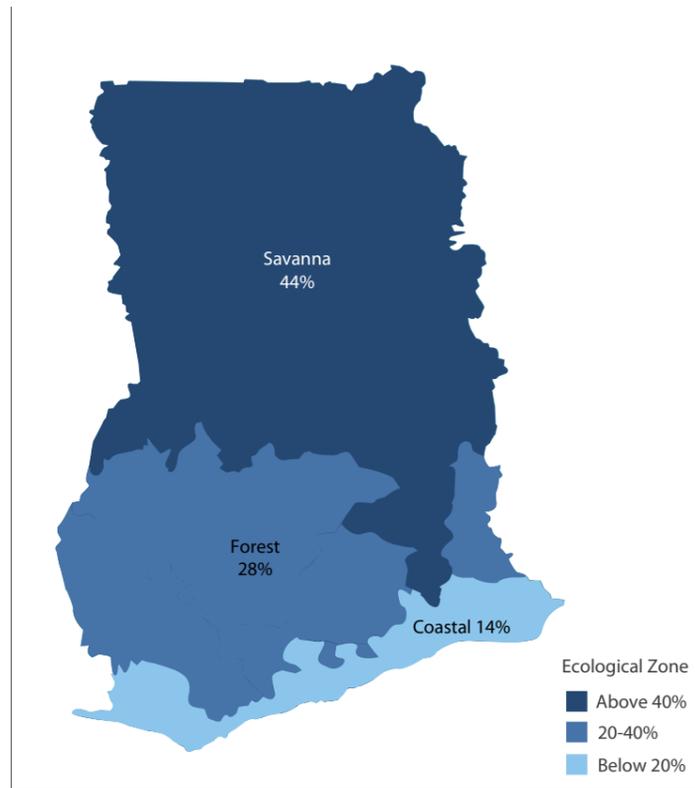
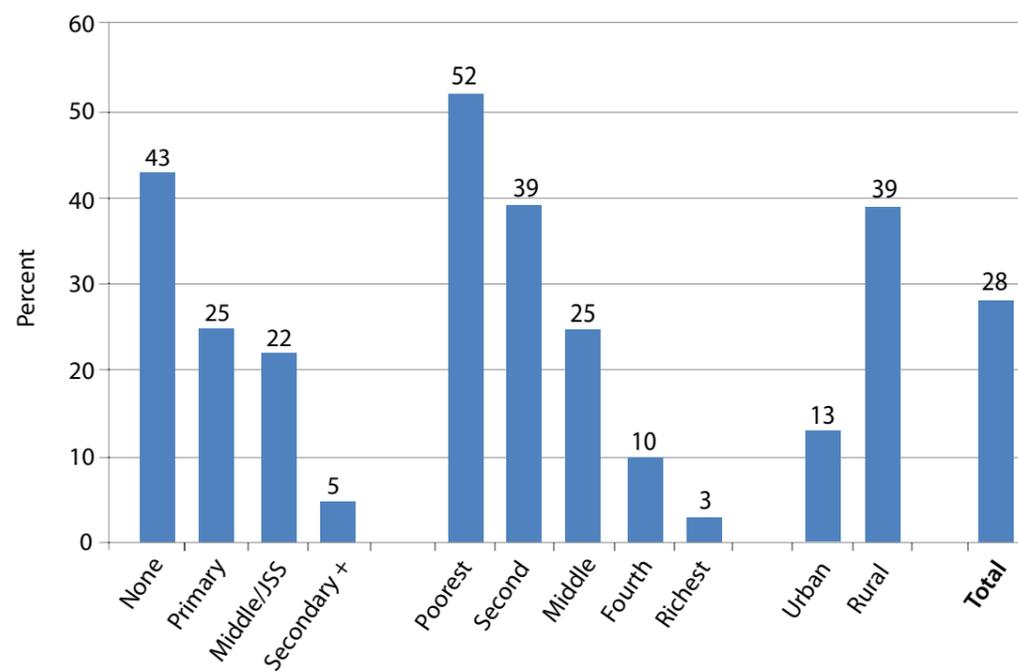


Figure MB.10: Malaria prevalence in children age 6-59 months by mother's education, wealth quintile and residence, Ghana, 2011





Safe drinking water is a basic necessity for good health. Unsafe drinking water can be a significant carrier of diseases such as trachoma, cholera, typhoid, and schistosomiasis. Drinking water can also be tainted with chemical, physical and radiological contaminants with harmful effects on human health. In addition to its association with disease, access to drinking water may be particularly important for women and children, especially in rural areas, who bear the primary responsibility for carrying water, often for long distances.

The MDG goal is to reduce by half, between 1990 and 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation. The World Fit for Children goal calls for a reduction in the proportion of households without access to hygienic sanitation facilities and affordable and safe drinking water by at least one-third.

The list of indicators used in MICS 2011 is as follows:

Water

- Use of improved drinking water sources
- Use of adequate water treatment method
- Time to source of drinking water
- Person collecting drinking water

Sanitation

- Use of improved sanitation facilities
- Sanitary disposal of child's faeces

For more details on water and sanitation and to access some reference documents, please visit the UNICEF childinfo website <http://www.childinfo.org/wes.html>.

Use of Improved Water Sources

The distribution of the population by source of drinking water is shown in Table WS.1 and Figure WS.1. The population using improved sources of drinking water are those using any of the following types of supply: piped water (into dwelling, compound, yard or plot, public tap/standpipe), tube well/borehole, protected well, protected spring, and rainwater collection. Bottled water is considered as an improved water source only if the household is using an improved water source for other purposes, such as hand washing and cooking.

Nearly 80 percent of the population is using an improved source of drinking water – 91 percent in urban areas and 69 percent in rural areas. The situation in the Volta region is considerably worse than in other regions; only 62 percent of the population in this region gets its drinking water from an improved source, while 91 percent of the population in Ashanti use improved sources of water for drinking.

The source of drinking water for the population varies strongly by region (Table WS.1). In the Volta region, 41 percent of the population uses drinking water that is piped into their dwelling or into their yard or plot or piped water in neighbours house or public standpipe. In Central, Greater Accra, Eastern and Ashanti regions, 40 percent, 34 percent, 33 percent and 32 percent respectively use piped water. In contrast, only about 19 percent of those residing in Brong Ahafo region and less than 8 percent of those in Upper East

region use water from a piped system. In Greater Accra region, sachet water (47%) is the most important source of drinking water whereas in Upper East and Upper West, the most important source is the tube well or borehole constituting 65 percent and 70 percent respectively. Tube well or bore hole is seen as the second most important source of drinking water in all the regions, and protected well also contribute significantly as a source of water in Brong Ahafo region. In Brong Ahafo, Northern, Eastern, Western and Volta, a significant percentage of the population rely on river or stream water (an unimproved source) as their main source of drinking water and about 10 percent of the population in the Northern region depend on water from either dam or lake or pond or canal or irrigation for drinking.

As expected, the use of improved drinking water increases with educational level of the head of household: from 72 percent for those with no education to 92 percent for those with secondary or higher education.

With regards to wealth quintiles, about 92 percent of the population in the fourth and fifth wealth quintiles use improved source of water for drinking but only 56 percent of the population in the poorest quintile get the opportunity to use improved sources of water for drinking.

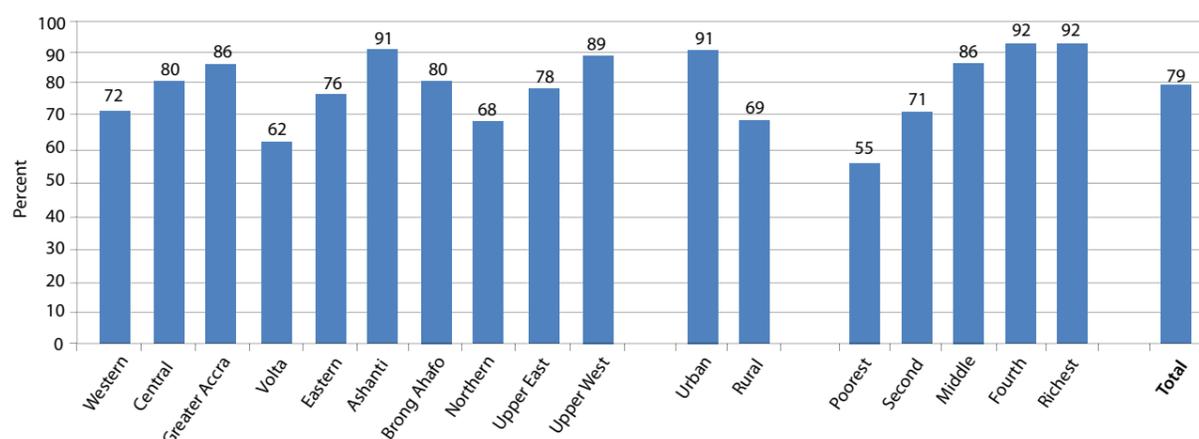
Table WS.1: Use of improved water sources

Percent distribution of household population according to main source of drinking water and percentage of household population using improved drinking water sources, Ghana, 2011

Background Characteristics	Main source of drinking water													Total	Percentage using improved sources of drinking water [1]	Number of household members							
	Improved sources						Unimproved sources																
	Piped into dwelling	Piped into compound, yard or plot	Piped to neighbour	Public tap/standpipe	Tube well, Borehole	Protected well	Protected spring	Rainwater collection	Bottled water	Sachet water	Unprotected well	Unprotected spring	Tanker-truck				Cart with small tank/drum	River/Stream	Dam, lake, pond, canal, irrigation channel	Bottled water	Sachet water	Other	
Region																							
Western	4.3	2.1	3.1	15.0	25.3	6.4	.0	.0	.8	14.6	8.1	.3	.0	.0	18.1	.0	.0	1.8	.0	100.0	71.5	4318	
Central	1.8	3.8	2.8	31.1	19.6	6.5	.0	1.2	.1	13.4	4.6	.2	1.8	.0	7.9	.5	.0	4.6	.0	100.0	80.5	4557	
Greater Accra	5.2	9.6	10.4	8.9	.8	1.0	.0	.7	1.7	47.4	.0	.0	1.5	.0	.8	.0	.3	11.9	.0	100.0	85.6	7625	
Volta	.9	4.7	6.5	28.6	12.1	3.5	.0	1.6	.0	3.8	7.6	.3	.0	.0	21.3	6.5	.0	2.5	.0	100.0	61.8	3947	
Eastern	2.0	8.1	7.6	15.4	16.3	9.2	.8	1.8	.0	15.3	3.4	.2	.0	.0	16.4	.7	.0	2.8	.0	100.0	76.5	5247	
Ashanti	3.0	9.2	6.8	13.2	38.1	9.2	.0	.5	.8	9.7	2.1	.0	.0	.0	6.1	.6	.0	.6	.0	100.0	90.5	8397	
Brong Ahafo	5.6	1.1	1.3	11.5	41.6	13.8	.1	.1	.1	5.3	6.5	.2	.2	.0	10.1	2.3	.0	.3	.0	100.0	80.4	4234	
Northern	.9	6.2	6.0	11.8	38.2	3.7	.1	.3	.1	1.1	7.1	.3	.0	.1	14.1	10.0	.0	.0	.0	100.0	68.4	4261	
Upper East	1.6	1.9	1.7	2.1	64.8	5.5	.0	.0	.0	.8	18.8	.0	.0	.0	2.4	.2	.0	.1	.1	100.0	78.3	2113	
Upper West	2.2	3.0	5.5	5.5	70.0	1.0	.0	.0	.0	1.5	4.5	.2	.2	.0	4.5	1.6	.0	.2	.0	100.0	88.6	1395	
Residence																							
Urban	5.9	11.2	10.2	19.3	8.0	6.6	.2	.7	1.0	27.6	2.1	.0	.9	.0	1.1	.5	.1	4.5	.0	100.0	90.7	22266	
Rural	.3	1.1	1.8	10.9	44.2	6.0	.0	.7	.1	3.3	7.4	.3	.1	.0	18.1	3.4	.0	2.1	.0	100.0	68.6	23827	
Education of household head																							
None	.6	2.9	4.2	14.4	38.0	7.9	.2	.6	.0	3.4	8.3	.3	.5	.0	14.4	3.7	.0	.9	.0	100.0	72.0	13735	
Primary	1.2	6.0	6.1	17.6	26.9	5.4	.1	.8	.2	9.0	4.3	.0	.5	.0	15.0	2.5	.0	4.3	.0	100.0	73.3	6196	
Middle/JSS	2.5	6.4	6.9	16.7	24.7	6.8	.1	.7	.3	16.1	4.4	.1	.5	.0	8.4	1.3	.1	4.2	.0	100.0	81.1	17493	
Secondary +	9.1	10.3	6.5	10.4	12.8	3.4	.1	1.0	2.2	35.9	1.0	.1	.3	.0	2.1	.4	.1	4.4	.0	100.0	91.6	8643	
Missing/DK	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	100.0	*	25
Wealth index quintiles																							
Poorest	.1	.0	.4	3.8	46.6	4.2	.0	.2	.0	.0	11.0	.4	.0	.0	25.0	7.1	.0	.0	.0	100.0	56.4	9216	
Second	.0	.4	3.4	15.9	42.7	7.0	.2	.6	.0	.5	8.7	.1	.1	.0	18.2	2.3	.0	.7	.0	100.0	69.8	9222	
Middle	.5	3.5	9.4	26.1	27.7	10.3	.2	1.3	.0	7.5	3.9	.2	1.2	.0	5.3	.6	.0	2.9	.0	100.0	86.0	9214	
Fourth	2.3	12.0	11.2	23.0	14.1	7.5	.1	.9	.0	21.5	1.0	.0	.6	.0	1.0	.0	.2	5.1	.0	100.0	92.0	9220	
Richest	12.3	14.2	5.0	5.9	2.5	2.4	.0	.5	2.6	45.7	.0	.0	.3	.0	.0	.0	.0	7.5	.0	100.0	92.1	9221	
Total	3.0	6.0	5.9	14.9	26.7	6.3	.1	.7	.5	15.0	4.9	.2	.4	.0	9.9	2.0	.1	3.3	.0	100.0	79.3	46093	

[1] MICS indicator 4.1; MDG indicator 7.8
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Figure WS.1: Percentage of population using improved sources of drinking water by region, residence and wealth quintile, Ghana, 2011



Use of in-house water treatment is presented in Table WS.2. Households were asked of ways they may be treating water at home to make it safer to drink – boiling, adding bleach or chlorine, using a water filter, and using solar disinfection were considered as proper treatment of drinking water. The table shows water treatment by all households and the percentage of household members living in households using unimproved water sources but using appropriate water treatment methods.

Results from the survey shows that 91 percent of household members do not treat their water before drinking perhaps they see it as coming from an improved source (Table WS.2). This means that less than 10 percent of all Ghanaians treat their water before drinking. For household members that treat their water before drinking, the most common method is straining through a cloth (3%), while 2 percent of the people let it stand, and another 2 percent boil it. Regarding households with unimproved sources of water, 17 percent of household members treat their water using appropriate water treatment method before they drink it. Household members in the Northern and Volta regions who use unimproved water sources for drinking are more likely to treat it using appropriate water treatment method than those in the other regions (40% and 28% respectively). In terms of residence, rural inhabitants (18%) are more likely to use appropriate water treatment method than those living in urban areas (13%) in households where unimproved source is used. People whose household head has no education or has only primary education are more likely to treat water before drinking than those with middle school/junior secondary school or secondary and higher level of education when using unimproved water sources. The richest households are also less likely to treat water from unimproved sources compared to the poorest households.

Table WS.2: Household water treatment
percentage who are using an appropriate treatment method, Ghana, 2011

Percentage of household population by drinking water treatment method used in the household, and for household members living in households where an unimproved drinking water source is used, the percentage who are using an appropriate treatment method, Ghana, 2011

Background Characteristics	Water treatment method used in the household										Number of household members	Percentage of household members in households using unimproved drinking water sources and using an appropriate water treatment method [1]	Number of household members in households using unimproved drinking water sources		
	None	Boil	Add bleach / chlorine	Strain through a cloth	Use water filter	Solar disinfection	Let it stand and settle	Add camphor/naphthalene	Add water tablet	Other				Don't know	
Region															
Western	93.8	1.1	.0	1.5	.2	.0	2.2	1.8	.0	.0	.0	4318	7.4	1229	
Central	92.3	1.3	.1	1.8	.3	.0	1.2	2.2	1.0	.2	.1	4557	11.2	891	
Greater Accra	90.5	2.7	1.1	.3	1.0	.0	3.5	1.0	.3	.1	.0	7625	8.4	1099	
Volta	83.7	2.0	.1	7.6	3.4	.0	2.1	.9	.6	.3	.0	3947	28.4	1508	
Eastern	92.0	1.7	.8	3.0	.1	.3	1.4	1.7	.0	.0	.0	5247	14.7	1234	
Ashanti	91.0	1.8	1.3	1.9	.7	.0	3.3	1.0	.0	.1	.0	8397	10.2	795	
Brong Ahafo	94.8	1.0	.4	3.5	.0	.0	.2	.6	.0	.0	.0	4234	11.0	828	
Northern	82.2	1.1	1.1	12.4	2.9	.1	.6	.6	.0	.1	.0	4261	39.8	1345	
Upper East	94.9	1.4	.6	1.7	.6	.0	.2	1.0	.0	.0	.1	2113	6.1	458	
Upper West	97.8	.7	.1	.7	.0	.0	.4	.3	.1	.0	.0	1395	7.4	159	
Residence															
Urban	91.3	1.6	1.1	1.6	1.0	.1	2.4	1.2	.4	.1	.0	22266	13.1	2061	
Rural	90.2	1.7	.3	4.8	.9	.0	1.5	1.1	.1	.1	.0	23827	18.3	7484	
Education of household head															
None	90.1	1.3	.7	4.9	1.2	.0	.9	1.1	.0	.1	.0	13735	19.1	3852	
Primary	90.0	1.0	.2	3.7	.5	.0	3.6	1.9	.0	.0	.0	6196	21.0	1654	
Middle/JSS	91.8	1.7	.8	2.4	.5	.1	2.1	1.0	.3	.1	.0	17493	13.3	3312	
Secondary +	90.3	2.5	1.0	2.0	1.5	.0	2.0	1.1	.5	.0	.0	8643	15.9	726	
Missing/DK	*	*	*	*	*	*	*	*	*	*	*	25	.	0	
Wealth index quintiles															
Poorest	86.4	1.8	.5	8.2	1.6	.0	1.2	.9	.0	.2	.0	9214	23.2	4015	
Second	92.3	1.2	.2	3.8	.8	.0	1.1	1.2	.0	.0	.0	9224	13.2	2781	
Middle	92.5	.9	.3	2.0	.4	.0	2.2	1.6	.3	.1	.0	9217	12.9	1291	
Fourth	92.3	1.0	1.1	1.5	.2	.2	2.9	1.2	.2	.1	.0	9218	17.6	734	
Richest	90.0	3.4	1.4	.8	1.7	.0	2.3	.9	.5	.0	.0	9219	6.3	725	
Total	90.7	1.6	.7	3.3	.9	.0	1.9	1.2	.2	.1	.0	46093	17.2	9545	

[1] MICS indicator 4.2
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Overall, 66 percent of households do not have drinking water on their premises. For these households, Table WS.4 shows that for the majority of households, an adult female (64%) is usually the person collecting the water. Adult men collect water in only 19 percent of cases, while for the rest of the households, female or male children under age 15 collect water (11% and 6% respectively). The pattern is the same in all regions but adult female collecting water is more predominant in the Brong Ahafo (70%), Volta (71%), Northern (88%), Upper East (87%), and Upper West (86%) regions. Men are less likely to collect water in the three northern regions compared to the other seven regions. With regards to female and male children under age 15 collecting water, the girls are mostly engaged than the boys in collecting water outside their own premises in all regions as well as in both urban and rural areas. In the households where the head of the household has secondary or higher education, adult men are more likely (29%) to collect water than households where the household head has no education (12%). The same pattern is observed in the case of the wealth quintiles, where the percentage of adult men collecting water increases with household wealth – 12 percent in the poorest households, 18 percent in the second wealth quintile, 20 percent in the middle wealth quintile, 25 percent in the fourth wealth quintile, and 25 percent in the richest households.

Table WS.4: Person collecting water

Percentage of households without drinking water on premises, and percent distribution of households without drinking water on premises according to the person usually collecting drinking water used in the household, Ghana, 2011

Background characteristics	Person usually collecting drinking water						DK	Total	Number of households without drinking water on premises
	Percentage of households without drinking water on premises	Number of households	Adult woman (age 15+ years)	Adult man (age 15+ years)	Female child (under 15)	Male child (under 15)			
Region									
Western	77.7	1116	55.5	23.6	13.0	7.8	.0	100.0	867
Central	76.8	1236	55.6	21.8	13.1	9.5	.0	100.0	950
Greater Accra	29.3	2321	61.8	27.4	7.2	3.6	.0	100.0	680
Volta	79.7	992	70.9	18.4	8.1	2.6	.0	100.0	791
Eastern	68.7	1533	56.5	20.3	14.9	8.3	.0	100.0	1054
Ashanti	66.1	2321	55.5	21.6	15.2	7.6	.1	100.0	1535
Brong Ahafo	78.9	1011	70.3	15.7	9.5	4.4	.1	100.0	797
Northern	80.9	727	88.0	6.9	4.3	.7	.2	100.0	589
Upper East	90.7	414	86.7	8.1	3.7	1.5	.1	100.0	376
Upper West	83.9	253	86.1	7.0	5.3	1.1	.5	100.0	212
Residence									
Urban	43.8	6358	60.3	22.0	12.3	5.4	.0	100.0	2787
Rural	91.0	5567	66.1	17.6	10.3	6.0	.1	100.0	5063
Education of household head									
None	85.3	2997	71.7	12.2	10.9	5.1	.1	100.0	2556
Primary	75.7	1560	65.0	18.6	11.8	4.6	.0	100.0	1180
Middle/JSS	65.7	4590	59.6	21.7	11.6	7.1	.0	100.0	3014
Secondary +	39.6	2775	57.3	28.8	8.7	4.9	.2	100.0	1100
Missing/DK	*	3	-	-	-	-	-	100.0	0
Wealth index quintiles									
Poorest	97.5	1763	75.9	12.2	8.2	3.6	.1	100.0	1718
Second	91.9	2244	64.2	17.3	12.5	6.0	.0	100.0	2062
Middle	75.7	2450	60.7	19.5	12.1	7.6	.0	100.0	1854
Fourth	57.4	2639	55.4	25.7	12.4	6.5	.1	100.0	1514
Richest	24.8	2829	61.8	26.3	7.8	4.1	.0	100.0	702
Total	65.8	11925	64.0	19.1	11.0	5.8	.1	100.0	7850

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Use of Improved Sanitation Facilities

Inadequate disposal of human excreta and personal hygiene is associated with a range of diseases including diarrhoeal diseases and polio. An improved sanitation facility is defined as one that hygienically separates human excreta from human contact. Improved sanitation can reduce diarrhoeal disease by more than a third, and can significantly lessen the adverse health impacts of other disorders responsible for death and disease among millions of children in developing countries. Improved sanitation facilities for excreta disposal include flush or pour flush to a piped sewer system, septic tank, or latrine; ventilated improved pit latrine, pit latrine with slab, and composting toilet.

Table WS.5 provide information on the proportion of Ghanaian population living in households using improved sanitation facilities. In this table, both household and public facilities are included in the calculation of this indicator, as the critical element is the category of the facility. About 61 percent of the population are living in households using improved sanitation facilities (Table WS.5). Households in urban areas (80%) have more access to an improved sanitation facility than those in rural areas (43%). Also, residents of Northern, Upper East and Upper West regions are less likely than populations in other regions to use improved facilities. For example, in Upper East region, only 10 percent of the population is using improved sanitation facilities. Table WS.5 reveals that use of improved sanitation facilities is strongly associated with wealth and educational level of head of households. Less than 1 in 5 (19%) of the household members belonging to the poorest wealth quintile have access to an improved sanitation facility. This increases to 44 percent for household members in the second wealth quintile, to nearly 70 percent for household members in the middle wealth quintile, 79 percent for household members in the fourth wealth quintile, and to a high of 94 percent for household members in the wealthiest quintile. There is also profound difference in specific facilities between urban and rural areas. In rural areas, the population is mostly using ventilated improved pit (VIP) latrine, pit latrines without slabs, or simply have no facilities. –In urban areas, the most common facilities are flush toilets with connection to a sewage system or septic tank (26%) and use of ventilated improved pit (VIP) latrine (40%).

Nearly 1 out of 4 households (23%) in Ghana practice open defecation or have no toilet facility, and this is more pronounced in rural areas (35%) than urban areas (10%). It is a practice that is more common among the poor and also those with relatively lower levels of education. For example, 67 percent of household members in the poorest wealth quintile practice open defecation; this reduces to 27 percent for household members in the second wealth quintile, to 14 percent for those in the middle wealth quintile, 6 percent for household members in the fourth wealth quintile, and to less than 1 percent for household members in the richest wealth quintile. The same pattern is observed in the case of the education level of the head of the household, where the percentage of household members practicing open defecation decreases with educational levels – 45 percent where the household head has no education, 26 percent when the head has primary education, 12 percent when the head has middle/JSS education, and to 8 percent in cases where the household head has secondary or higher education. In terms of regional distribution, open defecation is mostly practiced in Upper East (89%), Northern (72%) and Upper West (71%). Greater Accra region has the lowest proportion of household members practicing open defecation (9%).

Table WS.5: Types of sanitation facilities
Percent distribution of household population according to type of toilet facility used by the household, Ghana, 2011

Background Characteristics	Type of toilet facility used by household											Open defecation (No facility, Bush, Field)	Total	Percentage of improved sanitation facilities	Number of household members						
	Improved sanitation facility					Unimproved sanitation facility															
	Flush to piped sewer system	Flush to septic tank	Flush to pit (latrine)	Flush don't know where	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab / Open pit	Flush to somewhere else	Bucket	Hanging toilet, Hanging latrine					Mobile toilet	Other				
Region																					
Western	.0	8.1	3.6	.1	20.8	21.0	.0	34.4	.2	.1	.0	.0	.0	.0	.0	.0	11.9	100.0	53.7	4318	
Central	.4	6.6	2.6	.0	29.0	21.7	.0	24.5	.0	.3	.0	.0	.0	.0	.0	.0	14.8	100.0	60.3	4557	
Greater Accra	5.7	35.1	.7	.9	36.4	6.3	.1	5.3	.0	.7	.0	.0	.0	.1	.2	.0	8.5	100.0	85.2	7625	
Volta	2.4	2.3	.3	.0	31.4	12.2	.0	24.8	.0	2.1	.0	.0	.0	.0	.0	.0	24.5	100.0	48.6	3947	
Eastern	3.2	7.3	.2	.0	38.7	11.6	.0	31.9	.0	.7	.0	.0	.0	.0	.0	.0	6.2	100.0	61.1	5247	
Ashanti	.9	14.9	2.5	.0	40.1	23.7	.0	7.8	.0	.0	.0	.0	.0	.0	.0	.0	10.1	100.0	82.0	8397	
Brong Ahafo	1.4	4.8	1.3	.0	28.5	30.3	.0	17.5	.1	.1	.0	.0	.0	.0	.0	.0	15.9	100.0	66.4	4234	
Northern	.5	1.6	.1	.0	20.2	4.1	.0	1.7	.0	.0	.0	.0	.0	.0	.0	.0	71.9	100.0	26.4	4261	
Upper East	.5	1.5	.1	.0	5.3	2.6	.0	1.2	.0	.1	.0	.0	.0	.0	.1	.0	88.6	100.0	10.1	2113	
Upper West	.1	1.5	.8	.0	16.0	5.9	.0	4.4	.0	.0	.0	.0	.1	.0	.1	.0	71.1	100.0	24.3	1395	
Residence																					
Urban	3.6	22.8	2.3	.3	40.0	10.7	.0	9.7	.1	.5	.0	.0	.0	.0	.1	.0	9.9	100.0	79.8	22266	
Rural	.3	1.3	.5	.0	21.6	19.6	.0	21.2	.0	.4	.0	.0	.0	.0	.0	.0	35.2	100.0	43.2	23827	
Education of household head																					
None	.2	3.0	.9	.0	23.0	14.3	.0	13.2	.0	.3	.0	.0	.0	.0	.1	.0	45.0	100.0	41.4	13735	
Primary	.9	6.2	.9	.2	27.7	15.5	.1	22.2	.0	.1	.0	.0	.0	.0	.0	.0	26.2	100.0	51.4	6196	
Middle/JSS	1.2	11.2	1.3	.3	36.8	17.6	.0	19.2	.0	.6	.0	.0	.0	.0	.1	.0	11.8	100.0	68.3	17493	
Secondary +	6.8	29.9	2.7	.1	31.5	12.2	.0	7.7	.1	.5	.0	.0	.0	.0	.0	.0	8.2	100.0	83.5	8643	
Missing/DK	.0	100.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	.0	100.0	100.0	100.0	25
Wealth index quintile																					
Poorest	.0	.0	.1	.0	4.0	14.5	.0	15.3	.0	.3	.0	.0	.0	.0	.0	.0	65.7	100.0	18.6	9214	
Second	.1	.6	.2	.0	23.0	19.7	.0	29.2	.0	.1	.0	.0	.0	.0	.0	.0	27.1	100.0	43.5	9224	
Middle	.4	3.8	1.1	.1	43.5	20.2	.0	16.6	.0	.6	.0	.0	.0	.0	.0	.0	13.8	100.0	69.0	9217	
Fourth	1.1	8.8	1.8	.3	52.2	14.8	.1	13.2	.0	.4	.0	.0	.0	.0	.0	.0	7.4	100.0	79.0	9218	
Richest	8.0	45.0	3.8	.5	29.5	7.3	.0	4.0	.1	.8	.0	.0	.0	.0	.1	.2	.7	100.0	94.2	9219	
Total	1.9	11.6	1.4	.2	30.4	15.3	.0	15.7	.0	.4	.0	.0	.0	.0	.0	.0	22.9	100.0	60.9	46093	

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed

The MDGs and the WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify households as using an unimproved sanitation facility if they are using otherwise acceptable sanitation facilities but sharing a facility between two or more households or using a public toilet facility.

This position is similar to that taken by the Government of Ghana in the revised Environmental Sanitation Policy (2010) and the National Environmental Sanitation Strategy and Action Plan (2010) in which a clear distinction is made between household toilets for domestic use, and public toilets¹ for use at public locations.

In fact, in Ghana (as shown in Table WS.6), only 15 percent of household members can be considered as using improved sanitation facilities, using JMP's definition that requires that the facility is both improved (as described in WS.5) and unshared. As much as 28 percent use improved public facility², 12 percent share improved facility with 5 or less households and 6 percent share it with more than 5 households. Almost 5 percent of households, even though do not share the facility with any other households, are found to be using facility types that are unimproved. Urban households are more likely (21%) than rural households (9%) to use an improved toilet facility that is not shared. Greater Accra region (28%) has the highest household population using an improved toilet facility that is not shared. Five other regions have over 10 percent of household population using an improved toilet facility that is not shared: Ashanti (18%), Western and Eastern (17%), Central (13%), and Brong Ahafo (10%).

Education of household head and household wealth status are not strongly associated with the use of an improved sanitation facility that is not shared. For example, only 6 percent of household members from the poorest households are using an improved sanitation facility that is not shared, compared to 44 percent of household members from the richest households.

¹ The Ghana Government's Guidelines for the Provision, operation and maintenance management of public toilets states clearly that the country goal is to ensure that all households have their own toilet facilities. An acknowledgment is however made that this may not be achievable within the medium term and provision is made for households who do not yet have facilities to use these public facilities in the interim. The use of these public facilities, however, does not count towards improved sanitation coverage, and therefore all public toilets are considered as unimproved sanitation facilities in the Ghana.

² Idem

Table WS.6: Use and sharing of sanitation facilities

Background Characteristics	Percent distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Ghana, 2011												
	Users of improved sanitation facilities					Users of unimproved sanitation facilities					Number of household members		
	Not shared [1]	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/DK	Not shared	Public facility	Shared by: 5 households or less	Shared by: More than 5 households	Missing/DK		Open defecation (no facility, bush field)	Total
Region													
Western	17,3	17,0	13,1	6,1	,0	11,0	17,4	4,3	1,7	,0	11,9	100,0	4318
Central	13,3	25,4	14,9	6,8	,0	4,7	12,3	5,1	2,6	,2	14,8	100,0	4557
Greater Accra	28,0	33,4	13,7	9,9	,1	1,8	,8	2,3	1,3	,0	8,5	100,0	7625
Volta	7,0	29,1	6,6	5,6	,3	8,2	9,4	4,0	4,9	,5	24,5	100,0	3947
Eastern	16,9	23,5	14,9	5,6	,3	9,5	7,6	12,6	2,6	,4	6,2	100,0	5247
Ashanti	17,5	35,7	20,6	7,8	,3	1,5	4,7	1,5	,2	,0	10,1	100,0	8397
Brong Ahafo	9,8	48,7	5,3	2,3	,3	5,3	4,0	6,0	2,4	,0	15,9	100,0	4234
Northern	5,2	17,7	2,5	1,0	,0	,7	,4	,4	,2	,0	71,9	100,0	4261
Upper East	3,0	4,1	2,0	1,0	,0	1,1	,2	,0	,1	,0	88,6	100,0	2113
Upper West	5,2	15,3	2,5	1,3	,0	2,7	,6	1,0	,3	,0	71,1	100,0	1395
Residence													
Urban	21,2	34,7	15,0	8,8	,0	2,4	2,8	3,5	1,5	,0	9,9	100,0	22266
Rural	9,1	21,9	8,9	3,0	,3	6,5	8,8	4,4	1,8	,2	35,2	100,0	23827
Education of household head													
None	7,0	25,0	6,2	3,2	,1	4,8	4,5	3,2	1,1	,0	45,0	100,0	13735
Primary	6,5	31,8	9,7	3,3	,1	4,8	10,4	4,7	2,3	,1	26,2	100,0	6196
Middle/JSS	15,2	31,9	13,9	7,1	,2	5,2	7,1	5,0	2,3	,2	11,8	100,0	17493
Secondary +	33,2	22,5	18,1	9,3	,3	2,5	2,6	2,5	,7	,0	8,2	100,0	8643
Missing/DK	,0	,0	100,0	,0	,0	*	*	*	*	*	*	100,0	25
Wealth index quintiles													
Poorest	6,2	9,7	2,2	,5	,1	6,9	5,9	1,9	,8	,1	65,7	100,0	9214
Second	5,6	29,9	5,9	2,0	,0	7,6	12,8	6,6	2,0	,3	27,1	100,0	9224
Middle	7,8	40,6	13,9	6,3	,4	4,2	5,5	4,8	2,6	,0	13,8	100,0	9217
Fourth	11,6	39,7	17,4	10,2	,1	3,4	3,8	4,5	1,9	,0	7,4	100,0	9218
Richest	43,5	20,4	19,9	10,0	,3	,5	1,7	1,9	,9	,0	,7	100,0	9219
Total	15,0	28,1	11,9	5,8	,2	4,5	5,9	4,0	1,6	,1	22,9	100,0	46093

[1] MCS indicator 4.3; MDG indicator 7.9

An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Safe disposal of a child's faeces is disposing of the stool, by the mother or caretaker of the child using a toilet or by rinsing the stool into a toilet or latrine. Disposal of faeces of children 0-2 years of age is presented in Table WS.7. The results show that only slightly more than one-third (36%) of children had their stools disposed of safely. In most cases, mothers or caretakers of these children throw the stools into garbage (38%) or put the stools/rinse it into toilet or latrine, (34%). For households using an improved toilet facility, 42 percent of the 0-2 children's stool is put/rinsed into toilet or latrine; and for households using unimproved facility, this figure is 52 percent. In very few cases (2%), the children use the toilet facility themselves, while in 6 percent of cases, the children's stools are buried, and in 2 percent of cases, the stools are left in the open. With regard to type of sanitation in dwelling, it is 44 percent as against 54 percent for improved and unimproved in terms of safe disposal. The MICS results also show that Upper East (4%), Upper West (4%), and Northern (6%) regions are least likely to dispose of children's stools safely. The safe stool disposal is associated with mother's education and wealth index quintile. In other words, the percentage of safe stool disposal increases with the mother's education and wealth quintile.

Table WS.7: Disposal of child's faeces
Percent distribution of children age 0-2 years according to place of disposal of child's faeces, and the percentage of children age 0-2 years whose stools were disposed of safely the last time the child passed stools, Ghana, 2011

Background Characteristics	Place of disposal of child's faeces									Percentage of children whose last stools were disposed of safely [1]	Number of children age 0-2 years
	Child used toilet / latrine	Put / Rinsed into toilet or latrine	Put / Rinsed into drain or ditch	Thrown into garbage (solid waste)	Buried	Left in the open	Other	DK	Total		
Type of sanitation facility in dwelling											
Improved	2.0	42.1	11.5	38.0	3.6	.5	1.6	.8	100.0	44.1	2616
Unimproved	2.4	52.3	10.0	26.3	3.8	2.0	2.5	.6	100.0	54.7	759
Open defecation	.8	4.5	18.6	45.1	11.8	6.9	11.9	.5	100.0	5.3	1160
Region											
Western	2.5	44.6	6.8	37.8	2.0	6.0	.0	.3	100.0	47.1	447
Central	2.7	45.3	7.5	37.9	2.0	.0	4.2	.4	100.0	48.0	453
Greater Accra	.3	38.8	6.2	48.4	.8	.8	4.2	.6	100.0	39.0	671
Volta	3.0	25.4	16.5	27.2	13.4	.0	14.5	.0	100.0	28.4	338
Eastern	1.2	50.3	19.7	23.0	4.4	.0	.3	1.2	100.0	51.5	515
Ashanti	2.8	41.9	10.0	37.6	4.9	.5	1.2	1.1	100.0	44.6	890
Brong Ahafo	2.1	32.4	21.5	33.9	4.0	.6	5.1	.3	100.0	34.5	411
Northern	.6	5.0	19.7	48.0	9.3	6.9	9.8	.6	100.0	5.7	491
Upper East	.4	3.1	24.8	24.5	27.3	17.4	1.9	.7	100.0	3.5	184
Upper West	.5	3.7	6.7	63.7	9.7	1.5	13.2	1.0	100.0	4.2	134
Residence											
Urban	2.5	39.0	10.4	40.0	4.6	.7	2.3	.5	100.0	41.5	1977
Rural	1.2	30.5	15.1	36.2	6.6	3.7	6.0	.8	100.0	31.7	2559
Mother's education											
None	1.1	19.4	16.6	39.3	10.3	5.6	6.9	.8	100.0	20.5	1354
Primary	15.3	33.6	6.4	1.8	4.7	.8	100.0	37.3	999		
Middle/JSS	2.3	42.3	12.4	35.9	3.1	.7	2.9	.5	100.0	44.5	1604
Secondary +	2.6	43.5	2.8	47.1	1.5	.3	1.7	.5	100.0	46.1	579
Wealth index quintiles											
Poorest	1.7	34.7	15.2	35.4	5.0	2.3	5.5	.3	100.0	36.4	917
Second	1.5	35.0	15.2	35.2	8.0	.8	3.2	1.0	100.0	36.5	932
Middle	1.5	45.6	12.3	34.8	1.4	.6	2.7	1.1	100.0	47.1	867
Fourth	3.6	43.5	5.1	45.5	.7	.0	.8	.8	100.0	47.1	814
Richest	1.7	34.7	15.2	35.4	5.0	2.3	5.5	.3	100.0	36.4	917
Total	1.8	34.2	13.1	37.8	5.7	2.4	4.4	.7	100.0	36.0	4535

[1] MICS indicator 4.4

In its 2008 report³, the JMP developed a new way of presenting the access figures, by disaggregating and refining the data on drinking-water and sanitation and reflecting them in "ladder" format. This ladder allows a disaggregated analysis of trends in a three rung ladder for drinking-water and a four-rung ladder for sanitation. For sanitation, this gives an understanding of the proportion of population with no sanitation facilities at all, of those reliant on technologies defined by JMP as "unimproved," of those sharing sanitation facilities of otherwise acceptable technology, and those using "improved" sanitation facilities. Table WS.8 presents the percentages of households by drinking water and sanitation ladders. The Table also shows the percentage of household members using improved sources of drinking water and sanitary means of excreta disposal.

³ WHO/UNICEF JMP (2008), MDG assessment report - http://www.wssinfo.org/download?id_document=1279

Table WS.8: Drinking water and sanitation ladders
Percentage of household population by drinking water and sanitation ladders, Ghana, 2011

Background Characteristics	Percentage of household population using:										Number of household members	
	Improved drinking water [1]					Unimproved sanitation						
	Improved into dwelling, piped or yard	Other improved	Unimproved drinking water	Total	Improved sanitation [2]	Shared improved facilities	Unimproved facilities	Open defecation	Total	Improved drinking water sources and improved sanitation		
Region												
Western	6.9	64.7	28.5	100.0	17.3	36.2	34.4	11.9	100.0	11.8	4318	
Central	5.7	74.7	19.5	100.0	13.3	47.0	24.9	14.8	100.0	10.5	4557	
Greater Accra	16.0	69.6	14.4	100.0	28.0	57.2	6.1	8.5	100.0	22.4	7625	
Volta	5.7	56.1	38.2	100.0	7.0	41.6	26.9	24.5	100.0	5.8	3947	
Eastern	10.1	66.4	23.5	100.0	16.9	44.2	32.7	6.2	100.0	15.1	5247	
Ashanti	12.9	77.7	9.5	100.0	17.5	64.5	7.9	10.1	100.0	14.7	8397	
Brong Ahafo	6.7	73.7	19.6	100.0	9.8	56.5	17.7	15.9	100.0	6.6	4234	
Northern	7.2	61.3	31.6	100.0	5.2	21.2	1.8	71.9	100.0	4.6	4261	
Upper East	3.4	74.9	21.7	100.0	3.0	7.1	1.4	88.6	100.0	2.7	2113	
Upper West	5.1	83.5	11.4	100.0	5.2	19.0	4.5	71.1	100.0	4.8	1395	
Residence												
Urban	17.9	72.9	9.3	100.0	21.2	58.5	10.3	9.9	100.0	18.7	22266	
Rural	1.5	67.1	31.4	100.0	9.1	34.1	21.6	35.2	100.0	5.8	23827	
Education of household head												
None	3.5	67.9	28.0	100.0	7.0	34.5	13.6	45.0	100.0	4.1	13735	
Primary	7.3	65.0	26.7	100.0	6.5	44.9	22.4	26.2	100.0	4.6	6196	
Middle/JSS	9.1	67.5	18.9	100.0	15.2	53.1	19.9	11.8	100.0	11.9	17493	
Secondary +	20.9	54.9	8.4	100.0	33.2	50.1	8.3	8.2	100.0	30.3	8643	
Missing/DK	*	*	*	100.0	*	*	*	*	100.0	*	25	
Wealth index quintiles												
Poorest	.1	55.3	44.6	100.0	6.2	12.4	15.6	65.7	100.0	1.7	9214	
Second	.4	70.5	29.1	100.0	5.6	37.9	29.3	27.1	100.0	3.3	9224	
Middle	4.0	81.5	13.8	100.0	7.8	61.2	17.2	13.8	100.0	6.5	9217	
Fourth	14.3	74.3	8.0	100.0	11.6	67.4	13.6	7.4	100.0	10.3	9218	
Richest	28.4	42.9	7.9	100.0	43.5	50.6	5.0	.7	100.0	38.3	9219	
Total	9.4	69.9	20.7	100.0	15.0	45.9	16.1	22.9	100.0	12.1	46093	

Table WS.8 shows that among household population using improved drinking water, only 9 percent of them have water piped in dwelling, plot or yard; as much as 70 percent use improved water that they obtain from other improved sources, and 21 percent use unimproved sources of drinking water. The household population in Greater Accra, Eastern and Ashanti are more likely to have piped system within the dwelling or on plots compared to the other regions. The urban household population with pipe in dwelling are 18 percent as against only two percent for rural households; and as much as 31 percent of the rural household population rely on unimproved water sources for drinking against nine percent for urban residents.

The ladder for sanitation shows that 15 percent of household population use toilet facility exclusively (improved type and unshared) while 62 percent use unimproved toilet facilities (either because shared or because toilet category is unimproved), and 23 percent do not have it at all and practice open defecation.

At the national level, only 12 percent of the households have both improved drinking water sources and improved sanitation (not shared). Household members in urban areas are three times (19%) more likely than those in rural areas (6%) to have both improved drinking water sources and improved sanitation. There is also a positive relationship between education level and wealth index quintiles for the use of both improved drinking water sources and improved sanitation: for example, 38 percent of households in the richest wealth quintile have both improved drinking water source, and improved sanitation, compared to only 2 percent of the households in the poorest wealth quintile. Five regions have less than 10 percent of their household populations having access to both improved drinking water source, and an improved sanitation facility (Volta, Brong Ahafo, Northern, Upper East and Upper West), compared to the other five regions. Greater Accra region stands tall among all regions with 22 percent of households with access to both improved water source, and improved sanitation.

Handwashing

Handwashing with water and soap is the most cost effective health intervention to reduce both the incidence of diarrhoea and pneumonia for children under - 5 years. It is most effective when this is done by using water and soap after visiting a toilet or cleaning a child, before eating or handling food and before feeding a child. Monitoring correct hand washing behaviour at these critical times is challenging. A reliable alternative to observations or self-reported behaviour is assessing the likelihood that correct handwashing behaviour takes place by observing if a household has a specific place where people most often wash their hands, and observing if water and soap (or other local cleansing materials) are present at a specific place for handwashing.

As shown in Table WS.9, in Ghana, only 24 percent of the households with a specific place for handwashing were observed, while 70 percent households could not indicate a specific place where household members usually wash their hands. Less than 1 percent of the households did not give permission to see the place used for handwashing. Of those households where a place for handwashing was observed, 50 percent had both water and soap present at the designated place. In 14 percent of the households, only water was available at the designated place, while in 12 percent of the households the place had only soap but no water. The remaining 24 percent of households had neither water nor soap available at the designated place for handwashing.

Table WS.9: Water and soap at place for handwashing

Percentage of households where place for handwashing was observed and percent distribution of households by availability of water and soap at place for handwashing, Ghana, 2011

Background Characteristics	Percentage of households where place for handwashing was observed		Percentage of households where place for handwashing was not observed			Number of households	Percent distribution of households where place for handwashing was observed, and:				Total	Number of households where place for handwashing was observed	
	households where place for handwashing was observed	place for handwashing was not observed	Not in dwelling/plot/yard	No permission to see	Other reasons		Water and soap are available [1]	Water is available, soap is not available	Water is not available, soap is available	Water and soap are not available			Missing
Region													
Western	14.0	79.1	.0	6.9	1116	79.9	6.2	4.9	9.0	.0	100.0	156	
Central	38.3	51.0	.7	10.0	1236	40.1	10.7	13.8	35.2	.2	100.0	474	
Greater Accra	37.3	47.6	.8	14.2	2321	55.5	11.4	10.6	22.1	.4	100.0	866	
Volta	14.5	85.4	.0	.1	992	15.9	25.7	11.5	46.3	.7	100.0	144	
Eastern	6.5	93.3	.0	.2	1533	64.1	4.3	30.1	1.6	.0	100.0	99	
Ashanti	23.3	72.4	.3	4.0	2321	46.7	10.8	13.3	29.2	.0	100.0	542	
Brong Ahafo	29.5	70.4	.0	.1	1011	60.8	14.5	6.2	18.6	.0	100.0	298	
Northern	20.4	75.5	1.7	2.4	727	37.5	31.0	13.3	16.5	1.7	100.0	149	
Upper East	19.5	79.9	.0	.6	414	46.4	34.5	14.9	3.7	.6	100.0	81	
Upper West	10.5	87.0	1.4	1.0	253	36.3	35.3	14.5	13.2	.7	100.0	27	
Residence													
Urban	30.8	61.6	.6	7.0	6358	55.7	13.0	10.9	20.1	.3	100.0	1960	
Rural	15.7	80.4	.3	3.6	5567	37.3	14.9	14.2	33.2	.4	100.0	875	
Education of household head													
None	17.9	77.6	.4	4.1	2997	35.4	22.8	14.1	27.0	.8	100.0	538	
Primary	18.5	77.2	.2	4.1	1560	35.3	13.7	17.0	33.9	.0	100.0	289	
Middle/JSS	20.1	73.5	.5	5.9	4590	49.0	10.3	13.1	27.5	.2	100.0	923	
Secondary+	39.0	53.4	.6	7.0	2775	62.3	11.6	8.4	17.4	.2	100.0	1083	
Missing/DK	*	*	*	*	3	*	*	*	*	*	100.0	3	
Wealth index quintiles													
Poorest	12.9	83.7	.5	2.8	1763	35.6	26.5	15.9	20.8	1.2	100.0	228	
Second	16.6	78.3	.1	5.1	2244	35.1	15.2	11.2	38.2	.3	100.0	372	
Middle	17.7	78.1	.3	3.9	2450	34.4	14.4	17.1	34.0	.1	100.0	433	
Fourth	20.0	74.0	.3	5.7	2639	37.0	13.1	18.0	31.5	.5	100.0	529	
Richest	45.0	45.7	.8	8.5	2829	67.7	10.7	7.1	14.3	.1	100.0	1274	
Total	23.8	70.3	.4	5.5	11925	50.0	13.6	11.9	24.2	.3	100.0	2836	

[1] MICS indicator 4.5
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.

Availability of place of handwashing and soap is associated with residence, education and wealth background characteristics. Huge regional variations are noted for households where water and soap are available, with the highest proportion (80%) in Western and the lowest (16%) in Volta region.

Table WS.10 presents the availability of soap within dwellings, no matter the location of the soap. In total, almost two thirds of the households have soap somewhere in the dwelling: the soap was observed in 15% of the households where place for handwashing was also observed; it was shown in 38% of the households where place for handwashing was not observed; one third of the households had no soap anywhere in the household.

Figure WS.2 show the percentage of households with soap anywhere in the dwelling for hand washing by background characteristics. It appears that availability of soap in the dwelling is higher in urban areas (72%), than in rural areas (54%). Northern (28%), Volta (29%), and Upper West (34%) regions have the least proportions of households with soap available anywhere in the dwelling for handwashing, while Ashanti (87%), Brong Ahafo (78%) and Greater Accra (76%) have the highest proportions. Availability of soap for handwashing in households increases with educational level of the head of the household. This is also true for household wealth and availability of soap for handwashing anywhere in the dwelling.

Figure WS.2: Percentage of households with soap anywhere in the dwelling, Ghana, 2011

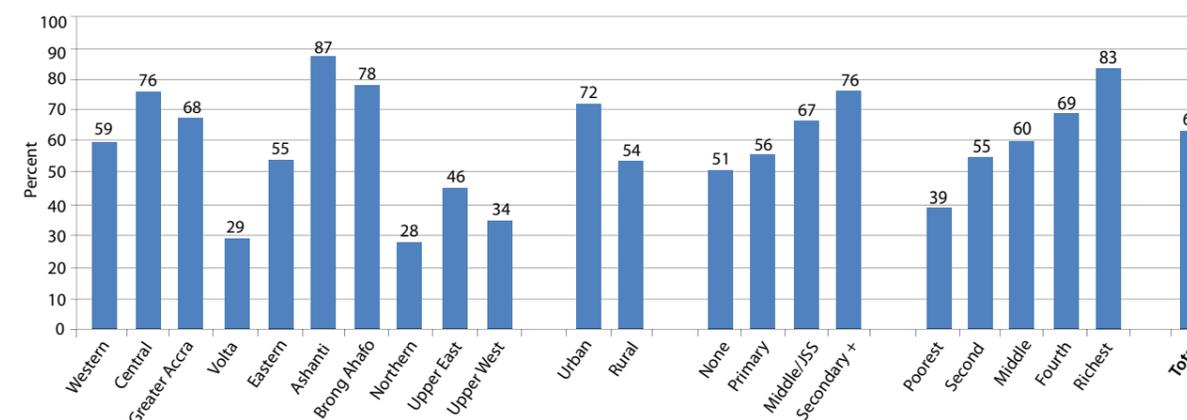


Table WS.10: Availability of soap
Percent distribution of households by availability of soap in the dwelling, Ghana, 2011

Background Characteristics	Place for handwashing observed				Place for handwashing not observed				Percentage of households with soap anywhere in the dwelling [1]	Number of households		
	Soap observed	Soap shown	No soap in household	Not able/Does not want to show soap	Missing	Soap shown	No soap in household	Not able/Does not want to show soap			Missing	Total
Region												
Western	11.9	1.5	.6	.0	.0	40.8	39.8	.0	5.5	100.0	59.4	1116
Central	20.7	10.6	5.5	.0	1.6	39.4	18.4	.1	3.8	100.0	75.8	1236
Greater Accra	24.7	8.2	3.6	.1	.7	29.1	27.6	.7	5.3	100.0	67.6	2321
Volta	4.0	3.7	6.6	.0	.3	19.0	64.1	.0	2.3	100.0	28.6	992
Eastern	6.1	.0	.4	.0	.0	44.4	43.7	.1	5.3	100.0	54.5	1533
Ashanti	14.0	6.9	1.3	.0	1.1	53.7	10.3	.1	12.5	100.0	87.2	2321
Brong Ahafo	19.8	7.0	2.0	.0	.8	47.2	19.1	.0	4.2	100.0	78.1	1011
Northern	10.4	4.7	4.1	.0	1.2	11.4	66.2	.0	1.9	100.0	27.8	727
Upper East	11.9	.5	6.7	.1	.2	30.7	42.2	.2	7.5	100.0	45.6	414
Upper West	5.3	3.4	1.1	.0	.7	22.9	63.2	.1	3.3	100.0	34.3	253
Residence												
Urban	20.5	6.9	2.5	.0	.8	38.4	24.6	.3	5.9	100.0	71.9	6358
Rural	8.1	3.8	3.2	.0	.6	36.6	41.4	.0	6.2	100.0	54.0	5567
Education of household head												
None	8.9	4.9	3.6	.0	.5	34.3	43.4	.1	4.3	100.0	51.0	2997
Primary	9.7	5.2	3.2	.0	.4	37.1	39.4	.4	4.6	100.0	56.0	1560
Middle/JSS	12.5	4.6	2.2	.1	.7	42.5	30.2	.2	7.0	100.0	66.7	4590
Secondary +	27.6	7.5	2.8	.0	1.1	33.2	20.4	.1	7.3	100.0	76.1	2775
Missing/DK	*	*	*	*	*	*	*	*	*	100.0	*	3
Wealth index quintiles												
Poorest	6.7	1.8	4.0	.0	.4	27.9	55.0	.1	4.0	100.0	39.0	1759
Second	7.7	5.1	3.5	.0	.3	38.4	39.7	.2	5.2	100.0	54.9	2199
Middle	9.1	4.9	3.0	.0	.7	40.5	36.1	.1	5.7	100.0	60.4	2455
Fourth	11.0	6.0	2.0	.0	1.0	43.4	27.6	.3	8.7	100.0	69.4	2664
Richest	33.7	8.0	2.2	.1	1.0	35.0	13.9	.2	5.8	100.0	82.7	2847
Total	14.7	5.5	2.8	.0	.7	37.6	32.4	.2	6.0	100.0	63.6	11925

[1] MICS indicator 4.6
An asterisk (*) indicates that figure is based on fewer than 25 unweighted cases, and has been suppressed.



		HOUSEHOLD QUESTIONNAIRE GHANA 2011			
HOUSEHOLD INFORMATION PANEL					HH
HH1. Locality Name Cluster No.: _____		HH2. Household Number: _____			
HH3. Interviewer name and number: _____		HH4. Supervisor name and number: _____			
HH5. Date of interview: (DD/ MM / YYYY) ____/____/2011		HH5A: Is the household selected for the male survey? Yes 1 No 2			
HH6. Area:		HH7. Region	HH7A. District	HH7B. Dist-type ____	HH7C. Sub-dist ____
Urban 1					
Rural 2					
HH7D. Structure Address:		HH7E: Contact No of HH:			

WE ARE FROM THE GHANA STATISTICAL SERVICE. WE ARE CONDUCTING A SURVEY THAT IS CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO ASK YOU A FEW QUESTIONS ON THESE AREAS. THE INTERVIEW WILL TAKE ABOUT 45 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE.

MAY I START NOW?

- Yes, permission is given Go to HH10 to get signature, then HH18 to record time, then begin interview.
 No, permission is not given Complete HH9. Discuss this result with your supervisor.

After all questionnaires for the household have been completed, fill in the following information:

HH8. Name of head of household: _____	
HH9. Result of household interview: Completed 01 No household member or no competent respondent at home at time of visit 02 Entire household absent for extended period of time 03 Refused 04 Dwelling vacant / Address not a dwelling 05 Dwelling destroyed 06 Dwelling not found 07 Other (specify) 96	HH10. Respondent to household questionnaire: Name: _____ (Respondent's signature or thumbprint) Line Number: ____ ____ HH11. Total number of household members: ____ ____
HH12. Number of women age 15-49 years: ____ ____	HH13. Number of women's questionnaires completed: ____ ____
HH14. Number of children under age 5: ____ ____	HH15. Number of under-5 questionnaires completed: ____ ____
IF HOUSEHOLD IS NOT SELECTED FOR THE MALE INTERVIEW (HH5A=2), LEAVE HH15A AND HH15B BLANK	
HH15A. Number of men aged 15-59 years ____ ____	HH15B. Number of men's questionnaires completed: ____ ____
HH16. Field edited by (Name and number): Name _____	HH17. Data entry clerk (Name and number): Name _____

HH18. HOUSEHOLD LISTING FORM														HL																																																																																																																																																																																																																																																																																																																																																																													
Record the time. FIRST, PLEASE TELL ME THE NAME OF EACH PERSON IN YOUR HOUSEHOLD WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HOUSEHOLD. List the head of the household in line 01. List all household members (HL2), their relationship to the household head (HL3), and their sex (HL4) Then ask: ARE THERE ANY OTHERS WHO LIVE HERE, EVEN IF THEY ARE NOT AT HOME NOW? (THESE MAY INCLUDE CHILDREN CURRENTLY IN SCHOOL OR AT WORK). If yes, complete listing for questions HL2-HL4. Then, ask questions starting with HL5 for each person at a time. Use an additional questionnaire if all rows in the household listing form have been used.																																																																																																																																																																																																																																																																																																																																																																																											
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If age is 95 or above, record '95'</td> <td></td> <td></td> <td></td> <td></td> <td>1 Yes 2 No</td> <td>1 Yes 2 No HL13 8 DK HL13</td> <td>Record line number of mother or 00 for "No"</td> <td>1 Yes 2 No Next Line 8 DK Next Line</td> <td>Record line number of father or 00 for "No"</td> </tr> <tr> <th>Line</th> <th>Name</th> <th>Relation*</th> <th>M</th> <th>F</th> <th>Month Year</th> <th>Age</th> <th>15-49</th> <th>15-59</th> <th>Mother</th> <th>Mother</th> <th>Y</th> <th>N</th> <th>Y</th> <th>N</th> <th>DK</th> <th>Mother</th> <th>Y</th> <th>N</th> <th>DK</th> <th>Father</th> </tr> <tr><td>01</td><td></td><td>01</td><td>1</td><td>2</td><td></td><td></td><td>01</td><td>01</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>02</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>02</td><td>02</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>03</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>03</td><td>03</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>04</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>04</td><td>04</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>05</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>05</td><td>05</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>06</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>06</td><td>06</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>07</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>07</td><td>07</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>08</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>08</td><td>08</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>09</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>09</td><td>09</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>10</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>10</td><td>10</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>11</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>11</td><td>11</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>12</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>12</td><td>12</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>13</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>13</td><td>13</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>14</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>14</td><td>14</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> <tr><td>15</td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td>15</td><td>15</td><td></td><td></td><td>1</td><td>2</td><td>1</td><td>2</td><td>8</td><td></td><td>1</td><td>2</td><td>8</td><td></td></tr> </table>														HL1. 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If age is 95 or above, record '95'					1 Yes 2 No	1 Yes 2 No HL13 8 DK HL13	Record line number of mother or 00 for "No"	1 Yes 2 No Next Line 8 DK Next Line	Record line number of father or 00 for "No"	Line	Name	Relation*	M	F	Month Year	Age	15-49	15-59	Mother	Mother	Y	N	Y	N	DK	Mother	Y	N	DK	Father	01		01	1	2			01	01			1	2	1	2	8		1	2	8		02			1	2			02	02			1	2	1	2	8		1	2	8		03			1	2			03	03			1	2	1	2	8		1	2	8		04			1	2			04	04			1	2	1	2	8		1	2	8		05			1	2			05	05			1	2	1	2	8		1	2	8		06			1	2			06	06			1	2	1	2	8		1	2	8		07			1	2			07	07			1	2	1	2	8		1	2	8		08			1	2			08	08			1	2	1	2	8		1	2	8		09			1	2			09	09			1	2	1	2	8		1	2	8		10			1	2			10	10			1	2	1	2	8		1	2	8		11			1	2			11	11			1	2	1	2	8		1	2	8		12			1	2			12	12			1	2	1	2	8		1	2	8		13			1	2			13	13			1	2	1	2	8		1	2	8		14			1	2			14	14			1	2	1	2	8		1	2	8		15			1	2			15	15			1	2	1	2	8		1	2	8	
HL1. Line number	HL2. Name	HL3. WHAT IS THE RELATIONSHIP OF (name) TO THE HEAD OF HOUSEHOLD?	HL4. IS (name) MALE OR FEMALE?	HL5. WHAT IS (name)'S DATE OF BIRTH?	HL6. HOW OLD IS (name)?	HL7. Circle line number if woman is age 15-49	HL7A. Check if HH5A=1 Circle line number if man is age 15-59	HL8. WHO IS THE MOTHER OR PRIMARY CARETAKER OF THIS CHILD?	HL9. WHO IS THE MOTHER/ PRIMARY CARETAKER OF THIS CHILD?	HL10. DID (name) STAY HERE LAST NIGHT?	HL11. IS (name)'S NATURAL MOTHER ALIVE?	HL12. DOES (name)'S NATURAL MOTHER LIVE IN THIS HOUSEHOLD?	HL13. IS (name)'S NATURAL FATHER ALIVE?	HL14. DOES (name)'S NATURAL FATHER LIVE IN THIS HOUSEHOLD?																																																																																																																																																																																																																																																																																																																																																																													
			1 Male 2 Female	98 DK 9998 DK	Record in completed years. If age is 95 or above, record '95'					1 Yes 2 No	1 Yes 2 No HL13 8 DK HL13	Record line number of mother or 00 for "No"	1 Yes 2 No Next Line 8 DK Next Line	Record line number of father or 00 for "No"																																																																																																																																																																																																																																																																																																																																																																													
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Check box if additional questionnaire is used <input type="checkbox"/>																																																																																																																																																																																																																																																																																																																																																																																											
Probe for additional household members. Probe especially for any infants or small children not listed, and others who may not be members of the family (such as servants, friends, physically challenged) but who usually live in the household. Insert names of additional members in the household list and complete form accordingly.																																																																																																																																																																																																																																																																																																																																																																																											
Now for each man age 15-49 years, write her name and line number and other identifying information in the information panel of a separate Individual Women's Questionnaire. Now for each man age 15-59 years, write his name and line number and other identifying information in the information panel of a separate Individual Men's Questionnaire if the household is selected for the Male Interview. For each child under age 5, write his/her name and line number AND the line number of his/her mother or caretaker in the information panel of a separate Under-5 Questionnaire. You should now have a separate questionnaire for each eligible woman, man and each child under five in the household.																																																																																																																																																																																																																																																																																																																																																																																											

* Codes for HL3: Relationship to head of household:

01 Head	06 Parent	11 Niece / Nephew
02 Wife / Husband/Cohabiting partner	07 Parent-In-Law	12 Other relative (specify)
03 Son / Daughter	08 Brother / Sister	13 Adopted / Foster / Stepchild
04 Son-In-Law / Daughter-In-Law	09 Brother-In-Law / Sister-In-Law	14 Not related
05 Grandchild	10 Uncle / Aunt	98 Don't know

EDUCATION														ED			
For household members age 3 and above														For household members age 3-24 years			
ED1. Line number	ED2. Name and age	ED3. HAS (name) EVER ATTENDED SCHOOL OR PRE-SCHOOL?	ED4A. WHAT IS THE HIGHEST LEVEL OF SCHOOL (name) ATTENDED?*	ED4B. WHAT IS THE HIGHEST CLASS/ YEAR (name) COMPLETED AT THIS LEVEL?*	ED5. DURING THE 2011-2012 SCHOOL YEAR, DID (name) ATTEND SCHOOL OR PRESCHOOL AT ANY TIME?	ED6. DURING THIS/THAT SCHOOL YEAR, WHICH LEVEL AND CLASS/YEAR IS/WAS (name) ATTENDING?*	ED7. DURING THE PREVIOUS SCHOOL YEAR, THAT IS (2010-2011), DID (name) ATTEND SCHOOL OR PRESCHOOL AT ANY TIME?	ED8. DURING THAT PREVIOUS SCHOOL YEAR, WHICH LEVEL AND CLASS/YEAR DID (name) ATTEND?*									
	Copy from Household Listing Form, HL2 and HL6	1 Yes 2 NO Next Line	If level=0 skip to ED5	Class/Year: 8 DK If less than a class/year completed, enter 0.	1 Yes 2 No ED7	If level=0 skip to ED7 Class/Year 8 DK	1 Yes 2 No Next Line 8 DK Next Line	If level=0 go to next person Class/Year: 8 DK									
Line	Name	Age	Yes	No	Level*	Class/Year	Yes	No	Level*	Class/Year	Y	N	DK	Level*	Class/Year		
01			1	2			1	2			1	2	8				
02			1	2			1	2			1	2	8				
03			1	2			1	2			1	2	8				
04			1	2			1	2			1	2	8				
05			1	2			1	2			1	2	8				

EDUCATION (cont'd)										ED	
06			1	2			1	2	8		
07			1	2			1	2	8		
08			1	2			1	2	8		
09			1	2			1	2	8		
10			1	2			1	2	8		
11			1	2			1	2	8		
12			1	2			1	2	8		
13			1	2			1	2	8		
14			1	2			1	2	8		
15			1	2			1	2	8		

* Codes for Educational Level: ED4A, ED6, ED8

0 Pre-school 1 Primary	2 Middle/JSS/JHS 3 Secondary/SSS/SHS	4 Voc/Comm/Tech 5 Post Secondary (Nursing/Teacher Training)	6 Tertiary 8 DK
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WATER AND SANITATION		WS	
WS1. WHAT IS THE MAIN SOURCE OF DRINKING WATER FOR MEMBERS OF YOUR HOUSEHOLD?	Piped water		
	Piped into dwelling	11	11 WS6
	Piped into compound, yard or plot	12	12 WS6
	Piped to neighbour	13	13 WS6
	Public tap / standpipe	14	14 WS3
	Tube Well, Borehole	21	21 WS3
	Dug well		
	Protected well	31	31 WS3
	Unprotected well	32	32 WS3
	Protected spring	41	41 WS3
	Unprotected spring	42	42 WS3
	Rainwater collection	51	51 WS3
	Tanker-truck	61	61 WS6
	Cart with small tank / drum	71	71 WS6
	Surface water		
River/ stream	81	81 WS3	
Dam, lake, pond, canal, irrigation channel)	82	82 WS3	
Bottled water	91	91 WS3	
Sachet water	92	92 WS3	
Other (specify)	96	96 WS3	
WS2. WHAT IS THE MAIN SOURCE OF WATER USED BY YOUR HOUSEHOLD FOR OTHER PURPOSES SUCH AS COOKING AND HAND WASHING?	Piped water		
	Piped into dwelling	11	11 WS6
	Piped into compound, yard or plot	12	12 WS6
	Piped to neighbour	13	13 WS6
	Public tap / standpipe	14	14 WS4
	Tube Well, Borehole	21	
	Dug well		
	Protected well	31	
	Unprotected well	32	
	Water from spring		
	Protected spring	41	
	Unprotected spring	42	
	Rainwater collection	51	
	Tanker-truck	61	61 WS6
	Cart with small tank / drum	71	71 WS6
Surface water			
River/ stream	81		
Dam, lake, pond, canal, irrigation channel)	82		
Other (specify)	96		
WS3. WHERE IS THAT WATER SOURCE LOCATED?	In own dwelling	1	1 WS6
	In own yard / plot	2	2 WS6
	Elsewhere	3	
WS4. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?	Number of minutes _ _ _ _		
	DK 998		

WATER AND SANITATION (cont'd)		WS	
WS5. WHO USUALLY GOES TO THIS SOURCE TO COLLECT THE WATER FOR YOUR HOUSEHOLD? Probe: IS THIS PERSON UNDER AGE 15? WHAT SEX?	Adult woman (age 15+ years)	1	
	Adult man (age 15+ years)	2	
	Female child (under 15)	3	
	Male child (under 15)	4	
	DK	8	
WS6. DO YOU DO ANYTHING TO THE WATER TO MAKE IT SAFER TO DRINK?	Yes	1	2 WS7A
	No	2	
	DK	8	8 WS7A
WS7. WHAT DO YOU USUALLY DO TO MAKE THE WATER SAFER TO DRINK? Probe: ANYTHING ELSE? Record all items mentioned.	Boil	A	
	Add bleach / chlorine	B	
	Strain it through a cloth	C	
	Use water filter (ceramic, sand, composite, etc.)	D	
	Solar disinfection	E	
	Let it stand and settle	F	
	Add camphor/naphthalene	G	
	Add water tablet	H	
	Other (specify)	X	
	DK	Z	
WS7A. Check WS1			
<input type="checkbox"/> WS1 = 11 to 14 Continue with WS7B			
<input type="checkbox"/> WS1 = 21 or 31 or 41 Go to WS7C			
<input type="checkbox"/> WS1 = other answers Go to WS8			
WS7B. DURING THE LAST MONTH, HOW OFTEN DID THE WATER FLOW THROUGH THE PIPE?	Everyday	1	1 WS8
	3 to 5 days a week	2	2 WS8
	Once a week	3	3 WS8
	Less than once a week	4	4 WS8
	Twice a month	5	5 WS8
	Less than twice a month	6	6 WS8
DK	8	8 WS8	
WS7C. WHEN WAS THE LAST TIME THE WATER FACILITY BROKE DOWN?	During last week	1	
	One month ago	2	
	Three months ago	3	
	More than 3 month ago	4	
	Never broke down	5	5 WS8
	DK	8	8 WS8
WS7D. LAST TIME THE FACILITY WATER BROKE DOWN, HOW LONG DID IT TAKE TO HAVE IT FIXED AND WORKING AGAIN?	Immediately/Few days	1	
	One week	2	
	During the same month	3	
	More than one month	4	
	Not fixed yet	5	
	DK	8	
WS8. WHAT KIND OF TOILET FACILITY DO MEMBERS OF YOUR HOUSEHOLD USUALLY USE? If "flush", probe: WHERE DOES IT FLUSH TO? If necessary, ask permission to observe the facility.	Flush		
	Flush to piped sewer system	11	
	Flush to septic tank	12	
	Flush to pit (latrine)	13	
	Flush to somewhere else	14	
	Flush, don't know where	15	
	Pit latrine		
	Ventilated Improved Pit latrine (VIP)	21	
	Pit latrine with slab	22	
	Pit latrine without slab / Open pit	23	
	Composting toilet	31	
	Bucket	41	
	Hanging toilet, Hanging latrine	51	
	Mobile Toilet	61	
	No facility, Bush, Field, Beach	95	95 Next Module
Other (specify)	96		
WS9. DO YOU SHARE THIS FACILITY WITH OTHERS WHO ARE NOT MEMBERS OF YOUR HOUSEHOLD?	Yes	1	
	No	2	2 Next Module
WS10. DO YOU SHARE THIS FACILITY ONLY WITH MEMBERS OF OTHER HOUSEHOLDS THAT YOU KNOW, OR IS THE FACILITY OPEN TO THE USE OF THE GENERAL PUBLIC?	Other households only (not public)	1	
	Public facility	2	2 Next Module

WATER AND SANITATION (cont'd)		WS
WS11. HOW MANY HOUSEHOLDS IN TOTAL USE THIS TOILET FACILITY, INCLUDING YOUR OWN HOUSEHOLD?	Number of households (if less than 10)	0__
	Ten or more households	10
	DK	98

HOUSEHOLD CHARACTERISTICS		
HC1A. WHAT IS THE RELIGION OF THE HEAD OF THIS HOUSEHOLD?	Catholic	11
	Protestant	12
	Pentecostal/Charismatic	13
	Deeper Life	14
	Jehovah Witness	15
	SDA	16
	Other Christian	17
	Moslem	21
	Traditional	31
	Spiritualist	32
	Other religion (specify)	96
No Religion	97	
HC1B. TO WHAT ETHNIC GROUP DOES THE HEAD OF THIS HOUSEHOLD BELONG? Refer to Manual for Ethnic classifications	Akan	11
	Ga/Dangme	12
	Ewe	13
	Guan	14
	Gruma	15
	Mole Dagbani	21
	Grusi	22
	Mande	23
	Non-Ghanaian	24
	Other ethnic group (specify)	96
HC2. HOW MANY ROOMS IN THIS HOUSEHOLD ARE USED FOR SLEEPING?	Number of rooms	__ __
HC3. Main material of the dwelling floor. Record observation.	Natural Floor	
	Earth/sand/mud/mud bricks	11
	Rudimentary floor	
	Wood planks	21
	Palm / Bamboo	22
	Stone	23
	Finished floor	
	Parquet or polished wood	31
	Vinyl tiles/Asphalt strips	32
	Ceramic tiles/marble tiles/porcelain	33
	Cement/Concrete	34
	Terrazzo	36
	Burnt Bricks	37
	Other (specify)	96
HC4. Main material of the roof. Record observation.	Natural Roof	
	Thatch / Palm leaf/Raffia	12
	Rudimentary Roof	
	Palm/Bamboo	22
	Wood planks	23
	Cardboard/Polythene sheets	24
	Mud/mud bricks/earth	25
	Finished Roof	
	Metal Sheet	31
	Parquet/Polished Wood	32
	Ceramic tiles	34
	Cement	35
	Roofing tiles	36
	Slate/asbestos	37
Other (specify)	96	
HC5. Main material of the exterior walls. Record observation.	Natural Wall	
	Cane / Palm / Trunks	12
	Earth/mud/mud bricks	13
	Rudimentary Wall	
	Palm/Bamboo with mud	21
	Stone with mud	22
	Plywood	24
	Cardboard	25
	Re-used wood	26
	Finished Wall	
	Stone with lime / cement	32
	Burned Bricks	33
	Cement blocks/concrete.	34
	Wood planks	36
Other (specify)	96	

HOUSEHOLD CHARACTERISTICS (cont'd)			
HC6. WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD MAINLY USE FOR COOKING?	Electricity	01	01 HC8
	Liquefied Petroleum Gas (LPG)	02	02 HC8
	Biogas	04	04 HC8
	Kerosene	05	05 HC8
	Charcoal	07	
	Wood/Firewood	08	
	Straw / Shrubs / Grass	09	
	Animal waste	10	
	Agricultural crop residue/sawdust	11	
	No food cooked in household	95	95 HC8
	Other (specify)	96	
HC6A. IN THIS HOUSEHOLD, IS FOOD COOKED ON AN OPEN FIRE, A COAL POT OR A CLOSED STOVE?	Open fire	1	
	Coal pot	2	
	Closed stove	3	
	Other (specify)	6	
HC7. IS THE COOKING USUALLY DONE IN THE HOUSE, IN A SEPARATE BUILDING, OR OUTDOORS? If 'In the house', probe: IS IT DONE IN A SEPARATE ROOM USED AS A KITCHEN?	In the house		
	In a separate room used as kitchen	1	
	Elsewhere in the house	2	
	In a separate building	3	
	Outdoors	4	
Other (specify)	6		
HC8. DOES YOUR HOUSEHOLD HAVE:		Yes	No
	[A] ELECTRICITY?	1	2
	[B] A RADIO?	1	2
	[C] A BLACK AND WHITE TELEVISION?	1	2
	[C1] A COLOUR TELEVISION?	1	2
	[D] A LAND/FIXED TELEPHONE?	1	2
	[E] A REFRIGERATOR/FREEZER?	1	2
	[F] A WASHING MACHINE?	1	2
	[G] A LAPTOP COMPUTER?	1	2
	[H] A DESKTOP COMPUTER?	1	2
	[I] A VIDEO DECK?	1	2
	[J] A DVD/VCD PLAYER?	1	2
	[K] A SEWING MACHINE?	1	2
HC9. DOES ANY MEMBER OF YOUR HOUSEHOLD OWN:		Yes	No
	[A] A WATCH?	1	2
	[B] A MOBILE TELEPHONE?	1	2
	[C] A BICYCLE?	1	2
	[D] A MOTORCYCLE OR SCOOTER?	1	2
	[E] AN ANIMAL-DRAWN CART?	1	2
	[F] A CAR OR TRUCK?	1	2
	[G] A CANOE/BOAT WITH A MOTOR?	1	2
	[H] A CANOE/BOAT WITHOUT A MOTOR?	1	2
HC10. WHAT IS THE OCCUPANCY STATUS OF YOUR HOUSEHOLD IN THIS DWELLING?	Own	01	
	Rent	02	
	Squatting	03	
	Caretaker	04	
	Perching	05	
	Rent Free	06	
	Other (specify)	96	
HC11. DOES ANY MEMBER OF THIS HOUSEHOLD OWN ANY PIECE OF LAND THAT IS USED OR CAN BE USED FOR AGRICULTURE?	Yes	1	
	No	2	2 HC12A
HC12. HOW MANY (HECTARES/POLES/ACRES/PLOT) OF AGRICULTURAL LAND DO MEMBERS OF THIS HOUSEHOLD OWN? If less than 1, record '00'. If 95 or more, record '95'. If unknown, record '98' for Number. If Unit is not known, circle "998".		Unit Number	
	Hectares	1 ___	
	Poles	2 ___	
	Acres	3 ___	
	Plot	4 ___	
	Ropes	5 ___	
DK	998 ___		
HC12A. APART FROM THE PLOT DESCRIBED IN HC11 ABOVE, DOES ANY MEMBER OF THIS HOUSEHOLD OWN ANY PIECE OF LAND THAT IS USED OR CAN BE USED FOR RESIDENTIAL AND/OR COMMERCIAL PURPOSES?	Yes	1	
	No	2	2 HC13

HOUSEHOLD CHARACTERISTICS (cont'd)			
HC12B. HOW MANY (HECTARES POLES/ACRES/PLOT/ROPES) OF RESIDENTIAL PLOTS DO MEMBERS OF THIS HOUSEHOLD OWN? If less than 1, record "00". If 95 or more, record '95'. If unknown, record '98' for Number. If Unit is not known, circle "998".	Hectares Poles Acres Plot Ropes DK	Unit Number 1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 998 ___	
HC13. DOES THIS HOUSEHOLD OWN ANY LIVESTOCK, HERDS, OTHER FARM ANIMALS, OR POULTRY?	Yes No	1 2	2 HC15
HC14. HOW MANY OF THE FOLLOWING ANIMALS DOES THIS HOUSEHOLD HAVE? [A] CATTLE, MILK COWS, OR BULLS? [B] HORSES, DONKEYS, OR MULES? [C] GOATS? [D] SHEEP? [E] CHICKENS? [F] PIGS? [G] RABBITS? [H] DUCKS? [I] OTHERS (SPECIFY) If none, record '00'. If 95 or more, record '95'. If unknown, record '98'.	Cattle, milk cows, or bulls Horses, donkeys, or mules Goats Sheep Chickens/Roosters Pigs Rabbits Ducks Other (specify)	Number _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____ _____	
HC15. DOES ANY MEMBER OF THIS HOUSEHOLD HAVE A BANK ACCOUNT?	Yes No DK	1 2 8	
HC16. OVER THE PAST 12 MONTHS, HAS ANY MEMBER OF THIS HOUSEHOLD RECEIVED ANY FORM OF SUPPORT (KIND OR CASH) FROM NON- HOUSEHOLD MEMBER?	Yes No DK	1 2 8	
HC17. OVER THE PAST 12 MONTHS, HAS ANY MEMBER OF THIS HOUSEHOLD RECEIVED ANY FORM OF SUPPORT (KIND OR CASH) FROM GOVERNMENT OR OTHER ORGANIZATION?	Yes No DK	1 2 8	2 HC19 8 HC19
HC18. FROM WHICH SOURCE DID THE HOUSEHOLD MEMBER(S) RECEIVE THIS FORM OF SUPPORT? Circle all that apply.	LEAP District Assembly NGO Religious group Social group Other (specify) DK	A B C D E X Z	
HC19. OVER THE PAST 12 MONTHS, HAS ANY MEMBER OF THIS HOUSEHOLD SENT OUT ANY FORM OF SUPPORT (KIND OR CASH) TO NON- HOUSEHOLD MEMBERS?	Yes No DK	1 2 8	

INSECTICIDE TREATED NETS		TN	
TN1. DOES YOUR HOUSEHOLD HAVE ANY MOSQUITO NETS THAT CAN BE USED WHILE SLEEPING?	Yes No	1 2	
TN2. HOW MANY MOSQUITO NETS DOES YOUR HOUSEHOLD HAVE?	Number of nets	_____	
TN3. Ask the respondent to show you the nets in the household. If more than 3 nets, use additional questionnaire(s).			
	1st Net	2nd Net	3rd Net
TN4. Mosquito net observed?	Observed hanging Observed not hanging Not observed	1 2 3	Observed hanging Observed not hanging Not observed 1 2 3

INSECTICIDE TREATED NETS (cont'd)		TN	
TN5. Observe or ask the brand/type of mosquito net. If brand is unknown and you cannot observe the net, show pictures of typical net types/brands to respondent.	Long-lasting treated nets Olyset Permanet Interceptor Netprotect Duranet Icon Life Other (specify) DK brand Pre-treated nets Dawa Dawa Plus MOH/NGO treated net Other (specify) DK brand Other nets 31 DK brand / type	11 12 13 14 15 16 17 18 21 22 23 26 28 98	Long-lasting treated nets Olyset Permanet Interceptor Netprotect Duranet Icon Life Other (specify) DK brand Pre-treated nets Dawa Dawa Plus MOH/NGO treated net Other (specify) DK brand Other nets 31 DK brand / type
TN5A. WHERE DID YOU GET THIS NET?	Public Sector Govt. Hospital/Clinic Govt. Health Centre Govt. Health Post/CHPS Fieldworker/Outreach /Peer Education Campaign Other public Private Medical Sector Private Hosp/Clinic Pharmacy/Chemical/ Drug store/shop Other private medical Other Source NGO/CBAs Shop/Market Street Vendor Other Institution Other Don't know	11 12 13 14 15 16 21 22 26 31 32 33 34 36 98	Long-lasting treated nets Olyset Permanet Interceptor Netprotect Duranet Icon Life Other (specify) DK brand Pre-treated nets Dawa Dawa Plus MOH/NGO treated net Other (specify) DK brand Other nets DK brand / type
TN6. HOW MANY MONTHS AGO DID YOU OBTAIN THIS NET? If less than one month, record "00"	Months ago More than 94 mo ago DK / Not sure	_____ 95 98	Months ago More than 94 mo ago DK / Not sure

TN6A. HOW MUCH DID IT COST YOU TO ACQUIRE THIS NET (GH¢)? If received free of charge, record "00"	Cedis _____ DK9998	Cedis _____ DK9998	Cedis _____ DK9998
TN7. Check TN5 for type of net	<input type="checkbox"/> Long-lasting (11-18) TN11 <input type="checkbox"/> Pre-treated (21-28) TN9 <input type="checkbox"/> Else Continue	<input type="checkbox"/> Long-lasting (11-18) TN11 <input type="checkbox"/> Pre-treated (21-28) TN9 <input type="checkbox"/> Else Continue	<input type="checkbox"/> Long-lasting (11-18) TN11 <input type="checkbox"/> Pre-treated (21-28) TN9 <input type="checkbox"/> Else Continue
TN8. WHEN YOU GOT THE NET, WAS IT ALREADY TREATED WITH AN INSECTICIDE TO KILL OR REPEL MOSQUITOES?	Yes No DK / Not sure	1 2 8	Yes No DK / Not sure
TN9. SINCE YOU GOT THE NET, HAS IT EVER BEEN SOAKED OR DIPPED IN A LIQUID TO KILL OR REPEL MOSQUITOES?	Yes No TN11 DK / Not sure TN11	1 2 8	Yes No TN11 DK / Not sure TN11

INSECTICIDE TREATED NETS (cont'd)			TN			
TN10. HOW MANY MONTHS AGO WAS THE NET LAST SOAKED OR DIPPED? If less than one month, record "00"	Months ago	___	Months ago	___	Months ago	___
	More than 24 mo. ago	95	More than 24 mo. ago	95	More than 24 mo. ago	95
	DK / Not sure	98	DK / Not sure	98	DK / Not sure	98
TN11. DID ANYONE SLEEP UNDER THIS MOSQUITO NET LAST NIGHT?	Yes	1	Yes	1	Yes	1
	No	2	No	2	No	2
		TN13		TN13		TN13
	DK / Not sure	8	DK / Not sure	8	DK / Not sure	8
		TN13		TN13		TN13
TN12. WHO SLEPT UNDER THIS MOSQUITO NET LAST NIGHT? Record the person's line number from the household listing form If someone not in the household list slept under the mosquito net, record "00"	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
	Name		Name		Name	
	Line number	___	Line number	___	Line number	___
TN13.	Go back to TN4 for next net. If no more nets, go to TN14		Go back to TN4 for next net. If no more nets, go to TN14		Go back to TN4 for next net. If no more nets, go to TN14	
			Check box if additional questionnaire used <input type="checkbox"/>			

INSECTICIDE TREATED NETS			TN	
TN14. DURING THE LAST 12 MONTHS, HAS ANY MEMBER OF YOUR HOUSEHOLD DISPOSED OFF ANY TREATED MOSQUITO NETS?	Yes	1	2 Next Module 8 Next Module	
	No	2		
	DK	8		
TN15. NOW I WANT TO TALK ABOUT THE LAST TREATED NET THAT YOU DISPOSED OFF. HOW DID YOU DISPOSE OFF YOUR LAST TREATED MOSQUITO NET?	Burned	1		
	Buried	2		
	Garbage/refuse dump	3		
	Reused for other purposes	4		
	Other (specify)	6		
TN16. HOW LONG DID YOU USE IT BEFORE DISPOSING IT OFF?	Less than 2 years	1		
	2 to 4 years	2		
	More than 4 years	3		
TN17. WHAT WAS THE MAIN REASON FOR DISPOSING OFF THIS NET?	Torn	1		
	Could not repel mosquitoes anymore	2		
	Got a new one	3		
	Other (specify)	6		

INDOOR RESIDUAL SPRAYING			IR	
IR1. AT ANY TIME IN THE PAST 12 MONTHS, HAS ANYONE COME INTO YOUR DWELLING TO SPRAY THE INTERIOR WALLS AGAINST MOSQUITOES?	Yes	1	2 Next Module 8 Next Module	
	No	2		
	DK	8		
IR2. WHO SPRAYED THE INTERIOR WALLS OF YOUR DWELLING? Circle all that apply.	Government worker / program	A		
	Private company	B		
	Non-governmental organization	C		
	Private individual	D		
	Other (specify)	X		
	DK	Z		

CHILD DISCIPLINE						CD	
Table 1: Children Aged 2-14 Years Eligible for Child Discipline Questions							
<ul style="list-style-type: none"> If there is no child aged 2-14 years in the household, skip to Next Module. List each of the children aged 2-14 years below in the order they appear in the Household Listing Form. Do not include other household members outside of the age range 2-14 years. Record the line number, name, sex, and age for each child. Then record the total number of children aged 2-14 in the box provided (CD6). 							
CD1. Rank number	CD2. Line number from HL1	CD3. Name from HL2	CD4. Sex from HL4	CD5. Age from HL6			
Rank	Line	Name	M	F	Age		
1	_0_7_	Kwame	1	2	_1_3_		
2	_0_8_	Kofi	1	2	_1_0_		
3	_1_0_	Adwoa	1	2	_0_8_		
4	_1_1_	Afi	1	2	_0_5_		
5	_1_6_	Fortune	1	2	_1_1_		
6	___		1	2	___		
7	___		1	2	___		
8	___		1	2	___		
CD6.	Total children age 2-14 years				__0__5_		
<ul style="list-style-type: none"> If there is only one child age 2-14 years in the household, skip table 2 and go to CD8; write down '1' and continue with CD9 							

Table 2: Selection of Random Child for Child Discipline Questions							
<ul style="list-style-type: none"> Use Table 2 to select one child between the ages of 2 and 14 years, if there is more than one child in that age range in the household. Check the last digit of the household number (HH2) from the cover page. This is the number of the row you should go to in the table below. Check the total number of eligible children (2-14) in CD6 above. This is the number of the column you should go to. Find the box where the row and the column meet and circle the number that appears in the box. This is the rank number of the child (CD1) about whom the questions will be asked. 							

CD7. Total Number of Eligible Children in the Household (CD6)								
Last digit of household number (HH2)	1	2	3	4	5	6	7	8+
0	1	2	2	4	3	6	5	4
1	1	1	3	1	4	1	6	5
2	1	2	1	2	5	2	7	6
3	1	1	2	3	1	3	1	7
4	1	2	3	4	2	4	2	8
5	1	1	1	1	3	5	3	1
6	1	2	2	2	4	6	4	2
7	1	1	3	3	5	1	5	3
8	1	2	1	4	1	2	6	4
9	1	1	2	1	2	3	7	5
CD8. Record the rank number of the selected child								__5__

CHILD DISCIPLINE			CD	
CD9. Write the name and line number of the child selected for the module from CD3 and CD2, based on the rank number in CD8.	Name			
	Line number	___		
CD10. ADULTS USE CERTAIN WAYS TO TEACH CHILDREN THE RIGHT BEHAVIOUR OR TO ADDRESS A BEHAVIOUR PROBLEM. I WILL READ VARIOUS METHODS THAT ARE USED AND I WANT YOU TO TELL ME IF YOU OR ANYONE ELSE IN YOUR HOUSEHOLD HAS USED THIS METHOD WITH (name) IN THE PAST MONTH.				
CD11. TOOK AWAY PRIVILEGES, FORBADE SOMETHING (name) LIKED OR DID NOT ALLOW HIM/HER TO LEAVE HOUSE.	Yes	1		
	No	2		
CD11A. IGNORED/REFUSED TO COMMUNICATE TO (name).	Yes	1		
	No	2		

CHILD DISCIPLINE (cont'd)		CD	
CD12. EXPLAINED WHY (name)'S BEHAVIOR WAS WRONG.	Yes No	1 2	
CD13. SHOOK HIM/HER.	Yes No	1 2	
CD14. SHOUTED, YELLED AT OR SCREAMED AT HIM/HER.	Yes No	1 2	
CD15. GAVE HIM/HER SOMETHING ELSE TO DO.	Yes No	1 2	
CD16. SPANKED, HIT, PUSHED OR SLAPPED HIM/HER ON THE BOTTOM WITH BARE HAND.	Yes No	1 2	
CD17. HIT HIM/HER ON THE BOTTOM OR ELSEWHERE ON THE BODY WITH SOMETHING LIKE A BELT, COMB, HAIRBRUSH, CANE, STICK OR OTHER HARD OBJECT.	Yes No	1 2	
CD18. CALLED HIM/HER DUMB, LAZY, OR ANOTHER NAME LIKE THAT.	Yes No	1 2	
CD19. HIT OR SLAPPED HIM/HER ON THE FACE, HEAD OR EARS.	Yes No	1 2	
CD20. HIT OR SLAPPED HIM/HER ON THE HAND, ARM, OR LEG.	Yes No	1 2	
CD21. BEAT HIM/HER UP, THAT IS HIT HIM/HER OVER AND OVER AS HARD AS ONE COULD.	Yes No	1 2	
CD22. DO YOU BELIEVE THAT IN ORDER TO BRING UP, RAISE, OR EDUCATE A CHILD PROPERLY, THE CHILD NEEDS TO BE PHYSICALLY PUNISHED?	Yes No Don't know / No opinion	1 2 8	

HAND WASHING		HW	
HW1. PLEASE SHOW ME WHERE MEMBERS OF YOUR HOUSEHOLD MOST OFTEN WASH THEIR HANDS.	Observed	1	
	Not observed		
	Not in dwelling / plot / yard	2	2 HW4
	No permission to see	3	3 HW4
	Other reason	6	6 HW4
HW2. Observe presence of water at the specific place for hand washing.	Water is available	1	
Verify by checking the tap/pump, or basin, bucket, water container or similar objects for presence of water.	Water is not available	2	
HW3. Record if soap or detergent or other traditional detergents are present at the specific place for hand washing.	Washing Soap (e.g. Key soap)	A	A HH19
Circle all that apply. Skip to Next Module if any soap or detergent code (A, B, C, D, E or X) is circled. If "None" (Y) is circled, continue with HW4.	Detergent (Powder / Liquid / Paste)	B	B HH19
	Liquid hand washing soap	C	C HH19
	Ash	D	D HH19
	Toilet Soap (e.g. Lux)	E	E HH19
	Other (specify)	X	X HH19
	None	Y	
	HW4. DO YOU HAVE ANY SOAP OR DETERGENT OR ANY OTHER TRADITIONAL DETERGENTS IN YOUR HOUSEHOLD FOR WASHING HANDS?	Yes No	1 2

HAND WASHING (continued)		HW	
HW5. CAN YOU PLEASE SHOW IT TO ME?	Washing Soap (e.g. Key soap)	A	
Record observation. Circle all that apply.	Detergent (Powder / Liquid / Paste)	B	
	Liquid handwashing soap	C	
	Toilet Soap (e.g. Lux)	E	
	Ash	D	
	Other (specify)	X	
	Not able / Does not want to show	Y	
HH19. Record the time.	Hour and minutes ___ : ___		

SALT IODIZATION		SI	
SI1. WE WOULD LIKE TO CHECK WHETHER THE SALT USED IN YOUR HOUSEHOLD IS IODIZED. MAY I HAVE A SAMPLE OF THE SALT USED TO COOK MEALS IN YOUR HOUSEHOLD?	Not iodized 0 PPM	1	
	More than 0 PPM & less than 15 PPM	2	
	15 PPM or more	3	
	No salt in the house	6	6 HH20
Once you have tested the salt, circle the number that corresponds to the test outcome.	Salt not tested	7	

SI1A. Has the household been selected for male questionnaire?

Check HH5A=1

Yes Collect salt sample from the household for further testing.

No Skip to HH20

SI2. HAS THE SALT SAMPLE BEEN COLLECTED FROM THIS HOUSEHOLD?	Yes No Refused	1 2 3	
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HH20. Does any eligible woman age 15-49 reside in the household?

Check Household Listing Form, column HL7 for any eligible woman. You should have a questionnaire with the Information Panel filled in for each eligible woman.

Yes Go to QUESTIONNAIRE FOR INDIVIDUAL WOMEN Administer the questionnaire to the first eligible woman.

No Continue.

HH21. Does any child under the age of 5 reside in the household?

Check Household Listing Form, column HL9 for any eligible child under age 5. You should have a questionnaire with the Information Panel filled in for each eligible child.

Yes Go to QUESTIONNAIRE FOR CHILDREN UNDER FIVE Administer the questionnaire to mother or caretaker of the first eligible child.

No Continue.

SALT IODIZATION (cont'd)

SI

HH22. [IF THIS HOUSEHOLD WAS SELECTED FOR THE MALE QUESTIONNAIRE] Does any eligible man age 15-59 reside in the household?

Check Household Listing Form, column HL7A for any eligible man.

You should have a questionnaire with the Information Panel filled in for each eligible man.

Yes Go to QUESTIONNAIRE FOR INDIVIDUAL MEN
Administer the questionnaire to the first eligible man.

No End the interview by thanking the respondent for his/her cooperation.
Gather together all questionnaires for this household and complete HH8 TO HH15B on
the cover page.

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

MICS		WOMEN QUESTIONNAIRE GHANA 2011	
WOMAN'S INFORMATION PANEL		WM	
This questionnaire is to be administered to all women age 15 through 49 (see Household Listing Form, column HL7). A separate questionnaire should be used for each eligible woman.			
WM1. Cluster Number:	WM2. Household number:		
WM3. Woman's name:	WM4. Woman's line number:		
WM5. Interviewer name and number:	WM6. Day / Month / Year of interview:		
Name of Region: _____	Name of District: _____		
Repeat greeting if not already read to this woman:		If greeting at the beginning of the household questionnaire has already been read to this woman, then read the following:	
WE ARE FROM GHANA STATISTICAL SERVICE. WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT 45 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.		NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 45 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.	
MAY I START NOW? <input type="checkbox"/> Yes, permission is given Go to WM10 to record the time and then begin the interview. If yes ask for all documents for her and for her children as IDs, maternity card, child's immunization card, birth certificate, antenatal card, baptismal card and any other card on which the child's records are written <input type="checkbox"/> No, permission is not given Complete WM7. Discuss this result with your supervisor.			
WM7. Result of woman's interview	Completed	01	
	Not at home	02	
	Refused	03	
	Partly completed	04	
	Incapacitated	05	
	Other (specify)	96	
WM8. Field edited by (Name and number):	WM9. Data entry clerk (Name and number):		
Name _____	Name _____		
WM10. Record the time.	Hour and minutes _____ : _____		

WOMAN'S BACKGROUND		WB	
WB1. IN WHAT MONTH AND YEAR WERE YOU BORN?	Date of birth Month _____ DK month 98 Year _____ DK year 9998		
WB2. HOW OLD ARE YOU? Probe: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?	Age (in completed years) _____		
Compare and correct WB1 and/or WB2 if inconsistent			
WB3. HAVE YOU EVER ATTENDED SCHOOL? (INCLUDING PRESCHOOL)	Yes 1 No 2	2	WB7
WB4. WHAT IS THE HIGHEST LEVEL OF SCHOOL YOU ATTENDED?	Preschool 0 Primary 1 Middle/JSS/JHS 2 Secondary/SSS/SHS 3 Voc/Comm/Tech 4 Post Secondary (Nursing/Teacher Trg) 5 Tertiary 6	0	WB7

WOMAN'S BACKGROUND (cont'd)		WB	
WB5. WHAT IS THE HIGHEST CLASS/YEAR YOU COMPLETED AT THAT LEVEL?	Class/Year _____		
If no class/year completed at that level, enter "0"			
WB6. Check WB4: <input type="checkbox"/> Secondary or Higher (WB4=3 or WB4=4 or WB4=5 or WB4=6) Go to WB8 <input type="checkbox"/> Primary /Middle/JSS/JHS (WB4=1 or WB4=2) Continue with WB7			
WB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME. Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe: CAN YOU READ PART OF THE SENTENCE TO ME?	Cannot read at all 1 Able to read only parts of sentence 2 Able to read whole sentence 3 No sentence in required language (specify language) 4 Blind / mute, visually / speech impaired 5		
WB8. WHAT IS YOUR RELIGION?	Catholic 11 Protestant 12 Pentecostal/Charismatic 13 Deeper Life 14 Jehovah Witness 15 SDA 16 Other Christian 17 Moslem 21 Traditional 31 Spiritualist 32 Other religion (specify) 96 No Religion 97		
WB9. WHAT IS YOUR ETHNIC GROUP?	Akan 11 Ga/Dangme 12 Ewe 13 Guan 14 Gruma 15 Mole Dagbani 21 Grusi 22 Mande 23 Non-Ghanaian 24 Other ethnic group (specify) 96		

ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY		MT	
MT1. Check WB7: <input type="checkbox"/> Question left blank (Respondent has Secondary or Higher education) Continue with MT2 <input type="checkbox"/> Able to read or no sentence in required language (codes 2, 3 or 4) Continue with MT2 <input type="checkbox"/> Cannot read at all or blind (codes 1 or 5) Go to MT3			
MT2. DO YOU READ A NEWSPAPER OR MAGAZINE ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all 4		

ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY (cont'd)		MT	
MT3. DO YOU LISTEN TO THE RADIO ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	
MT4. DO YOU WATCH TELEVISION ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	
MT6. HAVE YOU EVER USED A COMPUTER?	Yes No	1 2	
MT7. HAVE YOU EVER USED A COMPUTER IN THE LAST 12 MONTHS?	Yes No	1 2	
MT8. DURING THE LAST ONE MONTH, DID YOU USE A COMPUTER ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	
MT9. HAVE YOU EVER USED THE INTERNET?	Yes No	1 2	
MT10. HAVE YOU EVER USED THE INTERNET IN THE LAST 12 MONTHS? If necessary, probe for use from any location, with any device.	Yes No	1 2	
MT11. DURING THE LAST ONE MONTH, DID YOU USE THE INTERNET ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	

INFANT/CHILD MORTALITY		CM	
All questions refer only to LIVE births.			
CM1. NOW I WOULD LIKE TO ASK ABOUT ALL THE BIRTHS YOU HAVE HAD DURING YOUR LIFE. HAVE YOU EVER GIVEN BIRTH?	Yes No	1 2	2 CM8
CM4. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE NOW LIVING WITH YOU?	Yes No	1 2	2 CM6
CM5. HOW MANY SONS LIVE WITH YOU? HOW MANY DAUGHTERS LIVE WITH YOU? If none, record '00'.	Sons at home Daughters at home	— — — —	
CM6. DO YOU HAVE ANY SONS OR DAUGHTERS TO WHOM YOU HAVE GIVEN BIRTH WHO ARE ALIVE BUT DO NOT LIVE WITH YOU?	Yes No	1 2	2 CM8
CM7. HOW MANY SONS ARE ALIVE BUT DO NOT LIVE WITH YOU? HOW MANY DAUGHTERS ARE ALIVE BUT DO NOT LIVE WITH YOU? If none, record '00'.	Sons elsewhere Daughters elsewhere	— — — —	
CM8. HAVE YOU EVER GIVEN BIRTH TO A BOY OR GIRL WHO WAS BORN ALIVE BUT LATER DIED? If "No" probe by asking: I MEAN, TO A CHILD WHO EVER BREATHED OR CRIED OR SHOWED OTHER SIGNS OF LIFE – EVEN IF HE OR SHE LIVED ONLY A FEW MINUTES OR HOURS?	Yes No	1 2	2 CM10
CM9. HOW MANY BOYS HAVE DIED? HOW MANY GIRLS HAVE DIED? If none, record '00'.	Boys dead Girls dead	— — — —	
CM10. Sum answers to CM5, CM7, and CM9.	Sum	— —	

INFANT/CHILD MORTALITY (cont'd)	CM
CM11. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE HAD IN TOTAL (total number in CM10) LIVE BIRTHS DURING YOUR LIFE. IS THIS CORRECT?	
<input type="checkbox"/> Yes. Check below:	
<input type="checkbox"/> No live births Go to ILLNESS SYMPTOMS Module	
<input type="checkbox"/> One or more live births Continue with the BIRTH HISTORY module	
<input type="checkbox"/> No Check responses to CM1-CM10 and make corrections as necessary before proceeding to the BIRTH HISTORY Module or ILLNESS SYMPTOMS Module	

BIRTH HISTORY											BH						
NOW I WOULD LIKE TO RECORD THE NAMES OF ALL OF YOUR BIRTHS, WHETHER STILL ALIVE OR NOT, STARTING WITH THE FIRST ONE YOU HAD. Record names of all of the births in BH1. Record twins and triplets on separate lines. If there are more than 14 births, use an additional questionnaire.																	
BH Line No	BH1. WHAT NAME WAS GIVEN TO YOUR (first/next) BABY?	BH2. WERE ANY OF THESE BIRTHS TWINS?	BH3. IS (name) A BOY OR A GIRL?	BH4. IN WHAT MONTH AND YEAR WAS (name) BORN?	BH5. IS (name) STILL ALIVE?	BH6. HOW OLD WAS (name) AT HIS/HER LAST BIRTHDAY?	BH7. IS (name) LIVING WITH YOU?	BH8. Record household line number of child (from HL1)	BH9. If dead: HOW OLD WAS (name) WHEN HE/SHE DIED?	BH10. WERE THERE ANY OTHER LIVE BIRTHS BETWEEN (name of previous birth) AND (name), INCLUDING ANY CHILDREN WHO DIED AFTER BIRTH?	Y	N	Unit	Number	Y	N	
		1 Single 2 Multiple	1 Boy 2 Girl	Probe: WHAT IS HIS/HER BIRTHDAY?	1 Yes 2 No	Record age in completed years.	1 Yes 2 No	Record "00" if child is not listed.	If "1 year", probe: HOW MANY MONTHS OLD WAS (name)? Record days if less than 1 month; record months if less than 2 years; or years	1 Yes 2 No			Days Months Years	1 2 3	Add Birth	Next Birth	
Line	Name	S	M	B	G	Month	Year	Y	N	Age	Y	N	Line No	Unit	Number	Y	N
01		1	2	1	2			1	2					Days Months Years	1 2 3	Add Birth	Next Birth
													Next Line				
02		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
03		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
04		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
05		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
06		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
07		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
08		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
09		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
10		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
11		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
12		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
13		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth
14		1	2	1	2			1	2				BH10	Days Months Years	1 2 3	Add Birth	Next Birth

BIRTH HISTORY (cont'd)		BH
CM12. Compare number in CM10 with number of births in the Birth History above and check:		
<input type="checkbox"/> Numbers are same Continue with CM13		
<input type="checkbox"/> Numbers are different Probe and reconcile		
CM13. Check BH4 in BIRTH HISTORY: Last birth occurred within the last 2 years, that is, since (day and month of interview) in 2009		
<input type="checkbox"/> No live birth in last 2 years. Go to ILLNESS SYMPTOMS Module.		
<input type="checkbox"/> One or more live births in last 2 years. Record name of last born child and continue with CM14		
Name of child _____		
CM14: Check BH5 in BIRTH HISTORY if last child born during the last 2 years (since 2009) is alive or dead		
<input type="checkbox"/> Alive Go to Next Module.		
<input type="checkbox"/> Not Alive Continue with CM15		
CM15 WAS (NAME) REGISTERED WITH THE BIRTHS AND DEATHS REGISTRY WHEN S/HE DIED?	Yes	
	1	
	No	
	2	
	DK	
	8	

DESIRE FOR LAST BIRTH		DB
This module is to be administered to all women with a live birth in the 2 years preceding date of interview.		
Check child mortality module CM13 and record name of last-born child here _____.		
Use this child's name in the following questions, where indicated.		
DB1. WHEN YOU GOT PREGNANT WITH (name), DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes	1
	No	2
DB2. DID YOU WANT TO HAVE A BABY LATER ON, OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later	1
	No more	2
DB3. HOW MUCH LONGER DID YOU WANT TO WAIT?	Months	1 ___
	Years	2 ___
	DK	998

MATERNAL AND NEWBORN HEALTH		MN
This module is to be administered to all women with a live birth in the 2 years preceding date of interview.		
Check child mortality module CM13 and record name of last-born child here _____.		
Use this child's name in the following questions, where indicated.		
MN1. DID YOU SEE ANYONE FOR ANTENATAL CARE DURING YOUR PREGNANCY WITH (name)?	Yes	1
	No	2
		2 MN5

MATERNAL AND NEWBORN HEALTH (cont'd)		MN
MN2. WHOM DID YOU SEE?	Health professional:	
Probe:	Doctor	A
ANYONE ELSE?	Nurse / Midwife	B
	Auxiliary midwife	C
	Other person	
	Traditional birth attendant	F
	Community health worker	G
Probe for the type of person seen and circle all answers given.	Other (specify)	X
MN3. HOW MANY TIMES DID YOU RECEIVE ANTENATAL CARE DURING THIS PREGNANCY?	Number of times ___	
	DK	98
MN4. AS PART OF YOUR ANTENATAL CARE DURING THIS PREGNANCY, WERE ANY OF THE FOLLOWING DONE AT LEAST ONCE:	Yes	No
[A] WAS YOUR BLOOD PRESSURE MEASURED?	Blood pressure	1 2
[B] DID YOU GIVE A URINE SAMPLE?	Urine sample	1 2
[C] DID YOU GIVE A BLOOD SAMPLE?	Blood sample	1 2
MN5. DO YOU HAVE A CARD OR OTHER DOCUMENT WITH YOUR OWN IMMUNIZATIONS LISTED?	Yes (card seen)	1
	Yes (card not seen)	2
	No	3
MAY I SEE IT PLEASE?	DK	8
If a card is presented, use it to assist with answers to the following questions.		
MN6. WHEN YOU WERE PREGNANT WITH (name), DID YOU RECEIVE ANY INJECTION IN THE ARM OR SHOULDER TO PREVENT THE BABY FROM GETTING TETANUS, THAT IS CONVULSIONS AFTER BIRTH?	Yes	1
	No	2
	DK	8
		2 MN9
		8 MN9
MN7. HOW MANY TIMES DID YOU RECEIVE THIS TETANUS INJECTION DURING YOUR PREGNANCY WITH (name)?	Number of times ___	
	DK	8
		8 MN9
If 7 or more times, record '7'.		
MN8. How many tetanus injections during last pregnancy were reported in MN7?		
	<input type="checkbox"/> At least two tetanus injections during last pregnancy. Go to MN12	
	<input type="checkbox"/> Fewer than two tetanus injections during last pregnancy. Continue with MN9	
MN9. DID YOU RECEIVE ANY TETANUS INJECTION AT ANY TIME BEFORE YOUR PREGNANCY WITH (name), EITHER TO PROTECT YOURSELF OR ANOTHER BABY?	Yes	1
	No	2
	DK	8
		2 MN12
		8 MN12
MN10. HOW MANY TIMES DID YOU RECEIVE A TETANUS INJECTION BEFORE YOUR PREGNANCY WITH (name)?	Number of times ___	
	DK	8
		8 MN12
If 7 or more times, record '7'.		
MN11. HOW MANY YEARS AGO DID YOU RECEIVE THE LAST TETANUS INJECTION BEFORE YOUR PREGNANCY WITH (name)?	Years ago ___	
MN12. Check MN1 for presence of antenatal care during this pregnancy:		
	<input type="checkbox"/> Yes, antenatal care received. Continue with MN13	
	<input type="checkbox"/> No antenatal care received Go to MN17	
MN13. DURING ANY OF THESE ANTENATAL VISITS FOR THE PREGNANCY, DID YOU TAKE ANY MEDICINE IN ORDER TO PREVENT YOU FROM GETTING MALARIA?	Yes	1
	No	2
	DK	8
		2 MN17
		8 MN17
MN14. WHICH MEDICINES DID YOU TAKE TO PREVENT MALARIA?	SP / Fansidar / Malafan	A
	Chloroquine	B
	Other (specify)	X
	DK	Z
Circle all medicines taken. If type of medicine is not determined, show typical anti-malarial to respondent.		B MN17
		X MN17
		Z MN17

MATERNAL AND NEWBORN HEALTH (cont'd)		MN	
MN15A. HOW MANY MONTHS WERE YOU PREGNANT WHEN YOU FIRST TOOK SP/FANSIDAR/MALAFAN?	Less than 3 months From 3 to 8 months More than 8 months DK 98	1 2 3	
MN16. DURING THIS PREGNANCY, HOW MANY TIMES DID YOU TAKE SP/FANSIDAR?	Number of times ___ DK 98		
MN16A. DID YOU TAKE THE (number of times of MN16) DOSES IN THE PRESENCE OF A HEALTH WORKER?	Yes, all Yes, some No	1 2 3	
MN16B. DID YOU EXPERIENCE ANY SIDE EFFECTS AFTER HAVING TAKEN THE FIRST DOSE OF SP/FANSIDAR ?	Yes No	1 2	2 MN17
MN16C. WHAT SIDE EFFECTS DID YOU EXPERIENCE AFTER HAVING TAKEN THIS FIRST DOSE OF SP/FANSIDAR? Probe: ANY OTHER SIDE EFFECTS?	Skin rashes Blisters on face/ hands/ feet/etc Itching Yellow colouration of urine/ eyes Other (specify) _____	A B C D X	
MN17. WHO ASSISTED WITH THE DELIVERY OF (name)? Probe: ANYONE ELSE? Probe for the type of person assisting and circle all answers given. If respondent says no one assisted, probe to determine whether any adults were present at the delivery.	Health professional: Doctor Nurse / Midwife Auxiliary midwife Other person Traditional birth attendant Community health worker Relative / Friend Other (specify) No one	A B C F G H X Y	
MN18. WHERE DID YOU GIVE BIRTH TO (NAME)? Probe to identify the type of source. If unable to determine whether public or private, write the name of the place. (Name of place)	Home Your home Other home Public sector Govt. hospital/Polyclinic Govt. clinic / health centre Govt. health post/CHPS compound Other public (specify) Private Medical Sector Private hospital Private clinic Private maternity home Other private medical (specify) Other (specify)	11 12 21 22 23 26 31 32 33 36 96	11 MN20 12 MN20 96 MN20
MN19. WAS (name) DELIVERED BY CAESAREAN SECTION? THAT IS, DID THEY CUT YOUR BELLY OPEN TO TAKE THE BABY OUT?	Yes No	1 2	
MN20. WHEN (name) WAS BORN, WAS HE/SHE VERY LARGE, LARGER THAN AVERAGE, AVERAGE, SMALLER THAN AVERAGE, OR VERY SMALL?	Very large Larger than average Average Smaller than average Very small DK	1 2 3 4 5 8	
MN21. WAS (name) WEIGHED AT BIRTH?	Yes No DK	1 2 8	2 MN23 8 MN23
MN22. HOW MUCH DID (name) WEIGH? Record weight from health card, if available.	From card 1 (kg) ___ . ___ From recall... ..2 (kg) ___ . ___ DK 99998		

MATERNAL AND NEWBORN HEALTH (cont'd)		MN	
MN23. HAS YOUR MENSTRUAL PERIOD RETURNED SINCE THE BIRTH OF (name)?	Yes No	1 2	
MN24. DID YOU EVER BREASTFEED (name)?	Yes No	1 2	2 Next Module
MN25. HOW LONG AFTER BIRTH DID YOU FIRST PUT (name) TO THE BREAST? If less than 1 hour, record '00' hours. If less than 24 hours, record hours. Otherwise, record days.	Immediately 000 Hours 1 ___ Days 2 ___ Don't know / remember 998		
MN26. IN THE FIRST THREE DAYS AFTER DELIVERY, WAS (name) GIVEN ANYTHING TO DRINK OTHER THAN BREAST MILK?	Yes No	1 2	2 Next Module
MN27. WHAT WAS (name) GIVEN TO DRINK? Probe: ANYTHING ELSE?	Milk (other than breast milk) Plain water Sugar or glucose water Gripe water Sugar-salt-water solution Fruit juice Infant formula Tea / Infusions Honey Other (specify)	A B C D E F G H I X	

POST-NATAL HEALTH CHECKS		PN	
This module is to be administered to all women with a live birth in the 2 years preceding the date of interview.			
Check child mortality module CM13 and record name of last-born child here _____. Use this child's name in the following questions, where indicated.			
PN1. Check MN18: Was the child delivered in a health facility? <input type="checkbox"/> Yes, the child was delivered in a health facility (MN18=21-26 or 31-36) Continue with PN2 <input type="checkbox"/> No, the child was not delivered in a health facility (MN18=11-12 or 96) Go to PN6			
PN2. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT WHAT HAPPENED IN THE HOURS AND DAYS AFTER THE BIRTH OF (name). YOU HAVE SAID THAT YOU GAVE BIRTH IN (name or type of facility in MN18). HOW LONG DID YOU STAY THERE AFTER THE DELIVERY? If less than one hour, record '00' for Hours If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.	Hours Days Weeks Don't know / remember	1 ___ 2 ___ 3 ___ 998	
PN3. I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (name), CHECKING THE CORD, OR SEEING IF (name) IS OK. BEFORE YOU LEFT THE (name or type of facility in MN18), DID ANYONE CHECK ON (name)'S HEALTH?	Yes No	1 2	
PN4. AND WHAT ABOUT CHECKS ON YOUR HEALTH – I MEAN, SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU. DID ANY HEALTH CARE PROVIDER CHECK ON YOUR HEALTH WHILE YOU WERE STILL AT THE (name or type or facility in MN18)?	Yes No	1 2	

POST-NATAL HEALTH CHECKS (cont'd)		PN	
NOW I WOULD LIKE TO TALK TO YOU ABOUT WHAT HAPPENED AFTER YOU LEFT (name or type of facility in MN18).	Yes	1	1 PN11
	No	2	
PN5. DID ANY HEALTH CARE PROVIDER CHECK ON (child's name)'S HEALTH AFTER YOU LEFT (name or type of facility in MN18) ?			2 PN16
<p>PN6. Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?</p> <p><input type="checkbox"/> Yes, delivery assisted by a health professional or other health worker (MN17=A-G) Continue with PN7</p> <p><input type="checkbox"/> No, delivery not assisted by a health professional or other health worker (A-G not circled in MN17) Go to PN10</p>			
YOU HAVE ALREADY SAID THAT (person or persons in MN17) ASSISTED WITH THE BIRTH. NOW I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY, FOR EXAMPLE EXAMINING (name), CHECKING THE CORD, OR SEEING IF (name) IS OK.	Yes	1	
	No	2	
PN7. AFTER THE DELIVERY WAS OVER AND BEFORE (person or persons in MN17) LEFT YOU, DID (person or persons in MN17) CHECK ON (name)'S HEALTH?			
PN8. AND DID (person or persons in MN17) CHECK ON YOUR HEALTH BEFORE LEAVING?	Yes	1	
BY CHECK ON YOUR HEALTH, I MEAN ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.	No	2	
PN9. AFTER THE (person or persons in MN17) LEFT YOU, DID ANYONE CHECK ON THE HEALTH OF (name)?	Yes	1	1 PN11
	No	2	2 PN18
PN10. I WOULD LIKE TO TALK TO YOU ABOUT CHECKS ON (name)'S HEALTH AFTER DELIVERY – FOR EXAMPLE, SOMEONE EXAMINING (name), CHECKING THE CORD, OR SEEING IF THE BABY IS OK.	Yes	1	
AFTER (name) WAS DELIVERED, DID ANYONE CHECK ON HIS/HER HEALTH?	No	2	2 PN19
PN11. DID SUCH A CHECK ON (name) HAPPEN ONLY ONCE, OR MORE THAN ONCE?	Once	1	1 PN12A
	More than once	2	2 PN12B

POST-NATAL HEALTH CHECKS (cont'd)		PN	
PN12A. HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN?	Hours	1 ___	
PN12B. HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN?	Days	2 ___	
	Weeks	3 ___	
If less than one hour, record '00' for Hours If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.	Don't know / remember	998	
PN13. WHO CHECKED ON (name)'S HEALTH AT THAT TIME?	Health professional		
Probe:	Doctor	A	
ANYONE ELSE?	Nurse / Midwife	B	
	Auxiliary midwife	C	
Probe for the type of person seen and circle all answers given.	Other person		
	Traditional birth attendant	F	
	Community health worker	G	
	Relative / Friend	H	
	Other (specify)	X	
PN14. WHERE DID THIS CHECK TAKE PLACE?	Home		
Probe to identify the type of source.	Your home	11	
	Other home	12	
If unable to determine whether public or private, write the name of the place.	Public sector		
(Name of place)	Govt. hospital/Polyclinic	21	
	Govt. clinic / health centre	22	
	Govt. health post//CHPS compound	23	
	Other public (specify)	26	
	Private medical sector		
	Private hospital	31	
	Private clinic	32	
	Private maternity home	33	
	Other private medical (specify)	36	
	Other (specify)	96	
<p>PN15. Check MN18: Was the child delivered in a health facility?</p> <p><input type="checkbox"/> Yes, the child was delivered in a health facility (MN18=21-26 or 31-36) Continue with PN16</p> <p><input type="checkbox"/> No, the child was not delivered in a health facility (MN18=11-12 or 96) Go to PN17</p>			
PN16. AFTER YOU LEFT (name or type of facility in MN18), DID ANYONE CHECK ON YOUR HEALTH?	Yes	1	1 PN20
	No	2	2 Next Module
<p>PN17. Check MN17: Did a health professional, traditional birth attendant, or community health worker assist with the delivery?</p> <p><input type="checkbox"/> Yes, delivery assisted by a health professional or other health worker (MN17=A-G) Continue with PN18</p> <p><input type="checkbox"/> No, delivery not assisted by a health professional or other health worker (A-G not circled in MN17) Go to PN19</p>			
PN18. AFTER THE DELIVERY WAS OVER AND (person or persons in MN17) LEFT, DID ANYONE CHECK ON YOUR HEALTH?	Yes	1	1 PN20
	No	2	2 Next Module
PN19. AFTER THE BIRTH OF (name), DID ANYONE CHECK ON YOUR HEALTH?	Yes	1	
I MEAN SOMEONE ASSESSING YOUR HEALTH, FOR EXAMPLE ASKING QUESTIONS ABOUT YOUR HEALTH OR EXAMINING YOU.	No	2	2 Next Module

POST-NATAL HEALTH CHECKS (cont'd)		PN	
PN20. DID SUCH A CHECK HAPPEN ONLY ONCE, OR MORE THAN ONCE?	Once	1	1 PN21A
	More than once	2	2 PN21B
PN21A. HOW LONG AFTER DELIVERY DID THAT CHECK HAPPEN?	Hours	1 ___	
PN21B. HOW LONG AFTER DELIVERY DID THE FIRST OF THESE CHECKS HAPPEN? If less than one hour, record '00' for Hours If less than one day, record hours. If less than one week, record days. Otherwise, record weeks.	Days	2 ___	
	Weeks	3 ___	
	Don't know / remember	998	
PN22. WHO CHECKED ON YOUR HEALTH AT THAT TIME? Probe: ANYONE ELSE? Probe for the type of person seen and circle all answers given.	Health professional		
	Doctor	A	
	Nurse / Midwife	B	
	Auxiliary midwife	C	
	Other person		
	Traditional birth attendant	F	
	Community health worker	G	
	Relative / Friend	H	
	Other (specify)	X	
PN23. WHERE DID THIS CHECK TAKE PLACE? Probe to identify the type of source. If unable to determine whether public or private, write the name of the place. (Name of place)	Home		
	Your home	11	
	Other home	12	
	Public sector		
	Govt. hospital/Polyclinic	21	
	Govt. clinic / health centre	22	
	Govt. health post/CHPS compound	23	
	Other public (specify)	26	
	Private medical sector		
	Private hospital	31	
	Private clinic	32	
	Private maternity home	33	
	Other private medical (specify)	36	
	Other (specify)	96	

ILLNESS SYMPTOMS		IS	
IS1. Check Household Listing, column HL9			
Is the respondent the mother or caretaker of any child under age 5?			
<input type="checkbox"/> Yes Continue with IS2.			
<input type="checkbox"/> No Go to Next Module.			
IS2. SOMETIMES CHILDREN HAVE SEVERE ILLNESSES AND SHOULD BE TAKEN IMMEDIATELY TO A HEALTH FACILITY. WHAT TYPES OF SYMPTOMS WOULD CAUSE YOU TO TAKE YOUR CHILD TO A HEALTH FACILITY RIGHT AWAY? Probe: ANY OTHER SYMPTOMS? Keep asking for more signs or symptoms until the mother/caretaker cannot recall any additional symptoms. Circle all symptoms mentioned, but do NOT prompt with any suggestions	Child not able to drink or breastfeed	A	
	Child becomes very sick	B	
	Child develops a fever	C	
	Child has fast breathing	D	
	Child has difficulty breathing	E	
	Child has blood in stool	F	
	Child is drinking poorly	G	
	Child has diarrhoea	H	
	Child incessant crying for no reason	I	
	Child not eating well	J	
		Other (specify)	X
	Other (specify)	Y	
	Other (specify)	Z	

CONTRACEPTION		CP	
CP1. I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING. ARE YOU PREGNANT NOW?	Yes, currently pregnant	1	1 Next Module
	No	2	
	Unsure or DK	8	
CP2. COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY. ARE YOU OR YOUR PARTNER CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID GETTING PREGNANT?	Yes	1	2 Next Module 8 Next Module
	No	2	
	Don't know	8	
CP3. WHAT ARE YOU OR YOUR PARTNER DOING TO DELAY OR AVOID A PREGNANCY? Do not prompt. If more than one method is mentioned, circle each one.	Female sterilization	A	
	Male sterilization	B	
	IUD	C	
	Injectable	D	
	Implants	E	
	Pill	F	
	Male condom	G	
	Female condom	H	
	Diaphragm	I	
	Foam / Jelly	J	
	Lactational amenorrhoea method (LAM)	K	
	Periodic abstinence / Rhythm	L	
	Withdrawal	M	
	LNG-IUS N		
Other (specify)	X		

UNMET NEED		UN	
UN1. Check CP1. Currently pregnant?			
<input type="checkbox"/> Yes, currently pregnant Continue with UN2			
<input type="checkbox"/> No, unsure or DK Go to UN5			
UN2. NOW I WOULD LIKE TO TALK TO YOU ABOUT YOUR CURRENT PREGNANCY. WHEN YOU GOT PREGNANT, DID YOU WANT TO GET PREGNANT AT THAT TIME?	Yes	1	1 UN4
	No	2	
UN3. DID YOU WANT TO HAVE A BABY LATER ON OR DID YOU NOT WANT ANY (MORE) CHILDREN?	Later	1	
	No more	2	
UN4. NOW I WOULD LIKE TO ASK SOME QUESTIONS ABOUT THE FUTURE. AFTER THE CHILD YOU ARE NOW EXPECTING, WOULD YOU LIKE TO HAVE ANOTHER CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY MORE CHILDREN?	Have another child	1	1 UN7 2 UN13 8 UN13
	No more / None	2	
	Undecided / Don't know	8	
UN5. Check CP3. Currently using "Female sterilization"?			
<input type="checkbox"/> Yes Go to UN13			
<input type="checkbox"/> No Continue with UN6			
UN6. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE FUTURE. WOULD YOU LIKE TO HAVE (A/ANOTHER) CHILD, OR WOULD YOU PREFER NOT TO HAVE ANY (MORE) CHILDREN?	Have (a/another) child	1	2 UN9 3 UN11 8 UN9
	No more / None	2	
	Says she cannot get pregnant	3	
	Undecided / Don't know	8	

UNMET NEED (cont'd)		UN	
UN7. HOW LONG WOULD YOU LIKE TO WAIT BEFORE THE BIRTH OF (A/ANOTHER) CHILD?	Months	1 ___	994 UN11
	Years	2 ___	
	Soon / Now	993	
	Says she cannot get pregnant	994	
	After marriage	995	
	Other (specify)	996	
	Don't know	998	
UN8. Check CP1. Currently pregnant?			
<input type="checkbox"/> Yes, currently pregnant Go to UN13 <input type="checkbox"/> No, unsure or DK Continue with UN9			
UN9. Check CP2. Currently using a method?			
<input type="checkbox"/> Yes Go to UN13 <input type="checkbox"/> No Continue with UN10			
UN10. DO YOU THINK YOU ARE PHYSICALLY ABLE TO GET PREGNANT AT THIS TIME?	Yes	1	1 UN13
	No	2	
	DK	8	8 UN13
UN11. WHY DO YOU THINK YOU ARE NOT PHYSICALLY ABLE TO GET PREGNANT?	Infrequent sex / No sex	A	
	Menopausal	B	
	Never menstruated	C	
	Hysterectomy (surgical removal of uterus)	D	
	Has been trying to get pregnant for 2 years or more without result	E	
	Postpartum amenorrhoeic	F	
	Breastfeeding	G	
	Too old	H	
	Fatalistic	I	
	Other (specify)	X	
Don't know	Z		
UN12. Check UN11. "Never menstruated" mentioned?			
<input type="checkbox"/> Mentioned Go to Next Module <input type="checkbox"/> Not mentioned Continue with UN13			
UN13. WHEN DID YOUR LAST MENSTRUAL PERIOD START?	Days ago	1 ___	
	Weeks ago	2 ___	
	Months ago	3 ___	
	Years ago	4 ___	
	In menopause / Has had hysterectomy	994	
	Before last birth	995	
	Never menstruated	996	

FEMALE GENITAL MUTILATION/CUTTING		FG	
FG1. HAVE YOU EVER HEARD OF FEMALE CIRCUMCISION?	Yes	1	1 FG3
	No	2	
FG2. IN SOME COMMUNITIES, THERE IS A PRACTICE IN WHICH A GIRL MAY HAVE PART OF HER GENITALS CUT. HAVE YOU EVER HEARD ABOUT THIS PRACTICE?	Yes	1	2 Next Module
	No	2	
FG3. HAVE YOU YOURSELF EVER BEEN CIRCUMCISED?	Yes	1	2 FG9
	No	2	
FG4. NOW I WOULD LIKE TO ASK YOU WHAT WAS DONE TO YOU AT THAT TIME.	Yes	1	1 FG6
	No	2	
WAS ANY FLESH REMOVED FROM THE GENITAL AREA?	DK	8	
FG5. WAS THE GENITAL AREA JUST NICKED/CUT WITHOUT REMOVING ANY FLESH?	Yes	1	
	No	2	
	DK	8	
FG6. WAS THE GENITAL AREA SEWN/STITCH CLOSED?	Yes	1	
	No	2	
If necessary, probe: WAS IT SEALED?	DK	8	
FG7. HOW OLD WERE YOU WHEN YOU WERE CIRCUMCISED?	Age at circumcision ___		98
	If the respondent does not know the exact age, probe to get an estimate DK / Don't remember / Not sure		
FG8. WHO PERFORMED THE CIRCUMCISION?	Health professional		98
	Doctor	11	
	Nurse/Midwife	12	
	Other health professional (specify)	16	
	Traditional persons		
	Traditional 'circumciser'	21	
Traditional birth attendant	22		
Other traditional (specify)	26		
DK	98		
FG9. Check CM5 for Number of daughters at home and CM7 for Number of daughters elsewhere, and sum the answers here	Total number of living daughters ___		
FG10. JUST TO MAKE SURE THAT I HAVE THIS RIGHT, YOU HAVE (total number in FG9) LIVING DAUGHTERS. IS THIS CORRECT?	<input type="checkbox"/> Yes		
	<input type="checkbox"/> One or more living daughters Continue with FG11		
	<input type="checkbox"/> Does not have any living daughters Go to FG22		
	<input type="checkbox"/> No Check responses to CM1 – CM10 and make corrections as necessary, until FG10 = Yes		
FG11. Ask the respondent to tell you the name(s) of her daughter(s), beginning with the youngest daughter (if more than one daughter). Write down the name of each daughter in FG12. Then, ask questions FG13 to FG20 for each daughter at a time.			
The total number of daughters in FG12 should be equal to the number in FG9			
If more than 4 daughters, use additional questionnaires			

	Daughter #1	Daughter #2	Daughter #3	Daughter #4
FG12. Name of daughter				
FG13. HOW OLD IS (name)?	Age ___	Age ___	Age ___	Age ___

FEMALE GENITAL MUTILATION/CUTTING (cont'd)				FG
FG14. Is (name) younger than 15 years of age?	Yes	1	Yes	1
	No	2	No	2
If "No", go to FG13 for next daughter. If no more daughters, go to FG22		If "No", go to FG13 for next daughter. If no more daughters, go to FG22		If "No", go to FG13 for next daughter. If no more daughters, go to FG22
FG15. IS (name) CIRCUMCISED?	Yes	1	Yes	1
	No	2	No	2
If "No", go to FG13 for next daughter. If no more daughters, go to FG22		If "No", go to FG13 for next daughter. If no more daughters, go to FG22		If "No", go to FG13 for next daughter. If no more daughters, go to FG22
FG16. HOW OLD WAS (name) WHEN THIS OCCURRED?				
If the respondent does not know the age, probe to get an estimate.	Age	_____	Age	_____
	DK	98	DK	98
FG17. NOW I WOULD LIKE TO ASK YOU WHAT WAS DONE TO (name) AT THAT TIME.	Yes	1	Yes	1
	No	2	No	2
FG19		FG19		FG19
WAS ANY FLESH REMOVED FROM THE GENITAL AREA?	DK	8	DK	8
FG18. WAS HER GENITAL AREA JUST NICKED WITHOUT REMOVING ANY FLESH?	Yes	1	Yes	1
	No	2	No	2
DK		DK		DK
FG19. WAS HER GENITAL AREA SEWN CLOSED?	Yes	1	Yes	1
	No	2	No	2
DK		DK		DK
If necessary, probe: WAS IT SEALED?	DK	8	DK	8

FEMALE GENITAL MUTILATION/CUTTING (cont'd)				FG
FG20. WHO PERFORMED THE CIRCUMCISION?	Health professional		Health professional	Health professional
	Doctor	11	Doctor	11
	Nurse/midwife	12	Nurse/midwife	12
	Other health professional (specify)	16	Other health professional (specify)	16
	Traditional persons		Traditional persons	Traditional persons
	Traditional 'circumciser'	21	Traditional 'circumciser'	21
	Traditional birth attendant	22	Traditional birth attendant	22
	Other traditional (specify)	26	Other traditional (specify)	26
	DK	98	DK	98
	DK	98	DK	98
FG21.	Go back to FG13 for next daughter. If no more daughters, go to FG22	Go back to FG13 for next daughter. If no more daughters, go to FG22	Go back to FG13 for next daughter. If no more daughters, go to FG22	Go back to FG13 in first column of additional questionnaire for next daughter. If no more daughters, go to FG22
				Check box if additional questionnaire used
FG22. DO YOU THINK THIS PRACTICE SHOULD BE CONTINUED OR SHOULD IT BE DISCONTINUED?		Continued	1	
		Discontinued	2	
		Depends	3	
		DK	8	

BEHAVIOUR CHANGE COMMUNICATION ON MALARIA			BC
BC1. NOW I WOULD LIKE YOU TO TALK ABOUT MALARIA	Eating sweet foods		A
	Standing/ working in the sun		B
	Eating contaminated food		C
	Mosquito bites		D
	Malaria parasite(p. falciparum)		E
	Hereditary		F
	Dirty surroundings		G
	Weedy surroundings and stagnant water		H
	Other (specify)		X
	DK		Z
BC2. HOW WOULD YOU KNOW THAT SOMEONE HAS MALARIA?	Hot body fever		A
	Vomiting/Diarrhea		B
	Strong headaches/Dizziness		C
	Loss of appetite		D
	Weakness of the body		E
	Cough		F
	Chills		G
	Bitterness in the mouth		H
	Other (specify)		X
	DK		Z

BEHAVIOUR CHANGE COMMUNICATION ON MALARIA (cont'd)			BC
BC3. HOW CAN ONE PROTECT HIM/HERSELF AGAINST MALARIA?	Sleep under a mosquito net	A	
	Sleep under a insecticide treated mosquito net	B	
	Use Mosquito repellent	C	
	Avoid mosquito bites	D	
	Clear Weeds around the house	E	
	Fill in Stagnant waters (puddles)	F	
	Keep surrounding clean	G	
	Put mosquito screen window	H	
Other (specify)	X		
DK	Z		
BC4. CAN MALARIA BE TREATED?	Yes	1	
	No	2	
	DK	8	
BC5. IN THE PAST SIX MONTHS, HAVE YOU SEEN OR HEARD ANY MALARIA MESSAGES?	Yes	1	2 BC10
	No	2	

BC6. WHAT MESSAGES ABOUT MALARIA HAVE YOU SEEN OR HEARD IN THE PAST 6 MONTHS ? Probe: WHAT ELSE? Circle all that mentioned	If have fever go to health facility	A					
	Sleep under a insecticide treated mosquito net	B					
	Pregnant women should take drugs to prevent malaria	C					
	Malaria kills	D					
	Other (specify)	X					
	None	Y					
DK/Don't remember	Z						
BC7. IN THE PAST SIX MONTHS, HAVE YOU SEEN/HEARD ANY OF THE FOLLOWING MALARIA MESSAGES ON TELEVISION OR RADIO:	Yes on TV	Yes on radio	Yes on both	No			
	[A] NANA BORO'S "AHA YE DE-NTONTOM BE WU" MUSIC VIDEO/ SONG?	A	1	2		3	4
	[B] ADVERT WHERE WOMAN DOESN'T WANT TO STAY THE NIGHT WITH THE MAN UNLESS HE HAS A TREATED NET?	B	1	2		3	4
	[C] SHORT DOCUMENTARIES FEATURING THE TRUE STORIES OF GHANAIAN FAMILIES CHILDREN SUFFERING EPILEPSY AND LEARNING DISABILITIES DUE TO SEVERE MALARIA?	C	1	2		3	4
	(D) ADVERT WHERE PEOPLE FROM ALL WALKS OF LIFE ARE SLEEPING UNDER TREATED NETS?	D	1	2		3	4
BC8 DURING THE PAST 6 MONTHS, HAVE YOU SEEN/HEARD ANY ADVERT ON THE USE OF ACT WITH GREEN LEAF?	Yes	1	2 BC10				
	No	2					
BC9. WHERE DID YOU SEE/HEAR THE ADVERT ON THE USE OF ACT WITH GREEN LEAF? Probe: ANY OTHER MEDIA?	TV	A					
	Radio	B					
	Newspaper/Magazine	C					
	Poster /Leaflets	D					
	Billboard	E					
	Other (specify)	X					
DK/Don't remember	Z						
BC10. HAVE YOU PARTICIPATED IN ANY COMMUNITY EVENT EDUCATING COMMUNITY MEMBERS ON PREVENTION AND CONTROL OF MALARIA?	Yes	1					
	No	2					

ATTITUDES TOWARD DOMESTIC VIOLENCE				DV	
DV1. SOMETIMES A HUSBAND IS ANNOYED OR ANGERED BY THINGS THAT HIS WIFE DOES. IN YOUR OPINION, IS A HUSBAND JUSTIFIED IN HITTING OR BEATING HIS WIFE IN THE FOLLOWING SITUATIONS:		Yes	No	DK	
[A]	IF SHE GOES OUT WITHOUT TELLING HIM?	Goes out without telling	1	2	8
[B]	IF SHE NEGLECTS THE CHILDREN?	Neglects children	1	2	8
[C]	IF SHE ARGUES WITH HIM?	Argues with him	1	2	8
[D]	IF SHE REFUSES TO HAVE SEX WITH HIM?	Refuses sex	1	2	8
[E]	IF SHE BURNS THE FOOD?	Burns food	1	2	8
[F]	IF SHE INSULTS HIM?	Insults him	1	2	8
[G]	IF SHE REFUSES TO GIVE HIM FOOD?	Refuses to give food	1	2	8
[H]	IF SHE HAS ANOTHER PARTNER?	Another partner	1	2	8
[I]	IF SHE STEALS?	Stealing	1	2	8
[J]	IF SHE GOSSIPS?	Gossiping	1	2	8
[K]	OTHER, (SPECIFY)?	Other (specify)	1	2	8

MARRIAGE/UNION			MA
MA1. ARE YOU CURRENTLY MARRIED OR LIVING TOGETHER WITH A MAN AS IF MARRIED?	Yes, currently married Yes, living with a man No, not in union	1 2 3	3 MA5
MA2. HOW OLD IS YOUR HUSBAND/PARTNER? Probe: HOW OLD WAS YOUR HUSBAND/PARTNER ON HIS LAST BIRTHDAY?	Age in years__ __ DK 98		
MA3. BESIDES YOURSELF, DOES YOUR HUSBAND/PARTNER HAVE ANY OTHER WIVES OR PARTNERS OR DOES HE LIVE WITH OTHER WOMEN AS IF MARRIED?	Yes No	1 2	2 MA7
MA4. HOW MANY OTHER WIVES OR PARTNERS DOES HE HAVE?	Number __ __ DK 98		MA7 98 MA7
MA5. HAVE YOU EVER BEEN MARRIED OR LIVED TOGETHER WITH A MAN AS IF MARRIED?	Yes, formerly married Yes, formerly lived with a man No	1 2 3	3 Next Module
MA6. WHAT IS YOUR MARITAL STATUS NOW: ARE YOU WIDOWED, DIVORCED OR SEPARATED?	Widowed Divorced Separated	1 2 3	
MA7. HAVE YOU BEEN MARRIED OR LIVED WITH A MAN ONLY ONCE OR MORE THAN ONCE?	Only once More than once	1 2	
MA8. IN WHAT MONTH AND YEAR DID YOU FIRST MARRY OR START LIVING WITH A MAN AS IF MARRIED?	Date of first marriage Month __ __ DK month 98 Year __ __ __ __ DK year 9998		Next Module
MA9. HOW OLD WERE YOU WHEN YOU STARTED LIVING WITH YOUR FIRST HUSBAND/PARTNER?	Age in years __ __		

SEXUAL BEHAVIOUR		SB	
Check for the presence of others. Before continuing, ensure privacy.			
SB1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT SEXUAL ACTIVITY IN ORDER TO GAIN A BETTER UNDERSTANDING OF SOME IMPORTANT LIFE ISSUES.	Never had intercourse	00	
	Age in years	__ __	SB2
THE INFORMATION YOU SUPPLY WILL REMAIN STRICTLY CONFIDENTIAL.	First time when started living with (first) husband/partner	95	SB2
HOW OLD WERE YOU WHEN YOU HAD SEXUAL INTERCOURSE FOR THE VERY FIRST TIME?			
SB1A. DO YOU INTEND TO WAIT UNTIL YOU GET MARRIED TO HAVE SEXUAL INTERCOURSE FOR THE FIRST TIME?	Yes	1	1 SB16
	No	2	2 SB16
	Not Sure	3	3 SB16
SB2. THE FIRST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes	1	
	No	2	
	DK / Don't remember	8	
SB3. WHEN WAS THE LAST TIME YOU HAD SEXUAL INTERCOURSE?	Days ago	1 __ __	
Record 'years ago' only if last intercourse was one or more years ago. If 12 months or more the answer must be recorded in years.	Weeks ago	2 __ __	
	Months ago	3 __ __	
	Years ago	4 __ __	4 SB15
SB4. THE LAST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes	1	
	No	2	
SB5. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON WITH WHOM YOU LAST HAD SEXUAL INTERCOURSE?	Husband	1	
	Cohabiting partner	2	
	Boyfriend	3	3 SB7
	Casual acquaintance	4	4 SB7
	Ex-Boyfriend	5	5 SB7
Probe to ensure that the response refers to the relationship at the time of sexual intercourse	Other (specify)	6	6 SB7
If 'boyfriend', then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '2'. If 'no', circle '3'.			
SB6. Check MA1:			
<input type="checkbox"/> Currently married or living with a man (MA1 = 1 or 2) Go to SB8			
<input type="checkbox"/> Not married / Not in union (MA1 = 3) Continue with SB7			
SB7. HOW OLD IS THIS PERSON?	Age of sexual partner	__ __	
If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	DK	98	
SB8. HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes	1	
	No	2	2 SB15
SB9. THE LAST TIME YOU HAD SEXUAL INTERCOURSE WITH THIS OTHER PERSON, WAS A CONDOM USED?	Yes	1	
	No	2	
SB10. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON?	Husband	1	
	Cohabiting partner	2	
	Boyfriend	3	3 SB12
	Ex-Boyfriend	4	4 SB12
	Casual acquaintance	5	5 SB12
Probe to ensure that the response refers to the relationship at the time of sexual intercourse	Other (specify)	6	6 SB12
If 'boyfriend' then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '2'. If 'no', circle '3'.			

SEXUAL BEHAVIOUR (cont'd)		SB	
SB11. Check MA1 and MA7: <input type="checkbox"/> Currently married or living with a man (MA1 = 1 or 2) AND Married only once or lived with a man only once (MA7 = 1) Go to SB13 <input type="checkbox"/> Else Continue with SB12			
SB12. HOW OLD IS THIS PERSON?	Age of sexual partner	__ __	
If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	DK	98	
SB13. OTHER THAN THESE TWO PERSONS, HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes	1	
	No	2	2 SB15
SB14. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN THE LAST 12 MONTHS?	Number of partners	__ __	
SB15. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN YOUR LIFETIME? If a non-numeric answer is given, probe to get an estimate. If number of partners is 95 or more, write '95'.	Number of lifetime partners	__ __	
	DK	98	
SB16. DO YOU KNOW OF A PLACE WHERE A PERSON CAN GET CONDOMS?	Yes	1	2 Next Module
	No	2	
SB17. WHERE CAN YOU GET CONDOM FROM? Probe for any other source.	Public Sector		
	Govt. Hospital/Polyclinic	A	
	Govt. Clinic/ Health Center	B	
	Govt. Health Post/CHPS	C	
	Family Planning Clinic	D	
	Mobile Clinic/ Field Worker/ Outreach/ Peer Educator	E	
	Other Public (specify)	F	
	Private Medical Sector		
	Private Hospital/Clinic/Doctor	G	
	Pharmacy/ Chemical/Drug Store	H	
	FP/PPAG Clinic	I	
	Maternity Home	J	
	Other Private Medical	K	
	Other Source		
	Shop/Market	L	
	Church/ Community Volunteer	M	
	Friend/Relative	N	
	Other (specify)	X	
SB18. IF YOU WANTED TO, COULD YOU YOURSELF GET A CONDOM?	Yes	1	
	No	2	
	Don't know/Unsure	8	
HIV/AIDS		HA	
HA1. NOW I WOULD LIKE TO TALK WITH YOU ABOUT SOMETHING ELSE.	Yes	1	2 Next Module
HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?	No	2	
HA2. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER WHO HAS NO OTHER SEX PARTNERS?	Yes	1	
	No	2	
	DK	8	
HA3. CAN PEOPLE GET THE AIDS VIRUS BECAUSE OF WITCHCRAFT OR OTHER SUPERNATURAL MEANS?	Yes	1	
	No	2	
	DK	8	
HA4. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?	Yes	1	
	No	2	
	DK	8	

HIV/AIDS (cont'd)		HA			
HA5. CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?	Yes		1		
	No		2		
	DK		8		
HA6. CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS THE AIDS VIRUS?	Yes		1		
	No		2		
	DK		8		
HA7. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?	Yes		1		
	No		2		
	DK		8		
HA8. CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY:		Yes	No	DK	
		1	2	8	
	[A] DURING PREGNANCY?	1	2	8	
	[B] DURING DELIVERY?	1	2	8	
	[C] BY BREASTFEEDING?	1	2	8	
HA9. IN YOUR OPINION, IF A FEMALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA9A. IN YOUR OPINION, IF A MALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD HE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA10. WOULD YOU BUY FRESH VEGETABLES FROM A SHOPKEEPER OR VENDOR IF YOU KNEW THAT THIS PERSON HAD THE AIDS VIRUS?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA11. IF A MEMBER OF YOUR FAMILY GOT INFECTED WITH THE AIDS VIRUS, WOULD YOU WANT IT TO REMAIN A SECRET?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA12. IF A MEMBER OF YOUR FAMILY BECAME SICK WITH AIDS, WOULD YOU BE WILLING TO CARE FOR HER OR HIM IN YOUR OWN HOUSEHOLD?	Yes		1		
	No		2		
	DK / Not sure / Depends		8		
HA13. Check CM13: Any live birth in last 2 years?					
<input type="checkbox"/> No live birth in last 2 years Go to HA24					
<input type="checkbox"/> One or more live births in last 2 years Continue with HA14					
HA14. Check MN1: Received antenatal care?					
<input type="checkbox"/> Received antenatal care Continue with HA15					
<input type="checkbox"/> Did not receive antenatal care Go to HA24					
HA15. DURING ANY OF THE ANTENATAL VISITS FOR YOUR PREGNANCY WITH (name),		Y	N	DK	
	[A] WERE YOU GIVEN ANY INFORMATION ABOUT: BABIES GETTING THE AIDS VIRUS FROM THEIR MOTHER?	AIDS from mother	1	2	8
	[B] THINGS THAT YOU CAN DO TO PREVENT GETTING THE AIDS VIRUS?	Things to do	1	2	8
	[C] GETTING TESTED FOR THE AIDS VIRUS?	Tested for AIDS	1	2	8
	[D] WERE YOU OFFERED A TEST FOR THE AIDS VIRUS?	Offered a test	1	2	8

HIV/AIDS (cont'd)		HA	
HA16. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS AS PART OF YOUR ANTENATAL CARE?	Yes	1	
	No	2	2 HA19
	DK	8	8 HA19
HA17. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes	1	
	No	2	2 HA22
	DK	8	8 HA22
HA18. REGARDLESS OF THE RESULT, ALL WOMEN WHO ARE TESTED ARE SUPPOSED TO RECEIVE COUNSELLING AFTER GETTING THE RESULT.	Yes	1	1 HA22
	No	2	2 HA22
	DK	8	8 HA22
AFTER YOU WERE TESTED, DID YOU RECEIVE COUNSELLING?			
HA19. Check MN17: Birth delivered by health professional (A, B or C)?			
<input type="checkbox"/> Yes, birth delivered by health professional Continue with HA20			
<input type="checkbox"/> No, birth not delivered by health professional Go to HA24			
HA20. I DON'T WANT TO KNOW THE RESULTS, BUT WERE YOU TESTED FOR THE AIDS VIRUS BETWEEN THE TIME YOU WENT FOR DELIVERY AND BEFORE THE BABY WAS BORN?	Yes	1	
	No	2	2 HA24
HA21. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes	1	
	No	2	
HA22. HAVE YOU BEEN TESTED FOR THE AIDS VIRUS SINCE THAT TIME YOU WERE TESTED DURING YOUR PREGNANCY?	Yes	1	1 HA25
	No	2	
HA23. WHEN WAS THE MOST RECENT TIME YOU WERE TESTED FOR THE AIDS VIRUS?	Less than 12 months ago	1	1 Next Module
	12-23 months ago	2	2 Next Module
	2 or more years ago	3	3 Next Module
HA24. I DON'T WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes	1	
	No	2	2 HA27
HA25. WHEN WAS THE MOST RECENT TIME YOU WERE TESTED?	Less than 12 months ago	1	
	12-23 months ago	2	
	2 or more years ago	3	
HA26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes	1	1 Next Module
	No	2	2 Next Module
HA27. DO YOU KNOW OF A PLACE WHERE PEOPLE CAN GO TO GET TESTED FOR THE AIDS VIRUS?	Yes	1	
	No	2	

NATIONAL HEALTH INSURANCE		NH	
NH1. HAVE YOU EVER REGISTERED WITH ANY HEALTH INSURANCE SCHEME?	Yes No	1 2	1 NH9 2 NH10
NH2. WHAT TYPE OF HEALTH INSURANCE DO YOU HAVE? Probe: ANY OTHER?	National/District Health Insurance (NHIS) Mutual Health Organization/ Community-based Health Insurance Other Privately Purchased Commercial Health Insurance Other Health Insurance (specify)	A B C X	
NH3. Check NH2: <input type="checkbox"/> NHIS NOT CHECKED. Go to NH11			
NH4. HOW WAS YOUR MEMBERSHIP OF THE NHIS ACHIEVED?	Paid premium myself Premium paid by a relative or friend Premium paid by employers Premium paid by SSNIT Exempt as indigent Free Maternal Service Other (specify)	01 02 03 04 05 06 96	
NH5. DO YOU HOLD A VALID NATIONAL HEALTH INSURANCE SCHEME (NHIS) CARD? If person has valid insurance card, request to see it. Check to make sure it is valid for 2011	Yes, card seen Yes, card not seen No	1 2 3	1 NH9 2 NH9
NH6. WHY DO YOU NOT HAVE A VALID NHIS CARD?	Registered, but not fully paid yet Registered/Renewed, card not received Registered, in waiting period Registration not renewed Lost NHIS card Other (specify)	1 2 3 4 5 6	1 NH9 2 NH9 3 NH9 5 NH9 6 NH9
NH7. DO YOU PLAN TO RENEW THE NHIS REGISTRATION?	Yes No Don't know/ Not sure	1 2 8	1 NH9 8 NH9

NH8. WHY DO YOU NOT WANT TO RENEW THE NHIS REGISTRATION? Probe: ANY OTHER REASON?	Have not been sick Premium too expensive Still pay out of pocket Poor quality care with card Waiting time for card too long Desired services not covered Clinics used/ traditional services not Covered by NHIS Other (specify)	A B C D E F G X	
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NATIONAL HEALTH INSURANCE (cont'd)		NH	
NH9. IN YOUR OPINION, DO NHIS CARD HOLDERS GET BETTER/ SAME/WORSE SERVICES WHEN THEY ATTEND HEALTH CARE FACILITIES?	Better Same Worse Never used Don't know	1 2 3 4 8	1 WM11 2 WM11 3 WM11 4 WM11 8 WM11
NH10. WHY HAVE YOU NOT REGISTERED OR RENEWED REGISTRATION WITH THE NHIS? Probe: ANY OTHER REASON?	Not heard of NHIS Premium too expensive Do not trust NHIS Do not know where to register Registration office too far Do not need health insurance NHIS does not cover the services I need NHIS does not cover the facilities I use H Other (specify)	A B C D E F G X	A WM11 B WM11 C WM11 D WM11 E WM11 F WM11 G WM11 H WM11 X WM11
NH11. IS YOUR INSURANCE CURRENTLY VALID FOR 2011?	Yes No Don't know/ Not sure	1 2 8	
WM11. Record the time.	Hour and minutes ___ : ___		
WM12. Check Household Listing Form, column HL9. Is the respondent the mother or caretaker of any child age 0-4 living in this household?			
<input type="checkbox"/> Yes Go to QUESTIONNAIRE FOR CHILDREN UNDER FIVE for that child and start the interview		with this respondent.	
<input type="checkbox"/> No End the interview with this respondent by thanking her for her cooperation. Check for the presence of any other eligible woman, or children under-5 in the household. If none, check for the presence of any eligible male 15-59 years in the household (i.e. in Households where the Male Questionnaire is to be administered).			

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

QUESTIONNAIRE FOR CHILDREN UNDER FIVE
GHANA 2011

UNDER-FIVE CHILD INFORMATION PANEL

UF

This questionnaire is to be administered to all mothers or caretakers (see Household Listing Form, column HL9) who care for a child that lives with them and is under the age of 5 years (see Household Listing Form, column HL6). A separate questionnaire should be used for each eligible child.

UF1. Cluster Number: _____

UF2. Household number: _____

UF3. Child's name:

UF4. Child's line number:

Name _____

UF5. Mother's / Caretaker's name:

UF6. Mother's / Caretaker's line number:

Name _____

UF7. Interviewer name and number: _____

UF8. Day / Month / Year of interview:

Name _____

____ / ____ / 2011

Name of Region _____

Name of District: _____

Repeat greeting if not already read to this respondent:

If greeting at the beginning of the household questionnaire has already been read to this woman, then read the following:

WE ARE FROM GHANA STATISTICAL SERVICE. WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT (name)'S HEALTH AND WELL-BEING. THE INTERVIEW WILL TAKE ABOUT 20 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.

NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT (child's name from UF3)'S HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 20 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.

MAY I START NOW?

 Yes, permission is given Go to UF12 to record the time and then begin the interview.

If yes ask for child's immunization card, birth certificate, antenatal card, baptismal card and any other card on which the child's records are written.

 No, permission is not given Complete UF9. Discuss this result with your supervisor.

UF9. Result of interview for children under 5

Completed	01
Not at home	02
Refused	03
Partly completed	04
Incapacitated	05
Other (specify)	96

Codes refer to mother/caretaker.

UF10. Field edited by (Name and number):

UF11. Data entry clerk (Name and number):

Name _____

Name _____

UF12. Record the time.

Hour and minutes ____ : ____

AGE

AG

AG1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE HEALTH OF (name).

Date of birth
Day _____

IN WHAT MONTH AND YEAR WAS (name) BORN?

DK day 98

Probe:

WHAT IS HIS / HER BIRTHDAY?

Month _____

If the mother/caretaker knows the exact birth date, also enter the day; otherwise, circle 98 for day

Year _____

Month and year must be recorded.

AGE (cont'd)		AG
AG2. HOW OLD IS (name)?	Age (in completed years) ___	
Probe: HOW OLD WAS (name) AT HIS / HER LAST BIRTHDAY?		
Record age in completed years.		
Record '0' if less than 1 year.		
Compare and correct AG1 and/or AG2 if inconsistent.		

BIRTH REGISTRATION		BR
BR1. DOES (NAME) HAVE A BIRTH CERTIFICATE?	Yes, seen	1 1 BR2A
If yes, ask: MAY I SEE IT?	Yes, not seen	2 2 BR2A
	No	3
	DK	8
BR2 HAS (NAME)'S BIRTH BEEN REGISTERED WITH THE BIRTHS AND DEATHS REGISTRY?	Yes	1
	No	2 2 BR2B
	DK	8 8 BR2B
BR2A. WAS (NAME)'S BIRTH REGISTERED WITHIN THE FIRST YEAR OF BIRTH?	Yes	1 1 BR4
	No	2 2 BR4
	DK	8 8 BR4
BR2B. WHAT IS THE MAIN REASON WHY (NAME)'S BIRTH IS NOT REGISTERED?	Costs too much	1
	Must travel too far	2
	Did not know it should be registered	3
	Did not want to pay fine	4
	Did not find important	5
	Do not know where to register	6 6 BR4
	Other (specify)	7
	DK	8
BR3. DO YOU KNOW WHERE TO REGISTER YOUR CHILD'S BIRTH?	Yes	1
	No	2
BR4. HOW MUCH DOES IT COST TO REGISTER A CHILD WITH THE BIRTHS AND DEATHS REGISTRY IF THE CHILD IS UNDER 1 YEAR OLD?	Free	1
	Less than GH¢10	2
	GH¢10	3
	More than GH¢10	4
	DK	8

EARLY CHILDHOOD DEVELOPMENT		EC
EC1. HOW MANY CHILDREN'S BOOKS OR PICTURE BOOKS DO YOU HAVE FOR (name)?	None 00	
	Number of children's books 0 ___	
	Ten or more books 10	

EARLY CHILDHOOD DEVELOPMENT (cont'd)		EC
EC2. I AM INTERESTED IN LEARNING ABOUT THE THINGS THAT (name) PLAYS WITH WHEN HE/SHE IS AT HOME.		
DOES HE/SHE PLAY WITH:		
[A] HOMEMADE TOYS (SUCH AS DOLLS, CARS, OR OTHER TOYS MADE AT HOME)?	Y N DK	
Homemade toys	1 2 8	
[B] TOYS FROM A SHOP OR MANUFACTURED TOYS?		
Toys from a shop	1 2 8	
[C] HOUSEHOLD OBJECTS (SUCH AS BOWLS OR POTS) OR OBJECTS FOUND OUTSIDE (SUCH AS STICKS, ROCKS, ANIMAL SHELLS OR LEAVES)?		
Household objects or outside objects	1 2 8	
If the respondent says "YES" to any of the categories above, then probe to learn specifically what the child plays with to ascertain the response		
EC3. SOMETIMES ADULTS TAKING CARE OF CHILDREN HAVE TO LEAVE THE HOUSE TO GO SHOPPING, WASH CLOTHES, OR FOR OTHER REASONS AND HAVE TO LEAVE YOUNG CHILDREN.		
ON HOW MANY DAYS IN THE PAST WEEK WAS (name):		
[A] LEFT ALONE FOR MORE THAN AN HOUR?		Number of days left alone for more than an hour ___
[B] LEFT IN THE CARE OF ANOTHER CHILD, THAT IS, SOMEONE LESS THAN 10 YEARS OLD, FOR MORE THAN AN HOUR?		Number of days left with other child for more than an hour ___
If 'none' enter '0'. If 'don't know' enter '8'		
EC4. Check AG2: Age of child		
<input type="checkbox"/> Child age 3 or 4 Continue with EC5		
<input type="checkbox"/> Child age 0, 1 or 2 Go to Next Module		
EC5. DOES (name) ATTEND ANY ORGANIZED LEARNING OR EARLY CHILDHOOD EDUCATION PROGRAMME, SUCH AS A PRIVATE OR GOVERNMENT FACILITY, INCLUDING KINDERGARTEN OR COMMUNITY CHILD CARE?	Yes	1
	No	2 2 EC7
	DK	8 8 EC7
EC6. WITHIN THE LAST SEVEN DAYS, ABOUT HOW MANY HOURS DID (name) ATTEND?		Number of hours ___
EC7. IN THE PAST 3 DAYS, DID YOU OR ANY HOUSEHOLD MEMBER 15 YEARS OLDER ENGAGE IN ANY OF THE FOLLOWING ACTIVITIES WITH (name):		
If yes, ask: WHO ENGAGED IN THIS ACTIVITY WITH (name)?		
Circle all that apply.		
[A] READ BOOKS TO OR LOOKED AT PICTURE BOOKS WITH (name)?	Mother A Father B Other X No one Y	
[B] TOLD STORIES TO (name)?	A B X Y	
[C] SANG SONGS TO (name) OR WITH (name), INCLUDING LULLABIES?	A B X Y	
[D] TOOK (name) OUTSIDE THE HOME, COMPOUND, YARD OR ENCLOSURE?	A B X Y	
[E] PLAYED WITH (name)?	A B X Y	
[F] NAMED, COUNTED, OR DREW THINGS TO OR WITH (name)?	A B X Y	

EARLY CHILDHOOD DEVELOPMENT		EC
EC8. I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE HEALTH AND DEVELOPMENT OF YOUR CHILD. CHILDREN DO NOT ALL DEVELOP AND LEARN AT THE SAME RATE. FOR EXAMPLE, SOME WALK EARLIER THAN OTHERS. THESE QUESTIONS ARE RELATED TO SEVERAL ASPECTS OF YOUR CHILD'S DEVELOPMENT.	Yes No	1 2
CAN (name) IDENTIFY OR NAME AT LEAST TEN LETTERS OF THE ALPHABET?	DK	8
EC9. CAN (name) READ AT LEAST FOUR SIMPLE, POPULAR WORDS?	Yes No	1 2
	DK	8
EC10. DOES (name) KNOW THE NAME AND RECOGNIZE THE SYMBOL OF ALL NUMBERS FROM 1 TO 10?	Yes No	1 2
	DK	8
EC11. CAN (name) PICK UP A SMALL OBJECT WITH TWO FINGERS, LIKE A STICK OR A ROCK (STONE) FROM THE GROUND?	Yes No	1 2
	DK	8
EC12. IS (name) OFTEN TOO SICK TO PLAY?	Yes No	1 2
	DK	8

EARLY CHILDHOOD DEVELOPMENT		EC
EC13. DOES (name) FOLLOW SIMPLE DIRECTIONS ON HOW TO DO SOMETHING CORRECTLY?	Yes No	1 2
	DK	8
EC14. WHEN GIVEN SOMETHING TO DO, IS (name) ABLE TO DO IT INDEPENDENTLY?	Yes No	1 2
	DK	8
EC15. DOES (name) GET ALONG WELL WITH OTHER CHILDREN?	Yes No	1 2
	DK	8
EC16. DOES (name) KICK, BITE, OR HIT OTHER CHILDREN OR ADULTS?	Yes No	1 2
	DK	8
EC17. DOES (name) GET DISTRACTED EASILY?	Yes No	1 2
	DK	8

BREASTFEEDING		BF
BF1. HAS (NAME) EVER BEEN BREASTFED?	Yes No	1 2
	DK	8
		2 BF3
BF2. IS (NAME) STILL BEING BREASTFED?	Yes No	1 2
	DK	8

BREASTFEEDING (cont'd)		BF
BF10. DID (name) DRINK OR EAT VITAMIN OR MINERAL SUPPLEMENTS OR ANY MEDICINES YESTERDAY, DURING THE DAY OR NIGHT?	Yes No	1 2
	DK	8
BF11. DID (name) DRINK ORS (ORAL REHYDRATION SOLUTION) YESTERDAY, DURING THE DAY OR NIGHT?	Yes No	1 2
	DK	8
BF18. YESTERDAY, DURING THE DAY OR NIGHT, DID (name) DRINK ANYTHING FROM A BOTTLE WITH A NIPPLE?	Yes No	1 2
	DK	8

DIET DIVERSITY		DD
NOW I WOULD LIKE TO ASK YOU ABOUT (OTHER) LIQUIDS AND FOODS THAT (NAME) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED TO KNOW WHETHER YOUR CHILD HAD THE ITEM EVEN IF COMBINED WITH OTHER FOODS.		

DD1. DID (NAME) DRINK/EAT (NAME OF FOOD) DURING THE DAY OR THE NIGHT BEFORE:	Yes	No	DK	DD2 HOW MANY TIMES DID (name) DRINK
A. MILK SUCH AS TINNED, POWDERED OR FRESH ANIMAL MILK?				
B. INFANT FORMULA (SMA, LACTOGEN...)?				
C. BABY CEREAL (NESTLE CERELAC, FRESOCREM...)?				
D. TEA OR COFFEE?				
E. ANY OTHER LIQUIDS (JUICE, COCOA, COCONUT WATER...)?				
F. BREAD, RICE, NOODLES OR OTHER FOODS MADE FROM GRAIN (KENKEY, BANKU, KOKO, TUO ZAAFI, AKPLE, WEANIMIX...)?				
G. PUMPKIN, RED OR YELLOW YAMS, CARROTS, AND ORANGE OR YELLOW SWEET POTATOES...?				
H. WHITE POTATOES, WHITE YAMS, MANIOC, CASSAVA, COCOYAM, FUFU OR ANY OTHER FOODS MADE FROM ROOTS, TUBERS OR PLANTAIN?				
I. ANY DARK GREEN LEAFY VEGETABLES (KONTOMIRE, ALEEFU, AYOYO, KALE, CASSAVA LEAVES)?				
J. RIPE MANGOES, PAWPAW?				
K. ANY OTHER FRUITS OR VEGETABLES (BANANAS, AVOCADOS, TOMATOES, ORANGES, APPLES...)?				
L. LIVER, KIDNEY, HEART OR OTHER ORGAN MEATS?				
M. ANY MEAT SUCH AS BEEF, PORK, LAMB, GOAT, CHICKEN OR DUCK?				
N. EGGS?				
O. FRESH OR DRIED FISH OR SHELLFISH (PRAWNS, LOBSTERS...)?				
P. ANY FOODS MADE FROM BEANS, PEAS, LENTILS OR NUTS?				
Q. CHEESE, YOGURT OR OTHER MILK PRODUCTS?				
R. ANY OIL, FATS OR BUTTER, OR FOODS MADE WITH ANY OF THIS?				
S. ANY SUGARY FOODS AS CHOCOLATE, SWEET CANDIES, PASTRIES, CAKES OR BISCUITS?				
T. ANY OTHER SOLID OR SEMI-SOLID FOODS?				

CHECK DD1 : FOOD CONSUMED DURING THE DAY OR NIGHT BEFORE

 At least one Yes in F to T Continue with BF17 Not a single Yes in F to T Go to next module

BF17. HOW MANY TIMES DID (name) EAT SOLID OR SEMI-SOLID (SOFT, MUSHY) FOOD YESTERDAY, DURING THE DAY OR NIGHT?

Number of times ___

CA1. IN THE LAST TWO WEEKS, HAS (name) HAD DIARRHOEA?	Yes No	1 2	2 CA7
	DK	8	8 CA7

CARE OF ILLNESS		CA
CA2. I WOULD LIKE TO KNOW HOW MUCH (name) WAS GIVEN TO DRINK DURING THE DIARRHOEA (INCLUDING BREASTMILK). DURING THE TIME (name) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO DRINK, ABOUT THE SAME AMOUNT, OR MORE THAN USUAL? If less, probe: WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO DRINK, OR SOMEWHAT LESS?	Much less Somewhat less About the same More Nothing to drink DK	1 2 3 4 5 8
CA3. DURING THE TIME (name) HAD DIARRHOEA, WAS HE/SHE GIVEN LESS THAN USUAL TO EAT, ABOUT THE SAME AMOUNT, MORE THAN USUAL, OR NOTHING TO EAT? If "less", probe: WAS HE/SHE GIVEN MUCH LESS THAN USUAL TO EAT OR SOMEWHAT LESS?	Much less Somewhat less About the same More Stopped food Never gave food DK	1 2 3 4 5 6 8
CA4. DURING THE EPISODE OF DIARRHOEA, WAS (name) GIVEN TO DRINK ANY OF THE FOLLOWING: Read each item aloud and record response before proceeding to the next item.		Y N DK
[A] A FLUID MADE FROM A SACHET ORS?	Fluid from ORS sachet	1 2 8
[B] A PRE-PACKAGED ORS FLUID FOR DIARRHOEA?	Pre-packaged ORS fluid	1 2 8
[C] COCONUT WATER?	Coconut Water	1 2 8
[D] RICE WATER?	Rice Water	1 2 8
[E] MASHED KENKEY?	Mashed Kenkey	1 2 8
CA4F. Check CA4: ORS sachet or Pre-Packaged ORS given <input type="checkbox"/> [A]=1 or [B]=1 Continue with CA4G <input type="checkbox"/> Else CA5		
CA4G. WHERE DID YOU GET THE (ORS SACHET/PRE-PACKAGED ORS) FROM? Probe: ANYWHERE ELSE? Circle all providers mentioned, but do NOT prompt with any suggestions.	Public sector Govt. hospital/Polyclinic Govt. clinic/health centre Govt. health post/CHPS compound Community health worker Mobile / Outreach clinic Other public (specify) Private medical sector Private hospital / clinic/ physician Private pharmacy/Chemical shop Mobile / Outreach clinic Herbal centre/Herbal clinic Other private medical (specify) Other source Relative / Friend Shop Traditional practitioner Other (specify)	A B C D E H I K L M O P Q R X
CA4H. HOW MUCH DID YOU PAY FOR THE ORS?	Cedis _____ DK 998	
CA5. WAS ANYTHING (ELSE) GIVEN TO TREAT THE DIARRHOEA?	Yes No DK	1 2 8
		2 CA7 8 CA7

CARE OF ILLNESS (cont'd)		CA
CA6. WHAT (ELSE) WAS GIVEN TO TREAT THE DIARRHOEA? Probe: ANYTHING ELSE? Record all treatments given. Write brand name(s) of all medicines mentioned. (Name)	Pill or Syrup Antibiotic Antimotility (anti-diarrhoeal) Zinc Other (Not antibiotic, antimotility or zinc) Unknown pill or syrup Injection Antibiotic Non-antibiotic Unknown injection Intravenous Home remedy / Herbal medicine Other (specify)	A B C G H L M N O Q X
CA7. AT ANY TIME IN THE LAST TWO WEEKS, HAS (name) HAD AN ILLNESS WITH A COUGH?	Yes No DK	1 2 8
		2 CA14 8 CA14
CA8. WHEN (name) HAD AN ILLNESS WITH A COUGH, DID HE/SHE BREATHE FASTER THAN USUAL WITH SHORT, RAPID BREATHS OR HAVE DIFFICULTY BREATHING?	Yes No DK	1 2 8
		2 CA10 8 CA10
CA9. WAS THE FAST OR DIFFICULT BREATHING DUE TO A PROBLEM IN THE CHEST OR A BLOCKED OR RUNNY NOSE?	Problem in chest only Blocked or runny nose only Both Other (specify) DK	1 2 3 6 8
		2 CA14 6 CA14
CA10. DID YOU SEEK ANY ADVICE OR TREATMENT FOR THE ILLNESS FROM ANY SOURCE?	Yes No DK	1 2 8
		2 CA12 8 CA12
CA11. FROM WHERE DID YOU SEEK ADVICE OR TREATMENT? Probe: ANYWHERE ELSE? Circle all providers mentioned, but do NOT prompt with any suggestions. Probe to identify each type of source. If unable to determine if public or private sector, write the name of the place. (Name of place)	Public sector Govt. hospital/Polyclinic Govt. clinic/health centre Govt. health post/CHPS compound Community health worker Mobile / Outreach clinic Other public (specify) Private medical sector Private hospital / clinic / physician Private pharmacy/Chemical shop Mobile/Outreach clinic Herbal Centre/Clinic Other private medical (specify) Other source Relative / Friend Shop Traditional practitioner Other (specify)	A B C D E H I K L M O P Q R X
CA12. WAS (name) GIVEN ANY MEDICINE TO TREAT THIS ILLNESS?	Yes No DK	1 2 8
		2 CA14 8 CA14

CARE OF ILLNESS (cont'd)		CA	
CA13. WHAT MEDICINE WAS (name) GIVEN?	Antibiotic		
Probe:	Pill / Syrup	A	
ANY OTHER MEDICINE?	Injection	B	
Circle all medicines given. Write brand name(s) of all medicines mentioned.	Anti-malarials	M	M CA14
(Names of medicines)	Paracetamol / Panadol / Acetaminophen	P	P CA14
	Aspirin	Q	Q CA14
	Ibuprofen	R	R CA14
	Other (specify)	X	X CA14
	DK	Z	Z CA14
CA13A. FROM WHERE DID YOU GET THE ANTIBIOTIC (PILL/SYRUP OR INJECTION)?	Public sector		
Probe:	Govt. hospital/Polyclinic	A	
ANYWHERE ELSE?	Govt. clinic/health centre	B	
	Govt. health post/CHPS Compound	C	
	Community health worker	D	
	Mobile / Outreach clinic	E	
	Other public (specify)	H	
	Private medical sector		
	Private hospital / clinic/ physician	I	
	Private pharmacy/Chemical shop	K	
	Mobile/Outreach clinic	L	
	Herbal Centre/HerbalClinic	M	
	Other private (specify)	O	
	Other source		
	Relative / Friend	P	
	Shop	Q	
	Traditional practitioner	R	
	Other (specify)	X	
CA14. Check AG2: Child aged under 3?			
<input type="checkbox"/> Yes Continue with CA15			
<input type="checkbox"/> No Go to Next Module			
CA15. THE LAST TIME (name) PASSED STOOLS, WHAT WAS DONE TO DISPOSE OF THE STOOLS?	Child used toilet / latrine	01	
	Put / Rinsed into toilet or latrine	02	
	Put / Rinsed into drain or ditch	03	
	Thrown into garbage (solid waste)	04	
	Buried	05	
	Left in the open	06	
	Other (specify)	96	
	DK	98	

MALARIA		ML	
ML1. IN THE LAST TWO WEEKS, HAS (name) BEEN ILL WITH A FEVER AT ANY TIME?	Yes	1	
	No	2	2 Next Module
	DK	8	8 Next Module
ML2. AT ANY TIME DURING THE ILLNESS, DID (name) HAVE BLOOD TAKEN FROM HIS/HER FINGER OR HEEL FOR TESTING?	Yes	1	
	No	2	
	DK	8	

MALARIA (cont'd)		ML	
ML3. DID YOU SEEK ANY ADVICE OR TREATMENT FOR THE ILLNESS FROM ANY SOURCE?	Yes	1	
	No	2	2 ML8
	DK	8	8 ML8
ML4. WAS (name) TAKEN TO A HEALTH FACILITY DURING THIS ILLNESS?	Yes	1	
	No	2	2 ML8
	DK	8	8 ML8
ML4A. WHERE WAS (name) TAKEN DURING THIS ILLNESS?	Public sector		
	Govt. Hospital	11	
	Govt. clinic Health center	12	
	Govt. Health post/CHPS compound	13	
	Village health worker/CBA	14	
	Mobile/outreach clinic	15	
	Other (specify)	16	
	Private medical sector		
	Private hospital/clinic	21	
	Private physician	22	
	Private pharmacy/Chemical shop	23	
	Mobile/Outreach clinic	24	
	Other (specify)	26	
	Other source		
	Relative or Friend	31	
	Shop	32	
	Traditional practitioner	33	
	Drug peddlers	34	
	Other (specify)	96	
	DK	98	
ML5. WAS (name) GIVEN ANY MEDICINE FOR FEVER OR MALARIA AT THE HEALTH FACILITY?	Yes	1	
	No	2	2 ML7
	DK	8	8 ML7
ML6. WHAT MEDICINE WAS (name) GIVEN?	Anti-malarials:		
Probe:	SP / Fansidar	A	
ANY OTHER MEDICINE?	Chloroquine	B	
	Amodiaquine	C	
	Quinine	D	
	Artemisinin-based Combination	E	
	ACT with the green leaf	F	
	Other anti-malarial (specify)	H	
Circle all medicines mentioned. Write brand name(s) of all medicines, if given.	Antibiotic drugs		
(Name)	Pill / Syrup	I	
	Injection	J	
	Other medications:		
	Paracetamol/ Panadol / Acetaminophen	P	
	Aspirin	Q	
	Ibuprofen	R	
	Other (specify)	X	
	DK	Z	
ML7. WAS (name) GIVEN ANY MEDICINE FOR THE FEVER OR MALARIA BEFORE BEING TAKEN TO THE HEALTH FACILITY?	Yes	1	1 ML9
	No	2	2 ML10
	DK	8	8 ML10
ML8. WAS (name) GIVEN ANY MEDICINE FOR FEVER OR MALARIA DURING THIS ILLNESS?	Yes	1	
	No	2	2 ML10
	DK	8	8 ML10

MALARIA (cont'd)		ML
<p>ML9. WHAT MEDICINE WAS (name) GIVEN?</p> <p>Probe: ANY OTHER MEDICINE?</p> <p>Circle all medicines mentioned. Write brand name(s) of all medicines, if given.</p> <p>(Name)</p>	<p>Anti-malarials:</p> <p>SP / Fansidar A</p> <p>Chloroquine B</p> <p>Amodiaquine C</p> <p>Quinine D</p> <p>Artemisinin-based Combination E</p> <p>ACT with the green leaf F</p> <p>Other anti-malarial (specify) H</p> <p>Antibiotic drugs</p> <p>Pill / Syrup I</p> <p>Injection J</p> <p>Other medications:</p> <p>Paracetamol/ Panadol/ Acetaminophen P</p> <p>Aspirin Q</p> <p>Ibuprofen R</p> <p>Other (specify) X</p> <p>DK Z</p>	
<p>ML10. Check ML6 and ML9: Anti-malarial mentioned (codes A - H)?</p> <p><input type="checkbox"/> Yes Continue with ML11</p> <p><input type="checkbox"/> No Go to Next Module</p>		
<p>ML11. HOW LONG AFTER THE FEVER STARTED DID (name) FIRST TAKE (name of anti-malarial from ML6 or ML9)?</p> <p>If multiple anti-malarials mentioned in ML6 or ML9, name all anti-malarial medicines mentioned.</p>	<p>Same day 0</p> <p>Next day 1</p> <p>2 days after the fever 2</p> <p>3 days after the fever 3</p> <p>4 or more days after the fever 4</p> <p>DK 8</p>	

IMMUNIZATION		IM
<p>If an immunization card is available, copy the dates in IM3 for each type of immunization recorded on the card. IM6-IM17 are for registering vaccinations that are not recorded on the card. IM6-IM17 will only be asked when a card is not available.</p>		
<p>IM1. DO YOU HAVE A CARD WHERE (name)'S VACCINATIONS ARE WRITTEN DOWN?</p> <p>(If yes) MAY I SEE IT PLEASE?</p>	<p>Yes, seen 1</p> <p>Yes, not seen 2</p> <p>No card 3</p>	<p>1 IM3</p> <p>2 IM6</p>
<p>IM2. DID YOU EVER HAVE A VACCINATION CARD FOR (name)?</p>	<p>Yes 1</p> <p>No 2</p>	<p>1 IM6</p> <p>2 IM6</p>

IMMUNIZATION (cont'd)				IM
<p>IM3. (a) Copy dates for each vaccination from the card. (b) Write '44' in day column if card shows that vaccination was given but no date recorded.</p>	<p>Date of Immunization</p> <p>Day Month Year</p>			
BCG BCG				
POLIO AT BIRTH OPV0				
POLIO 1 OPV1				
POLIO 2 OPV2				
POLIO 3 OPV3				
PENTA1 (DPT/HEPB/INFL1) PEN1				
PENTA2 (DPT/HEPB/INFL2) PEN2				
PENTA3 (DPT/HEPB/INFL3) PEN3				
MEASLES MEASLES				
YELLOW FEVER YF				
VITAMIN A (1) (MOST RECENT) VITA1				
VITAMIN A (2) (2ND MOST RECENT) VITA2				
<p>IM4. Check IM3. Are all vaccines (BCG to Yellow Fever) recorded?</p> <p><input type="checkbox"/> Yes Go to IM18</p> <p><input type="checkbox"/> No Continue with IM5</p>				

<p>IM5. IN ADDITION TO WHAT IS RECORDED ON THIS CARD, DID (name) RECEIVE ANY OTHER VACCINATIONS – INCLUDING VACCINATIONS RECEIVED IN CAMPAIGNS OR IMMUNIZATION DAYS?</p> <p>Record 'Yes' only if respondent mentions vaccines shown in the table above.</p>	<p>Yes (Probe for vaccinations and write '66' in the corresponding day column for each vaccine mentioned. Then skip to IM18)</p> <p>No 2</p> <p>DK 8</p>	<p>1</p> <p>2 IM18</p> <p>8 IM18</p>
<p>IM6. HAS (name) EVER RECEIVED ANY VACCINATIONS TO PREVENT HIM/HER FROM GETTING DISEASES, INCLUDING VACCINATIONS RECEIVED IN A CAMPAIGN OR IMMUNIZATION DAY?</p>	<p>Yes</p> <p>No 2</p> <p>DK 8</p>	<p>1</p> <p>2 IM18</p> <p>8 IM18</p>
<p>IM7. HAS (name) EVER RECEIVED A BCG VACCINATION AGAINST TUBERCULOSIS – THAT IS, AN INJECTION IN THE ARM OR SHOULDER THAT USUALLY CAUSES A SCAR?</p>	<p>Yes</p> <p>No 2</p> <p>DK 8</p>	<p>1</p>
<p>IM8. HAS (name) EVER RECEIVED ANY "VACCINATION DROPS IN THE MOUTH" TO PROTECT HIM/HER FROM GETTING DISEASES – THAT IS, POLIO?</p>	<p>Yes</p> <p>No 2</p> <p>DK 8</p>	<p>1</p> <p>2 IM11</p> <p>8 IM11</p>
<p>IM9. WAS THE FIRST POLIO VACCINE RECEIVED IN THE FIRST TWO WEEKS AFTER BIRTH OR LATER?</p>	<p>First two weeks</p> <p>Later</p>	<p>1</p> <p>2</p>
<p>IM10. HOW MANY TIMES WAS THE POLIO VACCINE RECEIVED?</p>	<p>Number of times ___</p>	

IMMUNIZATION (cont'd)		IM	
IM11. HAS (name) EVER RECEIVED A PENTA (DPT/HEPB/INFL) VACCINATION – THAT IS, AN INJECTION IN THE THIGH OR BUTTOCKS – TO PREVENT HIM/HER FROM GETTING TETANUS, WHOOPING COUGH, OR DIPHTHERIA? Probe by indicating that PENTA vaccination is sometimes given at the same time as Polio	Yes No DK	1 2 8	1 2 IM16 8 IM16
IM12. HOW MANY TIMES WAS A PENTA (DPT/HEPB/INFL) VACCINE RECEIVED?	Number of times ____		
IM16. HAS (name) EVER RECEIVED A MEASLES INJECTION – THAT IS, A SHOT IN THE ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING MEASLES? Probe by indicating that the yellow fever vaccine is sometimes given at the same time as the measles vaccine	Yes No DK	1 2 8	
IM17. HAS (name) EVER RECEIVED THE YELLOW FEVER VACCINATION – THAT IS, A SHOT IN THE ARM AT THE AGE OF 9 MONTHS OR OLDER - TO PREVENT HIM/HER FROM GETTING YELLOW FEVER? Probe by indicating that the yellow fever vaccine is sometimes given at the same time as the measles vaccine	Yes No DK	1 2 8	
IM18. HAS (name) RECEIVED A VITAMIN A DOSE LIKE (THIS/ANY OF THESE) WITHIN THE LAST 6 MONTHS? Show common types of ampules / capsules / syrups	Yes No DK	1 2 8	
IM19. Please tell me if (name) has participated in any of the following campaigns over the course of the year:		Y N DK	
[A] POLIO IMMUNIZATION PHASE I (MARCH 2011)	POLIO IMMUNIZATION PHASE I	1 2 8	
[B] POLIO IMMUNIZATION PHASE II (MAY 2011)	POLIO IMMUNIZATION PHASE II	1 2 8	
[C] POLIO IMMUNIZATION PHASE III (AUGUST 2011)	POLIO IMMUNIZATION PHASE III	1 2 8	
[D] POLIO IMMUNIZATION PHASE IV (NOVEMBER 2011)	POLIO IMMUNIZATION PHASE IV	1 2 8	

NATIONAL HEALTH INSURANCE		HI	
HI1. HAS (name) EVER BEEN REGISTERED WITH ANY HEALTH INSURANCE SCHEME?	Yes No	1 2	2 HI10
HI2. WHAT TYPE OF HEALTH INSURANCE DOES (NAME) HAVE? Probe: ANY OTHER?	National/District Health Insurance (NHIS) Mutual Health Organization/ Community-based Health Insurance Other Privately Purchased Commercial Health Insurance Other Health Insurance (specify)	A B C X	
HI3. Check HI2: <input type="checkbox"/> NHIS NOT CHECKED. Go to HI11			
HI3A. IN WHICH YEAR WAS (NAME) FIRST REGISTERED WITH THE NATIONAL HEALTH INSURANCE SCHEME (NHIS)?	(YYYY) _____ DK.....998		
HI4. HOW WAS (NAME'S) MEMBERSHIP OF THE NHIS ACHIEVED?	Paid premium myself Premium paid by a relative or friend Free Child Health Service Other (specify)	01 02 07 96	

NATIONAL HEALTH INSURANCE (cont'd)		HI	
HI5. DOES (NAME) HOLD A VALID NATIONAL HEALTH INSURANCE SCHEME (NHIS) CARD? If child has valid insurance card, request to see it. Check to make sure it is valid for 2011	Yes, card seen Yes, card not seen No	1 2 3	1 HI9 2 HI9
HI6. WHY DOES (NAME) NOT HAVE A VALID NHIS CARD?	Registered/Renewed, card not received Registered, in waiting period Registration not renewed Lost NHIS card Not aware of need to renew the card Other (specify)	2 3 4 5 7 6	2 HI9 3 NI9 5 HI9 6 HI9
HI7. DO YOU PLAN TO RENEW (NAME'S) NHIS REGISTRATION?	Yes No Don't know/ Not sure	1 2 8	1 HI9 8 HI9

HI8. WHY DO YOU NOT WANT TO RENEW (NAME'S) NHIS REGISTRATION? Probe: ANY OTHER REASON?	Has not been sick Still pay out of pocket Poor quality care with card Waiting time for card too long Desired services not covered Clinics used/ traditional services not Covered by NHIS Not aware that card is renewable Other (specify)_____	A C D E F G H X	
HI9. IN YOUR OPINION, DOES A CHILD WITH THE NHIS CARD GET BETTER/SAME/WORSE SERVICES WHEN THEY VISIT HEALTH CARE FACILITIES?	Better Same Worse Never used Don't know	1 2 3 4 8	1 UF13 2 UF13 3 UF13 4 UF13 8 UF13
HI10. WHY HAVE YOU NOT REGISTERED OR RENEWED REGISTRATION FOR (NAME) WITH THE NHIS? Probe: ANY OTHER REASON?	Not heard of NHIS Do not trust NHIS Do not know where to register Registration office too far Do not need health insurance NHIS does not cover the services needed NHIS does not cover the facilities used Not aware that card is renewable Other (specify)_____	A C D E F G H I X	A UF13 C UF13 D UF13 E UF13 F UF13 G UF13 H UF13 X UF13
HI11. IS (NAME'S) INSURANCE CURRENTLY VALID FOR 2011?	Yes No Don't know/ Not sure	1 2 8	

UF13. Record the time.	Hour and minutes ____ : ____	
UF14. Is the respondent the mother or caretaker of another child age 0-4 living in this household?	<input type="checkbox"/> Yes Indicate to the respondent that the health technician will need to measure the weight and height of the child later. Go to the next QUESTIONNAIRE FOR CHILDREN UNDER FIVE to be administered to the same respondent <input type="checkbox"/> No End the interview with this respondent by thanking him/her for his/her cooperation and tell her/him that the health technician will need to measure the weight and height of the child Check to see if there are other woman's, under-5's or man's questionnaires to be administered in this household. Move to another woman's, under-5 or man's questionnaire, or start making arrangements for anthropometric measurements of all eligible children in the household.	

ANTHROPOMETRY		AN	
After questionnaires for all children are complete, the measurer weighs and measures each child. Record weight and length/height below, taking care to record the measurements on the correct questionnaire for each child. Check the child's name and line number on the household listing before recording measurements. Also observe and record whether the child has oedema or not.			
AN1. Measurer's name and number:	Name	_____	
AN2. Result of height / length and weight measurement	Either or both measured	1	
	Child not present	2	2 AN6
	Child or caretaker refused	3	3 AN6
	Other (specify)	6	6 AN6
AN3. Child's weight	Kilograms (kg)	____.____	
	Weight not measured	99.9	
AN4. Child's length or height	Check age of child in AG2:		
<input type="checkbox"/> Child under 2 years old. Measure length (lying down).	Length (cm) Lying down	1 _____ . ____	
	Height (cm) Standing up	2 _____ . ____	
<input type="checkbox"/> Child age 2 or more years. Measure height (standing up).	Length / Height not measured	9999.9	
	AN5. Oedema	Checked	
EXAMINE AND RECORD.	Oedema present	1	
	Oedema not present	2	
	Unsure	3	
	Not checked (specify reason)	7	
AN6. Is there another child in the household who is eligible for measurement?			
<input type="checkbox"/> Yes Record measurements for next child.			
<input type="checkbox"/> No End measurement with this household by thanking all participants for their cooperation. Health technician will then proceed to the anemia and malaria testing for eligible children in the house hold.			

ANAEMIA AND MALARIA TESTING FOR CHILDREN UNDER FIVE		AM	
After weighing and measuring the child, the health technician will request to do the anaemia and malaria testing.			
AM1. Check AG1:	Yes	1	
Was child born in month of interview or five previous months?	No	2	1 END
AM2. Ask consent for anaemia test from mother or caretaker:			
AS PART OF THIS SURVEY, WE ARE ASKING THAT CHILDREN ALL OVER THE COUNTRY TAKE AN ANAEMIA TEST. ANAEMIA IS A SERIOUS HEALTH PROBLEM THAT USUALLY RESULTS FROM POOR NUTRITION, INFECTION, OR DISEASE. THIS SURVEY WILL HELP THE GOVERNMENT TO DEVELOP PROGRAMS TO PREVENT AND TREAT ANAEMIA.			
WE ASK THAT ALL CHILDREN AGE 6 MONTHS TO 5 YEARS PARTICIPATE IN THE ANAEMIA TESTING PART OF THIS SURVEY AND GIVE A FEW DROPS OF BLOOD FROM A FINGER. THE EQUIPMENT USED TO TAKE THE BLOOD IS CLEAN AND COMPLETELY SAFE. IT HAS NEVER BEEN USED BEFORE AND WILL BE THROWN AWAY AFTER EACH TEST. YOUR CHILD WILL FEEL SOME PAIN THAT LASTS A FEW SECONDS WHEN HIS/HER FINGER IS PRICKED. THERE IS ALSO A SLIGHT RISK OF BLEEDING AND INFECTION WHERE THE FINGER IS PRICKED, BUT WE TAKE PRECAUTIONS TO REDUCE THIS RISK.			
THE BLOOD WILL BE TESTED FOR ANAEMIA IMMEDIATELY AND THE RESULT WILL BE MADE KNOWN TO YOU RIGHT AWAY. THE RESULT WILL BE KEPT CONFIDENTIAL AND WILL NOT BE SHARED WITH ANYONE OTHER THAN MEMBERS OF OUR SURVEY TEAM.			
DO YOU HAVE ANY QUESTIONS? YOU CAN SAY YES TO THE TEST OR YOU CAN SAY NO. IT IS UP TO YOU TO DECIDE.			
WILL YOU ALLOW (NAME OF CHILD) TO PARTICIPATE IN THE ANAEMIA TEST?			
AM3. Anaemia testing consent outcome.	Granted	1	
	_____ (mother/caretaker's signature or thumbprint)		
	_____ (health tech's signature as witness)		
	Refused	2	
	Child not present	5	
	Other	6	
AM4. Ask consent for malaria test from mother or caretaker:			
AS PART OF THIS SURVEY, WE ARE ASKING THAT CHILDREN ALL OVER THE COUNTRY TAKE A MALARIA TEST. MALARIA IS A SERIOUS ILLNESS CAUSED BY A PARASITE TRANSMITTED BY A MOSQUITO BITE. THIS SURVEY WILL HELP THE GOVERNMENT TO DEVELOP PROGRAMS TO PREVENT MALARIA.			
WE ASK THAT ALL CHILDREN AGE 6 MONTHS TO 5 YEARS PARTICIPATE IN THE MALARIA TESTING PART OF THIS SURVEY AND GIVE A FEW DROPS OF BLOOD FROM A FINGER. THE EQUIPMENT USED TO TAKE THE BLOOD IS CLEAN AND COMPLETELY SAFE. IT HAS NEVER BEEN USED BEFORE AND WILL BE THROWN AWAY AFTER EACH TEST. YOUR CHILD WILL FEEL SOME PAIN THAT LASTS A FEW SECONDS WHEN HIS/HER FINGER IS PRICKED. THERE IS ALSO A SLIGHT RISK OF BLEEDING AND INFECTION WHERE THE FINGER IS PRICKED, BUT WE TAKE PRECAUTIONS TO REDUCE THIS RISK. WE WILL USE BLOOD FROM THE SAME FINGER PRICK MADE FOR THE ANAEMIA TEST.			
ONE BLOOD DROP WILL BE TESTED FOR MALARIA IMMEDIATELY AND THE RESULT WILL BE MADE KNOWN TO YOU RIGHT AWAY. ANOTHER DROP WILL BE COLLECTED ON A SLIDE AND TAKEN TO A LABORATORY FOR TESTING. YOU WILL NOT BE TOLD THE RESULTS OF THE LABORATORY TESTING. ALL RESULTS WILL BE KEPT CONFIDENTIAL AND WILL NOT BE SHARED WITH ANYONE OTHER THAN MEMBERS OF OUR SURVEY TEAM.			
DO YOU HAVE ANY QUESTIONS? YOU CAN SAY YES TO THE TEST OR YOU CAN SAY NO. IT IS UP TO YOU TO DECIDE.			
WILL YOU ALLOW (NAME OF CHILD) TO PARTICIPATE IN THE MALARIA TESTING?			

ANAEMIA AND MALARIA TESTING FOR CHILDREN UNDER FIVE (cont'd)		AM
AM5. Malaria testing consent outcome.	Granted 1 _____ (mother/caretaker's signature or thumbprint) _____ (health tech's signature as witness) Refused 2 Child not present 5 Other 6	
AM6. Prepare supplies for the tests for which consent was granted and proceed with the tests.		
AM7. Bar code label. Put the first bar code label here, the 2nd on the RDT, the 3rd on the slide and the 4th and 5th on the transmittal forms.	PASTE THE 1st BAR CODE LABEL HERE Refused 9994 Child not present 9995 Other 9996	
AM8. Haemoglobin level. Record the haemoglobin level here and in the anaemia and malaria brochure.	G/DL __ __ . __ Refused 994 Child not present 995 Other 996	
AM9. Malaria rapid test outcome.	Tested 1 Refused 2 Child not present 3 Other 6	2 AM11 3 AM11 6 AM11
AM10. Malaria rapid test result. Record the result of the RDT here and in the anaemia and malaria brochure.	Positive, falciparum only (Pf) 1 Positive, other species (O,M,V) 2 Positive, both falciparum and OMV 3 Negative 4 Other 6	1 AM13 2 AM13 3 AM13
AM11. Check AM8: Haemoglobin result	Below 7.0 g/dl, severe anaemia 1 7.0 g/dl or above 2 Refused 3 Child not present 4 Other 6	2 END 3 END 4 END 6 END
AM12. Severe anaemia referral THE ANAEMIA TEST SHOWS THAT (NAME OF CHILD) HAS SEVERE ANAEMIA. YOUR CHILD IS VERY ILL AND MUST BE TAKEN TO A HEALTH FACILITY IMMEDIATELY.		END
AM13. DOES (NAME) SUFFER FROM ANY OF THE FOLLOWING ILLNESSES OR SYMPTOMS: EXTREME WEAKNESS? HEART PROBLEMS? FAINTING, LOSS OF CONSCIOUSNESS? RAPID OR DIFFICULT BREATHING? SEIZURES? ABNORMAL BLEEDING? JAUNDICE (YELLOW SKIN)? DARK URINE?	Extreme weakness A Heart problems B Fainting, loss of consciousness C Rapid or difficult breathing D Seizures E Abnormal bleeding F Jaundice G Dark urine H	
AM14. Check AM13: Any code circled?	No code circled 1 Any code circled 2	2 AM 17
AM15. Check AM8: Haemoglobin result	Below 6.0 g/dl, severe anaemia 1 6.0 g/dl or above 2 Refused 3 Child not present 4 Other 6	1 AM 17
AM16. IN THE PAST 2 WEEKS HAS (NAME) TAKEN ANY MEDICINE GIVEN BY A DOCTOR OR HEALTH CENTER TO TREAT THE MALARIA? Check if it is AL/AS-AQ by asking to see the medicine. Circle '1' only if it is AL or AS-AQ.	Yes 1 No 2	1 AM 18 2 AM 19

ANAEMIA AND MALARIA TESTING FOR CHILDREN UNDER FIVE (cont'd)		AM
AM17. Severe malaria referral THE MALARIA TEST SHOWS THAT (NAME OF CHILD) HAS MALARIA. YOUR CHILD ALSO HAS SYMPTOMS OF SEVERE MALARIA. THE MALARIA TREATMENT I HAVE WILL NOT HELP YOUR CHILD, AND I CANNOT GIVE YOU THE MEDICATION. YOUR CHILD IS VERY ILL AND MUST BE TAKEN TO A HEALTH FACILITY RIGHT AWAY.		END
AM18. Referral for those who are already taking AL or AS-AQ YOU HAVE TOLD ME THAT (NAME OF CHILD) HAS ALREADY RECEIVED MEDICATION FOR MALARIA. THEREFORE, I CANNOT GIVE YOU ADDITIONAL MEDICATION. HOWEVER, THE TEST SHOWS THAT HE/SHE IS POSITIVE FOR MALARIA. IF YOUR CHILD HAS A FEVER FOR TWO DAYS AFTER THE LAST DOSE OF MEDICATION, YOU SHOULD TAKE THE CHILD TO THE NEAREST HEALTH FACILITY FOR FURTHER EXAMINATION.		END
AM19. Consent for malaria treatment THE MALARIA TEST SHOWS THAT YOUR CHILD HAS MALARIA. WE CAN GIVE YOU FREE MEDICINE. THE MEDICINE IS CALLED AS-AQ. IT IS VERY EFFECTIVE AND IN A FEW DAYS IT SHOULD GET RID OF THE FEVER AND OTHER SYMPTOMS. YOU DO NOT HAVE TO GIVE THE CHILD THE MEDICINE. IT IS UP TO YOU TO DECIDE. PLEASE TELL ME IF YOU ACCEPT THE MEDICINE OR NOT.		
AM20. Accepted medicine?	Accepted medicine 1 Refused medicine 2 Other 6	

TABLE 1A: ARTESUNATE + AMODIAQUINE FIXED DOSE COMBINATION STANDARD REGIMEN, USING THE 3 AVAILABLE DOSING STRENGTHS

Artesunate + Amodiaquine Fixed Dose Combination*					
Weight (kg)	Age	Tablet Dosing Strength	Day 1	Day 2	Day 3
≤ 8 kg	2-11 mos. "Infants"	AS: 25 mg AQ: 67.5 mg	1 tablet	1 tablet	1 tablet
9-17 kg	1-5 years "Young Children"	AS: 50 mg AQ: 135 mg	1 tablet	1 tablet	1 tablet
18-35 kg	6-13 years "Children"	AS: 100 mg AQ: 270 mg	1 tablet	1 tablet	1 tablet
≥ 36 kg	> 13 years "Adolescents & Adults"	AS: 100 mg AQ: 270 mg	2 tablet	2 tablet	2 tablet

* Each tablet contains both Artesunate (AS) and Amodiaquine (AQ), at the dosages indicated. The product packaging clearly indicates which dosing strength applies to which age group.

TABLE 1B: ARTESUNATE + AMODIAQUINE CO-BLISTERED FORMULATION REGIMEN FOR ONCE DAILY DOSING

Weight (kg)	Age (yr)	Artesunate 50 mg tablets			Amodiaquine 150 mg base tablets		
		Day 1	Day 2	Day 3	Day 4	Day 5	Day 6
5-10 kg	Under 1	½ tab	½ tab	½ tab	½ tab	½ tab	½ tab
11-24 kg	1-6	1 tab	1 tab	1 tab	1 tab	1 tab	1 tab
24-50 kg	7-13	2 tabs	2 tabs	2 tabs	2 tabs	2 tabs	2 tabs
50-70 kg	14-18	3 tabs	3 tabs	3 tabs	3 tabs	3 tabs	3 tabs
≥70 kg	≥18	4 tabs	4 tabs	4 tabs	4 tabs	4 tabs	4 tabs

Note: The dose in mg/body weight is: Amodiaquine 10mg/kg body weight + Artesunate 4mg/ kg body weight, taken as a SINGLE DOSE daily for three (3) days, after meals.

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations

MAN'S INFORMATION PANEL		QUESTIONNAIRE FOR INDIVIDUAL MEN GHANA 2011
MAN'S INFORMATION PANEL		MM
This questionnaire is to be administered to all men age 15 through 59 (see column HL7A of Household Listing Form). Fill in one form for each eligible man.		
MM1. Cluster Number: _____	MM2. Household number: _____	
MM3. Man's name: _____	MM4. Man's line number: _____	
MM5. Interviewer name and number: _____	MM6. Day / Month / Year of interview:	
Name _____	____ / ____ / 2011	
Name of Region: _____	Name of District: _____	
Repeat greeting if not already read to this man:		If greeting at the beginning of the household questionnaire has already been read to this man, then read the following:
WE ARE FROM THE GHANA STATISTICAL SERVICE. WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT THESE SUBJECTS. THE INTERVIEW WILL TAKE ABOUT 30 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.		NOW I WOULD LIKE TO TALK TO YOU MORE ABOUT YOUR HEALTH AND OTHER TOPICS. THIS INTERVIEW WILL TAKE ABOUT 30 MINUTES. AGAIN, ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE SHARED WITH ANYONE OTHER THAN OUR PROJECT TEAM.
MAY I START NOW?		
<input type="checkbox"/> Yes, permission is given Go to MM10 to record the time and then begin the interview.		
<input type="checkbox"/> No, permission is not given Complete MM7. Discuss this result with your supervisor.		
MM7. Result of man's interview	Completed	01
	Not at home	02
	Refused	03
	Partly completed	04
	Incapacitated	05
	Other (specify)	96
MM8. Field edited by (Name and number):	MM9. Data entry clerk (Name and number):	
Name _____	Name _____	
MM10. Record the time.	Hour and minutes ____ : ____	
MAN'S BACKGROUND		MB
MB1. IN WHAT MONTH AND YEAR WERE YOU BORN?	Date of birth Month ____ DK month 98 Year ____ DK year 9998	
MB2. HOW OLD ARE YOU? Probe: HOW OLD WERE YOU AT YOUR LAST BIRTHDAY?	Age (in completed years) ____	
Compare and correct MB1 and/or MB2 if inconsistent		
MB3. HAVE YOU EVER ATTENDED SCHOOL? (INCLUDING PRESCHOOL)	Yes 1 No 2	2 MB7

MAN'S BACKGROUND (cont'd)		MB
MB4. WHAT IS THE HIGHEST LEVEL OF SCHOOL YOU ATTENDED?	Preschool 0 Primary 1 Middle/JSS/JHS 2 Secondary/SSS/SHS 3 Voc/Comm/Tech 4 Post Secondary (Nursing/Teacher Trg) 5 Tertiary 6	0 MB7
MB5. WHAT IS THE HIGHEST CLASS/YEAR YOU COMPLETED AT THAT LEVEL?	Class/Year —	
If no class/year completed at that level, enter "0"		
MB6. Check MB4: <input type="checkbox"/> Secondary or Higher (MB4=3 or MB4=4 or MB4=5 or MB4=6) Go to MB8 <input type="checkbox"/> Primary /Middle/JSS/JHS (MB4=1 or MB4=2) Continue with MB7		
MB7. NOW I WOULD LIKE YOU TO READ THIS SENTENCE TO ME.	Cannot read at all 1 Able to read only parts of sentence 2 Able to read whole sentence 3	
Show sentence on the card to the respondent. If respondent cannot read whole sentence, probe:		
CAN YOU READ PART OF THE SENTENCE TO ME?	No sentence in required language 4 (specify language)	
	Blind/mute, visually/speech impaired 5	

MB8. WHAT IS YOUR RELIGION?	Catholic 11 Protestant 12 Pentecostal/Charismatic 13 Deeper Life 14 Jehovah Witness 15 SDA 16 Other Christian 17 Moslem 21 Traditional 31 Spiritualist 32 Other religion (specify) 96 No Religion 97	
MB9. TO WHAT ETHNIC GROUP DO YOU BELONG?	Akan 11 Ga/Dangme 12 Ewe 13 Guan 14 Gruma 15 Mole Dagbani 21 Grusi 22 Mande 23 Non-Ghanaian 24 Other ethnic group (specify) 96	

ACCESS TO MASS MEDIA AND USE OF INFORMATION/COMMUNICATION TECHNOLOGY		AC
AC1. Check MB7:		
<input type="checkbox"/> Question left blank (Respondent has Secondary or Higher education) Continue with AC2 <input type="checkbox"/> Able to read or no sentence in required language (codes 2, 3 or 4) Continue with AC2 <input type="checkbox"/> Cannot read at all or blind (codes 1 or 5) Go to AC3		
AC2. DO YOU READ A NEWSPAPER OR MAGAZINE ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all 4	
AC3. DO YOU LISTEN TO THE RADIO ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all 4	
AC4. DO YOU WATCH TELEVISION ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all 4	
AC6. HAVE YOU EVER USED A COMPUTER?	Yes 1 No 2	2 AC9
AC7. HAVE YOU EVER USED A COMPUTER IN THE LAST 12 MONTHS?	Yes 1 No 2	2 AC9
AC8. DURING THE LAST ONE MONTH, DID YOU USE A COMPUTER ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day 1 At least once a week 2 Less than once a week 3 Not at all 4	
AC9. HAVE YOU EVER USED THE INTERNET?	Yes 1 No 2	2 NEXT MODULE

AC10. HAVE YOU EVER USED THE INTERNET IN THE LAST 12 MONTHS?	Yes No	1 2	2 NEXT MODULE
If necessary, probe for use from any location, with any device			
AC11. DURING THE LAST ONE MONTH, DID YOU USE THE INTERNET ALMOST EVERY DAY, AT LEAST ONCE A WEEK, LESS THAN ONCE A WEEK OR NOT AT ALL?	Almost every day At least once a week Less than once a week Not at all	1 2 3 4	

MARRIAGE/UNION MU

MU1. ARE YOU CURRENTLY MARRIED OR LIVING TOGETHER WITH A WOMAN AS IF MARRIED?	Yes, currently married Yes, cohabiting with a woman No, not in union	1 2 3	2 MU1B 3 MU5
MU1A. WHAT TYPE OF MARRIAGE?	Consensual union Customary marriage only Customary and religious Civil marriage only Customary and civil Customary, religious and civil Betrothed(incl. customary not completed) Other (specify) DK	01 02 03 04 05 06 07 96 98	
MU1B. HOW MANY WOMEN DO YOU CURRENTLY LIVE WITH (MARRIED OR AS IF MARRIED)?	Number of women	___	

MARRIAGE/UNION (cont'd) MU

If only one wife MU2. HOW OLD IS YOUR WIFE/PARTNER?	Age in years	___	MU8
Probe: HOW OLD WAS YOUR WIFE/PARTNER ON HER LAST BIRTHDAY?	DK	98	MU8
If more than one wife MU2A. HOW OLD IS YOUR YOUNGEST WIFE/PARTNER (RANK)?	Probe: HOW OLD WAS YOUR YOUNGEST WIFE/PARTNER ON HER LAST BIRTHDAY?		
MU5. HAVE YOU EVER BEEN MARRIED OR LIVED TOGETHER WITH A WOMAN AS IF MARRIED?	Yes, formerly married Yes, formerly lived with a woman No	1 2 3	3 Next Module
MU6. WHAT IS YOUR MARITAL STATUS NOW: ARE YOU WIDOWED, DIVORCED OR SEPARATED?	Widowed Divorced Separated	1 2 3	
MU7. HAVE YOU BEEN MARRIED OR LIVED WITH A WOMAN ONLY ONCE OR MORE THAN ONCE?	Only once More than once	1 2	
MU8. IN WHAT MONTH AND YEAR DID YOU FIRST MARRY OR START LIVING WITH A WOMAN AS IF MARRIED?	Date of first marriage Month ___ DK month 98 Year _____ DK year 9998		Next Module
MU9. HOW OLD WERE YOU WHEN YOU STARTED LIVING WITH YOUR FIRST WIFE/PARTNER?	Age in years	___	

ATTITUDE TOWARDS CONTRACEPTION MR

MR1. I WOULD LIKE TO TALK WITH YOU ABOUT ANOTHER SUBJECT – FAMILY PLANNING.			
MR2. COUPLES USE VARIOUS WAYS OR METHODS TO DELAY OR AVOID A PREGNANCY.	Yes No	1 2	2 MR4
ARE YOU OR (ANY OF) YOUR WIFE(S)/PARTNER(S) CURRENTLY DOING SOMETHING OR USING ANY METHOD TO DELAY OR AVOID HER GETTING PREGNANT?	DK	8	8 MR4
MR3. WHAT ARE YOU / ANY OF YOUR WIFE(S)/PARTNER(S) DOING TO DELAY OR AVOID A PREGNANCY?	Female sterilization Male sterilization IUD Injectables Implants Pill Male condom Female condom Diaphragm Foam / Jelly Lactational amenorrhoea method (LAM) Periodic abstinence / Rhythm Withdrawal LNG-IUS Other (specify)	A B C D E F G H I J K L M N X	NEXT MODULE
Do not prompt. If more than one method is mentioned, circle each one.			

ATTITUDE TOWARDS CONTRACEPTION (cont'd) MR

MR4. WOULD YOU YOURSELF USE OR WOULD YOU ALLOW (ANY OF) YOUR WIFE(S)/PARTNER(S) TO USE ANY SUCH METHODS?	Yes No DK / not sure / depends	1 2 8	1 NEXT MODULE 8 NEXT MODULE
MR5. WHY WOULDN'T YOU ALLOW YOUR WIFE(S)/PARTNER(S) TO USE ANY SUCH METHODS?	Religious beliefs Partner refuses Can't afford / expensive Side effects Not sexually active Do not wish to avoid pregnancy Encourages promiscuity Other (specify)	A B C D E F G X	
Probe: ANY OTHER REASON? Record all reasons mentioned.			

BEHAVIOUR CHANGE COMMUNICATION ON MALARIA MC

MC1. NOW I WOULD LIKE YOU TO TALK ABOUT MALARIA	Eating sweet foods Standing/ working in the sun Eating contaminated food Mosquito bites Malaria parasite (p. falciparum) Hereditary Dirty surroundings Weedy surroundings and stagnant water Other (specify) DK	A B C D E F G H X Z	
IN YOUR OPINION, WHAT CAUSES MALARIA?			
Probe: WHAT ELSE?			

MC2. HOW WOULD YOU KNOW THAT SOMEONE HAS MALARIA?	Hot body fever Vomiting/Diarrhea Strong headaches/Dizziness Loss of appetite Weakness of the body Cough Chills Bitterness in the mouth Other (specify) DK	A B C D E F G H X Z	
MC3. HOW CAN ONE PROTECT HIM/HERSELF AGAINST MALARIA?	Sleep under a mosquito net Sleep under a insecticide treated mosquito net Use Mosquito repellent Avoid mosquito bites Clear Weeds around the house Fill in Stagnant waters (puddles) Keep surrounding clean Put mosquito screen window Other (specify) DK	A B C D E F G H X Z	
MC4. CAN MALARIA BE TREATED?	Yes No DK	1 2 8	
MC5. IN THE PAST SIX MONTHS, HAVE YOU SEEN OR HEARD ANY MALARIA MESSAGES?	Yes No	1 2	2 MC10
BEHAVIOUR CHANGE COMMUNICATION ON MALARIA			MC
MC6. WHAT MESSAGES ABOUT MALARIA HAVE YOU SEEN OR HEARD IN THE PAST 6 MONTHS?	If have fever go to health facility Sleep under a insecticide treated mosquito net Pregnant women should take drugs to prevent malaria Malaria kills Other (specify) None DK/Don't remember	A B C D X Y Z	

MC7. IN THE PAST SIX MONTHS, HAVE YOU SEEN/HEARD ANY OF THE FOLLOWING MALARIA MESSAGES ON TELEVISION OR RADIO:	Yes on TV	Yes on radio	Yes on both	No	
[A] NANA BORO'S "AHA YE DE-NTONTOM BE WU" MUSIC VIDEO/ SONG?	1	2	3	4	
[B] ADVERT WHERE WOMAN DOESN'T WANT TO STAY THE NIGHT WITH THE MAN UNLESS HE HAS A TREATED NET?	1	2	3	4	
[C] SHORT DOCUMENTARIES FEATURING THE TRUE STORIES OF GHANAIAI FAMILIES CHILDREN SUFFERING EPILEPSY AND LEARNING DISABILITIES DUE TO SEVERE MALARIA?	1	2	3	4	
[D] ADVERT WHERE PEOPLE FROM ALL WALKS OF LIFE ARE SLEEPING UNDER TREATED NETS?	1	2	3	4	
MC8 DURING THE PAST 6 MONTHS, HAVE YOU SEEN/HEARD ANY ADVERT ON THE USE OF ACT WITH GREEN LEAF?	Yes 1 No 2				2 MC10
MC9. WHERE DID YOU SEE/HEAR THE ADVERT ON THE USE OF ACT WITH GREEN LEAF?	TV Radio Newspaper/Magazine Poster /Leaflets Billboard Other (specify) DK/Don't remember		A B C D E X Z		
MC10. HAVE YOU PARTICIPATED IN ANY COMMUNITY EVENT EDUCATING COMMUNITY MEMBERS ON PREVENTION AND CONTROL OF MALARIA?	Yes No		1 2		
ATTITUDE TOWARDS DOMESTIC VIOLENCE					MD
MD1. SOMETIMES A HUSBAND IS ANNOYED OR ANGERED BY THINGS THAT HIS WIFE DOES. IN YOUR OPINION, IS A HUSBAND JUSTIFIED IN HITTING OR BEATING HIS WIFE IN THE FOLLOWING SITUATIONS:		Yes	No	DK	
[A] IF SHE GOES OUT WITHOUT TELLING HIM?	Goes out without telling	1	2	8	
[B] IF SHE NEGLECTS THE CHILDREN?	Neglects children	1	2	8	
[C] IF SHE ARGUES WITH HIM?	Argues with him	1	2	8	
[D] IF SHE REFUSES TO HAVE SEX WITH HIM?	Refuses sex	1	2	8	
[E] IF SHE BURNS THE FOOD?	Burns food	1	2	8	
[F] IF SHE INSULTS HIM?	Insults him	1	2	8	
[G] IF SHE REFUSES TO GIVE HIM FOOD?	Refuses to give food	1	2	8	
[H] IF SHE HAS ANOTHER PARTNER?	Another partner	1	2	8	
[I] IF SHE STEALS?	Stealing	1	2	8	
[J] IF SHE GOSSIP?	Gossiping	1	2	8	
[K] OTHER, (SPECIFY)?	Other (specify)	1	2	8	

SEXUAL BEHAVIOUR		MS
Check for the presence of others. Before continuing, ensure privacy.		
MS1. NOW I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT SEXUAL ACTIVITY IN ORDER TO GAIN A BETTER UNDERSTANDING OF SOME IMPORTANT LIFE ISSUES. THE INFORMATION YOU SUPPLY WILL REMAIN STRICTLY CONFIDENTIAL. HOW OLD WERE YOU WHEN YOU HAD SEXUAL INTERCOURSE FOR THE VERY FIRST TIME?	Never had intercourse 00 Age in years ___ First time when started living with (first) wife/partner 95	00 Next Module
MS2. THE FIRST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes 1 No 2 DK / Don't remember 8	2 MS3 8 MS3
MS2A. WHAT WAS THE MAIN REASON WHY YOU USED THE CONDOM?	To prevent STD/HIV 1 To prevent pregnancy 2 To prevent both STD/HIV and pregnancy 3 Partner requested/insisted 4 Other (specify) 6	
MS3. WHEN WAS THE LAST TIME YOU HAD SEXUAL INTERCOURSE? Record 'years ago' only if last intercourse was one or more years ago. If 12 months or more the answer must be recorded in years.	Days ago 1 ___ Weeks ago 2 ___ Months ago 3 ___ Years ago 4 ___	4 MS15
MS4. THE LAST TIME YOU HAD SEXUAL INTERCOURSE, WAS A CONDOM USED?	Yes 1 No 2	2 MS5
SEXUAL BEHAVIOUR (cont'd)		MS
MS4A. WHAT WAS THE MAIN REASON WHY YOU USED THE CONDOM?	To prevent STD/HIV 1 To prevent pregnancy 2 To prevent both STD/HIV and pregnancy 3 Partner requested/insisted 4 Other (specify) 5	
MS5. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON WITH WHOM YOU LAST HAD SEXUAL INTERCOURSE? Probe to ensure that the response refers to the relationship at the time of sexual intercourse If 'girlfriend', then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '02'. If 'no', circle '03'.	Spouse 01 Cohabiting partner/concubine 02 Girlfriend/fiancée 03 Casual acquaintance 04 Ex-girlfriend/fiancée 05 Commercial sex worker 06 Other (specify) 96	
MS6. Check MU1: <input type="checkbox"/> Currently married or living with a woman (MU1 = 1 or 2) Go to MS8 <input type="checkbox"/> Not married / Not in union (MU1 = 3) Continue with MS7		

MS7. HOW OLD IS THIS PERSON? If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	Age of sexual partner ___ DK 98	
MS8. HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes 1 No 2	2 MS14B
MS9. THE LAST TIME YOU HAD SEXUAL INTERCOURSE WITH THIS OTHER PERSON, WAS A CONDOM USED?	Yes 1 No 2	
MS10. WHAT WAS YOUR RELATIONSHIP TO THIS PERSON? Probe to ensure that the response refers to the relationship at the time of sexual intercourse If 'girlfriend', then ask: WERE YOU LIVING TOGETHER AS IF MARRIED? If 'yes', circle '02'. If 'no', circle '03'.	Spouse 01 Cohabiting partner/concubine 02 Girlfriend/fiancée 03 Casual Acquaintance 04 Ex-Girlfriend/fiancée 05 Commercial Sex Worker 06 Other (Specify) 96	
MS11. Check MU1 and MU7: • Currently married or living with a woman (MU1 = 1 or 2) AND Married only once or lived with a woman only once (MU7 = 1) Go to MS13 • Else Continue with MS12		
MS12. HOW OLD IS THIS PERSON? If response is DK, probe: ABOUT HOW OLD IS THIS PERSON?	Age of sexual partner ___ DK 98	
MS13. OTHER THAN THESE TWO PERSONS, HAVE YOU HAD SEXUAL INTERCOURSE WITH ANY OTHER PERSON IN THE LAST 12 MONTHS?	Yes 1 No 2	2 MS14B
MS14. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN THE LAST 12 MONTHS?	Number of partners ___	
MS14A. WAS A CONDOM USED EVERY TIME YOU HAD SEXUAL INTERCOURSE IN THE LAST 12 MONTHS?	Yes 1 No 2	
MS14B. HAVE YOU EVER HAD SEX WITH A COMMERCIAL SEX WORKER?	Yes 1 No 2	2 MS15
SEXUAL BEHAVIOUR (cont'd)		MS
MS14C. WHEN WAS THE LAST TIME YOU HAD SEXUAL INTERCOURSE WITH A COMMERCIAL SEX WORKER? Record 'years ago' only if last intercourse was one or more years ago. If 12 months or more the answer must be recorded in years.	Days ago 1 ___ Weeks ago 2 ___ Months ago 3 ___ Years ago 4 ___	
MS15. IN TOTAL, WITH HOW MANY DIFFERENT PEOPLE HAVE YOU HAD SEXUAL INTERCOURSE IN YOUR LIFETIME? If a non-numeric answer is given, probe to get an estimate. If number of partners is 95 or more, write '95'.	Number of lifetime partners ___ DK 98	

HIV/AIDS		MH
MH1. NOW I WOULD LIKE TO TALK WITH YOU ABOUT SOMETHING ELSE.	Yes 1	2 Next Module
HAVE YOU EVER HEARD OF AN ILLNESS CALLED AIDS?	No 2	
MH2. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY HAVING JUST ONE UNINFECTED SEX PARTNER WHO HAS NO OTHER SEX PARTNERS?	Yes 1 No 2 DK 8	
MH3. CAN PEOPLE GET THE AIDS VIRUS BECAUSE OF WITCHCRAFT OR OTHER SUPERNATURAL MEANS?	Yes 1 No 2 DK 8	

MH4. CAN PEOPLE REDUCE THEIR CHANCE OF GETTING THE AIDS VIRUS BY USING A CONDOM EVERY TIME THEY HAVE SEX?	Yes No DK	1 2 8	
MH5. CAN PEOPLE GET THE AIDS VIRUS FROM MOSQUITO BITES?	Yes No DK	1 2 8	
MH6. CAN PEOPLE GET THE AIDS VIRUS BY SHARING FOOD WITH A PERSON WHO HAS AIDS?	Yes No DK	1 2 8	
MH7. IS IT POSSIBLE FOR A HEALTHY-LOOKING PERSON TO HAVE THE AIDS VIRUS?	Yes No DK	1 2 8	
MH8. CAN THE VIRUS THAT CAUSES AIDS BE TRANSMITTED FROM A MOTHER TO HER BABY:	Yes No DK	1 2 8	
[A] DURING PREGNANCY?	Yes No DK	1 2 8	
[B] DURING DELIVERY?	Yes No DK	1 2 8	
[C] BY BREASTFEEDING?	Yes No DK	1 2 8	
MH9. IN YOUR OPINION, IF A FEMALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD SHE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes No DK/Not sure/Depends	1 2 8	
MH9A. IN YOUR OPINION, IF A MALE TEACHER HAS THE AIDS VIRUS BUT IS NOT SICK, SHOULD HE BE ALLOWED TO CONTINUE TEACHING IN SCHOOL?	Yes No DK / Not sure / Depends	1 2 8	
MH10. WOULD YOU BUY FRESH VEGETABLES FROM A SHOPKEEPER OR VENDOR IF YOU KNEW THAT THIS PERSON HAD THE AIDS VIRUS?	Yes No DK / Not sure / Depends	1 2 8	

HIV/AIDS (cont'd)			MH
MH11. IF A MEMBER OF YOUR FAMILY GOT INFECTED WITH THE AIDS VIRUS, WOULD YOU WANT OTHER PEOPLE TO KNOW ABOUT IT?	Yes No DK / Not sure / Depends	1 2 8	
MH12. IF A MEMBER OF YOUR FAMILY BECAME SICK WITH AIDS, WOULD YOU BE WILLING TO CARE FOR HER OR HIM IN YOUR OWN HOUSEHOLD?	Yes No DK / Not sure / Depends	1 2 8	
MH12A. IN YOUR OPINION, CAN THE HIV VIRUS BE TRANSMITTED THROUGH ORAL SEX?	Yes No DK / Not sure / Depends	1 2 8	
MH12B. IN YOUR OPINION, CAN THE HIV VIRUS BE TRANSMITTED THROUGH ANAL SEX?	Yes No DK / Not sure / Depends	1 2 8	
MH12C. IN YOUR OPINION, CAN HIV/AIDS BE CURED?	Yes No DK / Not sure	1 2 8	2 MH24 8 MH24
MH12D. IN YOUR OPINION, CAN A MAN INFECTED WITH HIV/AIDS BE CURED BY HAVING SEX WITH A VIRGIN WOMAN?	Yes No DK / Not sure	1 2 8	

MH24. I DON'T WANT TO KNOW THE RESULTS, BUT HAVE YOU EVER BEEN TESTED TO SEE IF YOU HAVE THE AIDS VIRUS?	Yes No	1 2	2 MH27
MH 25. I DON'T WANT TO KNOW THE RESULTS BUT, WHEN WAS THE MOST RECENT TIME YOU WERE TESTED?	Less than 12 months ago 12-23 months ago 2 or more years ago	1 2 3	
MH25A. DID YOU, YOURSELF, ASK FOR THE TEST, WAS IT OFFERED AND YOU ACCEPTED, OR WAS IT REQUIRED?	Asked for the test Offered and accepted Required	1 2 3	

MH25B. WHERE DID YOU GO FOR THE TEST?	Public sector Govt. hospital Govt. health centre Govt. clinic/PHU Govt. VCT Centre Other public (specify)	11 12 13 14 16	
Probe to identify the type of source. If unable to determine whether public or private, write the name of the place. (NAME OF PLACE)	Private Medical Sector Private hospital Private clinic Other private medical (specify)	21 22 26	
	Other sources NGO VCT Centre Mission hospital	31 32	
	Other (specify)	96	
	DK	98	

HIV/AIDS (cont'd)			MH
MH 26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes No	1 2	1 Next Module 2 Next Module
MH 26. I DON'T WANT TO KNOW THE RESULTS, BUT DID YOU GET THE RESULTS OF THE TEST?	Yes No	1 2	1 Next Module 2 Next Module
MH 27. DO YOU KNOW OF A PLACE WHERE PEOPLE CAN GO TO GET TESTED FOR THE AIDS VIRUS?	Yes No	1 2	

NATIONAL HEALTH INSURANCE			NI
NI1. HAVE YOU EVER REGISTERED WITH ANY HEALTH INSURANCE SCHEME?	Yes No	1 2	2 NI10
NI2. WHAT TYPE OF HEALTH INSURANCE DO YOU HAVE? RECORD ALL MENTIONED	National/District Health Insurance (NHIS) Mutual Health Organization/ Community-based Health Insurance Other privately purchased commercial Health Insurance Other Health Insurance (specify)	A B C X	
NI3. Check NI2: <input type="checkbox"/> NHIS NOT CHECKED. Go to NI11.			

NI4. HOW WAS YOUR MEMBERSHIP OF THE NHIS ACHIEVED?	Paid premium myself Premium paid by a relative or friend Premium paid by employers Premium paid by SSNIT Exempt as indigent Other (specify)	01 02 03 04 05 96	
NI5. DO YOU HAVE A VALID NATIONAL HEALTH INSURANCE SCHEME (NHIS) CARD? If person has valid insurance card, request to see it. Check to make sure it is valid for 2011	Yes, card seen Yes, card not seen No	1 2 3	1 NI9 2 NI9
NI6. WHY DO YOU NOT HAVE A VALID NHIS CARD?	Registered, but not fully paid yet Registered/Renewed, card not received Registered, in waiting period Registration not renewed Lost NHIS card Other (specify)	1 2 3 4 5 6	1 NI9 2 NI9 3 NI9 5 NI9 6 NI9
NI7. DO YOU PLAN TO RENEW THE NHIS REGISTRATION?	Yes No Don't know/ Not sure	1 2 8	1 NI9 8 NI9
NI8. WHY DO YOU NOT WANT TO RENEW THE NHIS REGISTRATION?	Have not been sick Premium too Expensive Still pay out of pocket Poor quality care with card Waiting time for card too long Desired services not covered Clinics used/ traditional services not Covered by NHIS Other (specify)	A B C D E F G X	
NATIONAL HEALTH INSURANCE (cont'd)			NI
NI9. IN YOUR OPINION, DO NHIS CARD HOLDERS GET BETTER/ SAME/WORSE SERVICES WHEN THEY ATTEND HEALTH CARE FACILITIES?	Better Same Worse Never used Don't know	1 2 3 4 8	1 MM11 2 MM11 3 MM11 4 MM11 8 MM11
NI10. WHY HAVE YOU NOT REGISTERED OR RENEWED REGISTRATION WITH THE NHIS?	Not heard of NHIS Premium too Expensive Do not trust NHIS Do not know where to register Registration office too far Do not need health insurance NHIS does not cover the services I need NHIS does not cover the facilities I use Other	A B C D E F G H X	A MM11 B MM11 C MM11 D MM11 E MM11 F MM11 G MM11 H MM11 X MM11
NI11. IS YOUR INSURANCE CURRENTLY VALID FOR 2011?	Yes No Don't know / Not sure	1 2 8	
MM11. Record the time.	Hour and minutes ____ : ____		
MM12. End the interview with this respondent by thanking him for his cooperation. Check for the presence of any other eligible man in the household.			

Interviewer's Observations

Field Editor's Observations

Supervisor's Observations