Ghana

High Impact Rapid Delivery (HIRD) Supplementary Survey, 2007/2008 (District MICS)

Monitoring the situation of children and women

Consolidated Report for Central, Northern, Upper East and Upper West Regions

MICS

STATISTICAL SERVICE GHANA

FREEDOM AND JUSTICE

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High Impact Rapid Delivery (HIRD) Supplementary Survey (District MICS), 2007/2008

CONSOLIDATED REPORT FOR CENTRAL, NORTHERN, UPPER EAST AND UPPER WEST REGIONS

June, 2009

Summary Table of Findings - CENTRAL REGION
MICS and MDG Indicators

Topic	MICS Indicator Number	MDG Indicator Number	Indicator	Value	
CHILD MORTALITY					
Child mortality	1	13	Under-five mortality rate	83	Per thousand
	2	14	Infant mortality rate	55	Per thousand
NUTRITION					
Nutritional status	6	4	Underweight prevalence	18.6	Percent
	7		Stunting prevalence	20.6	Percent
	8		Wasting prevalence	4.6	Percent
Breastfeeding	45		Timely initiation of breastfeeding	32.6	Percent
	15		Exclusive breastfeeding rate	58.1	Percent
	16		Continued breastfeeding rate		
			at 12-15 months	94.3	Percent
			at 20-23 months	33.3	Percent
	17		Timely complementary feeding rate	69.0	Percent
	18		Frequency of complementary feeding	48.3	Percent
	19		Adequately fed infants	52.6	Percent
Salt iodization	41		Iodized salt consumption	21.5	Percent
Vitamin A	42		Vitamin A supplementation (under-fives)	83.3	Percent
	43		Vitamin A supplementation (post-partum mothers)	40.0	Percent
Low birth weight	9		Low birth weight infants	8.5	Percent
	10		Infants weighed at birth	32.3	Percent
CHILD HEALTH					
Immunization	25		Tuberculosis immunization coverage	94.9	Percent
	26		Polio immunization coverage	87.8	Percent
	27		DPT immunization coverage	89.1	Percent
	28	15	Measles immunization coverage	86.1	Percent
	31		Fully immunized children	71.8	Percent
	29		Hepatitis B immunization coverage	89.1	Percent
	30		Yellow fever immunization coverage	84.4	Percent
Tetanus toxoid	32		Neonatal tetanus protection	78.5	Percent
Care of illness	33		Use of oral dehydration therapy (ORT)	30.4	Percent
	34		Home management of diarrhoea	27.5	Percent
	23		Care seeking for suspected pneumonia	26.8	Percent
	22		Antibiotic treatment of suspected pneumonia	38.6	Percent
Solid fuel use	24	29	Solid fuels	90.1	Percent
Malaria	36		Household availability of insecticide-treated nets (ITNs)	37.8	Percent
	37	22	Under-fives sleeping under insecticide-treated nets	40.9	Percent
	38		Under-fives sleeping under mosquito nets	42.6	Percent
	39	22	Antimalarial treatment (under-fives)	32.7	Percent
	40		Women receiving IPT for malaria during pregnancy	53.1	Percent

Source and cost of supplies	96		Source of supplies (from public sources)		
			Insecticide treated nets	83.7	Percent
			Antimalarials	52.4	Percent
	97		Cost of supplies (median costs)		
			Insecticide treated nets public sources	2.0	GHC
			Private sources	2.0	GHC
			Antimalarials public sources	3.0	GHC
			Private sources	1.0	GHC
ENVIRONMENT					
Water and Sanitation	11	30	Use of improved drinking water sources	79.2	Percent
	13		Water treatment	1.5	Percent
	12	31	Use of improved sanitation facilities	64.0	Percent
	14		Disposal of child's faeces	42.9	Percent
REPRODUCTIVE HEALTH					
Contraception and unmet need	21	19c	Contraceptive prevalence	17.2	Percent
Maternal and newborn health	20		Antenatal care	92.7	Percent
	44		Content of antenatal care		
			Blood test taken	81.5	Percent
			Blood pressure measured	92.3	Percent
			Urine specimen taken	84.9	Percent
			Weight measured	91.6	Percent
	4	17	Skilled attendant at deli very	49.1	Percent
	5		Institutional deliveries	47.5	Percent
CHILD DEVELOPMENT					
Child development	46		Support for learning	24.5	Percent
	47		Father's support for learning	40.7	Percent
	48		Support for learning: children’s books	7.7	Percent
	49		Support for learning: non-children’s books	43.3	Percent
	50		Support for learning: materials for play	17.8	Percent
	51		Non-adult care	20.2	Percent
EDUCATION					
Education	52		Pre-school attendance	65.8	Percent
	53		School readiness	95.4	Percent
	54		Net intake rate in primary education	59.6	Percent
	55	6	Net primary school attendance rate	87.6	Percent
	56		Net secondary school attendance rate	52.5	Percent
	58		Transition rate to secondary school	98.3	Percent
	59	7b	Primary completion rate	33.6	Percent
	61	9	Gender parity index primary school secondary school	 1.00 0.92	 Ratio Ratio
Literacy	60	8	Adult literacy rate (youth) women	75.5	Percent

CHILD PROTECTION					
Birth registration	62		Birth registration	59.6	Percent
Child labour	71		Child labour	25.8	Percent
	72		Labourer students	96.1	Percent
	73		Student labourers	25.9	Percent
Child discipline	74		Child discipline Any psychological/physical punishment	84.3	Percent
Early marriage and polygyny	67		Marriage before age 15	4.5	Percent
			Marriage before age 18	32.5	Percent
	68		Young women aged 15-19 currently married/in union	11.4	Percent
	70		Polygamy	13.8	Percent
	69		Spousal age difference		
			women aged 15-19	14.5	Percent
			women aged 20-24	13.4	Percent
Female genital mutilation/ cutting	66		Approval for FGM/C	1.5	Percent
	63		Prevalence of female genital mutilation/cutting (FGM/C)	0.4	Percent
Domestic violence	100		Attitudes towards domestic violence Women	61	Percent
Disability	101		Child disability	11.7	Percent
HIV/AIDS, SEXUAL BEHAVIOUR, AND ORPHANED AND VULNERABLE CHILDREN					
HIV/AIDS knowledge and attitudes	82	19b	Comprehensive knowledge about HIV prevention among young women 15-24 years	16.5	Percent
	89		Knowledge of mother-to-child transmission of HIV Women	74.3	Percent
	86		Attitude towards women with HIV/AIDS	2.8	Percent
	87		Women who know where to be tested for HIV	47.2	Percent
	88		Women who have been tested for HIV	11.8	Percent
	90		Counselling coverage for the prevention of mother-to-child transmission of HIV	37.9	Percent
	91		Testing coverage for the prevention of mother-to-child transmission of HIV	9.1	Percent
Sexual behaviour	84		Sex before age 15 women	9.7	Percent
	92		Age-mixing among sexual partners		Percent
	83	19a	Condom use with non-regular partners Women	35.7	Percent
	85		Higher risk sex in the last year women	24.3	Percent
Support to orphaned and vulnerable children	75		Prevalence of orphans	6.6	Percent
	78		Children's living arrangements	17.4	Percent
	77	20	School attendance of orphans versus non-orphans	1.04	Ratio
NATIONAL HEALTH INSURANCE SCHEME					
National Health Insurance Scheme			Registered with NHIS	31.0	Percent
			Valid card holders	52.3	Percent

Summary Table of Findings - NORTHERN REGION
MICS and MDG Indicators

Topic	MICS Indicator Number	MDG Indicator Number	Indicator	Value	
CHILD MORTALITY					
Child mortality	1	13	Under-five mortality rate	120	per thousand
	2	14	Infant mortality rate	64	per thousand
NUTRITION					
Nutritional status	6	4	Underweight prevalence	29.3	Percent
	7		Stunting prevalence	31.1	Percent
	8		Wasting prevalence	8.8	Percent
Breastfeeding	45		Timely initiation of breastfeeding	43.0	Percent
	15		Exclusive breastfeeding rate	67.2	Percent
	16		Continued breastfeeding rate		
			at 12-15 months	98.5	Percent
			at 20-23 months	80.3	Percent
	17		Timely complementary feeding rate	53.2	Percent
	18		Frequency of complementary feeding	48.3	Percent
	19		Adequately fed infants	58.2	Percent
Salt iodization	41		Iodized salt consumption		
			MICS	11.4	Percent
			DHS	11.9	Percent
Vitamin A	42		Vitamin A supplementation (under-fives)	50.7	Percent
	43		Vitamin A supplementation (post-partum mothers)	38.8	Percent
Low birth weight	9		Low birth weig ht infants	7.8	Percent
	10		Infants weighed at birth	10.3	Percent
CHILD HEALTH					
Immunization	25		Tuberculosis immunization coverage	95.4	Percent
	26		Polio immunization co verage	84.6	Percent
	27		DPTHepbHib immunization coverage	85.9	Percent
	28	15	Measles immunization coverage	81.8	Percent
	31		Fully immunized children	69.3	Percent
	30		Yellow fever immunization coverage	80.9	Percent
Tetanus toxoid	32		Neonatal tetanus protection	71.8	Percent
Care of illness	33		Use of oral dehydration therapy (ORT)	29.0	Percent
	34		Home management of diarrhoea	25.6	Percent

	23		Care seeking for suspected pneumonia	35.6	Percent
	22		Antibiotic treatment of suspected pneumonia	25.5	Percent
Solid fuel use	24	29	Solid fuels	97.3	Percent
Malaria	36		Household availability of insecticide-treated nets (ITNs)	54.7	Percent
Source and cost of supplies	96		Source of supplies (from public sources)	49.6	Percent
			Insecticide treated nets	78.0	Percent
			Antimalarials	55.6	Percent
	97		Cost of supplies (median costs)		
			Insecticide treated nets public sources	1.00	GHC
			private sources	1.50	GHC
			Antimalarials public sources	2.00	GHC
			private sources	0.80	GHC
ENVIRONMENT					
Water and Sanitation	11	30	Use of improved drinking water sources	61.8	Percent
	13		Water treatment	3.9	Percent
	12	31	Use of improved sanitation facilities	21.4	Percent
	14		Disposal of child's faeces	5.9	Percent
REPRODUCTIVE HEALTH					
Contraception and unmet need	21	19c	Contraceptive prevalence	7.8	Percent
Maternal and newborn health	20		Antenatal care	88.9	Percent
	44		Content of antenatal care	92.0	Percent
			Blood test taken	54.2	Percent
			Blood pressure measured	89.0	Percent
			Urine specimen taken	50.1	Percent
			Weight measured	89.4	Percent
	4	17	Skilled attendant at deli very	19.3	Percent
	5		Institutional deliveries	17.5	Percent
CHILD DEVELOPMENT					
Child development	46		Support for learning	19.1	Percent
	47		Father's support for learning	52.2	Percent
	48		Support for learning: children's books	4.7	Percent
	49		Support for learning: non-children's books	24.3	Percent
	50		Support for learning: materials for play	16.6	Percent
	51		Non-adult care	35.4	Percent

EDUCATION					
Education	52		Pre-school attendance	40.2	Percent
	53		School readiness	80.4	Percent
	54		Net intake rate in primary education	47.5	Percent
	55	6	Net primary school attendance rate	60.2	Percent
	56		Net secondary school attendance rate	25.1	Percent
	58		Transition rate to secondary school	89.1	Percent
	59	7b	Primary completion rate	14.0	Percent
	61	9	Gender parity index primary school secondary school	 1.00 0.76	 Ratio Ratio
Literacy	60	8	Adult literacy rate (youth) women	31.5	Percent
CHILD PROTECTION					
Birth registration	62		Birth registration	51.6	Percent
Child labour	71		Child labour	45.1	Percent
	72		Labourer students	62.3	Percent
	73		Student labourers	41.4	Percent
Child discipline	74		Child discipline Any psychological/physical punishment	 84.3	 Percent
Early marriage and polygyny	67		Marriage before age 15 Marriage before age 18	5.6 34.3	Percent Percent
	68		Young women aged 15-19 currently married/in union	14.0	Percent
	70		Polygamy	42.8	Percent
	69		Spousal age difference women aged 15-19 women aged 20-24	 13.6 17.9	 Percent Percent
Female genital mutilation/ cutting	66		Approval for FGM/C	4.7	Percent
	63		Prevalence of female genital mutilation/cutting (FGM/C)	4.5	Percent
Domestic violence	100		Attitudes towards domestic violence women	83.0	Percent
Disability	101		Child disability	16.7	Percent
HIV/AIDS, SEXUAL BEHAVIOUR, AND ORPHANED AND VULNERABLE CHILDREN					
HIV/AIDS knowledge and attitudes	82	19b	Comprehensive knowledge about HIV prevention among young women 15-24 years	17.6	Percent
	89		Knowledge of mother-to-child transmission of HIVwomen	64.9	Percent
	86		Attitude towards women with HIV/AIDS	3.1	Percent
	87		Women who know where to be tested for HIV	30.5	Percent
	88		Women who have been tested for HIV	5.4	Percent

	90		Counselling coverage for the prevention of mother -to-child transmission of HIV	34.4	Percent
	91		Testing coverage for the prevention of mother-to-child transmission of HIV	4.1	Percent
Sexual behaviour	84		Sex before age 15 women	6.6	Percent
	92		Age-mixing among sexual partners	13.5	Percent
	83	19a	Condom use with non-regular partners Women	34.3	Percent
	85		Higher risk sex in the last year Women	31.5	Percent
Support to orphaned and vulnerable children	75		Prevalence of orphans	7.3	Percent
	78		Children's living arrangements	4.9	Percent
NATIONAL HEALTH INSURANCE SCHEME					
National Health Insurance Scheme			Women, 15 - 49 years registered with NHIS	28.9	Percent
			Valid Card holders	60.2	Percent

Summary Table of Findings - UPPER EAST REGION
MICS and MDG Indicators

Topic	MICS Indicator Number	MDG Indicator Number	Indicator	Value	
CHILD MORTALITY					
Child mortality	1	13	Under-five mortality rate	93	per thousand
	2	14	Infant mortality rate	57	per thousand
NUTRITION					
Nutritional status	6	4	Underweight prevalence	24.6	percent
	7		Stunting prevalence	23.4	percent
	8		Wasting prevalence	8.1	percent
Breastfeeding	45		Timely initiation of breastfeeding	51.2	percent
	15		Exclusive breastfeeding rate	54.9	percent
	16		Continued breastfeeding rate		
			at 12-15 months	97.5	percent
			at 20-23 months	84.3	percent
	17		Timely complementary feeding rate	52.7	percent
	18		Frequency of complementary feeding	44.7	percent
	19		Adequately fed infants	50.1	percent
Salt iodization	41		Iodized salt consumption	11.8	percent
Vitamin A	42		Vitamin A supplementation (under-fives)	48.3	percent
	43		Vitamin A supplementation (post-partum mothers)	61.7	percent
Low birth weight	9		Low birth weight infants	8.5	percent
	10		Infants weighed at birth	25.4	percent
CHILD HEALTH					
Immunization	25		Tuberculosis immunization coverage	96.9	percent
	26		Polio immunization coverage	92.1	percent
	27		DPT immunization coverage	87.9	Percent
	28	15	Measles immunization coverage	90.7	Percent
	31		Fully immunized children	79.3	Percent
	29		Hepatitis B immunization coverage	87.9	Percent
	30		Yellow fever immunization coverage	89.2	Percent
Tetanus toxoid	32		Neonatal tetanus protection	80.7	Percent
Care of illness	33		Use of oral dehydration therapy (ORT)	46.3	Percent
	34		Home management of diarrhoea	17.8	Percent
	23		Care seeking for suspected pneumonia	47.7	Percent
	22		Antibiotic treatment of suspected pneumonia	60.4	Percent
Solid fuel use	24	29	Solid fuels	94.9	Percent
Malaria	36		Household availability of insecticide-treated nets (ITNs)	52.5	Percent
	37	22	Under-fives sleeping under insecticide-treated nets	56.3	Percent
	38		Under-fives sleeping under mosquito nets	61.1	Percent
	39	22	Antimalarial treatment (under-fives)	36.5	Percent
	40		Intermittent preventive malaria treatment (pregnant women)	63.8	Percent
Source and cost of supplies	96		Source of supplies (from public sources)		
			Insecticide treated nets	86.3	Percent
			Antimalarials	61.2	Percent
	97		Cost of supplies (median costs)		
			Insecticide treated nets		
			public sources	1.00	GHC
			private sources	3.00	GHC
			Antimalarials		
			public sources	2.50	GHC
			private sources	1.00	GHC

ENVIRONMENT					
Water and Sanitation	11	30	Use of improved drinking water sources	81.7	Percent
	13		Water treatment	2.5	Percent
	12	31	Use of improved sanitation facilities	11.0	Percent
	14		Disposal of child's faeces	3.2	Percent
REPRODUCTIVE HEALTH					
Contraception and unmet need	21	19c	Contraceptive prevalence	12.6	Percent
Maternal and newborn health	20		Antenatal care	94.8	Percent
	44		Content of antenatal care		
			Blood test taken	77.7	Percent
			Blood pressure measured	96.2	Percent
			Urine specimen taken	71.0	Percent
			Weight measured	96.9	Percent
	4	17	Skilled attendant at delivery	39.9	Percent
	5		Institutional deliveries	37.9	Percent
CHILD DEVELOPMENT					
Child development	46		Support for learning	11.4	Percent
	47		Father's support for learning	43.8	Percent
	48		Support for learning: children's books	4.6	Percent
	49		Support for learning: non-children's books	32.4	Percent
	50		Support for learning: materials for play	19.5	Percent
	51		Non-adult care	29.3	Percent
EDUCATION					
Education	52		Pre-school attendance	42.8	Percent
	53		School readiness	84.2	Percent
	54		Net intake rate in primary education	57.0	Percent
	55	6	Net primary school attendance rate	75.4	Percent
	56		Net secondary school attendance rate	29.8	Percent
	57	7	Children reaching grade five		Percent
	58		Transition rate to secondary school	91.5	Percent
	59	7b	Primary completion rate	14.4	Percent
	61	9	Gender parity index		
			primary school	1.02	ratio
			secondary school	1.00	ratio
Literacy	60	8	Adult literacy rate (youth) women	43.9	Percent
CHILD PROTECTION					
Birth registration	62		Birth registration	59.1	Percent
Child labour	71		Child labour	30.4	Percent
	72		Labourer students	73.5	Percent
	73		Student labourers	28.8	Percent
Child discipline	74		Child discipline		
			Any psychological/physical punishment	86.1	Percent
Early marriage and polygyny	67		Marriage before age 15	5.3	Percent
			Marriage before age 18	40.1	Percent
	68		Young women aged 15-19 currently married/in union	11.3	Percent
	70		Polygamy	39.6	Percent
	69		Spousal age difference		
			women aged 15-19	25.3	Percent
			women aged 20-24	25.7	Percent
Female genital mutilation/ cutting	66		Approval for FGM/C	1.3	Percent
	63		Prevalence of female genital mutilation/cutting (FGM/C)	19.8	Percent
Domestic violence	100		Attitudes towards domestic violence women	74.7	Percent
Disability	101		Child disability	14.5	Percent

HIV/AIDS, SEXUAL BEHAVIOUR, AND ORPHANED AND VULNERABLE CHILDREN					
HIV/AIDS knowledge and attitudes	82	19b	Comprehensive knowledge about HIV prevention among young women 15 - 24 years	30.8	Percent
	89		Knowledge of mother- to-child transmission of HIV women	67.7	Percent
	86		Attitude towards women with HIV/AIDS	4.9	Percent
	87		Women who know where to be tested for HIV	45.7	Percent
	88		Women who have been tested for HIV	9.9	Percent
	90		Counselling coverage for the prevention of mother-to-child transmission of HIV	61.3	Percent
	91		Testing coverage for the prevention of mother-to-child transmission of HIV	13.2	Percent
Sexual behaviour	84		Women who have sex before age 15	4.5	Percent
	92		Age-mixing among sexual partners	18.1	Percent
	83	19a	Women condom use with non-regular partners	63.5	Percent
	85		Higher risk sex in the last year women	10.3	Percent
Support to orphaned and vulnerable children	75		Prevalence of orphans	8.9	Percent
	78		Children's living arrangements	9.1	Percent
NATIONAL HEALTH INSURANCE SCHEME					
National Health Insurance Scheme			Registered with NHIS	30.9	Percent
			Valid Card holders	59	Percent

Summary Table of Findings - UPPER WEST REGION
MICS and MDG Indicators

Topic	MICS Indicator Number	MDG Indicator Number	Indicator	Value	
CHILD MORTALITY					
Child mortality	1	13	Under-five mortality rate	113	Per thousand
	2	14	Infant mortality rate	62	Per thousand
NUTRITION					
Nutritional status	6	4	Underweight prevalence	18.6	Percent
	7		Stunting prevalence	18.9	Percent
	8		Wasting prevalence	6.0	Percent
Breastfeeding	45		Timely initiation of breastfeeding	40.3	Percent
	15		Exclusive breastfeeding rate	92.1	Percent
	16		Continued breastfeeding rate		
			at 12-15 months	100	Percent
			at 20-23 months	84.7	Percent
	17		Timely complementary fee ding rate	58.7	Percent
	18		Frequency of complementary feeding	47.5	Percent
	19		Adequately fed infants	66.4	Percent
Salt iodization	41		Iodized salt consumption	15.0	Percent
Vitamin A	42		Vitamin A supplementation (under-fives)	51.7	Percent
	43		Vitamin A supplementation (post-partum mothers)	66.7	Percent
Low birth weight	9		Low birth weight infants	6.3	Percent
	10		Infants weighed at birth	22.9	Percent
CHILD HEALTH					
Immunization	25		Tuberculosis immunization coverage	97.8	Percent
	26		Polio immunization coverage	94.2	Percent
	27		DPT immunization coverage	96.2	Percent
	28	15	Measles immunization coverage	97.9	Percent
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	38		Under-fives sleeping under mosquito nets	79.2	Percent

	39	22	Anti -malarial treatment (under-fives)	45.1	percent
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			Insecticide treated nets public sources	2.00	GHC
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			Private sources	0.95	GHC
ENVIRONMENT					
Water and Sanitation	11	30	Use of improved drinking water sources	87.1	percent
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	63		Prevalence of female genital mutilation/cutting (FGM/C)	49.4	Percent
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			Women	84.1	Percent
Disability	101		Child disability	17.4	Percent
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	86		Attitude towards women with HIV/AIDS	4.1	Percent
	87		Women who know where to be tested for HIV	43.4	Percent
	88		Women who have been tested for HIV	11.7	Percent
	90		Counselling coverage for the prevention of mother-to-child transmission of HIV	45.9	Percent
	91		Testing coverage for the prevention of mother-to-child transmission of HIV	12.1	Percent
Sexual behaviour	84		Sex before age 15 women	7.3	Percent
	92		Age-mixing among sexual partners	18.4	Percent
	83	19a	Condom use with non-regular partners		
			Women	64.0	Percent
	85		Higher risk sex in the last year women	31.2	Percent
Support to orphaned and vulnerable children	75		Prevalence of orphans	7.9	Percent
	78		Children's living arrangements	10.9	PeRcent
NATIONAL HEALTH INSURANCE SCHEME					
National Health Insurance Scheme			Women 15-49 years Registered with NHIS	40.2	Percent
			Valid card holders	74.8	Percent

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List of Abbreviations and Acronyms

AIDS	Acquired Immune Deficiency Syndrome
AMA	Accra Metropolitan Authority
BCG	Bacillis-Cereus-Geuerin (Tuberculosis)
CDC	Center for Disease Control
CSPro	Census and Survey Processing System
CWIQ	Core Welfare Indicator Questionnaire
DHS	Demographic and Health Survey
DPT	Diphtheria Pertussis Tetanus
(DPT)HH	DPT Hepatitis B Haemophilus B
EA	Enumeration Area
EPI	Expanded Programme on Immunization
FGM/C	Female Genital Mutilation/Cutting
GDHS	Ghana Demographic and Health Survey
GPRS	Ghana Poverty Reduction Strategy
GPRS II	Growth and Poverty Reduction Strategy II
GPI	Gender Parity Index
GLLS	Ghana Living Standards Survey
GSS	Ghana Statistical Service
HIV	Human Immunodeficiency Virus
IDD	Iodine Deficiency Disorders
IQ	Intelligence Quotient
ITN	Insecticide Treated Net
IUD	Intrauterine Device
JSS	Junior Secondary School
KMA	Kumasi Metropolitan Authority
LAM	Lactational Amenorrh0ea Method
LPG	Liquefied Petroleum Gas
MDGs	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MMR	Measles Mumps Rubella
MoH	Ministry of Health
MTCT	Mother-To-Child Transmission
NAR	Net Attendance Rate
NCHS	(US) National Center for Health Statistics
ORT	Oral rehydration treatment
ORS	Oral Rehydration Salts
PEPFAR	(US) President's Emergency Plan for AIDS Relief
PHC	Population and Housing Census
ppm	Parts Per Million
RHF	Recommended Homemade Fluid
SD	Standard Deviation
SPSS	Statistical Package for Social Sciences
SSS	Senior Secondary School
STI/D	Sexually Transmitted Infection / Disease
TBA	Traditional Birth Attendant
U5MR	Under-five Mortality Rate
UN	United Nations
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
WFFC	World Fit for Children
WHO	World Health Organization

Preface

This report presents the results of the district level Multiple Indicators Cluster Survey (MICS) conducted May to December, 2007 to provide indicators for the High Impact Rapid Delivery (HIRD) programme. The survey was preceded by the 2006 MICS, which was conducted by the Ghana Statistical Service with support from the Ministry of Health and UNICEF Ghana, and provided national and regional statistics and indicators.

A number of new interventions have been implemented by the Government in the recent past, which will have an impact on indicators and are expected to change over a short period of time. The Ministry of Health has put a strong emphasis on scaling-up of the High Impact Rapid Delivery approach (HIRD) to achieving MDGs 4 and 5 which was adopted for national implementation after the successful evaluation and documentation of the lessons learnt from the Upper East pilot.

As a supplementary MICS survey, the current survey responds to the need to have baseline data to support the implementation of the HIRD intervention in the Upper West, Northern and Central Regions. To this end, it was designed to provide district level indicators to monitor progress on issues relating to women and children in these regions.

The HIRD Supplementary Survey was developed within the framework of the MICS, and employed the same methodologies with minor modifications made to the 2006 MICS questionnaire. It was implemented by UNICEF with technical assistance from the Ministry of Health (MOH) and the Ghana Statistical Service (GSS).

The survey findings present a wealth of data for monitoring the situation of women and children, in general, and in the particular context of the Millennium Development Goals (MDGs), for these target regions. They would also enhance the effectiveness of implementation of programmes, such as the Integrated Management of Childhood Illness (IMCI) and the United States Government President's Emergency Plan for AIDS Relief and malaria, among others.

Dr. Grace Bediako
Government Statistician

Acknowledgements

The successful execution of the High Impact Rapid Delivery (HIRD) Supplementary survey (District MICS), 2007/2008 was due to the invaluable assistance given by all collaborating agencies, institutions, organisations and individuals to whom we owe a great deal of gratitude.

UNICEF Ghana initiated and funded the project, and we appreciate its effort in helping to organise the survey, which involved staff from New York. We are also grateful to it for its immense and diverse contributions ranging from expert visits, local technical assistance, procurement and administration. We also thank the Danish Government for financing the National Health Insurance module through the Ministry of Health.

We appreciate the work done by the Survey Steering Committee for its immense contribution to the implementation of the survey.

We acknowledge the Ministry of Health (MoH) for its substantial contribution to the survey, releasing staff to serve on the secretariat and participating in the fieldwork.

We are grateful to the entire project staff of the survey for its tireless work, dedication to duty and other contributions in the different phases of the survey. We give our sincerest gratitude to field survey personnel for their dedication and professionalism that has produced data of very good quality. The contribution of other staff in the Ghana Statistical Service and Ministry of Health who worked behind the scenes in various ways to assist the survey team is acknowledged. Their names have been printed in the appendix in recognition of their contribution.

We thank the contributors to the survey and this report for the good work done. Their names have been mentioned individually in the report.

The final and sincere thanks go to all respondents who readily made themselves available to be interviewed and contributed to the success of the 2007/2008 HIRD Supplementary Survey.

Executive Summary - Central Region

Household Characteristics

- Children less than 15 years account for 42 percent of the population of Central region.
- Forty percent of households are headed by women in the region.
- Thirty-six of the households in the region reported at least one child under 5 years and 66 percent have at least one child under 18 years.
- 2-3 households members constitute one-third of all households, and 4-5 household members constitute 26 percent of households in the Central region.

Characteristics of Respondents

- Sixty-four percent of women live in the rural areas.
- The age distribution shows that only 4 percent of respondents are in the 15-24 age group.
- Results also reveal that two out of every three women are currently married or in union. Five percent of women have never been married and 88 percent have given birth at least once.
- About one in every four women in the region have primary education, 6 percent have a secondary or higher education, and 51 percent of the women are categorized as literate in Central region.

Child Mortality

- Infant mortality rate is 55 deaths per 1,000 live births and under-five mortality rate is 83 deaths per 1,000 live births.
- Neonatal mortality is estimated at 29 deaths per 1,000 live births. This means that one out of every four under-fiv deaths in region occur during the neonatal period.
- Under-five mortality experienced by male children (100 deaths per 1,000 live births) is 18 percent higher than that experienced by female children (82 deaths per 1,000 live births).
- Birth interval also affects survival of children; when there is less than two years between pregnancies; infant mortality for children born less than two-year birth interval is 100 deaths per 1,000, and reduces to 55 deaths per 1,000 live births (an estimated 46percent reduction) when the birth interval is 2 or 3 years.
- First births and higher order births generally face an elevated risk of mortality. Infant mortality for birth order seven and higher is 79 deaths per 1,000 live births, compared to 48 deaths per 1,000 live births order 2-3.

Nutritional Status

- Approximately one in every five children below the age of 5 years in Central region is underweight. Twenty-one percent of children in the region are stunted or too short for their age, while five percent are wasted or too thin for their height. Very few (one percent) of under five children in the region can be said to be overweight.
- Underweight is more prevalent in male children (21 percent) compared to female children (17 percent). The same can be said of the other forms of malnutrition.
- A higher percentage of children aged 12-23 months are malnourished compared to children who are younger and older.

Breastfeeding

- Thirty-three percent of women breastfed their new-born within an hour of birth, while 77 percent breastfed their children within one day of birth.
- Fifty-eight percent of children aged less than six months are exclusively breastfed.
- Sixty-nine percent of children aged 6-9 months are receiving breast milk and solid or semi-solid foods.

Salt Iodization

- One in every five households was found to consume adequately iodised salt. About 21 percent of households consumed iodated salt that had less than 15 parts per million (ppm), and in as high as 48 percent of households salt was not iodised.
- Use of adequately iodised salt is higher in urban households (31 percent), compared to rural households (16 percent). There is also a direct relationship between consumption of adequately iodised salt and education level of household head.

Vitamin A Supplement

- Survey results reveal that 83 percent of children aged 6-59 months had received a high dose of Vitamin A supplement within the six months prior to the survey; five percent of children aged 6-59 months had never received Vitamin A supplement.
- Forty percent of women with a birth two years prior to the survey had received a high dose of Vitamin A supplement before their baby was 8 weeks old.

Low Birth Weight

- Overall, only one in three births in the region were weighed at birth and nine percent of the infants weigh below 2500 grams.

Immunization

- Seventy-two percent of children aged 12-23 months are fully immunized before their first birthday and more than 81 percent of children 12-23 months have all the required vaccinations against childhood diseases.
- Approximately 95 percent of children aged 12-23 months received a BCG vaccination by the age of 12 months.
- The coverage for measles vaccines by 12 months is lower than other vaccines at 86 percent, while immunization against measles by second birthday increases to 93 percent.
- Ninety-nine percent of children aged 12-23 months receive polio 1 by age 12 months and the third dose, this reduces to 88 percent. Polio dose given at birth is just above 50 percent.

Tetanus Toxoid

- Sixty-eight percent of mothers in the Central region received at least two doses of tetanus toxoid vaccine during their last pregnancy, and 78 percent of mothers were fully protected against tetanus.

Oral Rehydration Treatment

- Fourteen percent of children in Central region had diarrhoea in the two weeks prior to the survey, and 28 percent of children with diarrhoea were managed at home.
- Two percent of children with diarrhoea were given the recommended homemade fluids while 29 percent were given fluid from the ORS packet.

Care Seeking and Antibiotic Treatment of Pneumonia

- Twenty-seven percent of children under-five years with suspected pneumonia were taken to an appropriate provider.

Solid Fuel Use

- Overall, 90 percent of all households in the Central region are using solid fuels for cooking.
- Education level of head of households also gives a clear indication that higher education has a positive relationship with the use of open stove.

Malaria

- Forty percent of households had at least one mosquito net, of which, 38 percent are insecticide treated nets (ITNs).
- Forty-one percent of the children under-five years sleep under an ITN.
- The use of ITN is higher in the rural areas (43 percent) than in the urban areas (37 percent).
- For households with ITNs, 84 percent obtained them from the public sector.
- Eighteen percent of children under-five were ill with fever two weeks preceding the survey. Prevalence of fever peaked at 12-23 months old (22 percent).
- Sixteen percent of children with fever were given chloroquine and less than two percent were given SP. Of children with fever, 43percent are treated with an appropriate anti-malarial drug and 33 percent received the drug within 24 hours of onset of symptoms. Urban children are more likely than rural children to be treated appropriately for fever.
- Seventy-eight percent of women in the Central region who gave birth in preceding two years received medicine to prevent malaria during pregnancy.

Water and Sanitation

- Seventy-nine percent of households in Central region have improved sources of drinking water. Boreholes constitute 36 percent of the improved sources, while 5 percent of the population have water piped into own dwelling or piped into yard or plot. Thirty-two percent of households access improved water through public taps/standpipe.
- Unprotected wells constitute the largest proportion of unimproved sources (4 percent).
- Ninety-seven percent of households in Central region do not apply any appropriate water treatment method to their drinking water.

Time to Source Water

- Almost half (47 percent) of the households in Central region have water on the premises or within 15 minutes.
- The mean time for accessing water by households that do not have water in dwelling is 19 minutes. Rural households get to the source and back in 21 minutes, while urban households spend 17 minutes.
- Less than 5 percent of households that do not have water in own dwelling spend an hour or more to source drinking water.

Person Collecting Water

- Adult women are more likely to be responsible for fetching drinking water than men and children. In 47 percent of households, adult women collect household water alone, compared to only 18 percent of adult men.
- In six percent of the households, children normally collect water, although female children are more likely to collect water (4 percent) compared to male children.

Use of Sanitary Means of Excreta Disposal

- Sixty-four percent of the population is using improved sanitation facilities; Improved sanitation is more prevalent in urban areas (78 percent) than in rural areas (57percent).
- Households whose heads have little or no education are less likely to use improved health facilities (60 percent) compared with households whose head has secondary or higher education (79 percent).
- Out of the proportion using any of the categories classified as improved, 90 percent share the facility with other households.

- About 67 percent of the households share a toilet facility among ten or more households, 12 percent among 2-4 households and 9 percent among 5-9 households.

Disposal of child's faeces

- Forty-three percent of children's stool is disposed off safely in the Central region.
- The most common form of disposal is by throwing the faeces into the garbage (38 percent).

Use of Improved Water Sources and Improved Sanitation

- In Central region, slightly over half of the households use both improved drinking water sources and sanitary means of disposal of excreta.
- Sixty-seven percent of households in the urban areas have both improved sources of drinking water and excreta disposal, compared to only 44 percent of rural households.

Durability of Dwelling

- No house in urban areas in the Central region is located in a hazardous location; however, 5 percent of the dwellings are in poor condition and 1 percent of households live in dwellings considered non durable.

Contraception

- Majority of women aged 15-49 years married or in union do not use any form of contraception (83 percent).
- Fifteen percent of women using contraceptives use modern methods, compared to 2 percent using traditional methods.
- Both the pill and injections are the most popular methods of contraception used in Central region, each used by 6 percent of married women.
- The percentage of women using any method of contraception rises from 12 percent among those with little or no education to 24 percent among women with secondary or higher education.

Antenatal Care

- Ninety-three percent of women received antenatal care one or more times during their last pregnancy. Seventy-two percent of the pregnant women made at least the four antenatal care visits recommended by WHO.
- Most of the pregnant women in the region had all the assessments done; 82 percent had blood sample taken, 85 percent had urine specimen taken, 92 percent had blood pressure taken, while 92 percent had their weight measured.
- Majority (85 percent) of the women aged 15-49 years were provided with antenatal care by a nurse or midwife.
- Women living in urban areas were more likely to be provided with ANC by a medical doctor (13 percent) than their rural counterpart (5 percent).

Assistance at Delivery

- Half of all births in Central region were delivered with the assistance of skilled personnel (medical doctor, nurse/midwife).
- Forty-five percent of the births in two years prior to the survey were delivered with assistance of a nurse or midwife, while doctors assisted with the delivery of 5 percent of births.
- Thirty-one percent of births were delivered by trained traditional birth attendants.
- In Central region, 48 percent of all births that occurred in the two years prior to the survey took place in a health facility; women in urban areas are more likely to delivery in health facilities (62 percent) compared to women in rural areas (41 percent).
- Mothers with education and living in urban areas and from the richest households are more likely to have skilled personnel assisting them during deliveries and also deliver in a health facility.

Child Development

- On average, 25 percent of household members are engaged with children under-five years in four activities that promote learning and school readiness.
- In the Central region, household members in urban areas engage more with children than their rural counterparts (27 and 23 percent respectively).
- There is greater engagement by adults with higher education than those with little or no education.
- One in five children under-five years were left with inadequate care and 7 percent were left along the week preceding the survey.

Pre-school Attendance and School Readiness

- Sixty-six percent of children aged 36-59 months are attending pre-school in Central region. Children whose mothers have secondary or higher education are more likely to attend pre-school (83 percent), compared to children whose mothers have little or no education (57 percent.

Primary and Secondary School participation

- Of children who are of primary school entry age in Central region, 60 percent are attending the first grade of primary school.
- Eight-eight percent of children of primary school age in Central region are attending primary school or secondary school. Twelve percent of children are out of school when they are supposed to be participating in school.
- Secondary school net attendance ratio is just over 50 percent in Central region.
- The gender parity index (GPI) for primary school is 1.0, indicating there is no difference in school attendance between boys and girls. GPI for secondary school is 0.92, indicating that there are more boys attending school compared to girls.

Literacy

- Two in every three females aged 15-24 years in the Central region is literate.
- The literacy rate is strongly and positively associated with urban residence, higher levels of education, and higher household wealth.

Birth Registration

- The births of 60 percent of children under-five years in Central region have been registered. Birth registration is higher for children in urban areas (66 percent), compared to those in rural areas (57 percent).
- 'Birth registration costs too much' (29 percent) and 'Didn't know child should be registered' (17 percent) were the two main reasons for non-registration of births.

Child Labour

- The type of labour activity engaged in by children include unpaid work (6 percent), household chores for 28+ hours/ week (2 percent) and working for family business (21 percent).
- Twenty-six percent of children in the region are engaged in activities that amount to child labour.
- More children in the rural areas (28 percent) than children in urban (18 percent) participate in child labour-related activities .

Child Discipline

- Eighty-four percent of children aged 2- 14 years were subjected to at least one form psychological or physical punishment by their mothers/caretakers or other household members.
- Sixty-four percent are subjected to minor physical punishment, whereas 5 percent are subjected to severe physical punishment.

Early Marriage and Polygyny

- Five percent of women aged 15-49 years in marriage or union were married before 15 years and 33 percent before their 18th birthday.
- The proportion of currently married women and those in polygamous marriages is higher for women with little or no education.
- Nine percent of women 15-24 years who are married/in union are in polygynous unions.

Female Genital Mutilation/Cutting (FGM/C)

- In Central region, less than one percent of women aged 15-49 have had some form of Female Genital Mutilation/Cutting.
- The practice is higher among women with little or no education, and women living in the poorest households.
- More than 80 percent of women aged 15-49 years believe that the practice should be discontinued.

Domestic Violence (DV)

- Sixty-one percent of women affirmed that a husband was justified to beat his wife for any of the given reasons. Acceptance of domestic violence is highest among women with little or no education (71 percent) compared to those with secondary or higher education (30 percent).

Child Disability

- Twelve percent of children aged 2-9 years of age had at least one form of disability as reported by their Mothers/caretakers.

Knowledge of HIV Transmission

- Nearly all the women aged 15-49 years in Central region have heard of AIDS.
- Sixty-eight percent of women 15-49 years know all three main ways of preventing HIV transmission, and 17 percent have comprehensive knowledge (identify 2 prevention methods and 3 misconception of HIV transmission).
- Knowledge of mother-to-child transmission of HIV is also high; 96 percent of women 15-49 years know HIV can be transmitted from mother to child, and two out of every three women know all the three ways of mother to child transmission.

Attitude towards People Living with HIV/AIDS (PLWHA)

- The percentage of those who agree with at least one discriminatory statement is high (92 percent).
- Only 3 percent of women agree with none of the discriminatory statements hence have an accepting attitude towards persons living with HIV and AIDS.
- Education and place of residence are strongly related to negative attitudes towards those who are HIV-positive; rural residents and less educated women in the region are more likely to have discriminatory attitudes towards people who are HIV positive as compared to the residents of urban and the more educated.
- Eighty-eight percent of women who have heard of AIDS indicated that they would not buy from a shopkeeper or food vendor/seller with HIV/AIDs, and half of the women indicated that if a family member had HIV, they would like to keep it a secret.

Knowledge of Facility for HIV Testing

- Nearly half of the women aged 15-49 years know a place to get tested, and 12 percent have actually ever been tested.
- Only 3 percent of the respondents in the region were tested in the last 12 months and received their results.
- Thirty-eight percent of women 15-49 years who gave birth in the two years preceding the survey were

provided information about HIV prevention during ANC visit; 13 percent were tested for HIV at ANC visit, and 9 percent received results of their test.

- More people in urban areas know a place to get HIV testing compared with those in the rural areas.

Sexual Behaviour Related to HIV Transmission

- Ten percent of young women aged 15-19 in the Region had sex before age 15. Also, 10 percent of women 15-24 years had sex in the 12 months preceding the survey with a man 10 or more years older.
- Twenty-four percent of women aged 15-24 years had sex with non-marital, non-cohabiting partner in the last year, and 36 percent of them used condoms during the last such sex.

Orphans and Vulnerable Children

- Forty-eight percent of children are living with both parents, and 17 percent do not live with a biological parent.
- Less than one percent of children aged 0-17 years have lost both parents, and 7 percent have one or both parents dead.

National Health Insurance

- One in every three women interviewed is registered with the National Health Insurance Scheme (NHIS) in Central region, and half of these are valid NHIS card holders.
- Those not registered with NHIS gave 'premium too expensive (56 percent) as the main reason for non-registration.
- Four out of every five women registered with NHIS have benefited from the scheme, majority indicating that they have saved money from paying hospital bills, and that they can use health services to prevent illness becoming severe.
- Virtually all of the women who are valid NHIS card holders said they would continue renewing their membership.

Executive Summary - Northern Region

Household Characteristics

- Proportion of children less than 15 years is 47 percent.
- Nine percent of households are headed by women in the region.
- Sixty percent of the households in the region reported at least one child under 5 years and 83 percent have at least one child under 18 years.
- 4-6 household members constitute one in every three households, 6-7 households members make up 22 percent of households and 2-3 household members make up 20 percent of all households.

Characteristics of Respondents

- Sixty-nine percent of women live in the rural area.
- The age distribution shows 32 percent respondents are in the 15-24 age group.
- The survey also reveals that 78 percent are currently married or in union. Nineteen percent of women have never been married and 79 percent have given birth at least once.
- Nearly 3 out of 4 women in the region have little or no education, 11 percent have primary education, 10 percent Middle/JSS, and 5 percent have secondary or higher education.
- Thirty-eight percent of women categorized as literate are from the richest wealth quintile, whereas only 5 percent of those literate fall under the poorest wealth quintile.

Child Mortality

- Infant mortality rate is 64 deaths per 1,000 live births and under-five mortality rate is 120 deaths per 1,000 live births.
- Neonatal mortality is estimated at 29 deaths per 1,000 live births. This means that for children who die before their first birthday, nearly one out of every two die within the first month of life.
- Under-five mortality experienced by children in rural areas (135 deaths per 1,000 live births) is almost 10 percent higher than that experienced by children residing in urban areas (123 deaths per 1,000 live births).
- Birth interval also affects survival of children when there is less than two years between pregnancies. Infant mortality for children born less than a two-year birth interval is 124 deaths per 1,000, and reduces to 57 deaths per 1,000 live births (an estimated 54 percent reduction) when the birth interval is 3 years.
- First births and higher order births generally face an elevated risk of mortality. Under-five mortality for birth order seven and higher is 153 deaths per 1,000 live births, compared to 114 deaths per 1,000 live births for order 2-3.

Nutritional Status

- Approximately one in three children under age 5 in the Northern Region is underweight with 7 percent classified as severely underweight. Thirty percent of children in the region are stunted or too short for their age, while 9 percent are wasted or too thin for their height. Very few (about one percent) of under five children in the region can be said to be overweight.
- Little differences exist between males (28 percent) and females (30 percent) in the levels of underweight among children under five years. The same can be said of the other forms of malnutrition.
- Children whose mothers have some form of education are likely to be less malnourished than children whose mothers' have no or little education.

Breastfeeding

- Forty-three percent of women breastfed their new-born within an hour of birth, while 78 percent breastfed their children within one day of birth.
- Sixty-seven percent of children aged less than six months are exclusively breastfed.
- Breastfeeding pattern by the socio-economic status of the household indicate that exclusive breastfeeding of a child less than six months is positively associated with household richer households.
- The higher the educational level of the mother as well as the higher the socio-economic status of the household the higher the proportion of adequately fed infants.

Salt Iodization

- Only 11 percent of households were found to consume adequately iodised salt. Almost 16 percent of households consumed iodated salt that had less than 15 parts per million (ppm), and in as high as 69 percent of households, salt was not iodised.
- Use of salt adequately iodised salt is higher in urban households (24 percent), compared to rural households (5 percent). There is also a direct relationship between consumption of adequately iodised salt and household wealth, and education of household head.

Vitamin A Supplement

- Results show that only 51 percent of children aged 6-59 months had received a high dose Vitamin A supplement within the six months prior to the survey.
- Ten percent of children aged 6-59 months had never received Vitamin A supplement.
- Thirty-nine percent of women with a birth in 2 years preceding the survey received a high dose of Vitamin A supplement.

Low Birth Weight

- Overall, only one of ten births in the region was weighed at birth and of these nearly 8 percent of infants weigh below 2500 grams.

Immunization

- Almost 70 percent of children aged 12-23 months were fully immunized before the age of 12 months and more than 78 percent of children 12-23 months have all the required vaccinations against childhood diseases.
- Approximately 95 percent of children aged 12-23 months received a BCG vaccination by the age of 12 months.
- The coverage for measles vaccines by 12 months is 82 percent, while immunization against measles by second birthday increases to 90 percent.
- Ninety-eight percent of children aged 12-23 months receive polio 1 by age 12 months and third dose, this reduces to 87 percent. Polio dose given at birth is low at 43 percent.
- Children vaccinated by 12 months of age against yellow fever is 81 percent.

Tetanus Toxoid

- A little over 62 percent of mothers in the Northern region received at least two doses of tetanus toxoid vaccine during the last pregnancy with the highest of 80 percent recorded in Central Gonja, and lowest (47 percent) in Nanumba North.
- About 72 percent of mothers were protected against tetanus.
- Women with secondary education as well as women in wealthiest households are more likely to be protected against tetanus.

Oral Rehydration Treatment

- About 26 percent of children with diarrhoea were managed at home.

Care Seeking and Antibiotic Treatment of Pneumonia

- Twenty-five percent of children under-five years with suspected pneumonia two weeks before the survey receive an antibiotic treatment. Thirty-six percent of children under-five with suspected pneumonia were taken to any appropriate health provider.

Solid Fuel Use

- Overall, 97 percent of all households in the Northern region are using solid fuels for cooking.
- Education level of head of households also gives a clear indication that higher education has a positive relationship with the use of open stove.

Malaria

- Sixty percent of households had at least one mosquito net, of which, 55 percent are insecticide treated nets (ITNs).
- Fifty percent of the children under-five years sleep under a mosquito net, out of which 47 percent sleep under an ITN.
- The use of ITN is higher in the rural areas (49 percent) than in the urban areas (40 percent).
- Twenty-three percent of children under-five were ill with fever two weeks preceding the survey. Prevalence of fever is lowest among infants 0-11 months (16 percent), but peaks at 12-23 months old (30 percent).
- Twenty percent of children with fever were given chloroquine and about one percent were given SP. Of children with fever, 51 percent were treated with an appropriate anti-malarial drug and 36 percent received the drug within 24 hours of onset of symptoms.
- Urban children are more likely than rural children to be treated appropriately as are the children of mothers with secondary or higher education.
- Seventy-one percent of women in the Northern region who gave birth in preceding two years received medicine to prevent malaria during pregnancy.

Water and Sanitation

- Sixty-two percent of households in Northern region has improved sources of drinking water. Forty-one percent of the improved source is boreholes, while 14 percent of the access is through public tap/standpipe. About 3 percent have pipe-borne water in their dwelling, yard or plot.
- River/stream and dam/lake/pond/canal constitutes the largest proportion of unimproved sources (32 percent).
- Sixty-five percent of households in the region do not apply any appropriate water treatment method to their drinking water.
- Households whose heads have little or no education are less likely to treat their water compared with households with primary or higher education.

Time to Source Water

- The mean time for accessing water by households that do not have water in dwelling is 25 minutes. Rural households get to the source and back in 26 minutes, while urban households spend 23 minutes.
- About 7 percent of households that do not have water in own dwelling spend an hour or more to source drinking water.
- Thirtyseven percent of households have water on the premises or within 15 minutes in the region.

Person Collecting Water

- Adult women are more likely to be responsible for fetching drinking water than men and children.
- In fifty-four percent of households, adult women collect household water compared to only 8 percent of adult men.
- In two percent of the households, children normally collect water, although female children are more likely to collect water (1.3 percent) compared to male children (0.5 percent).

Use of Sanitary Means of Excreta Disposal

- Twenty-one percent of the population is using improved sanitation facilities.
- Improved sanitation is more common in urban areas (47 percent) than in rural areas (11 percent).
- Households whose heads have little or no education are less likely to use improved health facilities (17 percent) compared with households whose head has secondary or higher education (49 percent).
- About one percent of population in poorest households use improved sanitation facilities, compared to 52 percent of population in richest households.
- Out of the proportion using any of the categories classified as improved facility, 89 percent share the facility with other households.
- About 67 percent of the households share a toilet facility among ten or more households, 7 percent among 2-4 households and 4 percent among 5-9 households.

Disposal of child's faeces

- Only 6 percent of children's stool is disposed of safely in the Northern region.
- The most common form of disposal is by throwing the faeces into the garbage (38 percent).

Use of Improved Water Sources and Improved Sanitation

- Only 17 percent of households use both improved drinking water sources and sanitary means of disposal of excreta .
- Forty-two percent of households in the urban areas have both improved sources of drinking water and excreta disposal, compared to only 7 percent of rural households.

Durability of Dwelling

- No house in the Northern region is located in a hazardous location; however, 15 percent of all dwellings are in poor condition.
- Few dwellings (3 percent) are considered non durable, and 11 percent, have natural floor material.

Contraception

- Majority of women aged 15-49 years married or in union do not use any form of contraception (92 percent).
- Current use of contraception was reported by 8 percent of women currently married or in union.
- The most popular method is injections which are used by four percent of married women in the Northern Region.
- Seven percent of women using contraceptives use modern methods, compared to one percent using traditional methods.
- The percentage of women using any method of contraception rises from 6 percent among those with little or no education to 11 percent among women with primary education, and to 27 percent among women with secondary or higher education.
- Women from the poorest households are less likely to use any method of contraception (5 percent), compared to those from richest households (14 percent).

Antenatal Care

- Pregnant women receiving ANC one or more times during pregnancy is 92 percent. Sixty-five percent of the pregnant women make at least the four visits recommended by WHO.
- Forty-two percent made their first ANC visit during their first trimester, 54 percent during their second trimester and about 4 percent during their last trimester.
- Most of the women in the region had all the assessments done; 54 percent had blood sample taken, 50 percent had urine specimen taken and 89 percent had blood pressure taken, while 89 percent had their weight measured.
- Majority (83 percent) of the women aged 15-49 years were provided with antenatal care by a nurse or midwife, while 6 percent were provided ANC by a doctor.
- Women living in urban areas were more likely to access ANC (97 percent) than their rural counterpart (91 percent).

Assistance at Delivery

- Twenty percent of births in Northern region were delivered with the assistance of a skilled personnel (medical doctor, nurse/midwife).
- Fifteen percent of the births occurring in two years prior to the survey were delivered with assistance of a nurse or midwife, while doctors assisted with the delivery of 3 percent of births.
- Twenty-nine percent of births were delivered by trained traditional birth attendants.
- About 18 percent of pregnant women delivered in health facilities; women in urban areas are more likely to delivery in health facilities (39 percent) compared to women in rural areas (10 percent).
- Mothers with education and living in urban areas and from the richest households are more likely to have skilled personnel assisting them during deliveries and also deliver in a health facility.

Child Development

- On average household members are engaged with children under-five years in four activities that promote learning. Fifty-two percent of the children have their fathers involved in one or more activities.
- In the Northern region, household members in urban areas (27 percent) engage more with children than their rural counterparts (17 percent).
- There is greater engagement by adults with higher education than those with little or no education. About 35 percent of children under-five years were left with inadequate care the week preceding the survey.

Pre-school Attendance and School Readiness

- Forty percent of children aged 36-59 months are attending pre-school in the region; the figure is 55 percent in the urban areas, compared to 35 percent in rural areas.
- Sixty-four percent of children living in the wealthiest households attend pre-school, while the figure drops to 24 percent in poor households.

Primary and Secondary School participation

- Of children who are of primary school entry age in the Northern region, 48 percent are attending the first grade of primary school.
- Sixty percent of children of primary school age in the Northern region are attending primary school or secondary school.
- In wealthiest households, children are more likely to attend Grade 1 in a timely manner at 58 percent compared to 38 percent among children living in the poorest households.
- Seventy percent of children attend school in the urban areas while in rural areas, 57 percent attend.
- Children in the poorest households (44 percent) are less likely to attend school as compared to 73 percent in the wealthiest households.

- Secondary school net attendance ratio is only 25 percent in all districts of Northern region.
- Forty-three percent of children in the wealthiest quintile attend secondary schools at the correct age, compared to only 12 percent from the poorest quintile.

Literacy
- The literacy rate among females aged 15-24 years is 32 percent.
- The literacy rate is strongly and positively associated with urban residence, higher levels of education, and higher household wealth.

Birth Registration
- The births of 52 percent of children under-five years in the Northern region have been registered. Birth registration is higher for children in urban areas (73 percent), compared to those in rural areas (45 percent).
- Children whose mothers have a secondary or higher education had a higher registration of 91 percent, compared to children whose mothers had little or no education (50 percent).
- 'Didn't know child should be registered' (38 percent) and 'Birth registration costs too much' (23 percent) were the two main reasons for non-registration of births.

Child Labour
- Forty-five of children in the region are engaged in activities that amount to child labour.
- The type of labour activity engaged in by children include paid work (3 percent), unpaid work (7 percent), household chores for 28+ hours/ week (3 percent) and working for family business (40 percent).
- More children in the rural areas (50 percent) than children in urban (33 percent) participate in child labour-related activities.

Child Discipline
- Eighty-four percent of children aged 2- 14 years were subjected to at least one form psychological or physical punishment by their mothers/caretakers or other household members.
- Sixty-eight percent were subjected to minor physical punishment, whereas 11 percent were subjected to severe physical punishment.

Early Marriage and Polygyny
- Six percent of women aged 15-49 years in marriage or union were married before 15 years and 34 percent before their 18th birthday.
- The proportion of women in polygamous marriages is higher for women with little or no education.
- Fourteen percent of young women aged 15-19 years are married/in union; those in rural areas are more likely to be married/in union (16 percent), compared to their counterparts living in urban areas (10 percent).
- Seventeen percent of women 15-24 years who are married/in union have a husband/partner 10+ years older than them.

Female Genital Mutilation/Cutting (FGM/C)
- Five percent of women aged 15-49 have had some form of Female Genital Mutilation/ cut.
- The practice is higher among women with little or no education, and women living in the poorest households.
- Eighty-four percent of women aged 15-49 years believe that the practice should be discontinued; while only 2 percent believe otherwise.

Domestic Violence (DV)

- Eighty-three percent of women affirmed that a husband was justified to beat his wife for any reason. Acceptance of domestic violence is highest among women with little or no education (86 percent) compared to those with secondary or higher education (50 percent).

Child Disability

- Seventeen percent of children aged 2-9 years have some form of disability as reported by their mothers/caretakers.

Knowledge of HIV Transmission

- Ninety-seven percent of women 15-49 years have heard of AIDS.
- Forty-seven percent of women 15-49 years know all three main ways of preventing HIV transmission, and 18 percent have comprehensive knowledge (identify 2 prevention methods and 3 misconception of HIV transmission).
- Eighty-eight percent of women 15-49 years know HIV can be transmitted from mother to child.

Attitude towards People Living with HIV/AIDS (PLWHA)

- The percentage of those who agree with at least one discriminatory statement is high (89 percent).
- Only 3 percent of women agree with none of the discriminatory statements hence have an accepting attitude towards persons living with HIV and AIDS.
- Eighty-three percent of women 15-49 years indicate that they would not buy from a shopkeeper or food vender/seller with HIV/AIDS, 3 out of 4 women believe that a male health worker with HIV should not be allowed to work, while one out of four women indicate that they would not care for a family member who is sick with AIDS.
- Rural residents and less educated women in the region are more likely to have discriminatory attitudes towards people who are HIV positive as compared to the residents of urban and the more educated.

Knowledge of Facility for HIV Testing

- Thirty-one percent of the respondents know a place to get tested, and 5 percent have actually ever been tested.
- Only one percent of the respondents in the region were tested in the last 12 months and received their results.
- Thirty-four percent of women 15-49 years who gave birth in the two years preceding the survey were provided information about HIV prevention during ANC visit; Seven percent were tested for HIV at ANC visit, and 4 percent received their results of the test.
- More women in urban areas (43 percent) know a place to get HIV testing compared with those in the rural areas (25 percent).

Sexual Behaviour Related to HIV Transmission

- Nearly seven percent of young women aged 15-19 in the region had sex before age 15.
- Women of poor economic status are also more likely to have sex with a partner 10 years or older (20 percent) compared to women in the richest wealth index quintiles (10 percent).
- Thirty-two percent of women aged 15-24 years had sex with non-marital, non-cohabiting partner in the last year, and 34 percent of them used condoms during the last such sex.

Orphans and Vulnerable Children

- Eighty three of children 0-17 years are living with both parents.
- Very few (0.2 percent) of children 0-17 years have lost both father and mother (double orphans), but 5 percent have one or both parents dead.
- Only two percent of children live with only their mother because their father is dead and less than one percent lives with their father because their mother is dead.

National Health Insurance

- Twenty-nine percent of women sampled in the Northern region are registered with the National Health Insurance Scheme (NHIS), and 60 percent of these are valid NHIS card holders.
- Those not registered with NHIS gave 'premium too expensive' (61 percent) as the main reason for non-registration.
- About 4 out of 5 women registered with NHIS have benefited from the scheme, majority indicating that they have saved money from paying hospital bills, and that they can use health services to prevent illness becoming severe.
- Virtually all of the women who are valid NHIS card holders said they would continue renewing their membership.

Executive Summary - Upper East Region

Household Characteristics

- Proportion of children less than 15 years is 44 percent.
- Seventeen percent of households are headed by women in the region.
- About half of the households in the region reported at least one child under 5 years and 82 percent of households have at least one child under 18 years.
- 6-7 households' members constitute one in every five households.

Characteristics of Respondents

- Sixty-nine percent of women live in the rural area.
- The age distribution shows 36 percent respondents are in the 15-24 age group.
- The results also reveal that 3 in 5 women are currently married or in union. 23 percent of women have never been married and 74 percent have given birth at least once.
- About one in five women in the region have primary education, while less than 10 percent have secondary or higher education.
- Forty-seven percent of women in the richest wealth quintiles are categorized literate compared with only 12 percent of women in the poorest wealth quintile.
- Eighty-one percent of children in the Upper East region live in rural areas.

Child Mortality

- Infant mortality rate is 57 deaths per 1,000 live births and under-five mortality rate is 93 deaths per 1,000 live births.
- Neonatal mortality is estimated at 29 deaths per 1,000 live births. This means that one out of every four under-five deaths in region occur during the neonatal period.
- Under-five mortality experienced by male children (107 deaths per 1,000 live births) is 12 percent higher than that is experienced by female children (94 deaths per 1,000 live births) .
- Birth interval also affects survival of children when there is less than two years between pregnancies infant mortality for children born less than a two-year birth interval is 113 deaths per 1,000, and reduces to 45 deaths per 1,000 live births (an estimated 60 percent reduction) when the birth interval is 3 years.
- First births and higher order births generally face an elevated risk of mortality infant mortality for birth order seven and higher is 74 deaths per 1,000 live births, compared to 53 deaths per 1,000 live births order 2-3.

Nutritional Status

- Approximately one in four children under age 5 in the Upper East region is underweight with five percent classified as severely underweight. Twenty-three percent of children in the region are stunted or too short for their age, while eight percent are wasted or too thin for their height. Very few (less than one percent) of under five children in the region can be said to be overweight.
- Little differences exist between males (26 percent) and females (24 percent) in the levels of underweight among children under five years. The same can be said of the other forms of malnutrition, although the proportion is slightly higher among males than females.
- Children whose mothers have some form of education are likely to be less malnourished than children whose mothers' have no or little education.

Breastfeeding

- Fifty-one percent of women breastfed their new-born within an hour of birth, while 86 percent breastfed their children within one day of birth.
- Fifty-five percent of children aged less than six months are exclusively breastfed.
- Breastfeeding pattern by the socio-economic status of the household indicate that exclusive breastfeeding of a child less than six months is positively associated with household richer households.
- The higher the educational level of the mother as well as the higher the socio-economic status of the household the higher the proportion of approximately or adequately fed infants.

Salt Iodization

- Only 12 percent of households were found to consume adequately iodised salt. Almost 13 percent of households consumed iodated salt that had less than 15 parts per million (ppm), and in as high as 73 percent of households salt was not iodised.
- Use of salt adequately iodised salt is higher in urban households (31 percent), compared to rural households (6 percent). There is also a direct relationship between consumption of adequately iodised salt and household wealth, and education of household head.

Vitamin A Supplement

- Results show that only 48 percent of children aged 6-59 months had received a high dose Vitamin A supplement within the six months prior to the survey.
- Six percent of children aged 6-59 months had never received Vitamin A supplement.

Low Birth Weight

- Overall, only one of four births in the region were weighed at birth and of these nearly nine (8.5) percent of infants weigh below 2500 grams.

Immunization

- Sixty-six percent of children aged 12-23 months are fully immunized before the age of 12 months and more than 88 percent of children 12-23 months have all the required vaccinations against childhood diseases.
- Approximately 95 percent of children aged 12-23 months received a BCG vaccination by the age of 12 months.
- The coverage for measles vaccines by 12 months is lower than other vaccines at 73 percent, while immunization against measles by second birthday increases to 95 percent.
- Ninety-seven percent of children aged 12-23 months receive polio 1 by age 12 months and third dose, this reduces to 90 percent. Polio dose given at birth is low at 50 percent.
- Seventy-three percent of children were immunized against yellow fever by 12 months of age.

Tetanus Toxoid

- A little over 67 percent of mothers in the Upper East region received at least two doses of tetanus toxoid vaccine during the last pregnancy with the highest of 78 percent recorded in Bolgatanga Municipality, and lowest (43 percent) in Builsa.
- About 81 percent of mothers were fully protected against tetanus.
- Women with secondary education as well as women in wealthiest households are more likely to be protected against tetanus.

Oral Rehydration Treatment

- About 18 percent of children with diarrhoea were managed at home.
- Infants less than 12 months are less likely to be managed at home (13.5 percent) as compared to those age 24-35 months (22 percent).

Care Seeking and Antibiotic Treatment of Pneumonia

- Sixty percent of children under-five years with suspected pneumonia receive an antibiotic treatment. Forty-eight percent of children under-five with suspected pneumonia were taken to any appropriate health provider.
- Children of mothers with at least a secondary education are more likely to take their children under age 5 with suspected pneumonia to an appropriate provider.

Solid Fuel Use

- Overall, 95 percent of all households in the Upper East Region are using solid fuels for cooking.
- Education level of head of households also gives a clear indication that higher education has a positive relationship with the use of open stove.

Malaria

- More than half (58 percent) of households had at least one mosquito net, of which, 53 percent are insecticide treated nets (ITNs).
- Sixty-one percent of the children under-five years sleep under a mosquito net, but 56 percent sleep under an ITN.
- The use of ITN is higher in the rural areas (57 percent) than in the urban areas (53 percent).
- Twenty-five percent of children under-five were ill with fever two weeks preceding the survey. Prevalence of fever is lowest among infants 0-11 months (18 percent), but peaked at 24-35 months old (30 percent).
- Twenty-eight percent of children with fever were given chloroquine and less than one percent were given SP. Of children with fever, 53 percent are treated with an appropriate anti-malarial drug and 37 percent receive the drug within 24 hours of onset of symptoms.
- Urban children are more likely than rural children to be treated appropriately as are the children of mothers with secondary or higher education.
- Eighty-five percent of women in the Upper East Region who gave birth in preceding two years received medicine to prevent malaria during pregnancy.

Water and Sanitation

- Eighty-two percent of households in Upper East region have improved sources of drinking water. Seventy percent of the improved source is boreholes, while 8 percent of the population is through pipe-borne water in their dwelling, yard or plot or public tap.
- Unprotected wells constitute the largest proportion of unimproved sources (16 percent).
- Forty-eight percent of the poorest households in the region use unimproved sources of water.
- Ninety- five percent of households in Upper East region do not apply any appropriate water treatment method to their drinking water.
- Households whose heads have little or no education are less likely to treat their water compared with households with primary and middle school education.

Time to Source Water

- The mean time for accessing water by households that do not have water in dwelling is 24 minutes. Rural households get to the source and back in 24 minutes, while urban households spend 22 minutes.
- Less than 5 percent of households that do not have water in own dwelling spend an hour or more to source drinking water .
- Thirty four percent of households have water on the premises or within 15 minutes in the region.

Person Collecting Water

- Adult women are more likely to be responsible for fetching drinking water than men and children.
- In forty-eight percent of households, adult women collect household water either alone or with children compared to only eight percent of adult men.
- In three percent of the households, children normally collect water, although female children are more likely to collect water (2 percent) compared to male children (less than 1 percent).

Use of Sanitary Means of Excreta Disposal

- Eleven percent of the population is using improved sanitation facilities.
- Improved sanitation is more prevalent in urban areas (44 percent) than in rural areas (3 percent).
- Households whose heads have little or no education are less likely to use improved health facilities (5 percent) compared with households whose head has secondary or higher education (52 percent).
- Less than 1 percent of population in poorest households use improved sanitation facilities, compared to 41 percent of population in richest households.
- Out of the proportion using any of the categories classified as improved facility, 72 percent share the facility with other households.
- About 59 percent of the households share a toilet facility among ten or more households, 7 percent among 2-4 households and 6 percent among 5-9 households.

Disposal of child's faeces

- Only 3 percent of children's stool is disposed of safely in the upper east region.
- The most common form of disposal is by throwing the faeces into the garbage (41 percent).

Use of Improved Water Sources and Improved Sanitation

- Only one in every ten households use both improved drinking water sources and sanitary means of disposal of excreta.
- Forty-one percent of households in the urban areas have both improved sources of drinking water and excreta disposal, compared to only 2 percent of rural households.

Durability of Dwelling

- None of the houses in the urban areas of the Upper East region is located in a hazardous location; however, 15 percent of all dwellings are in poor condition and 2 percent are vulnerable to accidents.
- Few dwellings (8 percent) are considered non durable and 17 percent, have natural floor material.

Contraception

- Majority of women aged 15-49 years married or in union do not use any form of contraception (87 percent).
- Current use of contraception was reported by 13 percent of women currently married or in union.
- The most popular method is injections which are used by eight percent of married women in the Upper East region.
- Twelve percent of women using contraceptives use modern methods, compared to less than one percent using traditional methods.
- The percentage of women using any method of contraception rises from ten percent among those with little or no education to thirteen percent among women with primary education, and to 35 percent among women with secondary or higher education.
- Women from the poorest households are less likely to use any method of contraception (6 percent), compared to those from richest households (24 percent).

Antenatal Care

- Pregnant women receiving ANC one or more times during pregnancy is 98 percent. Eighty-five percent of the pregnant women make at least the four visits recommended by WHO.
- Most of the women in the region had all the assessments done; 78 percent had blood sample taken, 71 percent had urine specimen taken and over 92 percent had blood pressure taken, while 97 percent had their weight measured.
- Majority (86 percent) of the women aged 15-49 years were provided with antenatal care by a nurse or midwife.
- Women living in urban areas were more likely to be provided with ANC by a medical doctor (15 percent) than their rural counterpart (5 percent).

Assistance at Delivery

- Forty percent of births in upper east region were delivered with the assistance of any skilled personnel (medical doctor, nurse/midwife).
- More than one in three of the births (37 percent) in two years prior to the survey were delivered with assistance of a nurse or midwife, while doctors assisted with the delivery of 3 percent of births
- About 20 percent of births were delivered by trained traditional birth attendants.
- About 40 percent of pregnant women delivered in health facilities; women in urban areas are more likely to delivery in health facilities (70 percent) compared to women in rural areas (30 percent).
- Mothers with education and living in urban areas and from the richest households are more likely to have skilled personnel assisting them during deliveries and also deliver in a health facility.

Child Development

- On average household members are engaged with children under-five years in four activities that promote learning. Forty-four percent of the children have their fathers involved in one or more activities.
- In the upper east region, household members in urban areas (16 percent) engage more with children than their rural counterparts (10 percent).
- There is greater engagement by adults with higher education than those with less or without any education. About 29 percent of children under-five years were left with inadequate care the week preceding the survey.

Pre-school Attendance and School Readiness

- Forty-three percent of children aged 36-59 months are attending pre-school in Upper East region; the figure is as high as 64 percent in the urban areas, compared to 39 percent in rural areas.
- Seventy-two percent of children living in the wealthiest households attend pre-school, while the figure drops to 33 percent in poor households.

Primary and Secondary School participation

- Of children who are of primary school entry age in the Upper East region, 57 percent are attending the first grade of primary school.
- In wealthiest households, children are more likely to attend school in a timely manner at 65 percent compared to 58 percent among children living in the poorest households.
- Seventy-five percent of children of primary school age in the Upper East region are attending primary school or secondary school.
- Twenty-five percent of children are out of school when they are supposed to be participating in school.
- Seventy-seven percent of children attend school in the urban areas while in rural areas 75 percent attend.
- Children in the poorest households (72 percent) are less likely to attend school as compared to 83 percent in the wealthiest households.
- Secondary school net attendance ratio is below 50 percent in all districts of Upper East region.
- Nearly 50 percent of children in the wealthiest quintile attend secondary schools at the correct age, compared to only 20 percent from the poorest quintile.
- There is no difference in school attendance between boys and girls (gender parity for primary and JSS for boys and girls is 1.02 and 1.00 respectively).

Literacy

- The literacy rate among females aged 15-24 years is 44 percent.
- The literacy rate is strongly and positively associated with urban residence, higher levels of education, and higher household wealth.

Birth Registration

- The births of 59 percent of children under-five years in the Upper East region have been registered. Birth registration is higher for children in urban areas (71 percent), compared to those in rural areas (56 percent).

- Children whose mothers have a secondary or higher education had a higher registration of 85 percent, compared to children whose mothers had little or no education (55 percent).
- 'Birth registration costs too much' (29 percent) and 'Didn't know child should be registered' (28 percent) were the two main reasons for non-registration of births.

Child Labour
- The type of labour activity engaged in by children include paid work (2 percent), unpaid work (9 percent), household chores for 28+ hours/ week (1 percent) and working for family business (25 percent).
- Thirty percent of children in the region are engaged in activities that amount to child labour.
- More children in the rural areas (32 percent) than children in urban (23 percent) participate in child labour-related activities.

Child Discipline
- Eighty-six percent of children aged 2- 14 years were subjected to at least one form psychological or physical punishment by their mothers/caretakers or other household members.
- Fifty-eight percent are subjected to minor physical punishment, whereas 10 percent are subjected to severe physical punishment.

Early Marriage and Polygyny
- Five percent of women aged 15-49 years in marriage or union were married before 15 years and 40 percent before their 18th birthday.
- The proportion of currently married women and those in polygamous marriages is higher for women with little or no education.
- Eleven percent of young women aged 15-19 years are married/in union; those in rural areas are more likely to be married/in union (13 percent), compared to their counterparts living in urban areas (6 percent).
- Twenty-five percent of women 15-24 years who are married/in union have a husband/partner 10+ years older than them.

Female Genital Mutilation/Cutting (FGM/C)
- Twenty percent of women aged 15-49 have had some form of female Genital Mutilation
- The practice is higher among women with little or no education, and women living in the poorest households.
- Ninety-four percent of women aged 15-49 years believe that the practice should be discontinued; while only 2 percent believe otherwise.

Domestic Violence (DV)
- Seventy-five percent of women affirmed the fact that a husband was justified to beat his wife for any reason. Acceptance of domestic violence is highest women with little or no education (79 percent) compared to those with secondary or higher education (54 percent).

Child Disability
- Fifteen percent of children aged 2-9 years have some form of disability.

Knowledge of HIV Transmission
- Ninety-seven percent of women 15-49 years have heard of AIDS.
- Sixty-two percent of women 15-49 years know all three main ways of preventing HIV transmission, and 31 percent have comprehensive knowledge (identify 2 prevention methods and 3 misconception of HIV transmission).
- Ninety-one percent of women 15-49 years know HIV can be transmitted from mother to child.

Attitude towards People Living with HIV/AIDS (PLWHA)

- The percentage of those who agree with at least one discriminatory statement is high (91 percent).
- Five percent of women agree with none of the discriminatory statements hence have an accepting attitude towards persons living with HIV and AIDS.
- Education and type of residence are strongly related to negative attitudes towards those who are HIV-positive.
- Rural residents and less educated women in the region are more likely to have discriminatory attitudes towards people who are HIV positive as compared to the residents of urban and the more educated.

Knowledge of Facility for HIV Testing

- Forty-six percent of the respondents know a place to get tested, and 10 percent have actually ever been tested.
- Only one percent of the respondents in the region were tested in the last 12 months and received their results.
- Sixty-one of women 15-49 years who gave birth in the two years preceding the survey were provided information bout HIV prevention during ANC visit; 21 percent were tested for HIV at ANC visit, and 13 percent received their results of the test.
- More people in urban areas (63 percent) know a place to get HIV testing compared with those in the rural areas (41 percent).

Sexual Behaviour Related to HIV Transmission

- Nearly five percent of young women aged 15-19 in the Region had sex before age 15.
- There is an indirect relationship between education and age at sexual debut.
- There is a slight difference in rural women (4.6 percent) and their urban counterparts (4.2 percent) aged 15-19 who had sex before age 15.
- Women of poor economic status are also more likely to have sex with a partner 10 years or more years older (26 percent) compared with women in the richest (18 percent) wealth index quintiles.
- 33 percent of women aged 15-24 years had sex with non-marital, non-cohabiting partner in the last year, and 67 percent of them used condoms during the last such sex.

Orphans and Vulnerable Children

- Seventy-six percent of children are living with both parents.
- Nine percent do not live with a biological parent.
- Only 0.5 percent of all children have lost both father and mother.
- Only six percent of children live with only their mother because their father is dead and less than one percent lives with their father because their mother is dead.

National Health Insurance

- About one in every three women interviewed is registered with the National Health Insurance Scheme (NHIS) in the Upper East region, and almost 70 percent of these are valid NHIS card holders.
- Those not registered with NHIS gave 'premium too expensive (63 percent) as the main reason for non-registration.
- Ninety-one percent of women registered with NHIS have benefited from the scheme, majority indicating that they have saved money from paying hospital bills, and that they can use health services to prevent illness becoming severe.
- Virtually all of the women who are valid NHIS card holders said they would continue renewing their membership.

Executive Summary - Upper West Region

Household Characteristics

- Proportion of children aged less than 15 years is 45.2 percent.
- Eighteen percent of households in the region are headed by women. The region is basically rural, with 88 percent of the population living in rural area.
- Thirty-one percent of households have a household size of 4-5 members and 22 percent has 2-3 household members.

Characteristics of Respondents

- The largest proportions of women in the region are in the 15-24 years age group, forming 32 percent of total women population.
- Three out of four women in the region are married or currently in union, while twenty-one percent have never been married. Seventy-seven percent of women in the region have given birth at least once.
- About 3 in 5 women in the region have little or no education. Seventeen percent of women aged 15-49 years have primary education, and 18 percent have middle/JSS education. Only 6 percent of women have secondary or higher education.
- One out of four women in the region is literate. Literacy rate for women 15-24 years is 50 percent, and this reduces with age, with only 8 percent of women 45-49 years being literate. Also, 62 percent of women in urban areas are literate compared to their counterparts in rural areas.

Child Mortality

- Infant mortality rate is 62 deaths per 1,000 live births and under-five mortality rate is 113 deaths per 1,000 live births.
- Neonatal mortality is estimated at 32 deaths per 1,000 live births. This means that for children who die before their first birthday, nearly one out of every two die within the first month of life.
- Under-five mortality experienced by children in rural areas (127 deaths per 1,000 live births) is almost 20 percent higher than that experienced by children residing in urban areas (103 deaths per 1,000 live births).
- Birth interval also affects survival of children when there is less than two years between pregnancies infant mortality for children born less than a two-year birth interval is 145 deaths per 1,000, and reduces to 48 deaths per 1,000 live births (an estimated 67 percent reduction) when the birth interval is 3 years.
- First births and higher order births generally face an elevated risk of mortality under-five mortality for birth order seven and higher is 148 deaths per 1,000 live births, compared to 105 deaths per 1,000 live births order 2-3.

Nutritional Status

- Almost nineteen percent (18.6) and 3 percent of children under-five are underweight and severely underweight respectively; overweight is not an issue among children under-five in the region, less than 1 percent are overweight.
- Malnutrition peaks at age 12-23 months; 19 percent of children are stunted and 6 percent wasted. The highest recorded form of malnutrition in the region is found in Jirapa-Lambussie, closely followed by Wa West.

Breastfeeding

- Forty percent of children are breastfed within one hour of birth, and 68 percent within one day of birth.
- Ninety-two percent of children less than six months are exclusively breastfed in the region.
- Among children 6-9 months, 59 percent receive breast milk and solid or semi-solid foods; at 12-15 months, 100 percent are still being breastfed and by age 20-23 months 85 percent are still breastfed.

Salt Iodization

- In 2 in 5 households tested salt is not iodized. Fifteen percent of households consume salt that contains 15 parts per million (ppm) or more of iodine, while 40 percent households consume inadequately iodated salt.
- The use of adequately iodated salt is four times high in urban residence compared to rural residence in the region.

Vitamin A Supplement

- Fifty-two percent of children aged 6-59 months receive a high dose of Vitamin A supplement within last 6 months, while 7 percent never received the supplement.
- 67 percent of women with a birth 2 years prior to the survey received Vitamin A supplement before the infant was 8 weeks old.

Low Birth Weight

- Twenty-three percent of children were weighed at birth in the region, 6 percent of weighed live births are below 2500 grams.

Immunization

- Eighty-five percent of children aged 12-23 months are fully immunized before their first birthday, and about 90 percent of children aged 12-23 months in the region have all the required vaccinations.
- Ninety-seven percent of children aged 12-23 months received a BCG vaccination by the age of 12 months.
- First dose of (DPT)HH is given to 99 percent of children aged 12-23 months, 98 percent of the same age group receive second dose and 95 percent of the same age group receive the third dose.
- Ninety-nine percent of children aged 12-23 months receive polio 1 by age 12 months and third dose, 93 percent.

Tetanus Toxoid

- Protection level of women who have had a live birth within the last 2 years against tetanus is generally high at 73 percent, peaking at 76 percent for women aged 25-29 years in the region.
- Sixty-two percent of women in the region received at least 2 doses during the last pregnancy.

Oral Rehydration Treatment

- Twenty percent of children under-5 years had diarrhoea in the last two weeks prior to the survey, and 42 percent of these children were given fluid from ORS packet, 2 percent were given recommended homemade fluid and 58 percent received no treatment.
- Children aged 0-59 months in the region with diarrhea managed at home is 7 percent. Only 3 percent of infants under 12 months are managed at home as compared to approximately 10 percent of those 36-47 months.

Care Seeking and Antibiotic Treatment of Pneumonia

- Fifty percent of children under-five years with suspected pneumonia received an antibiotic treatment in the region.
- Forty-seven percent of children with suspected pneumonia were taken to an appropriate provider.

Solid Fuel Use

- Ninety-eight percent of households are using solid fuels for cooking. Its use is lower in Wa Municipality (93 percent) and in urban areas (92 percent).
- The higher the educational level of head of household, the lower the use of solid fuels for cooking (90 percent); similarly, the percentage among the wealthiest households in the region is 92 percent.

Malaria

- Seventy-one percent of households in the region have at least one mosquito net, of which 67 percent are insecticide treated nets (ITN).
- Seventy-nine percent of children under-five sleep under a mosquito net, of which 78 percent sleep under an ITN.
- The use of ITN is higher in the rural areas (79 percent) than in the urban areas (69 percent).
- Thirty percent of children under-five were ill with fever. The prevalence of fever is lowest among 48-59 months old but peaked at 24-35 months old children (36 percent).
- The most widely used appropriate anti-malarial drugs are Artemisnin based combinations used by 23 percent of children aged 0-59 months, followed by chloroquine (22 percent) and armodiaquine (13 percent).
- Of children with fever, 64 percent are treated with an appropriate anti-malarial drug and 45 percent receive the drug within 24 hours of onset of symptoms.

Water and Sanitation

- Eighty-seven percent of the population in the Upper West region has access to improved drinking water sources; ninety-four percent in the urban area and 80 percent in the rural areas.
- Use of improved water sources is higher for the wealthiest households (90 percent), compared to households in the poorest wealth quintile (49 percent).
- Nadawli district recorded the highest percentage of households using an improved source of drinking water (98 percent), and Wa East recorded the lowest (64 percent).

Time to Source Water

- Five percent of households have water on own premises and 31 percent access water within 30 minutes. Only 6 percent of households spend more than 1 hour to source of drinking water.
- The mean time for accessing water by households including waiting to get water and return is 24 minutes. This decreases slightly with education of household head; household heads with little or no education in the region get to the source and back in 26 minutes but household heads with secondary and higher education spend 20 minutes.

Person Collecting Water

- Adult women are more likely to fetch water than men and children. In 50 percent of households, adult women collect household water alone compared to only 7 percent of adult men.
- In 31 percent of households, water is collected by adult women with children. Children (both male and female under 15 years) form less than 3 percent of household's members who collect water.

Use Sanitary Means of Excreta Disposal

- Only 20 percent of the population in the region is using improved sanitation facilities. The improved sanitation is more prevalent in the urban areas (78 percent) than in rural areas (15 percent).
- Out of the proportion using any of the categories classified as improved facility; about 78 percent share the facility with other households. About 56 percent of the households share a toilet facility among ten or more households, 10 percent among 2-4 households and 6 percent among 5-9 households.

Disposal of child's faeces

- Seventy percent of children's stool are thrown into garbage (solid waste) and put/rinsed latrine into drain or ditch. Only 3 percent of children's' stools are buried; virtually no child (0.2 percent) uses the toilet/latrine themselves.

Use of Improved Water Sources and Improved Sanitation

- Nineteen percent of households use both improved sources of drinking water and sanitary means of disposing excreta.
- In the urban areas 74 percent of households use both improved sources of drinking water and sanitary means of excreta disposal compared to only 13 percent of rural households.
- Wa Municipality has the highest number of households using both improved sources for drinking water and sanitary means of excreta disposal (38 percent), while Wa East has the lowest (2 percent).

Durability of Dwelling

- No house is located in a hazardous area; however 3 percent of the dwellings are considered non durable but none is vulnerable to accidents in the region.
- Twenty-eight percent of the dwellings have natural floor materials.

Contraception

- Eighty-three percent of currently married/in union women within the region are not currently using any methods of family planning.
- The most popular method of contraception currently used is the injection, used by 11 percent of the married women, followed by the Pill, used by 4 percent of the women.
- The condom is used by less than one percent of partners of married women in the region.

Antenatal Care

- Coverage of antenatal care in the region is relatively high with 92 percent of pregnant women aged 15-49 years receiving ANC from skilled personnel.
- Eighty-nine percent of pregnant women had their blood pressure checked, 90 percent of them had their weight measured and 75 percent had their blood samples taken. However, only 2 out of three women had their urine specimen taken.
- Medical doctors provided ANC to 2 percent of women, whereas nurse/midwife provided ANC to 89 percent of the women.
- Nearly four in every five pregnant women received the recommended 4 or more visits during their pregnancy, and over half of the pregnant women (52 percent) made their first ANC visit during the first trimester, while 45 percent made their first visit in the second trimester. Only 3 percent of the women made their first ANC visit in the last trimester.

Assistance to Delivery

- Forty-two percent of births are delivered by skilled personnel, while 40 percent occurred at a health facility, including 7 percent assisted by a medical doctor.
- Women in urban areas are four times as likely to have their births assisted by a medical personnel and more than twice to deliver at a health facility in the region, compared to women in rural areas.

Child Development

- Twenty percent of adults are engaged with children in four or more activities that promote learning and school readiness in the region. Twenty-seven percent of the children have their fathers involved in one or more activities.
- Twelve percent of children are living in a household without their biological fathers.
- The proportion of children 0-59 months with whom an adult household member engaged in four or

more activities is 40 percent in urban areas and 18 percent in rural areas.

- Thirty-two percent of children live in households with at least 3 or more non-children's books but only 2 percent of the children have children's books.
- Eleven percent of children under-five years have three or more playthings in their homes but 13 percent do not have any. Twenty-nine percent of children aged 0-23 months have no playthings, compared to only one percent of those aged 24-59 months.
- During the week preceding the survey, in the region, 23 percent of children were left with inadequate care, and 6 percent were left alone.

Pre-school Attendance and School Readiness.

- Forty-eight percent of children in the region aged 36-59 months are attending pre-school; 70 percent in urban areas compared to 46 percent in rural areas. Seventy-seven percent of children living in wealthiest household attend pre-school in the region compared to 31 percent in poor households.

Primary and Secondary School participation

- Fifty-two percent of children of primary school entry age are attending first grade in the region.
- Eighty-six percent of urban children attend school as against 49 percent rural children.
- Sixty-nine percent of children of primary school age in the region are attending primary school or secondary school while 31 percent are out of school. 92 percent of urban children and two-thirds of rural children are attending school.

Literacy

- Fifty percent of women aged 15-24 years are literate. In the urban area, 74 percent of women are literate while in the rural area 45 percent are literate. In the wealthiest quintile, 67 percent are literates compared to 42 percent of women in the poorest quintile.

Birth Registration

- The births of 53 percent of children under-five years have been registered. Eighty-six percent of children whose mothers/caretakers have a secondary or higher level of education have their births registered, compared to 45 percent of children whose mothers/caretakers have little or no education.
- Sixty-nine percent of children residing in urban areas have their births registered compared to 42 percent of children residing in rural areas.

Child Labour

- Seventy-one percent of children 5-14 years in the region are engaged in some form of child labour. Children aged 5-11 engaged in child labour were more (49 percent) compared to those aged 12-14 (46.7 percent).
- More children 5-14 years from the poorest households are engaged in some form of child labour (59 percent), compared to children from the richest wealth quintile (31 percent).
- Of 72 percent of children aged 5-14 years of age attending school, 46 percent are also involved in child labour activities.

Child Discipline

- Ninety-one percent of children aged 2-14 years in the region are subjected to at least one form of psychological or physical punishment.
- Eighty-eight percent are subjected to psychological punishment whiles 71 percent to minor physical punishment and 14 percent to severe physical punishment.

Early Marriage and Polygyny

- Seven percent of women aged 15-24 years in marriage or union were married before aged 15 and one-third of women aged 20-24 married before their 18th birthday.
- A little over one-third of married women are in polygynous unions.
- One in three married women aged 15-24 in the region have partners who are 0-4 years older than themselves, while 34 percent have partners 5-9 years older and 27 percent have partners aged ten years or older.

Female Genital Mutilation/Cutting (FGM/C)

- One in every two women aged 15-49 years have had some form of FGM/C, and 2 percent have had extreme FGM/C. Women in rural areas (52 percent) are more inclined to accept the practice than women in urban areas (32 percent).
- Eighty-four percent of women aged 15-49 years expressed that the practice should be discontinued; whiles 5 percent believe the practice should be continued.

Domestic Violence (DV)

- Eighty-four percent of women aged 15-49 believe that a husband is justified in beating his wife for any of the reasons provided. Acceptance of domestic violence is higher among women residing in rural areas (86 percent) than the urban areas (70 percent). It is also higher among women with little or no education, compared to those with primary or higher education.

Child Disability

- Seventeen percent of children aged 2-9 years in the region have at least one form of disability as reported by their mothers/caretakers.

Knowledge of HIV Transmission

- Ninety-three percent of women in the region have heard of AIDS, and 51 percent know of all three main ways of preventing HIV transmission.
- Only 16 percent of women aged 15-49 years have comprehensive knowledge of HIV/AIDS (identify 2 prevention methods and 3 misconceptions).
- Almost 88 percent of women know that HIV can be transmitted from mother to child, and 73 percent know all three ways of mother-to-child transmission of HIV.

Attitude towards People Living with HIV/AIDS (PLWHA)

- The percentage of those who agree with at least one discriminatory statement is high (93 percent)
- Only 4 percent of women agree with none of the discriminatory statements hence have an accepting attitude towards persons living with HIV and AIDS.
- One in five women who have heard of AIDS admit they would not care for a family member who was sick with AIDS, and 57 percent would like to keep the HIV status of a family member secret. Also, two-thirds of the women believe that a female health worker with HIV should not be allowed to work.
- Education and type of residence are strongly related to negative attitudes towards those who are HIV-positive. Rural residents and less educated women in the region are more likely to have discriminatory attitudes towards people who are HIV-positives, compared to urban residents and women with higher levels of education.

Knowledge of Facility for HIV Testing

- Forty-three percent of women know where to be tested, and 12 percent have actually ever been tested, while only 1 percent were tested and received results in the past 12 months.

- Women aged 25-29 are more likely to have been tested in the region.

Sexual Behaviour Related to HIV Transmission

- About 7 percent of young women aged 15-19 in the region had sex before age 15, and 40 percent of women aged 20-24 had sex before their 18th birthday.
- Eighteen percent of women aged 15-24 had sex with men who were ten or older than themselves.
- Of the women 15-24 years who had sex with more than one partner in the 12 months prior to the survey, 31 percent had sex with a non-marital, non-cohabiting partner.
- Sixty-four percent of women 15-24 years used a condom at last sex with a non-marital, non-cohabiting partner.

Orphans and Vulnerable Children

- Seventy-six percent of children in the region are living with both parents whiles 11 percent are not living with a biological parent.
- Less than one percent of the children have both parent's dead (double orphans), but 8 percent have lost one or both parents.

National Health Insurance

- About one in every five women interviewed is registered with the National Health Insurance Scheme (NHIS) in the Upper West region, and 85 percent of these are valid NHIS card holders.
- Those not registered with NHIS gave 'premium too expensive (56 percent) as the main reason for non-registration.
- About 90 percent of women registered with NHIS have benefited from the scheme, majority indicating that they have saved money from paying hospital bills, and that they can use health services to prevent illness becoming severe.
- Virtually all of the women who are valid NHIS card holders said they would continue renewing their membership.

I. Introduction

Background and Objectives

This report is based on the High Impact Rapid Delivery (HIRD) Supplementary Survey at the district level (District Multiple Indicator Cluster Survey, or District MICS), carried out by UNICEF in 2007 with assistance from the Ghana Statistical Service (GSS) and the Ministry of Health (MOH). The survey was based on the evaluation of the Accelerated Child Survival and Development (ACSD) being piloted in the Upper East and, in large part, on the need to have baseline data to help in the implementation of the HIRD intervention in the Upper West, Northern and Central regions, which are among the deprived regions in the country. All women aged 15-49 and children below five years were eligible for individual interviews. Caretakers or mothers responded on behalf of under-five children in selected households.

The HIRD Survey is designed to provide up-to-date information on the situation of children and women in some deprived regions at district level.

In recent decades, several donor-specific programmes and interventions have been implemented in Ghana. The level of implementation of these programmes or interventions at national, regional and district levels differed from one donor to the other. However, the common aim has been to improve the health and socio-economic status of women, children and other vulnerable groups.

This report presents a comprehensive analysis of the results of the HIRD Supplementary Survey (District MICS) at regional level, for Central, Northern, Upper East and Upper West Regions. Separate regional reports are available that provides comprehensive analysis by district for the four regions.

Survey Objectives

Despite the existence of a number of data sources, one of the challenges faced by policy makers and programme managers in Ghana is the lack of sub-national data. Many national and international agencies are interested in identifying districts with poor socio-economic indicators for intensive intervention but present data sources are unable to meet this demand.

A number of new intervention programmes have been implemented by the Government in the recent past, which will have an impact on indicators and are expected to change over a short period of time. For example, the Ghana Poverty Reduction Strategy (GPRS) is focused on poverty reduction and MDGs. The GPRSII Ministry of Health has put a strong emphasis on scaling-up of the High Impact Rapid Delivery approach (HIRD) to achieving MDGs 4 and 5 which was adopted for national implementation after the successful evaluation and documentation of the lessons learnt from the UNICEF supported ACSD pilot. The latest data on these indicators will help programme managers to better plan and monitor development activities.

The HIRD Supplementary Survey (District MICS) 2007/2008 has as its primary objectives:

- To evaluate programme interventions in the reduction of childhood mortality through the Accelerated Child Survival and Development (ACSD) in the Upper East Region;
- To collect baseline data for the scale-up of implementation of the High Impact Rapid Delivery (HIRD) programme in the Northern, Upper West, and Central Regions.
- To analyse urban indicators in the two major cities in the country; Kumasi and Accra; and
- To contribute to the improvement of data and monitoring systems in Ghana using the MICS and MDG goals as reference.

The report is divided into 13 chapters as outlined in the table of contents. A number of annexes serve as reference and background information to this report. Computations of all indicators shown in this report are explained in details in Annex E.

Chapter two describes the sample and methodology used for the survey. It also talks about the survey instruments and the various modules of the questionnaires, training and fieldwork and data processing. Chapter three looks at the sample coverage, response rate, characteristics and of the households interviewed and that of respondents. Child and infant mortality results are discussed in chapter four. Chapter five presents results on the nutritional status of children in the region. It looks at the breastfeeding patterns, salt iodisation, vitamin A supplements etc. Immunization, tetanus toxiod, use of ORS in the treatment of diarrhoea, care and treatment of pneumonia among children, treatment of malaria and the cost of obtaining antimalarials and ITN usage is discussed in chapter six.

Chapter seven shows results of the survey on solid fuel use, use of improved water and sanitary source and the disposal of child's faeces. Chapters eight and nine shows results on contraception, antenatal care, assistance during delivery and child development whiles, chapter ten discusses results related to education. Birth registration, child labour, child discipline, early marriage and polygyny, female genital mutilation/cutting, domestic violence and child disability are discussed in chapter eleven. HIV/AIDS, sexual behaviour and vulnerable children are discussed in chapter twelve whiles chapter thirteen discusses result on national health insurance registration, reasons for no registering and beneficiaries views of the health scheme.

II. Sample and Survey Methodology

Sample design

The sample for the HIRD Supplementary Survey was designed to provide estimates on a large number of indicators of the health status of women and children at the district and regional levels, in the Northern, Upper East, Upper West and Central Regions. The survey results also provides separate estimates for rural-urban areas analysing urban trends using Accra and Kumasi metropolises as a case study for further urban studies and analysis.

In each of the first four regions, a sample of households was chosen to provide information for each of the districts in each region. Almost around the time of the HIRD Supplementary Survey, another large survey, Maternal Mortality Survey (MMS) was being implemented nation-wide. Therefore, to reduce household listing costs in the HIRD Supplementary Survey, it was decided to use a number of selected EAs in each district while combining the selected ones in the verbal autopsy survey with household listing material, and additional ones to complete a specific number of EAs with a fresh household listing. The EAs were categorized into urban and rural areas proportionally to the number of households in each area. In each area, the EAs were selected systematically with a probability proportional to size (households).

In the Upper East Region sample, the number of current districts is eight (in the 2000 Population and Housing Census, it was six). In each district about 22 EAs were selected, and in each EA a total of 20 households were selected.

For the Upper West Region sample, the number of current districts is eight (in the last census it was five). In each district, about 12 EAs were selected, and in each EA a total of 20 households were selected.

Again, in the Northern Region sample, the number of current districts is 18 (in the last census it was 13). In each district, about 10 EAs were selected, and in each EA a total of 20 households were selected.

For the Central Region sample, the number increased from 12 districts in the last census to 13. In each of the districts, 15 EAs were selected, and in each EA a total of 20 households were selected.

In Kumasi and Accra Metropolitan Areas, 45 EAs were selected systematically with probability proportional to size (households) and 20 households were selected in each EA.

The list of enumeration areas (EAs) from the 2000 Population and Housing Census served as a frame for the HIRD Supplementary Survey sample. A complete household listing exercise covering all selected Eas from the 2000 Population and Housing Census sampling frame was carried out in May through December, 2007. At the second stage, 20 households were systematically sampled per EA based on this list. The objective of this exercise was to ensure an adequate number of complete interviews to provide estimates for important population characteristics with acceptable statistical precision per region. A more detailed description of the sample design can be found in Annex A.

Questionnaires

Three sets of questionnaires were used in the survey:

- a household questionnaire which was used to collect information on all selected household members and household characteristics and to identify eligible individuals;
- a women's questionnaire administered in each household to all women aged 15-49 years; and
- an under-5 questionnaire, administered to mothers or caretakers of all children under five years1 living in the household.

The questionnaire included the following modules:

Household Questionnaire
- Household listing
- Education
- Water and Sanitation
- Household Characteristics
- Insecticide Treated Net
- Working Children
- Child Discipline
- Disability
- National Health Insurance
- Salt Iodization

Questionnaire for Individual Women
- Infant and Child Mortality
- Tetanus Toxoid
- Maternal and Newborn Health
- Marriage/Union
- Contraception
- Female Genital Mutilation/Cutting
- Domestic Violence
- Sexual Behaviour
- HIV/AIDS
- National Health Insurance

Questionnaire for Children under Five
- Birth Registration and Early Learning
- Childhood Education and Child Development
- Vitamin A
- Breastfeeding
- Care during Illness
- Immunization
- Malaria
- Anthropometry

The questionnaires are based on the Ghana 2006 MICS model questionnaire with some modifications to fit specific survey conditions and standards. The questionnaires, after modification, were pre-tested in July, 2007 in the Greater Accra Region. A 7-day pre-test training session was conducted by staff of the Ghana Statistical Service (GSS), Ministry of Health (MOH) and other selected ministries, departments and agencies

(MDAs) for 14 interviewers. Two teams consisting of supervisors and six interviewers were formed after the training to pilot the survey in two selected localities (one urban and one rural) in the same region to test the entirety of the survey procedures and the new modules.

The final field tools were modified based on the results of the pre-test for the main fieldwork. As part of the process, cooking salt was tested for iodine content and the height and weight of all children less than 5 years (0-59 months) was established.

Training and Fieldwork

A total of 86 field personnel and three data entry clerks participated in the main fieldwork training conducted from 19th August to 2nd September 2007. Data entry clerks took part in the main training sessions to get a better understanding of the questionnaires and the survey techniques. The training included lectures on interviewing techniques, discussion of the questionnaires, and mock interviews among trainees to acquire skills in asking questions. All interviewers were further trained in testing for iodine in salt and taking the height and weight of all under-five children. Towards the end of the training period, trainees spent three days conducting field interviews in 10 Enumeration Areas (EAs) (2 urban and 8 rural). These areas were selected to provide the field staff a better understanding of working in different environments.

Supervisors, editors and interviewers were selected based on their performance in the field practices, participation in class, assessment tests, understanding of the questionnaires and fluency in Ghanaian languages.

Data were collected by 10 teams, each comprising four interviewers, a driver, an editor/measurer and a supervisor. The editor edited the completed questionnaires in the field and took height and weight measurements. Fieldwork in the three Northern Regions began in early September 2007 and ended in mid-December 2007. The delay in the completion of the fieldwork was due to flooding caused by torrential rains which started two weeks into the fieldwork.

In the Central Region, seven teams were formed for the data collection exercise. The teams comprised four interviewers, a driver, an editor/measurer and a supervisor. To minimise errors and mistakes in the filling of questionnaires, field editors went through the questionnaires at the end of each working day. Fieldwork began on the 1st of February, 2008 and ended on the 14th of March, 2008. Throughout the report, the survey is referred to as "HIRD Supplementary Survey 2007/2008" since data for the three Northern regions was collected in 2007, and data for Central region was collected in early 2008.

Data Processing

The data were entered on 12 microcomputers using the Census and Survey Programme (CSPro) by 12 data entry operators, three data entry supervisors and an office editor (who received and administered the completed questionnaires for them to be captured). In order to ensure quality control, all questionnaires were double-entered and internal consistency checks were performed. Procedures and standard programs developed for the 2006 Ghana MICS were adapted to the HIRD Supplementary Survey questionnaire and were used throughout the data processing. Data processing began in early March 2008 and finished in mid-June 2008. Data were analysed using the Statistical Package for Social Sciences (SPSS) software. Model syntax and tabulation plans were developed for this purpose.

III. Sample Coverage and Characteristics

This section presents information on the sample coverage, socio-economic and demographic characteristics of the household population, focusing on age, sex, district, place of residence, and socio-economic conditions of households.

Sample Coverage and Response Rate

The sample for the HIRD Supplementary Survey 2007/2008 covered the population residing in private households within the selected regions and metropolitan areas. The survey was done to have enough estimates for the various regions which serve as the lowest administrative unit within the country.

The 2000 Population and Housing Census served as the sampling frame for the study. The EAs within the regions were stratified by district and urban/rural location. A complete household listing was done and based on the total number of households per EA, a systematic sample of 20 households per each EA were selected and included in the survey. Within these selected households, all females aged 15-49 were identified as eligible for individual interview. In addition, children under five years in selected households were also identified and either their mothers or their caretakers were interviewed on their behalf.

Response rates are important as a high level of non-response may affect the reliability of the survey results. A total of 13,440 households were selected for the HIRD Supplementary Survey (District MICS). Of this number, a representative sample of 12,680 households was selected in the four regions. The sample within each region was selected in a manner to permit separate estimates of some key indicators for each region.

Table HH.1 presents regional information on the results of the household and individual interviews. A total of 12,680 households were sampled from the four regions and of these, 12,622 were found to be occupied. Interviews were completed for 12,187 households, which represents a 97 percent response rate. A total of 11,962 eligible women (aged 15-49) from every selected household were identified for the individual interviews. Interviews were successfully completed for 11,174 women, yielding a response rate of 93 percent. In addition, 8,691 children aged 0-59 months within the selected households were listed in the household roster and caretakers answered questions on their behalf. Questionnaires were completed for 8,457 out of the 8,691 under-five children identified and this corresponded to a response rate of 97 percent. The overall response rates for women and children under-five were all over 90 percent.

Response rate for households, women and children under five also varied by region. Household, women and children interviews for each region had a response rate of over 92 percent. There was no considerable difference in the response rate for households, women and children under five by place of residence.

Table HH. 1 : Results of household and individual interviews

Numbers of households, women, and children under-5 by results of the household, women's, and under-five's interviews, and household, women's, and underfive's response rates, HIRD Supplementary Survey, 2007/2008

	Region				Area		Total
	Central	Northern	Upper East	Upper West	Urban	Rural	
Sampled households	3880	3520	3460	1820	3500	9180	12680
Occupied households	3872	3511	3429	1810	3487	9135	12622
Interviewed households	3707	3402	3324	1754	3337	8850	12187
Household response rate	95.7	96.9	96.9	96.9	95.7	96.9	96.6
Eligible women	2921	3846	3501	1694	3223	8739	11962
Interviewed women	2765	3545	3288	1576	2993	8181	11174
Women response rate	94.7	92.2	93.9	93.0	92.9	93.6	93.4
Women's overall response rate	90.6	89.3	91.0	90.2	88.9	90.7	90.2
Eligible children under 5	1832	3233	2310	1316	1874	6817	8691
Mother/Caretaker Interviewed	1798	3108	2268	1283	1816	6641	8457
Child response rate	98.1	96.1	98.2	97.5	96.9	97.4	97.3
Children's overall response rate	94.0	93.1	95.2	94.5	92.7	94.4	94.0

Household Characteristics

Table HH.2 and Figure HH.1 gives the age and sex distribution of the survey population and the population pyramid respectively.

The survey in the four regions successfully interviewed 111,346 household members consisting of 55,378 males and 55,968 females. This gives an estimated average household size of 9.1 and a sex ratio 98 males per 100 females. This indicates that there are slightly more females than males in the four regions.

The four regions have a very youthful population and this is indicated in the five-year age distribution for both sexes. There is a higher proportion (55 percent) of persons in the lower age group (0-19 years) than for those in the higher age group (20 years and above).

The 2000 census results showed that the proportion of children less than 15 years old in the four regions was 41.2 percent. The HIRD Supplementary Survey results indicate that the proportion of children less than 15 years old in the four regions increased to 45 percent. The proportion of children between ages 0-17 is 51.4 percent. The dependent population (less than 15 years and 65+) increased slightly from 47.6 percent in 2000 to 49.9 percent in the HIRD Supplementary survey.

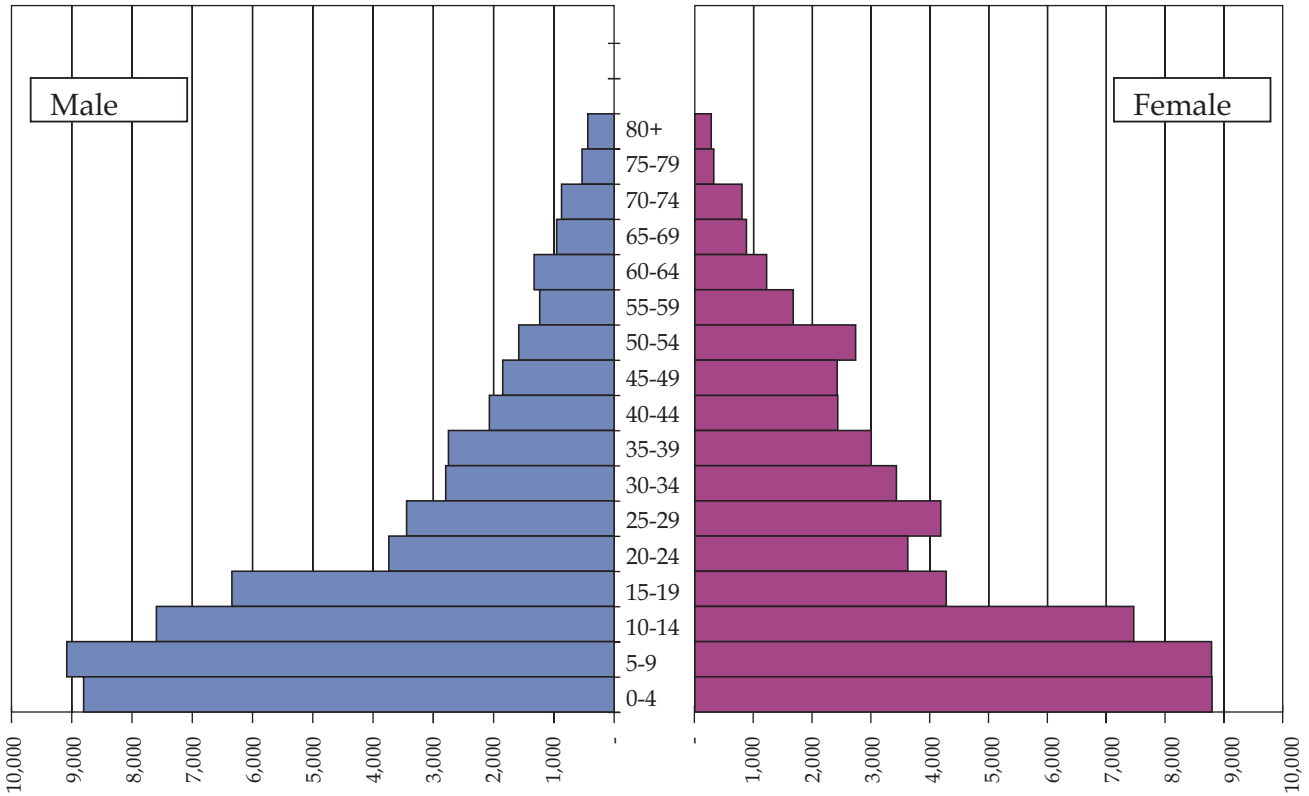
The sex composition of a population is influenced largely by the sex ratio at birth, differences between the sexes in death rates and differences between sexes in net migration. Generally, in most populations, there is a slight excess of males to females at birth. This results in males usually outnumbering females at younger ages (GSS 2005). The results of the HIRD Supplementary Survey are consistent with this observation. However, for the older age group (60-79 years), the number of males is more than that of females. This is inconsistent with most populations where the reverse is true.

Table HH.2: Household age distribution by sex

Percentage distribution of household population by five-year age groups and dependency age groups, and number of children aged 0-17 years, by sex, HIRD Supplementary Survey, 2007/2008

	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Age									
0-4	13.8	13.1	13.5	16.6	16.7	16.7	15.9	15.7	15.8
5-9	14.1	14.6	14.4	17.2	16.2	16.7	16.4	15.7	16.1
10-14	12.8	13.3	13.0	14.0	13.3	13.7	13.7	13.3	13.5
15-19	12.2	9.4	10.8	11.2	7.0	9.1	11.4	7.6	9.5
20-24	8.2	7.1	7.7	6.2	6.2	6.2	6.8	6.5	6.6
25-29	7.3	8.2	7.7	5.9	7.2	6.5	6.2	7.4	6.9
30-34	5.6	6.4	6.0	4.8	6.1	5.4	5.0	6.2	5.6
35-39	5.6	5.2	5.4	4.7	5.4	5.1	4.9	5.4	5.2
40-44	4.2	4.4	4.3	3.6	4.3	3.9	3.8	4.3	4.0
45-49	3.4	3.5	3.5	3.2	3.8	3.5	3.3	3.7	3.5
50-54	3.1	5.3	4.2	2.7	4.7	3.7	2.9	4.9	3.9
55-59	2.5	3.1	2.8	2.1	2.9	2.5	2.2	3.0	2.6
60-64	2.8	2.4	2.6	2.2	2.2	2.2	2.4	2.2	2.3
65-69	1.5	1.6	1.5	1.8	1.5	1.7	1.7	1.6	1.6
70-74	1.4	1.5	1.5	1.6	1.4	1.5	1.6	1.4	1.5
75-79	0.8	0.5	0.7	1.0	0.5	0.8	1.0	0.5	0.7
80+	0.7	0.4	0.5	0.8	0.6	0.7	0.8	0.5	0.6
Missing/DK	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Dependency age groups									
<15	40.7	40.9	40.8	48.0	46.3	47.2	46.0	44.8	45.4
15-64	54.9	54.9	54.9	46.6	49.7	48.1	48.9	51.1	50.0
65+	4.3	4.1	4.2	5.3	4.0	4.6	5.0	4.0	4.5
Missing/DK	0.1	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.1
Age									
Children aged 0-17	47.7	46.7	47.2	55.5	50.5	53.1	53.4	49.5	51.5
Adults 18+	52.3	53.3	52.8	44.5	49.5	46.9	46.6	50.5	48.5
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

Figure HH.1: Population Pyramid by age and sex, HIRD Supplementary Survey, 2007/2008



Source: HIRD Supplementary Survey, 2007/2008

Table HH.3 provides background information on households, the sex of the household head, place and area of residence, number of household members, and households with at least one child (0-17 years).

Socio-cultural factors such as kinship types, marriage, family and household formation largely influence living arrangements among society groups in Ghana in general. Ethnicity in Ghana also has great impact on the composition and the size of households. The sex of the head of household, size and household composition are also important factors that have an impact on household welfare. Furthermore, the number of people who constitute a household can provide useful insights for policy makers in ensuring equitable distribution of resources (GSS, 2005).

Table HH.3: Household composition

Percentage distribution of households by selected characteristics, HIRD Supplementary Survey, 2007/2008

	Weighted percentage	Number of households weighted	Number of households unweighted
Sex of household head			
Male	78.0	9507	9535
Female	22.0	2688	2652
Region			
Central	30.4	3707	3707
Northern	28.0	3410	3402
Upper East	27.3	3324	3324
Upper West	14.4	1754	1754
Area			
Urban	28.2	3440	3337
Rural	71.8	8755	8850
Number of household members			
1	13.3	1627	1621
2-3	24.6	2999	2966
4-5	28.6	3488	3460
6-7	19.2	2336	2353
8-9	8.1	989	1014
10+	6.2	755	773
At least one child aged < 18 years	77.1	12195	12187
At least one child aged < 5 years	48.5	12195	12187
At least one woman aged 15-49 years	71.9	12195	12187
Total	**100.0**	**12,195**	**12,187**

The 2007/2008 HIRD Supplementary Survey results in the four regions indicate that 22 percent of households are headed by women. This is slightly lower than the national average in the 2006 MICS (29 percent).

In the four regions, the most common household size is 4-5 members, representing 29 percent, followed by 2-3 household members (25 percent). The larger households might be due to socio-cultural factors in the three northern regions (Northern, Upper East and Upper West). Thirteen percent of the households are single-member households.

Nearly half of the households in the four regions have at least one child less than 5 years old. About 3 in 5 households have at least one child under 18 years old, and 72 percent of households have at least one woman aged 15-49 years (Table HH.3).

Table HH.4: Women's background characteristics

Percent distribution of women aged 15-49 years by background characteristics, HIRD Supplementary Survey, 2007/2008

	Weighted percent	Number of women weighted	Number of women unweighted
Region			
Central	19.2	2003	1981
Northern	34.1	3554	3545
Upper East	31.6	3288	3288
Upper West	15.1	1576	1576
Area			
Urban	28.6	2979	2628
Rural	71.4	7442	7762
Age			
15-19	15.9	1743	1642
20-24	15.1	1657	1511
15-24	31.0	3399	3153
25-29	13.8	1513	1393
30-34	15.8	1729	1613
35-39	13.8	1511	1513
40-44	11.1	1214	1251
45-49	9.6	1055	1026
Marital/Union status			
Currently married/in union	76.2	7936	7790
Formerly married/in union	5.4	558	774
Never married/in union	18.5	1927	1826
Motherhood status			
Ever gave birth	79.8	8320	8452
Never gave birth	20.2	2101	1938
Education			
None	64.4	6715	6009
Primary	15.0	1562	1906
Middle/JSS	14.8	1547	1880
Secondary +	5.7	597	595
Wealth index quintiles			
Poorest	18.4	1913	2063
Second	20.9	2175	2089
Middle	20.3	2120	2075
Fourth	20.3	2120	2088
Richest	20.1	2093	2075
Total	**100.0**	**10421**	**10390**

Characteristics of respondents

Table HH.4 provide information on the background characteristics of female respondents aged 15-49 years and of children under five years old. The Table also provide useful information on the distribution of women according to district, urban-rural location, age, marital status, motherhood and parenthood status, education[1], and wealth index quintiles[2] of female respondents aged 15-49. Seventy-six percent of women respondents are married or currently in union while 19 percent of women have never been married. Eighty percent of women interviewed have given birth at least once.

Generally, the proportion of respondent decreases with age. The 15-24 age group form 31 percent of the total respondents in the four regions. Seventy-one percent of total respondents reside in rural areas of the four regions. One in five women are from the richest wealth index quintile while, 18 percent are from the poorest wealth index quintile.

[1] *Unless otherwise stated, "education", when it is used as a background variable, refers to the highest educational level attended by the respondent.*

[2] *Principal components analysis was performed by using information on the ownership of household goods and amenities (assets) to assign weights to each household asset, and obtain wealth scores for each household in the sample (The assets used in these calculations were as follows: Persons per sleeping room; type of floor, roof, wall, cooking fuel, and sanitary facility; household assets; and source of drinking water). Each household was then weighted by the number of household members, and the household population was divided into five groups of equal size, from the poorest quintile to the richest quintile, based on the wealth scores of households they were living in. The wealth index is assumed to capture the underlying long-term wealth through information on the household assets, and is intended to produce a ranking of households by wealth, from poorest to richest. The wealth index does not provide information on absolute poverty, current income or expenditure levels, and the wealth scores calculated are applicable for only the particular data set they are based on. Further information on the construction of the wealth index can be found in Rutstein and Johnson, 2004, and Filmer and Pritchett, 2001.*

Table HH.4A: Adult literacy

Percentage of women aged 15-49 years that are literate, HIRD Supplementary Survey, 2007/2008

	Percentage literate *	Number of women aged 15-49 years
Region		
Central	50.8	2003
Northern	16.5	3554
Upper East	23.1	3288
Upper West	25.8	1576
Area		
Urban	38.4	2979
Rural	15.2	7442
Education		
None	0.1	6715
Primary	8.2	1562
Middle/JSS	100.0	1547
Secondary +	100.0	597
Age		
15-19	45.2	1657
20-24	28.9	1575
25-29	21.5	1951
30-34	13.6	1644
35-39	12.4	1437
40-44	11.9	1154
45-49	11.5	1003
Wealth index quintiles		
Poorest	23.1	1913
Second	20.8	2175
Middle	23.3	2120
Fourth	24.3	2120
Richest	30.9	2093
Total	**24.5**	**10421**

** MICS Indicator 60; MDG Indicator 8*

Adult literacy is an MDG indicator, and is an important background characteristic of respondents. In this survey, literacy was assessed on the ability of a respondent to read a short simple statement or questions on school attendance. The questions on literacy were asked only of respondents who had not attended school or attended primary or middle/JSS. Table HH.4A show the percent literate is the regions.

One in four women in the four regions is literate. There are considerable differences in literacy levels among the four regions. A little over half of the women in Central region are literate. Within the three Northern regions, women in Upper West region are more literate (26 percent) than those in Upper East and Northern regions. Northern region has the least proportion of literate women (17 percent).

As expected, the possibility of a person living in an urban area to be literate is higher (34 percent) than for women living in the rural area (15 percent). Literacy levels decreases with age – for example, 45 percent of women aged 15-19 year are literate compared to 12 percent of those in the 45-49 year group.

Women in the richest wealth index quintile (31 percent) are more likely to be literate than their counterpart in the poorest wealth index quintile (23 percent).

Table HH.5 presents further background characteristics such as distribution of children by sex, age (months), region and place of residence, mother's or caretaker's education of children under-five and wealth index quintiles.

There are no considerable differences in the proportion of girls to boys among under-five years in the four regions. There are however, slightly more (51 percent) boys than girls residing in urban areas. Children are evenly divided in each of the five one-year age groups. One in five children in the four regions is less than one year.

About one-third of children under-five years in all four regions are in the Northern region. Upper East region is second with 27 percent of children under five years, followed by Central region with 21 percent of the children. Upper West region has the least proportion (15 percent) of children under-five years in the four regions.

A high proportion of mothers or caretakers of children under five have little or no education (83 percent). One out of ten mothers has primary level education, 5 percent have middle/JSS education and about 3 percent have secondary or higher education.

Table HH. 5: Children's background characteristics

Percentage distribution of children under five years of age, by background characteristics, HIRD Supplementary Survey, 2007/2008

	Total	Number of under-5 children weighted	Number of under-5 children unweighted
Sex			
Male	49.5	4193	4198
Female	50.5	4273	4259
Region			
Central	21.2	1798	1798
Northern	36.8	3117	3108
Upper East	26.8	2268	2268
Upper West	15.2	1283	1283
Age			
< 6 months	10.7	910	904
6-11 months	11.1	940	939
12-23 months	19.5	1654	1670
24-35 months	19.9	1689	1666
36-47 months	20.8	1762	1770
48-59 months	17.8	1511	1508
Mother's education			
None	82.5	6985	3896
Primary	10.0	844	2173
Middle/JSS	48	405	1672
Secondary+	2.7	232	716
Wealth index quintiles			
Poorest	21.7	1837	1685
Second	19.7	1670	1693
Middle	19.0	1605	1679
Fourth	19.3	1637	1703
Richest	20.3	1717	1696
Total	**100.0**	**8466**	**8457**

IV. Infant and Child Mortality

This chapter describes levels, trends, and differentials in early childhood mortality and high-risk fertility behavior of women in the Upper East, Upper West, Northern and Central regions of Ghana. One of the overarching objectives of the MDGs and World Fit for Children (WFFC) is to reduce infant and under-five mortality. Specifically, the MDGs call 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.

Childhood mortality in general and under-five mortality in particular contributes to a better understanding of a country's socio-economic situation and sheds light on the quality of life of the population. Such analyses are thus useful for identifying promising directions for health programmes and for advancing child survival efforts. Measures of childhood mortality are also useful for population projections. The information in this chapter is disaggregated by socio-economic and demographic characteristics since studies have shown the existence of differentials in mortality by these characteristics, and the disaggregation helps to identify subgroups that are at high risk. Preparation, implementation, and monitoring and evaluation of population, health, and other socio-economic programs and policies depend to a large extent on target population identification.

The mortality rates presented in this chapter are computed using direct measures from birth histories collected from the female respondents, to produce robust estimates that are comparable with the ones obtained from other sources in the country like the Ghana Demographic and Health Surveys (GDHS). Women in the age group 15-49 were asked if they had ever given birth, and if they had, they were asked to report the number of sons and daughters living with them, the number living elsewhere, and the number who had died. A detailed history of all live births was gathered in chronological order starting with the first live birth. Women were asked whether a live birth was single or multiple; the sex of the child; the date of birth (month and year); survival status; age of the child on the date of the interview if alive; and if not alive, the age at death of each child born alive.

Definitions

Childhood mortality estimates measure the risk of dying from birth upto age five. Since the primary causes of childhood mortality change as children agefrom biological factors to environmental factorschildhood mortality rates are expressed by age categories and are customarily defined as follows:

Neonatal mortality (NN)	: the probability of dying between birth and the first month of life
Postneonatal mortality (PNN)	: the difference between infant and neonatal mortality
Infant mortality (1q0)	: the probability of dying between birth and exact age one
Child mortality (4q1)	: the probability of dying between exact ages one and five
Under-five mortality (5q0)	: the probability of dying between birth and exact age five.

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

Assessment of Data Quality

The reliability of mortality estimates depends on the sampling variability of the estimates and on nonsampling errors. Sampling variability and sampling errors are discussed in details in this Report (Annex A and C). Nonsampling errors depend on the extent to which the date of birth and age at death are accurately reported and recorded and the completeness with which child deaths are reported. Omission of births and deaths affects mortality estimates, displacement of birth and death dates impacts mortality trends, and misreporting of age at death may distort the age pattern of mortality. Typically, the most serious source of nonsampling errors in a survey that collects retrospective information on births and deaths is the underreporting of births and deaths of children who were dead at the time of the survey. When selective omission of childhood deaths occurs, it is usually most severe for deaths in early infancy. If early neonatal deaths are selectively underreported, the result is a low ratio of deaths under seven days to all neonatal deaths and a low ratio of neonatal to infant deaths. Under-reporting of early infant deaths is most commonly observed for births that occurred longer before the survey; hence, it is useful to examine the ratios over time.

Inspection of these ratios (Annex B, Table DQ.11) indicates that no significant numbers of early infant deaths were omitted in the HIRD Supplementary Survey. Firstly, the proportion of neonatal deaths occurring in the first week of life is estimated at 83 percent for the sampled regions (0-4 years before the survey). Further, while the proportion seems significantly lower after the 0-4 years period (74 percent), which may indicate omission of dead children born in the 5-9 and 10-14 years prior to the survey, this is still plausible since a ratio of about 70 percent is often considered as normal[3]. The results are also similar to those found in other surveys, which shows that in Ghana, an estimated 40 percent of neonatal deaths occur in the first 24 hours and 75 percent in the first 7 days of life (GHS, 2008). Secondly, the proportion of infant deaths occurring during the first month of life is plausible (53 percent), and is stable over the 15 years before the survey. This is also consistent with other studies that reveal that in Ghana, newborn deaths are an important component of child mortality, representing an estimated 40 percent of all deaths (GHS, 2008).

Heaping of the age at death on certain digits is another problem that is inherent in most retrospective surveys. This phenomenon introduces biases in rate calculation, if the net result is to shift deaths from one age segment to another. Thus, heaping at 12 months causes concern because a certain fraction of deaths, though reported to occur after infancy (i.e. at ages 12-23 months), may have actually occurred during infancy (i.e., at ages 0-11 months). In such a case, the infant mortality rate will be biased downwards and child mortality upwards. Table DQ.12 (Annex D) presents the distribution of deaths reported at ages 0-24 months by reported age at death for three 5-year periods preceding the survey. Distinct 'heaps' of deaths are evident at 6, 12 and 18 months of age, with corresponding deficits in the adjacent months. More troublesome are the large number of deaths reported at '1 year', which are likely as a result of digit preference and misreporting or not probing of interviewers. This 'heaping' took place in spite of the care taken in the HIRD Supplementary Survey to minimize errors of this nature by insisting that age at death be recorded in days if the death took place within one month after birth, in months if the child died within 24 months of birth, and in years if the child died between ages two and five. Nevertheless, this is not markedly different from the levels of 'heaping' seen in other retrospective surveys.

[3] *There are no models for mortality patterns during the neonatal period. However, one review of data from developing countries concluded that at levels of neonatal mortality of 20 per 1,000 or higher, approximately 70 percent of neonatal deaths occur within the first six days of life (Boerma, 1988).*

In sum, internal consistency checks indicate that the mortality data from the HIRD Supplementary Survey are of reasonable quality. The imprecise reports of ages at death, especially the reports of '1 year', may introduce a small downward bias in the estimation of infant mortality and an upward bias in the estimation of child mortality. However, the evaluation of trends in the survey would not be affected. Finally, as the periods covered extend further into the past, the resulting censoring of information becomes progressively more severe. To minimize the effect of censoring, analysis of child mortality trends is limited to a period no more than 15 years prior to the survey.

Levels and Trends of Early Childhood Mortality

Table CM.2 provides estimates of childhood mortality for the 15 years preceding the survey in three five-year periods for the four regions. Central region had the lowest infant mortality and under-five mortality rates among the four regions. For the most recent five-year period, corresponding approximately to 20032007/2008, the infant mortality rate was estimated at 55 per 1,000 live births, while the under-five mortality rate was estimated at 83 per 1,000 live births for the Central Region. The Northern region had the highest rates for the two indicators 64 and 120 per 1,000 live births respectively. For the Upper East region, the infant mortality rate was estimated at 57 per 1,000 live births, while the under-five mortality rate was estimated at 93 per 1,000 live births. Infant mortality for the Upper West region was 62 deaths per 1,000 live births, while the under-five mortality was 113 per 1,000 live births. Neonatal mortality in the four regions was fairly consistent (29 per 1,000 live births for Central, Northern and Upper East regions, and 32 for Upper West region). This means that neonatal deaths are still a key component of all infant and under-five deaths in the four regions and Ghana in general.

In the Central region, the survey results reveal that for the 15-year period preceding the survey, under-five mortality declined by about 14 percent from 97 to 83 deaths per 1,000 live births. Infant mortality declined by 8 percent from 60 to 55 deaths per 1,000 live births. In the region, child mortality had the largest decline of 28 percent from 40 to 29 deaths per 1,000 live births (Table CM.2 and Figure CM.1).

In the Northern region, for the 15-year period preceding the survey, the findings show a decline in under-five mortality by about 33 percent from 178 to 120 deaths per 1,000 live births. Infant mortality declined by 26 percent from 87 to 64 deaths per 1,000 live births. Child mortality had the largest decline of 39 percent from 99 to 60 deaths per 1,000 live births. During the same period, neonatal mortality decreased from 42 to 29 deaths per 1,000 live births, marking a 31 percent reduction.

In the Upper East region, during the 15-year period preceding the survey, the findings show a decline in under-five mortality by about 32 percent from 136 to 93 deaths per 1,000 live births. Infant mortality declined by 28 percent from 79 to 57 deaths per 1,000 live births, and neonatal mortality decreased from 38 to 29 deaths per 1,000 live births, marking a 24 percent reduction.In the Upper West region, the findings show a decline in under-five mortality of about 34 percent from 170 to 113 deaths per 1,000 live births in the 15-year period preceding the survey. Infant mortality declined by 24 percent from 82 to 62 deaths per 1,000 live births. During the same period, neonatal mortality decreased from 45 to 32 deaths per 1,000 live births, marking a 13 percent reduction (Table CM.2 and Figure CM.1).

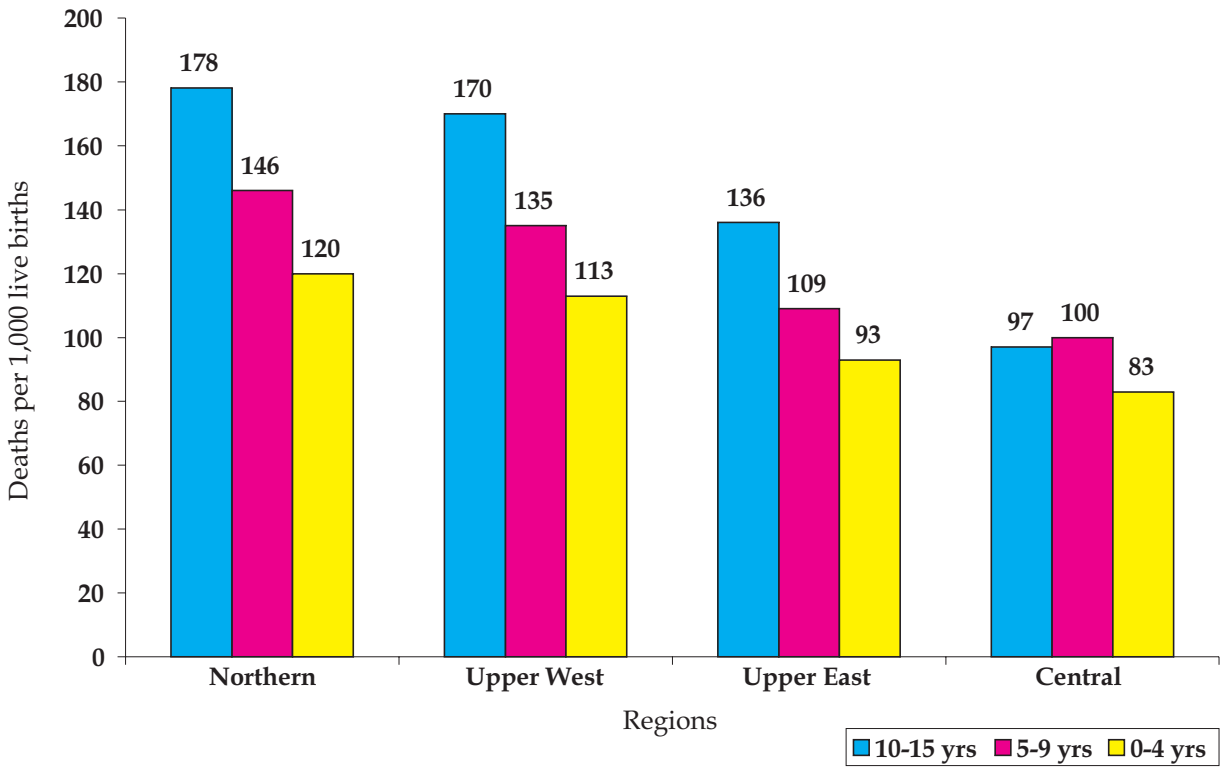
Table CM.1 Early childhood mortality rates

Neonatal, postneonatal, infant, child, and under-five mortality rates for **five-year** periods preceding the survey, HIRD Supplementary Survey, 2007/2008

Years preceding the survey	Approximate calendar period	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality (1q0)*	Child mortality (4q1)	Under-five mortality (5q0)**
Central Region						
0-4	2004-2008	29	26	55	29	83
5-9	1999-2003	38	28	66	36	100
10-14	1994-1998	31	29	60	40	97
Northern Region						
0-4	2003-2007	29	34	64	60	120
5-9	1998-2002	33	41	74	78	146
10-14	1993-1997	42	45	87	99	178
Upper East Region						
0-4	2003-2007	29	28	57	38	93
5-9	1998-2002	40	24	63	48	109
10-14	1993-1997	38	41	79	62	136
Upper West Region						
0-4	2003-2007	32	30	62	55	113
5-9	1998-2002	32	43	74	66	135
10-14	1993-1997	45	37	82	95	170

** MICS indicator 2; MDG indicator 14* *** MICS indicator 1; MDG indicator 13*

Figure CM.1: Trends in Under-five Mortality at 0-4 years, 5-9 years and 10-14 years before Survey, HIRD Supplementary Survey, 2007/2008



Socio-economic Differentials in Childhood Mortality

Tables CM.3 show differentials in childhood mortality by three socio-economic variables: residence (urban-rural), mother's education and wealth quintiles for the four regions where the survey was conducted. 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.3 are calculated for a ten-year period (19982007/8) preceding the survey.

From Table CM.2 it is apparent that infant and child survival are associated with the socio-economic characteristics of mothers. Generally, mortality in urban areas is consistently lower than in rural areas for Central, Northern and Upper West regions. In the Upper East region, no significant differences in under-five mortality between urban and rural residences are observed; the rate is estimated at 99 and 101 per 1,000 live births respectively (Figure CM.2). The urban-rural difference is even more pronounced in the Upper West region, where there is an 18 percent difference between rural and urban under-five mortality (127 and 103 deaths per 1,000 live births).

Table CM.2 Early childhood mortality rates by socioeconomic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by background characteristic, HIRD Supplementary Survey, 2007/2008

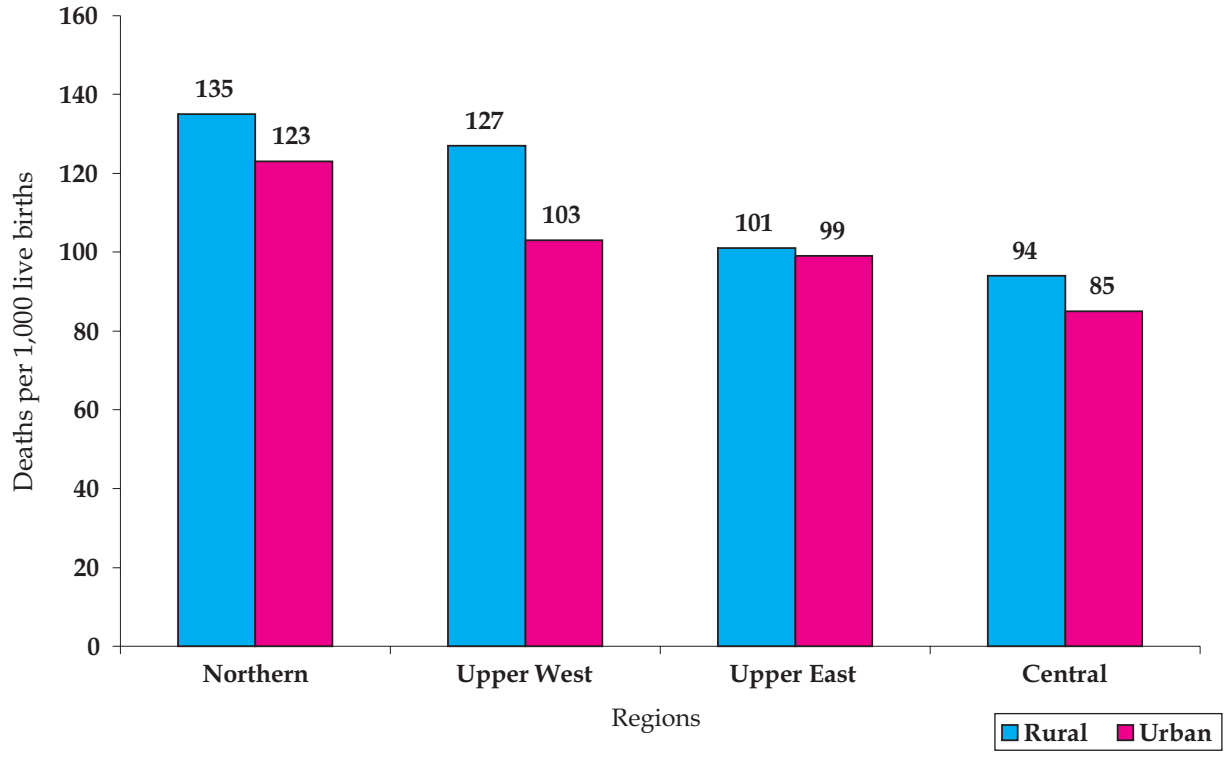
	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
CENTRAL REGION					
Residence					
Urban	31	26	57	30	85
Rural	35	28	63	33	94
Mother's education					
No education	43	30	73	36	106
Primary	24	28	53	28	79
Secondary +	35	25	59	32	90
Wealth quintile					
Poorest	32	26	58	40	95
Second	32	25	57	25	81
Middle	40	24	65	29	91
Fourth	30	24	54	28	81
Highest	34	35	69	38	104
NORTHERN REGION					
Residence					
Urban	29	37	66	61	123
Rural	32	38	70	70	135
Mother's education					
No education	31	38	69	69	133
Primary	30	43	72	62	130
Secondary +	(42)	25	66	64	126
Wealth quintile					
Poorest	17	37	54	65	116
Second	30	39	69	78	141
Middle	40	44	84	77	155
Fourth	37	36	73	73	141
Highest	35	32	67	50	113
UPPER EAST REGION					
Residence					
Urban	36	29	65	37	99
Rural	34	25	59	45	101
Mother's education					
No education	34	23	58	42	97
Primary	33	33	66	53	116
Secondary +	(37)	32	69	37	103
Wealth quintile					
Poorest	41	33	74	60	129
Second	36	23	60	48	104
Middle	33	23	56	37	91
Fourth	31	24	54	32	85
Highest	30	26	56	38	91
Total	34	26	60	43	101
UPPER WEST REGION					
Residence					
Urban	27	22	49	57	103
Rural	32	38	70	61	127
Mother's education					
No education	33	34	67	64	127
Primary	(26)	43	68	47	112
Secondary +	(31)	44	74	48	119
Wealth quintile					
Poorest	(48)	41	90	59	143
Second	32	33	65	74	134
Middle	34	35	68	69	133
Fourth	29	39	68	56	120
Highest	(19)	35	54	32	84

Figures in parentheses '( )' are based on 250-499 exposed persons

Numerous studies have demonstrated a strong relationship between a mother's level of education and the survival of her child. However, according to the HIRD Supplementary Survey, the pattern is not consistent in all four regions. For example, in the Upper East region, childhood mortality rates are higher for women with secondary and higher education, and lowest for mothers with little or no education. In the Central region, while mortality is consistently higher for mothers with little or no education for all childhood mortality, there is an irregular pattern for mothers with primary, secondary or higher education. In the Upper West region, infant mortality is 67 per 1,000 live births for mothers with little or no education, and increases slightly to 74 per 1,000 live births for children whose mothers have secondary or higher education. In the Northern region, the pattern is also not consistent. For example, little variations are observed between infant mortality and mother's education. For mothers with little or no education, infant mortality is 69 per 1,000 live births, for mothers with primary education, infant mortality is estimated at 72 deaths per 1,000 live births, while for those with secondary or higher education, infant mortality is 66 per 1,000 live births (Table CM.3).

The survey found that in the 3 Northern regions, more than 60 percent of women had little or no education, less than 20 percent had primary education, and about 5 percent had secondary or higher education (Table HH.4). It is generally expected that more educated women are less likely to under-report the number of deaths and misquote the actual age at death than those less educated. The aberrant patterns may likely be attributed to the large sampling errors associated with the rates among women with higher education, and need to be treated with caution.

Figure CM.2: Under-five Mortality by Area of Residence, HIRD Supplementary Survey, 2007/2008



Demographic Characteristics and Childhood Mortality

Studies have shown that a number of demographic factors 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 shows the relationships between childhood mortality and these demographic variables. For all variables, mortality 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 in the four regions (Table CM.3). With the exception of neonatal mortality which is fairly similar between boys and girls, male mortality exceeds female mortality at all levels in the Upper East region. Studies have also 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 seen in Table CM.3, exhibiting the expected U-shaped relationship with mother's age high for women in the young age groups, low for women in the middle age groups, and high for women in the older age groups. In the Northern region for example, the infant mortality rate for women under 20 years when they gave birth is estimated at 99 deaths per 1,000 live births. The rate decreases for women who gave birth at age 20-29 years and 30-39 years (62 and 64 deaths per 1,000 live births respectively), and then rises to 96 deaths per 1,000 live births for women who gave birth at age 40-49 years. The higher rates may be related to biological factors that lead to complications during pregnancy and delivery.

Table CM.3 Early childhood mortality rates by demographic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by demographic characteristics, HIRD Supplementary Survey, 2007/2008

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
CENTRAL REGION					
Child's sex					
Male	44	26	70	33	100
Female	23	28	52	32	82
Mother's age at birth					
<20	(35)	33	68	32	98
20-29	33	26	59	29	86
30-39	33	23	56	41	95
40-49	(42)	64	106	*	106
Birth order					
1	39	25	64	35	97
2-3	25	23	48	24	71
4-6	39	28	67	40	104
7+	35	44	79	34	110
Previous birth interval					
<2 years	(67)	33	100	23	121
2 years	27	27	54	38	90
3 years	23	32	54	28	81
4+ years	23	22	46	32	76
NORTHERN REGION					
Child's sex					
Male	38	38	76	75	145
Female	25	37	62	61	120
Mother's age at birth					
<20	46	53	99	57	150
20-29	25	37	62	66	124
30-39	32	32	64	78	137
40-49	(49)	47	96	53	143
Birth order					
1	38	45	83	64	142
2-3	25	33	59	59	114
4-6	29	35	65	77	137
7+	41	43	84	75	153
Previous birth interval					
<2 years	61	62	124	105	216
2 years	31	38	69	75	139
3 years	26	31	57	65	118
4+ years	12	21	33	38	70
UPPER EAST REGION					
Child's sex					
Male	34	27	61	49	107
Female	35	24	59	37	94
Mother's age at birth					
<20	38	26	64	43	105
20-29	34	26	60	41	99
30-39	33	25	58	42	97
40-49	(39)	29	68	77	139
Birth order					
1	41	32	73	36	107
2-3	31	22	53	34	85
4-6	29	27	56	51	105
7+	52	22	74	62	132
Previous birth interval					
<2 years	(74)	39	113	84	187
2 years	37	31	68	57	121
3 years	23	22	45	36	80
4+ years	24	16	40	25	64

Table CM.3 Early childhood mortality rates by demographic characteristics (cont.)

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by demographic characteristics, HIRD Supplementary Survey, 2007/2008

UPPER WEST REGION					
Child's sex					
Male	36	35	72	60	127
Female	28	37	65	61	122
Mother's age at birth					
<20	(72)	51	124	72	187
20-29	29	39	68	44	109
30-39	26	29	56	81	132
40-49	(31)	(29)	60	52	109
Birth order					
1	58	50	108	53	156
2-3	24	34	58	50	105
4-6	23	34	57	65	119
7+	41	33	74	80	148
Previous birth interval					
<2 years	66	80	145	97	228
2 years	17	34	51	68	115
3 years	26	22	48	60	105
4+ years	14	15	29	27	55

Rates based on 250-499 exposed persons are in parenthesis '( )'

The birth interval also affects survival when there is less than two years between pregnancies, demonstrating the importance of spacing on child survival. This is consistent in all four regions. In the Central region for example, infant mortality for children born at less than a two-year interval is 100 deaths per 1,000, and reduces to 54 deaths per 1,000 live births, an estimated 46 percent reduction when the birth interval is 2 or 3 years. Under-five mortality reduces by 33 percent from 121 deaths per 1,000 live births (birth interval less than 2 years) to 81 deaths per 1,000 live births when a birth occurs 3 years after a previous birth.

First births and higher order births generally face an elevated risk of mortality. Data from the four regions confirm this pattern for the most part. In the Upper West region for example, birth order seven and higher experiences the highest levels of childhood mortality; and mortality is lowest for second and third order births.

Figure CM.3: Under-5 Mortality by selected Demographic Characteristics, HIRD Supplementary Survey, 2007/2008

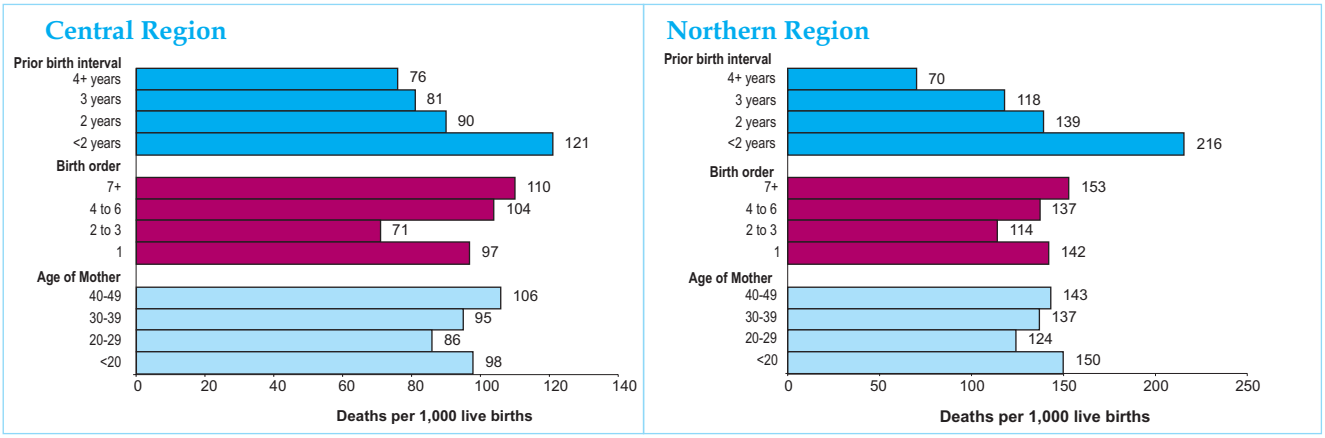
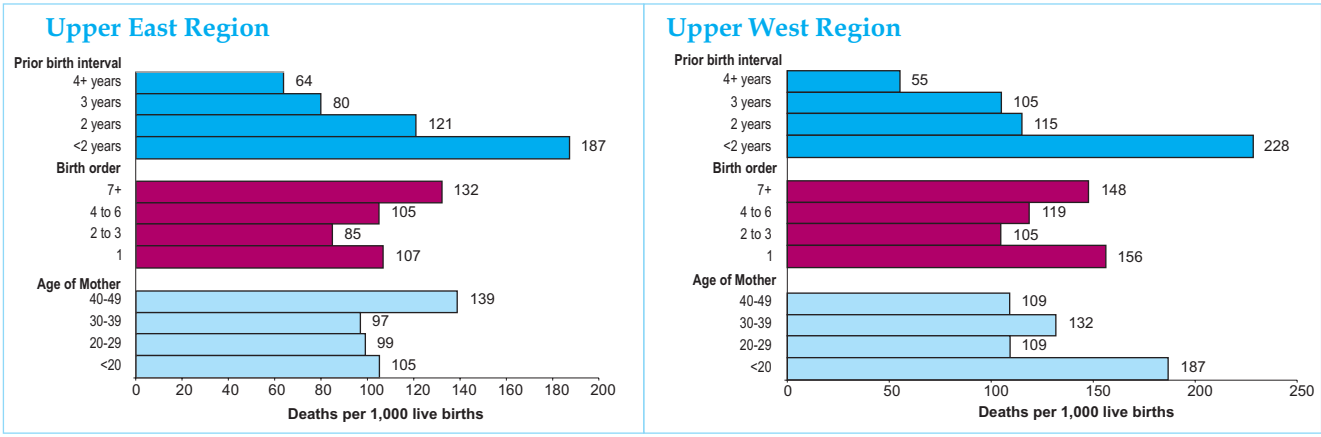


Figure CM.3: Under-5 Mortality by selected Demographic Characteristics, HIRD Supplementary Survey, 2007/2008 (cont.)



High-risk Fertility Behavior

Children's survival chances are associated with certain characteristics of fertility behavior. These characteristics are of particular importance in this section because they are easily avoidable at a relatively low cost. Typically, infants and children have an elevated risk of dying if their mothers are too young (under 18 years of age) or too old (over 35 years old), if they are born after too short a birth interval (less than 24 months), and if their mothers have already had many children. Although first births are commonly associated with higher mortality risk, they are not included in the high-risk category because the risks associated with first births are unavoidable.

Table CM.5 shows the percent distribution of children born in the five-years preceding the survey and the percent distribution of currently married women, by risk factors in the Central, Northern, Upper East and Upper West regions. The Table also shows the risk ratio of dying for children, by comparing the proportion of dead children in each risk category with the proportion of dead children not in any high-risk category.

The first column in Table CM.5 shows the percentage of births occurring in the five years before the survey that fall into the various risk categories. Slightly more than half (55 percent) of births in the four regions have elevated mortality risks, which are avoidable, and one out of every three births were not in any high-risk category. Among those who are at risk, 32 percent of births are in a single high-risk category, while 24 percent of births are in a multiple high-risk category. In general, risk ratios are higher for children in a multiple high-risk category than for those in a single high-risk category.

In the four regions, the most vulnerable births are those to women with a birth interval of less than 24 months and birth order is 3 or higher (3.4). This is followed by women who are age 35 or older, with a birth interval less than 24 months, and birth order three or higher (2.4). Fortunately, only 5 percent of births fall into this category. Twenty-four percent of births occur to mothers who have three or more births, and 18 percent of births occur to mothers who are 35 years or older and have had three or more children. These children are more than twice as likely to die as children without any risk.

The last column of Table CM.5 shows the distribution of currently married women who have the potential for having a high-risk birth by category. This was obtained by simulating the distribution of currently married women by the risk category in which a birth would fall if a woman were to conceive at the time of

the survey. This column is purely hypothetical and does not take into consideration the protection provided by family planning, postpartum insusceptibility, and prolonged abstinence. However, it provides an insight into the magnitude of high-risk fertility behavior. Four in every five women are potentially at risk of giving birth to a child with an elevated risk of mortality. One in two of these women is or would be too old, and have or would have too many children. A substantially higher proportion of women have the potential of having a birth in a multiple high-risk category than in a single high-risk category.

Table CM.5 High-risk fertility behavior

Percent distribution of children born in the five years preceding the survey by category of elevated risk of mortality and the risk ratio, and percent distribution of currently married women by category of risk if they were to conceive a child at the time of the survey, HIRD Supplementary Survey, 2007/2008

Risk category	Births in the 5 years preceding the survey		Percentage of currently married women[1]
	Percentage of births	Risk ratio	
Not in any high risk category	29.1	1.0	16.1[a]
Unavoidable risk category			
First order births between ages 18 and 34 years	15.9	1.5	4.2
Single high-risk category			
Mothers's age <18	3.4	1.8	0.3
Mothers's age >34	1.3	0.5	3.6
Birth interval <24 months	3.3	1.9	8.9
Birth order >3	23.6	1.1	14.6
Subtotal	**31.6**	**1.3**	**27.3**
Multiple high-risk category			
Age <18 & birth interval <24 months[2]	0.1	3.7	0.1
Age >34 & birth interval <24 months	0.1	0.0	0.2
Age >34 & birth order >3	18.4	1.6	34.4
Age >34 & birth interval <24 months & birth order >3	1.5	2.4	7.2
Birth interval <24 months & birth order >3	3.4	3.4	10.3
Subtotal	**23.5**	**1.9**	**52.3**
In any avoidable high-risk category	55.0	1.5	79.6
Total	**100.0**	-	**100.0**
Number of births/women	9,226	-	8,547

Note: Risk ratio is the ratio of the proportion dead among births in a specific high-risk category to the proportion dead among births not in any high-risk category.

Na = Not applicable

[1] *Women are assigned to risk categories according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age less than 17 years and 3 moths or older than 34 years and 2 months, latest birth less than 15 months ago, or latest birth being of order 3 or higher*

[2] *Includes the category age <18 and birth order >3*

[a] *Includes sterilized women*

V. Nutrition

Nutritional Status

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

In a well-nourished population, there is a standard distribution of height and weight for children under age five. Malnourishment in a population can be measured by comparing children to a reference distribution. The reference population used here is the WHO/CDC/NCHS reference, which is recommended for use by UNICEF and the World Health Organization. Each of the three nutritional status indicators can be expressed in standard deviation units (z-scores) from the median of this reference population.

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 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.

Weight for children whose weight for height is more than two standard deviations below the median of the reference population are classified as wasted, while those who fall more than three standard deviations below the median are 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.

Finally, 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 underweight while those whose weight for age is more than three standard deviations below the median are classified as severely underweight.

Table NU.1 shows percentages of children classified in each of these categories, based on the anthropometric measurements that were taken during fieldwork by background characteristics. Additionally, the table includes the percentage of children who are overweight, i.e. those children whose weight for height is above 2 standard deviations from the median of the reference population.

Interviews were successfully completed for 8,466 children but about 5 percent was not included in the analysis because of missing height or weight values. Thus, 8,020 children with complete height and weight figures were included in this analysis. Nearly one in four children under age five in the selected regions of study (Central, Northern, Upper East and Upper West) are underweight, with 5 percent classified as severely underweight. Twenty-five percent of children in the study areas are stunted or too short for their age, while seven percent are wasted or too thin for their height. However, one percent of under-five children in these regions can be said to be overweight.

Table NU.1 : Child malnourishment

Percentage of under-five children who are severely or moderately undernourished, HIRD Supplementary Survey, 2007/2008

	Weight for age		Height for age		Weight for height			
	Percent below - 2 SD	Percent below-3 SD*	Percent below-2 SD	Percent below-3 SD**	Percent below-2 SD	Percent below-3 SD***	Percent above +2 SD	Number of children
Sex								
Male	24.6	5.4	26.6	7.7	8.2	0.9	1.1	3,967
Female	23.7	4.0	23.2	7.0	6.4	0.6	0.9	4,053
Region								
Central	18.6	2.3	20.6	4.6	4.6	0.1	1.1	1,704
Northern	29.3	6.8	31.1	10.4	8.8	1.2	1.1	2,891
Upper East	24.6	5.0	23.4	7.4	8.1	0.8	0.8	2,202
Upper West	18.6	2.5	18.9	4.0	6.0	0.5	0.9	1,223
Area								
Urban	22.1	4.2	20.6	5.4	8.1	0.7	1.0	1,774
Rural	24.7	4.8	26.1	8.0	7.1	0.7	1.0	6,245
Age								
< 6 months	2.0	0.5	5.0	1.4	2.0	0.2	3.9	841
6-11 months	23.1	4.8	13.2	3.4	10.0	0.7	1.8	910
12-23 months	38.0	8.2	31.2	8.7	17.8	2.3	0.6	1,616
24-35 months	29.0	7.5	26.4	8.2	6.1	0.6	0.2	1,634
36-47 months	21.3	2.6	29.1	9.1	3.0	0.3	0.4	1,640
48-59 months	19.5	2.2	30.6	9.1	2.9	0.0	0.8	1,378
Mother's education								
None	25.1	4.8	26.2	7.9	7.3	0.8	1.0	6,593
Primary	20.2	4.4	19.4	5.7	8.3	0.8	0.7	813
Middle/JSS	19.0	2.8	20.1	4.1	4.1	0.3	1.4	391
Secondary+	17.1	4.2	14.1	3.6	8.3	0.0	1.1	222
Wealth index quintiles								
Poorest	27.7	5.4	26.8	7.9	8.0	0.9	0.9	1,739
Second	23.9	4.2	26.4	8.1	6.8	0.7	1.2	1,588
Middle	24.0	5.4	25.9	8.8	6.7	0.7	0.8	1,528
Fourth	25.0	4.7	25.7	7.3	7.7	0.9	0.8	1,529
Richest	19.8	3.7	19.8	4.9	7.1	0.5	1.2	1,635
Total	**24.1**	**4.7**	**24.9**	**7.4**	**7.3**	**0.7**	**1.0**	**8,020**

** MICS indicator 6; MDG indicator 4; ** MICS indicator 7 *** MICS indicator 8*

There are no marked differences between males (25 percent) and females (24 percent) in the levels of underweight among children under five years. However, slightly more males are stunted and wasted than females in the four regions.

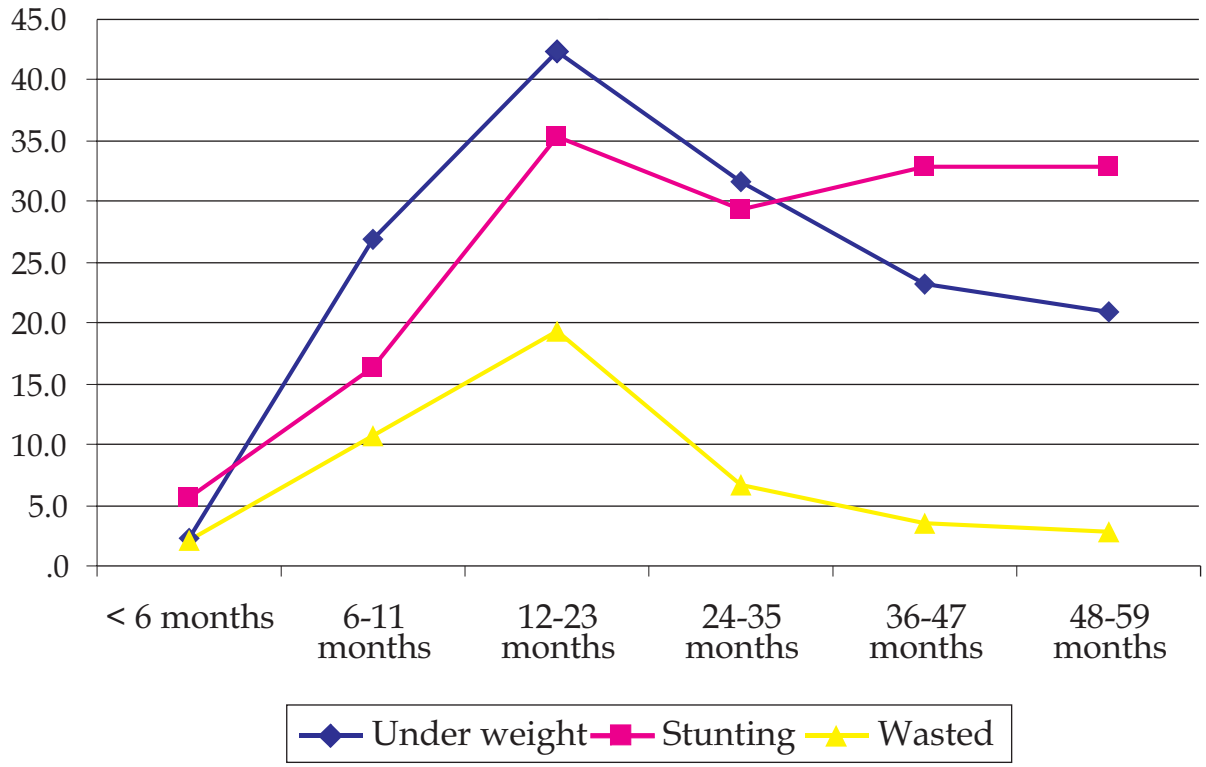
Regional variations in nutritional status of children are quite substantial. Both Northern and Upper East regions have underweight levels higher than the overall average (29 percent and 25 percent respectively). Children living in the Northern region recorded the highest level of stunting, followed by Upper East, and Central, all with levels above 20 percent, while Upper West recorded the lowest level of stunting at 19 percent. With regards to children that are wasted in the four regions, Northern region again, had the highest level of wasted children under five years old (9 percent) followed by Upper East region then Upper West region. Central region recorded the lowest prevalence of wasted children at five percent.

Little variations are observed between educational level and the socio-economic status of the mother and nutritional status of the child. For example, 25 percent of children whose mothers have secondary or higher

educations are underweight compared with 28 percent of children whose mothers have little or no education.

The age pattern shows that a higher proportion of children aged 12-23 months are underweight, stunted and wasted compared to children who are younger and older. This pattern is expected as most children are weaned at this age, thereby exposing them to contamination in water and food and from the environment and also inadequate amounts of food required for their healthy growth. Figure NU.1 shows underweight, stunting and wasting by age-group of children. The proportion of children underweight is lowest among children aged less than 6 months (2 percent) increases sharply to peak at 12-23 months (42 percent) and declines steadily to 21 percent among children aged 48-59 months.

Figure NU.1: Percentage of children under-five who are undernorished, HIRD Supplementary Survey, 2007/2008



A similar pattern exist for wasting among children, rising gradually from virtually two percent to reach a maximum of 19 percent by age 12-23 before decreasing sharply to about 3 percent among the oldest age group. Stunting, on the other hand, rises from a low level of nearly six percent, increases sharply to a peak of 35 percent by age group 12-23, decreases to 29 percent by age-group 24-35 then increases to 33 percent in the oldest group (48-59 months).

Breastfeeding

Appropriate feeding practices are essential for the survival, healthy growth and development of infants as well as for the well-being of their mothers. Breastfeeding for the first few years of life protects children from infection; it is an ideal source of nutrients, and is very 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. The *World Fit for Children* goal states that children should be exclusively breastfed for the first six months of life

and continue breastfeeding with safe, appropriate and adequate complementary feeding up to 2 years of age and beyond.

Initiation of Breastfeeding

Breastfeeding is sufficient for infant nutritional status in the first six months of life. It provides all the nutritional requirement of the infant child. It is recommended that breastfeeding be initiated within one hour of birth. Such early initiation of breastfeeding helps the newborn express its innate sucking reflex, thereby stimulating breast milk production. Table NU.2 shows the percentage of women with a child born in the two years preceding the survey who was breastfed within one hour of birth, and infants who were breastfed within one day of birth (which includes those who started within one hour), by some background characteristics.

Table NU.2: Initial breastfeeding

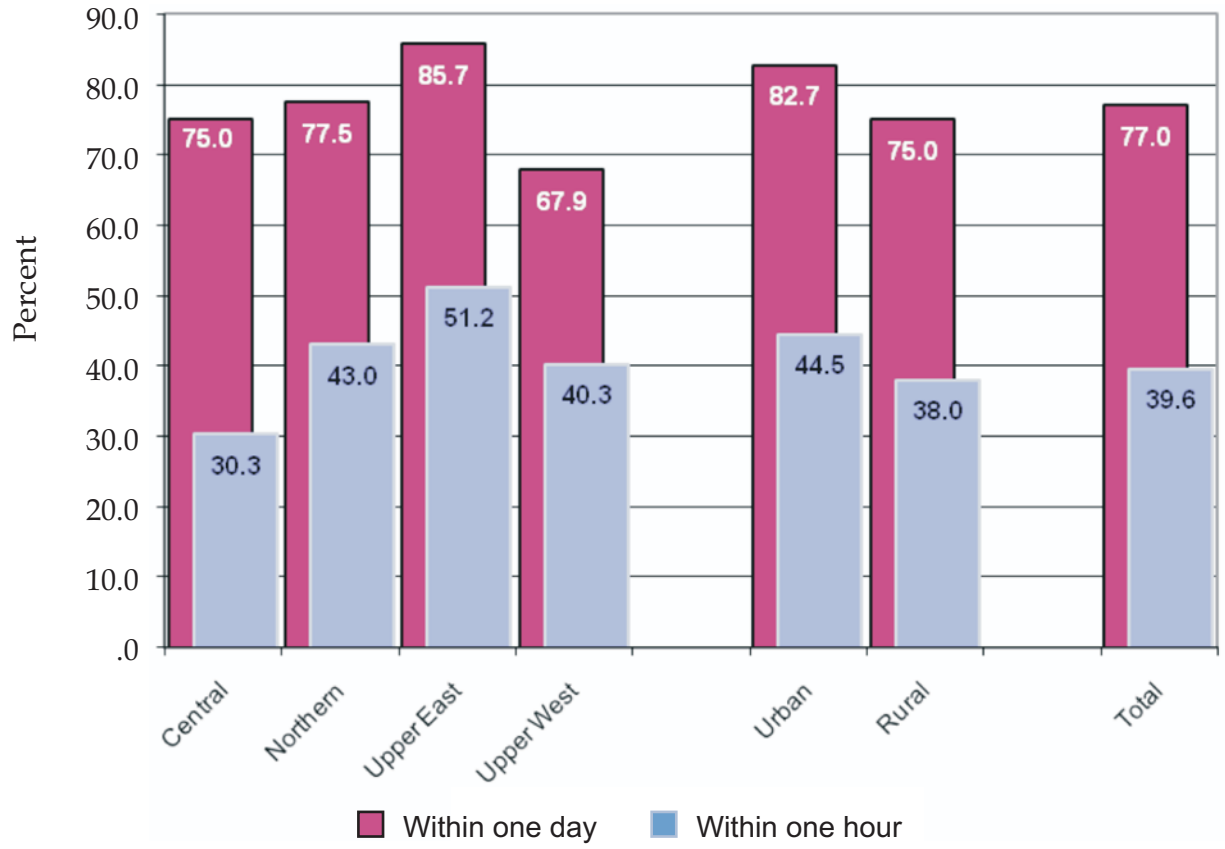
Percentage of women aged 15-49 years with a birth in the 2 years preceding the survey who breastfed their baby within one hour of birth and within one day of birth, HIRD Supplementary Survey, 2007/2008

	Percentage who started breastfeeding within one hour of birth*	Percentage who started breastfeeding within one day of birth	Number of women with a live birth in the two years preceding the survey
Region			
Central	30.3	75.0	762
Northern	42.8	774	1341
Upper East	51.2	85.7	914
Upper West	40.3	67.9	508
Area			
Urban	445	82.7	816
Rural	38.0	75.0	2409
Mother's Education			
None	42.1	76.4	1984
Primary	34.6	74.5	595
Middle/JSS	32.4	79.8	531
Secondary +	55.1	86.4	115
Wealth index quintile			
Poorest	41.1	78.3	636
Second	38.5	73.9	559
Middle	36.1	72.7	577
Fourth	36.3	75.8	640
Richest	44.3	82.1	812
Total	**39.6**	**77.0**	**3225**

** MICS indicator 45*

A total of 3,225 women aged 15-49 years had a live birth within the two years preceding the survey and of these, two-fifths breastfed their infants within an hour after birth while 77 percent breastfed within one day after birth. Initiation of breastfeeding varies among the regions. The proportion of infants that were breastfed within one hour of birth ranged from 30 percent in the Central Region to 51 percent in the Upper East region. The proportion of mother's breastfeeding their newborn within one day of birth also shows a different pattern. The Upper West region recorded the lowest proportion (68 percent) of mothers who breastfed their newborn infants within a day of birth whilst Upper East region recorded the highest for the same indicator (86 percent).

Figure NU.2: Percentage of mothers who started breastfeeding within one hour and within one day of birth, HIRD Supplementary Survey, 2007/2008



A higher proportion of infants born to women in urban areas were breastfed within one hour of birth than those born to women in rural areas (45 percent and 38 percent respectively). The same pattern holds for the proportion of infants that were breastfed within one day of birth (83 percent versus 75 percent).

The level of a mother's education as well as the socio-economic status of the household did not have a direct relationship with the proportion of infants breastfed within one hour and one day of birth respectively (Table NU.2). Although a higher proportion of mothers with secondary or higher level of education breastfed their infants within one hour than mothers with no education, the same cannot be said of mothers with some form of education. Nonetheless, there is a positive relationship between the level of a mother's education and breastfeeding the child within one day of birth. The proportion increased from 76 percent among mothers with no education to 80 percent among mothers with middle/JSS education, and further to 86 percent among those with secondary or higher education.

Age Pattern of Breastfeeding

The Ghana Health Service introduced the Baby Friendly Hospital Initiative (BFHI) in 1993. This has had a positive impact on breastfeeding initiation among Ghanaian women. Expecting and lactating mothers are encouraged to breastfeed their infants exclusively for the first six months and complement the breastfeeding with nutritious foods for at least two years. Supplementing breastfeeding before the sixth month is discouraged because of the high cost of infant formula in the country as well as the unhygienic conditions in which some mothers prepare and give the milk to their infants.

Table NU.3 presents breastfeeding status 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 (separately for 0-3 months and 0-5 months), as well as complementary feeding of children 6-9 months and continued breastfeeding of children at 12-15 and 20-23 months of age.

Sixty-seven percent of infants aged less than six months are exclusively breastfed, which is lower than what is recommended by WHO and the Ghana Health Service. At age 6-9 months, 56 percent of infants are receiving breast milk and solid or semi-solid foods. By age 12-15 months, 98 percent of infants are still being breastfed and by age 20-23 months, 73 percent of infants are still breastfed. The proportion of girls exclusively breastfed is higher than that of boys but the reverse is true for the proportions still breastfed over age 6-9 months.

Table NU.3: Breastfeeding

Percentage of living children according to breastfeeding status at each age group, HIRD Supplementary Survey, 2007/2008

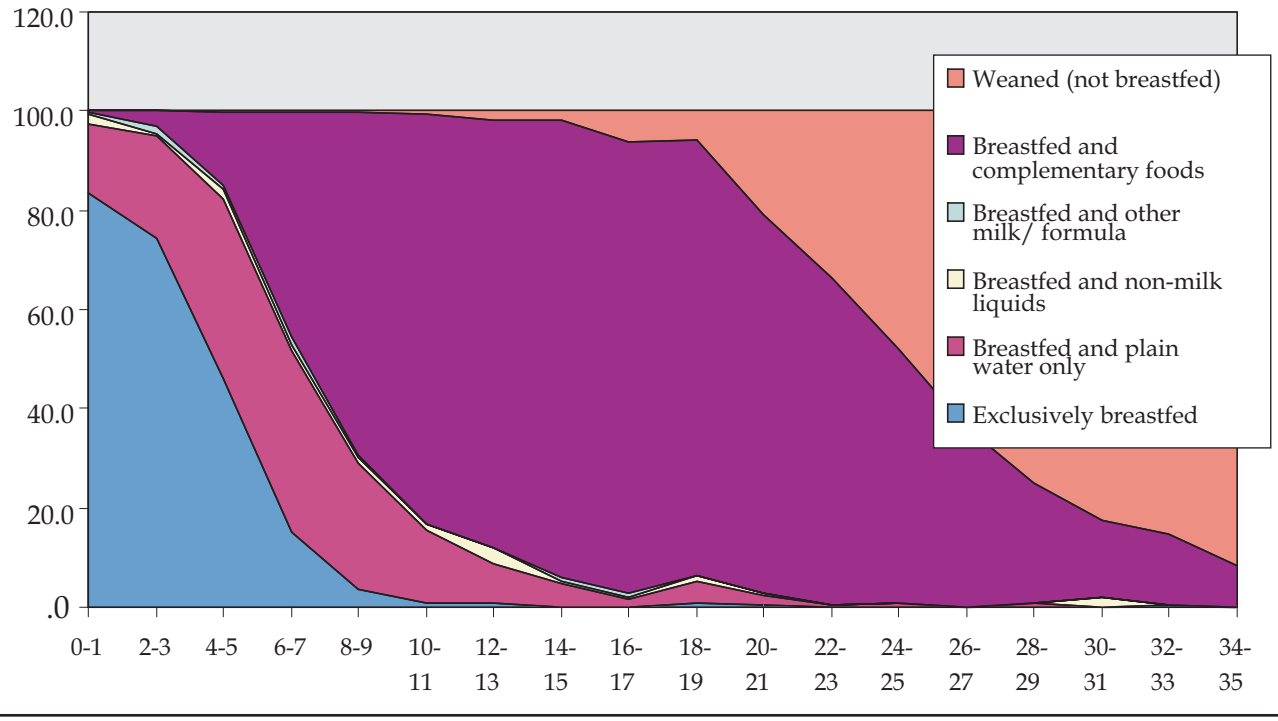
	Children 0-3 months		Children 0-5 months		Children 6-9 months		Children 12-15 months		Children 20-23 months	
	Percent exclusively breastfed	Number of children	Percent exclusively breastfed *	Number of Children	Percent receiving breast milk and solid/mushy food **	Number of children	Percent breastfed***	Number of children	Percent breastfed ***	Number of children
Sex										
Male	76.6	268	63.9	441	58.9	345	98.2	301	73.8	251
Female	79.4	295	68.8	469	51.5	297	98.1	269	71.8	308
Region										
Central	77.0	92	58.1	164	68.6	138	94.3	100	33.3	177
Northern	78.0	240	67.4	372	53.1	232	98.5	242	80.3	172
Upper East	70.6	157	54.9	258	52.7	159	97.5	145	84.3	125
Upper West	96.2	74	92.1	116	59.1	113	100.0	84	84.7	85
Mother's education										
None	76.7	448	63.5	726	53.0	503	98.4	457	72.8	462
Primary	79.9	70	70.0	110	60.2	88	97.0	66	71.1	50
Middle/JSS	(75.8)	27	(68.3)	44	(55.1)	34	(98.7)	29	(75.4)	31
Secondary+	*	18	(66.3)	30	*	17	*	18	*	16
Wealth index quintile										
Poorest	79.1	115	66.0	200	63.0	137	97.4	143	69.7	114
Second	77.9	103	67.8	175	54.9	133	98.4	113	71.2	99
Middle	83.5	126	72.7	184	52.1	130	97.6	100	76.8	107
Fourth	66.0	95	49.8	150	59.7	115	98.1	113	73.0	105
Richest	80.0	122	72.8	200	47.9	127	99.1	101	72.0	134
Total	**78.0**	**563**	**66.5**	**910**	**55.5**	**642**	**98.1**	**570**	**72.6**	**559**

** MICS indicator 15 *** MICS indicator 16; ** MICS indicator 17.*

Figures in asterisk (*) are based on 25 unweighted cases and has been suppressed

Figure NU.3 shows the detailed pattern of breastfeeding by the child's age in months. Even at the earliest ages, some infants are receiving plain water, other liquids or foods other than being exclusively breastfed. Among infants who were less than one month old, only 84 percent were being exclusively breastfed, with 16 percent being given plain water, other liquids and other milk or formula in addition to breast milk. By the end of the fifth month, the proportion of infants exclusively breastfed falls to only 42 percent. Complementary feeding is supposed to start by age six months when breast milk is not sufficient to provide the nutrient requirement for proper and healthy growth of the infant. Most infants within the surveyed regions were exclusively breastfed until 10 months of age. By age 23 months, a little over one-third of infants had been weaned. Breastfeeding decreased rapidly late in the second year of life and by age 35 months virtually all children (92 percent) have been weaned.

Figure NU.3: Infant feeding patterns by age: percent distribution of children aged less than 3 years by feeding patterns by group, HIRD Supplementary Survey, 2007/2008



The adequacy of feeding among infant under 12 months old is provided in Table NU.4. 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. Infants aged 6-8 months are considered to be adequately fed if they are receiving breast milk and complementary food at least two times per day, while infants aged 9-11 months are considered to be adequately fed if they are receiving breast milk and eating complementary food at least three times a day.

Overall, only 57 percent of infants aged less than 12 months are appropriately fed in the surveyed regions. The proportion of adequately fed infants varies slightly by sex with females adequately fed than males in the entire age bracket with the exception of 6-11 months age group where the reverse occurs.

Table NU.4: Adequately fed infants

Percentage of infants under 6 months of age exclusively breastfed, percentage of infants 6-11 months who are breastfed and who ate solid/semi-solid food at least the minimum recommended number of times yesterday and percentage of infants adequately fed, HIRD Supplementary Survey, 2007/2008

	0-5 months exclusively breastfed	Number of infants aged 0-5 months	6-8 months who received breastmilk and complementary food at least 2 times in prior 24 hours	Number of infants aged 6-8 months	9-11 months who received breastmilk and complementary food at least 3 times in prior 24 hours	Number of infants aged 9-11 months	6-11 months who received breastmilk and complementary food at least the minimum recommended number of times per day*	Number of infants aged 6-11 months	0-11 months who were appropriately fed**	Number of infants aged 0-11 months
Sex										
Male	63.9	440	46.8	259	49.1	241	47.9	500	55.8	940
Female	68.8	469	41.9	222	53.7	218	47.7	440	58.6	910
Area										
Urban	68.3	182	42.8	92	43.1	118	43.0	210	55.8	392
Rural	65.8	728	44.9	389	53.9	341	49.1	730	57.6	1458
Region										
Central	58.1	164	54.3	93	43.7	120	48.3	213	52.6	377
Northern	67.4	371	43.4	176	53.6	166	48.3	343	58.2	714
Upper East	54.9	258	41.9	123	47.9	106	44.7	228	50.1	486
Upper West	92.1	117	45.2	89	51.2	67	47.8	156	66.7	273
Mother's education										
None	63.5	726	44.2	385	55.0	360	49.2	945	56.5	1470
Primary	70.0	110	45.1	63	54.4	53	49.7	116	60.0	226
Middle/JSS	68.3	44	*	23	(41.2)	26	42.2	49	54.3	94
Secondary +	66.3	30	*	11	*	19	(48.0)	30	58.2	60
Wealth index quintiles										
Poorest	66.0	200	55.2	101	58.6	94	56.8	196	61.1	396
Second	67.8	175	44.5	100	58.6	90	50.8	190	59.5	366
Middle	72.7	184	34.7	96	47.8	85	40.8	181	57.4	365
Fourth	49.8	150	52.2	85	56.6	97	54.5	181	52.3	332
Richest	72.8	200	35.7	99	35.9	92	35.8	192	56.6	392
Total	**66.5**	**910**	**44.5**	**481**	**51.3**	**459**	**47.8**	**940**	**57.3**	**1850**

* *MICS indicator 18*
** *MICS indicator 19*

Figures in asterisk (*) are based on 25 unweighted cases and has been suppressed

There are also differences in the number of infants appropriately fed by region and place of residence. Adequacy of feeding among infants less than 12 months old in the four regions varies from 50 percent in the Upper East region to 67 percent among infants in the Upper West region. In addition, a slightly higher proportion of infants in rural areas were adequately fed than infants in urban areas across all ages.

There is an irregular relationship between age of the infant in months and the proportion adequately fed. Sixty-seven percent of infants aged 0-5 months were adequately fed, which is about two-thirds of all infants under six months old expected to be exclusively breastfed. The proportion decreased to 45 percent among infants aged 6-8 months. However, the proportion of infants aged 9-11 months adequately fed is 51 percent, indicating that about half of the infants aged 9-11 months were not adequately or appropriately fed. Furthermore, less than half (48 percent) of infants aged 6-11 months are appropriately fed in the surveyed regions.

No distinct variations are observed between the educational level of the mother as well as the socio-economic status of the household, and the proportion of appropriately or adequately fed infants.

Salt Iodization

Iodine deficiency disorder (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 risks 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. In Ghana, there are several programmes aimed at reducing micronutrient deficiencies among the population, especially children under five years. These include salt iodisation and Vitamin A supplementation. Iodine deficiency can be avoided by using salt that has been fortified with iodine. The indicator measuring the progress towards eliminating iodine deficiency is the percentage of households consuming adequately iodized salt (>15 parts per million).

The proportion of households consuming adequately iodised salt can be computed using two different approaches. One school of thought factors in households without salt in their computations whereas the second school of thought is based on only households with salt available. The first approach is usually used in the Multiple Indicator Cluster Survey (MICS), whereas the other is usually adopted by the Measure DHS. For purposes of comparison, both approaches have been computed to make our findings in the region comparable to both the 2006 MICS (presented in Table NU.5) and the 2003 Ghana Demographic and Health Survey results (see Table NU.5A).

Table NU.5 presents the percentage distribution of households with salt tested for iodine content by level of iodine in salt (parts per million), by background characteristics. The results show that salt used for cooking was tested in 94 percent of households in the Supplementary Survey of sample households. The salt was tested for iodine content by using salt test kits and testing for the presence of potassium iodide and potassium iodate content, and salt was not available in 6 percent of the households.

Table NU.5: Iodized salt consumption (MICS)

Percentage of households consuming adequately iodized salt, HIRD Supplementary Survey, 2007/2008

	Percent of households in which salt was tested	Number of households intervi ewed	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	< 15 PPM	15+ PPM*		
Region								
Central	89.3	3707	10.0	47.7	20.8	21.5	100.0	3678
Northern	95.9	3410	3.9	69.2	15.5	11.4	100.0	3386
Upper East	96.9	3324	2.8	73.0	12.5	11.8	100.0	3314
Upper West	93.7	1754	5.3	40.0	39.7	15.0	100.0	1735
Area								
Urban	92.4	3440	7.3	48.4	17.4	26.9	100.0	5482
Rural	95.8	8755	3.8	70.5	18.1	7.5	100.0	6631
Education of household head								
None	96.3	6992	3.4	71.6	17.3	7.7	100.0	5643
Primary	94.8	1513	5.0	63.4	19.2	12.4	100.0	1888
Middle/JSS	92.3	2356	7.2	52.4	22.0	18.3	100.0	2658
Secondary +	89.4	1333	9.8	33.4	14.4	42.3	100.0	1924
Wealth index quintile								
Poorest	94.0	2318	5.6	58.7	17.6	18.0	100.0	2364
Second	93.7	2297	5.8	58.6	18.6	16.9	100.0	2424
Middle	92.8	2319	6.8	58.7	18.2	16.2	100.0	2482
Fourth	95.7	2492	4.0	60.1	19.8	16.1	100.0	2476
Richest	93.9	2770	5.6	57.2	21.4	15.7	100.0	2367
Total	**94.0**	**12195**	**5.5**	**58.7**	**19.1**	**16.6**	**100.0**	**12113**

**MICS indicator 41*

Figure NU.4 shows the percentage of households consuming adequately iodized salt by region and place of residence, based on all households visited. Salt was found to contain 15 parts per million (ppm) or more of iodine in only 17 percent of households in the four regions. Use of adequately iodised salt is very low, ranging from 11 percent in the Northern region to 22 percent among households in the Central region.

Nineteen percent of households consumed iodated salt that had less than 15 parts per million (ppm); and in as high as 59 percent of households salt was not iodized. In the Upper East region, 73 percent of households consumed salt that was not iodised (the highest among the four regions), while Upper West recorded the lowest proportion of households consuming salt that was not iodised (40 percent).

The use of iodated salt is influenced by place of residence. Residents in urban households consuming adequately iodized salt were more than three times the number of households in rural areas consuming adequately iodized salt.

The educational level of the head of household had a positive relationship with consumption of adequately iodised salt. The proportion consuming adequately iodised salt in households in which the head had no education (8 percent) is markedly lower than in households whose head had secondary or higher level of education (42 percent). There were no wide variations among households consuming iodized salt and the socio-economic status of the household.

Figure NU.4: Percentage of households consuming adequately iodized salt, HIRD Supplementary Survey, 2007/2008

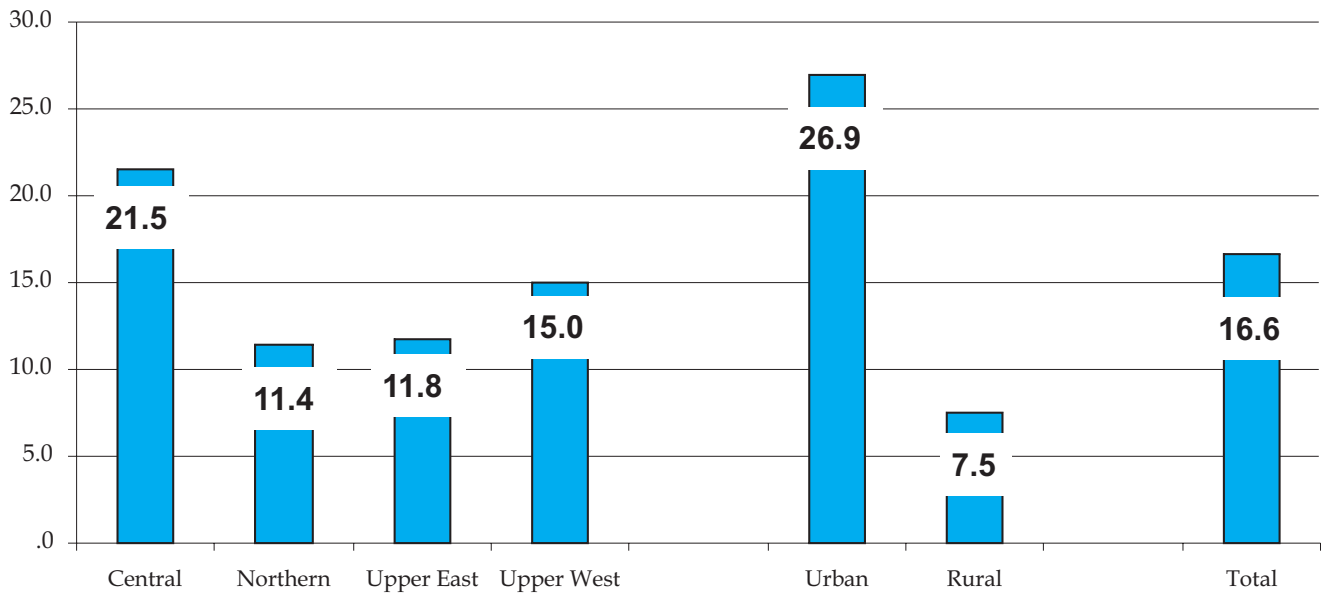


Table NU.5A presents data on the proportion of households consuming adequately iodated salt, based on households in which salt was available and tested. Although the findings are not too different from the first approach, the results shows that salt used for cooking was tested in 94 percent of households sampled. Of these households tested, only 18 percent were found to consume adequately iodised salt. One-fifth of households had less than 15 ppm, while in as many as two-thirds of households, salt was not iodised.

Table NU.5A: Iodized salt consumption (DHS)

Percentage of households consuming adequately iodized salt, HIRD Supplementary Survey, 2007/2008

	Percent of households in which salt was tested	Number of households interviewed	Percent of households with salt test result:			Total	Number of households in which salt was tested
			Not iodized	< 15 PPM	15+ PPM*		
Region							
Central	89.3	3707	53.0	23.1	23.9	100.0	3311
Northern	95.9	3410	72.0	16.1	11.9	100.0	3272
Upper East	96.9	3324	75.1	12.8	12.1	100.0	3222
Upper West	93.7	1754	42.3	42.0	15.8	100.0	1644
Area							
Urban	92.4	3440	52.2	18.7	29.0	100.0	3151
Rural	95.8	8755	73.3	18.8	7.8	100.0	8297
Education of household head							
None	96.3	6992	74.1	17.9	8.0	100.0	6691
Primary	94.8	1513	66.8	20.2	13.0	100.0	1421
Middle/JSS	92.3	2356	56.5	23.7	19.7	100.0	2141
Secondary +	89.4	1333	37.1	16.0	46.9	100.0	1196
Wealth index quintile							
Poorest	94.0	2318	62.2	18.7	19.1	100.0	2218
Second	93.7	2297	62.3	19.8	18.0	100.0	2182
Middle	92.8	2319	63.0	19.6	17.4	100.0	2196
Fourth	95.7	2492	62.6	20.6	16.8	100.0	2318
Richest	93.9	2770	60.6	22.7	16.7	100.0	2533
Total	**94.0**	**12195**	**62.1**	**20.3**	**17.6**	**100.0**	**11448**

**MICS indicator 41*

Vitamin A Supplementation

Vitamin A is essential micronutrient for the normal functioning of the eye, resistance to diseases 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 need 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 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, targeting 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 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 programmes, the definition of the indicator is the percentage 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 Ministry of Health and Ghana Health Service recommend that children aged 6-11 months and 12-59 months be given one high-dose Vitamin A capsule every six months. Vitamin A capsules for children under five years are linked to immunization services and are given when the child has contact with these services after six months of age. In addition, mothers are given a Vitamin A supplement within eight weeks of giving birth to assist both the mother and her breastfeeding child.

Table NU.6 presents the proportion of children aged 6-59 months who received Vitamin A supplements in the six months preceding the survey, by background characteristics. The Table shows that 54 percent of children aged 6-59 months had received a high-dose Vitamin A supplement within the six months prior to the survey. Twenty-four percent had received one, but earlier than six months before the survey and 11 percent of children received a Vitamin A supplement at some time in the past but their mothers/caretakers were unable to specify when. Nine percent of children aged 6-59 months had never received a Vitamin A supplement.

Among the four regions, Central region recorded the highest proportion of children 6-59 months that received Vitamin A supplement within six months prior to the survey (83 percent). Only one in two children 6-59 months in Upper East, Upper West and Northern regions had received the Vitamin A supplement. There are no considerable differences by residence, education level of the mother and by socio-economic status of the household and Vitamin A supplementation for children 6-59 months in the four regions.

Table NU.6: Children's vitamin A supplementation

Percent distribution of children aged 6-59 months by whether they received a high dose Vitamin A supplement in the last 6 months, HIRD Supplementary Survey, 2007/2008

	Percent of children who received Vitamin A:					Total	Number of children aged 6-59 months
	Within last 6 months*	Prior to last 6 months	Not sure when	Not sure if received	Never received Vitamin A		
Sex							
Male	54.1	23.8	10.8	2.1	9.3	100.0	3752
Female	54.2	24.5	11.1	2.0	8.1	100.0	3804
Region							
Central	83.3	6.5	4.1	1.3	4.7	100.0	1634
Northern	50.7	25.4	11.3	2.5	10.1	100.0	2745
Upper East	48.3	34.0	10.4	1.3	6.0	100.0	2010
Upper West	51.8	21.5	18.8	1.1	6.9	100.0	1167
Area							
Urban	56.1	23.1	10.0	2.6	8.1	100.0	1692
Rural	53.6	24.5	11.2	1.9	8.9	100.0	5864
Age							
6-11 months	58.3	1.2	2.5	6.7	31.3	100.0	940
12-23 months	66.3	20.3	6.7	0.3	6.4	100.0	1654
24-35 months	56.3	27.7	10.6	1.0	4.4	100.0	1689
36-47 months	45.9	31.4	14.6	2.1	5.9	100.0	1762
48-59 months	44.8	30.4	17.3	2.3	5.1	100.0	1511
Mother's education							
None	54.4	23.5	11.0	1.6	9.6	100.0	6259
Primary	56.0	22.8	10.1	2.8	8.3	100.0	734
Middle/JSS	52.4	25.8	11.9	2.1	7.7	100.0	361
Secondary+	51.2	28.0	11.1	2.5	7.2	100.0	202
Wealth index quintile							
Poorest	11.1	4.2	2.5	0.3	1.8	20.0	1510
Second	11.0	4.7	1.9	0.4	1.9	19.8	1499
Middle	10.4	4.6	2.5	0.4	2.0	19.9	1504
Fourth	10.9	5.1	2.0	0.5	1.5	19.9	1505
Richest	10.8	5.5	2.0	0.5	1.6	20.4	1539
Total	**54.2**	**24.1**	**10.9**	**2.1**	**8.7**	**100.0**	**7556**

** MICS indicator 42*

Table NU.7 shows the percentage of women aged 15-49 years with a birth in the two years preceding the survey who received a Vitamin A supplement, by background characteristics. The Table shows that out of a total of 3,525 mothers aged 15-49 years with a birth in the two years preceding the survey, only 45 percent received a Vitamin A supplement within eight weeks of the birth. The regional distribution shows that the proportion is highest in the Upper West region (67 percent) and lowest in Northern and Central regions at about 40 percent.

Vitamin A coverage increases with the educational level of the mother. Three in five women with secondary or higher education received Vitamin A supplement compared to two in five mothers with little or no education.

Table NU.7: Post-partum mother's Vitamin A supplementation

Percentage of women aged 15-49 years with a birth in the 2 years preceding the survey whether they received a high-dose Vitamin A supplement before the infant was 8 weeks old, HIRD Supplementary Survey, 2007/2008

	Received Vitamin A supplement*	Not sure if received Vitamin A	Number of women aged 15-49 years with a birth in 2 years before survey
Region			
Central	40.0	1.4	762
Northern	38.8	1.3	1341
Upper East	61.7	1.6	914
Upper West	66.7	1.3	508
Area			
Urban	49.5	1.8	821
Rural	42.2	1.2	2704
Education			
None	41.9	1.2	2178
Primary	48.1	1.4	630
Middle/JSS	46.3	1.9	560
Secondary +	60.9	2.6	156
Wealth index quintile			
Poorest	43.5	1.4	680
Second	45.1	1.3	777
Middle	46.3	.8	753
Fourth	42.9	.8	706
Richest	45.1	3.4	609
Total	**44.6**	**1.5**	**3525**

** MICS indicator 43*

Low Birth Weight

Weight at birth is a good indicator not only of a mother's health and nutritional status but also of 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 greater increased risk of dying during their early months and years of life. Those who survive have an 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 later in 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 the 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 newborns are not delivered in 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 birth[3].

Table NU.8 presents the percentage of live births in the two years preceding the survey that weighed below 2500 grams at birth, by background characteristics. From the survey results, mothers were asked how large or small their baby's size was and this was used in the computation of birth weight. Overall, only 32 percent of newborns in the surveyed areas were weighed at birth. Seven percent of babies in the four regions were estimated to weigh below 2500 grams at birth.

Among the four regions surveyed, Upper East region recorded the highest prevalence of children who weighed below 2500 grams (9 percent). Northern region recorded the least proportion of live births weighed at birth (10 percent).

Table NU.8: Low birth weight infants

Percentage of live births in the two years preceding the survey that weighed below 2500 grams at birth, HIRD Supplementary Survey, 2007/2008

Background characteristics	Percent of live births below 2500 grams *	Percent of live births weighed at birth **	Number of live births
Region			
Central	7.7	32.3	762
Northern	8.4	10.3	1341
Upper East	8.7	25.4	914
Upper West	7.3	22.9	508
Area			
Urban	7.0	43.7	821
Rural	7.2	26.6	2704
Education			
None	8.2	21.8	2178
Primary	7.2	26.0	630
Middle/JSS	6.8	35.1	560
Secondary +	5.2	81.0	156
Wealth index quintile			
Poorest	6.4	29.9	696
Second	7.7	32.7	611
Middle	7.4	27.2	631
Fourth	6.4	35.4	700
Richest	7.4	33.6	800
Total	**7.1**	**32.3**	**3525**

** MICS Indicator 9*
*** MICS Indicator 10*

[3] *For a detailed description of the methodology, see Boerma, Weinstein, Rutstein and Sommerfelt, 1996*

VI. Child Health

Immunization

The cardinal aim of immunization is to reduce the prevalence of morbidity associated with vaccine-preventable diseases. In Ghana, the Expanded Programme of Immunization (EPI) focuses on nine of the vaccine-preventable diseases. It has been noted that for Ghana to achieve the desired impact, it must attain and sustain coverage of at least 80 percent at the district level. The UNICEF and WHO guidelines state that it is vital to give every child the 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.

The HIRD Supplementary Survey assessed vaccination information with a two-pronged approach. In the first instance, mothers/caretakers were made to provide evidence of immunization records (cards) for children under five years old.

Secondly, there was a verbal autopsy conducted by interviewing mothers/caretakers to unearth and validate important data. The vaccination information garnered by the interviewers were transcribed from the cards onto the HIRD supplemented survey questionnaire.

The survey indicated that 90 percent of children had health cards (Table CH.2). In the absence of a health card, a further probe was made for mothers to remember whether or not the child had received each of the vaccinations and, for DPT and polio, how many times. Figure CH.1 and Figure CH.1 presents data on children aged 12-23 months with regard to each of the vaccinations.

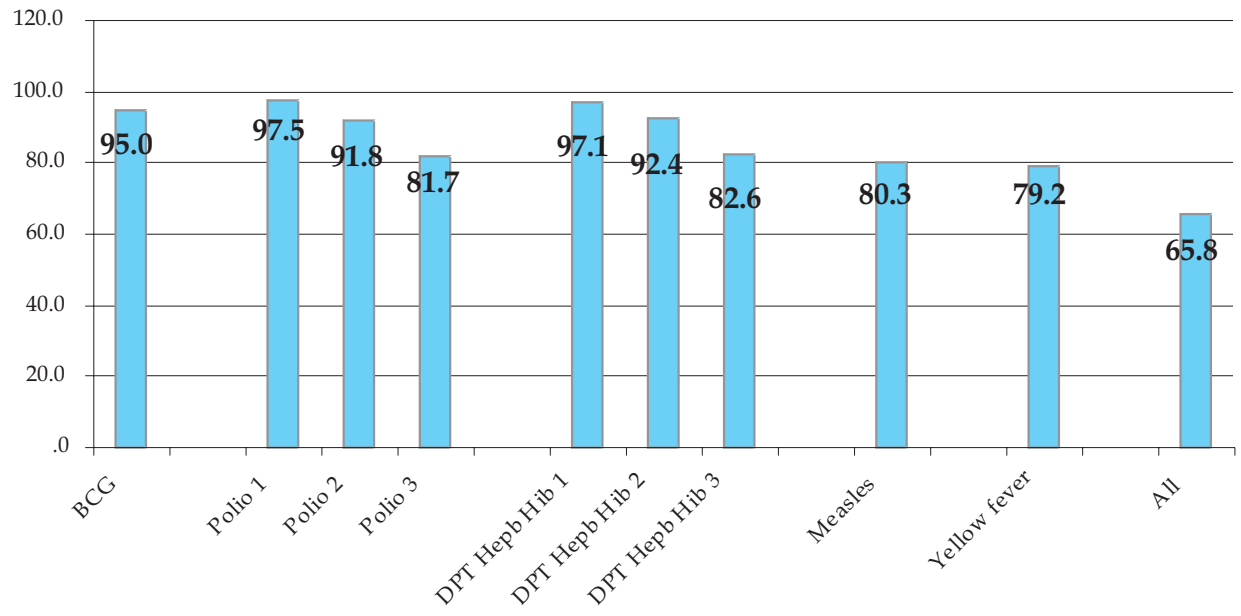
Table CH.1: Vaccinations in first year of life

Percentage of children aged 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, HIRD Supplementary Survey, 2007/2008

	BCG *	Polio 0	Polio 1	Polio 2	Polio 3 **	DPT Hepb Hib 1	DPT Hepb Hib 2	DPT Hepb Hib 3 ***	MMR ****	Yellow fever ******	All *****	None	Number of children aged 12-23 months
Vaccination card	86.4	38.6	89.1	85.1	80.3	88.5	85.4	81.1	80.6	80.7	73.4	0.2	1654
Mother's report	9.2	4.3	8.9	7.0	3.9	9.1	7.8	4.3	8.5	8.3	2.6	0.5	1654
Either	95.6	42.9	97.9	92.1	84.2	97.6	93.2	85.5	89.1	89.0	76.0	0.7	1654
Vaccinated by 12 months of age	95.0	42.9	97.5	91.8	81.7	97.1	92.4	82.6	80.3	79.2	65.8	0.7	1654

** MICS Indicator 25*
*** MICS Indicator 26*
**** MICS Indicator 27*
***** MICS Indicator 28 ; MDG Indicator 15*
****** MICS Indicator 30*
****** MICS Indicator 31*

Figure CH.1: Percentage of children 12-23 months immunized against childhood diseases before their first birthday, HIRD Supplementary Survey, 2007/2008



The denominator for the Table comprises children aged 12-23 months so that only children who are old enough to be fully vaccinated are counted. In the top panel, the numerator includes all children who were vaccinated at any time before the survey according to the vaccination card or the mother's report.

It indicates that about 95 percent of all children aged 12-23 months had a BCG vaccination by the age of 12 months and 97 percent had received the first dose of (DPT) HepBHib. There was a trend of decline in subsequent doses of (DPT) HepBHib, with the second dose falling to 92 percent and the third 83 percent. In terms of polio vaccination, 98 percent of children had it by age 12 months, followed by a decline to 92 percent and 82 percent for the second and third doses respectively. As a result of the trend, the total recorded proportion of children who were fully immunized by the age 12 months for the four regions that were surveyed was 66 percent. It is important to state that this is below the target of 80 percent required for making the desired and sustainable impact in immunization. With regard to measles and yellow fever vaccination, immunization rates were 80 percent and 79 percent respectively.

The findings of the HIRD Supplementary Survey from Table CH.2 shows that for all four regions, 76 percent of children aged 12-23 months have all the required vaccinations. In all the vaccine categories, females (79 percent) were more likely to be vaccinated than males (73 percent).

There are also wide, cross-regional variations in vaccination coverage. Ninety percent of children in the Upper West region had been vaccinated against childhood diseases by their second birthday, followed by Upper East (87 percent) and Central region (81 percent). The Northern region had the lowest coverage (71 percent), which was below the average of 76 percent for the four regions.

Table CH.2: Vaccinations by background characteristics

Percentage of children aged 12-23 months currently vaccinated against childhood diseases, HIRD Supplementary Survey, 2007/2008

	BCG	Polio 0	Polio 1	Polio 2	Polio 3	MMR	DPT Hep B1	DPT Hep B2	DPT Hep B3	All	Yellow fever	None	Percent with health card	Number of children aged 12-23 months
Sex														
Male	94.6	42.0	97.7	90.7	81.9	87.5	97.2	91.7	83.3	73.2	87.9	1.0	89.4	823
Female	96.6	43.8	98.2	93.5	86.5	90.7	97.9	94.7	87.6	78.8	90.1	0.4	90.7	831
Region														
Central	95.4	53.6	99.0	95.5	88.9	93.2	98.8	97.1	91.7	81.0	92.6	0.0	88.6	383
Northern	95.0	36.7	97.7	90.0	80.6	86.2	96.9	91.1	81.3	71.2	86.3	0.9	89.6	619
Upper East	97.3	52.1	97.8	96.3	93.0	95.6	99.2	97.4	95.3	88.6	95.3	0.5	90.6	399
Upper West	97.8	65.2	99.0	98.6	94.2	97.9	99.0	98.8	96.2	90.1	97.5	0.4	95.9	251
Mother's education														
None	95.8	41.8	97.6	91.1	84.0	89.1	97.6	92.5	85.1	75.2	90.5	0.5	90.9	746
Primary	95.0	43.7	97.5	92.3	81.4	89.6	96.7	93.2	82.7	74.6	87.3	1.3	88.2	449
Middle/JSS	95.6	42.7	99.1	92.5	87.6	88.7	98.5	93.2	89.2	78.5	88.9	0.2	91.7	321
Secondary+	96.1	46.3	98.3	96.2	86.5	88.3	98.0	97.3	87.8	79.2	87.4	1.0	88.4	137
Wealth index quintiles														
Poorest	95.7	44.4	97.3	93.0	86.6	89.5	96.9	94.1	89.5	79.5	89.3	0.9	92.0	336
Second	93.5	45.9	97.5	93.9	83.8	92.6	98.6	94.5	86.0	76.3	92.3	0.1	92.6	311
Middle	95.1	38.3	97.6	92.8	86.2	84.6	97.1	94.4	86.5	73.4	85.0	1.0	89.8	338
Fourth	96.0	34.2	98.2	90.3	82.7	89.1	96.5	90.4	82.1	75.5	88.8	0.8	88.6	342
Richest	97.4	52.1	99.0	90.5	81.5	90.4	98.8	92.5	82.9	75.6	90.1	0.4	87.9	326
Total	**95.5**	**42.8**	**97.9**	**92.1**	**84.2**	**89.2**	**97.5**	**93.2**	**85.4**	**76.0**	**89.0**	**0.7**	**90.1**	**1652**

Tetanus toxoid

To reduce maternal and neonatal mortality, one of the key strategies is to eliminate maternal tetanus. The main purpose of tetanus toxoid (TT) immunization in pregnancy is to reduce the incidence of neonatal tetanus, which is targeted for elimination. Tetanus toxoid immunization also reduces the incidence of tetanus. To prevent maternal and neonatal tetanus, it is important to ensure that all pregnant women receive at least two doses of tetanus toxoid vaccine. However, if women have not received two doses of the vaccine during pregnancy, they (and their newborn) are considered to be protected if the following conditions are met:

- Received at least two doses, of tetanus toxoid vaccine, the last within the prior three years;
- Received at least three doses, the last within the prior five years;
- Received at least four doses, the last within 10 years;
- Received at least five doses during lifetime.

The causative agent of tetanus Clostridium is a bacteria that thrives on dead tissue and decaying matter. Transmission occurs when there is contact between the bacteria and any broken skin or dead tissue such as a wound or when an infant umbilical cord is cut. Usually, signs of maternal and neonatal tetanus occur three to 10 days after birth. Key to the prevention of maternal and neonatal tetanus is the immunization of women during pregnancy with at least two doses of tetanus vaccine. The reduction of maternal and child mortality as enshrined in the MDGs stipulates the elimination of maternal and neonatal tetanus. Globally, the WHO has targeted a reduction to less than one case of neonatal tetanus per 1,000 live births in every region of the world.

Table CH.3 shows the proportion of mothers who gave birth in the two years before the survey and were protected against neonatal tetanus, by key background characteristics. In all four regions, 65 percent of mothers received at least two doses of tetanus toxoid (TT) vaccination during the last pregnancy. Central region recorded the highest coverage (68 percent), Upper West region recorded 67 percent whiles Upper West and Northern regions recorded the lowest TT2 coverage of 62 percent each.

In general, protection against tetanus for mothers for the four regions stood at 75 percent. Again this also exhibited regional variations with Upper East recording the highest of 81 percent. Two regions, Upper West (73 percent) and Northern (72 percent) performed below the four regional average. Little variations are observed by mother's education and socio-economic status and being protected against tetanus.

Table CH.3: Neonatal tetanus protection

Percentage of mothers with a birth in the last two years protected against neonatal tetanus, HIRD Supplementary Survey, 2007/2008

	Received at least 2 doses during last pregnancy	Received at least 2 doses, the last within prior 3 years	Received at least 3 doses, the last within 5 years	Receive d at least 4 doses, the last within 10 years	Received at least 5 doses during lifetime	Protected against tetanus *	Number of mothers
Region							
Central	68.4	9.2	0.9	0.0	0.0	78.5	762
Northern	62.4	9.0	0.4	0.1	0.0	71.8	1341
Upper East	67.4	12.5	0.6	0.2	0.0	80.7	914
Upper West	61.9	11.2	0.3	0.0	0.0	73.4	508
Area							
Urban	62.4	9.7	0.5	0.1	0.0	72.7	821
Rural	54.4	3.3	0.0	0.0	0.0	57.7	2704
Age							
15-19	67.5	10.7	0.2	0.0	0.0	78.4	191
20-24	63.5	11.1	0.6	0.1	0.0	75.2	703
25-29	64.9	10.7	0.1	0.0	0.0	75.7	943
30-34	63.6	10.2	1.1	0.5	0.0	75.3	792
35-39	52.0	7.5	0.7	0.4	0.0	60.6	513
40-44	62.9	9.4	0.5	0.1	0.0	72.9	277
45-49	62.5	9.5	0.0	0.0	0.0	72.1	106
Education							
None	69.8	14.2	0.7	0.0	0.0	84.6	2178
Primary	68.4	9.2	0.9	0.0	0.0	78.5	630
Middle/JSS	62.4	9.0	0.4	0.1	0.0	71.8	560
Secondary +	67.4	12.5	0.6	0.2	0.0	80.7	156
Wealth index quintiles							
Poorest	63.9	9.3	0.1	0.0	0.0	73.3	521
Second	64.4	11.0	0.6	0.0	0.0	76.0	503
Middle	67.0	9.0	0.3	0.0	0.0	76.3	501
Fourth	62.8	10.4	0.7	0.2	0.0	74.1	529
Richest	66.3	8.2	0.4	0.0	0.0	74.9	558
Total	**64.9**	**9.6**	**0.4**	**0.0**	**0.0**	**75.0**	**2611**

** MICS Indicator 32*

Oral Rehydration Treatment

Diarrhoea-related diseases have been documented by WHO as one of the major causes of mortality among children under five, although there are proven and well-known interventions, such as oral rehydration therapy (ORT). Diarrhoeal diseases account for 1.8 million child deaths globally. It is, therefore, important to monitor the application of the well-known interventions to ensure that the expected impact is achieved, thereby contributing to the achievement of child survival-related MDGs and strategies.

The HIRD Supplementary Survey sought to appraise the application of the proven interventions, by eliciting from mothers whether or not the child had had diarrhoea in two weeks prior to the survey. Affirming the incidence of diarrhoea, the survey further probed into how the child drank and ate during the episode and whether this was more or less than the child's normal intake.

Table CH.4 indicates that 22 percent of children under five years had diarrhoea in the two weeks before the survey. The Northern region had the highest prevalence of 25 percent, followed by Upper West (20 percent), then Upper East (16 percent), and Central region, with lowest prevalence of 14 percent. From a demographic perspective, the bulk of cases occurred in the 6-11 and 12-23 month age groups, which are the weaning period. The lowest prevalence of 14 percent occurred among age groups of less than 6 months and 54-59 months. The relatively small number of cases of babies aged below 6 months was attributed to the fact that most of them were exclusively breastfed. The survey results indicated an interesting result. Children 0-59 months residing in urban areas are more likely to have diarrhoea than those residing in rural areas.

Twenty-eight percent of children in the four regions received fluid from ORS packet, and 5 percent received the recommended homemade fluid during an episode of diarrhoea. ORT use rate was highest in Upper East region (46 percent) and lowest in Central and Northern regions which recorded about 30 percent.

In general, 48 percent of children aged 0-59 months with diarrhoea drank more. Fifty-one percent drank the same or less and 49 percent ate much less or more. Thirty-two percent of children in the four regions with diarrhoea received ORT or increased fluids and continued feeding (Table CH.5).

In terms of home management of diarrhoea, about 24 percent of children 0-59 months who had diarrhoea were managed at home. Mothers residing in urban areas were managing cases at home more than those residing in rural areas. The Upper East region had the lowest incidence of managing children who had diarrhoea at home (7 percent), compared to the Central region, which recorded the highest incidence (28 percent). The analysis further showed that children between the ages 36-47 months and 24-25 months were more likely to be managed at home, at the rate of 32 percent and 31 percent respectively compared to the other age groups.

Table CH 4: Home management of diarrhoea

Percentage of children aged 0-59 months with diarrhoea in the last two weeks who took increased fluids and continued to feed during the episode, HIRD Supplementary Survey, 2007/2008

	Had diarrhoea in last two weeks	Number of children aged 0-59 months	Children with diarrhoea who drank more	Children with diarrhoea who drank the same or less	Children with diarrhoea who ate somewhat less, same or more	Children with diarrhoea who ate much less or none	Home management of diarrhoea *	Received ORT or increased fluids AND continued feeding **	Number of children aged 0-59 months with diarrhoea
Sex									
Male	22.9	4193	48.6	50.6	52.3	47.6	24.5	32.4	849
Female	21.5	4273	48.4	51.2	50.1	49.7	22.9	31.1	804
Area									
Urban	23.4	1874	48.4	51.2	52.4	47.2	25.6	35.9	364
Rural	21.8	6592	48.5	50.8	50.8	49.1	23.1	30.5	1289
Region									
Central	14.1	1798	46.9	53.1	60.9	39.1	27.5	41.0	254
Northern	25.0	3117	50.9	48.4	53.3	46.6	25.7	32.7	781
Upper East	15.9	2268	48.3	51.0	39.4	60.1	17.8	28.0	360
Upper West	20.1	1283	25.1	74.9	36.0	63.7	7.4	18.6	258
Age									
0-11 months	21.1	1850	35.5	63.8	48.3	51.7	15.3	22.4	347
12- 23 months	30.7	1654	47.4	52.3	51.6	48.1	22.8	33.1	463
24- 35 months	25.1	1689	58.0	40.2	53.7	46.2	30.7	36.8	371
36- 47 months	19.1	1762	53.6	46.4	55.9	44.1	31.6	39.9	298
48- 59 months	14.1	1511	48.2	51.8	43.2	56.4	14.7	23.0	173
Mother's education									
None	22.6	6985	50.6	48.1	52.3	47.4	25.0	32.2	1347
Primary	20.5	844	43.2	56.7	51.8	48.2	21.5	32.6	204
Middle/JSS	21.9	405	49.5	50.5	47.7	52.3	22.7	28.3	67
Secondary +	25.5	232	48.9	51.1	51.6	48.2	24.7	34.9	35
Wealth index quintiles									
Poorest	23.4	1837	45.1	52.9	57.7	41.7	22.6	30.9	324
Second	20.0	1670	55.3	44.2	50.8	48.9	28.7	34.5	329
Middle	25.5	1605	48.6	51.3	49.6	50.4	25.5	34.5	331
Fourth	24.0	1637	43.5	56.1	50.8	49.2	19.5	28.6	375
Richest	18.7	1717	51.2	48.8	47.0	53.0	22.4	30.2	295
Total	**22.3**	**8466**	**48.4**	**50.9**	**51.3**	**48.6**	**23.7**	**31.7**	**1653**

** MICS indicator 34*
*** MICS indicator 35*

Table CH.5 presents the source and cost of supplies for ORS for the treatment of diarrhoea. About 49 percent of children under five obtained their supply from the public sector, while five percent obtained ORS from the private sector and 47 percent from other sources like friends or relatives. In general, 46 percent had their ORS free from the public sector and nine percent had it for free from the private sector. The median cost for the purchase of ORS was higher in the public sector (40 pesewas) than in private sector (20 pesewas).

Table CH.5: Source and cost of supplies of oral rehydration salts

Percentage distribution of children aged 0-59 months with diarrhoea during the two weeks preceding the survey, by source of oral rehydration salts (ORS) for treatment of diarrhoea, percentage of children aged 0-59 months with diarrhoea during the two weeks preceding the survey for whom ORS were obtained for free, and median cost of ORS for those paying for the ORS, by type of source, HIRD Supplementary Survey, 2007/2008

	Oral rehydration salts			Total	Number of children with diarrhoea in prior 2 weeks who received oral rehydration salts	Percentage Free		Median cost in GHC for those not free	
	Public*	Private	Others			Public	Private	Public**	Private**
Sex									
Male	47.4	6.3	46.3	100.0	256	36.8	2.6	0.50	0.20
Female	49.8	2.8	47.4	100.0	261	34.8	24.2	0.40	0.29
Region									
Central	45.6	3.4	51.0	100.0	72	48.8	33.4	0.25	0.10
Northern	44.4	4.8	50.8	100.0	191	35.2	10.6	0.50	0.20
Upper East	46.6	7.3	46.1	100.0	147	25.9	0.0	0.20	0.20
Upper West	79.5	.0	20.5	100.0	107	40.6	.	0.25	.
Area									
Urban	44.1	6.2	49.7	100.0	110	49.1	0.0	0.40	0.10
Rural	50.3	3.9	45.8	100.0	407	31.5	14.7	0.40	0.30
Mother's education									
None	52.7	3.8	43.5	100.0	394	36.9	18.8	0.50	0.36
Primary	40.1	6.0	53.9	100.0	77	35.6	5.3	0.22	0.10
Middle/JSS	52.5	4.3	43.2	100.0	29	27.1	0.0	0.38	0.19
Secondary/SSS	44.2	4.8	50.9	100.0	17	46.5	0.0	0.20	0.20
Wealth index quintiles									
Poorest	50.8	2.2	47.0	100.0	90	30.0	0.0	0.75	0.17
Second	47.5	3.3	49.2	100.0	83	33.9	0.0	0.25	0.30
Middle	54.9	5.4	39.7	100.0	124	43.7	26.7	0.25	0.10
Fourth	44.5	2.4	53.1	100.0	152	35.5	14.1	0.49	0.50
Richest	43.3	11.4	45.3	100.0	68	33.5	0.0	0.40	0.20
Total	**48.5**	**4.6**	**46.9**	**100.0**	**517**	**36.0**	**9.3**	**0.40**	**0.20**

** MICS indicator 96;*
*** MICS indicator 97*

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. Children with suspected pneumonia are those who had an illness with a cough accompanied by rapid or difficult breathing and whose symptoms were due to a problem in the chest and a blocked nose. In the HIRD Supplementary Survey, the questions were limited to children who had suspected pneumonia within the previous two weeks, whether or not care was sought outside the home and whether or not they had received an antibiotic within the previous two weeks.

Table CH. 6 presents the percentage of children aged 0-59 months in the last two weeks who were taken to a health provider with suspected pneumonia. The results of the survey indicate that 7 percent of the children 0-59 months had acute respiratory infection. Upper West region had the highest prevalence of acute

respiratory infection (9 percent) and Central region recorded the lowest (2 Percent). The findings also showed that males were more likely to have acute respiratory infection than females. The results also showed that children below one year had a higher probability of having acute respiratory infection compared to the other age groups.

Of the children who had acute respiratory infection, 38 percent were taken to an appropriate provider. The Upper East region had the highest percentage of cases managed by an appropriate provider (48 percent) while Central region had the lowest (27 percent).

Table CH.6: Care seeking for suspected pneumonia

Percentage of children aged 0-59 months in the last two weeks taken to a health provider, HIRD Supplementary Survey, 2007/2008

	Had acute respiratory infection	Number of children aged 0-59 months	Govt. hospital	Govt. health centre	Govt. health post	Village health worker	Mobile/outreach clinic	Other public	Private hospital clinic	Private physician	Pharmacy	Relative or friend	Chemical Shop	Any appropriate provider *	Number of children aged 0-59 months with suspected pneumonia
Sex															
Male	7.2	4193	10.7	17.8	1.0	1.5	0.3	0.0	1.5	0.3	0.3	0.9	14.3	32.9	581
Female	6.6	4273	14.4	23.6	1.8	0.3	0.4	0.0	3.0	0.3	1.6	0.3	10.8	43.6	534
Area															
Urban	6.0	1874	18.8	21.4	0.0	0.0	0.0	0.0	4.6	0.0	4.2	1.3	8.4	44.9	225
Rural	7.1	6592	10.9	20.4	1.7	1.2	0.4	0.0	1.6	0.3	0.1	0.4	13.7	36.3	890
Region															
Central	2.4	1798	(9.6)	(6.5)	0.0	0.0	(2.0)	0.0	(1.9)	(6.8)	(1.8)	0.0	(20.5)	(26.8)	43
Northern	7.5	3117	10.8	20.2	1.5	1.0	0.0	0.0	2.4	0.0	1.0	0.4	12.3	35.8	236
Upper East	6.0	2268	17.5	27.0	0.6	0.5	0.0	0.0	3.3	0.0	0.6	0.0	12.0	47.7	136
Upper West	9.1	1283	19.5	21.1	2.1	1.6	2.6	0.0	0.0	0.0	0.0	3.3	12.7	46.7	117
Age															
0-11 months	7.7	1850	19.2	16.6	3.6	1.2	0.0	0.0	1.0	1.1	0.0	0.8	12.5	42.7	129
12-23 months	6.8	1654	12.6	30.0	2.3	0.3	0.0	0.0	0.4	0.0	0.0	0.0	16.0	44.8	107
24-35 months	7.6	1689	11.3	21.8	0.0	0.0	0.8	0.0	4.3	0.0	3.7	0.3	12.5	38.2	112
36-47 months	6.3	1762	11.5	16.3	0.0	0.9	0.4	0.0	2.9	0.0	0.4	1.4	8.8	32.0	104
48-59 months	5.8	1511	3.9	18.5	0.0	2.8	0.6	0.0	2.6	0.0	0.0	0.5	13.3	28.5	80
Mother's education															
None	7.3	6985	13.4	19.5	0.8	1.2	0.4	0.0	2.8	0.3	1.6	.3	15.6	38.2	441
Primary	6.4	844	13.8	22.1	0.3	1.5	0.4	0.0	0.7	0.0	0.0	1.9	11.2	38.5	65
Middle/JSS	5.7	405	*	*	*	*	*	*	*	*	*	*	*	*	16
Secondary+	8.8	232	*	*	*	*	*	*	*	*	*	*	*	*	10
Wealth index quintiles															
Poorest	6.8	1837	8.7	12.7	2.0	0.0	0.0	0.0	2.0	0.0	0.4	2.2	12.1	25.4	101
Second	6.8	1670	9.9	30.8	2.0	2.6	0.5	0.0	0.0	0.0	0.0	0.0	15.2	45.4	111
Middle	6.8	1605	15.2	20.6	0.4	1.9	0.0	0.0	1.9	0.7	0.0	1.0	16.8	40.7	115
Fourth	7.5	1637	12.2	21.5	2.4	0.3	0.8	0.0	3.0	0.0	0.3	0.0	13.4	40.0	115
Richest	6.6	1717	16.3	15.4	0.0	0.0	0.4	0.0	3.7	0.7	3.9	0.0	5.8	36.5	91
Total	**6.9**	**8466**	**12.5**	**20.2**	**1.4**	**1.0**	**0.3**	**0.0**	**2.2**	**0.3**	**0.9**	**0.6**	**12.7**	**37.7**	**532**

** MICS indicator 23*

Figures in asterick (*) are based on 25 unweighted cases and has been suppressed.

Figures in parentheses "( )" are based on 25 unweighted cases.

Table CH.7 shows the use of antibiotics for the treatment of suspected pneumonia in under-5s by sex, age, region, residence, and socioeconomic factors. For the four regions, 31 percent of children under-5 with suspected pneumonia received an antibiotic during the two weeks prior to the survey. Slightly more children in urban areas (32 percent) received antibiotics for suspected pneumonia as compared to 30 percent of children in rural areas. Children in Upper West region are more likely to receive antibiotics for suspected pneumonia than those in the other three regions.

The Table also shows that antibiotic treatment of suspected pneumonia is quite low (26 percent) among children 12-23 months year of age, with the highest treatment being for children between 24-35 months (37 percent).

The use of antibiotics for the treatment of suspected pneumonia is higher in children whose mothers/caretakers have attained higher educational level as well as mothers in the richest wealth index quintiles.

Table CH.7: Antibiotic treatment of pneumonia

Percentage of children aged 0-59 months with suspected pneumonia who received antibiotic treatment, HIRD Supplementary Survey, 2007/2008

	Percentage of children aged 0-59 months with suspected pneumonia who received antibiotics in the last two weeks *	Number of children aged 0-59 months with suspected pneumonia in the two weeks prior to the survey
Sex		
Male	30.5	273
Female	31.8	259
Region		
Central	38.6	43
Northern	25.5	235
Upper East	46.2	136
Upper West	49.6	117
Area		
Urban	32.1	95
Rural	30.8	436
Age		
0-11 months	33.7	129
12-23 months	25.6	107
24-35 months	36.7	112
36-47 months	29.6	104
48-59 months	27.3	80
Mother's education		
None	31.3	441
Primary	31.4	65
Middle/JSS	27.7	16
Secondary/SSS	34.4	10
Wealth index quintiles		
Poorest	25.7	101
Second	34.1	111
Middle	25.8	115
Fourth	27.7	115
Richest	40.3	91
Total	**30.7**	**532**

** MICS indicator 22*

Mothers of children were asked about the source and cost of antibiotics and the results is presented in Table CH.16. Sixty-one percent of households received their antibiotics from the public sector, 6 percent from private sector, and 34 percent from other sources such as friends or family members and drug peddlers.

Twenty-seven percent of households in the four regions received antibiotics from the public sector for free whiles 14 percent received it free from private sector. The median cost for antibiotics in the four regions was 23 pesewas and 70 pesewas for public and private sources respectively.

Table CH.16: Source and cost of supplies for antibiotics

Percent distribution of children aged 0-59 months with suspected pneumonia during the two weeks preceding the survey by source of antibiotics for treatment of pneumonia, percentage of children aged 0-59 with suspected pneumonia during the two weeks preceding the survey for whom antibiotics were obtained for free, and median cost of antibiotics for those paying for the antibiotics, by type of source of antibiotics, HIRD Supplementary Survey, 2007/2008

	Antibiotic			Total	Number children with suspected pneumonia in prior 2 weeks who received antibiotics	Percentage Free		Median cost for those not free	
	Public*	Private	Others			Public	Private	Public**	Private**
Sex									
Male	58.0	3.7	38.3	100.0	111	24.9	22.1	0.23	0.92
Female	63.0	8.2	28.8	100.0	107	29.4	10.3	0.22	0.24
Region									
Central	*	*	*	100.0	21	10.0	0.0	0.57	0.70
Northern	49.6	11.1	39.3	100.0	64	18.1	0.0	0.25	0.24
Upper East	68.7	5.2	26.2	100.0	69	29.2	51.3	0.25	0.22
Upper West	69.8	0.0	30.2	100.0	65	34.5	.	0.12	
Area									
Urban	(51.8)	(14.0)	(34.3)	100.0	43	36.5	30.4	0.26	0.20
Rural	62.6	4.0	33.5	100.0	175	25.3	0.0	0.20	0.70
Mother's education									
None	59.3	5.8	34.8	100.0	176	27.4	0.0	0.20	0.70
Primary	(67.7)	(2.8)	(29.5)	100.0	31	28.7	0.0	0.25	0.10
Middle/JSS	*	*	*	100.0	6	31.1	.	0.28	
Secondary+	*	*	*	100.0	5	0.0	100.0	0.20	
Total	**60.5**	**5.9**	**33.6**	**100.0**	**218**	**27.2**	**14.1**	**0.23**	**0.70**

** MICS indicator 96*
*** MICS indicator 97*

Solid Fuel Use

Cooking with solid fuels (charcoal and wood) leads to high levels of indoor pollution and is a major cause of ill-health in the world, particularly among under-5 children, in the form of acute respiratory illness. This section of the report compares the proportion of households according to type of cooking fuel, by region.

Ninety-five percent of households in the four regions surveyed use solid fuel as their main type of fuel for cooking. The use of solid fuel for cooking among households in the three Northern regions was over 97 percent, while Central region recorded about 90 percent (Table CH. 8). Wood forms the largest proportion (72 percent) of the solid fuel used for cooking in all regions but, is heavily relied upon in the three northern regions, at over 75 percent. One in five households in the four regions use charcoal for cooking, although it is more relied upon by Central region (31 percent), than in the three Northern regions. The use of liquefied petroleum gas (LPG) is not encouraging, ranging from less than one percent and 5 percent for Upper West region and the Central region respectively.

As can be expected, more rural households rely on wood for cooking (90 percent), compared to urban households (51 percent). Very few rural households use charcoal for cooking (6 percent). Distribution of fuel for cooking with respect to the educational level of the head of household showed that households whose head has secondary or higher education is more likely to use other sources of fuel for cooking compared to households whose head has little or no education. However, little variations are observed between the socio-economic status of the household and the use of solid fuels for cooking (Table CH.8).

Table CH.8: Solid fuel use

Percent distribution of households according to type of cooking fuel, and percentage of households used solid fuels for cooking, HIRD Supplementary Survey, 2007/2008

	Type of fuel using for cooking:										Total	Solid fuels for cooking *	Number of households
	Electricity	Liquefied Petroleum Gas (LPG)	Biogas	Kerosene	Charcoal	Wood	Crop residue/ sawdust	Animal waste	None/ no cooking	Other			
Region													
Central	0.0	4.6	0.0	0.1	30.9	59.2	0.0	0.0	5.1	0.0	100.0	90.1	3707
Northern	0.1	1.2	0.0	0.1	14.1	83.1	0.1	0.0	1.3	0.0	100.0	97.3	3410
Upper East	0.0	1.5	0.2	0.1	11.6	75.5	9.7	0.0	1.1	0.0	100.0	96.9	3324
Upper West	0.0	0.3	0.1	0.1	11.6	86.2	0.0	0.0	1.7	0.0	100.0	97.8	1754
Area													
Urban	0.1	5.1	0.1	0.3	39.6	50.9	0.6	0.0	3.2	0.0	100.0	91.2	3440
Rural	0.0	0.3	0.0	0.0	6.2	90.1	1.9	0.0	1.4	0.0	100.0	98.2	8755
Education of household head													
None	0.0	0.1	0.0	0.0	9.0	87.8	1.9	0.0	1.1	0.0	100.0	98.7	6992
Primary	0.0	0.5	0.0	0.5	17.2	78.0	1.8	0.0	2.1	0.0	100.0	97.0	1513
Middle/JSS	0.1	1.4	0.0	0.2	30.9	63.4	0.6	0.0	3.4	0.0	100.0	94.9	2356
Secondary +	0.1	13.5	0.4	0.3	39.4	41.2	0.5	0.0	4.6	0.0	100.0	81.0	1333
Wealth index quintiles													
Poorest	0.1	3.9	0.0	0.0	21.3	70.8	1.2	0.0	2.6	0.0	100.0	93.4	2318
Second	0.1	2.6	0.0	0.4	23.4	70.6	0.8	0.0	2.0	0.0	100.0	94.8	2297
Middle	0.0	2.4	0.1	0.2	20.8	72.4	1.0	0.0	3.1	0.0	100.0	94.2	2319
Fourth	0.0	1.9	0.1	0.1	22.3	73.1	0.8	0.0	1.8	0.0	100.0	96.1	2492
Richest	0.0	1.8	0.1	0.1	20.4	74.7	0.6	0.0	2.2	0.1	100.0	95.8	2770
Total	**0.1**	**2.5**	**0.1**	**0.2**	**21.6**	**72.3**	**0.9**	**0.0**	**2.3**	**0.0**	**100.0**	**94.9**	**12195**

** MICS indicator 24; MDG indicator 29*

Information on the type of stove used with solid fuel is shown in Table CH.9. The average for the four regions in the use of open fire stood at 78 percent. Sixty-six percent of households in the Central region use open fire while in the three Northern regions, the use of open fire stands above 86 percent. Only one in five households in the four regions use open stove. A sizable proportion of households in the Central region use open stove (34 percent) which is much more encouraging than in Northern region (14 percent), Upper East region (11 percent) and Upper West region (10 percent).

In terms of rural-urban residence, a high of 94 percent of the rural population use open fires for cooking compared with only 58 percent in urban areas. The reverse is true for open stove (i.e. urban 42 percent and as low as 6 percent in rural areas).

Education of head of household also gives a clear indication that higher education has a positive relationship in the use of open stoves 47 percent for secondary or higher versus 9 percent for households whose head has little or no education. Perhaps households with heads with higher education have the advantage of knowing the health implications of the use of open fires as compared to open stoves.

Table CH.9: Solid fuel use, by type of stove or fire

Percentage of households using solid fuels for cooking, by type of stove or fire, HIRD Supplementary Survey, 2007/2008

	Food cooked on stove or open fire			Total	Number of households using solid fuels for cooking
	Open fire	Open stove	Closed stove		
Region					
Central	65.7	34.2	0.1	100.0	3341
Northern	86.3	13.6	0.0	100.0	3319
Upper East	88.7	11.2	0.1	100.0	3220
Upper West	90.0	10.0	0.0	100.0	1716
Area					
Urban	57.9	42.1	0.1	100.0	3061
Rural	94.3	5.7	0.0	100.0	8535
Education of household head					
None	91.5	8.5	0.0	100.0	6880
Primary	83.5	16.5	0.0	100.0	1462
Middle/JSS	67.9	32.1	0.0	100.0	2204
Secondary +	53.5	46.5	0.0	100.0	1050
Wealth index quintiles					
Poorest	77.4	22.5	0.0	100.0	2245
Second	76.1	23.8	0.1	100.0	2231
Middle	79.6	20.4	0.0	100.0	2247
Fourth	78.2	21.8	0.0	100.0	2360
Richest	79.4	20.5	0.0	100.0	2512
Total	**78.1**	**21.8**	**0.0**	**100.0**	**11596**

Malaria

Malaria is a leading cause of death in children under age five in Ghana. It also contributes to anaemia in children and is a common cause of school absenteeism. Preventive measures, especially the use of insecticide treated mosquito nets (ITNs), can dramatically reduce malaria mortality rates among children. In areas where malaria is common, international recommendations suggest treating any fever in children as if it were malaria and immediately giving the child a full course of recommended anti-malarial tablets. Children with severe malaria symptoms, such as fever or convulsions, should be taken to a health facility. Also, children recovering from malaria should be given extra liquids and food and should continue breastfeeding where applicable.

The HIRD Supplementary Survey questionnaire incorporates questions on the use of bednets, both at household level and among children under five years of age, as well as anti-malaria treatment, and intermittent preventive therapy for malaria. The survey results indicate that 54 percent of households in the four regions had at least one mosquito net, out of which 50 percent were insecticide treated nets. (Table CH 10). More households in the Upper West region (67 percent) owned insecticide treated nets as compared to households in the other three regions. Households in the Central region recorded the lowest proportion of ITNs (38 percent). The higher percentage of ITNs in the three Northern regions may be due to the distribution of nets in these areas by NGOs and development agencies such as UNICEF.

The results also showed that education has an influence on owning an ITN. A higher number of household whose head has secondary or higher education own an ITN compared to households whose head has little or no education.

Table CH.10: Availability of insecticide treated nets

Percent of households with at least one insecticide treated net (ITN), HIRD Supplementary Survey, 2007/2008

	Percentage of households with at least one mosquito net	Percentage of households with at least one insecticide treated net (ITN)*	Number of households
Region			
Central	40.1	37.8	3707
Northern	59.6	54.7	3410
Upper East	56.8	51.4	3324
Upper West	70.5	66.8	1754
Area			
Urban	48.6	45.8	3440
Rural	60.3	55.2	8755
Education of household head			
None	54.8	49.7	6992
Primary	60.1	55.6	1513
Middle/JSS	54.6	51.8	2356
Secondary +	67.6	65.2	1333
Wealth index quintiles			
Poorest	53.7	48.3	2318
Second	51.6	47.1	2297
Middle	54.7	50.7	2319
Fourth	54.3	50.5	2492
Richest	55.9	51.4	2770
Total	**54.0**	**49.6**	**12195**

** MICS Indicator 36*

Regarding the use of ITNs in the four regions surveyed, one out of every two children slept under an ITN the night before the survey (Table CH.11). More children in the Upper West region slept under an ITN (78 percent), followed by children in the Upper East region (56 percent), while Central region had the lowest proportion of children sleeping under ITNs the night prior to the survey (41 percent).

Table CH.11: Children sleeping under bednets

Percentage of children aged 0-59 months who slept under an insecticide treated net during the previous night, HIRD Supplementary Survey, 2007/2008

	Slept under a bednet *	Sleep under an insecticide treated net **	Slept under an untreated net	Slept under a net but don't know if treated	Don't know if slept under a net	Did not sleep under a bednet	Number of children aged 0-59 months
Sex							
Male	53.0	49.8	1.9	1.3	0.1	46.9	4193
Female	53.6	50.3	1.6	1.6	0.0	46.4	4273
Region							
Central	42.6	40.9	1.0	.7	0.1	57.3	1798
Northern	50.4	47.0	1.8	1.5	0.1	49.6	3117
Upper East	61.1	56.3	2.4	2.4	0.0	38.9	2268
Upper West	79.2	77.6	1.5	0.1	0.1	20.7	1283
Area							
Urban	43.4	42.1	0.8	0.5	0.1	56.5	1874
Rural	56.2	52.5	2.1	1.7	0.0	43.7	6592
Age							
0-11 months	54.5	51.0	1.7	1.8	0.0	45.5	1850
12-23 months	59.9	57.4	1.8	.6	0.0	40.1	1654
24-35 months	57.2	54.5	1.4	1.3	0.2	42.5	1689
36-47 months	47.1	43.5	2.0	1.5	0.0	52.9	1762
48-59 months	47.0	43.2	1.8	1.9	0.0	53.0	1511
Mother's education							
None	54.0	50.8	2.1	1.1	0.0	46.0	3890
Primary	51.5	48.4	1.7	1.4	0.1	48.4	2180
Middle/JSS	53.4	49.6	1.5	2.3	0.0	46.6	1662
Secondary+	54.2	52.3	.8	1.2	0.3	45.5	734
Wealth index quintiles							
Poorest	53.1	49.5	1.9	1.6	0.1	46.8	1837
Second	55.1	51.7	2.3	1.2	0.1	44.7	1670
Middle	53.6	50.8	1.9	1.0	0.0	46.4	1605
Fourth	55.7	52.9	1.4	1.4	0.0	44.3	1637
Richest	48.4	45.2	1.3	2.0	0.0	51.5	1717
Total	**53.1**	**50.0**	**1.7**	**1.4**	**0.1**	**46.8**	**8466**

** MICS indicator 38*
*** MICS indicator 37; MDG indicator 22*

ITN use is highest among children between the ages 12-23 months (57 percent) and lowest among children aged 48-59 years (43 percent). There was, however, no variation in gender and ITN use among children under five. The higher proportion of children sleeping under ITN in the three northern regions could be attributed to the implementation of the High Impact Rapid Delivery (HIRD) approach, which seeks to provide ITNs freely or at low cost for pregnant women and children under five years.

Questions on the prevalence and treatment of fever were asked for all children under age five. About 23 percent of children under five years in the four regions were ill with fever in the two weeks prior to the survey (Table CH.12). Prevalence of fever is higher in the Upper West region (30 percent) followed by the Upper East region (25 percent) and Northern region (23 percent). The Central region had the lowest prevalence of fever in children under five years (18 percent).

Fever is less common among children below one year (17 percent) and high among children 12-23 months old (29 percent). The survey also shows that there is no correlation between children who had fever two weeks before the survey, their mother's educational level and the socio-economic status of the household in which they live.

In the HIRD Supplementary Survey, mothers were asked to report all the medicines given to a child to treat the fever, including any medicine given at home and medicines given or prescribed at a health facility. The findings of the survey revealed that in the four regions, about 52 percent of children with fever in the two weeks preceding the survey were treated with an "appropriate" anti-malarial drug and 37 percent received "appropriate" anti-malarial drugs within 24 hours of onset of symptoms. Regional differentials in the use of appropriate anti-malarial drugs exist. Sixty-four percent of children in the Upper West region received an appropriate dose of anti-malaria medicine, the highest proportion, while Central region recorded the lowest proportion at 43 percent.

In the survey, "appropriate" anti-malarial drugs include chloroquin, SP and artemisinin combination drugs. In the four regions, only nine percent of children with fever were given artemisinin combination therapy, which is currently the drug of choice in the Ministry of Health. Wide regional variations were noted in the use of artemisinin combination therapy. The highest usage of 23 percent was recorded in the Upper West region, while the other three regions recorded less than 10 percent usage of artemisinin combination therapy. One out of every five children received chloroquine, 13 percent received amodiaquine and 9 percent received quinine.

Table CH.12: Treatment of children with anti-malarial drugs

Percentage of children 0-59 months of age who were ill with fever in the last two weeks who received anti-malarial drugs, HIRD Supplementary Survey, 2007/2008

	Had a fever in last two weeks	Number of children aged 0-59 months	Children with a fever in the last two weeks who were treated with:													Number of children with fever in last two weeks
			Anti-malarials:							Other medications						
			SP/ Fansidar	Chloroquine	Amodiaquine	Quinine	Artemisnin based combinations	Other Anti-malarial	Any appropriate anti-malarial drug	Paracetamol/Panadol/Acetaminophen	Aspirin	Ibuprofen	Other	DK	Any appropriate anti-malarial drug within 24 hours of onset of symptoms *	
Region																
Central	17.6	1798	1.5	15.6	14.6	0.8	8.1	3.0	43.4	79.4	1.3	1.5	35.7	0.9	32.7	316
Northern	23.4	3117	1.3	20.0	13.4	9.9	7.5	5.9	51.3	65.2	0.8	0.0	23.6	6.6	36.4	728
Upper East	24.8	2268	0.7	27.8	8.7	6.3	8.6	2.6	52.5	80.3	0.7	0.5	14.1	1.7	36.5	563
Upper West	30.2	1283	0.0	22.4	12.9	7.8	23.4	2.0	64.0	69.3	0.4	0.5	18.8	3.0	45.1	388
Area																
Urban	23.2	1874	2.3	22.5	15.9	12.9	9.5	7.3	61.5	74.5	0.1	0.1	20.9	5.2	44.7	405
Rural	23.6	6592	0.8	20.6	11.9	7.1	9.3	4.0	49.3	67.4	1.0	0.3	23.3	5.0	34.7	1589
Age																
0-11 months	17.4	1850	0.1	17.7	9.1	7.2	7.1	9.3	46.3	65.7	0.6	0.2	19.7	4.6	37.1	338
12-23 months	28.8	1654	1.6	19.7	15.2	7.1	11.5	4.0	53.3	70.1	0.6	0.1	24.0	4.8	35.3	463
24-35 months	26.6	1689	1.2	22.0	11.1	9.4	9.7	4.6	52.5	67.5	0.9	0.5	25.9	5.8	36.2	470
36-47 months	24.8	1762	1.5	22.7	13.1	11.9	9.3	2.8	54.6	68.5	0.8	0.4	24.6	4.8	39.4	432
48-59 months	20.1	1511	0.7	23.2	15.0	5.1	7.9	4.2	52.2	73.9	1.2	0.0	16.3	5.2	37.3	291
Mother's education																
None	23.4		1.0	19.5	13.4	8.4	8.5	5.6	52.3	65.6	0.7	0.3	22.2	4.9	36.8	914
Primary	22.6		1.3	21.5	13.6	9.6	9.7	2.4	50.7	74.5	1.2	0.4	24.0	6.0	38.2	494
Middle/JSS	24.1		1.2	25.1	10.6	5.4	10.0	5.9	52.1	70.9	.6	0.1	23.6	4.4	36.6	402
Secondary+	24.9		0.8	18.7	12.1	12.1	11.2	4.6	54.8	67.1	0.6	0.0	20.1	4.6	35.6	184
Wealth index quintiles																
Poorest	25.1		2.0	17.3	14.0	6.7	14.1	3.7	50.9	66.1	1.3	0.0	18.6	5.0	39.0	417
Second	23.5		1.4	21.3	11.5	6.1	9.9	4.9	49.6	73.6	0.6	0.5	19.8	4.0	36.7	397
Middle	23.8		0.2	19.9	13.3	11.2	6.6	6.6	53.1	69.6	1.0	0.1	24.0	8.4	35.4	407
Fourth	23.7		1.7	22.4	13.4	7.6	8.5	4.7	53.0	67.8	0.1	0.1	24.8	4.4	34.4	398
Richest	21.2		0.2	24.7	12.5	11.0	7.9	4.0	55.6	67.7	0.8	0.5	27.1	3.5	41.0	376
Total	**23.4**	**8466**	**1.1**	**21.0**	**13.0**	**8.5**	**9.4**	**4.8**	**52.4**	**68.9**	**0.8**	**0.2**	**22.8**	**5.1**	**37.2**	**1994**

MICS indicator 39; MDG indicator 22

Malaria causes a number of complications in pregnancy including anaemia and intra-uterine growth retardation resulting in low birth weight, abortion, predisposition to peri-natal death and maternal death. It is, therefore, important for pregnant women to be protected against malaria attacks during pregnancy. In Ghana, the policy states that intermittent preventive therapy (IPT) with SP should accompany ITN distribution for effective prevention of malaria in pregnancy. The HIRD Supplementary Survey sought to find out the percentage distribution of women aged 15-49 years with a birth in the two years preceding the survey who received IPT for malaria during pregnancy.

The findings presented in Table CH. 13 reveal that three out of four women in the four regions surveyed who gave birth in the preceding two years received medicine to prevent malaria during pregnancy. The rate ranges from 70 percent in Northern region to 85 percent in Upper East region. Just over half of the women with recent births reported having received two or more doses of SP/Fansidar during their last pregnancy; this is considered as intermittent preventive treatment.

The survey also revealed that women with secondary or higher education were more likely to receive medicine to prevent malaria during pregnancy and also receive IPT two or more times than women with little or no education in the four regions.

Although the use of chloroquine to prevent malaria is not a recommended choice, about six percent of women received chloroquine to prevent malaria during pregnancy. The use of chloroquine to prevent malaria during pregnancy ranges from one percent in Upper West region to 7 percent in the Northern region.

Table CH.13: Intermittent preventive treatment for malaria

Percent distribution of women aged 15-49 years with a birth in two years preceding the survey who received intermittent preventive therapy (IPT) for malaria during pregnancy, HIRD Supplementary Survey, 2007/2008

	Medicine to prevent malaria during pregnancy	SP/Fansidar			Chloro-quine	Other medicines	Don't know medicine	Number of women who gave birth in the preceding two years
		Only one time	Two or more times *	Number of times unknown				
Region								
Central	77.9	16.1	53.1	0.0	6.0	0.0	0.0	762
Northern	70.6	14.9	44.5	0.1	6.5	0.0	0.0	1341
Upper East	85.1	16.1	63.8	0.1	5.6	0.0	0.0	914
Upper West	84.2	12.8	68.8	0.2	0.7	0.0	0.0	508
Area								
Urban	79.5	15.5	54.0	0.1	7.8	0.0	0.0	821
Rural	72.6	14.9	48.4	0.1	5.3	0.0	0.0	2704
Education								
None	72.6	14.7	48.3	0.0	6.1	0.0	0.0	2178
Primary	76.1	16.9	50.4	0.4	4.8	0.0	0.0	630
Middle/JSS	79.4	17.5	50.9	0.0	7.0	0.0	0.0	560
Secondary +	85.1	8.6	71.2	0.3	3.2	0.0	0.0	156
Wealth index quintiles								
Poorest	74.0	16.4	48.7	0.0	4.9	0.0	0.0	680
Second	71.7	14.4	50.0	0.2	8.7	0.0	0.0	777
Middle	75.5	13.8	53.1	0.0	3.9	0.0	0.0	753
Fourth	78.1	18.1	49.0	0.1	8.5	0.0	0.0	706
Richest	83.1	14.4	59.1	0.0	5.6	0.0	0.0	609
Total	**76.2**	**15.4**	**51.8**	**0.1**	**6.4**	**0.0**	**0.0**	**3525**

** MICS Indicator 40*

Sources and Costs of Supplies for ITNs and Antimalarials

Table CH. 14 shows the percentage of households by source of ITNs for prevention of malaria, percentage of households obtaining ITNs for free, and the median cost of ITNs for those paying for nets. The results of the survey showed that about 81 percent of households in the four regions obtained ITNs from the public sector, making it the main source for households. About 20 percent of households obtained their ITN supply from private sources (18 percent from sources such as chemical shops, relatives/friends and traditional practitioners, and two percent from private distribution). Among households that sourced their ITNs from the public sector, 49 percent received them for free.

It is also interesting to note that a higher proportion of households in Central region received free ITNs from the public sector compared to the three northern regions. The median cost for ITNs for the four regions was 2 GHC for both public and private sources. The median cost for ITNs in Upper East and Northern regions is lower than that of Central and Upper West regions.

Table CH.14: Source of supplies for ITNs

Percent distribution of households by source of ITNs for prevention of malaria, percentage of households obtaining ITNs for free, and median cost of ITNs for those paying for nets, by type of source of net, HIRD Supplementary Survey, 2007/2008

	Source of insecticide treated nets				Number of households with an least one ITN	Percentage Free		Median cost (GHC) for those not free	
	Public*	Private	Other	Total		Public	Private	Public**	Private**
Region									
Central	83.7	1.2	15.1	100.0	1402	52.7	31.5	2.00	2.00
Northern	78.0	2.5	19.4	100.0	1868	48.4	32.2	1.00	1.50
Upper East	86.3	1.5	12.2	100.0	1709	42.4	28.0	1.00	3.00
Upper West	86.7	1.9	11.4	100.0	1172	33.3	13.4	2.00	2.00
Area									
Urban	77.2	3.5	19.3	100.0	1530	50.1	31.7	2.00	2.50
Rural	82.2	1.7	16.1	100.0	4621	45.0	28.7	2.00	2.00
Education of household head									
None	80.6	2.0	17.4	100.0	3368	45.9	28.8	1.50	1.00
Primary	81.7	1.7	16.6	100.0	790	47.5	22.7	2.00	3.00
Middle/JSS	84.5	2.1	13.4	100.0	1154	52.9	45.6	2.00	3.00
Secondary +	77.6	3.3	19.1	100.0	839	39.3	25.3	2.00	3.00
Wealth index quintiles									
Poorest	82.6	2.1	15.3	100.0	1114	40.4	56.3	2.00	1.80
Second	77.5	2.6	19.9	100.0	1138	50.0	36.8	2.00	1.00
Middle	84.6	1.0	14.4	100.0	1139	54.3	19.2	2.00	2.00
Fourth	78.6	3.1	18.3	100.0	1229	52.1	21.6	2.00	4.00
Richest	79.2	1.4	19.4	100.0	1531	46.4	24.4	2.00	2 70
Total	**80.5**	**2.0**	**17.5**	**100.0**	**6151**	**48.8**	**32.3**	**2.00**	**2·00**

**MICS indicator 96*
*** MICS indicator 97*

The source and cost of supplies for antimalarials for children under five years of age are presented in Table CH 15. Similar to the ITNs, more children obtained their antimalarials from the public sector. Over half the households (57 percent) got antimalarials from the public sector, and the remainder from private sources (33 percent from private distributors/ retailers and 10 percent from other sources like friends or family members, drug peddlers etc).

Upper West region recorded the highest proportion of households that received antimalarials from public sources whilst Central region recorded the least. The median cost of an antimalarial is considerably higher in the private sector than in the public sector (80 pesewas and 20 pesewas respectively). The median cost of antimalarials in the Upper West region from the private sector is 95 pesewas, which was the highest among the four regions.

Table CH.15: Source and cost of supplies for antimalarials

Percent distribution of children aged 0-59 months with fever who took antimalarials in the two weeks preceding the survey, by source of antimalarials, percentage of children for whom antimalarials were obtained for free, and median cost of antimalarials for those paying for antimalarials, HIRD Supplementary Survey, 2007/2008

	Source of antimalarials			Total	Number of children with fever in prior two weeks who were treated with antimalarials	Percentage Free		Median cost (GHC) for those not free	
	Public*	Private	Other			Public	Private	Public**	Private**
Sex									
Male	56.3	32.6	11.0	100.0	541	27.4	2.1	0.20	0.10
Female	58.4	32.4	9.1	100.0	513	31.2	1.8	0.20	0.80
Region									
Central	52.4	45.2	2.4	100.0	137	26.7	1.3	0.30	0.10
Northern	55.6	32.2	12.2	100.0	373	26.1	1.9	0.20	0.80
Upper East	61.2	31.4	7.4	100.0	295	28.9	3.4	0.25	0.10
Upper West	65.2	28.5	6.3	100.0	248	45.5	0.8	0.15	0.95
Area									
Urban	57.1	38.7	4.2	100.0	248	46.2	3.7	0.15	0.80
Rural	57.5	30.3	12.2	100.0	806	23.2	1.1	0.20	0.80
Mother's education									
None	58.1	30.8	11.1	100.0	797	26.7	1.2	0.20	0.80
Primary	57.7	31.4	10.9	100.0	158	36.3	1.3	0.15	0.80
Middle/JSS	57.7	36.7	5.6	100.0	60	30.7	0.9	0.25	0.96
Secondary+	52.5	35.0	12.5	100.0	38	21.1	8.8	0.20	0.10
Wealth index quintiles									
Poorest	62.8	30.3	6.9	100.0	167	26.4	1.1	0.20	0.10
Second	64.5	24.8	10.7	100.0	208	27.2	1.1	0.20	0.70
Middle	50.0	38.7	11.3	100.0	202	24.9	2.2	0.20	0.80
Fourth	52.3	32.7	15.0	100.0	261	25.1	3.5	0.15	0.80
Richest	58.1	35.4	6.5	100.0	216	42.9	1.6	0.34	0.10
Total	**57.4**	**32.5**	**10.1**	**100.0**	**1054**	**29.4**	**2.0**	**0.20**	**0.80**

** MICS indicator 96; ** MICS indicator 97*

VII. Environment

Environmental issues are of increasing concern because the environment is an essential factor contributing to health, productivity and welfare. Against this background and in recognition of its importance to the development of these four regions, the survey looks at water sources, water treatment, excreta disposal, and durability of housing as environmental indicators.

Use of Improved and Unimproved Water Sources

The distribution of the population by source of drinking water is shown in Table EN.1. The population using improved drinking water sources is those who use any of the following types: piped water, public tap, borehole, protected well and protected spring. About 73 percent of the population in the four regions use improved drinking water sources. There are regional variations in the proportion of households that use improved sources of drinking water, ranging from 62 percent in Northern region to 87 percent in Upper West region.

The use of improved sources is higher in urban areas compared to rural areas. Four in five households in urban areas use improved sources of drinking water compared about three in five households in the rural areas.

The educational level of the household head has positive correlation in the use improved source of water. For instance, four in five households whose head has secondary or higher education have access to improved drinking water sources compared to three in five households whose head has little or no education.

The use of boreholes is significant in all four regions (44 percent). Upper West region has the highest usage of borehole (78 percent), followed by Upper East region (67 percent). On the other hand, fewer households in the Northern and Central regions use boreholes as their main source of drinking water (41 percent and 36 percent respectively). Table EN.1 also shows that only 6 percent of households in the four regions have water piped into the dwelling or piped into the yard or plot. Public tap/stand pipe as a source of drinking water is used by 18 percent of households in the four regions. Households in Central region are more likely to access their drinking water from public tap/stand pipe compared to the three Northern regions.

According to WHO/UNICEF Joint Monitoring Programme (JMP), sachet and bottled water are however not considered as 'improved' drinking water sources. This is because of concerns about the quantity of supplied water vis a vis affordability to the general public, not because of concerns over the water quality. It is interesting to note therefore, that 4 percent of household members in the four regions use bottled water as their main source of drinking water. The proportion ranges from 4 percent in Central and Upper West regions to 16 percent in Upper East region.

[4] *WHO/UNICEF Joint Monitoring Platform website http:/www.wssinfo.org*

Table EN.1: Use of improved water sources

Percent distribuion of household population according to main source of drinking water and percentage of household members using improved drinking water sources, HIRD Supplementary Survey, 2007/2008

	Main source of drinking water															Total	Improved source of drinking water*	Number of household members
	Improved sources								Unimproved sources									
	Piped into dwelling	Piped into yard or plot	Public tap/ Stand pipe	Bore hole	Protected well	Spring	Sachet water	Bottled water	Unprotected well	Rain water collection	Tanker -truck	Cart with small tank/ drum	River/ Stream	Dam/ lake/ pond/ canal/irrigation channel	Missing			
Region																		
Central	1.3	3.7	31.7	36.1	6.3	0.1	0.0	3.8	0.0	1.0	0.1	11.6	0.5	3.7	0.2	100.0	79.2	13070
Northern	2.1	1.3	13.9	40.6	3.5	0.4	0.0	5.1	0.2	0.1	0.1	16.0	16.0	0.2	0.4	100.0	61.8	18557
Upper East	1.7	3.3	2.5	66.9	7.1	0.2	0.0	15.7	0.0	0.0	0.3	1.8	.2	0.1	0.2	100.0	81.7	17197
Upper West	0.6	2.9	3.6	78.4	1.4	0.0	0.0	4.3	0.1	0.2	0.0	6.0	2.0	0.1	0.2	100.0	87.1	8591
Residence																		
Urban	6.6	6.7	35.9	26.8	6.9	0.0	0.0	6.7	0.3	0.5	0.4	3.7	2.9	1.6	1.0	100.0	82.9	14306
Rural	0.1	0.3	5.0	54.8	3.2	0.5	0.0	6.5	0.1	0.1	0.0	15.7	13.4	0.2	0.0	100.0	63.9	43109
Education of household head																		
None	0.6	1.2	10.4	49.2	3.8	0.3	0.0	6.7	0.2	0.1	0.1	13.3	13.5	0.1	0.3	100.0	65.6	36255
Primary	0.7	1.2	13.5	48.5	5.9	1.1	0.0	9.4	0.0	0.2	0.2	13.0	6.0	0.3	0.1	100.0	70.9	6671
Middle/JSS	1.3	4.8	25.3	42.5	4.3	0.1	0.0	5.7	0.0	0.5	0.1	10.0	3.6	1.4	0.4	100.0	78.3	9579
Secondary +	14.6	5.8	20.7	35.5	5.5	0.0	0.0	2.8	0.2	0.6	0.4	8.3	1.7	3.7	0.1	100.0	82.2	4910
Wealth index quintiles																		
Poorest	3.7	3.4	21.3	40.8	3.6	0.1	0.0	3.5	0.1	0.2	0.1	13.8	7.9	0.9	0.5	100.0	73.0	12187
Second	2.8	2.7	22.1	42.7	4.9	0.0	0.0	3.1	0.1	0.6	0.0	11.1	8.4	1.2	0.0	100.0	75.4	111 30
Middle	2.9	3.0	17.6	43.3	3.6	0.0	0.0	5.1	0.0	0.2	0.1	13.7	9.9	0.6	0.1	100.0	70.3	10649
Fourth	2.7	2.9	15.3	47.0	4.9	1.4	0.0	3.8	0.1	0.2	0.4	9.8	10.5	0.6	0.6	100.0	74.1	10738
Richest	1.9	2.7	14.9	44.9	6.3	0.7	0.0	6.6	0.3	0.3	0.2	10.5	8.3	1.2	1.2	100.0	71.3	12711
Total	**2.8**	**2.9**	**18.3**	**43.8**	**4.6**	**0.4**	**0.0**	**4.4**	**0.1**	**0.3**	**0.2**	**11.8**	**9.0**	**0.9**	**0.5**	**100.0**	**72.9**	**57415**

** MICS indicator 11; MDG indicator 30*

Household Water Treatment

Waterborne and water-based diseases arise from tainted water and disease is transmitted when the water is used for drinking or cooking. If the water is not treated, it may be a main conduit of diseases such as diarrhoea, guinea worm, typhoid fever, cholera, schistosomiasis, trachoma and lead poisoning.

Table EN.2 shows the percentage distribution of the household population according to drinking water treatment method, as well as the percentage of household members that apply appropriate water treatment methods. Seventy-eight percent of households in the four regions do not apply any treatment method to their drinking water. Only three percent of households that treat their water use appropriate method.

Households in urban areas are more likely to treat their drinking water (4 percent) than those in rural areas (3 percent). Households whose head has secondary education or higher are more likely to treat drinking water (9 percent) especially if sources of water are unimproved compared to households whose head has little or no education (4 percent).

Table EN.2: Household water treatment

ercentage distribution of household population according to drinking water treatment method used in the household and percentage of household members that applied an appropriate water treatment method, HIRD Supplementary Survey, 2007/2008

	Water treatment method used in the household							All drinking water sources: Appropriate water treatment method *	Number of household members	Improved drinking water sources: Appropriate water treatment method	Number of household members	Unimproved drinking water sources: Appropriate water treatment method	Number of household members
	None	Boil	Add bleach/ chlorine	Strain through a cloth	Use water filter	Solar disinfection	Let it stand and settle						
Region													
Central	96.7	1.0	0.2	0.8	0.3	0.0	0.9	1.5	13070	1.3	10477	2.0	2593
Northern	64.5	1.9	0.8	32.2	1.2	0.0	0.4	3.9	18558	3.1	11509	5.2	7049
Upper East	95.0	1.6	0.6	1.2	0.4	0.0	0.5	2.5	17197	2.1	14057	4.2	3139
Upper West	96.1	1.5	0.5	1.6	0.4	0.0	0.1	2.2	8591	1.7	7501	6.1	1089
Area													
Urban	83.6	2.2	0.8	12.7	1.0	0.0	0.2	4.0	14306	4.1	12351	3.2	1956
Rural	72.7	1.6	0.7	24.2	0.8	0.0	0.6	3.0	43109	1.8	31194	5.1	11915
Education of household head													
None	72.3	1.4	0.6	24.7	1.0	0.0	0.5	2.9	36255	2.2	26414	4.3	9841
Primary	78.7	2.7	0.7	17.2	0.6	0.0	0.3	3.8	6671	3.2	5161	5.5	1510
Middle/JSS	86.5	1.9	0.8	10.0	0.4	0.0	0.6	3.1	9579	2.0	7823	7.2	1756
Secondary+	84.1	3.4	1.6	11.6	0.7	0.0	0.1	5.6	4910	4.9	4146	9.0	763
Wealth index quintiles													
Poorest	81.5	1.3	0.3	15.9	0.6	0.0	0.3	2.2	12188	1.8	5696	3.2	6493
Second	80.2	1.6	0.5	16.9	1.1	0.0	0.1	3.1	11130	2.6	8816	5.0	2313
Middle	78.5	1.7	0.5	17.7	1.3	0.0	0.5	3.5	10649	3.5	9241	3.5	1408
Fourth	72.8	1.6	1.2	24.3	0.6	0.0	0.2	3.3	10738	3.1	9273	4.0	1465
Richest	75.8	1.1	0.7	22.0	0.2	0.0	0.4	2.0	12711	1.2	10519	3.9	2191
Total	**77.7**	**1.5**	**0.7**	**19.4**	**0.8**	**0.0**	**0.3**	**2.8**	**57415**	**2.4**	**43545**	**3.9**	**13870**

** MICS indicator 13*

Time to water source

Table EN.3 shows the time households spend to get their drinking water. The mean time to the source of drinking water is about 24 minutes for the four regions. Regional variation exist with households in the three Northern regions spending about 25 minutes and Central region spending the least time (19 minutes) to access their drinking water.

About 37 percent of households in the four regions have water on premises or within 15 minutes. Twenty-nine percent of households spend less than 15 minutes to go for water and back, whilst 26 percent and six percent of households spend more than 30 minutes and one hour or more respectively to go for water and return.

Table EN.3: Time to source of water

Percentage distribution of households according to time to go to source of drinking water, get water and return, and mean time to source of drinking water, HIRD Supplementary Survey, 2007/2008

	Time to source of drinking water:					Total	Mean time to source of drinking water (excluding those on premises)	Number of households
	Water on premises	Less than 15 minutes	15 minutes to less than 30 minutes	30 minutes to less than 1 hour	1 hour or more			
Region								
Central	6.9	40.2	30.1	17.5	4.0	100.0	19.4	3707
Northern	6.1	30.5	27.0	27.9	7.3	100.0	24.9	3410
Upper East	7.7	25.8	34.5	26.6	4.7	100.0	23.7	3324
Upper West	4.8	25.4	30.8	33.2	5.5	100.0	24.4	1754
Area								
Urban	18.3	34.8	22.8	18.4	5.0	100.0	21.3	3440
Rural	1.1	29.4	31.7	29.9	6.7	100.0	24.6	8755
Education of household head								
None	3.6	28.7	30.8	29.3	6.3	100.0	24.7	6992
Primary	4.1	33.4	30.8	24.1	7.0	100.0	22.8	1513
Middle/J SS	7.9	39.5	26.0	21.2	4.8	100.0	20.4	2356
Secondary +	23.1	30.8	20.6	18.0	6.8	100.0	23.0	1333
Wealth index quintiles								
Poorest	10.4	32.1	27.3	23.8	6.0	100.0	23.8	2318
Second	9.2	33.5	28.9	22.0	5.3	100.0	22.4	2297
Middle	7.9	31.2	30.1	23.6	6.8	100.0	23.6	2319
Fourth	7.3	28.2	28.4	28.4	6.3	100.0	24.0	2492
Richest	7.8	30.3	30.4	25.9	4.7	100.0	22.3	2770
Total	**6.4**	**31.0**	**29.0**	**26.4**	**6.2**	**100.0**	**23.7**	**12195**

Person collecting water

Table EN.4 shows the distribution of households according to the person who usually collects water used in the household, so as to know whether fetching drinking water is the responsibility of a particular sex or age group. The contribution of women to collecting water is greater in all the four regions. In households in the four regions, one in two adult women are responsible for fetching drinking water for their households. Adult women who collect water either alone or with children constitute 28 percent of persons collecting water used in households, compared to only seven percent of adult men and their children. This might be due to socio-cultural factors where women are believed to be responsible for all domestic duties such as cooking, taking care of children, fetching of water, among other duties.

The contribution of women in water collection is higher in the Northern region where in 86 percent of households, adult women are usually responsible for the collection of water either alone or with their children. The Central region, however, has a relatively lower proportion of women (67 percent) engaged in water collection either alone or with their children. The contribution of adult men is higher (18 percent) in the Central region compared to the three Northern regions.

Adult men in households where the head has secondary or higher education are more likely to collect water than those in households where the head has little or no education. In three percent of households, children are the ones who usually collect water. However, female children are more likely to collect water (2 percent) compared to male children (one percent).

Table EN.4: Person collecting water

Percentage distribution of households according to the person collecting water used in the household, HIRD Supplementary Survey, 2007/2008

	Person collecting drinking water								Total	Number of households where water is fetched
	Adult woman	Adult man	Female child (under 15)	Male child (under 15)	Children (both sexes)	Adult woman + child(ren)	Adult man + child(ren)	Other		
Region										
Central	46.8	18.1	3.9	2.5	6.4	18.9	0.8	2.4	100.0	3420
Northern	54.3	7.7	1.3	.5	2.4	31.4	0.5	1.8	100.0	3201
Upper East	47.8	8.3	1.7	0.6	2.8	36.7	1.3	0.7	100.0	3066
Upper West	50.1	6.6	2.7	0.4	2.3	31.4	1.4	4.6	100.0	1668
Area										
Urban	54.2	14.3	2.2	1.0	3.7	21.7	0.5	2.3	100.0	2748
Rural	50.8	7.7	1.9	0.8	2.9	33.1	0.8	1.9	100.0	8608
Education of household head										
None	51.5	5.5	1.9	0.6	3.2	34.1	0.9	2.1	100.0	6766
Primary	54.2	13.4	1.8	0.9	1.9	26.2	0.4	1.1	100.0	1435
Middle/JSS	50.9	17.3	2.4	1.8	3.5	21.7	0.4	1.7	100.0	2161
Secondary +	51.5	21.1	1.5	0.8	3.5	18.4	0.3	2.5	100.0	993
Wealth index quintiles										
Poorest	51.7	10.3	1.8	0.9	3.4	29.2	0.8	1.9	100.0	2227
Second	50.1	9.4	2.3	1.0	3.2	31.1	0.5	1.9	100.0	2232
Middle	51.4	12.8	1.8	1.5	3.4	26.2	0.6	2.2	100.0	2256
Fourth	51.9	10.6	1.6	.8	3.6	28.4	0.6	2.3	100.0	2372
Richest	53.3	11.2	2.3	.7	3.5	25.1	1.0	2.7	100.0	2269
Total	**51.7**	**10.9**	**2.0**	**1.0**	**3.4**	**28.0**	**0.7**	**2.2**	**100.0**	**11355**

Use of Sanitary Means of Excreta Disposal

Inadequate disposal of human excreta and inadequate personal hygiene are associated with a range of diseases including diarrhoea and polio. Table EN.5 shows the percentage distribution of type of toilet facility used by households in the regions. Sanitary (toilet) facilities were classified into improved and unimproved sanitation facilities. Improved sanitation facilities include: flush toilets connected to sewage systems, septic tanks or pit, ventilated improved pit latrines and pit latrines with slabs. Thirty-one percent of the population in the four regions uses sanitary means to dispose off their excreta.

The Table also shows that the use of improved toilet facilities is more prevalent in the urban areas (52 percent) and only 15 percent in the rural areas. There are also regional variations, with the Central region (64 percent) having the highest proportion of population that use improved sanitation (toilet) facilities. About 21 percent of the population in both Northern and Upper West regions use sanitary means of excreta disposal. The Upper East region has the lowest proportion of population using sanitary means of excreta disposal (11 percent).

Educational background of head of household has an influence on the type of toilet facilities being used. Thus, the higher the educational level of the household head, the more likely household members to use improved sanitary means of excreta disposal. However, little variations are observed between the use of improved sanitary means of excreta disposal and the socio-economic status of the household.

It is interesting to note that in 63 percent of households in the four regions have no toilet facilities in their households or use bush or fields to dispose of their excreta. Upper East region has the highest proportion (88 percent) followed by Upper West and Northern regions. The Central region has the least proportion of households without toilet facilities or use bush/field to dispose of their excreta (16 percent).

Table EN.5: Use of sanitary means of excreta disposal

Percentage distribution of household population, according to type of toilet used by the household and the percentage of household members using sanitary means of excreta disposal, HIRD Supplementary Survey, 2007/2008

	Type of toilet facility used by household								Total	Percentage of population using sanitary means of excreta disposal *	Number of household members
	Improved sanitation facility					Unimproved sanitation facility					
	Flush to piped sewer system	Flush to septic tank	Flush to pit (latrine)	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Pit latrine without slab/open pit	Bucket	No facilities or bush or field			
Region											
Central	0.3	3.3	0.7	36.6	23.2	20.0	0.1	15.9	100.0	64.0	13070
Northern	0.8	0.3	0.1	16.4	3.7	2.9	0.3	75.1	100.0	21.4	18558
Upper East	1.3	0.6	0.3	6.5	2.3	1.0	0.2	87.7	100.0	11.0	17197
Upper West	0.3	0.4	0.0	18.1	2.1	1.4	0.0	77.7	100.0	20.9	8591
Area											
Urban	2.8	2.2	0.7	38.0	8.3	5.0	0.8	41.7	100.0	52.0	14306
Rural	0.0	0.2	0.0	9.7	4.7	4.3	0.0	80.8	100.0	14.7	43109
Education of household head											
None	0.0	0.2	0.0	13.1	3.8	3.1	0.0	79.4	100.0	17.1	36255
Primary	0.0	0.3	0.2	17.7	6.8	6.8	0.3	67.7	100.0	25.1	6671
Middle/JSS	0.3	1.0	0.3	33.2	13.2	10.3	0.1	41.6	100.0	48.0	9579
Secondary +	8.8	5.2	1.5	30.3	9.3	5.0	2.1	37.7	100.0	55.0	4910
Wealth index quintiles											
Poorest	0.9	1.1	0.4	24.0	6.3	5.4	0.7	60.7	100.0	32.8	12188
Second	2.0	1.0	0.4	23.1	6.3	5.3	0.4	60.9	100.0	32.7	11130
Middle	1.4	1.2	0.1	20.7	6.0	5.1	0.1	64.9	100.0	29.5	10649
Fourth	0.8	1.0	0.1	20.1	5.2	4.3	0.5	67.8	100.0	27.3	10738
Richest	0.7	0.9	0.3	22.6	7.3	5.3	0.0	62.6	100.0	31.8	12711
Total	**1.2**	**1.0**	**0.3**	**22.1**	**6.2**	**5.1**	**0.3**	**63.4**	**100.0**	**30.8**	**57415**

** MICS Indicator 12; MDG Indicator 31*

According to the WHO/UNICEF Joint Monitoring Programme (JMP), improved sanitation (toilet) facilities include: flush toilets connected to sewage systems or septic tanks or pit, ventilated improved pit latrines and pit latrines with slabs but should not be shared. By this definition, only 13 percent of households in the four regions use an improved toilet facility (Table EN: 5A). However, out of the proportion using any of the categories classified as improved, 83 percent of households share the facilities with others. The Central region has the smallest proportion of households that do not share the toilet facility with any other households (9 percent) compared to the three Northern regions. In the four regions, about 65 percent of households share a toilet facility among ten or more households. Eleven percent shares a toilet facility among 2-4 households, and 7 percent among 5-9 households.

There are variations in educational levels of heads of household and exclusive use of improved toilet facility by households. Households whose head has little or no education are less likely to use an improved toilet facility exclusively (10 percent) than households whose heads have secondary or higher education (29 percent). No wide variations are observed between socio-economic status of the household and exclusive use of toilet facility by one household.

Table EN.5A: Shared use of improved sanitation facilities

Percentage distribution of household population using improved sanitation facilities, by number of households using the facility, HIRD Supplementary Survey, 2007/2008

	Not sharing	Among those using improved sanitation facility, number of household members sharing a facility				Total	Number of households members using improved sanitation facilities
		2-4 households	5-9 households	Ten or more house-holds	Don't Know/ Missing		
Kind of toilet facility							
Flush to piped sewer system	83.3	7.2	2.4	7.1	0.0	100	689
Flush to septic tank	53.4	21.5	8.2	14.7	2.1	100	574
Flush to pit (latrine)	42.9	10.8	16.1	28.6	1.8	100	172
Ventilated Improved Pit latrine (VIP)	7.2	6.6	4.2	76.1	5.9	100	12577
Pit latrine with slab	12.2	18.5	13.4	54.7	1.2	100	3560
Region							
Central	9.4	12.4	8.6	66.6	3.1	100	8481
Northern	11.4	6.8	4.0	67.2	10.5	100	4971
Upper East	24.5	7.4	5.6	58.9	3.5	100	2348
Upper West	27.4	10.4	5.9	55.6	0.5	100	1952
Area							
Urban	14.1	10	7.2	65.0	3.6	100	10439
Rural	11.8	11.6	7.1	64.7	4.9	100	7313
Education of household head							
None	10.1	8.9	6.2	68.6	6.1	100	6241
Primary	6.1	8.9	6.1	74.4	4.6	100	2203
Middle/JSS	8.8	11.2	8.1	69.0	3.0	100	5598
Secondary +	29	4.3	8.2	45.8	2.7	100	3711
Wealth index quintiles							
Poorest	12.8	13.4	7.8	61.4	4.7	100	3998
Second	12.3	9.4	7.2	66.9	4.2	100	3640
Middle	14.1	12.7	7.8	62.2	3.2	100	3141
Fourth	13.4	8.2	6.4	67.1	5.0	100	2931
Richest	12.9	10.2	5.8	66.7	4.6	100	4042
Total	**13.0**	**10.8**	**7.1**	**64.8**	**4.4**	**100**	**17752**

Disposal of child's faeces

The manner in which a child's faeces are disposed of may pose serious threats to health by contributing to an unhygienic environment in which diseases are easily transmitted. The study examined what was done to dispose of children's faeces. Table EN.6 shows the distribution of children 0-2 years and methods of disposal of children's faeces by region.

Ten percent of children 0-2 years in the four regions have their faeces disposed of safely. Wide regional variations exist in the proportion of children whose stools are disposed of safely. Central region records the highest proportion (43 percent) of children 0-2 years whose faeces are disposed of safely while the Upper East region recorded the lowest (3 percent).

Nearly one in five children have their faeces disposed of safely in urban areas compared to little less than one in 10 children in rural areas. A few children use the toilet/latrine themselves. Thirty-nine percent of children's faeces are thrown into garbage (solid waste) and 18 percent put/rinsed into a drain or ditch. About one in ten household put or rinse children's stools into toilets or latrines.

The educational background of the mother has influence on disposing of faeces safely. Mothers with little or no education (9 percent) are less likely to dispose of children's faeces safely than mothers with secondary or higher education (13 percent).

Table EN.6: Disposal of child's faeces

Percent distribution of children aged 0-2 years according to place of disposal of child's faeces, and the percentage of children aged 0-2 years whose stools are disposed of safely, HIRD Supplemental Survey, 2007/2008

	What was done to dispose of the stools								Total	Proportion of children whose stools are disposed of safely *	Number of children aged 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/ Missing			
Sex											
Male	0.4	9.2	17.4	39.4	10.8	3.4	18.8	0.7	100.0	9.6	2689
Female	0.1	10.5	17.9	38.6	11.6	3.7	16.8	0.8	100.0	10.5	2563
Region											
Central	0.5	42.4	13.2	37.8	1.4	0.5	3.8	0.4	100.0	42.9	1131
Northern	0.2	5.7	18.1	38.2	12.1	3.9	21.0	0.7	100.0	5.9	1980
Upper East	0.1	3.1	13.7	41.3	19.5	6.4	15.0	1.0	100.0	3.2	1364
Upper West	0.2	10.5	26.5	43.9	3.0	0.1	14.8	1.1	100.0	10.7	777
Area											
Urban	0.5	19.1	18.0	36.5	9.9	2.4	12.7	1.0	100.0	19.6	1193
Rural	0.2	7.1	17.5	39.7	11.6	3.9	19.3	0.7	100.0	7.2	4059
Mother's education											
None	0.2	9.0	17.5	38.1	12.2	3.4	18.6	1.1	100.0	9.2	4268
Primary	0.3	9.8	17.8	38.6	11.0	4.3	17.6	0.5	100.0	10.1	554
Middle/JSS	0.3	10.6	17.4	39.8	9.2	3.3	18.6	0.7	100.0	10.9	280
Secondary +	0.1	12.7	18.6	42.6	11.1	2.5	12.4	0.0	100.0	12.7	149
Wealth index quintiles											
Poorest	0.2	8.6	18.7	37.2	10.6	4.6	19.4	0.8	100.0	8.8	1130
Second	0.1	8.3	16.7	43.1	8.6	3.6	18.3	1.2	100.0	8.5	1022
Middle	0.1	9.0	18.0	38.0	13.0	3.1	18.6	0.1	100.0	9.1	1011
Fourth	0.5	9.9	17.8	40.3	11.0	3.7	16.0	0.8	100.0	10.5	1015
Richest	0.2	13.2	17.4	37.0	11.5	2.6	17.0	1.0	100.0	13.4	1073
Total	**0.2**	**9.9**	**17.7**	**39.1**	**11.0**	**3.5**	**17.8**	**0.8**	**100.0**	**10.1**	**5252**

** MICS indicator 14*

Use of Improved Water Sources and Improved Sanitation

Table EN.7 provides information on the percentage of the household population using both improved drinking water sources and sanitary means of excreta disposal. About one-quarter of households in the four regions use improved sources of drinking water and sanitary means of excreta disposal. The Central region, however, has a higher proportion of population using improved sources of drinking water and as well improved sanitary means of excreta disposal (56 percent). The three Northern regions all have less than 20 percent of the population using improved sources of drinking water and sanitary means of excreta disposal, with Upper East region recording the lowest (10 percent).

There is a marked difference between urban and rural households using improved sources of drinking water and sanitary means of excreta disposal. About 54 percent of urban households versus 14 percent of rural households use both improved sources of drinking water and improved sanitary means of excreta disposal.

Use of improved sanitary means and improved sources of drinking water and education level of head of household has a positive correlation. Household heads with little or no education (14 percent) are less likely to use improved sanitary means and improved sources of drinking water than those with secondary or higher education (57 percent). There is also a marked difference between the poorest and richest households. Almost half of the households in the richest wealth index quintile use both improved water sources and sanitary means of excreta disposal compared to only one in ten households in the poorest wealth index quintile.

Table EN.7: Use of improved water sources and improved sanitation

Percentage of household population using both improved drinking water sources and sanitary means of excreta disposal, HIRD Supplementary Survey, 2007/2008

	Percentage of household population using improved sources of drinking water *	Percentage of household population using sanitary means of excreta disposal **	Percentage of household population using improved sources of drinking water and using sanitary means of excreta disposal	Number of household members
Region				
Central	83	64.0	52.2	13070
Northern	61.8	21.4	16.9	18558
Upper East	81.7	11.0	10.1	17196
Upper West	87.1	20.9	19.2	8591
Area				
Urban	88.6	57.6	53.9	14306
Rural	72.5	18.0	14.1	43108
Education of household head				
None	72.9	17	13.9	36229
Primary	77.6	27.4	23.2	6671
Middle/JSS	82.9	53.0	46.1	9579
Secondary +	89.6	60.0	56.7	4910
Wealth index quintiles				
Poorest	47.3	14.4	12.4	12188
Second	79.6	15.6	12.4	11130
Middle	87.8	19.4	15.8	10648
Fourth	87.2	35.0	29.9	10738
Richest	83.4	52.7	47.4	12711
Total	**76.5**	**27.9**	**24.1**	**57414**

** MICS indicator 11; MDG indicator 30*
*** MICS indicator 12; MDG indicator 31*

Durability of Housing

The quality of dwellings (including the type of flooring material used), the general condition of the dwelling, its location, and durability are indicators of the socio-economic status of a household and also has health implications.

Table EN.8 presents the proportion of household members living in dwellings in urban areas that are not considered durable, by background characteristics. Four percent of households live in dwellings considered non-durable and less than one percent of the urban households are vulnerable to accidents in the four regions. Eleven percent of households have natural floor material, while 13 percent of the dwellings are in poor condition.

There is a positive correlation with respect to the level of education of the household head and the durability of the dwelling in which they live. Households where the head has secondary or higher education are less likely to live in dwellings considered non-durable (less than one percent), compared to five percent of households whose head has little or no education.

Table EN.8: Durability of housing

Percentage of households and household members living in dwellings in urban areas that are not considered durable by background characteristics, HIRD Supplementary Survey, 2007/2008

	Dwelling has natural floor material	Dwelling is in poor condition	Dwelling is vulnerable to accidents	Dwelling located in hazardous location	Percent of households living in dwellings considered non durable *	Number of households	Percent of household members living in dwelling considered non-durable	Number of household members
Region								
Central	6.9	5.1	0.6	0.0	1.3	1341	1.2	4504
Northern	10.6	14.5	0.0	0.0	3.0	4338	3.3	5486
Upper East	16.8	14.8	1.8	0.0	7.8	744	7.3	3459
Upper West	27.6	8.3	0.0	0.0	3.3	205	4.9	857
Education of household head								
None	13.2	15.7	0.2	0.0	4.7	3184	4.9	6279
Primary	15.0	10.6	0.6	0.0	3.7	709	4.1	1687
Middle/JSS	9.7	9.6	0.6	0.0	1.8	1292	2.1	3498
Secondary+	5.6	8.8	0.1	0.0	0.7	1443	0.6	2843
Wealth index quintiles								
Poorest	10.4	10.0	0.7	0.0	2.5	1162	3.1	1556
Second	7.3	13.3	0.0	0.0	1.7	1252	1.7	1493
Middle	10.4	11.8	0.2	0.0	2.6	1129	3.6	1588
Fourth	9.1	10.8	0.3	0.0	2.8	1109	3.4	3292
Richest	11.8	13.0	0.7	0.0	5.3	1079	5.0	6378
Total	**11.0**	**12.5**	**0.3**	**0.0**	**3.2**	**6628**	**3.5**	**14306**

** MICS Indicator 94*

VIII. Reproductive Health

Contraception

Appropriate family planning is important to the health of women and children by preventing pregnancies that are too early or too later, extending the period between births and limiting the number of children. A World Fit for Children goal is that all couples have access to information and services to prevent pregnancies that are too early, too closely spaced, too late or too many.

Contraception use appears to be low in the four regions surveyed. Table RH.1 shows that current use of any method of contraception was reported by 11 percent of women currently married or in union. Ten percent of the women were using a modern method and one percent was using any of the traditional methods. Nine in every ten women who were married or in a union were not using any contraceptive method.

Of those who use any method of contraceptive, the most popular method is the injections, used by 6 percent of married or in union women in the four regions. This is followed by the pill, used by three percent of the women. Less than one percent of women reported use of the IUD, implants, condoms, withdrawal, female sterilization, vaginal methods, or the lactational amenorrhea method (LAM). Also, one percent of the women married or in union periodically abstained from sexual intercourse.

The use of contraception is highest in the Central and Upper West regions, where each recorded 17 percent of contraceptive use by women married or in union using any method. Contraceptive use is less popular in the Northern region, where only eight percent of women married or in union used any contraceptive method.

Adolescents are far less likely to use contraception than older women. Only about six percent of married or women in a union aged 15-19 currently use a method of contraception compared to 12 percent of women married or in union aged 25-34 and 35-39 years old respectively. The area in which a woman resides has a positive correlation on the use of contraceptives. Women married or in union who resides urban areas are more likely to use contraceptive compared to those who resides in rural areas (15 percent and 9 percent respectively).

Women's education level is also strongly associated with contraceptive use. The proportion of women using any method of contraception increases from 7 percent among those with no education to about 14 percent among women with primary education, and further to 29 percent among women with secondary or higher education. In addition to differences in the rate of use, the method mix also varies by education. About four percent of contraceptive users with primary education or lower use the injections and two percent are on the pill. In contrast, 16 percent of contraceptive users with secondary or higher education use the injections and six percent use the pill.

The use of contraceptives also has some correlation with the number of living children that the women has. Women with three or more children are more likely to use contraceptive compared to those with one or no child (Table RH.1).

Table RH.1: Use of contraception

Percentage of women aged 15-49 years married or in union who are using (or whose partner is using) a contraceptive method, HIRD Supplementary Survey, 2007/2008

	Percent of women (currently married or in-union) who are using:													Total	Any modern method	Any traditional method	Any method *	Number of women currently married or in union
	Not using any method	Female sterilization	Pill	IUD	Injections	Implants	Condom	Female condom	Diaphragm/ foam/ jelly	LAM	Periodic abstinence	Withdrawal	Other					
Region																		
Central	82.8	1.1	5.9	0.4	5.6	1.0	0.7	0.1	0.1	0.1	1.8	0.1	0.2	100.0	15.0	2.2	17.2	1532
Northern	92.2	0.1	2.1	0.0	3.7	0.3	0.4	0.0	0.0	0.1	0.9	0.0	0.1	100.0	6.6	1.2	7.8	2770
Upper East	87.4	0.1	2.1	0.1	8.1	1.1	0.7	0.1	0.0	0.0	0.3	0.0	0.0	100.0	12.3	0.3	12.6	2297
Upper West	82.9	0.7	3.5	0.5	10.9	0.4	0.4	0.0	0.0	0.3	0.2	0.0	0.2	100.0	16.4	0.7	17.1	1175
Area																		
Urban	85.2	0.4	2.9	0.1	7.6	0.9	1.0	0.1	0.0	0.1	1.5	0.0	0.2	100.0	12.9	1.9	14.8	1860
Rural	91.3	0.3	2.5	0.1	4.3	0.4	0.3	0.0	0.0	0.1	0.7	0.0	0.1	100.0	7.8	0.9	8.7	5913
Age																		
15-19	93.7	0.0	2.7	0.0	2.0	0.0	0.5	0.0	0.0	0.6	0.4	0.0	0.0	100.0	5.3	1.0	6.3	232
20-24	91.5	0.0	2.2	0.1	4.3	0.1	0.8	0.0	0.0	0.1	0.8	0.0	0.0	100.0	7.5	1.0	8.5	1041
15-24	91.9	0.0	2.3	0.1	3.9	0.1	0.7	0.0	0.0	0.2	0.7	0.0	0.0	100.0	7.1	1.0	8.1	1273
25-29	88.2	0.0	3.0	0.1	6.0	0.6	1.0	0.1	0.0	0.1	0.9	0.0	0.2	100.0	10.7	1.1	11.8	1653
30-34	88.1	0.3	2.9	0.2	6.3	0.5	0.2	0.0	0.1	0.1	1.2	0.0	0.1	100.0	10.5	1.3	11.9	1511
35-39	88.5	0.2	2.9	0.1	5.9	0.7	0.4	0.0	0.0	0.1	0.9	0.0	0.4	100.0	10.1	1.4	11.5	1355
40-44	91.1	0.6	2.2	0.2	4.1	0.5	0.1	0.0	0.0	0.1	1.0	0.0	0.0	100.0	7.8	1.1	8.9	1109
45-49	93.0	0.8	1.7	0.0	3.3	0.5	0.1	0.0	0.0	0.0	0.5	0.0	0.0	100.0	6.4	0.5	7.0	872
Number of living children																		
0	98.0	0.0	0.4	0.0	1.4	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2.0	0.0	2.0	353
1	91.8	0.0	2.0	0.1	3.5	0.2	0.8	0.0	0.0	0.2	1.2	0.0	0.1	100.0	6.7	1.5	8.2	1143
2	88.1	0.0	2.0	0.1	6.9	0.5	0.9	0.1	0.0	0.1	1.1	0.0	0.0	100.0	10.6	1.3	11.9	1322
3	87.3	0.2	4.0	0.1	6.0	0.6	0.4	0.0	0.0	0.1	1.3	0.0	0.0	100.0	11.3	1.4	12.7	1297
4+	89.7	0.5	2.8	0.1	5.1	0.6	0.2	0.0	0.1	0.1	0.6	0.0	0.3	100.0	9.4	1.0	10.3	3658
Education																		
None	92.6	0.2	1.7	0.0	3.9	0.3	0.4	0.0	0.0	0.1	0.7	0.0	0.1	100.0	6.5	0.9	7.4	5161
Primary	86.4	0.5	3.3	0.0	6.9	0.9	0.4	0.0	0.0	0.4	1.1	0.0	0.0	100.0	12.0	1.6	13.6	1183
Middle/JSS	79.4	0.7	7.5	0.4	8.5	1.3	0.9	0.1	0.0	0.0	1.0	0.1	0.2	100.0	19.4	1.3	20.6	1087
Secondary +	70.9	0.0	6.1	0.9	15.5	1.2	1.2	0.0	0.1	0.2	3.7	0.0	0.3	100.0	24.9	4.2	29.1	343
Wealth index quintiles																		
Poorest	88.6	0.1	2.9	0.3	5.9	0.5	0.2	0.0	0.0	0.3	1.1	0.0	0.0	100.0	9.9	1.4	11.4	1048
Second	88.3	0.4	2.4	0.1	6.1	0.7	1.1	0.0	0.1	0.0	0.7	0.0	0.1	100.0	10.9	0.8	11.7	1022
Middle	90.1	0.3	2.6	0.0	5.1	0.5	0.7	0.1	0.0	0.2	0.3	0.0	0.0	100.0	9.3	0.6	9.9	1028
Fourth	91.3	0.2	2.4	0.1	4.7	0.5	0.2	0.0	0.0	0.1	0.6	0.0	0.1	100.0	8.0	0.7	8.7	1163
Richest	87.3	0.4	3.4	0.1	5.7	0.5	0.1	0.0	0.2	0.0	2.0	0.0	0.4	100.0	10.4	2.3	12.7	1216
Total	**89.1**	**0.3**	**2.7**	**0.1**	**5.5**	**0.6**	**0.5**	**0.0**	**0.0**	**0.1**	**0.9**	**0.0**	**0.1**	**100.0**	**9.7**	**1.2**	**10.9**	**5477**

** MICS indicator 21; MDG indicator 19C*

Antenatal Care

Antenatal Care (ANC) is commonly understood to have a beneficial impact on pregnancy and birth outcomes through early diagnosis and treatment of complications as well as by promoting the health of the pregnant woman and her unborn child.

Antenatal care services create the opportunity for service providers to establish contact with the woman to identify and manage current and potential risks and problems during pregnancy. The ANC period presents an important opportunity for reaching pregnant women with interventions that may be vital to their health. It also creates opportunities for screening for conditions such as breast cancer, HIV and STI among others.

For effective antenatal care, it is ideal that services are initiated early in pregnancy and an adequate number of visits made so that the woman can enjoy the full benefit of the package of services delivered under antenatal care. The current package of services provided in Ghana includes malaria prevention through chemoprophylaxis or Intermittent Preventive Treatment and promotion of use of insecticide treated mosquito nets, nutrition education, iron foliate supplementation, tetanus immunization, clinical examination, laboratory investigations, voluntary counseling and testing (VCT) and prevention of mother-to-child transmission (PMTCT), family planning education, education on breastfeeding and care of the newborn.

The World Health Organization recommends a minimum of four antenatal visits. ANC visits should include the following assessments:

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

Table RH.2 presents the percentage distribution of women aged 15-49 who gave birth in the two years preceding the survey, by type of personnel providing antenatal care. The findings indicate that a majority (89 percent) of the women aged 15-49 years were provided with antenatal care by skilled personnel in the four regions surveyed.

ANC coverage is very encouraging in all the four regions. Central, Upper East and Upper West regions all recorded over 90 percent ANC coverage by skilled personnel, while the Northern region recorded the lowest coverage of 87 percent. Nurses/ midwifes provided over 80 percent of all antenatal care in all four regions. Medical doctors provided antenatal care to 6 percent of the pregnant women. Women in Central were more likely to be provided antenatal care by a doctor (9 percent) compared to the three Northern regions.

Women in urban areas are more likely to receive antenatal care from skilled personnel compared to those in rural areas. Slight variations existed between the socio-economic status of the women and access to ANC by skilled personnel. The survey also revealed that 8 percent of women in Northern and Upper West regions did not received any antenatal care during their last pregnancy.

Table RH.2: Antenatal care provider

Percentage distribution of women aged 15-49 who gave birth in the two years preceding the survey, by type of personnel providing antenatal care, HIRD Supplementary Survey, 2007/2008

	Person providing antenatal care								Total	Any skilled personnel *	Number of women who gave birth in the preceding two years
	Medical doctor	Nurse/ midwife	Auxiliary midwife	Traditional birth attendant	Community health worker	Relative/ Friend	Other/ missing	No antenatal care received			
Region											
Central	7.8	84.8	.8	0.6	0.1	0.9	0.7	4.4	100.0	92.6	762
Northern	5.5	81.2	2.1	0.6	1.7	0.5	0.4	8.0	100.0	86.7	1341
Upper East	7.3	86.1	2.9	0.1	1.5	0.0	0.2	2.0	100.0	93.4	914
Upper West	2.1	89.4	0.3	0.4	0.0	0.1	0.1	7.5	100.0	91.5	508
Area											
Urban	7.7	84.2	2.7	0.0	1.3	0.2	0.7	3.3	100.0	91.9	821
Rural	5.1	82.4	1.7	0.6	1.4	0.5	0.2	7.9	100.0	87.5	2704
Age											
15-19	7.8	85.1	1.3	0.0	0.3	1.7	0.0	3.9	100.0	92.9	191
20-24	6.4	83.4	2.4	0.5	2.3	0.7	0.0	4.5	100.0	89.7	703
25-29	6.0	83.6	1.4	0.8	1.7	0.3	0.1	6.1	100.0	89.6	943
30-34	7.2	80.6	2.4	0.6	1.0	0.1	0.7	7.5	100.0	87.8	792
35-39	3.8	83.5	2.4	0.1	1.0	0.2	0.5	8.5	100.0	87.3	513
40-44	2.0	86.7	1.2	0.3	0.3	0.7	0.9	7.9	100.0	88.7	277
45-49	3.9	74.5	1.5	0.3	2.7	0.7	1.5	14.9	100.0	78.4	106
Education											
None	6.0	85.8	1.9	0.2	0.4	0.6	0.5	4.5	100.0	91.8	2178
Primary	9.9	82.0	.8	0.8	0.5	0.3	0.6	5.1	100.0	91.9	630
Middle/JSS	11.6	85.8	.6	0.0	0.0	0.0	0.6	1.4	100.0	97.4	560
Secondary +	7.8	84.8	.8	0.6	0.1	0.9	0.7	4.4	100.0	92.6	156
Wealth index quintiles											
Poorest	6.6	80.0	4.1	0.6	1.4	0.2	0.6	6.6	100.0	86.6	680
Second	3.5	84.1	2.0	0.5	2.9	0.2	0.0	6.8	100.0	87.6	777
Middle	7.7	80.6	1.9	0.2	1.6	0.1	0.5	7.4	100.0	88.4	753
Fourth	3.9	87.9	1.2	0.1	1.0	0.5	0.3	5.2	100.0	91.8	706
Richest	6.0	84.1	1.0	0.8	0.8	0.3	1.1	5.8	100.0	90.1	609
Total	**5.5**	**83.3**	**2.0**	**0.4**	**1.6**	**0.3**	**0.5**	**6.4**	**100.0**	**88.8**	**3525**

** MICS indicator 20*

Table RH 3 presents the percentage of women aged 15-49 years in the four regions receiving antenatal care who gave birth in the two years preceding the survey, and the content of antenatal care received. The percent of women who received ANC is very high in the four regions surveyed. As high as, 93 percent of women received ANC one or more times in all four regions. Ninety-eight percent of women in the Upper East region received ANC more than once during the pregnancy, followed by Central region where 96 percent of pregnant women attended ANC one or more times. Among the four regions, both Northern region and Upper West region recorded the lowest proportion of pregnant women receiving ANC one or more times during pregnancy (92 percent).

Table RH.3: Antenatal care content

Percentage of pregnant women receiving specific care as part of the antenatal care provided among women aged 15-49 years who gave birth in two years preceding the survey and received antenatal care, HIRD Supplementary Survey, 2007/2008

	Percent of pregnant women receiving ANC one or more times during pregnancy*	Percent of pregnant women who had:				Number of women who gave birth in two years preceding survey
		Blood sample taken	Blood pressure measured	Urine specimen taken	Weight measured	
Region						
Central	95.6	85.2	96.6	88.8	95.8	762
Northern	92.0	58.9	96.8	54.5	97.2	1341
Upper East	98.0	79.2	98.2	72.4	98.8	914
Upper West	92.3	81.1	96.5	65.5	97.8	508
Area						
Urban	97.0	76.8	98.2	76	97.6	821
Rural	93.6	62.7	96.5	56.8	97.2	2404
Age						
15-19	96.5	63.7	95.6	64.9	96.3	191
20-24	96.3	65.3	97.9	62.5	97.2	703
15-24	96.4	65	97.5	62.9	97	894
25-29	95.1	67.4	96.6	62.6	97.5	943
30-34	93.8	69.9	97.4	61.9	97.4	792
35-39	92.6	61.2	97.1	61.5	97.9	513
40-44	93.6	66.7	95.7	56	96	277
45-49	88.4	58.8	94.5	53.5	97.1	106
Education						
None	93.1	61.6	96.7	55.1	97.2	2178
Primary	96.5	77.2	97.7	72.1	96.9	630
Middle/JSS	95.9	75.3	96.3	81	97.6	560
Secondary +	98.9	85.1	99.4	88.1	99.4	156
Wealth index quintiles						
Poorest	92.5	68.2	97.2	61.7	97.2	680
Second	91.0	65.2	97.4	59.6	97	777
Middle	90.8	67.1	97.5	63.2	98.4	753
Fourth	95.1	68.2	97.9	63.7	97.3	706
Richest	96.0	72.3	96	68.9	97	609
Total	**93.1**	**68**	**97.2**	**63.2**	**97.4**	**3525**

**MICS indicator 44*

With the exception of women aged between 45 - 49 years among whom 88 percent received ANC more than once, little variation was noted among the other age groups and ANC visits. As already discussed above, various assessments were expected to be conducted during ANC visits. Ninety-seven percent of women had their blood pressure and weight measured. About 68 percent had their blood sample taken, while 63 percent of the women had their urine specimen taken.

Among the women who gave birth in two years preceding survey and received antenatal care, 46 percent made their first ANC visit during their first trimester, one in two women made their first ANC visit during the second trimester and 4 percent made it during their last trimester. Little variations are observed in Central, Upper West and Upper East regions in terms of women who made their first ANC visit during their first trimester. However, Northern region lags behind at 42 percent. Table RH.3.1 also shows that 72 percent of women in the four regions made 4 or more ANC visits as recommended by WHO. Upper East region had the highest proportion of women who made 4 or more visits (85 percent), Upper West was second at 79 percent, followed by Central region (72 percent). Northern region had the lowest proportion of women who made 4 or more ANC visits (69 percent). Women residing in urban areas are also more likely to attend ANC 4 or more times compared to those residing in rural areas (84 percent and 68 percent respectively). Table RH.3.1 also reveals that there is a positive correlation in education level and socio-economic status of the women and the possibility of attending ANC 4 or more times. For example, 69 percent of women with little or no education attended ANC 4 or more times, compared to 97 percent of women with secondary or higher education.

Table RH.3.1: Antenatal care utilization

Percentage of pregnant women receiving antenatal care among women aged 15-49 years who gave birth two years preceding the survey, and months of first visit, and number of ANC visits, HIRD Supplemental Survey, 2007/2008

	Months of first antenatal visit				Number of times of Antenatal visits			Number of women who gave birth in two years preceding survey and received antenatal care
	1-3 months	4-6 months	7-9 months	Total	1-3 times	4 or more times	Total	
Region								
Central	53.2	41.3	5.6	100	28.2	71.8	100	728
Northern	41.7	54.0	4.3	100	31.1	68.9	100	1,233
Upper East	55.0	42.7	2.3	100	14.9	85.1	100	896
Upper West	52.1	44.6	3.3	100	21.3	78.7	100	470
Residence								
Urban	50.7	46.8	2.5	100	16.1	83.9	100	796
Rural	43.9	51.5	4.6	100	31.7	68.3	100	2,532
Age								
15-19	47.9	46.4	5.7	100	26.1	73.9	100	185
20-24	44.5	51.3	4.2	100	30.4	69.6	100	676
25-29	48.1	48.4	3.4	100	27.1	72.9	100	896
30-34	46.0	50.9	3.1	100	26.8	73.2	100	743
35-39	42.1	51.9	6.0	100	26.6	73.4	100	474
40-44	42.4	54.2	3.3	100	26.2	73.8	100	260
45-49	45.4	46.9	7.8	100	39.2	60.8	100	94
Marital/Union status								
Currently married/in union	45.5	50.3	4.2	100	28.2	71.8	100	2,309
Formerly married/in union	48.2	50.7	1.1	100	16.8	83.2	100	63
Never married/ in union	44.4	51.3	4.3	100	26.4	73.6	100	60
Education level								
None	43.2	52.5	4.3	100	30.6	69.4	100	2,028
Primary	46.4	47.7	5.9	100	26.5	73.5	100	609
Middle/JSS	51.7	46.2	2.0	100	21.0	79.0	100	538
Secondary+	67.1	32.9		100	3.1	96.9	100	154
Wealth index quintiles								
Poorest	39.7	56.8	3.5	100	35.3	64.7	100	481
Second	41.5	52.5	5.9	100	33.2	66.8	100	458
Middle	45.4	49.3	5.3	100	30.9	69.1	100	455
Fourth	50.2	46.9	2.9	100	23.5	76.5	100	503
Richest	50.7	46.1	3.2	100	17.7	82.3	100	535
Total	**45.6**	**50.3**	**4.1**	**100**	**27.9**	**72.1**	**100**	**2,432**

Assistance at Delivery

The provision of delivery assistance by skilled attendants can greatly improve outcomes for mothers and infants by the use of technically appropriate procedures, and accurate and speedy diagnosis and treatment of complications. Skilled assistance at delivery is defined as assistance provided by a doctor, nurse, midwife or auxiliary midwife.

Table RH.4 shows the proportion of women aged 15-49 with a birth in the two years preceding the survey, by type of personnel assisting at delivery in the four regions surveyed. About 30 percent of the women in the four regions were assisted by skilled personnel. Central region recorded the highest proportion of women assisted by skilled personnel during delivery (49 percent), followed by the Upper West and Upper East regions with 41 and 40 percent respectively. Northern region, however, recorded the lowest proportion of 19 percent.

The survey further revealed that one in four women who delivered two years preceding the survey were assisted by a nurse/ midwife and only four percent were assisted by a doctor. It is also interesting to note that in the four regions surveyed, trained traditional birth attendants assisted 27 percent of deliveries, while 13 percent of deliveries were assisted by untrained traditional birth attendants. Women in the Northern region are more likely to be attended by untrained traditional birth attendants (18 percent), compared to the other three regions. Also, a high proportion of births were delivered by relative/friend in the four regions (27 percent). Pregnant women in both Northern and Upper East regions are more likely to be assisted by a relative/friend during delivery.

Over half the women in urban areas were assisted by skilled personnel during delivery as against 19 percent of women in rural areas. The more educated a woman is, the more likely she is to have delivered with the assistance of a skilled person, particularly a doctor or a nurse/ midwife. The results showed that about 19 percent of women with no education delivered with the assistance of skilled personnel while four in five women with a secondary or higher education were delivered by skilled personnel. Nearly 14 percent of the educated women were delivered by a medical doctor as opposed to a little over two percent of uneducated women.

Twenty-eight percent of pregnant women delivered in a health facility. Central region recorded the highest institutional deliveries (48 percent) whiles Northern region recorded the least with 18 percent of institutional deliveries.

Women aged 25-29 years and 30-34 years are more likely to deliver in a facility and also by skilled personnel compared to the other age groups. The educational level of the woman also plays considerable role in where she delivers. For instance, three in four women with secondary or higher education delivered in a health facility compared to only 17 percent of women with little or no education.

Table RH.5: Assistance during delivery

Percentage distribution of women aged 15-49 with a birth in two years preceding the survey, by type of personnel assisting at delivery, HIRD Supplementary Survey, 2007/2008

	Person assisting at delivery							Total	Any skilled personnel *	Delivered in health facility **	Number of women who gave birth in preceding two years
	Medical doctor	Nurse/ midwife	Trained Traditional birth attendant	Untrained Traditional birth attendant	Relative/ friend	Other/ missing	No attendant				
Region											
Central	4.6	44.5	31.4	5.2	11.8	1.2	1.2	100.0	49.1	47.5	762
Northern	3.0	16.5	29.1	18.0	30.1	1.2	2.2	100.0	19.4	17.5	1341
Upper East	3.1	36.8	19.8	5.2	31.4	3.1	.5	100.0	39.9	37.9	914
Upper West	6.7	34.2	28.1	3.6	21.3	4.0	2.0	100.0	40.9	39.9	508
Area											
Urban	6.1	44.7	24.4	6.6	14.8	1.5	1.9	100.0	50.8	47.5	821
Rural	2.6	16.8	29.2	16.2	31.7	1.7	1.8	100.0	19.3	18.0	2704
Age											
15-19	0.8	26.7	31.5	8.5	29.6	2.2	0.6	100.0	27.6	26.9	191
20-24	3.0	22.4	28.7	13.2	30.1	1.6	1.1	100.0	25.4	23.5	703
15-24	2.6	23.2	29.2	12.3	30.0	1.7	1.0	100.0	25.8	24.1	894
25-29	3.4	27.8	22.9	15.1	28.9	1.3	.5	100.0	31.2	28.5	943
30-34	5.3	23.7	26.9	12.2	26.7	1.9	3.4	100.0	28.9	28.5	792
35-39	2.0	21.0	31.6	15.1	26.2	1.5	2.6	100.0	23.0	20.4	513
40-44	4.4	17.5	35.1	16.2	22.6	2.4	1.9	100.0	21.9	20.1	277
45-49	0.4	11.6	38.2	17.0	26.4	1.6	4.8	100.0	12.0	10.2	106
Education											
None	2.2	16.7	29.6	16.1	31.9	1.7	1.8	100.0	19.0	16.9	2178
Primary	5.0	31.2	27.2	8.9	22.6	2.1	3.0	100.0	36.2	35.5	630
Middle/JSS	5.9	43.7	25.9	9.0	13.3	1.2	1.1	100.0	49.5	47.7	560
Secondary +	13.5	65.6	8.4	4.6	7.0	0.6	0.3	100.0	79.1	77.4	156
Wealth index quintiles											
Poorest	5.2	28.2	26.4	12.5	24.8	1.4	1.4	100.0	33.4	31.1	680
Second	3.8	22.6	30.1	12.7	28.1	1.0	1.7	100.0	26.3	25.0	777
Middle	3.7	29.4	22.8	14.5	26.7	1.3	1.5	100.0	33.2	31.1	753
Fourth	2.0	20.2	30.4	15.8	28.4	2.5	0.7	100.0	22.2	20.1	706
Richest	4.7	30.2	22.9	9.6	26.0	2.0	4.6	100.0	34.9	32.5	609
Total	**3.8**	**26.0**	**26.7**	**13.1**	**26.8**	**1.6**	**1.9**	**100.0**	**29.8**	**27.8**	**3525**

** MICS indicator 4; MDG indicator 17*
*** MICS indicator 5*

IX. Child Development

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. This means that early childhood care and development (ECCD) is crucial for every child. It is the timely provision of a range of services that promotes the survival, growth, development and protection of the young child[5]. It is the period of rapid brain and cognitive development.

In this context, adult activities with children, presence of books in the home, especially for the child, and the conditions of care are important indicators of quality of home care. A World Fit for Children goal is that "children should be physically healthy, mentally alert, emotionally secure, socially competent and ready to learn." Proper child upbringing has always been an important feature in Ghanaian society. Ghana developed an ECCD policy in August 2004. The policy takes into account new ECCD approaches, primarily focusing on the protection of a child's right to develop his or her full cognitive, emotional, social and physical potential.

In the HIRD Supplementary Survey, respondents were asked to provide information on activities that support early learning. 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. Survey results are seen in Tables CD.1 and CD. 2.

Responses from the survey indicate that 20 percent of adults engage in four or more activities to promote learning and school readiness. The average number of activities that household members engaged in with children was 2.6. The proportion of household members who engage with children ranges from 25 percent in the Central region to 17 percent in the Upper East region.

The engagement of adults in activities that promote learning and school readiness is highest (27 percent) in urban households and lowest (17 percent) in rural households. No considerable gender differences are observed. There is greater engagement by adults with higher education than those with less or without any education.

Almost five in every 10 fathers engaged in one or more activities that promote learning and school readiness. The involvement of fathers in activities that promote learning is highest (52 percent) in the Northern region and lowest (27 percent) in the Upper West region. The percentage of children living in a household without their natural/ biological fathers ranged between 41 percent in the Central region and 11 percent in the Northern region.

More children in urban areas than in rural areas are living without their biological fathers in their households. The proportion of children from the richer households living without their biological father is higher than children from the poorest households (Table CD. 1).

[5] *MOWAC, ECCD Policy, 2004.*

Table CD.1: Family support for learning

Percentage of children aged 0-59 months for whom household members are engaged in activities that promote learning and school readiness, HIRD Supplementary Survey, 2007/2008

	Percentage of children aged 0-59 months					
	For whom household members engaged in four or more activities that promote learning and school readiness *	Mean number of activities household members engage in with the child	For whom the father engaged in one or more activities that promote learning and school readiness **	Mean number of activities the father engage in with the child	Living in a household without their natural father	Number of children aged 0-59 months
Sex						
Male	19.3	2.6	49.7	0.9	14.1	4193
Female	19.5	2.6	46.9	0.9	15.8	4273
Region						
Central	24.6	2.7	40.7	0.8	41.5	1798
Northern	19.1	2.6	52.2	0·9	11.0	3117
Upper East	17.0	2.5	49.6	0.9	14.3	2268
Upper West	19.5	2.5	27.1	0.5	12.4	1283
Residence						
Urban	26.9	2.9	52.0	1.0	19.8	1874
Rural	17.2	2.5	47.1	0.8	14.0	6592
Age						
0-23 months	21.9	2.5	44.9	0.8	15.1	4244
24-59 months	26.9	2.7	51.0	1.0	15.9	4222
Mother's education						
None	19.4	2.5	49.8	0.9	14.3	6985
Primary	20.0	2.7	46.0	0.9	14.7	844
Middle/JSS	18.6	2.9	45.5	0.9	16.7	405
Secondary/SSS	20.0	3.0	41.8	0.9	15.4	232
Father's education						
None	15.6	2.5	53.0	0.9	.0	5047
Primary	18.8	2.6	63.6	1.2	.0	731
Middle/JSS	23.6	2.7	61.7	1.2	.0	913
Secondary/SSS/SHS +	27.8	2.8	23.6	0.5	69.2	1776
Wealth index quintiles						
Poorest	19.7	2.4	51.1	0.8	13.2	1837
Second	21.8	2.5	50.1	0.9	13.9	1670
Middle	20.9	2.5	47.5	0.8	15.3	1605
Fourth	17.0	2.7	45.6	1.0	17.2	1637
Richest	18.0	2.9	48.6	0.9	15.5	1717
Total	**19.8**	**2.6**	**48.3**	**0.9**	**15.0**	**8466**

** MICS indicator 46*
*** MICS indicator 47*

Early learning practices are associated with positive future prospects for every child in terms of growth and development. It is very important to introduce children to learning materials such as books, household objects and other playthings in their early years. Play, for instance, enhances children's development and early learning abilities.

Table CD. 2 shows that 29 percent of households in the four regions surveyed had at least 3 or more non-children books. In relation to regional variations, 24 percent of children in the Northern region live in households where at least three or more non-children books are present compared to 43 percent of children in the Central region. Interestingly, the proportion of households with three or more children's books is very low in all four regions. Only 5 percent of households in the four regions with children aged 0-59 months have three or more children's books in their households.

The proportion of urban households (43 percent) with three or more non-children's books is higher than rural households (23 percent). A similar trend is seen in relation to children's books, with nine percent of urban households having three or more children's books compared with three percent in rural households. Availability of books in households correlates with level of education and wealth of the household; proportions of both non-children and children's books are higher for households in which the mother has secondary or higher level of education.

The HIRD Supplementary Survey included questions on playthings available for children's use in households. Playthings included household objects, home-made toys, toys that came from a store, and objects and materials found outside the home. Table CD.2 shows, that 17 percent of children aged 0-59 months had three or more playthings in their homes. The table also indicates that 61 percent of children play with household objects, 63 percent play with objects and materials found outside home, 21 percent play with home-made toys, and 11 percent of children play with toys bought from a store. More urban children (24 percent) than rural children (18 percent) have access to three or more playthings in their household.

Table CD.2: Learning materials

Percentage of children aged 0-59 months living in households containing learning materials, HIRD Supplementary Survey, 2007/2008

	3 or more non-children's books *	3 or more children's books **	Child plays with:					3 or more types of play-things ***	Number of children aged 0-59 months
			Household objects	Objects and materials found outside the home	Homemade toys	Toys that came from a store	No play-things mentioned		
Sex									
Male	28.3	4.7	58.8	62.6	22	11.5	17.3	17	4193
Female	27.3	4.8	61.8	63.7	20.9	10.2	17.3	16.7	4273
Region									
Central	43.3	7.7	53.1	61.2	22.5	23.8	11.1	17.8	1798
Northern	24.3	4.7	59.5	62.2	21.5	8.6	19	16.6	3117
Upper East	29.5	4.7	57	72.2	27.6	12.8	16.6	20.7	2268
Upper West	32.3	1.7	82.8	58	8.2	8.4	12.7	11.4	1283
Area									
Urban	43.2	9.4	61.4	62.5	24.8	23.6	14.7	24.3	1874
Rural	23.2	3.4	60	63.4	20.4	7	18.1	14.6	6592
Age									
0-23 months	26.5	3.7	43.7	39.2	13.7	10.3	37	9.4	3504
24-59 months	28.8	5.5	72.4	80.5	27	11.2	3	22.3	4962
Mother's education									
None	27.3	4.6	60.2	62.1	20.8	10.2	18.1	16	6985
Primary	27.9	4.8	59.8	62.1	22.6	10.9	18.3	17.4	844
Middle/JSS	26.1	5	58.9	65.6	22	11.7	15.6	18.3	405
Secondary+	33.8	5.1	65.7	66.5	19.7	12.3	14	16.5	232
Wealth index quintiles									
Poorest	28.2	4	60.5	63.8	20.7	11.4	16.4	17.1	1837
Second	27	5.3	61	64.3	21.1	10	18	18.1	1670
Middle	25.7	3.6	60.5	61.4	18.5	9	18.1	14.5	1605
Fourth	26.6	5.1	59.6	62.9	20.8	10.9	16.4	14.7	1637
Richest	31.4	5.6	60.7	62.7	25.4	13	17.6	19.8	1717
Total	**27.8**	**4.7**	**60.5**	**63**	**21.3**	**10.9**	**17.3**	**16.9**	**8466**

** MICS indicator 49*
*** MICS indicator 48*
**** MICS indicator 50*

Children Left Alone or with Other Children

Children are very vulnerable and so need constant guidance and protection from harm. Leaving children alone or in the presence of other young children increase their risk to harm. The safety of children cannot be guaranteed when they are left in the care of other children. In the HIRD Supplementary Survey, 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.3 indicates that in the four regions, 30 percent of children aged 0-59 months were left in the care of children under 10 years in the week preceding , while 12 percent were left alone during the week preceding the interview. From the results, 33 percent of children were left with inadequate care in the week preceding the survey in the four regions.

The proportion of children left in the care of children under 10 years ranges from 33 percent in the Northern region to 19 percent in the Central region. The Table also indicates that the Northern region has the highest proportion of children left with inadequate care in the week preceding the survey (35 percent), while the Central region has the least proportion (20 percent).

No considerable variations are observed in terms of sex and residence for children left with inadequate care in the week before the survey. There is also no clear pattern between children left with inadequate care, their mothers educational level or socio-economic status of the households in which they live.

Table CD.3: Children left alone or with other children

Percentage of children age 0-59 months left in the care of other children under the age of 10 years or left alone in the past week, HIRD Supplementary Survey, 2007/2008

	Left in the care children under the age of 10 years in past week	Left alone in the past week	Left with inadequate care in past week *	Number of children aged 0-59 months
Sex				
Male	30.3	11.5	32.3	4193
Female	30.1	12.1	32.5	4273
Region				
Central	18.7	7.0	20.2	1798
Northern	33.1	13.0	35.4	3117
Upper East	30.9	13.3	33.3	2268
Upper West	20.8	5.6	22.8	1283
Area				
Urban	30.1	11.3	32.4	1874
Rural	30.3	11.9	32.4	6592
Age				
0-23	19.4	4.6	20.6	3504
24-59	38.1	17.0	41.0	4962
Mother's education				
None	30.6	11.8	32.6	6985
Primary	30.4	11.8	33.0	844
Middle/JSS	28.8	12.2	31.0	405
Secondary +	30.8	10.9	32.7	232
Wealth index quintiles				
Poorest	31.5	12.5	33.4	1837
Second	30.2	11.5	33.4	1670
Middle	29.3	11.9	31.1	1605
Fourth	31.7	12.6	33.7	1637
Richest	29.1	11.2	31.3	1717
Total	**30.3**	**11.9**	**32.6**	**8466**

** MICS indicator 51*

X. Education

The education system in Ghana has undergone a number of changes over the years through various reform programmes. The most recent involved renaming the junior secondary schools (JSS) and senior secondary schools (SSS) as junior and senior high schools, among other initiatives such as the abolition of school levies and introduction of the capitation grant. These have contributed to substantial increases in enrolment rates.

Pre-School Attendance and School Readiness

Attending pre-school education in an organized learning environment or child education programme is important for the readiness of children for school. One of the World Fit for Children goals is the promotion of early childhood education. In Ghana, as part of the implementation of the Early Childhood Care Development (ECCD) policy, kindergarten (KG) education was incorporated into the formal basic education system, and each primary school is expected to have a kindergarten attached to it.

In the four regions, 53 percent of children aged 36-59 months are attending pre-school (Table ED.1). The Central region has a higher proportion (64 percent) of children aged 36-59 months in pre-school. However, among the three Northern regions, the Upper West region has the higher percentage of children aged 36-59 months in pre-school (48 percent) while the Northern region has the least (40 percent).

Forty-seven percent of female children are attending pre-school compared to their male counterparts (41 percent). There are also considerable differences between urban and rural areas. Fifty-eight percent of children 36-59 years are attending pre-school in urban areas and 40 percent in rural areas. The ages of children attending pre-school were broken down according to those aged 36-47 months and 48-59 months. Over half of children in the latter age bracket are in pre-school compared to 36 percent of the former.

Differentials by educational level of mother's education are very significant. Eighty-seven percent of children whose mothers have secondary or higher education currently attends early childhood education compared to 37 percent of children whose mothers have little or no education.

Table ED.1 shows the proportion of children in the first grade of primary school who attended pre-school the previous year, an important indicator of school readiness. Overall, 93 percent of children who are currently attending first grade in the four regions were attending pre-school the previous year. All four regions have over 80 percent of children with pre-school experience. However, the Central region recorded the highest proportion (96 percent) compared to the three Northern regions. Among the three Northern regions, Upper West had the highest proportion (90 percent) while Northern region had the lowest proportion (81 percent) of children with pre-school experience.

The proportion of males with pre-school experience (86 percent) is higher than that of females (79 percent). As expected, there are more children in urban areas with pre-school experience (93 percent) than their rural counterparts (79 percent).

Eighty-five percent of children aged 6 years in first grade have pre-school experience. Over half the children aged 36-47 months in first grade have pre-school experience and 78 percent of children aged 48-59 months also in the same grade have pre-school experience.

The educational level of the mother's and the socio-economic status of the household have a positive correlation with the child having pre-school experience before entering first grade. Mothers of 95 percent of children in first grade with pre-school experience have secondary or higher education. This is higher than for mothers with little or no education, where 80 percent of the children in first grade have pre-school experience.

Table ED.1: Early childhood education

Percentage of children aged 36-59 months who are attending some form of organized early childhood education programme and percentage of first graders who attended pre-school, HIRD Supplementary Survey, 2007/2008

	Percentage of children aged 36-59 months currently attending early childhood education*	Number of children aged 36-59 months	Percentage of children attending first grade who attended pre-school programme in previous year**	Number of children attending first grade
Sex				
Male	40.9	1608	86.3	346
Female	46.8	1664	79.1	303
Region				
Central	63.7	684	96.0	91
Northern	40.3	1156	80.5	241
Upper East	42.8	917	84.2	223
Upper West	47.7	515	90.0	94
Residence				
Urban	57.8	759	92.6	186
Rural	39.7	2513	79.1	463
Age of child				
36-47 months	36.0	1794	49.9	25
48-59 months	53.5	1478	78.2	76
6 years	.		85.1	548
Mother's education				
None	37.2	1527	80.1	303
Primary	59.0	807	93.0	160
Middle/JSS	73.3	654	96.2	130
Secondary +	87.2	284	95.1	56
Wealth index quintiles				
Poorest	46.3	678	94.0	137
Second	56.5	643	84.2	130
Middle	55.7	626	93.7	127
Fourth	49.6	635	100.0	128
Richest	55.7	628	100.0	127
Total	**52.8**	**3272**	**92.9**	**649**

** MICS Indicator 52 ** MICS Indicator 53*

Primary and Secondary School Participation

Universal access to basic education for the world's children is one of the most important of the Millennium Development Goals and the objectives of *A World Fit for Children.* Education is a vital prerequisite for combating poverty, empowering women, protecting children from hazardous and exploitative labour and 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
- Net primary school attendance rate
- Net secondary school attendance rate
- Net primary school attendance rate of children of secondary school age
- Female to male education ratio (or gender parity index - GPI)

The indicators of school progression include:

- Survival rate to grade five
- Transition rate to secondary school
- Net primary completion rate

The degree to which children attend primary school in a timely manner is defined in the HIRD Supplementary Survey as the percentage of children who are of primary school entry age (6 years) and who attend the first grade of primary school. Of children who are of primary school entry age in the four regions, a little over half are attending the first grade of primary school (Table ED.2). There are no considerable sex differentials. Appreciable differences however exist in area of residence. Fifty-five percent of children living in urban areas are currently attending grade 1, compared with 49 percent of children living in rural areas.

Some variations are also noted by region. In the Central region, three in five children of primary school entry age currently attend grade 1, whereas the Northern region recorded the least (48 percent) for this indicator. A positive correlation with education of the mother is observed for children aged 6 whose mothers have a secondary or higher education, 84 percent were attending first grade, compared to 49 percent of children whose mothers have little or no education.

Table ED.2 also reveals that only half of children of primary school entry age are in school. This could signify that opportunities for primary pupil participation are not uniformly available or affordable in Ghana. It may, also reflect later entry into the school system than the recommended school age as a result of parents holding younger children at home for various reasons, but intending to enrol them at an older age. This could also be related to the distance a child needs to walk to school, and the cost of sending a child to school.

Table ED.2: Primary school entry

Percentage of children of primary school entry age attending grade 1, HIRD Supplementary Survey, 2007/2008

	Percentage of children of primary school entry age currently attending grade 1 *	Number of children of primary school entry age
Sex		
Male	50.9	989
Female	50.5	891
Region		
Central	59.6	416
Northern	47.6	631
Upper East	57.0	524
Upper West	51.8	309
Residence		
Urban	55.3	406
Rural	49.3	1474
Age at beginning of school year		
6	50.7	1880
Mother's education		
None	48.6	1358
Primary	51.3	262
Middle/JSS	64.7	214
Secondary +	84.2	35
Wealth index quintiles		
Poorest	55.5	439
Second	65.9	363
Middle	56.4	341
Fourth	60.5	369
Richest	47.5	369
Total	**56.6**	**1880**

** MICS Indicator 54*
Table based on estimated age at the beginning of the school year

Data presented in Table ED.3 show that 79 percent of primary school age in the four regions are attending primary school or secondary school. This also reveals that 21 percent of the children in the four regions are out of school when they are expected to be participating in school. All four regions have over 60 percent of children of primary school age attending either primary or secondary school. The regional differentials show that the Central region has the highest net attendance ratio (NAR) at 86 percent while the Northern region has the lowest at 60 percent.

In urban areas, three in four children attend school while in rural areas three in five children aged between 6 and 11 years are attending school. The higher the educational level of the head of household in which the children reside, the higher the proportion of the latter in school (83 percent in households where the head has secondary or higher education, and 62 percent in households where the head has little or no education).

The socio-economic status of the household in which the child resides also has a positive relation to the NAR. Eighty-two percent of children from the richest households are attending school versus 74 percent of children in poorest households.

Table ED.3: Primary school net attendance ratio

Percentage of children of primary school age attending primary school or secondary school (NAR), HIRD Supplementary Survey, 2007/2008

	Male		Female		Total	
	Net attendance ratio	Number of children	Net attendance ratio	Number of children	Net attendance ratio*	Number of children
Region						
Central	86.2	1109	86.4	1092	86.3	2202
Northern	60.4	1686	60.3	1654	60.3	3339
Upper East	75.1	1589	76.4	1534	75.7	3123
Upper West	64.1	866	74.2	773	68.9	1638
Residence						
Urban	74.5	1089	74.6	1216	74.5	2305
Rural	63.4	4161	64.2	3836	63.8	7998
Age at beginning of school year						
6	56.5	989	56.5	891	56.5	1880
7	63.0	918	64.1	951	63.5	1869
8	67.4	846	67.3	801	67.3	1647
9	68.4	981	70.0	923	69.1	1904
10	72.8	644	73.1	638	72.9	1282
11	70.9	872	73.4	849	72.1	1721
Education of household head						
None	61.6	3926	62.2	3703	61.9	7628
Primary	70.3	665	75.2	660	72.8	1324
Middle/JSS	83.7	529	81.3	525	82.5	1053
Secondary +	82.7	106	82.4	124	82.5	230
Wealth index quintiles						
Poorest	76.9	1202	70.5	1128	73.6	2329
Second	77.6	1133	77.9	957	77.8	2090
Middle	85.9	953	71.5	981	78.7	1934
Fourth	84.4	960	78.1	884	81.6	1844
Richest	82.7	1003	80.6	1103	81.6	2106
Total	**81.8**	**5250**	**75.6**	**5052**	**78.7**	**10303**

** MICS indicator 55; MDG indicator 6*
Table based on estimated age as of the beginning of the school year

The secondary school net attendance ratio is presented in Table ED.4. It shows a huge decrease in the measure of age-appropriate attendance between primary and secondary school only 45 percent of children of secondary school age (defined for this analysis as children aged 12-17 years) are attending secondary school. This low percentage might be due in part to the fact that either some of them are out of school or are attending primary school. Another explanation could be that some of the children of secondary school age could be attending vocational, technical and commercial schools.

With respect to sex, there are more males (49 percent) than females (39 percent) attending secondary school. The secondary school net attendance ratio is highest in the Central region at 52 percent, compared to the three Northern regions where the lowest NAR is in the Northern region at 25 percent. Children in urban areas are more likely to attend secondary school at the correct age than their cohort in rural areas.

Table ED.4: Secondary school net attendance ratio

Percentage of children of secondary school age attending secondary or higher school (NAR), HIRD Supplementary Survey, 2007/2008

	Male		Female		Total	
	Net attendance ratio	Number of children	Net attendance ratio	Number of children	Net attendance ratio*	Number of children
Region						
Central	53.9	932	49.8	859	51.9	1791
Northern	27.9	1328	21.2	992	25.1	2320
Upper East	29.8	1353	29.9	1135	29.8	2488
Upper West	27.6	703	32.9	520	29.9	1223
Residence						
Urban	46.9	1049	38.7	982	43.1	2031
Rural	25.2	3267	22.9	2524	24.2	5791
Age at beginning of school year						
12	13.2	762	10.9	797	12.0	1559
13	26.0	703	24.8	710	25.4	1413
14	29.3	902	40.4	575	33.3	1476
15	38.4	645	38.4	466	38.4	1112
16	38.0	640	34.2	435	36.4	1074
17	44.4	664	30.7	523	38.6	1187
Wealth index quintiles						
Poorest	43.8	1000	34.7	745	39.7	1745
Second	50.1	843	34.0	620	42.6	1463
Middle	51.2	757	42.2	651	47.4	1408
Fourth	48.2	761	52.5	653	50.4	1414
Richest	50.9	955	33.5	837	42.8	1791
Total	**49.0**	**4316**	**39.2**	**3506**	**44.4**	**7822**

** MICS indicator 56.*
Table based on estimated age as of the beginning of the school year
638 cases are missing from the background variable mother's education. The information is not available for children who were 17 at the beginning of the school year

The primary school net attendance ratio of children of secondary school age is presented in Table ED.4A. Twenty-eight percent of the children of secondary school age are attending primary school when they should be attending secondary school. The remaining 27 percent are not attending school - they are children out of school, or attending vocational, technical and other commercial schools. The proportion of children of secondary school age attending primary school is highest in the Upper West region where two in five children of secondary school age are in primary school, and lowest in the Northern region at 29 percent. This indicator is negatively associated with the age of the child 56 percent of children aged 12 years are in primary school, while seven percent of 17 year-olds are in primary school. This presents an indication of late school entry.

Table ED.4A: Secondary school age children attending primary school

Percentage of children of secondary school age attending primary school, HIRD Supplementary Survey, 2007/2008

	Male		Female		Total	
	Percent attending primary school	Number of children	Percent attending primary school	Number of children	Percent attending primary	Number of children
Region						
Central	31.6	932	27.4	859	29.6	1791
Northern	29.0	5004	27.4	3730	28.3	2320
Upper East	37.7	1353	33.6	1135	35.8	2488
Upper West	41.3	703	38.4	520	40.1	1223
Residence						
Urban	27.0	2232	25.1	1897	26.1	2031
Rural	33.7	5759	31.4	4347	32.7	5791
Age at beginning of school year						
12	56.1	1311	55.4	1471	55.7	1559
13	48.2	1347	43.4	1279	45.9	1413
14	32.9	1663	29.6	929	31.7	1476
15	24.0	1211	13.9	811	20.0	1112
16	16.9	1149	6.8	804	12.8	1074
17	9.6	1309	2.8	950	6.7	1187
Wealth index quintiles						
Poorest	30.0	210	20.5	172	25.7	1745
Second	22.3	220	28.7	193	25.3	1463
Middle	25.5	228	23.1	166	24.5	1408
Fourth	33.8	171	23.9	181	28.7	1414
Richest	30.8	226	35.4	195	33.0	1791
Total	**28.2**	**1054**	**26.6**	**908**	**27.5**	**7822**

Table based on estimated age as of the beginning of the school year
638 cases are missing from the background variable mother's education. The information is not available for children who were 17 at the beginning of the school year

The percentage of children entering first grade who eventually reach grade 5 is presented in Table ED.5. The indicator is calculated as a product of probabilities of the surveyed yearly transition rates. Of all children starting grade one in the four regions, 92 percent eventually reach grade five. This number includes children who repeat grades and eventually move up to reach grade five. Among the four regions, Central region has the highest proportion of children entering first grade of primary school who eventually reach grade 5, while the Northern region has the lowest proportion.

Table ED.5: Children reaching grade 5

Percentage of children entering first grade of primary school who eventually reach grade 6, HIRD Supplementary Survey, 2007/2008

	Percent attending 2nd grade who were in 1st grade last year	Percent attending 3rd grade who were in 2nd grade last year	Percent attending 4th grade who were in 3rd grade last year	Percent attending 5th grade who were in 4th grade last year	Percent attending 6th grade who were in 5th grade last year	Percent who reach grade 6 of those who enter 1st grade *
Sex						
Male	89.3	90.5	89.7	93.3	93.2	63.1
Female	89.8	91.8	89.9	90.5	89.3	59.9
Region						
Central	99.1	98.8	99.1	99.8	99.8	96.7
Northern	87.3	89.0	87.0	88.6	89.3	53.5
Upper East	91.9	95.1	93.8	95.7	94.7	74.4
Upper West	89.4	88.3	86.1	91.1	86.9	53.8
Area						
Urban	87.5	89.5	89.7	91.8	91.7	59.1
Rural	90.2	91.9	89.8	92.0	91.4	62.6
Mother's education						
None	89.5	91.3	89.8	91.0	90.4	60.3
Primary	88.5	91.3	91.4	95.6	93.3	65.9
Middle/JSS	91.7	90.8	91.9	96.3	96.2	70.9
Secondary +	91.9	88.7	87.7	88.6	91.3	57.8
Wealth index quintiles						
Poorest	97.2	98.6	97.8	100.0	100.0	93.8
Second	99.0	98.8	90.0	93.2	91.1	74.8
Middle	99.1	95.4	94.2	96.5	97.8	84.0
Fourth	97.7	94.3	95.3	97.7	97.8	83.9
Richest	94.0	95.3	94.9	96.7	96.9	79.7
Total	**89.5**	**91.2**	**89.8**	**91.9**	**91.5**	**61.7**

** MICS Indicator 57 ; MDG Indicator 7*

Table ED.6 shows the net primary school completion rate and transition rate to secondary education. Only sixteen percent of the children of primary completion age (11 years) were attending the last grade of primary education. This value should be distinguished from the gross primary completion ratio which includes children of any age attending the last grade of primary. There is no appreciable difference with respect to sex. The net primary school completion rate is 30 percent for urban areas and 12 percent for rural areas.

Ninety-two percent of the children who successfully completed the last grade of primary school were found to be attending the first grade of JSS. There are marked differences between males and females 94 percent and 89 percent respectively. There is however, no difference between children who resides in urban and rural areas transiting to secondary education.

Table ED.6: Primary school completion and transition to secondary education

Primary school completion rate and transition rate to secondary education, HIRD Supplementary Survey, 2007/2008

	Net primary school completion rate *	Number of children of primary school completion age	Transition rate to secondary education **	Number of children who were in the last grade of primary school the previous year
Sex				
Male	16.5	872	93.7	573
Female	15.9	849	87.9	428
Region				
Central	33.6	377	98.2	309
Northern	14.0	551	89.1	222
Upper East	14.4	509	91.5	306
Upper West	12.4	284	90.8	164
Residence				
Urban	29.5	387	91.8	297
Rural	11.6	1334	91.3	704
Mother's education				
None	13.6	1396	93.7	654
Primary	17.2	149	88.3	104
Middle/JSS	36.2	129	97.2	109
Secondary +	35.0	47	91.5	134
Wealth index quintiles				
Poorest	16.9	379	98.5	197
Second	36.2	351	95.7	159
Middle	37.6	324	98.6	170
Fourth	54.5	299	98.9	209
Richest	33.3	369	92.5	266
Total	**16.2**	**1721**	**91.5**	**1001**

** MICS Indicator 59; MDG Indicator 7b*
*** MICS Indicator 58*
Table based on estimated age as of the beginning of the school year

The ratio of girls to boys attending primary and secondary education is provided in Table ED.7. These ratios are known as the Gender Parity Index (GPI), and the ratios included here are obtained from net attendance ratios rather than gross attendance ratios. The latter ratios provide an erroneous description of the GPI mainly because in most cases, the majority of over-aged children attending primary school tend to be boys. The Table shows that the primary school gender parity index for the four regions is 1.01, indicating that there are slightly more girls than boys in primary school in all four regions.

At the JSS level, the GPI for the four regions is 0.89, indicating that there are more boys than girls at secondary level. The Upper East region has attained gender parity at the JSS level. However, Central and Northern regions are yet to achieve gender parity at secondary level, with a GPI of 0.92 and 0.76 respectively. In the Upper West region, there are slightly more girls than boys in secondary schools (GPI of 1.19).

Table ED.7 : Education gender parity

Ratio of girls to boys attending primary education and ratio of girls to boys attending secondary education, HIRD Supplementary Survey, 2007/2008

	Primary school net attendance ratio (NAR), girls	Primary school net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school NAR*	Secondary school net attendance ratio (NAR), girls	Secondary school net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school NAR*
Region						
Central	86.4	86.2	1.00	49.8	53.9	.92
Northern	60.3	60.4	1.00	21.2	27.9	.76
Upper East	76.4	75.1	1.02	29.9	29.8	1.00
Upper West	74.2	64.1	1.16	32.9	27.6	1.19
Residence						
Urban	74.6	74.5	1.00	38.7	46.9	.82
Rural	64.2	63.4	1.01	22.9	25.2	.91
Mother's education						
None	62.9	63.1	1.00	21.7	23.7	.92
Primary	80.1	72.8	1.10	33.5	29.5	1.13
Middle/JSS	85.3	84.1	1.01	49.6	56.8	.87
Secondary +	89.9	87.1	1.03	38.5	46.8	.82
Wealth index quintiles						
Poorest	70.5	76.9	.92	34.7	43.8	.79
Second	77.9	77.6	1.00	34.0	50.1	.68
Middle	71.5	85.9	.83	42.2	51.2	.82
Fourth	78.1	84.4	.93	52.5	48.2	1.09
Richest	80.6	82.7	.97	33.5	50.9	.66
Total	**66.9**	**66.0**	**1.01**	**27.7**	**31.2**	**.89**

** MICS Indicator 61; MDG Indicator 9*
Table based on estimated age as of the beginning of the school year

Adult Literacy

One of the *World Fit for Children* goals is to achieve adult literacy. Adult literacy is also an MDG indicator, relating to both men and women. In HIRD MICS, since only a women's questionnaire was administered, the results are based only on females age 15-24. Literacy was assessed on the ability of women to read a short simple statement or on school attendance. The question on literacy was asked only of respondents who had not attended school or attended primary or middle/JSS.The percentage of literacy is presented in Table ED.8.

The survey found that two in five women aged 15-24 years in the four regions are literate. Similar to other educational indicators, the literacy rate is strongly and positively associated with urban residence (57 percent for urban versus 27 percent for rural residence) and higher levels of education. Literacy is 45 percent among 15-19 years-old but drops to 29 percent among 20-24 years-old.

Among regions, literacy is highest in the Central region at 65 percent and ranges from 32 to 50 percent in the three Northern regions with Northern region recording the least proportion of literacy among women 15-24 years.

Table ED.8: Adult literacy

Percentage of women aged 15-24 years that are literate, HIRD Supplementary Survey, 2007/2008

	Percentage literate *	Number of women aged 15-24 years
Region		
Central	64.8	343
Northern	31.5	1130
Upper East	43.9	1190
Upper West	49.5	504
Area		
Urban	56.9	944
Rural	28.6	2223
Education		
None	0	1098
Primary	15	852
Middle/JSS	100	925
Secondary +	100	292
Age		
15-19	45.2	1650
20-24	28.9	1518
Wealth index quintiles		
Poorest	41.5	503
Second	34.8	522
Middle	38.2	578
Fourth	40	679
Richest	47.6	884
Total	**40.4**	**3167**

** MICS Indicator 60; MDG Indicator 8*

XI. Child Protection

Births registration

The United Nations Convention on the Rights of the Child (UNCRC) states 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.

The Births and Deaths Registration Act of 1965 (Act 301), which established the current system in Ghana, makes the registration of births and deaths compulsory. In order to make registration facilities accessible and enable more births to be registered, the Births and Deaths Registry has established offices in all the regions, many districts and several communities around the country. Additionally, the Government provides free registration for new born babies within twelve months of delivery.

The survey results indicate that births of 54 percent of children under five years have been registered (Table CP.1). Birth registration is highest in the Central region and Upper East region, each recording 60 percent registration, and lowest in the Northern region (52 percent).

As expected, the proportion of births registered in urban areas was higher (72 percent) than those in rural areas (48 percent). As can also be observed, only 46 percent of children are registered before their first birth day and this trend needs to be changed. No gender differentials were observed.

For respondents who have not registered their children, they were asked the reason(s) for not doing so and reasons given were;

- Cost too high (22 percent)
- Must travel too far (10 percent)
- Don't know child should be registered (31 percent)
- Late, didn't want to pay a fine (1.2 percent)
- Doesn't know where to register (14.1 percent)
- Other reasons such as don't have time to do that, did not know it was import etc (15.4 percent)

Information on Table CP.1, reveals that "not knowing that a child should be registered" was the main reason for not registering their children. Thirty-four percent of respondents in the Northern region gave this reason for not registering their children. This was followed by Upper West region where 29 percent of respondents indicated that they did not know they were expected to register their children's births. Central region had the least proportion of respondents not knowing they were expected to register their children (17 percent). Going by the above results, it is important for the relevant authorities to make more effort in educating the general public on the need for a child to have a birth certificate.

The cost of registering children was the second main reason for not registering. Upper East region recorded the highest (29 percent) for not registering due to cost and Upper West region recorded the lowest (15 percent) respondent for this reason.

Table CP.1: Birth registration

Percentage distribution of children aged 0-59 months, by whether birth is registered and reasons for non-registration, HIRD Supplementary Survey, 2007/2008

	Birth is registered *	Don't know if birth is registered	Number of children aged 0-59 months	Birth is not registered because:								Total	Number of children aged 0-59 months without birth registration
				Costs too much	Must travel too far	Didn't know child should be registered	Late, didn't want to pay fine	Doesn't know where to register	Other	Don't know	Missing		
Sex													
Male	53.8	0.5	4193	22.7	10.7	30.9	1.3	13.6	15.0	5.7	0.1	100.0	1971
Female	53.6	0.7	4273	21.2	9.7	30.9	1.1	14.3	16.1	6.3	0.4	100.0	2012
Region													
Central	59.6	1.0	1798	28.7	9.2	16.9	2.6	6.3	29.1	7.1	0.1	100.0	772
Northern	51.7	0.5	3117	20.5	11.5	33.6	0.8	15.9	12.2	5.4	0.2	100.0	1586
Upper East	59.1	0.8	2268	29.3	7.1	28.2	2.0	5.3	25.3	2.8	0.0	100.0	995
Upper West	53.0	0.9	1283	14.8	4.9	28.6	2.1	20.6	12.4	15.2	1.3	100.0	630
Area													
Urban	71.9	0.7	1874	24.0	6.1	31.7	1.4	7.4	21.1	8.2	0.3	100.0	578
Rural	48.3	0.6	6592	21.6	10.9	30.7	1.2	15.1	14.6	5.6	0.2	100.0	3405
Age													
0-11 months	46.3	0.2	1850	16.8	11.2	28.3	0.9	13.7	25.4	3.5	0.1	100.0	1060
12-23 months	59.8	0.0	1654	23.1	11.7	29.5	1.5	15.4	12.7	6.2	0.0	100.0	651
24-35 months	57.1	0.3	1689	24.4	8.1	34.3	0.6	16.5	11.6	4.0	0.4	100.0	696
36-47 months	54.4	1.0	1762	24.0	9.4	33.6	1.5	12.3	9.9	8.5	0.6	100.0	830
48-59 months	51.5	1.8	1511	23.9	10.3	29.4	1.6	12.4	13.7	8.7	0.1	100.0	745
Mother's education													
None	53.4	0.7	6985	22.1	11.1	30.3	1.4	14.8	14.2	6.1	0.1	100.0	3459
Primary	55.2	0.5	844	20.1	11.3	29.9	.6	14.4	17.9	5.6	0.2	100.0	367
Middle/JSS	52.5	0.4	405	25.0	7.7	30.8	1.4	12.1	16.1	6.1	0.7	100.0	121
Secondary +	53.7	0.8	232	19.5	8.3	36.9	1.0	12.8	14.9	6.6	0.0	100.0	36
Wealth index quintiles													
Poorest	52.1	0.5	1837	21.3	7.7	31.5	1.2	15.5	16.2	6.6	0.1	100.0	1034
Second	54.3	0.6	1670	24.8	9.0	28.3	1.3	15.3	14.2	6.3	0.8	100.0	874
Middle	51.9	0.7	1605	22.6	11.1	33.0	1.1	13.0	14.0	5.0	0.2	100.0	822
Fourth	53.4	0.9	1637	20.4	13.3	29.7	1.1	13.3	16.4	5.7	0.3	100.0	749
Richest	57.1	0.4	1717	21.3	9.7	31.3	1.3	13.5	16.0	6.9	0.0	100.0	504
Total	**53.8**	**0.6**	**8466**	**22.1**	**10.1**	**30.8**	**1.2**	**14.1**	**15.4**	**6.1**	**0.2**	**100.0**	**3982**

** MICS Indicator 62*

Child Labour

Article 32 of the Convention on the Rights of the Child says: "States Parties recognize the right of the child to be protected from economic exploitation and from performing any work that is likely to be hazardous or to interfere with the child's education, or to be harmful to the child's health or physical, mental, spiritual, moral or social development..." The World Fit for Children mentions nine strategies to combat child labour and the MDGs call for the protection of children against exploitation.

The basic rights of children as stated in the CRC are echoed in the 1992 Constitution of Ghana and the Children's Act, 1998, (Act 560). The provisions in the laws are directed at protecting children from harmful and exploitative labour[6]. Article 28(2) of the 1992 Constitution states that:

'Every child has the right to be protected from engaging in work that constitutes a threat to his health, education or development'

The minimum age of formal and informal employment under the Children's Act is 15. In Ghana, children between 13 and 15 years are permitted to engage in 'light work', which is not likely to be harmful to the health or development of the child, and equally does not affect the child's participation and attendance in school[7]. The following forms of labour are prohibited under Act 560:

- 'Exploitative Labour' which is defined as any form of work which deprives children of their health, education or development;
- 'Hazardous Labour' which is defined as work which poses a danger to children's health, safety or morals;
- 'Night Work' which is work carried out between the hours of eight o'clock in the evening and six o'clock in the morning.

In the HIRD Supplementary Survey questionnaire, a number of questions addressed the issue of child labour, that is, children 5-14 years of age involved in labour activities. The survey considered a child to be involved in child labour activities at the moment of the survey if during the week preceding the survey:

- Ages 5-11: at least one hour of economic work or 28 hours of domestic work per week.
- Ages 12-14: at least 14 hours of economic work or 28 hours of domestic work per week.

This definition allows differentiation between child labour and child work in order to identify the type of work that should be eliminated. As such, the estimate provided here is a minimum of the prevalence of child labour since some children may be involved in hazardous labour activities for a number of hours that could be less than the numbers specified in the criteria above. Table CP.2 presents the results of child labour, by type of work.

The Table shows that 33 percent of children in the four regions are engaged in child labour. The types of labour activities include paid work (3 percent), unpaid work (10 percent), household chores for 28+ hours/week (2 percent), and working for the family business (36 percent).

Child labour is highest (49 percent) in the Upper West and lowest in the Central region where one in four child is engaged in child labour. The involvement in child labour is higher for male children than for female children.

Forty-five percent of children aged 5-11 years are engaged in child labour in the four regions surveyed compared with 29 percent of children between the ages of 12-14 years. Among those involved in child labour activities, 37 percent of children are attending school whilst 49 percent are not.

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[6] *FIDA/ILO, Manual on Children's Rights and Child Labour*
[7] *Situation Analysis of Children and Women in Ghana 2000*

Table CP.2: Child labour

Percentage of children aged 5-14 years who are currently working and the percentage who are involved in child labour activities (to be eliminated), by type of work, HIRD Supplementary Survey, 2007/2008

	Any paid child work outside the household	Any unpaid child work outside the household	Any Household chores	Household chores for 28+ hours/ week	Any child work for family business	Any child work	Total child labour *	Number of children 5-14 years of age
Sex								
Male	3.4	10.0	63.6	2.4	48.6	53.0	41.9	8624
Female	3.8	10.0	79.1	3.2	45.1	50.5	39.4	8337
Region								
Central	.6	10.1	80.0	1.8	29.1	36.2	24.7	3655
Northern	4.4	10.1	69.7	2.5	52.6	56.1	45.1	5512
Upper East	2.6	13.0	70.8	.6	37.1	43.4	30.4	5107
Upper West	3.6	3.7	72.7	10.2	45.1	55.5	48.5	2687
Area								
Urban	3.1	9.5	68.5	2.7	31.6	38.2	29.4	3855
Rural	3.8	10.1	72.2	2.8	52.0	56.3	44.5	13106
Age								
5-11 years	2.6	8.4	65.0	2.3	40.3	44.9	44.9	12268
12-14 years	6.4	14.2	88.4	4.1	64.7	70.5	29.3	4693
School participation								
Yes	3.2	9.8	72.2	2.2	43.8	48.7	37.0	12817
No	4.6	10.5	69.1	4.1	53.8	58.6	49.1	4144
Mother's education								
None	3.8	9.8	70.9	3.0	49.8	54.3	43.0	12479
Primary	4.2	12.4	74.7	1.5	42.1	47.9	37.3	2136
Middle/JSS	1.3	8.0	73.3	2.3	30.5	37.4	27.7	1840
Secondary +	2.6	14.1	64.8	1.1	19.0	27.5	16.7	395
Wealth index quintiles								
Poorest	1.7	9.7	72.5	4.2	36.8	43.0	35.0	3857
Second	3.7	10.2	72.2	2.5	34.0	42.3	34.3	3396
Middle	2.3	8.0	72.3	2.3	35.8	42.2	30.7	3136
Fourth	1.8	10.2	77.6	.5	39.2	45.1	35.6	3033
Richest	3.0	9.6	73.0	2.2	33.2	41.6	30.5	3480
Total	**2.5**	**9.5**	**73.5**	**2.3**	**35.8**	**42.8**	**33.2**	**16961**

** MICS Indicator 71*

From the Table, 43 percent mothers with little or no education and 17 percent of mothers with secondary or higher education have their children engaged in child labour, suggesting that the higher the educational attainment of a mother, the less involvement of children in activities that amount to child labour.

Student Labourers

Table CP.3 presents the percentage of children classified as student labourers or as labourer students in the four regions. Student labourers are the children attending school that were involved in child labour activities at the time of the survey. In the four regions surveyed, 84 percent of children aged 5-14 years are in school but, of this number, 33 percent engage in child labour. Seventy-three percent of child labourers attend school. However, 29 percent students are also involved in child labour.

Table CP.3: Labourer students and student labourers

Percentage of children aged 5-14 years who are labourer students and student labourers, HIRD Supplementary Survey, 2007/2008

	Percentage of children in child labour *	Percentage of children attending school ***	Number of children aged 5-14	Percentage of child labourers who are also attending school **	Number of child labourers aged 5-14	Percentage of students who are also involved in child labour ****	Number of students aged 5-14
Sex							
Male	41.9	69.7	8624	62.2	3308	37.4	6472
Female	39.4	68.9	8337	63.7	2931	36.5	6345
Region							
Central	24.7	95.2	3655	95.2	903	24.7	3479
Northern	45.1	62.3	5512	57.3	2483	41.4	3426
Upper East	30.4	77.4	5107	73.5	1550	28.8	3955
Upper West	48.5	72.8	2687	68.9	1303	45.8	1957
Area							
Urban	29.4	78.8	3855	67.5	983	25.2	3254
Rural	44.5	66.1	13106	61.9	5256	41.7	9563
Age							
5-11 years	44.9	68.8	12268	64.7	5058	42.2	9207
12-14 years	29.3	70.6	4693	55.6	1181	23.0	3609
Mother's education							
None	43.0	65.2	12479	60.0	4991	39.6	8778
Primary	37.3	81.3	2136	77.7	691	35.7	1840
Middle/JSS	27.7	90.9	1840	81.5	475	24.8	1725
Secondary +	16.7	90.3	395	82.3	59	15.2	371
Wealth index quintiles							
Poorest	35.0	82.3	3857	71.3	1512	30.3	2543
Second	34.3	81.4	3396	67.8	1349	28.6	2419
Middle	30.7	83.7	3196	71.9	1284	26.4	2486
Fourth	35.6	87.0	3033	76.2	1108	31.2	2389
Richest	30.5	85.9	3480	80.7	986	28.6	2980
Total	**33.2**	**84.0**	**16961**	**73.4**	**6239**	**29.0**	**12817**

** *MICS Indicator 72*
**** *MICS Indicator 73*

The proportion of students who are also engaged in child labour activities ranged from 46 percent in Upper West region to 25 percent in Central region. Two in five students in rural areas are involved in child labour compared to one in four students residing in urban areas. A higher proportion of students whose mothers have little or no education are involved in child labour (40 percent), compared to students whose mothers have secondary or higher education (15 percent).

Child Discipline

As stated in *A World Fit for Children,* "children must be protected against any acts of violence …" and the Millennium Declaration calls for the protection of children against abuse, exploitation and violence. In the Ghana District MICS survey, mothers/caretakers of children age 2-14 years were asked a series of questions on the ways parents correct their children when they go wrong. On the basis of these questions, the two

indicators used to describe aspects of child discipline are: 1) the number of children 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 2-14 years of age that believe that in order to raise their children properly, they need to physically punish them.

Table CP.4 shows that 84 percent of children aged 2-14 years were subjected to any psychological or physical punishment by their mothers/caretakers or other household members. With regards to psychological punishment, 78 percent of children have had such experiences; while minor physical punishment had been meted out to 64 percent of children aged 2-14. Ten percent of children aged 2-14 years were physically punished severely, while 10 percent of the children were subjected to only non-violent punishment. Six percent of children were not subjected to any method of punishment (not punished or disciplined).

The proportion of children aged 2-14 years subjected to at least one form of psychological or physical punishment by their mothers/caretakers or other household members ranges from 91 percent in the Upper West region to 84 percent in the Northern region. Psychological and physical punishment is more intense in the Upper West region than in the other three regions.

No variations are observed by area of residence and subjecting children to psychological or physical punishment. A higher proportion of children aged 10-14 years were subjected to psychological or physical punishment compared to children in the other age groups. Eighty-six percent of males were psychologically or physically punished compared to 83 percent of females.

Mother/ caretaker were also asked whether they believed that a child needs to be punished physically if he or she does something wrong. About 43 percent of mothers/caretakers believe that children should be physically punished when they misbehave. A higher proportion (48 percent) of mother/ caretakers in Northern region believe that children need to be physically punished whiles 33 percent of mother/ caretakers in Central region believe this should be done.

The subjection of a child to any form of physical punishment has some correlation with the level of education of the mother or caretaker. Forty-five percent of mother/caretakers with little or no education believe that children should be physically punished compared to 30 percent of their counterpart with secondary or higher education.

Table CP.4: Child discipline

Percentage of children aged 2-14 years according to method of disciplining the child, HIRD Supplementary Survey, 2007/2008

	Percentage of children 2-14 years of age who experience:								
	Only non-violent discipline	Psychological Punishment	Minor physical punishment	Severe physical punishment	Any psychological or physical punishment *	No discipline or punishment	Missing	Mother/caretaker believes that the child needs to be physically punished	Number of children aged 2-14 years**
Sex									
Male	8.9	79.9	67.1	11.4	86.0	5.0	0.1	44.3	4133
Female	10.3	77.7	63.5	10.0	83.4	6.0	0.4	41.8	4323
Region									
Central	8.7	78.4	63.9	4.6	84.3	6.8	0.2	33.1	2130
Northern	10.4	76.7	66.5	11.8	83.5	5.9	0.2	47.6	2593
Upper East	8.4	82.5	58.4	10.3	86.1	5.1	0.4	33.3	2470
Upper West	7.4	88.0	71.3	13.8	91.1	1.3	0.2	43.8	1263
Area									
Urban	10.0	77.3	62.8	9.3	84.3	5.6	0.1	42.2	2336
Rural	9.5	79.3	66.1	11.3	84.8	5.5	0.3	43.4	6120
Age									
2-4 years	11.9	70.9	64.1	6.9	79.0	8.7	0.4	39.5	2145
5-9 years	9.2	79.7	69.2	11.2	85.9	4.9	0.1	43.8	3418
10-14 years	8.5	83.5	61.4	13.0	87.3	3.9	0.3	44.8	2893
Mother's education									
None	9.6	79.0	65.3	11.4	84.6	5.5	0.2	44.9	6410
Primary	6.4	83.6	70.7	12.5	89.6	3.7	0.3	41.2	932
Middle/JSS	10.4	74.3	62.2	5.0	81.5	8.1	0.1	35.2	811
Secondary +	17.1	71.7	54.3	4.4	78.3	4.2	0.5	29.8	304
Wealth index quintiles									
Poorest	8.2	81.0	66.8	10.3	86.9	4.9	0.0	43.9	1635
Second	10.8	76.0	62.6	10.5	82.0	7.2	0.1	44.4	1747
Middle	9.6	77.9	66.3	10.8	85.0	5.3	0.0	43.3	1732
Fourth	9.1	74.4	61.6	9.7	81.8	8.8	0.2	41.1	1734
Richest	11.3	78.8	62.3	10.0	83.4	4.9	0.4	40.8	1608
Total	**9.8**	**77.6**	**63.9**	**10.3**	**83.8**	**6.3**	**0.1**	**42.7**	**8456**

** MICS Indicator 74*

*** Table is based on children aged 2-14 years randomly selected during fieldwork (one child selected per household, if any children in the age range) for whom the questions on child discipline were administered*

Early Marriage and Polygyny

Child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation. Women married at younger ages are more likely to drop out of school, experience higher levels of fertility, domestic violence, and maternal mortality. The right to "free and full" consent to a marriage recognized the Universal Declaration of Human Rights with the recognition that consent cannot be "free and full" when one of the parties involved is not sufficiently mature to make an informed decision about a life partner. Two indicators of early marriage are the percentage of women married before age 15 and the percentage married before 18 years of age.

The percentage of women married at various ages is provided in Table CP.5. Six percent of married women or those in union aged 15-49 years married before age 15, and 36 percent of women aged 20-49 years married before their eighteenth birthday.

The 35-39 year group has the highest proportion (8 percent) of women aged 15-49 years who married before their 15th birthday while two in five women aged 30- 34 years were married before age 18. Early marriage (those who marry before their 18th birthday) is highest in the Upper West region (43 percent) and lowest in Central region (33 percent).

Education level and area of residence is directly related to the age at which a woman gets married. In relation to educational attainment, the proportion of women who went into early marriage is higher for women with little or no education compared with those with secondary or higher education. A similar trend is observed in women residing in rural households. Early marriage among women aged 15-19 years is more pronounced in rural areas than in urban areas (Table CP.5).

Table CP.5: Early marriage and polygyny

Percentage of women aged 15-49 in marriage or union before their 15th birthday, percentage of women aged 20-49 in marriage or union before their 18th birthday, HIRD Supplementary Survey, 2007/2008

	Percentage married before age 15 *	Number of women aged 15-49 years	Percentage married before age 18 *	Number of women aged 20-49 years	Percentage of women 15-19 years married/in union **	Number of women aged 15-19 years
Region						
Central	4.5	2003	32.5	1904	49.9	99
Northern	5.5	3554	34.2	2985	14.0	569
Upper East	5.3	3288	40.1	2597	11.3	691
Upper West	10.0	1576	43.3	1286	8.3	290
Area						
Urban	5.6	2768	31.9	2307	10.1	461
Rural	5.8	7653	37.1	6465	15.9	1189
Age						
15-19	2.3	1650	.	0	14.0	1650
20-24	4.1	1518	29.2	1518	.	0
15-24	3.2	3168	29.2	1518	14.0	1650
25-29	5.7	1829	34.7	1829	.	0
30-34	7.6	1628	40.1	1628	.	0
35-39	8.1	1492	38.3	1492	.	0
40-44	6.8	1268	38.9	1268	.	0
45-49	6.2	1036	32.8	1036	.	0
Education						
None	6.8	5908	38.6	5495	25.2	413
Primary	5.8	1902	38.6	1359	12.2	543
Middle/JSS	3.1	1962	27.4	1352	6.9	611
Secondary +	.5	649	9.8	567	1.5	83
Wealth index quintiles						
Poorest	6.3	1933	39.2	1142	14.7	134
Second	5.1	1916	35.3	1110	13.0	148
Middle	5.7	1978	35.7	1130	11.7	191
Fourth	6.3	2171	32.6	1304	17.6	210
Richest	5.2	2421	35.7	1488	12.4	276
Total	**5.7**	**10421**	**35.6**	**6175**	**13.8**	**1650**

** MICS Indicator 67 ; ** MICS Indicator 68*

Data in the table CP.5A indicate that 75 percent of women in the age group of 15-49 years are in marriage/ union. Of these, 38 percent of the women are in polygamous marriage.

The proportion of women in polygynous marriages ranges from 43 percent in the Northern region to 14 percent in the Central region. Two in five women residing in rural households are in polygynous marriages/ unions compared to 34 percent of women in urban areas. A higher proportion of women in older age groups who are currently married are in polygynous marriages compared with younger women. For instance, 23 percent of women aged 15-24 years currently married/ in-union are in polygynous marriages/in union compared with 53 percent of their counterpart in the 45-49 years age group.

The proportion of currently married women and those in polygamous marriages is higher for women with little or no education. This suggests that the likelihood of an educated women entering into a polygynous marriage is less compared to those with little or no education.

Table CP.5A: Marital status and Polygyny

Percentage and number of women aged 15-49 who are currently married or in union, and percentage who are in polygynous marriage or union, HIRD Supplementary Survey, 2007/2008

	Percentage of women aged 15-49 currently married/in union	Number of women aged 15-49 years	Percentage of women aged 15-49 years in polygynous marriage/in union *	Number of women aged 15-49 currently married/in union
Region				
Central	76.5	2003	13.8	1532
Northern	77.9	3554	42.8	2769
Upper East	69.9	3288	39.6	2297
Upper West	74.6	1576	34.4	1175
Area				
Urban	68.1	2768	33.6	1986
Rural	79.4	7653	40.5	5787
Age				
15-19	14.0	1650	23.5	227
20-24	68.9	1518	23.4	1064
15-24	40.8	3168	23.4	1292
25-29	91.8	1829	30.3	1755
30-34	94.5	1628	39.1	1522
35-39	93.0	1492	47.2	1309
40-44	90.6	1268	49.0	1024
45-49	88.8	1036	52.9	872
Education				
None	88.3	5908	43.1	5806
Primary	59.9	1902	32.2	916
Middle/JSS	49.7	1962	21.5	753
Secondary +	51.0	649	16.1	298
Wealth index quintiles				
Poorest	75.6	1864	38.1	1434
Second	78.4	1839	37.3	1690
Middle	75.3	1930	37.8	1581
Fourth	75.4	2212	37.4	1585
Richest	71.5	2577	38.0	1483
Total	**75.3**	**10421**	**37.7**	**7773**

** MICS Indicator 70*

Spousal Age Difference

Another component is the spousal age difference with an indicator being the percentage of married/in union women with a difference of 10 or more years younger than their current spouse. Table CP.6 presents the results of the age difference between husbands and wives.

The Table indicates that 30 percent of currently married women aged 15-24 years are either married or in union with partners 0-4 years older than themselves, 34 percent have partners 5-9 years older, and 18 percent are married to partners who are 10 years or older than themselves. Eighteen percent of women respondents indicated that they do not know the age of their partners.

One in four women in the Upper West and Upper East regions is married to a partner that is 10 years older than themselves. Central region has the lowest proportion of women whose partner is 10 years or older (14 percent). Women in rural areas are also more likely to have partners who are 10 years older than themselves (20 percent), compared to women residing in urban areas (15 percent).

Table CP.6: Spousal age difference

Percentage distribution of currently married/in union women aged 15-19, 20-24 and 15-24 according to the age difference with their husband or partner, HIRD Supplementary Survey, 2007/2008

	Percentage of currently married/in union women aged 15-24 whose husband or partner is:					Total	Number of women aged 15-24 years currently married/in union
	Younger	0-4 years older	5-9 years older	10+ years older *	Husband/ partner's age unknown		
Region							
Central	0.0	38.0	42.5	13.7	5.8	100.0	225
Northern	0.1	26.9	33.6	17.1	22.2	100.0	470
Upper East	0.5	31.9	34.9	25.3	7.5	100.0	403
Upper West	0.5	31.8	33.7	26.5	7.5	100.0	175
Area							
Urban	0.1	36.7	32.8	14.2	16.1	100.0	263
Rural	0.2	26.9	35.1	20.1	17.7	100.0	1010
Age							
15-19	0.2	27.1	32.5	15.1	25.1	100.0	232
20-24	0.2	29.5	35.1	19.6	15.7	100.0	1041
Education							
None	0.1	25.6	33.3	20.5	20.5	100.0	660
Primary	0.6	33.0	34.0	17.0	15.4	100.0	295
Middle/JSS	0.0	37.3	40.9	12.0	9.8	100.0	258
Secondary +	0.0	36.7	36.0	23.5	3.9	100.0	59
Wealth index quintiles							
Poorest	0.0	33.9	39.7	12.8	13.5	100.0	160
Second	0.0	26.6	36.5	24.2	12.7	100.0	170
Middle	0.2	25.8	36.1	16.1	21.9	100.0	174
Fourth	0.1	31.4	29.5	17.9	21.1	100.0	181
Richest	0.2	33.0	30.7	17.1	19.0	100.0	185
Total	**0.1**	**29.8**	**34.3**	**18.0**	**17.8**	**100.0**	**870**

** MICS Indicator 69*

Female Genital Mutilation/Cutting (FGM/C)

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 tissue. Other complications include septicaemia, infertility, obstructed labour, and even death. 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 barbers, without anaesthesia, using scissors, razor blades or broken glass. FGM/C is a fundamental violation of human rights. It does not have any medical necessity and it subjects girls and women to health risks and 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 give informed consent to such a potentially damaging practice as FGM/C.

In Ghana, FGM/C is carried out in the Northern, Upper East and Upper West regions. In southern Ghana, FGM/C is prevalent among migrants who carry their customs with them.

The 1992 Constitution (Article 26, Section 2) prohibits FGC and in 2005, the Cabinet gave approval for a Bill to strengthen the provision on female circumcision, introduced by an amendment to the Criminal Offences (Amendment) Act, 1994 (Act 484). The Act changes the reference from 'female circumcision' to 'female genital mutilation' to reflect the actual nature of the offence. It also alters the scope of responsibility to include not only practitioners but other co-operating participants, such as those persons who send or receive victims. The penalty has been increased from 3 years to 5 years.

The HIRD Supplementary Survey sought to determine knowledge of FGM/C, its prevalence, and the type performed in the country. Table CP.7 presents the prevalence of FGM/C among women, the type and the procedure used to perform it. The survey also asked questions on women's attitudes towards FGM/C and what to do with it. Ten percent of women aged 15-49 in the four regions have had some from of FGM/C and six percent have had extreme FGM/C. From the Table, 73 percent of women who have had FGM/C had their flesh removed, 18 percent could not determine the type/form, seven percent indicated that their flesh was sewn closed, and the flesh of three percent was nicked in the process of genital mutilation.

Among the four regions, the proportion of women who had FGM/C is highest in Upper West, where one in two women had FGM/C. Upper East region is second (20 percent), followed by Northern region (5 percent). In Central region, less than one percent of the women had FGM/C. The practice is found to be higher among older women, and lower in women aged 15-49 years with some level of education. Incidentally, women in rural areas (12 percent) are more inclined to accept the practice than women in urban areas (5 percent). Respondents were also asked what to do about FGM/C, and the majority (86 percent) indicated that the practice should be discontinued. Four percent indicated that the practice should still be continued while 2 percent said it depended on the situation.

Table CP.7: Female Genital Mutilation/Cutting (FGM/C):

Percentage of women aged 15-49 who have had any form of the female genital mutilation (FGM/C), the percentage who had different types of FGM/C, the percentage who have had an extreme form of FGM (infibulation), the percentage distribution of attitudes towards whether the practice of FGM/C should continued, HIRD Supplementary Survey, 2007/2008

	Had any form of FGM/C *	Number of women aged 15-49 years	Percentage of women with FGM/C who:				Total	Had an extreme form of FGM/C **	Number of women aged 15-49 year	Percentage distribution of women who believe the practice of FGM/C should:				Total	Number of women aged 15-49 years who have heard of FGM/C
			Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined				Continue ***	Be discontinued	Depends on situation	Don't know/Missing		
Region															
Central	0.4	2003	69.7	0.0	20.1	10.2	100.0	*	8	1.5	82.1	1.3	15.1	100.0	1169
Northern	4.5	3554	66.5	5.0	11.7	16.8	100.0	10.0	160	4.7	84.0	2.1	9.2	100.0	2170
Upper East	19.8	3288	85.4	3.7	5.8	5.1	100.0	5.1	652	1.3	94.3	0.6	3.9	100.0	2579
Upper West	49.4	1576	67.1	0.8	3.2	28.8	100.0	2.2	778	5.1	84.3	0.3	10.3	100.0	1439
Area															
Urban	5.2	2768	73.5	4.0	9.4	13.1	100.0	8.0	208	1.9	92.0	1.0	5.1	100.0	2009
Rural	12.2	7653	72.8	2.8	6.1	18.4	100.0	5.0	1390	4.5	83.4	1.8	10.3	100.0	5347
Age															
15-19	7.1	1650	66.2	5.2	10.8	17.9	100.0	10.2	153	3.7	88.0	0.7	7.6	100.0	1098
20-24	8.1	1518	69.1	3.2	4.9	22.8	100.0	3.5	179	4.2	87.5	0.6	7.7	100.0	1054
25-29	7.5	1829	76.2	3.0	5.2	15.6	100.0	4.3	225	3.2	85.7	1.4	9.7	100.0	1279
30-34	8.9	1628	74.6	3.1	4.3	18.0	100.0	4.0	216	3.0	86.8	1.6	8.6	100.0	1165
35-39	13.7	1492	74.8	1.9	8.7	14.5	100.0	8.4	298	5.2	83.9	2.3	8.7	100.0	1052
40-44	15.1	1268	75.4	2.3	6.4	15.9	100.0	3.8	289	3.5	85.0	2.1	9.4	100.0	934
45-49	15.6	1036	71.0	3.0	5.6	20.4	100.0	4.3	239	3.5	84.3	2.5	9.7	100.0	774
Education															
None	11.9	5908	73.7	3.1	5.6	17.7	100.0	4.8	1175	4.2	83.8	1.8	10.2	100.0	4084
Primary	8.8	1902	72.7	2.7	6.9	17.7	100.0	4.2	228	3.7	87.0	1.3	8.0	100.0	1256
Middle/JSS	6.6	1962	65.3	2.6	13.8	18.3	100.0	13.8	148	3.0	89.1	1.2	6.7	100.0	1411
Secondary +	4.8	649	77.2	3.3	6.4	13.2	100.0	1.8	47	1.5	95.8	0.7	2.0	100.0	606
Wealth index quintiles															
Poorest	10.2	1276	73.8	2.2	5.8	18.2	100.0	5.2	150	4.2	85.0	1.2	9.7	100.0	814
Second	8.6	1259	77.9	1.5	2.6	18.1	100.0	1.8	202	4.1	86.3	1.3	8.4	100.0	831
Middle	8.1	1321	73.2	2.4	9.3	15.1	100.0	8.8	241	3.3	84.7	2.3	9.6	100.0	858
Fourth	8.9	1514	70.4	2.2	6.1	21.3	100.0	4.8	225	2.9	84.7	1.7	10.7	100.0	1036
Richest	8.5	1764	68.0	2.8	10.5	18.8	100.0	8.2	129	2.9	88.8	1.0	7.3	100.0	1239
FGM/C experience															
No FGM/C	0.0	8823	0.0	0.0	0.0	0.0	0.0	.	0	3.1	86.2	1.6	9.1	100.0	5825
Had FGM/C	100.0	1598	72.9	3.0	6.6	17.6	100.0	5.5	1598	7.8	84.6	0.9	6.6	100.0	1532
Total	**10.2**	**10422**	**72.9**	**3.0**	**6.6**	**17.6**	**100.0**	**5.5**	**1598**	**3.7**	**86.0**	**1.5**	**8.7**	**100.0**	**7356**

** MICS indicator 63; ** MICS indicator 66; *** MICS indicator 67;*

Domestic Violence

Domestic violence is a global problem. In Ghana, it is reported virtually on a daily basis in the print and electronic media. Most victims of domestic violence are women and children. To address the issues, Ghana passed the Domestic Violence Act in 2007. The Act seeks to provide victims of domestic violence with protection. The HIRD supplementary survey sought information on attitudes towards the phenomenon.

A number of questions were asked of women age 15-49 years to assess their attitudes towards whether husbands are justified to hit or beat their wives/partners in a variety of scenarios. These questions were asked in order to identify any cultural beliefs that could be associated with the prevalence of violence against women. The main assumption here is that women who agree with the statements indicating that husbands/partners are justified in beating their wives/partners in the situations described tend in reality to be abused by their own husbands/partners. The responses to these questions are in Table CP.8.

Seventy-eight percent of women aged 15-49 approve of husband beating a wife. When asked whether a husband is justified to beat a wife, the following reasons were given:

- When a wife goes out without telling a husband (39 percent)
- When a wife neglects their children (46 percent)
- When a wife argues with a husband (33 percent)
- When a wife refuses to have sex (33 percent)
- When a wife burns food (72 percent), and
- When a wife has another partner (22 percent)

The proportion of women who accept wife-beating is highest in the Upper West and Northern regions (84 percent and 83 percent respectively) and lowest in the Central region (61 percent). It is interesting to note that all the age categories recorded over 75 percent approval of a man beating a wife for any of the above reasons.

Domestic violence is less acceptable to women with secondary or higher education (50 percent) than women with little or no education (85 percent). The data also indicate that 82 percent of women currently married/ in union approves of wife beating, whiles 70 percent of women formerly married/ in union approves husbands beating their wives. Interestingly, 74 percent of women who have never been married/in union also approved wife-beating.

Table CP.8: Attitudes toward domestic violence

Percentage of women aged 15-49 years who believe a husband is justified in beating his wife/partner in various circumstances, HIRD Supplementary Survey, 2007/2008

	Women who believe a husband is justified in beating his wife/partner:							
	When she goes out without telling him	When she neglects the children	When she argues with him	When she refuses sex with him	When she has another partner	When she burns the food	For any of these reasons*	Number of women aged 15-49 years
Region								
Central	20.0	26.3	20.2	15.4	7.6	55.5	61.0	2003
Northern	44.4	51.7	36.0	38.2	27.8	77.2	83.0	3554
Upper East	31.8	42.7	25.8	25.7	14.9	68.9	74.7	3288
Upper West	44.8	54.0	39.6	37.1	26.2	78.0	84.1	1576
Area								
Urba n	32.0	38.8	25.4	26.6	16.7	65.9	72.7	2768
Rural	43.0	51.4	36.1	36.5	26.2	76.8	82.2	7653
Age								
15-19	39.5	45.0	31.8	32.4	25.3	73.8	78.7	1650
20-24	37.9	48.7	31.4	31.2	22.8	70.5	77.6	1518
25-29	37.6	46.1	32.9	31.0	21.5	74.1	79.4	1829
30-34	40.9	49.7	33.3	34.5	23.6	72.9	79.4	1628
35-39	39.8	48.6	33.0	35.8	21.1	73.9	80.5	1492
40-44	40.3	48.3	33.6	35.9	24.7	75.7	80.7	1268
45-49	45.5	49.1	36.5	38.1	27.6	76.2	81.0	1036
Marital/Union status								
Currently	41.8	50.1	34.7	35.2	24.4	75.8	81.5	7774
married/in union								
Formerly married/in union	26.7	32.9	24.0	24.5	12.9	63.4	69.7	772
Never married/in union	35.6	42.5	28.8	30.2	22.8	68.1	73.9	1876
Education								
None	45.1	53.6	37.8	39.0	27.5	79.2	84.5	5908
Primary	38.4	46.7	31.8	33.3	22.1	73.1	79.6	1902
Mi ddle/JSS	27.8	32.6	22.5	20.3	14.0	62.3	68.9	1962
Secondary +	15.0	24.6	9.3	10.0	6.9	42.2	50.3	649
Wealth index quintiles								
Poorest	42.9	49.3	35.2	35.7	26.1	74.2	80.2	1276
Second	41.1	49.4	33.3	34.2	22.2	72.6	78.8	1259
Middle	41.4	47.9	35.4	33.8	22.4	74.4	80.1	1321
Fourth	36.7	44.5	31.4	31.6	21.8	71.4	77.7	1514
Richest	33.0	40.5	28.6	28.1	18.7	67.5	72.5	1764
Total	**39.0**	**46.3**	**32.7**	**32.6**	**22.2**	**72.0**	**77.8**	**7134**

** MICS Indicator 100*

Child Disability

One of the World Fit for Children goals is to protect children against abuse, exploitation, and violence, including the elimination of discrimination against children with disabilities. The 1992 Constitution of Ghana guarantees the right of disabled people to special treatment. While efforts have been made to provide the necessary facilities for the development of the disabled child, there is still a lot more to be done to change the attitudes of parents and society such that the child with disabilities is recognized as an individual with equal rights. In Ghana, persons with a physically disability are estimated to be approximately 10 percent of the total population[8]. This indicates that persons with disabilities constitute a significant portion of Ghana's population, and improving their life and living conditions is an important obligation for the government and its partners. This section focuses on issues that relate to child disability.

For children aged 2 through 9 years of age, a series of questions were asked to assess a number of disabilities/impairments, such as sight impairment, deafness, and difficulties with speech. This approach rests on the concept of functional disability developed by WHO and aims to identify the implications of any impairment or disability for the development of the child (e.g. health, nutrition, education, etc.).

Section 59 of the Persons with Disability Act, 2006 (Act 715) defines 'person with disability' as 'an individual with a physical, mental or sensory impairment including a visual, hearing or speech functional disability which gives rise to physical, cultural or social barriers that substantially limit one or more of the major life activities of that individual'.

Table CP.9 provides information on children aged 2-9 years with disabilities. The data indicate that 13 percent of children aged 2-9 years have at least one disability as reported by their mothers/caretakers. The proportion of children with disabilities is highest (17 percent) in the Upper West region and lowest (11 percent) in the Central region.

In terms of age groups, 18 percent of children aged 2-4 had some disability, while 15 percent of those aged 5-6, and 14 percent of the 7-9 age group also reported at least one disability. Child disability has no correlation with the educational level of the mother of the child or the social status of the household from which the child comes from.

The under mentioned are the proportions of the types of disabilities reported:

- Delay in sitting standing or walking (4.1 percent)
- Difficulty seeing either in the daytime or at night (2.2 percent)
- Children who appear to have difficulty hearing (1.6 percent)
- Children not understanding instructions (0.4 percent)
- Children with difficulty in walking, moving, moving arms, weakness or stiffness (0.9 percent)
- Children who experience fits, become rigid, or lose consciousness (1.8 percent)
- Children not learning to do things like other children their age (0.8 percent)
- Children not speaking or cannot be understood in words (1.3 percent)
- Children who appear to be mentally backward, dull, or slow (3.9 percent)
- Children whose speech is not normal (4.1 percent), and
- Children who cannot name at least one object (10.4 percent)

[8] *Based on this estimate, using 10 percent of the 2000 Population and Housing Census results (UNICEF 2000: 120), would put the number of persons with disabilities at approximated 2 million*

Table CP.9: Child disability

Percentage of children 2-9 years of age with disability reported by their mother or caretaker, according to the type of disability, HIRD Supplementary Survey, 2007/2008

	Percentage of children aged 2- 9 years with reported disability by type of disability														
	Delay in sitting standing or walking	Difficulty seeing, either in the daytime or at night	Appears to have difficulty hearing	No understanding of instructions	Difficulty in walking moving, moving arms, weakness or stiffness	Have fits, become rigid, lose consciousness	Not learning to do things like other children his/her age	No speaking cannot be understood in words	Appears mentally backward, dull, or slow	Percentage of children 2-9 years of age with at least one reported disability*	Number of children aged 2-9 years	Speech is not normal	Number of children aged 3-9 years	Cannot name at least one object	Number of children aged 2 years
Region															
Central	4.0	1.1	1.4	0.5	1.2	2.3	0.7	0.8	2.0	11.0	2965	2.0	2607	7.6	358
Northern	5.6	1.8	3.0	1.5	2.1	3.2	1.1	2.1	3.3	16.7	4822	6.2	4188	12.3	634
Upper East	3.2	1.9	3.1	1.0	1.2	2.6	1.6	2.2	3.4	14.5	4118	5.2	3634	11.4	484
Upper West	5.6	3.1	2.9	1.1	2.7	1.7	0.7	2.7	3.0	17.4	2113	9.1	1885	14.6	228
Area															
Urban	5.6	2.6	2.2	1.2	1.8	2.8	1.1	1.6	3.0	15.9	3065	7.4	2693	7.2	372
Rural	4.9	1.6	3.0	1.3	2.0	2.9	1.1	2.1	3.2	15.8	10954	5.3	9621	13.2	1333
Age of child															
2-4	5.7	1.5	1.7	1.7	2.2	3.8	1.6	3.9	3.4	17.8	4937	7.5	3232	11.9	1705
5-6	4.9	1.7	3.4	1.4	1.7	3.0	1.2	1.2	3.1	15.4	3686	5.5	3686	.	0
7-9	4.5	2.3	3.4	0.7	1.8	1.9	0.6	0.8	3.0	14.2	5396	5.0	5396	.	0
Mother's education															
None	5.2	1.7	2.9	1.4	2.1	2.9	1.2	2.2	3.2	16.1	10058	6.2	8894	12.3	1164
Primary	6.0	2.6	2.9	0.6	1.2	3.3	1.0	1.5	3.4	17.5	1929	4.0	1669	8.3	260
Middle/JSS	3.5	1.1	1.6	0.5	1.5	2.1	.7	.9	2.3	11.3	1613	4.2	1389	14.4	223
Secondary +	2.1	3.8	1.3	0.4	.7	3.0	1.7	1.3	3.4	14.3	339	6.3	285	5.1	53
Wealth index quintiles															
Poorest	2.6	1.3	2.3	0.3	1.1	1.8	1.2	1.6	3.8	12.6	3119	5.0	2756	20.5	363
Second	5.2	3.4	1.6	1.0	.4	1.2	0.7	1.0	6.4	17.4	2825	3.7	2485	7.9	339
Middle	3.8	1.2	1.8	0.8	1.2	1.3	0.9	1.0	2.9	11.1	2632	3.2	2293	9.5	339
Fourth	3.6	3.6	1.9	0.0	1.6	1.7	0.4	1.1	3.3	13.5	2626	3.7	2277	4.0	349
Richest	5.0	1.2	.5	0.0	0.1	2.9	1.0	1.9	3.1	11.6	2818	5.1	2502	14.0	315
Total	**4.1**	**2.2**	**1.6**	**0.4**	**0.9**	**1.8**	**0.8**	**1.3**	**3.9**	**13.3**	**14019**	**4.1**	**12314**	**10.4**	**1705**

** MICS Indicator 101*

XII. HIV/AIDS, Sexual Behaviour, and Orphaned and Vulnerable Children

Knowledge of HIV Transmission

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. The indicators to measure this goal as well as the MDG of reducing HIV infections by half using 1990 as the base year include improving the level of knowledge of HIV and its prevention, and changing behaviour to prevent further spread of the disease. One of the most important prerequisites for reducing the rate of HIV infection is accurate knowledge of how HIV is transmitted and strategies for preventing transmission. Correct information is the first step toward raising awareness and giving people the tools to protect them from infection. Misconceptions about HIV are common and can confuse people and hinder prevention efforts. People in different districts in the regions are likely to have variations in misconceptions, although some misconceptions appear to be universal (for example that sharing food can transmit HIV or mosquito bites can transmit HIV).

The HIV module was administered to only women 15-49 years of age. Table HA.1 provides information on women's knowledge on HIV prevention and transmission. Almost 97 percent of women in the four regions have heard of AIDS. However, only 53 percent of the women know all three main ways of preventing HIV transmission. Eighty-nine percent of the respondents in the four regions know HIV transmission can be prevented by having one, faithful, uninfected sex partner. Prevention of HIV transmission by using condoms every time is known by 67 percent of women, and 71 percent know that HIV transmission can be prevented by abstaining from sex. Ninety-four percent of the respondents know at least one way of preventing HIV infection; and only six percent of respondents do not know any of the three ways (abstaining from sex, remaining faithful to partner, and use of a condom) of HIV prevention.

Differentials are observed in urban-rural residence. Fifty-six percent and 50 percent of women residing in urban and rural areas respectively know all three main ways of preventing HIV. The knowledge of all three main ways of preventing HIV is high among women in the younger age groups compared to women in the older age groups.

Women with higher levels of education are more likely to be aware of the various preventive methods than those with lower levels of schooling. In terms of regional variations, knowledge of HIV transmission and methods of prevention is highest in Central region, where 68 percent of women aged 15-49 know all three main ways of preventing HIV transmission. Upper East region is second (62 percent), followed by Upper West region (51 percent). Northern region recorded the lowest level of knowledge in the prevention of HIV (47 percent).

Table HA.1: Knowledge of preventing HIV transmission

Percentage of women aged 15-49 years who know the main ways of preventing HIV transmission, HIRD Supplementary Survey, 2007/2008

	Heard of AIDS	Percentage who know transmission can be prevented by:			Knows all three ways	Knows at least one way	Doesn't know any way	Number of women
		Having only one faithful un infected sex partner	Using a condom every time	Abstaining from sex				
Region								
Central	99.3	96.7	80.4	81.1	68.0	98.8	1.2	2003
Northern	97.4	86.8	61.3	68.7	46.5	93.1	6.9	3554
Upper East	96.5	90.0	75.2	76.6	62.2	94.0	6.0	3288
Upper West	93.0	87.8	62.1	71.2	51.3	91.9	8.1	1576
Area								
Urban	98.8	91.8	72.5	72.4	55.7	96.4	3.6	2768
Rural	96.4	87.1	62.8	71.1	50.1	92.7	7.3	7653
Age								
15 - 19	95.9	87.6	67.6	71.3	52.2	92.6	7.4	1650
20 - 24	97.8	89.9	71.1	75.6	55.9	95.4	4.6	1518
15 - 24	96.9	88.7	69.3	73.4	54.0	94.0	6.0	3168
25 - 29	98.0	89.8	69.2	71.9	54.6	94.9	5.1	1829
30 - 34	97.7	88.6	65.9	72.6	53.1	94.6	5.4	1628
35 - 39	97.6	89.3	65.3	70.3	52.4	93.5	6.5	1492
40 - 44	95.7	87.2	56.8	68.3	45.3	91.6	8.4	1268
45 - 49	96.1	84.6	56.7	68.1	42.4	92.0	8.0	1036
Education								
None	96.2	86.0	60.2	69.6	47.5	92.1	7.9	5908
Primary	97.6	88.2	69.3	73.8	55.2	94.1	5.9	1902
Middle/JSS	99.5	95.3	77.9	75.4	60.7	98.0	2.0	1962
Secondary +	100.0	97.6	84.5	76.2	66.3	99.9	.1	649
Wealth index quintiles								
Poorest	97.8	90.4	64.8	71.4	51.9	94.4	5.6	1276
Second	97.0	88.3	62.1	70.9	49.1	94.0	6.0	1259
Middle	96.8	87.9	69.0	72.5	53.2	93.8	6.2	1321
Fourth	97.5	88.4	68.5	68.4	51.7	93.9	6.1	1514
Richest	97.8	90.9	70.6	74.0	57.3	94.8	5.2	1764
Total	**97.4**	**89.1**	**67.0**	**71.4**	**52.6**	**94.2**	**5.8**	**7134**

Table HA.2 presents the proportion of women who can correctly identify misconceptions about HIV. The indicator derived from the Table is based on the two most common misconceptions in Ghana that HIV can be transmitted by supernatural means, or by mosquito bites, and that a healthy-looking person cannot be infected. The table also provides information on whether respondents know that HIV cannot be transmitted by sharing food, and that HIV can be transmitted by sharing needles.

One in four women in the four regions reject the two most common misconceptions and know that a healthy-looking person can be infected. One in two of the respondents believe that HIV cannot be transmitted by supernatural means, and 49 percent of women also believe that HIV cannot be transmitted by mosquito bites. Sixty-seven percent know that a healthy-looking person can be infected, while 62 percent of women in the four regions know that a person cannot get HIV by sharing food with a person who has AIDS. Also, 94 percent of women in the regions are aware that HIV can be transmitted by sharing needles.

Table HA.2: Identifying misconceptions about HIV/AIDS

Percentage of women aged 15-49 years who correctly identify misconceptions about HIV/AIDS, HIRD Supplementary Survey, 2007/2008

	Percentage who know that:						
	HIV cannot be transmitted by supernatural means	HIV cannot be transmitted by mosquito bites	A healthy looking person can be infected	Reject two most comm on misconceptions and know a healthy -looking person can be infected	HIV cannot be transmitted by sharing food	HIV can be transmitted by sharing needles	Number of women
Region							
Central	38.6	49.1	78.7	19.9	75.4	97.5	2003
Northern	55.0	45.7	61.7	23.0	54.2	92.8	3554
Upper East	58.3	56.7	76.3	35.3	75.2	93.1	3288
Upper West	51.9	48.9	61.9	22.6	66.4	89.1	1576
Area							
Urban	62.2	58.9	72.7	34.4	74.2	95.4	2768
Rural	50.2	43.8	63.1	20.9	55.5	92.1	7653
Age							
15 - 19	57.9	56.7	61.2	29.5	65.6	91.9	1650
20 - 24	55.9	49.7	67.3	26.7	62.5	94.6	1518
15 - 24	56.9	53.3	64.2	28.2	64.1	93.2	3168
25 - 29	56.1	49.9	69.0	26.2	65.1	95.0	1829
30 - 34	54.4	48.7	68.1	26.0	59.0	94.3	1628
35 - 39	47.3	42.6	66.7	20.0	58.4	93.8	1492
40 - 44	51.5	44.2	64.9	22.6	55.7	89.7	1268
45 - 49	48.5	39.4	61.7	17.9	54.1	89.6	1036
Education							
None	50.0	41.9	61.6	19.9	52.8	91.5	5908
Primary	50.8	47.1	67.4	22.0	64.1	93.9	1902
Middle/JSS	61.7	62.3	75.3	34.4	79.6	96.9	1962
Secondary +	81.1	84.0	85.5	60.6	94.2	98.3	649
Wealth index quintiles							
Poorest	56.6	48.7	67.2	24.6	60.3	94.0	1276
Second	51.6	44.6	63.7	21.5	60.6	92.8	1259
Middle	53.3	48.6	65.2	22.8	62.1	93.2	1321
Fourth	52.5	50.8	68.8	28.4	62.1	93.1	1514
Richest	57.3	54.3	72.4	31.3	66.9	94.4	1764
Total	**54.2**	**49.4**	**67.4**	**25.7**	**62.4**	**93.5**	**7134**

It is also observed that women with higher levels of education, from the wealthiest quintiles, and those in urban areas are more likely to reject misconceptions of HIV compared to their counterparts with little or no education, those residing in rural areas and those in the poorest wealth index quintiles.

Comprehensive Knowledge of HIV Methods and Transmission

Table HA.3 summarizes information from Tables HA.1 and HA.2 and presents the percentage of women who know two ways of preventing HIV transmission and reject three common misconceptions. One in every five women in the four regions surveyed has comprehensive knowledge, which is to identify two preventive methods and three misconceptions. There are notable differences in knowledge of HIV/AIDS prevention behaviour. Comprehensive knowledge was higher in urban areas (28 percent) than rural areas

(16 percent). Women in the younger ages have comprehensive knowledge on HIV than women in the older age groups. For instance, 23 percent of women in the age category of 15-24years have comprehensive knowledge of HIV whilst 13 percent of women in the 45-49 year age group have comprehensive knowledge on HIV. Comprehensive knowledge is highest in Upper East region (31 percent) compared to the other three regions, where comprehensive knowledge was less than 20 percent.

Table HA.3: Comprehensive knowledge of HIV/AIDS transmission

Percentage of women aged 15-49 years who have comprehensive knowledge of HIV/AIDS transmission, HIRD Supplementary Survey, 2007/2008

	Knows 2 ways to prevent HIV transmission	Correctly identify 3 misconceptions about HIV transmission	Have comprehensive knowledge(identify 2 prevention methods and 3 misconceptions) *	Number of women
Region				
Central	78.9	19.9	16.5	2003
Northern	58.0	23.0	17.6	3554
Upper East	72.7	35.3	30.8	3288
Upper West	59.2	22.6	16.2	1576
Area				
Urban	69.8	34.4	27.9	2768
Rural	59.8	20.9	16.2	7653
Age				
15-19	64.7	29.5	23.3	1650
20-24	67.3	26.7	21.9	1518
15-24	66.0	28.2	22.6	3168
25-29	66.5	26.2	21.5	1829
30-34	62.7	26.0	19.6	1628
35-39	62.9	20.0	15.8	1492
40-44	55.0	22.6	17.8	1268
45-49	52.5	17.9	13.4	1036
Education				
None	57.0	19.9	15.2	5908
Primary	66.0	22.0	17.3	1902
Middle/JSS	75.8	34.4	28.3	1962
Secondary +	82.9	60.6	52.0	649
Wealth index quintiles				
Poorest	62.6	24.6	19.5	1276
Second	59.0	21.5	16.8	1259
Middle	65.7	22.8	18.7	1321
Fourth	65.5	28.4	22.3	1514
Richest	68.4	31.3	26.1	1764
Total	**64.2**	**25.7**	**20.6**	**7134**

Knowledge of Mother-to-Child Transmission

Knowledge of mother-to-child transmission (MTCT) of HIV is also an important first step for women to seek HIV testing when they are pregnant to avoid infecting the baby. It should be known that HIV can be transmitted during pregnancy, delivery, and through breastfeeding. The level of knowledge among women age 15-49 years concerning mother-to-child transmission is high (Table HA. 4). Four in five women in the four regions know that HIV can be transmitted from mother-to-child. Sixty-seven percent could name all three ways of preventing MTCT, while eight percent do not know of any specific way.

There are variations at regional level regarding those who know all three ways of preventing MTCT. Central region recorded the highest proportion of women who know all three ways of preventing MTCT (74 percent), while Northern region recorded the least proportion (65 percent). Women with secondary or higher levels of education are more likely to be aware of all three methods of MTCT than those with little or no education.

Table HA.4: Knowledge of mother-to-child HIV transmission

Percentage of women aged 15-49 who correctly identify means of HIV transmission from mother to child, HIRD Supplementary Survey, 2007/2008

	Know HIV can be transmitted from mother to child	Percentage who know HIV can be transmitted:				Did not know any specific way	Number of women
		During pregnancy	At delivery	Through breast milk	All three ways *		
Region							
Central	95.5	86.5	81.7	90.7	74.3	3.8	2003
Northern	88.0	79.9	70.7	82.9	64.9	9.4	3554
Upper East	90.7	82.6	75.7	83.3	67.7	5.8	3288
Upper West	87.9	82.6	75.6	84.3	72.3	5.1	1576
Area							
Urban	91.6	82.6	74.3	85.4	66.3	7.2	2768
Rural	88.2	80.7	72.6	83.3	67.2	8.2	7653
Age							
15 - 19	82.9	74.4	64.3	76.5	58.3	13.0	1650
20 - 24	91.7	81.1	71.1	85.9	63.8	6.1	1518
15 - 24	87.2	77.7	67.6	81.1	61.0	9.7	3168
25 - 29	92.5	84.3	76.3	86.7	69.3	5.5	1829
30 - 34	91.5	84.4	78.7	86.8	72.4	6.2	1628
35 - 39	89.8	82.5	75.0	85.1	69.8	7.8	1492
40 - 44	87.8	80.6	72.0	82.7	66.6	8.0	1268
45 - 49	86.2	80.2	73.5	82.4	68.7	9.9	1036
Education							
None	87.6	79.9	71.3	82.7	66.1	8.6	5908
Primary	88.4	79.6	71.7	83.7	65.9	9.2	1902
Middle/JSS	93.5	85.9	77.9	86.8	69.7	6.0	1962
Secondary +	98.6	88.6	83.9	90.0	71.3	1.4	649
Wealth index quintiles							
Poorest	90.2	82.1	71.9	84.7	65.8	7.6	1276
Second	89.4	80.4	73.7	84.8	67.1	7.6	1259
Middle	88.9	82.2	73.2	83.5	67.5	7.9	1321
Fourth	89.7	82.8	74.7	84.1	68.4	7.8	1514
Richest	91.2	82.1	74.6	85.4	67.8	6.6	1764
Total	**89.9**	**81.9**	**73.6**	**84.5**	**67.3**	**7.5**	**7134**

** MICS Indicator 89*

Attitudes towards People Living with HIV and AIDS

The indicators on attitudes toward people living with HIV measure stigma and discrimination in the community. Stigma and discrimination are high when respondents report an accepting attitude on the following four questions: 1) Would not care for family member sick with AIDS; 2) Would not buy fresh vegetables from a vendor who was HIV positive; 3) Thinks that a female or male health worker who is HIV positive should not be allowed to work in health facilities; and 4) Would want to keep HIV status of a family member a secret.

Table HA.5 presents the attitudes of women towards people living with HIV/AIDS. Generally, the percentage of those who agree with at least one discriminatory statement is high; four in five women in the four regions surveyed. Only four percent of women agree with none of the discriminatory statements and, therefore, have an accepting attitude towards people living with HIV and AIDS. Eighty-two percent of the women admit that they would not buy from a shopkeeper or food vender/seller with HIV/AIDS, while 73 percent believe that a male health worker with HIV should not be allowed to work. Forty-eight percent admit that if a family member had HIV, they would want to keep it a secret, and 22 percent indicate that they would not care for a family member who was sick with AIDS.

Education and area of residence are strongly related to negative attitudes towards those who are HIV positive. Rural residents and less educated women are more likely to have discriminatory attitudes towards people who are HIV positive, compared to residents of urban areas and those with secondary or higher education. A high level of stigma exists among women but, little variations are observed within the four regions in terms of those who agree with at least one discriminatory statement.

Table HA.5: Attitudes toward people living with HIV/AIDS

Percentage of women aged 15-49 years who have heard of AIDS who express a discriminatory attitude towards people living with HIV/AIDS, HIRD Supplementary Survey, 2007/2008

	Would not care for a family member who was sick with AIDS	If a family member had HIV would want to keep it a secret	Believe that a female health worker with HIV should not be allowed to work	Believe that a male health worker with HIV should not be allowed to work	Would not buy from a shopkeeper or food vender/seller with HIV/AIDS	Agree with at least one discriminatory statement	Agree with none of the discriminatory statements*	Number of women who have heard of AIDS
Region								
Central	19.3	50.3	71.6	71.6	88.0	92.0	2.8	1989
Northern	24.9	45.2	74.8	75.8	82.9	89.3	3.1	3461
Upper East	11.6	45.4	68.9	70.5	78.9	91.4	4.9	3173
Upper West	20.4	57.1	65.4	66.2	83.0	93.4	4.1	1466
Area								
Urban	17.5	52.0	65.4	66.2	76.4	89.0	5.1	2738
Rural	23.5	44.5	75.8	76.8	85.4	90.8	2.7	7351
Age								
15 - 19	25.2	53.3	72.2	73.5	81.7	87.6	3.1	1580
20 - 24	19.5	45.2	73.0	74.5	82.1	90.6	4.3	1487
15 - 24	22.4	49.3	72.6	74.0	81.9	89.1	3.7	3067
25 - 29	21.9	48.0	72.8	74.1	81.4	89.9	3.8	1787
30 - 34	22.0	43.1	74.1	75.1	83.9	91.2	2.3	1586
35 - 39	18.3	46.3	73.3	74.2	83.4	91.6	3.8	1455
40 - 44	22.1	43.6	72.2	72.7	84.0	89.9	3.8	1206
45 - 49	23.4	45.6	70.5	70.6	84.6	91.7	2.6	986
Education								
None	24.5	43.2	76.4	77.6	86.8	91.0	2.2	5629
Primary	22.4	52.9	73.7	74.3	84.4	88.9	2.8	1859
Middle/JSS	15.7	53.1	65.8	66.4	75.6	90.8	5.4	1953
Secondary +	5.8	52.4	48.3	50.2	54.1	84.7	13.4	649
Wealth index quintiles								
Poorest	22.1	44.4	71.6	72.4	83.6	90.0	4.2	1225
Second	24.3	47.5	75.9	76.7	83.0	89.4	3.3	1204
Middle	21.3	49.3	72.2	73.0	82.9	90.1	3.2	1276
Fourth	20.5	47.1	72.7	73.6	80.9	89.8	4.0	1467
Richest	19.9	49.2	67.4	68.9	80.1	90.8	3.3	1743
Total	**21.6**	**47.5**	**72.0**	**73.0**	**82.1**	**90.0**	**3.6**	**6917**

** MICS Indicator 86*

Knowledge of facility for HIV testing

Another important indicator is the knowledge of where to be tested for HIV and use of such services. Knowledge of HIV status helps HIV-negative individuals make specific decisions to reduce risk and increase safer sex practices so they can remain disease-free. Findings related to knowledge among women of an HIV testing facility and whether they have ever been tested and who have been tested in the last 12 months and have been told the test results, are presented in Table HA.6.

Considering responses from the four regions, 37 percent of women know a place to get tested, and only 8 percent have actually ever been tested. Of those ever tested for HIV, three out of four women were told their test results. Only one percent of respondents in the four regions was tested and received the results in the 12 months preceding the survey.

Forty-seven percent of women in urban areas know a place to get HIV testing compared with those in rural areas (33 percent). From Table HA.6, the higher the educational level, the more knowledgeable the person is about a place to get tested and the likelihood of the person having taken the HIV test compared to those with lower levels of education.

The regional variations also show that respondents are more likely to get tested in the Central region and Upper West regions (12 percent) than in Northern region (5 percent).

Table HA.6: Knowledge of a facility for HIV testing

Percentage of women aged 15-49 years who know where to get an HIV test, percentage of women who have been tested and of those tested, the percentage who have been told the result, HIRD Supplementary Survey, 2007/2008

	Know a place to get tested *	Have been tested **	Were tested and received results in the past 12 months	Number of women	If tested, have been told result	Number of women who have been tested for HIV
Region						
Central	47.2	11.8	2.6	2003	81.9	237
Northern	30.5	5.4	1.1	3554	73.5	193
Upper East	45.7	9.9	1.2	3288	68.5	327
Upper West	43.4	11.7	1.3	1576	57.3	184
Area						
Urban	47.4	11.2	2.8	2768	83.1	356
Rural	31.1	5.8	0.7	7653	62.8	584
Age						
15 - 19	31.9	2.8	.6	1650	73.6	61
20 - 24	40.1	9.1	2.3	1518	70.4	181
15 - 24	35.9	5.8	1.4	3168	71.2	242
25 - 29	38.3	10.9	1.5	1829	65.8	242
30 - 34	38.8	10.0	1.2	1628	70.6	197
35 - 39	34.3	6.9	1.1	1492	78.2	134
40 - 44	33.3	5.2	1.5	1268	79.9	76
45 - 49	30.1	3.8	0.5	1036	81.7	49
Education						
None	28.8	5.3	0.6	5908	62.8	394
Primary	35.5	8.8	1.6	1902	72.6	191
Middle/JSS	51.1	9.8	2.1	1962	76.5	223
Secondary +	74.4	19.8	5.5	649	91.4	132
Poorest	37.4	8.7	1.2	1276	72.8	92
Second	34.7	6.9	1.5	1259	74.7	85
Middle	35.3	7.5	1.1	1321	76.9	100
Fourth	35.0	7.1	1.2	1514	73.2	115
Richest	41.7	8.0	1.8	1764	77.0	221
Total	**36.8**	**7.6**	**1.4**	**7134**	**74.9**	**613**

** MICS Indicator 87*

*** MICS Indicator 88*

Table HA.7 shows that 91 percent of women who gave birth in the two years preceding the survey received antenatal care (ANC) from a health professional for the last pregnancy. Among these women, only two out of five women were provided information about HIV prevention during the antenatal care visit. One out of ten women were tested for HIV during ANC visit and just a few (7 percent) of those who got tested received their HIV results at an antenatal clinic.

The Upper East region recorded the highest proportion of pregnant women who were provided with information on HIV prevention during ANC visits (61 percent). This was followed by Upper West region with 46 percent receiving HIV counselling during ANC visits. Northern region had the least proportion of women who were provided with information on HIV during ANC visits (34 per cent).

Educational level of the women and the socio-economic status of the household in which the women belong has positive correlation on being provided with information on HIV during ANC visits. Over one in two women with secondary or higher education were counselled on the prevention of HIV during ANC visits compared to 36 percent of pregnant women with little or no education.

Table HA.7: HIV testing and counselling coverage during antenatal care

Percentage of women aged 15-49 years who gave birth in the two years preceding the survey who were offered HIV testing and counselling with their antenatal care, HIRD Supplementary Survey, 2007/2008

	Percentage of women who:				
	Received antenatal care from a health professional for last pregnancy	Were provided information about HIV prevention during ANC visit *	Were tested for HIV at ANC visit	Received results of HIV test at ANC visit **	Number of women who gave birth in two years preceding the survey
Region					
Central	93.3	37.9	12.9	9.1	762
Northern	88.8	34.4	7.0	4.1	1341
Upper East	96.3	61.3	20.5	13.2	914
Upper West	91.8	45.9	23.2	12.1	508
Area					
Urban	94.5	52.4	15.2	11.1	821
Rural	89.2	34.9	9.1	4.9	2704
Age					
15 - 19	94.1	31.0	10.7	5.8	191
20 - 24	92.1	33.1	11.7	7.4	703
25 - 29	91.0	43.4	12.2	7.1	943
30 - 34	90.2	39.7	10.1	5.9	792
35 -49	88.5	39.9	8.3	5.5	896
Education					
None	89.2	36.4	8.7	4.9	2178
Primary	93.7	42.2	13.9	8.4	630
Middle/JSS	92.6	47.1	14.9	9.2	560
Secondary +	98.0	55.5	21.9	19.5	156
Wealth index quintiles					
Poorest	90.7	38.2	12.1	8.0	680
Second	89.6	37.0	8.9	5.7	777
Middle	90.2	40.9	9.6	6.1	753
Fourth	92.9	41.2	10.5	6.3	706
Richest	91.2	43.3	12.8	8.4	609
Total	**90.9**	**40.0**	**10.7**	**6.8**	**3525**

** MICS Indicator 90*

*** MICS Indicator 91*

Sexual Behaviour Related to HIV Transmission

Promoting safer sexual behaviour is critical for reducing HIV prevalence. In most countries, over half of new HIV infections are among young people aged 15-24 years and a change in behaviour among this age group will be important for reducing new infections. A module of questions was administered to all women to assess their risk of HIV infection. Risk factors for HIV among the youth and the general population include sex at an early age and sex with older men.

Table HA.8 presents information about sexual behaviour that increases the risk of HIV infection among young women. Seven percent of young women aged 15-19 in the four regions had sex before age 15. However, among women aged 20-24, 45 percent had sex before their 18th birthday. Level of education of a woman has some correlation to the age at first sex. Women in rural areas tend to have sex at earlier ages (15 or 18 years) compared to their counterparts in urban areas.

Young women engaging in sexual relationships with considerably older men is believed to somewhat contributed to the spread of HIV and other sexually transmitted infections (STIs) in Ghana. This is because sex between younger, uninfected women and older, infected partners increases the possibility of introducing the virus into a younger, uninfected cohort. To investigate the phenomenon, young women were asked the age of their sexual partner in the 12 months preceding the survey.

Table HA. 8 shows that 13 percent of women aged 15-24 had sex with a man 10 years or older than themselves in the 12 months before the survey. In terms of urban-rural residence, one in ten women in urban areas had sex with a man who was 10 or more years older, whereas 17 percent of women in rural areas had sex with men 10 years older in the 12 months before the survey.

Women with secondary or higher education (9 percent) are less likely to have had sex with a partner 10 years or older, compared with women with little or no education (19 percent). Regional variations were also observed; 18 percent of women aged 15-24 years in Upper West and Upper East regions had sex with men who were 10 years or older compared to one in ten women in the Central region.

Table HA.8: Sexual behaviour

Sexual behaviour that increases risk of HIV infection, percentage of young women aged 15-19 years who had sex before age 15, percentage of young women aged 20-24 who had sex before age 18, and percentage of young women aged 15-24 who had sex with a man 10 or more years older;
HIRD Supplementary Survey, 2007/2008

	Percentage of women aged 15-19 who had sex before age 15 *	Number of women aged 15-19 years	Percentage of women aged 20-24 who had sex before age 18	Number of women aged 20-24 years	Percentage who had sex in the 12 months preceding the survey with a man 10 or more years older **	Number of women who had sex in the 12 months preceding the survey
Region						
Central	30.0	99	56.4	244	10.4	292
Northern	6.7	569	46.2	560	13.6	599
Upper East	4.5	691	44.2	500	18.1	525
Upper West	7.3	290	40.8	214	18.4	229
Area						
Urban	6.7	461	40.9	413	10.1	432
Rural	7.1	1189	48.4	1105	16.0	1214
Age						
15-19	7.0	1650	.	0	8.7	465
20-24	·	0	46.3	1518	16.6	1181
15-24	7.0	1650	46.3	1518	14.4	1646
Education						
None	8.4	413	51.1	685	18.7	687
Primary	10.1	543	57.5	309	13.2	377
Middle/JSS	3.8	611	41.0	314	6.7	420
Secondary +	1.3	83	16.3	210	9.0	162
Wealth index quintiles						
Poorest	7.4	134	46.3	180	11.0	186
Second	4.4	148	48.5	178	14.7	202
Middle	6.8	191	48.5	170	11.4	216
Fourth	7.9	210	43.7	214	14.6	242
Richest	7.8	276	39.5	276	13.8	274
Total	**6.9**	**959**	**45.3**	**1018**	**13.2**	**1121**

** MICS Indicator 84*
*** MICS Indicator 92*

Condom Use

The use of condoms during sex, especially with non-regular partners, is important for reducing the spread of HIV. Table HA.9A shows the percentage of sexually-active young women 15-24 years who had high-risk sex in the previous year and who used a condom at the last high-risk sex. Sixty-two percent of women aged 15-24 years in the four regions have ever had sex, and out of these, 53 percent had sex within the 12 months prior to the survey. Of women 15-24 years who had sex in within the 12 months prior to the survey, less than one percent had sex with more that one partner, but one in three of them had sex with a non-marital, non-cohabiting partner. Interestingly, only 45 percent of those who had sex used a condom during the last time they had sex with a non-marital, non-cohabiting partner.

Table HA.9A: Condom use at last high-risk sex

Percentage of young women aged 15-24 who had high risk sex in the previous year and who used a condom at last high risk sex, HIRD Supplementary Survey, 2007/2008

	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in the last 12 months	Number of women aged 15-24	Percent who had sex with non-marital, non-cohabiting partner *	Number of women aged 15-24 years who had sex in last 12 months	Percent who used a condom at last sex with a non-marital, non-cohabiting partner **	Number of women age d 15-24 years who had sex in last 12 months with a non-marital, non-cohabiting partner
Region								
Central	100.0	85.0	0.9	343	24.3	292	35.7	71
Northern	62.3	53.0	0.3	1130	31.6	599	34.3	189
Upper East	53.3	44.1	0.8	1190	33.3	525	66.8	175
Upp er West	53.0	45.4	0.9	504	31.2	229	64.0	72
Area								
Urban	57.2	47.4	0.4	874	43.9	432	53.2	189
Rural	64.0	54.6	0.5	2294	26.4	1214	35.1	316
Age								
15-19	34.2	29.1	0.6	1650	57.5	465	45.2	256
20-24	91.0	76.9	0.4	1518	20.7	1101	38.8	249
15-24	61.9	52.4	0.5	3168	31.2	1646	42.2	506
Education								
None	74.1	63.0	0.6	1098	17.0	687	22.8	118
Primary	53.6	44.4	0.4	852	35.7	377	27.9	114
Middle/JSS	47.1	41.0	0.4	925	48.7	420	57.2	168
Secondary +	68.5	55.9	0.5	292	64.1	162	64.3	107
Wealth index quintiles								
Poorest	58.7	49.3	0.5	314	33.2	186	41.1	43
Second	64.3	54.8	1.2	327	26.5	202	42.5	39
Middle	63.4	55.0	0.2	361	35.2	216	44.8	63
Fourth	65.3	54.5	0.4	424	31.1	242	48.7	70
Richest	58.2	48.3	0.2	552	34.8	275	48.4	115
Total	**62.1**	**52.5**	**0.5**	**1978**	**32.1**	**1120**	**45.4**	**331**

** MICS Indicator 85* *** MICS Indicator 83; MDG Indicator 19a*

Condom usage during last sex encounter was high with women in the early ages (15-24 years) compared to their counterparts in the older years (40-49 years old group). There are variations among regions with regard to women aged 15-49 who reported condom use at last sex with a non-marital, non-cohabiting partner. Central region recorded the lowest proportion of women using condoms at last sexual intercourse with a non-marital, non-cohabiting partner (27 percent), whilst a sizeable proportion of women in the Upper East and Upper West regions (64 percent and 58 percent respectively) used condoms at last high risk sex (Table HA.9B).

The use of condom and engaging in high-risk sex increases with the level of education. One in five women 15-49 years with little or no education used a condom during last high-risk sex, while two in three women with secondary or higher education used a condom during last sex with non-marital, non-cohabiting partners.

Table HA.9B: Condom use at last high-risk sex

Percentage of young women aged 15-49 who had high risk sex in the previous year and who used a condom at last high risk sex, HIRD Supplementary Survey, 2007/2008

	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in the last 12 months	Number of women aged 15-49 years	Percent who had sex with non-marital, non-cohabiting partner *	Number of women aged 15-49 years who had sex in last 12 months	Percent who used a condom at last sex with a non-marital, non-cohabiting partner **	Number of women aged 15-49 years who had sex in last 12 months with a non-marital, non-cohabiting partner
Region								
Central	100.0	86.2	0.3	2003	12.2	1726	27.4	210
N orthern	87.9	72.8	0.3	12882	9.4	9376	35.4	882
Upper East	83.0	65.2	0.5	3288	10.3	2143	63.5	221
Upper West	84.8	70.2	0.4	1576	8.4	1106	58.0	92
Area								
Urban	85.5	68.6	0.3	5645	15.6	3875	50.4	603
Rural	89.1	74.3	0.4	14104	7.6	10477	32.4	801
Age								
15-19	34.2	29.1	0.6	3140	57.5	915	45.2	526
20-24	91.0	76.9	0.4	2986	20.7	2297	38.8	476
15-24	61.9	52.4	0.5	6125	31.2	3212	42.2	1002
25-29	99.5	85.1	0.4	3698	6.1	3145	51.7	192
30-34	99.8	85.8	0.4	3116	3.1	2672	31.3	83
35-39	99.9	81.7	0.1	2723	1.9	2225	18.5	42
40-44	100.0	78.9	0.3	2187	3.2	1725	12.7	55
45-49	100.0	72.2	0.0	1901	2.3	1373	4.1	31
Education								
None	94.6	77.2	0.3	12726	4.0	9825	20.3	391
Primary	77.0	63.8	0.4	2961	15.7	1888	27.0	296
Middle/JSS	71.9	63.1	0.4	2932	24.8	1851	50.1	459
Secondary +	84.9	69.6	0.5	1131	33.0	787	67.3	259
Wealth index quintiles								
Poorest	88.1	71.2	0.2	2903	9.2	2066	36.9	190
Second	89.3	74.0	0.9	3300	8.3	2441	36.9	203
Middle	88.0	72.7	0.4	3216	12.2	2338	44.2	286
Fourth	88.4	73.7	0.2	3217	10.0	2370	47.1	236
Richest	86.6	71.3	0.2	3176	12.7	2264	45.0	287
Total	**88.1**	**72.6**	**0.4**	**15812**	**10.5**	**11479**	**42.6**	**1202**

** MICS Indicator 85*
*** MICS Indicator 83; MDG Indicator 19a*

Orphans and Vulnerable Children

As the HIV epidemic progresses, more and more children are becoming orphaned and vulnerable because of AIDS. Children who are orphaned or in vulnerable households may be at increased risk of neglect or exploitation. Monitoring the variations in different outcomes for orphans and vulnerable children and comparing them to their peers gives us a measure of how well communities and governments are responding to their needs.

To monitor these variations, a measurable definition of orphaned and vulnerable children needed to be created. The UNAIDS Monitoring and Evaluation Reference Group developed a proxy definition of children who have been affected by adult morbidity and mortality. This should capture many of the children affected by AIDS in countries or areas where a significant proportion of the adults are HIV positive. The definition classifies children as orphaned and vulnerable if they have experienced the death of either parent, if either parent is chronically ill, or if an adult (aged 18-59) in the household either died (after being chronically ill) or was chronically ill in the year prior to the survey.

Table HA.10 shows the frequency of children aged 0-17 living with neither parent, living with mother only and living with father only as well as distribution by sex, region, place of residence and wealth index. Sixty-six percent of children are living with both parents, but 14 percent do not live with their biological parents. For those not living with their biological parents, less than one percent has only their father alive (0.8 percent) , one percent (1.3 percent) have only their mother alive, and one in ten have both parents alive. Less than one percent (0.4 percent) of the children have both parents dead, while 6 percent of children have one or both parent dead.

Fourteen percent of those not living with their biological parent reside in urban areas, whereas only seven percent resides in rural areas. Central region recorded the highest proportion of children not living with both parents (18 percent) whilst the Northern region recorded the lowest with seven percent.

Table HA.10: Children's living arrangements and orphanhood

Percentage distribution of children aged 0-17 years according to living arrangements, percentage of children aged 0-17 years in households not living with a biological parent and percentage of children who are orphans, HIRD Supplementary Survey, 2007/2008

	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 *	One or both parents dead **	Number of children
		Only father alive	Only mother alive	Both are alive	Both are dead	Father alive	Father dead	Mother alive	Mother dead					
Sex														
Male	79.2	0.4	1.2	5.8	0.3	6.9	3.0	2.1	1.0	0.2	100.0	7.7	5.9	15048
Female	76.1	0.7	1.0	8.4	0.3	7.3	3.1	2.0	0.8	0.3	100.0	10.4	6.0	14116
Region														
Central	49.1	1.1	1.3	14.7	0.4	25.8	3.4	3.2	0.5	0.5	100.0	17.5	6.7	6324
Northern	83.3	0.5	1.0	5.6	0.2	4.5	2.2	1.6	0.9	0.1	100.0	7.3	4.9	9709
Upper East	76.0	0.5	1.5	6.7	0.5	5.1	5.6	2.8	0.9	0.4	100.0	9.1	8.9	8672
Upper West	75.5	0.2	1.7	8.4	0.6	5.6	4.1	2.4	1.3	0.2	100.0	10.9	7.9	4459
Area														
Urban	69.2	1.0	1.5	11.0	0.4	10.0	3.2	2.6	1.0	0.2	100.0	13.9	7.0	6701
Rural	80.5	0.4	1.0	5.7	0.3	6.1	3.0	1.9	0.9	0.2	100.0	7.4	5.6	22462
Age														
0-4 years	84.3	0.2	0.3	2.6	0.0	10.3	1.3	0.8	0.2	0.1	100.0	3.1	2.0	8540
5-9 years	78.3	0.5	0.9	8.0	0.3	5.8	2.6	2.6	0.9	0.1	100.0	9.7	5.2	9082
10-14 years	73.5	0.7	1.9	9.6	0.5	5.4	4.4	2.5	1.3	0.2	100.0	12.7	8.8	7879
15-17 years	68.3	1.3	2.4	10.2	0.8	6.0	5.8	2.7	1.6	0.8	100.0	14.7	11.9	3662
Wealth index quintiles														
Poorest	12.5	0.2	0.3	2.4	0.1	2.7	0.5	0.3	0.0	0.0	19.2	15.9	5.9	6518
Second	14.7	0.2	0.3	1.7	0.1	2.7	0.5	0.4	0.1	0.1	20.9	11.1	5.8	5798
Middle	13.5	0.1	0.2	2.3	0.1	2.8	0.9	0.6	0.1	0.0	20.6	13.5	6.8	5469
Fourth	12.1	0.1	0.2	1.9	0.0	3.2	0.6	0.9	0.1	0.0	19.0	11.4	4.9	5336
Richest	13.6	0.3	0.3	2.6	0.1	2.1	0.5	0.4	0.3	0.1	20.3	15.9	6.8	6042
Total	**66.3**	**0.8**	**1.3**	**11.1**	**0.4**	**13.6**	**3.0**	**2.6**	**0.6**	**0.4**	**100.0**	**13.6**	**6.0**	**29164**

** MICS Indicator 78*

** MICS Indicator 75*

XIII. National Health Insurance

The National Health Insurance Scheme (NHIS) was founded as one of the key pillars of the Poverty Reduction Programme of the government. It was introduced in 2003 by the National Health Insurance Act, Act 650, with the view to improving financial access of Ghanaians, especially the poor and the vulnerable, to quality basic health care services. NHIS card holders can access both public and private healthcare facilities accredited by the National Health Insurance Authority. Under the NHIS, the rich subsidizes the poor, the healthy subsidizes the sick and the economically active pays for children, the aged and the indigents (NHIS website).

The HIRD Supplementary District MICS Survey incorporated a Module on NHIS in both the Household and Women Questionnaires, where respondents were asked their views on the National Health Insurance Scheme (NHIS). Respondents were asked whether or not they had registered with the scheme, reasons for not registering, whether they had a valid NHIS card, whether or not they had benefited and if they would continue to be members of the scheme or not. For those not registered or holding valid NHIS cards, a series of questions were asked to find out the reasons.

National Health Insurance Registration

Table WNH.1 shows the percentage of women aged 15-49 years registered with NHIS in Central, Northern, Upper East and Upper West regions. In the four regions, 32 percent of the women had registered with the NHIS. Upper West region had the highest percentage of women registered (40 percent), followed by Upper East region (31 percent). Central and Northern regions had 30 percent and 29 percent of the women registered respectively.

Percentage of women registered with NHIS increases with education level. For instance, 67 percent of women with secondary or higher education are registered with the NHIS compared to 24 percent of their counterparts with little or no education. There is also positive correlation of NHIS registration and socio-economic status of women. Nineteen percent of women from the poorest wealth quintiles are registered compared to 51 percent from the richest wealth quintile.

The Survey also reveals the reasons for non-registration to NHIS by women. Four percent responded that they had not registered because they had not heard of NHIS, 59 percent indicated that the premium was too expensive, 2 percent did not trust NHIS, 17 percent did not know where to register, and a further 9 percent indicated that the District Office was too far. Additionally, 8 percent of the women gave other reasons for non-registration. Interestingly, little variations are observed among those who indicated that the NHIS premium was too expensive, and the socio-economic status of the women.

Table WNH.1: National Health Insurance Scheme registration

Percentage of women aged 15-49 years registered with NHIS, and reasons for not registering, for those not registered, HIRD Supplementary, 2007/2008

	Percentage of women registered*	Number of women Registered	Reasons for not registering with NHIS						Total number of women aged 15-49 years
			Not heard of NHIS	Premium too Expensive	Don't trust NHIS	Don't know where to register	District office too far	Other	
Region									
Central	29.9	600	0.3	57.6	1.8	6.4	1.7	11.0	2,003
Northern	28.9	1,027	4.8	60.4	1.3	25.1	13.6	4.1	3,554
Upper East	30.9	1,015	2.2	62.7	0.9	14.6	15.2	9.0	3,288
Upper West	40.2	633	4.6	55.5	5.1	10.4	5.9	7.1	1,576
Area									
Urban	49.7	1,376	1.9	54.5	3.0	12.4	5.0	9.0	2,768
Rural	24.8	1,899	3.4	61.3	1.5	17.0	12.2	7.0	7,653
Age									
15-19	31.7	523	4.7	63.6	1.9	20.5	11.4	5.6	1,650
20-24	28.5	433	2.9	62.4	1.5	16.0	12.7	7.4	1,518
25-29	32.5	595	2.7	55.2	1.8	17.0	10.4	8.6	1,829
30-34	34.9	568	3.1	59.3	2.5	16.7	10.8	6.9	1,628
35-39	32.9	490	2.5	59.7	1.1	14.2	10.1	8.4	1,492
40-44	28.2	357	2.7	61.3	1.5	11.4	10.3	8.1	1,268
45-49	29.8	309	2.7	58.4	2.0	15.9	8.9	9.2	1,036
Marital/Union status									
Currently married/in union	31.1	2,419	3.0	58.9	1.7	16.2	11.2	6.9	7,774
Formerly married/in union	27.5	213	1.4	61.9	2.2	9.8	6.6	8.6	772
Never married/in union	34.3	644	4.2	63.6	1.7	18.6	10.8	8.5	1,876
Education									
None	24.1	1,424	3.7	60.0	1.7	18.1	12.5	7.0	5,908
Primary	31.1	592	2.5	61.5	1.5	15.9	10.1	6.2	1,902
Middle/JSS	41.9	823	1.4	59.6	2.2	10.2	5.5	6.5	1,962
Secondary+	67.3	437	1.5	50.7	2.5	8.5	8.1	11.6	649
Wealth index quintiles									
Poorest	19.3	247	5.1	56.2	1.9	18.5	11.6	9.7	1,276
Second	21.8	275	3.5	60.4	2.1	16.6	8.5	5.9	1,259
Middle	27.5	363	2.7	59.4	1.3	17.0	8.3	7.9	1,321
Fourth	31.3	474	3.4	60.9	2.3	15.3	8.7	5.4	1,514
Richest	51.1	902	2.4	56.1	3.3	17.0	6.1	10.1	1,764
Total	**31.7**	**2,260**	**3.5**	**58.7**	**2.2**	**16.9**	**8.7**	**7.8**	**7,134**

Validity of National Health Insurance Card

Table WNH.2 provides information on the percentage of women who have registered with the NHIS and hold a valid NHIS card or otherwise, and the reason for not having a valid NHS card. Sixty-five percent of women in the four regions have a valid NHIS card.

As in the case of NHIS registration, women with secondary or higher education level are more likely to hold a valid NHIS card than those with little or no education. Eighty percent of the women with secondary or higher education have a valid NHIS card compared to 62 percent of women with little or no education. Women in the richest wealth quintiles are also more likely to have valid NHIS cards (69 percent) compared to those in the other wealth quintiles.

For women registered with NHIS but not holding valid NHIS cards, reasons given by respondents for not having a valid NHIS were: not received card from authorities (62 percent), in waiting period (62 percent), not renewed registration (40 percent), not fully paid (17 percent) and other reasons (4 percent).

Table WNH.2: National Health Insurance Scheme registration and card validity

Percentage of women 15-49 years registered with the National Health Insurance Scheme and hold valid NHIS cards HIRD Supplementary Survey 2007/2008

	Percentage of valid NHIS Card holders	Number of women having valid cards	Reasons for not having valid NHIS card					Number of Registered women
			Have registered but not paid full amount	Have registered but not received card	Have not renewed my registration	Registered but in the waiting period	Other	
Region								
Central	52.3	314	19.6	63.7	61.0	51.6		600
Northern	60.2	619	14.5	67.4	23.6	74.9	2.5	1,027
Upper East	68.3	693	13.5	46.3	15.4	82.8	6.2	1,015
Upper West	84.7	536	20.9	30.0	44.7	43.9	8.4	633
Area								
Urban	72.1	993	11.2	58.1	40.6	63.3	3.5	1,376
Rural	61.5	1,169	18.7	56.7	25.8	73.3	4.7	1,899
Age								
15 - 19	70.5	368	11.1	52.8	28.8	66.9	15.9	523
20 - 24	61.7	268	19.6	54.1	28.1	71.2	0.0	433
25 - 29	67.2	400	18.7	53.4	32.6	65.5	0.0	595
30 - 34	69.5	395	19.3	63.4	41.4	61.1	3.1	568
35 - 39	64.6	317	15.2	58.2	22.2	85.0	8.9	490
40 - 44	63.5	227	10.2	62.5	37.4	67.9	0.0	357
45 - 49	60.7	187	16.6	57.2	30.8	70.8	0.0	309
Marital/Union status								
Currently married/in union	65.0	1,573	17.1	59.8	29.8	73.0	1.9	2,419
Formerly married/in union	62.7	133	19.1	44.2	42.2	58.2	0.0	213
Never married/in union	70.7	456	10.5	51.5	30.6	64.9	12.0	644
Education								
None	61.5	876	15.9	59.6	18.3	81.7	7.0	1,424
Primary	62.1	368	17.3	54.0	31.6	68.6	0.0	592
Middle/JSS	69.1	568	17.5	59.5	49.3	49.3	4.9	823
Secondary+	80.0	349	9.8	44.6	49.2	57.1	3.3	437
Wealth index quintiles								
Poorest	59.5	147	17.4	64.1	61.2	47.6	0.0	247
Second	64.3	177	16.3	57.7	39.9	67.6	0.0	275
Middle	59.3	215	17.2	58.3	40.8	61.6	0.0	363
Fourth	64.9	308	18.4	64.5	28.5	67.3	21.1	474
Richest	69.0	622	16.5	62.8	40.0	60.0	0.0	902
Total	**65.0**	**1,468**	**17.1**	**61.8**	**40.4**	**61.5**	**3.6**	**2,260**

National Health Insurance Benefits

Table WNH.3 provides information on the proportion of women who registered with the NHIS and those who indicated that joining NHIS had been beneficial to them. Eighty-three percent of women in the four regions indicated that joining NHIS had been beneficial. On being prompted to indicate the kind of benefits they had received, 94 percent of the women indicated that they had saved money from paying hospital bills. Seventy-six percent alleged that since joining NHIS, there was no need to borrow money to pay for hospital bills; 77 percent revealed that they were not afraid to use health facilities because of costs, and 91 percent indicated that they could now use health services to prevent illnesses becoming severe. The few respondents who indicated that they had not benefited from registering with the NHIS gave reasons such as; had not been sick, health facility too far, transport costs are high, did not receive proper treatment at facility and still had to pay for some services, e.g. drugs. The survey also sought to find out if the women registered with the NHIS wished to renew their membership, and nearly all the women indicated that they wished to continue to be members of the NHIS.

Table WNH.3: National Health Insurance Scheme registration and benefits received

Percentage of women 15-49 years registered with the National Health Insurance Scheme and hold valid NHIS cards, HIRD Supplementary Survey 2007/2008

	Percentage of women indicating that joining NHIS has been Beneficial	Valid card holders who said joining NHIS is beneficial because of the following reasons:					Percentage of women who indicated they will continue to be members of NHIS	Number of women having valid cards
		Saved money from paying Hospital Bills	No need to borrow to pay Hospital Bills	Not afraid using health facility because of cost	Can now use health services to prevent diseases Becoming Severe	Other		
Region								
Central	81.4	92.6	65.7	70.9	94.5	8.5	98.6	314
Northern	78.7	89.9	74.0	75.3	83.1	1.7	98.4	619
Upper East	91.0	90.6	74.2	85.5	92.0	4.0	97.4	693
Upper West	89.3	98.9	83.0	83.3	97.2	1.1	98.9	536
Area								
Urban	88.0	92.7	73.9	77.6	90.8	3.5	98.0	993
Rural	83.5	93.1	76.3	82.3	92.0	3.1	98.4	1,169
Age								
15-19	79.7	89.0	71.2	80.1	93.9	1.7	98.4	368
20-24	86.2	93.0	78.4	83.0	88.0	2.2	97.9	268
25-29	88.6	93.3	71.2	74.7	89.2	3.1	98.0	400
30-34	88.2	95.6	76.4	81.6	91.7	2.3	98.8	395
35-39	86.5	90.6	77.4	79.3	90.9	4.7	98.5	317
40-44	84.5	96.8	78.4	83.5	94.9	3.6	98.1	227
45-49	84.0	92.1	76.0	81.9	92.6	7.7	97.4	187
Marital/Union status								
Currently marrie d/in union	87.3	93.9	75.2	78.9	90.7	3.4	98.2	1,573
Formerly married/in union	82.5	94.3	79.2	82.1	96.0	5.2	97.3	133
Never married/in union	80.6	88.8	73.5	83.7	92.6	2.4	98.5	456
Education								
None	86.2	93.1	76.3	79.9	91.2	2.5	98.2	876
Primary	82.9	93.8	79.8	84.0	90.7	3.0	98.6	368
Middle/JSS	83.6	92.3	69.1	75.6	92.7	3.5	98.5	568
Secondary+	90.1	92.4	77.1	83.6	90.7	5.1	97.4	349
Wealth index quintiles								
Poorest	85.7	94.7	74.0	72.0	91.3	4.2	98.9	147
Second	79.4	93.7	83.7	83.4	93.8	1.6	99.1	177
Middle	81.4	95.3	71.9	78.1	91.8	4.0	99.3	215
Fourth	84.6	97.0	78.2	77.0	94.2	4.4	99.2	308
Richest	83.4	92.0	73.8	77.0	88.5	2.0	97.7	622
Total	**83.1**	**94.0**	**75.6**	**77.4**	**91.1**	**3.0**	**98.6**	**1,468**

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National Health Insurance Scheme website: www.nhis.gov.gh
WHO/UNICEF Joint Monitoring Platform website: www.wssinfo.org

Annex A — Sampling Calculation

The major features of sample design are described in this appendix. Sample design features include target sample size, sample allocation, sample frame and listing, choice of domains, sampling stages, stratification, and the calculation of sample weights.

The High Impact Rapid Delivery (HIRD) Supplementary Survey (District MICS), 2007/2008 was conducted in four out of ten regions of Ghana i.e. Upper East, Upper West, Northern and Central, as well as in the two largest metropolitans Accra and Kumasi. The primary objective of the sample design was to produce statistically reliable estimates on a large number of indicators on children and women at the district level. The survey results also provides separate estimates for urban areas analysing urban status using Accra and Kumasi metropolises as a case study for further urban studies and analysis to be performed in future. No national estimates were calculated since the survey took place in only four regions and two metropolitan areas. A multi-stage, stratified cluster sampling approach was used for the selection of the survey sample.

Urban and rural areas in each of the four regions were defined as the sampling strata but each area is not a separated domain. In all regions surveyed, the sample took into consideration the new district demarcations.

Sample Size and Sample Allocation

The sample size for HIRD Supplementary Survey (District MICS) 2007/08 was calculated as 14,720. In each of the first four regions, a sample of households was chosen to provide information for each of the currently defined districts. The average cluster size in HIRD Supplementary Survey (District MICS) 2007/08 was determined as 20 households based on a number of considerations, including the budget available, and the time that would be needed per team to complete one cluster. In each region, the clusters (primary sampling units) were distributed to urban and rural domains by the current district demarcations.

Table SD.1: Allocation of sample clusters (primary sample units) to sampling domains

Region	N clusters	Urban clusters	Rural clusters
Central	195	75	120
Accra Metropolitan Areas	45	45	-
Kumasi Metropolitan Area	45	45	-
Northern	180	53	127
Upper East	176	36	140
Upper West	96	11	85
Total	**737**	**265**	**472**

However, a total of 14,440 households (3460 in Upper East region, 3520 in Northern region, 1820 in Upper West region, 3880 in Central region and 900 and 860 in AMA and KMA respectively) were accessible during data collection due to varying reasons such as flooding and the relocation of some communities, hence, the difference between the sample size calculated and the sample selected. Due to the non-replacement sampling used for the survey these inaccessible EA were not replaced.

Sampling Frame and Selection of Clusters

The frame for HIRD Supplementary Survey (District MICS) 2007/08 is the 2000 Population and Housing Census. The Enumeration Areas (EAs) were selected systematically and with PPS (probability proportional to size). The EAs within each region surveyed were stratified by district and urban/rural. Twenty-two and twelve EAs were selected in each of the current eight districts in the Upper East and Upper West Regions respectively, whiles ten EAs were selected in each of the current eighteen districts in the Northern Region. In the Central region, fifteen EAs were selected in each of the thirteen districts. In the two metropolitan areas (Accra and Kumasi), forty-five EAs were selected in each of these areas. This thus formed the first stage sampling (Table SD.2). The EAs were allocated into urban and rural areas proportionally to the number of households in each area. In each area the EAs were selected systematically with probability proportional to size (households).

Table SD.2: Selection of district and sample cluster

Region	No. Old Districts	No of New Districts	No. of EAs/District	No. of Households Per EA
Upper East Region	6	8	22	20
Upper West Region	5	8	12	20
Northern Reg ion	13	18	10	20
Central Region	12	13	15	20
Accra Metropolitan Assembly	-	-	45	20
Kumasi Metropolitan Assembly	-	-	45	20

Listing Activities

The list of enumeration areas (EAs) from the 2000 Population and Housing Census served as a frame for the HIRD Supplementary Survey sample. A complete household listing exercise covering all selected EAs from the 2000 Population and Housing Census sampling frame was carried out in May through December, 2007. Almost around the time of the HIRD supplementary survey, another large survey on verbal autopsy for Maternal Mortality Survey (MMS) was being implemented nation-wide. Therefore, to reduce household listing cost in the HIRD supplementary survey, it was decided to use a number of selected EAs in each district but combining the selected ones in the verbal autopsy survey with households listing material, and additional ones to complete such specific number of EAs with a fresh household listing. In each region, a sample of households was chosen to provide information for each of the currently defined districts. For the second stage sampling, 20 households were systematically sampled per EA based on this list. Within these selected households, all females aged 15-49 were identified and interviewed for the individual woman questionnaire. In addition, children under five years of age in selected households were also identified and either their mothers or caretakers were interviewed on their behalf.

Calculation of Sample Weights

The HIRD Supplementary Survey (District MICS) 2007/08 sample is not self-weighted. Essentially, by allocating a non-proportionally numbers of households to each of the regions, different sampling fractions were used in each region since the size of the regions varied. For this reason, sample weights were calculated and these were 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 domain:

$W_h = 1 / f_h$

The term fh, the sampling fraction at the h-th stratum, is the product of probabilities of selection at every stage in each sampling domain:

$f_h = P_{1h} * P_{2h} * P_{3h}$

where Pih is the probability of selection of the sampling unit in the i-th stage for the h-th sampling domain, i.e.,

P_{1h} is the selection probability in the MMR survey;
P_{2h} is the sub selection rate for clusters used in the 2007 survey from MMR survey; and
P_{3h} is the sub selection rate for households in the cluster.

Since the estimated numbers of households per enumeration area prior to the first stage selection (selection of primary sampling units) and the updated number of households per EA were different, individual sampling fractions for households in each EA (cluster) were calculated. The sampling fractions for households in each EA therefore included the probability of selection of the EA in that particular sampling domain and the probability of selection of a household in the sample EA.

A second component which has to be taken into account in the calculation of sample weights is 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 = Number of interviewed households / Number of occupied households listed

After the completion of fieldwork, response rates were calculated for each sampling domain. These were used to adjust the sample weights calculated for each cluster. Response rates in the HIRD Supplementary Survey (District MICS) 2007/08 are shown in Table HH.1 in this report.

Similarly, the adjustment for non-response at the individual level (women and under-5 children) is equal to the inverse value of:

RR = Completed women's (or under-5's) questionnaires / Eligible women (or under-5s)

Number of eligible women and under-5 children were obtained from the household listing in the Household Questionnaire in households where interviews were completed.

The unadjusted weights for the households were calculated by multiplying the above factors for each enumeration area. These weights were then standardized (or normalized) Normalization is performed by multiplying the aforementioned unadjusted weights by the ratio of the number of completed households to the total unadjusted weighted number of households. A similar standardization procedure was followed in obtaining standardized weights for the women's and under-5's questionnaires.

Sample weights were appended to all data sets and analyses were performed by weighting each household, woman or under-5 with these sample weights.

Annex B — List of Personnel Involved in Survey

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Bo Robert Pedersen	...	Monitoring and Evaluatoin Officer
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Annex C — Sampling errors

The sample of respondents selected in High Impact Rapid Delivery (HIRD) Supplementary Survey (District MICS), 2007/2008 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 all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey results.

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. 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
- 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. 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. For any given statistic calculated from the survey, the value of that statistics will fall within a range of plus or minus two times the standard error (p + 2.se or p 2.se) of the statistic in 95 percent of all possible samples of identical size and design.

For the calculation of sampling errors from High Impact Rapid Delivery (HIRD) Supplementary Survey (District MICS), 2007/2008 data, SPSS 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 regions, and for urban and rural areas. 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.

Table SE.1: Indicators selected for sampling error calculations

List of indicators selected for sampling error calculations, and base populations (denominators) for each indicator, HIRD Supplementary Survey, 2007/2008

MICS Indicator		Base Population
	HOUSEHOLDS	
30	Household availability of insecticide treated nets	All households
41	Iodized salt consumption	All households
74	Child discipline	Children aged 2 - 14 years selected
	HOUSEHOLD MEMBERS	
11	Use of improved drinking water sources	All household members
12	Use of improved sanitation facilities	All household members
55	Net primary school attendance rate	Children of primary school age
56	Net secondary school attendance rate	Children of secondary school age
59	Primary completion rate	Children of primary school completion age
71	Child labour	Children aged 5 - 14 years
75	Prevalence of orphans	Children aged under 18
76	Prevalence of vulnerable children	Children aged under 18
	WOMEN	
4	Skilled attendant at delivery	Women aged 15-49 years with a live birth in the last 2 years
20	Antenatal care	Women aged 15 - 49 years with a live birth in the last 2 years
21	Contraceptive prevalence	Women aged 15 - 49 currently married /in union
60	Adult literacy	Women aged 15 - 24 years
63	Prevalence of female genital mutilation/cutting (FGM/C)	Women aged 15 - 49 years
67	Marriage before age 18	Women aged 20 - 49 years
70	Polygyny	Women aged 15-49 years currently married or in union
82	Comprehensive knowledge about HIV prevention among young people	Women aged 15 - 24 years
83	Condom use with non-regular partners	Women aged 15 - 24 years that had a non-marital, non-cohabiting partner in the last 12 months
84	Age at first sex among young people	Women aged 15 - 24 years
86	Attitude towards people with HIV/AIDS	Women aged 15 - 49 years
88	Women who have been tested for HIV	Women aged 15 - 49 years
89	Knowledge of mother-to-child transmission of HIV	Women aged 15-49 years

Table SE.1: Indicators selected for sampling error calculations cont'd

List of indicators selected for sampling error calculations, and base populations (denominators) for each indicator, HIRD Supplementary Survey, 2007/2008

MICS	Indicator	Base Population
	UNDER-5s	
-	Neonatal mortality rate	Child exposed to the risk of mortality
-	Post-neonatal mortality	Child exposed to the risk of mortality
2	Infant mortality rate	Child exposed to the risk of mortality
-	Child (1-4 yrs) mortality rate	Child exposed to the risk of mortality
1	Under-5 mortality rate	Child exposed to the risk of mortality
6	Underweight prevalence	Children under age 5
25	Tuberculosis immunization coverage	Children aged 12-23 months
26	Polio immunization coverage	Children aged 12-23 months
27	Immunization coverage for DPT	Children aged 12-23 months
28	Measles immunization coverage	Children aged 12-23 months
31	Fully immunized children	Children aged 12-23 months
-	Acute respiratory infection in last two weeks	Children under age 5
22	Antibiotic treatment of suspected pneumonia	Children under age 5 with suspected pneumonia in the last 2 weeks
-	Diarrhoea in last two weeks	Children under age 5
35	Received ORT or increased fluids and continued feeding	Children under age 5 with diarrhoea in the last 2 weeks
37	Under-fives sleeping under insecticide treated nets	Children under age 5
-	Fever in last two weeks	Children under age 5
39	Antimalarial treatment	Children under age 5 with fever in the last 2 weeks
46	Support for learning	Children under age 5
62	Birth registration	Children under age 5

Table SE.2: Sampling errors: Total sample

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, (Central, Northern, Upper East and Upper West Regions, and Accra and Kumasi Metropolitan Areas), 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.474	0.004	0.009	0.995	0.997	13815	13807	0.466	0.483
Iodized salt consumption	NU.5	0.199	0.004	0.021	1.566	1.251	13746	13741	0.191	0.208
Child discipline	CP.4	0.864	0.004	0.005	1.199	1.095	9246	9254	0.856	0.872
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.781	0.008	0.011	5.472	2.339	62852	13807	0.765	0.798
Use of improved sanitation facilities	EN.5	0.336	0.007	0.020	2.736	1.654	62852	13807	0.323	0.349
Net primary school attendance rate	ED.3	0.733	0.006	0.009	2.258	1.503	10975	11146	0.721	0.746
Net secondary school attendance rate	ED.4	0.312	0.005	0.016	1.240	1.113	10391	10455	0.302	0.322
Primary completion rate	ED.6	0.000	0.000	.	.	.	1842	1852	0.000	0.000
Child labour	CP.2	0.352	0.005	0.013	1.693	1.301	18105	18361	0.343	0.361
Prevalence of orphans	HA.10	0.070	0.002	0.024	1.420	1.192	31267	31696	0.066	0.073
WOMEN										
Skilled attendant at delivery	RH.5	0.370	0.007	0.020	0.894	0.945	3742	3785	0.355	0.385
Antenatal care	RH.3	0.925	0.004	0.004	0.830	0.911	3742	3785	0.918	0.933
Contraceptive prevalence	RH.1	0.128	0.003	0.026	0.822	0.906	8414	8433	0.121	0.134
Adult literacy	ED.8	0.436	0.008	0.019	0.937	0.968	3265	3251	0.420	0.453
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.143	0.004	0.030	1.712	1.308	11272	11243	0.135	0.152
Marriage before age 18	CP.5	0.362	0.005	0.013	0.923	0.961	9603	9582	0.352	0.371
Polygyny	CP.5	0.327	0.006	0.019	1.468	1.212	8414	8433	0.315	0.340
Comprehensive knowledge about HIV prevention among young people	HA.3	0.258	0.007	0.028	0.880	0.938	3265	3251	0.244	0.273
Condom use with non-regular partners	HA.9	0.491	0.012	0.025	0.307	0.554	530	522	0.467	0.516
Age at first sex among young people	HA.8	0.074	0.004	0.058	0.437	0.661	1668	1661	0.065	0.082
Attitude towards people with HIV/AIDS	HA.5	0.051	0.002	0.039	0.903	0.950	10940	10884	0.047	0.055
Women who have been tested for HIV	HA.6	0.105	0.003	0.025	0.832	0.912	11272	11243	0.099	0.110
Knowledge of mother-to-child transmission of HIV	HA.4	0.690	0.004	0.006	0.954	0.977	11272	11243	0.681	0.698
UNDER-5s										
Underweight prevalence	NU.1	0.231	0.004	0.017	0.759	0.871	8578	8556	0.224	0.239
Tuberculosis immunization coverage	CH.2	0.961	0.003	0.004	0.550	0.742	1746	1762	0.954	0.968
Polio immunization coverage	CH.2	0.877	0.007	0.008	0.906	0.952	1746	1762	0.863	0.892
Immunization coverage for DPT	CH.2	0.897	0.007	0.008	0.867	0.931	1746	1762	0.883	0.910
Measles immunization coverage	CH.2	0.919	0.005	0.006	0.631	0.795	1746	1762	0.908	0.929
Fully immunized children	CH.2	0.809	0.008	0.010	0.768	0.876	1746	1762	0.792	0.825
Acute respiratory infection in last two weeks	CH.6	0.062	0.002	0.039	0.912	0.955	9062	9053	0.057	0.067
Antibiotic treatment of suspected pneumonia	CH.7	0.380	0.012	0.032	0.359	0.599	561	580	0.356	0.404
Diarrhoea in last two weeks	CH.4	0.191	0.005	0.025	1.296	1.138	9062	9053	0.181	0.200
Received ORT or increased fluids and continued feeding	CH.5	0.304	0.008	0.026	0.493	0.702	1728	1734	0.289	0.320
Under-fives sleeping under insecticide treated nets	CH.11	0.512	0.007	0.014	1.740	1.319	9062	9053	0.498	0.526
Fever in last two weeks	CH.12	0.228	0.005	0.021	1.177	1.085	9062	9053	0.219	0.238
Antimalarial treatment	CH.12	0.381	0.008	0.020	0.538	0.734	2068	2096	0.365	0.396
Support for learning	CD.1	0.205	0.005	0.023	1.284	1.133	9062	9053	0.195	0.214
Birth registration	CP.1	0.565	0.008	0.014	2.279	1.510	9062	9053	0.549	0.581

Table SE.3: Sampling errors: Urban areas

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Urban areas (Central, Northern, Upper East and Upper West Regions, and Accra and Kumasi Metropolitan Areas), 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.381	0.006	0.017	0.849	0.921	5060	4957	0.368	0.394
Iodized salt consumption	NU.5	0.382	0.010	0.026	2.045	1.430	5038	4933	0.362	0.402
Child discipline	CP.4	0.876	0.005	0.006	0.744	0.863	2947	2890	0.865	0.886
HOUSEHOLD MEMBERS										
Use of improved drinking watesources	EN.1	0.903	0.008	0.009	3.868	1.967	19743	4957	0.886	0.919
Use of improved sanitation facilities	EN.5	0.676	0.011	0.016	2.805	1.675	19743	4957	0.654	0.698
Net primary school attendance rate	ED.3	0.834	0.013	0.015	3.385	1.840	2978	2939	0.809	0.859
Net secondary school attendance rate	ED.4	0.468	0.010	0.021	1.196	1.094	3265	3210	0.449	0.487
Primary completion rate	ED.6	0.000	0.000	.	.	.	507	507	0.000	0.000
Child labour	CP.2	0.222	0.008	0.035	1.695	1.302	4999	4932	0.207	0.238
Prevalence of orphans	HA.10	0.076	0.003	0.037	0.971	0.985	8805	8695	0.070	0.081
WOMEN										
Skilled attendant at delivery	RH.5	0.648	0.012	0.018	0.612	0.782	1038	1020	0.624	0.671
Antenatal care	RH.3	0.959	0.005	0.005	0.542	0.736	1038	1020	0.949	0.968
Contraceptive prevalence	RH.1	0.169	0.007	0.039	0.749	0.865	2501	2426	0.156	0.183
Adult literacy	ED.8	0.631	0.015	0.023	0.852	0.923	972	916	0.602	0.661
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.062	0.004	0.063	0.926	0.962	3618	3481	0.054	0.070
Marriage before age 18	CP.5	0.313	0.008	0.026	0.926	0.962	3139	3035	0.297	0.330
Polygyny	CP.5	0.229	0.012	0.052	1.989	1.410	2501	2426	0.205	0.253
Comprehensive knowledge about HIV prevention among young people	HA.3	0.367	0.013	0.034	0.626	0.791	972	916	0.341	0.392
Condom use with non-regular partners	HA.9	0.577	0.014	0.025	0.176	0.419	214	208	0.549	0.606
Age at first sex among young people	HA.8	0.074	0.005	0.074	0.194	0.440	480	446	0.063	0.085
Attitude towards people with HIV/AIDS	HA.5	0.081	0.005	0.058	1.022	1.011	3588	3450	0.072	0.091
Women who have been tested for HIV	HA.6	0.165	0.006	0.034	0.774	0.880	3618	3481	0.154	0.176
Knowledge of mother-to-child transmission of HIV	HA.4	0.694	0.006	0.009	0.628	0.792	3618	3481	0.681	0.706
UNDER-5s										
Underweight prevalence	NU.1	0.190	0.007	0.035	0.639	0.800	2333	2273	0.177	0.203
Tuberculosis immunization coverage	CH.2	0.974	0.004	0.004	0.283	0.532	504	501	0.966	0.982
Polio immunization coverage	CH.2	0.882	0.011	0.013	0.615	0.784	504	501	0.859	0.905
Immunization coverage for DPT	CH.2	0.911	0.009	0.010	0.524	0.724	504	501	0.892	0.929
Measles immunization coverage	CH.2	0.938	0.008	0.009	0.562	0.750	504	501	0.922	0.954
Fully immunized children	CH.2	0.821	0.012	0.014	0.481	0.693	504	501	0.797	0.845
Acute respiratory infection in last two weeks	CH.6	0.051	0.004	0.080	0.830	0.911	2470	2412	0.042	0.059
Antibiotic treatment of suspected pneumonia	CH.7	0.417	0.016	0.038	0.127	0.356	125	123	0.385	0.449
Diarrhoea in last two weeks	CH.4	0.178	0.006	0.034	0.614	0.784	2470	2412	0.166	0.190
Received ORT or increased fluids and continued feeding	CH.5	0.332	0.016	0.049	0.526	0.725	439	447	0.299	0.364
Under-fives sleeping under insecticide treated nets	CH.11	0.399	0.012	0.029	1.368	1.169	2470	2412	0.376	0.423
Fever in last two weeks	CH.12	0.194	0.007	0.038	0.825	0.908	2470	2412	0.179	0.208
Antimalarial treatment	CH.12	0.459	0.016	0.034	0.476	0.690	479	487	0.428	0.490
Support for learning	CD.1	0.277	0.010	0.036	1.175	1.084	2470	2412	0.258	0.297
Birth registration	CP.1	0.714	0.010	0.014	1.234	1.111	2470	2412	0.694	0.734

Table SE.4: Sampling errors: Rural areas

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Rural areas (Central, Northern, Upper East and Upper West Regions Areas), 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.528	0.005	0.010	1.057	1.028	8755	8850	0.517	0.539
Iodized salt consumption	NU.5	0.093	0.003	0.029	0.771	0.878	8708	8808	0.088	0.099
Child discipline	CP.4	0.858	0.005	0.006	1.394	1.181	6298	6364	0.848	0.869
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.725	0.011	0.015	5.543	2.354	43109	8850	0.703	0.748
Use of improved sanitation facilities	EN.5	0.180	0.008	0.044	3.760	1.939	43109	8850	0.165	0.196
Net primary school attendance rate	ED.3	0.696	0.007	0.010	2.059	1.435	7998	8207	0.681	0.710
Net secondary school attendance rate	ED.4	0.241	0.005	0.023	1.172	1.083	7126	7245	0.230	0.252
Primary completion rate	ED.6	0.000	0.000	.	.	.	1334	1345	0.000	0.000
Child labour	CP.2	0.401	0.006	0.014	1.719	1.311	13106	13429	0.390	0.412
Prevalence of orphans	HA.10	0.067	0.002	0.031	1.618	1.272	22462	23001	0.063	0.072
WOMEN										
Skilled attendant at delivery	RH.5	0.263	0.008	0.029	0.828	0.910	2704	2765	0.248	0.279
Antenatal care	RH.3	0.913	0.005	0.006	0.902	0.950	2704	2765	0.902	0.923
Contraceptive prevalence	RH.1	0.110	0.004	0.034	0.863	0.929	5913	6007	0.103	0.118
Adult literacy	ED.8	0.354	0.010	0.027	0.959	0.979	2293	2335	0.334	0.373
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.182	0.006	0.034	1.934	1.391	7653	7762	0.169	0.194
Marriage before age 18	CP.5	0.385	0.006	0.015	0.939	0.969	6465	6547	0.373	0.397
Polygyny	CP.5	0.368	0.007	0.020	1.371	1.171	5913	6007	0.354	0.383
Comprehensive knowledge abut HIV prevention among young people	HA.3	0.212	0.008	0.037	0.867	0.931	2293	2335	0.197	0.228
Condom use with nonregular partners	HA.9	0.433	0.018	0.041	0.398	0.631	316	314	0.398	0.468
Age at first sex among young people	HA.8	0.073	0.005	0.075	0.536	0.732	1189	1215	0.062	0.084
Attitude towards people with HIV/AIDS	HA.5	0.036	0.002	0.050	0.686	0.828	7351	7434	0.032	0.039
Women who have been tested for HIV	HA.6	0.076	0.003	0.037	0.886	0.941	7653	7762	0.071	0.082
Knowledge of mother-to-child transmission of HIV	HA.4	0.688	0.006	0.008	1.109	1.053	7653	7762	0.677	0.699
UNDER-5s										
Underweight prevalence	NU.1	0.247	0.005	0.020	0.792	0.890	6245	6283	0.237	0.257
Tuberculosis immunization coverage	CH.2	0.956	0.005	0.005	0.619	0.787	1242	1261	0.947	0.965
Polio immunization coverage	CH.2	0.875	0.009	0.011	1.022	1.011	1242	1261	0.857	0.894
Immunization coverage for DPT	CH.2	0.891	0.009	0.010	0.988	0.994	1242	1261	0.874	0.909
Measles immunization coverage	CH.2	0.911	0.007	0.007	0.665	0.816	1242	1261	0.898	0.924
Fully immunized children	CH.2	0.804	0.010	0.013	0.878	0.937	1242	1261	0.783	0.825
Acute respiratory infection in last two weeks	CH.6	0.066	0.003	0.045	0.954	0.977	6592	6641	0.060	0.072
Antibiotic treatment of suspected pneumonia	CH.7	0.370	0.015	0.040	0.428	0.654	436	457	0.340	0.399
Diarrhoea in last two weeks	CH.4	0.196	0.006	0.031	1.529	1.237	6592	6641	0.184	0.208
Received ORT or increased fluids and continued feeding	CH.5	0.295	0.009	0.030	0.486	0.697	1289	1287	0.277	0.313
Under-fives sleeping under insecticide treated nets	CH.11	0.554	0.008	0.015	1.886	1.373	6592	6641	0.538	0.571
Fever in last two weeks	CH.12	0.241	0.006	0.024	1.263	1.124	6592	6641	0.229	0.253
Antimalarial treatment	CH.12	0.357	0.009	0.025	0.558	0.747	1589	1609	0.339	0.375
Support for learning	CD.1	0.177	0.005	0.030	1.315	1.147	6592	6641	0.166	0.188
Birth registration	CP.1	0.509	0.010	0.019	2.569	1.603	6592	6641	0.489	0.529

Table SE.5: Sampling errors: Central Region

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Central Region, 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.378	0.006	0.017	0.637	0.798	3707	3707	0.366	0.391
Iodized salt consumption	NU.5	0.215	0.007	0.031	0.963	0.981	3678	3680	0.202	0.229
Child discipline	CP.4	0.843	0.007	0.009	0.856	0.925	2130	2112	0.829	0.858
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.830	0.016	0.020	7.123	2.669	13070	3707	0.797	0.863
Use of improved sanitation facilities	EN.5	0.640	0.017	0.027	4.777	2.186	13070	3707	0.606	0.674
Net primary school attendance rate	ED.3	0.863	0.007	0.008	0.869	0.932	2202	2194	0.849	0.876
Net secondary school attendance rate	ED.4	0.448	0.010	0.021	0.805	0.897	2168	2182	0.429	0.468
Primary completion rate	ED.6	0.000	0.000	.	.	.	377	376	0.000	0.000
Child labour	CP.2	0.247	0.007	0.028	0.922	0.960	3655	3633	0.233	0.261
Prevalence of orphans	HA.10	0.067	0.003	0.050	1.120	1.058	6324	6310	0.060	0.073
Skilled attendant at delivery	RH.5	0.487	0.016	0.033	0.798	0.893	762	754	0.455	0.520
Antenatal care	RH.3	0.933	0.006	0.007	0.457	0.676	762	754	0.921	0.946
Contraceptive prevalence	RH.1	0.172	0.008	0.048	0.731	0.855	1532	1522	0.156	0.189
Adult literacy	ED.8	0.648	0.022	0.034	0.697	0.835	343	336	0.605	0.692
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.004	0.001	0.170	0.229	0.478	2003	1981	0.003	0.005
Marriage before age 18	CP.5	0.326	0.006	0.020	0.353	0.594	1904	1888	0.313	0.339
Polygyny	CP.5	0.138	0.005	0.036	0.318	0.564	1532	1522	0.128	0.148
Comprehensive knowledge about HIV prevention among young people	HA.3	0.175	0.012	0.070	0.349	0.591	343	336	0.150	0.199
Condom use with non-regular partners	HA.9	0.357	0.036	0.100	0.370	0.609	71	68	0.286	0.428
Age at first sex among young people	HA.8	0.300	0.024	0.081	0.258	0.508	99	93	0.251	0.348
Attitude towards people with HIV/AIDS	HA.5	0.036	0.003	0.081	0.481	0.693	1989	1965	0.030	0.042
Women who have been tested for HIV	HA.6	0.118	0.006	0.054	0.772	0.878	2003	1981	0.105	0.131
Knowledge of mother-to-child transmission of HIV	HA.4	0.743	0.009	0.012	0.826	0.909	2003	1981	0.725	0.761
UNDER-5s										
Underweight prevalence	NU.1	0.186	0.008	0.045	0.804	0.897	1704	1701	0.169	0.203
Tuberculosis immunization coverage	CH.2	0.954	0.006	0.006	0.321	0.567	383	381	0.942	0.966
Polio immunization coverage	CH.2	0.889	0.009	0.010	0.318	0.564	383	381	0.870	0.907
Immunization coverage for DPT	CH.2	0.917	0.008	0.008	0.301	0.549	383	381	0.902	0.933
Measles immunization coverage	CH.2	0.932	0.008	0.008	0.368	0.607	383	381	0.916	0.947
Fully immunized children	CH.2	0.810	0.013	0.016	0.405	0.636	383	381	0.784	0.835
Acute respiratory infection in last two weeks	CH.6	0.024	0.003	0.132	0.772	0.879	1798	1798	0.018	0.030
Antibiotic treatment of suspected pneumonia	CH.7	0.386	0.000	0.001	0.000	0.003	43	45	0.386	0.387
Diarrhoea in last two weeks	CH.4	0.141	0.006	0.046	0.614	0.783	1798	1798	0.128	0.154
Received ORT or increased fluids and continued feeding	CH.5	0.410	0.017	0.041	0.310	0.557	254	263	0.377	0.444
Under-fives sleeping under insecticide treated nets	CH.11	0.409	0.012	0.029	1.065	1.032	1798	1798	0.385	0.433
Fever in last two weeks	CH.12	0.176	0.008	0.044	0.754	0.868	1798	1798	0.160	0.191
Antimalarial treatment	CH.12	0.327	0.012	0.036	0.199	0.446	316	318	0.304	0.351
Support for learning	CD.1	0.245	0.010	0.043	1.060	1.029	1798	1798	0.224	0.266
Birth registration	CP.1	0.595	0.014	0.023	1.414	1.189	1798	1798	0.567	0.622

Table SE.6: Sampling errors: Accra Metropolitan Area

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Accra Metropolitan Area, 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.227	0.015	0.067	1.081	1.040	828	828	0.196	0.257
Iodized salt consumption	NU.5	0.717	0.026	0.036	2.643	1.626	825	825	0.666	0.768
Child discipline	CP.4	0.927	0.010	0.011	0.592	0.769	381	382	0.907	0.948
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.984	0.011	0.011	6.566	2.562	2634	828	0.962	1.000
Use of improved sanitation facilities	EN.5	0.919	0.015	0.017	2.609	1.615	2634	828	0.888	0.949
Net primary school attendance rate	ED.3	0.950	0.008	0.008	0.383	0.619	317	319	0.935	0.965
Net secondary school attendance rate	ED.4	0.633	0.026	0.042	1.151	1.073	387	387	0.581	0.686
Primary completion rate	ED.6	0.000	0.000	.	.	.	57	57	0.000	0.000
Child labour	CP.2	0.151	0.015	0.101	0.973	0.987	536	539	0.121	0.182
Prevalence of orphans	HA.10	0.047	0.009	0.197	1.883	1.372	990	993	0.028	0.065
WOMEN										
Skilled attendant at delivery	RH.5	0.901	0.020	0.022	0.494	0.703	110	109	0.860	0.941
Antenatal care	RH.3	0.974	0.013	0.014	0.777	0.881	110	109	0.947	1.000
Contraceptive prevalence	RH.1	0.208	0.019	0.089	0.615	0.784	294	295	0.171	0.245
Adult literacy	ED.8	0.735	0.043	0.059	0.419	0.648	45	45	0.648	0.821
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.026	0.006	0.224	0.547	0.739	405	406	0.014	0.038
Marriage before age 18	CP.5	0.184	0.018	0.099	0.876	0.936	394	395	0.147	0.220
Polygyny Comprehensive knowledge about HIV	CP.5	0.056	0.011	0.203	0.720	0.849	294	295	0.033	0.079
prevention among young people	HA.3	0.151	0.018	0.117	0.106	0.325	45	45	0.115	0.186
Condom use with non-regular partners	HA.9	0.389	0.002	0.005	0.000	0.016	16	16	0.385	0.393
Age at first sex among young people	HA.8	0.096	0.000	0.000	0.000	0.000	11	11	0.096	0.096
Attitude towards people with HIV/AIDS	HA.5	0.067	0.012	0.181	0.946	0.973	405	406	0.043	0.091
Women who have been tested for HIV	HA.6	0.282	0.029	0.101	1.638	1.280	405	406	0.225	0.340
Knowledge of mother-to-child transmission of HIV	HA.4	0.759	0.020	0.026	0.856	0.925	405	406	0.719	0.798
UNDER-5s										
Underweight prevalence	NU.1	0.098	0.018	0.189	0.980	0.990	254	254	0.061	0.135
Tuberculosis immunization coverage	CH.2	0.958	0.020	0.020	0.453	0.673	48	48	0.919	0.998
Polio immunization coverage	CH.2	0.869	0.043	0.050	0.774	0.880	48	48	0.782	0.955
Immunization coverage for DPT	CH.2	0.937	0.020	0.021	0.320	0.566	48	48	0.897	0.977
Measles immunization coverage	CH2	0.897	0.035	0.040	0.640	0.800	48	48	0.826	0.968
Fully immunized children	CH.2	0.829	0.050	0.060	0.819	0.905	48	48	0.729	0.928
Acute respiratory infection in last two weeks	CH.6	0.035	0.011	0.323	1.059	1.029	279	279	0.013	0.058
Antibiotic treatment ofsuspected pneumonia	CH.7	0.720	0.000	0.000	0.000	0.000	10	10	0.720	0.720
Diarrhoea in last two weeks	CH.4	0.066	0.012	0.190	0.702	0.838	279	279	0.041	0.090
Received ORT or increased fluids and continued feeding	CH.5	0.172	0.010	0.058	0.012	0.108	18	18	0.152	0.192
Under-fives sleeping under insecticide treated nets	CH.11	0.181	0.026	0.144	1.270	1.127	279	279	0.129	0.233
Fever in last two weeks	CH.12	0.113	0.017	0.150	0.801	0.895	279	279	0.079	0.147
Antimalarial treatment	CH.12	0.528	0.016	0.030	0.031	0.176	32	32	0.497	0.560
Support for learning	CD.1	0.316	0.027	0.085	0.920	0.959	279	279	0.262	0.369
Birth registration	CP.1	0.789	0.029	0.037	1.391	1.179	279	279	0.732	0.847

Table SE.7: Sampling errors: Kumasi Metropolitan Area

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Kumasi Metropolitan Area, 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.266	0.017	0.063	1.129	1.062	792	792	0.232	0.299
Iodized saltconsumption	NU.5	0.403	0.024	0.060	1.927	1.388	790	790	0.354	0.451
Child discipline	CP.4	0.966	0.007	0.007	0.536	0.732	409	409	0.952	0.979
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.914	0.012	0.014	1.551	1.245	2803	792	0.890	0.939
Use of improved sanitation facilities	EN.5	0.961	0.011	0.011	2.376	1.542	2803	792	0.940	0.982
Net primary school attendance rate	ED.3	0.963	0.010	0.011	1.073	1.036	356	356	0.943	0.984
Net secondary school attendance rate	ED.4	0.561	0.027	0.049	1.409	1.187	461	461	0.506	0.616
Primary completion rate	ED.6	0.000	0.000	.	.	.	64	63	0.000	0.000
Child labour	CP.2	0.078	0.018	0.232	2.774	1.665	608	608	0.042	0.114
Prevalence of orphans	HA.10	0.102	0.010	0.102	1.313	1.146	1113	1114	0.081	0.122
WOMEN										
Skilled attendant at delivery	RH.5	0.917	0.017	0.018	0.389	0.623	107	107	0.883	0.950
Antenatal care	RH.3	0.991	0.009	0.009	1.001	1.000	107	107	0.973	1.000
Contraceptive prevalence	RH.1	0.123	0.015	0.122	0.729	0.854	347	348	0.093	0.154
Adult literacy	ED.8	0.795	0.047	0.059	0.689	0.830	52	53	0.701	0.888
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.014	0.006	0.459	1.301	1.141	445	447	0.001	0.026
Marriage before age 18	CP.5	0.371	0.015	0.040	0.417	0.646	438	439	0.341	0.400
Polygyny	CP.5	0.075	0.017	0.229	1.476	1.215	347	348	0.041	0.109
Comprehensive knowledge about HIV prevention among young people	HA.3	0.284	0.022	0.078	0.125	0.354	52	53	0.239	0.328
Condom use with non-regular partners	HA.9	0.237	0.000	0.001	0.000	0.002	9	9	0.236	0.237
Age at first sex among young people	HA.8	0.256	0.000	0.000	0.000	0.000	8	8	0.256	0.256
Attitude towards people with HIV/AIDS	HA.5	0.106	0.016	0.146	1.134	1.065	445	447	0.075	0.137
Women who have been tested for HIV	HA.6	0.282	0.023	0.080	1.128	1.062	445	447	0.236	0.327
Knowledge of mother-to-child transmission of HIV	HA.4	0.688	0.019	0.027	0.731	0.855	445	447	0.651	0.726
UNDER-5s										
Underweight prevalence	NU.1	0.088	0.011	0.120	0.421	0.649	304	304	0.067	0.109
Tuberculosis immunization coverage	CH.2	0.977	0.022	0.022	0.919	0.959	44	44	0.934	1.000
Polio immunization coverage	CH.2	0.953	0.030	0.031	0.865	0.930	44	44	0.893	1.000
Immunization coverage for DPT	CH.2	0.978	0.021	0.022	0.917	0.958	44	44	0.936	1.000
Measles immunization coverage	CH.2	0.978	0.021	0.022	0.917	0.958	44	44	0.936	1.000
Fully immunized children	CH.2	0.930	0.034	0.037	0.787	0.887	44	44	0.861	0.999
Acute respiratory infection in last two weeks	CH.6	0.062	0.014	0.231	1.120	1.058	317	317	0.033	0.091
Antibiotic treatment of suspected pneumonia	CH.7	0.449	0.068	0.152	0.359	0.599	20	20	0.313	0.586
Diarrhoea in last two weeks	CH.4	0.180	0.022	0.121	1.020	1.010	317	317	0.136	0.223
Received ORT or increased fluids and continued feeding	CH.5	0.251	0.061	0.242	1.104	1.051	57	57	0.129	0.373
Under-fives sleeping under insecticide treated nets	CH.11	0.370	0.037	0.100	1.856	1.363	317	317	0.296	0.444
Fever in last two weeks	CH.12	0.133	0.020	0.153	1.137	1.066	317	317	0.092	0.174
Antimalarial treatment	CH.12	0.524	0.041	0.079	0.282	0.531	42	42	0.441	0.607
Support for learning	CD.1	0.298	0.034	0.113	1.705	1.306	317	317	0.231	0.365
Birth registration	CP.1	0.681	0.034	0.050	1.668	1.292	317	317	0.614	0.749

Table SE.8: Sampling errors: Northern Region

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Northern Region, 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.548	0.008	0.015	0.986	0.993	3410	3402	0.531	0.565
Iodized salt consumption	NU.5	0.114	0.012	0.103	4.610	2.147	3403	3394	0.090	0.137
Child discipline	CP.4	0.835	0.010	0.011	1.713	1.309	2593	2607	0.816	0.854
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.621	0.020	0.033	6.004	2.450	18558	3402	0.581	0.662
Use of improved sanitation facilities	EN.5	0.214	0.016	0.077	5.440	2.332	18558	3402	0.181	0.246
Net primary school attendance rate	ED.3	0.602	0.014	0.024	2.932	1.712	3339	3425	0.574	0.631
Net secondary school attendance rate	ED.4	0.212	0.011	0.050	1.925	1.387	2871	2905	0.191	0.233
Primary completion rate	ED.6	0.000	0.000	.	.	.	551	558	0.000	0.000
Child labour	CP.2	0.451	0.011	0.024	2.602	1.613	5512	5674	0.429	0.472
Prevalence of orphans	HA.10	0.049	0.003	0.066	2.244	1.498	9709	9965	0.042	0.055
WOMEN										
Skilled attendant at delivery	RH.5	0.188	0.008	0.044	0.622	0.789	1341	1362	0.171	0.204
Antenatal care	RH.3	0.889	0.008	0.009	0.960	0.980	1341	1362	0.872	0.906
Contraceptive prevalence	RH.1	0.078	0.004	0.056	0.727	0.852	2770	2800	0.069	0.086
Adult literacy	ED.8	0.315	0.015	0.046	1.101	1.049	1130	1115	0.285	0.344
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.045	0.005	0.103	1.763	1.328	3554	3545	0.036	0.054
Marriage before age 18	CP.5	0.344	0.011	0.031	1.527	1.236	2985	2984	0.322	0.365
Polygyny Comprehensive knowledge about HIV	CP.5	0.428	0.012	0.027	1.548	1.244	2770	2800	0.405	0.451
prevention among young people	HA.3	0.189	0.013	0.070	1.273	1.128	1130	1115	0.162	0.215
Condom use with non-regular partners	HA.9	0.343	0.016	0.048	0.223	0.472	189	189	0.310	0.375
Age at first sex among young people	HA.8	0.066	0.008	0.115	0.525	0.725	569	561	0.051	0.082
Attitude towards people with HIV/AIDS	HA.5	0.040	0.004	0.100	1.461	1.209	3461	3446	0.032	0.048
Women who have been tested for HIV	HA.6	0.054	0.003	0.054	0.582	0.763	3554	3545	0.048	0.060
Knowledge of mother-to-child transmission of HIV	HA.4	0.649	0.008	0.013	1.045	1.022	3554	3545	0.633	0.665
UNDER-5s										
Underweight prevalence	NU.1	0.293	0.006	0.021	0.528	0.727	2891	2873	0.281	0.306
Tuberculosis immunization coverage	CH.2	0.951	0.007	0.007	0.582	0.763	621	628	0.937	0.964
Polio immunization coverage	CH.2	0.806	0.018	0.022	1.296	1.139	621	628	0.770	0.842
Immunization coverage for DPT	CH.2	0.813	0.016	0.020	1.055	1.027	621	628	0.781	0.845
Measles immunization coverage	CH.2	0.860	0.012	0.014	0.796	0.892	621	628	0.835	0.885
Fully immunized children	CH.2	0.711	0.019	0.026	1.045	1.022	621	628	0.674	0.748
Acute respiratory infection in last two weeks	CH.6	0.076	0.005	0.062	0.978	0.989	3117	3108	0.066	0.085
Antibiotic treatment of suspected pneumonia	CH.7	0.254	0.013	0.051	0.216	0.464	235	240	0.228	0.281
Diarrhoea in last two weeks	CH.4	0.251	0.011	0.043	1.938	1.392	3117	3108	0.229	0.272
Received ORT or increased fluids and continued feeding	CH.5	0.327	0.010	0.031	0.359	0.599	781	774	0.306	0.347
Under-fives sleeping under insecticide treated nets	CH.11	0.470	0.012	0.025	1.723	1.313	3117	3108	0.446	0.493
Fever in last two weeks	CH.12	0.233	0.009	0.039	1.439	1.200	3117	3108	0.215	0.252
Antimalarial treatment	CH.12	0.364	0.011	0.032	0.424	0.651	728	746	0.341	0.387
Support for learning	CD.1	0.190	0.008	0.042	1.291	1.136	3117	3108	0.174	0.206
Birth registration	CP.1	0.513	0.016	0.032	3.385	1.840	3117	3108	0.480	0.546

Table SE.9: Sampling errors: Upper East Region

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Upper East, 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se*/*r*	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.514	0.009	0.018	1.154	1.074	3324	3324	0.496	0.533
Iodized salt consumption	NU.5	0.118	0.006	0.047	0.983	0.991	3314	3312	0.107	0.129
Child discipline	CP.4	0.861	0.008	0.009	1.160	1.077	2470	2463	0.846	0.876
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.819	0.014	0.017	4.091	2.023	17197	3324	0.792	0.846
Use of improved sanitation facilities	EN.5	0.110	0.005	0.042	0.726	0.852	17197	3324	0.100	0.119
Net primary school attendance rate	ED.3	0.757	0.011	0.015	2.054	1.433	3123	3121	0.735	0.779
Net secondary school attendance rate	ED.4	0.259	0.010	0.037	1.423	1.193	2997	2971	0.240	0.279
Primary completion rate	ED.6	0.000	0.000	.	.	.	509	521	0.000	0.000
Child labour	CP.2	0.304	0.008	0.025	1.354	1.164	5107	5078	0.289	0.319
Prevalence of orphans	HA.10	0.089	0.004	0.042	1.489	1.220	8672	8570	0.082	0.097
WOMEN										
Skilled attendant at delivery	RH.5	0.393	0.016	0.041	1.005	1.002	914	916	0.361	0.426
Antenatal care	RH.3	0.963	0.005	0.006	0.760	0.872	914	916	0.952	0.974
Contraceptive prevalence	RH.1	0.127	0.006	0.045	0.668	0.817	2297	2278	0.115	0.138
Adult literacy	ED.8	0.439	0.016	0.036	1.186	1.089	1190	1199	0.408	0.470
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.198	0.010	0.050	2.054	1.433	3288	3288	0.178	0.218
Marriage before age 18	CP.5	0.401	0.008	0.020	0.716	0.846	2597	2585	0.384	0.417
Polygyny	CP.5	0.396	0.012	0.031	1.470	1.212	2297	2278	0.371	0.420
Comprehensive knowledge about HIV prevention among young people	HA.3	0.364	0.013	0.034	0.816	0.903	1190	1199	0.339	0.390
Condom use with non-regular partners	HA.9	0.668	0.020	0.031	0.326	0.571	175	175	0.627	0.709
Age at first sex among young people	HA.8	0.045	0.005	0.115	0.438	0.662	691	703	0.035	0.055
Attitude towards people with HIV/AIDS	HA.5	0.064	0.004	0.061	0.802	0.896	3173	3163	0.057	0.072
Women who have been tested for HIV	HA.6	0.099	0.004	0.043	0.674	0.821	3288	3288	0.091	0.108
Knowledge of mother-to-child transmission of HIV	HA.4	0.677	0.008	0.012	0.973	0.987	3288	3288	0.661	0.693
UNDER-5s										
Underweight prevalence	NU.1	0.246	0.009	0.036	0.948	0.974	2202	2201	0.228	0.264
Tuberculosis immunization coverage	CH.2	0.973	0.006	0.006	0.556	0.746	399	410	0.962	0.985
Polio immunization coverage	CH.2	0.930	0.010	0.011	0.673	0.820	399	410	0.909	0.951
Immunization coverage for DPT	CH.2	0.953	0.010	0.011	0.931	0.965	399	410	0.933	0.973
Measles immunization coverage	CH.2	0.956	0.008	0.008	0.546	0.739	399	410	0.941	0.971
Fully immunized children	CH.2	0.886	0.012	0.014	0.613	0.783	399	410	0.861	0.911
Acute respiratory infection in last two weeks	CH.6	0.060	0.004	0.060	0.525	0.725	2268	2268	0.053	0.067
Antibiotic treatment of suspected pneumonia	CH.7	0.462	0.032	0.070	0.585	0.765	136	139	0.397	0.527
Diarrhoea in last two weeks	CH.4	0.159	0.008	0.049	1.023	1.011	2268	2268	0.143	0.174
Received ORT or increased fluids and continued feeding	CH.5	0.280	0.019	0.069	0.655	0.809	360	359	0.242	0.319
Under-fives sleeping under insecticide treated nets	CH.11	0.563	0.014	0.025	1.852	1.361	2268	2268	0.535	0.591
Fever in last two weeks	CH.12	0.248	0.009	0.034	0.889	0.943	2268	2268	0.231	0.265
Antimalarial treatment	CH.12	0.365	0.017	0.045	0.666	0.816	563	562	0.332	0.399
Support for learning	CD.1	0.170	0.009	0.054	1.356	1.165	2268	2268	0.152	0.189
Birth registration	CP.1	0.589	0.016	0.027	2.306	1.519	2268	2268	0.558	0.621

Table SE.10: Sampling errors: Upper West Region

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Upper West, 2007/2008

	Table	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se/r*)	Design effect (*deff*)	Square root of design effect (*deft*)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Household availability of ITNs	CH.10	0.668	0.013	0.019	1.304	1.142	1754	1754	0.642	0.694
Iodized salt consumption	NU.5	0.150	0.005	0.033	0.337	0.581	1735	1740	0.140	0.160
Child discipline	CP.4	0.911	0.006	0.006	0.489	0.700	1263	1281	0.900	0.922
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	EN.1	0.872	0.011	0.013	2.032	1.426	8591	1754	0.849	0.895
Use of improved sanitation facilities	EN.5	0.209	0.014	0.068	2.142	1.464	8591	1754	0.181	0.238
Net primary school attendance rate	ED.3	0.689	0.016	0.023	2.100	1.449	1638	1731	0.656	0.721
Net secondary school attendance rate	ED.4	0.255	0.010	0.041	0.876	0.936	1507	1549	0.234	0.276
Primary completion rate	ED.6	0.000	0.000	.	.	.	284	277	0.000	0.000
Child labour	CP.2	0.485	0.012	0.026	1.767	1.329	2687	2829	0.460	0.510
Prevalence of orphans	HA.10	0.079	0.004	0.045	0.822	0.907	4459	4744	0.072	0.086
Prevalence of vulnerable children	HA.11								0.000	0.000
WOMEN										
Skilled attendant at delivery	RH.5	0.403	0.021	0.053	1.021	1.010	508	537	0.360	0.446
Antenatal care	RH.3	0.918	0.012	0.013	1.007	1.003	508	537	0.894	0.942
Contraceptive prevalence	RH.1	0.171	0.010	0.060	0.877	0.937	1175	1190	0.151	0.192
Adult literacy	ED.8	0.495	0.016	0.033	0.543	0.737	504	503	0.462	0.528
Prevalence of female genital mutilation/cutting (FGM/C)	CP.7	0.494	0.015	0.030	1.368	1.170	1576	1576	0.464	0.523
Marriage before age 18	CP.5	0.428	0.013	0.031	0.949	0.974	1286	1291	0.401	0.455
Polygyny	CP.5	0.344	0.015	0.043	1.162	1.078	1175	1190	0.314	0.374
Comprehensive knowledge about HIV prevention among young people	HA.3	0.229	0.014	0.060	0.540	0.735	504	503	0.201	0.256
Condom use with non-regular partners	HA.9	0.640	0.038	0.060	0.410	0.640	72	65	0.563	0.717
Age at first sex among young people	HA.8	0.073	0.011	0.150	0.506	0.711	290	285	0.051	0.095
Attitude towards people with HIV/AIDS	HA.5	0.044	0.002	0.043	0.123	0.350	1466	1457	0.040	0.047
Women who have been tested for HIV	HA.6	0.117	0.006	0.049	0.502	0.708	1576	1576	0.105	0.128
Knowledge of mother-to-child transmission of HIV	HA.4	0.723	0.010	0.014	0.766	0.875	1576	1576	0.703	0.743
UNDER-5s										
Underweight prevalence	NU.1	0.186	0.009	0.049	0.674	0.821	1223	1223	0.168	0.204
Tuberculosis immunization coverage	CH.2	0.978	0.010	0.010	1.077	1.038	251	251	0.958	0.997
Polio immunization coverage	CH.2	0.942	0.007	0.007	0.214	0.463	251	251	0.928	0.956
Immunization coverage for DPT	CH.2	0.962	0.006	0.006	0.266	0.516	251	251	0.950	0.975
Measles immunization coverage	CH.2	0.979	0.001	0.001	0.009	0.096	251	251	0.977	0.981
Fully immunized children	CH.2	0.901	0.013	0.014	0.464	0.681	251	251	0.875	0.926
Acute respiratory infection in last two weeks	CH.6	0.091	0.008	0.087	0.967	0.983	1283	1283	0.075	0.107
Antibiotic treatment of suspected pneumonia	CH.7	0.496	0.033	0.066	0.541	0.735	117	126	0.430	0.561
Diarrhoea in lasttwo weeks	CH.4	0.201	0.008	0.039	0.503	0.709	1283	1283	0.185	0.217
Received ORT or increased fluids and continued feeding	CH.5	0.186	0.020	0.106	0.672	0.820	258	263	0.147	0.226
Under-fives sleeping under insecticide treated nets	CH.11	0.776	0.013	0.017	1.276	1.129	1283	1283	0.750	0.803
Fever in last two weeks	CH.12	0.302	0.013	0.042	0.973	0.987	1283	1283	0.277	0.328
Antimalarial treatment	CH.12	0.451	0.021	0.048	0.733	0.856	388	396	0.408	0.493
Support for learning	CD.1	0.195	0.012	0.063	1.233	1.110	1283	1283	0.171	0.220
Birth registration	CP.1	0.527	0.016	0.030	1.258	1.122	1283	1283	0.496	0.558

Table SE.11: Sampling errors: Childhood Mortality

Standard errors, coefficients of variations, design effects (deff), square root of design effects (deft) and confidence intervals for Childhood Mortality, Central, Northern, Upper East and Upper West Regions, 2007/2008

	Value (r)	Standard error (se)	Coefficient of variation (se/r)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence Limits	
							R-2SE	R+2SE
NEONATAL MORTALITY								
Central	33.6	3.700	0.110	1.087	3648	3615	26.178	40.976
Northern	31.1	2.672	0.086	1.087	6305	6475	25.776	36.465
Upper East	34.4	2.826	0.082	0.999	4718	4702	28.746	40.051
Upper West	32.1	4.111	0.128	1.078	2644	2748	23.923	40.366
Total	**32.6**	**1.526**	**0.047**	**1.057**	**18452**	**18679**	**29.582**	**35.686**
POSTNEONATAL MORTALITY								
Central	26.559	2.790	0.105	1.005	3649	3617	20.978	32.140
Northern	36.499	2.585	0.071	1.056	6316	6487	31.329	41.670
Upper East	25.005	2.288	0.092	1.015	4722	4708	20.428	29.581
Upper West	36.035	4.107	0.114	1.121	2647	2751	27.822	44.248
Total	**29.756**	**1.370**	**0.046**	**1.038**	**18472**	**18703**	**27.015**	**32.497**
INFANT MORTALITY								
Central	60.123	4.641	0.077	1.079	3649	3617	50.841	69.404
Northern	67.568	3.813	0.056	1.094	6316	6487	59.941	75.195
Upper East	59.372	3.450	0.058	0.980	4722	4708	52.473	66.272
Upper West	68.150	5.862	0.086	1.140	2647	2751	56.426	79.874
Total	**62.356**	**2.049**	**0.033**	**1.075**	**18472**	**18703**	**58.258**	**66.453**
CHILD MORTALITY								
Central	27.000	3.057	0.113	1.070	3669	3634	20.885	33.115
Northern	55.075	3.364	0.061	1.145	6374	6548	48.347	61.804
Upper East	37.444	3.054	0.082	1.082	4760	4744	31.336	43.551
Upper West	50.450	6.006	0.119	1.290	2675	2785	38.437	62.463
Total	**41.321**	**1.823**	**0.044**	**1.188**	**18618**	**18852**	**37.675**	**44.966**
UNDER-FIVE MORTALITY								
Central	86.771	5.821	0.067	1.152	3670	3636	75.129	98.412
Northern	121.822	4.809	0.039	1.108	6385	6560	112.204	131.441
Upper East	96.251	4.546	0.047	1.047	4765	4750	87.160	105.342
Upper West	117.767	8.282	0.070	1.238	2678	2788	101.203	134.331
Total	**103.079**	**2.745**	**0.027**	**1.162**	**18637**	**18876**	**97.590**	**108.569**

Annex D — Data quality tables

Table DQ.1: Age distribution of household population

Single-year distribution of household population by sex (weighted), Central, Northern, Upper East and Upper West Regions, 2007/2008

	Male		Female			Male		Female	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
Age					**Age**				
0	971	3.4	948	3.2	41	132	0.5	174	0.6
1	829	2.9	856	2.9	42	251	0.9	293	1.0
2	841	3.0	864	3.0	43	146	0.5	242	0.8
3	868	3.1	903	3.1	44	130	0.5	199	0.7
4	728	2.6	733	2.5	45	311	1.1	335	1.1
5	890	3.2	849	2.9	46	149	0.5	152	0.5
6	1,019	3.6	929	3.2	47	143	0.5	196	0.7
7	989	3.5	891	3.0	48	217	0.8	239	0.8
8	918	3.3	951	3.3	49	138	0.5	158	0.5
9	846	3.0	801	2.7	50	281	1.0	220	0.8
10	981	3.5	923	3.2	51	106	0.4	267	0.9
11	644	2.3	638	2.2	52	172	0.6	419	1.4
12	872	3.1	849	2.9	53	97	0.3	334	1.1
13	762	2.7	797	2.7	54	164	0.6	258	0.9
14	703	2.5	710	2.4	55	189	0.7	312	1.1
15	902	3.2	575	2.0	56	149	0.5	244	0.8
16	645	2.3	466	1.6	57	133	0.5	126	0.4
17	640	2.3	435	1.5	58	135	0.5	188	0.6
18	664	2.4	523	1.8	59	75	0.3	96	0.3
19	455	1.6	366	1.3	60	269	1.0	315	1.1
20	567	2.0	480	1.6	61	62	0.2	73	0.3
21	342	1.2	311	1.1	62	155	0.5	162	0.6
22	417	1.5	408	1.4	63	88	0.3	74	0.3
23	285	1.0	286	1.0	64	115	0.4	93	0.3
24	252	0.9	372	1.3	65	197	0.7	220	0.8
25	481	1.7	499	1.7	66	43	0.2	32	0.1
26	302	1.1	368	1.3	67	86	0.3	75	0.3
27	313	1.1	390	1.3	68	137	0.5	143	0.5
28	327	1.2	447	1.5	69	58	0.2	71	0.2
29	220	0.8	289	1.0	70	205	0.7	211	0.7
30	429	1.5	556	1.9	71	70	0.2	69	0.2
31	180	0.6	218	0.7	72	133	0.5	116	0.4
32	345	1.2	391	1.3	73	59	0.2	66	0.2
33	189	0.7	254	0.9	74	36	0.1	50	0.2
34	204	0.7	299	1.0	75	153	0.5	93	0.3
35	463	1.6	448	1.5	76	47	0.2	42	0.1
36	210	0.7	267	0.9	77	29	0.1	15	0.0
37	210	0.7	230	0.8	78	55	0.2	56	0.2
38	277	1.0	379	1.3	79	22	0.1	15	0.1
39	189	0.7	239	0.8	80+	248	0.9	213	0.7
40	402	1.4	420	1.4	DK/missing	32	0.1	13	0.0
Total						**28,191**	**100.0**	**29,223**	**100.0**

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 (weighted), by five-year age group, Central, Northern, Upper East and Upper West Regions, 2007/2008

	Household population of women age 10-54	Interviewed women age 15 - 49		Percentage of eligible women interviewed
	Number	Number	Percent	
Age				
10-14	3,917	na	na	na
15-19	2,365	1,640	15.8	69.3
20-24	1,857	1,510	14.6	81.3
25-29	1,993	1,820	17.6	91.3
30-34	1,717	1,618	15.6	94.3
35-39	1,562	1,485	14.3	95.0
40-44	1,329	1,263	12.2	95.1
45-49	1,079	1,032	10.0	95.6
50-54	1,498	na	na	na
15-49	**11,903**	**10,368**	**100.0**	**87.1**

na' indicates not applicable

Table DQ.3: Age distribution of eligible and interviewed under-5s

Household population of children age 0-7, children whose mothers/caretakers were interviewed and percentage of under-5 children whose mothers/caretakers were interviewed (weighted), by five-year age group, Central, Northern, Upper East and Upper West Regions, 2007/2008

	Household population of children age 0-7	Interviewed children age 0-4		Percentage of eligible children interviewed
	Number	Number	Percent	
Age				
0	1,918	1,880	22.6	98.0
1	1,685	1,618	19.4	96.0
2	1,705	1,662	20.0	97.5
3	1,772	1,735	20.8	97.9
4	1,460	1,426	17.1	97.6
5	1,739	na	na	na
6	1,947	na	na	na
7	1,880	na	na	na
0-4	**8,540**	**8,321**	**100.0**	**97.4**

'na' indicates not applicable

Table DQ.4: Age distribution of under-5 children

Age distribution of under-5 children by 3-month groups (weighted), Central, Northern, Upper East and Upper West Regions, 2007/2008

	Male		Female		Total	
	Number	Perce nt	Number	Percent	Number	Percent
Age in months						
0-2	182	4.3	225	5.3	407	4.8
3-5	259	6.2	244	5.7	503	5.9
6-8	259	6.2	222	5.2	481	5.7
9-11	241	5.7	218	5.1	459	5.4
12-14	234	5.6	216	5.1	451	5.3
15-17	190	4.5	188	4.4	378	4.5
18-20	196	4.7	210	4.9	406	4.8
21-23	186	4.4	233	5.5	419	4.9
24-26	202	4.8	200	4.7	402	4.7
27-29	216	5.2	196	4.6	413	4.9
30-32	206	4.9	240	5.6	446	5.3
33-35	205	4.9	223	5.2	428	5.1
36-38	231	5.5	222	5.2	453	5.4
39-41	237	5.6	223	5.2	460	5.4
42-44	194	4.6	224	5.2	418	4.9
45-47	207	4.9	224	5.2	431	5.1
48-50	198	4.7	219	5.1	416	4.9
51-53	201	4.8	182	4.3	383	4.5
54-56	189	4.5	189	4.4	378	4.5
57-59	159	3.8	174	4.1	333	3.9
Total	**4,193**	**100.0**	**4,273**	**100.0**	**8,466**	**100.0**

Table DQ.5: Heaping on ages and periods

Age and period ratios at boundaries of eligibility by type of information collected (Household questionnaire, weighted),Central, Northern, Upper East and Upper West Regions, 2007/2008

	Age and period ratios			Eligibility boundary (lower/upper)	Module/Questions
	Male	Female	Total		
Age in household questionnaire					
1	0.9	1.0	1.0		
2	1.0	1.0	1.0	Lower	Child discipline and child disability
3	1.1	1.1	1.1		
4	0.9	0.9	0.9	Upper	Under-5 questionnaire
5	1.0	1.0	1.0	Lower	Child labour and education
6	1.1	1.0	1.0		
8	1.0	1.1	1.0		
9	0.9	0.9	0.9	Upper	Child disc ipline
10	1.2	1.2	1.2		
13	1.0	1.0	1.0		
14	0.9	1.0	1.0	Upper	Child labour and child discipline
15	1.2	1.0	1.1	Lower	Individual's questionnaire
16	0.9	0.9	0.9		
17	1.0	0.9	1.0	Upper	Orphaned and vulnerable children
18	1.1	1.0	1.0		
23	0.9	0.8	0.8		
24	0.7	1.0	0.9	Upper	Education
25	1.4	1.2	1.3		
48	1.3	1.2	1.3		
49	0.7	0.8	0.7	Upper	Individual's questionnaire
50	1.6	1.0	1.3		
Age in women's questionnaire					
23	na	0.8	na		
24	na	1.0	na	Upper	Sexual behaviour
25	na	1.2	na		

na' indicates not applicable

Table DQ.6: Completeness of reporting

Percentage of observations missing information for selected questions and indicators (Household, Women and Under-5 questionnaires, weighted), Central, Northern, Upper East and Upper West Regions, 2007/2008

	Percent with missing information	Number
Household		
Salt testing	0.3	12,195
Women		
Month of birth only	50.3	10,422
Month and year of birth	1.0	10,422
Month of first birth only	17.1	10,422
Month and year of first birth	0.7	10,422
Completed years since first birth	1.4	58
Month of first marriage only	53.0	8,546
Month and year of first marriage	2.8	8,546
Age at first marriage/union	0.4	8,546
Age at first intercourse	0.0	3,168
Time since last intercourse	0.2	1,950
Under-5		
Month of birth under-5 only	3.3	8,466
Month and year of birth under - 5	0.0	8,466
Weight	0.8	8,466
Height	0.9	8,466
Height or weight	0.9	8,466

Table DQ.7: Presence of mother in the household and the person interviewed for the under-5 questionnaire

Distribution of children under five by whether the mother lives in the same household, and the person interviewed for the under-5 questionnaire (weighted), Central, Northern, Upper East and Upper West Regions, 2007/2008

	Mother in the household			Mother not in the household					Number of Children aged 0-4 years
	Mother Interviewed	Father Interviewed	Other adult female Interviewed	Other adult male Interviewed	Father Interviewed	Other adult female Interviewed	Other adult male Interviewed	Total	
Age									
0	98.9	0.0	0.2	0.0	0.0	0.9	0.0	100	1,918
1	97.6	0.1	0.3	0.0	0.0	1.9	0.1	100	1,685
2	95.2	0.2	0.2	0.1	0.2	4.2	0.0	100	1,705
3	90.8	0.0	0.2	0.0	0.9	7.9	0.1	100	1,772
4	88.8	0.1	0.5	0.0	0.7	9.8	0.1	100	1,460
Total	**94.5**	**0.1**	**0.3**	**0.0**	**0.4**	**4.7**	**0.1**	**100**	**8,540**

Table DQ.8: School attendance by single age

Distribution of household population age 5-24 by educational level and grade attended in the current year, Central, Northern, Upper East, and Upper West Regions, 2007/2008

	Pre-School	Primary	Middle/ JSS	Secondary/ SSS	Voc./Comm/ Tech	Post Sec	Tertiary	Not attending school	Missing	Total
Age										
5	75.2	24.7	0.0	0.0	0.0	0.0	0.0	29.4	0.2	1,739
6	46.4	53.5	0.1	0.0	0.0	0.0	0.0	24.2	0.0	1,947
7	21.9	77.8	0.1	0.0	0.0	0.0	0.0	18.4	0.2	1,880
8	11.5	88.5	0.0	0.0	0.0	0.0	0.0	15.8	0.0	1,869
9	5.6	93.9	0.4	0.0	0.0	0.0	0.0	15.8	0.2	1,647
10	2.2	97.1	0.6	0.0	0.0	0.0	0.0	16.8	0.0	1,904
11	0.8	96.8	2.1	0.1	0.0	0.0	0.0	14.2	0.1	1,282
12	0.4	91.9	7.6	0.0	0.0	0.0	0.0	15.3	0.2	1,721
13	0.2	80.2	19.4	0.1	0.0	0.0	0.0	16.4	0.1	1,559
14	0.2	61.7	36.4	1.7	0.0	0.0	0.0	13.6	0.0	1,413
15	0.2	47.5	48.9	3.1	0.1	0.0	0.0	17.6	0.2	1,476
16	0.1	31.3	60.1	8.4	1.0	0.0	0.0	17.5	0.1	1,112
17	0.0	23.8	57.6	17.2	1.2	0.1	0.0	21.6	0.0	1,074
18	0.0	16.0	59.2	22.3	1.9	0.4	0.2	19.4	0.0	1,187
19	0.0	11.5	50.8	33.9	0.5	0.9	2.0	21.8	0.4	821
20	0.0	20.5	44.1	26.3	2.5	1.7	4.5	32.6	0.4	1,047
21	0.0	4.3	37.0	35.0	7.3	8.4	8.1	25.2	0.0	653
22	0.0	6.7	29.5	33.7	10.8	9.9	8.4	31.8	0.0	825
23	0.0	3.9	24.5	27.4		24.0	20.2	33.4	0.0	571
24	0.0	9.8	20.7	13.4	14.9	18.8	22.4	37.4	0.0	624
Total	**12.8**	**66.2**	**16.4**	**3.6**	**0.3**	**0.3**	**0.3**	**20.4**	**0.1**	**26,352**

Table DQ.9: Sex ratio at birth among children ever born and living

Sex ratio at birth among children ever born, children living, and deceased children by age of women (weighted), Central, Northern, Upper East and Upper West, 2007/2008

	Children ever born			Children living			Children deceased			
	Number of sons	Number of daughters	Sex ratio	Number of sons	Number of daughters	Sex ratio	Number of sons	Number of daughters	Sex ratio	Number of women
Age										
15-19	143	126	1.14	130	120	1.08	14	5	2.62	1,650
20-24	859	848	1.01	776	772	1.01	82	76	1.09	1,518
25-29	2,332	2,239	1.04	2,078	2,037	1.02	254	202	1.25	1,829
30-34	3,154	3,080	1.02	2,757	2,776	0.99	396	304	1.31	1,628
35-39	3,838	3,619	1.06	3,277	3,169	1.03	561	450	1.24	1,492
40-44	3,842	3,626	1.06	3,147	3,056	1.03	695	570	1.22	1,268
45-49	3,617	3,279	1.10	2,891	2,642	1.09	726	637	1.14	1,036
Total	**17,784**	**16,816**	**1.06**	**15,057**	**14,572**	**1.03**	**2,727**	**2,244**	**1.22**	**10,422**

Table DQ.10: Distribution of women by time since last birth

Distribution of women aged 15-49 years with at least one live birth (weighted), by months since last birth, Central, Northern, Upper East and Upper West Regions, 2007/2008

Months since last birth	Number	Percent	Months since last birth	Number	Percent
0	2	0.6	18	4	1.2
1	11	3.3	19	9	2.6
2	11	3.3	20	8	2.4
3	12	3.4	21	15	4.4
4	18	5.4	22	9	2.7
5	5	1.5	23	10	3.0
6	7	2.0	24	11	3.3
7	6	1.7	25	9	2.7
8	12	3.6	26	10	2.9
9	14	4.1	27	9	2.6
10	9	2.7	28	11	3.2
11	17	5.1	29	7	2.0
12	5	1.5	30	8	2.3
13	7	2.0	31	6	1.7
14	5	1.5	32	11	3.2
15	10	3.0	33	11	3.3
16	4	1.2	34	15	4.6
17	6	1.8	35	14	4.2
Total				**337**	**100.0**

Table DQ.11: 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, for five-year periods of birth preceding the survey (weighted), Central, Northern, Upper East and Upper West Regions, 2007/2008

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	58	59	61	52	230
1	81	71	66	55	273
2	24	27	18	20	89
3	28	31	28	22	108
4	7	22	20	24	73
5	17	12	16	14	60
6	10	17	11	22	60
7	13	19	25	16	73
8	2	8	7	6	24
9	3	4	5	3	14
10	4	4	1	3	11
11	1	4	1	1	6
12	2	0	1	2	5
13	1	2	1	0	3
14	9	18	18	16	61
15	1	1	2	0	4
16	0	1	1	0	1
17	2	0	0	0	2
18	2	2	1	1	5
19	1	2	0	1	4
20	0	3	2	1	6
21	3	11	9	6	29
22	1	0	0	0	1
24	0	0	0	1	1
25	0	2	1	0	3
26	0	1	2	0	3
27	1	0	0	0	1
28	0	2	2	2	6
29	0	0	2	0	2
30	0	1	1	0	2
31+	0	0	0	1	1
Total 0-30	**270**	**324**	**300**	**265**	**1,158**
Percent early neonatal	83.3	74.0	73.5	78.0	77.0

1 = 6 days / = 30 days

Table DQ.12: 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, for five-year periods of birth preceding the survey, Central, Northern, Upper East and Upper West Regions, 2007/2008

Age at death (months)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1	270	324	300	265	1,158
1	28	31	35	23	116
2	19	37	34	31	121
3	38	39	42	40	158
4	25	33	24	22	104
5	11	17	14	20	62
6	29	35	26	30	119
7	16	21	15	19	72
8	24	23	33	17	97
9	18	24	19	12	73
10	11	16	17	8	51
11	18	16	19	15	68
12	29	32	27	43	131
13	8	29	27	7	71
14	10	27	17	10	64
15	5	11	5	4	24
16	2	4	8	3	17
17	3	9	6	4	22
18	8	17	18	22	65
19	0	12	2	0	14
20	1	4	1	3	8
21	1	2	4	1	6
22	2	3	1	1	6
23	0	2	3	5	10
24+	0	7	4	5	17
1 Year	20	29	17	13	79
Total 0 -11	**506**	**615**	**577**	**502**	**2,199**
Percent neonatal	53.3	52.6	52.0	52.8	52.7

[a] *Includes deaths under one month reported in days*
[1] *Under one month / under one year*

Annex E — Indicators for Global and National Reporting

The global indicators on the following pages are included in MICS 2006. The indicators were selected because data relevant to them can be collected through household surveys and because they respond to the monitoring needs for global goals established in the Millennium Declaration, the World Fit for Children Declaration and Plan of Action, the World Summit for Children and a number of other global commitments, and they respond to a number of national monitoring needs, i.e. GPRS II, Programme of Work of MoH, M&E framework of Ghana AIDS Commission, etc.

The list includes a brief description of the numerator and denominator of each indicator. The international commitments to which each of the indicators apply is noted using the following abbreviations:

WSC	World Summit for Children
MDG	Millennium Development Goal, and Indicator (I)
WFFC	World Fit for Children Declaration and Plan of Action, Major Goal (MG) or Strategy/Action (SA)
Abuja	The Abuja Declaration of the African Summit on Malaria
UNGASS	United Nations General Assembly Special Session on HIV/AIDS

Almost every table in the report refers to this list for easy reference of computation method. A further reference is placed in footnotes to allow the reader to investigate the link to the actual questionnaires.

Definitions of Indicators

INDICATOR	NUMERATOR	DENOMINATOR	WSC	MDG	WFFC	Other
HEALTHY LIVES						
1. Under-five mortality rate [9]	Probability of dying by exact age 5 years		1	4 I 13	MG A	
2. Infant mortality rate [9]	Probability of dying by exact age 1 year		1	4 I 14	MG A	
4. Skilled attendant at delivery	Number of women aged 15 -49 years with a birth in the 2 years preceding the survey that were attended during childbirth by skilled health personnel [10]	Total number of women surveyed aged 15 -49 years with a birth in the 2 years preceding the survey [11]	11	5 I 17	MG B SA 6	
5. Institutional deliveries	Number of women aged 15 -49 years with a birth in the 2 years preceding the survey that delivered in a health facility [12]	Total number of women surveyed aged 15 -49 years with a birth in 2 years preceding the survey [13]			MG B SA 6	
6. Underweight prevalence	Number of children under age five that fall below minus two standard deviations from the median weight for age of the NCHS/WHO standard (moderate and severe); number that fall below minus three standard deviations (severe)	Total number of children under age five that were weighed [14]	3	1 I 4	MG C	
7. Stunting prevalence	Number of children under age five that fall below minus two standard deviations from the median height for age of the NCHS/WHO standard (moderate and severe); number that fall below minus three standard deviations (severe)	Total number of children under age five measured [15]	3		MG C	
8. Wasting prevalence	Number of children under age five that fall below minus two standard deviations from the median weight for height of the NCHS/WHO standard (moderate and severe); number that fall belo w minus three standard deviations (severe)	Total number of children under age five weighed and measured [16]	3		MG C	
9. Low-birthweight infants	Number of last live births in the 2 years preceding the survey weighing below 2,500 grams [17]	Total number of last live births in the 2 years preceding the survey [18]	12		MG C	
10. Infants weighed at birth	Number of last live births in the 2 years preceding the survey that were weighed at birth [19]	Total number of last live births in the 2 years preceding the survey [20]			MG C	
11. Use of improved	Number of household members living in households [21] using	Total number of household members in	4	7 I 30	MG D SA 23	

[9] The under-five and infant mortality rates are obtained via a calculation that uses as input a table on numbers of women, children ever born, and proportion dead by age of women. Numbers for this table are obtained from the Child Mortality module.
[10] Maternal and Newborn Health module, MN7=A, B, C.
[11] Child Mortality module, total women with a birth in the last 2 years, CM12 = Yes.
[12] Maternal and Newborn Health module, MN8=21-26 OR 31-36.
[13] See footnote 11.
[14] Anthropometry module, AN1. Children with out-of-range weights for age are omitted from calculations.
[15] Anthropometry module, AN2. Children with out-of-range heights for age are omitted from calculations.
[16] Anthropometry module, AN1 and AN2. Children with out-of-range weights for height are omitted from calculations.
[17] Maternal and Newborn Health module, MN11. See www.childinfo.org for further information on the tabulation of prevalence of low birthweight.
[18] See footnote 11.
[19] Maternal and Newborn Health module, MN10=1.
[20] See footnote 4.
[21] This indicator is obtained by weighting the number of households by the number of household members (HH11).
[22] Water and Sanitation module, WS1=11, 12, 13, 21, 31, 41, 81, 91 OR (WS1=91 AND WS2=11, 12, 13, 21, 31, 41, 81, 91).

drinking water sources	improved sources[22] of drinking water	households surveyed				
12. Use of improved sanitation facilities	Number of hou sehold members [23] using improved sanitation facilities [24]	Total number of household members in households surveyed	5	7 I 31	MG D SA 23	
13. Water treatment	Number of household members using water that has been treated[25]	Total number of household members in households surveyed			SA 23	
14. Disposal of child's faeces	Number of children under age three whose (last) stools were disposed of safely [26]	Total number of children under age three surveyed			SA 23	
15. Exclusive breastfeeding rate	Number of infants aged 0 -5 months that are exclusively breastfed [27]	Total number of infants aged 0-5 months surveyed	16		SA 5	
16. Continued breastfeeding rate	Number of infants aged 12 -15 months, and 20 -23 months, that are currently breastfeeding[28]	Total number of children aged 12-15 months and 20-23 months surveyed	16		SA 5	
17. Timely complementary feeding rate	Number of infants aged 6 -9 months that are receiving breastmilk and complementary foods[29]	Total number of infants aged 6-9 months surveyed			SA 5	
18. Frequency of complementary feeding	Number of infants aged 6 -11 months that receive breastmilk and complementary food at least the minimum recommended number of times per day (two times per day for infants aged 6 -8 months, three times per day for infants aged 9 -11 months)[30]	Total number of infants aged 6-11 months surveyed			SA 5	
19. Adequately fed infants	Number of infants aged 0 -11 months that are appropriately fed: infants aged 0 -5 months that are exclusively breastfed and infants aged 6-11 months that are breastfed and ate solid or semi - solid foods the appropriate number of times (see above) yesterday [31]	Total number of infants aged 0-11 months surveyed			SA 5	
20. Antenatal care	Number of women aged 15 -49 years that were attended at least once during pregnancy in the 2 years preceding the survey by skilled health personnel [32]	Total number of women surveyed aged 15 -49 years with a birth in the 2 years preceding the survey[33]	9 11		SA 6	
21. Contraceptive prevalence	Number of women currently married or in union aged 15-49 partner is using) a contraceptive	Total number of women aged 15-49 years that	10	6 I 19c	SA 1 SA 3	

[23] See footnote 21.
[24] Water and Sanitation module, WS7=11, 12, 13, 21, 22.
[25] Water and Sanitation module, WS6=A, B, D, E.
[26] Care of Illness module, CA13=1 OR 2.
[27] Children still breastfed (Breastfeeding module, BF2=1) AND no other food given (answer must be 2 (No) for BF3B, C, D, E, F, G and H; only BF3A =1 is permissible).
[28] Breastfeeding module, BF2=1.
[29] Children still breastfed (Breastfeeding module, BF2=1) AND complementary foods given in the last 24 hours (BF3H=1), even if also given other breastmilk substitutes.
[30] Breastfeeding module, (BF2=1 AND BF5>=2) for infants aged 6-8 months OR (BF2=1 AND BF5>=3) for infants aged 9-11 months.
[31] See footnotes 27 and 30.
[32] Maternal and Newborn Health module, MN2=A, B, C.
[33] See footnote 11.
[34] Marriage module, MA1=1 OR 2 AND Contraception module, CP2=1.
[35] Marriage module, MA1=1 OR 2.
[36] Care of Illness module, CA5=1 AND CA6=1 AND (CA7=1 OR 3) AND CA11=A.

	method (either modern or traditional) [34]	in union [35]				
22. Antibiotic treatment of suspected pneumonia	Number of children aged 0 -59 months with suspec ted pneumonia in the previous 2 weeks receiving antibiotics [36]	Total number of children aged 0-59 months with suspected pneumonia in the previous 2 weeks[37]			SA 11	
23. Care-seeking for suspected pneumonia	Number of children aged 0 -59 months with suspected pneum onia in the previous 2 weeks that are taken to an appropriate health provider[38]	Total number of children aged 0-59 months with suspected pneumonia in the previous 2 weeks[39]	24		SA 11	
24. Solid fuels	Number of residents in households that use solid fuels (wood, charcoal, crop residues and dung) as the primary source of domestic energy to cook [40]	Total number of residents in households surveyed		7 I 29	SA 11	
25. Tuberculosis immunization coverage	Number of children aged 12 -23 months receiving BCG vaccine before their first birthday [41]	Total number of children aged 12-23 months surveyed	22		SA 7	
26. Polio immunization coverage	Number of children aged 12 -23 months receiving Polio3 vaccine before their first birthday	Total number of children aged 12-23 months surveyed	22		SA 7	
27. Immunization coverage for diphtheria, pertussis and tetanus (DPT)	Number of children aged 12 -23 months receiving DPT3 vaccine before their first birthday	Total number of children aged 12-23 months surveyed	22		SA 7	
28. Measles immunization coverage	Number of children aged 12 -23 months receiving measles vaccine before their first birthday	Total number of children aged 12-23months surveyed	22	4 I 15	SA 7	
29. Hepatitis B immunization coverage	Number of children aged 12 -23 months immunized against hepatitis before their first birthday	Total number of children aged 12-23 months surveyed			SA 7	
30. Yellow fever immunization coverage	Number of children aged 12 -23 months immunized against yellow fever before their first birthday	Total number of children aged 12-23 months surveyed			SA 7	
31. Fully immunized children	Number of children aged 12 -23[42] months receiving (DPT)HH1 -3, Polio1-3, BCG and MMR vaccines before their first birthday	Total number of children aged 12-23[9] mon ths surveyed			SA 7	
32. Neonatal tetanus protection	Number of mothers with live births in the previous year that were given at least two doses of tetanus toxoid (TT) vaccine within the the appropriate interval prior to giving birth[43]	Total number of women surveyed aged 15 -49 years with a birth in the year preceding the survey[44]	22		SA 7	

[37] Care of Illness module, CA5=1 AND CA6=1 AND (CA7=1 OR 3).
[38] Care of Illness module, CA5=1 AND CA6=1 AND (CA7=1 OR 3) AND having seen an appropriate health provider, CA8=1 AND (CA9=A-H, I-J, L-O) (excludes pharmacy).
[39] See footnote 37.
[40] Household Characteristics module, HC6 = 23, 31, 32, 41, OR 51.
[41] Total number of children aged 12-23 months vaccinated with BCG before their first birthday, as validated by a card or mother's recall. To estimate the number of children without a card to have received the vaccine before their first birthday, the proportion of vaccinations given during the first year of life is assumed to be the same as for the proportion of children with a card that received the vaccine before their first birthday. The same estimation approach is also used for indicators on Polio, (DPT)HH, measles, and yellow fever vaccines (indicators 26-30).
[42] See footnote Error! Bookmark not defined..
[43] Tetanus Toxoid module: numerator is all mothers with live births in the previous year with
(1) two TT doses during the pregnancy (TT3>=2) OR
(2) one TT dose during the pregnancy and at least one TT dose prior to the pregnancy (TT3=1 AND TT6>=1) OR
(3) at least two TT doses prior to the pregnancy of which the last dose was less than 3 years before the birth (TT6>=2 AND (CM11-TT7{TT8})<3) OR
(4) with three doses within the 5 years before the pregnancy (TT6>=3 AND (CM11-TT7{TT8})<5) OR
(5) with four doses with the last dose less than 10 years before the pregnancy (TT6>=4 AND ((CM11-TT7{TT8})<10) OR
(6) with five doses or more ever (TT6>=5).
[44] Birth in the year preceding the survey: that is, if the date of the interview (Women's Information Panel, WM6) minus the date of birth of the child (Child Mortality module, CM11) is less than 1 year.
[45] Care of Illness module, CA1=1 AND (CA2A=1 OR CA2B=1 OR CA2C=1).

33. Use of oral rehydration therapy (ORT)	Number of children aged 0 -59 months with diarrhoea in the previous 2 weeks that received oral rehydration salts and/or an appropriate hous ehold solution[45]	Total number of children aged 0-59 months with diarrhoea[46] in the previous 2 weeks	25		SA 11	
34. Home management of diarrhoea	Number of children aged 0 -59 months with diarrhoea in the previous 2 weeks that received more fluids AND continued e ating somewhat less, the same or more food[47]	Total number of children aged 0-59 months with diarrhoea in the previous 2 weeks [48]	23		SA 11	
35. Received ORT or increased fluids and continued feeding	Number of children aged 0 -59 months with diarrhoea that received ORT (oral rehydration salts or an appropriate household solution) or received more fluids AND continued eating somewhat less, the same or more food[49]	Total number of children aged 0-59 months with diarrhoea in the previous 2 weeks [50]			SA 11	
36. Household availability of insecticide-treated nets (ITNs)	Number of households with at least one mosquito net, either permanently treated or treated within the previous year [51]	Total number of households surveyed			SA 12	Abuja
37. Under-fives sleeping under insecticide-treated nets	Number of children aged 0 -59 months that slept under an insecticide-treated mosquito net the previous night [52]	Total number of children aged 0-59 months surveyed		6 I 22	SA 12	Abuja
38. Under-fives sleeping under mosquito nets	Number of children aged 0-59 months that slept under a mosquito net the previous night[53]	Total number of children aged 0-59 months surveyed			SA 12	
39. Antimalarial treatment (under- fives)	Number of children aged 0 -59 months reported to have had fever in the previous 2 weeks that were treated with an appropriate antimalarial within 24 hours of onset[54]	Total number of children aged 0-59 months reported to have had fever in the previous 2 weeks[55]		6 I 22	SA 12	
40. Antimalarial treatment (under- fives)	Number of children aged 0 -59 months reported to have had fever in the previous 2 weeks that were treated with an appropriate antimalarial within 24 hours of onset[56]	Total number of children aged 0-59 months reported to have had fever in the previous 2 weeks[57]		6 I 22	SA 12	

[46] If CA1=8 (don't know if child has had diarrhoea in past 2 weeks), the child is omitted from subsequent calculations.
[47] Care of Illness module, CA1=1 AND CA3 = 3 AND (CA4=3, 4, OR 5).
[48] See footnote 45.
[49] Care of Illness module, CA1=1 AND ((CA2A=1 OR CA2B=1 OR CA2C = 1) OR CA3 = 3) AND (CA4=3, 4, OR 5).
[50] See footnote 45.
[51] Insecticide-treated Net module:
(1) long-lasting net (TN3L1=1 OR TN3L2=1) OR
(2) pre-treated net obtained in the previous 12 months ((TN3P1=1 OR TN3P2=1) AND TN6<12) OR
(3) other net obtained in previous 12 months and pre-treated ((TN3O1=1 OR TN3O2=1 OR TN3X=1 OR TN3Z=1) AND TN5=1 AND TN6<12) OR
(4) pre-treated or other net treated in the previous 12 months ((TN3P1=1 OR TN3P2=1 OR TN3O1=1 OR TN3O2=1 OR TN3X=1 OR TN3Z=1) AND TN7=1 AND TN8<12)).
Please note that the definition in of an ITN in MICS differ from that of previous rounds of DHS
[52] Malaria module:
(1) long-lasting net (ML12=11 OR 12) OR
(2) pre-treated net obtained in the previous 12 months ((ML12=21 OR 22) AND ML11<12) OR
(3) other net obtained in the previous 12 months and already treated (ML11<12 AND ML13=1) OR
(4) net was treated within the last 12 months (ML14=1 AND ML15 <12).
Please note that the definition in of an ITN in MICS differ from that of previous rounds of DHS
[53] Malaria module, ML10=1.
[54] Malaria module, ML1=1 AND (ML4=A-H OR ML7=AH) AND (ML9=0 OR 1).
[55] Malaria module, ML1=1.
[56] Maternal and Newborn Health module for malaria-affected countries, MN6B=A AND MN6D>=2.
[57] See footnote 11.
[58] Salt Iodization module, SI1=3.
[59] If a household has salt, but it is not tested (Salt Iodization module, SI1=7), these households are omitted from the denominator.

41. Intermittent preventive malaria treatment (pregnant women)	Number of women receiving appropriate intermittent medication to prevent malaria (defined as at least 2 doses of SP/Fansidar) during the last pregnancy, leading to a live birth within the 2 years preceding the survey [58]	Total number of women that have had a live birth within the 2 years preceding the survey [57]			SA 12	Abuja
42. Iodized salt consumption	Number of households with salt testing 15 parts per million or more of iodine/iodate [58]	Total number of households surveyed [59]	14		SA 22	
43. Vitamin A supplementation (under-fives)	Number of children aged 6 -59 months receiving at least one high-dose vitamin A supplement in the previous 6 months [60]	Total number of children aged 6-59 months surveyed	15		SA 22	
44. Vitamin A supplementation (post-partum mothers)	Number of women with a live birthin the 2 years preceding the survey that received a high-dose vitamin A supplement within 8 weeks after birth[61]	Total number of women that had a live birth in the 2 years preceding the survey[62]	15		SA 22	
45. Content of antenatal care	Number of women with a li ve birth in the 2 years preceding the survey that received antenatal care during the last pregnancy [63]	Total number of women with a live birth in the 2 years preceding the survey[64]			SA 6	
46. Timely initiation of breastfeeding	Number of women with a live birth in the 2 years preceding the survey that put the newborn infant to the breast within 1 hour of birth[65]	Total number of women with a live birth in the 2 years preceding the survey[66]			SA 5	
47. Support for learning	Number of children aged 0 -59 months living in h ouseholds in which an adult has engaged in four or more activities to promote learning and school readiness in the past 3 days [67]	Total number of children aged 0-59 months surveyed			SA 10	
48. Father's support for learning	Number of children aged 0 -59 months whose father has engaged in one or more activities to promote learning and school readiness in the past 3 days[68]	Total number of children aged 0-59 months			SA 10	
49. Support for learning: children's books	Number of households with three or more children's books[69]	Total number of households surveyed			SA 10	
50. Support for learning: materials for play	Number of ho useholds with three or more materials intended for play [71]	Total number of households surveyed			SA 10	
51. Non-adult care	Number of children aged 0 -59 months left alone or in the care of another child younger than 10 years of age in the past week [72]	Total number of children aged 0-59 months surveyed			SA 10	

[60] Vitamin A module, VA1=1 AND VA2<6.
[61] Maternal and Newborn Health module, MN1=1.
[62] See footnote 11.
[63] Maternal and Newborn Health module, proportions calculated separately: total number of women that were weighed, had their blood pressure taken, gave a urine sample, or gave a blood sample: MN3A=1; MN3B=1; MN3C=1; MN3D=1.
[64] See footnote 11.
[65] Maternal and Newborn Health module, MN13=000 (immediately) OR 100 (less than 1 hour).
[66] See footnote 11.
[67] Birth Registration and Early Learning module, sum of responses (BR8ABR8F<>'Y') >=4.
[68] Birth Registration and Early Learning module, sum of responses (BR8ABR8F='B') >=1.
[69] Child Development optional module, CE1>=3.
[70] Child Development optional module, CE2>=3.
[71] Child Development optional module, CE3 contains 3 or more of A, B, C, D.
[72] Child Development optional module, number of responses where CE4>00 or number of responses where CE5>00.

INDICATOR	NUMERATOR	DENOMINATOR	WSC	MDG	WFFC	Other
EDUCATION						
52. Pre-school attendance	Number of children aged 36 -59 months that attend some form of early childhood education programme[73]	Total number of child ren aged 36-59 months surveyed	26		MG A	
53. School readiness	Number of children in first grade that attended some form of pre - school the previous year [74]	Total number of children in the first grade surveyed[75]			MG A	
54. Net intake rate in primary education	Number of children of school -entry age that are currently attending first grade[76]	Total number of children of primary- school entry age surveyed	6		MG B	
55. Net primary school attendance rate	Number of children of primary - school age currently attending primary or s econdary school [77]	Total number of children of primary- school age surveyed	6	2 I 6	MG B	
56. Net secondary school attendance rate	Number of children of secondary - school age currently attending secondary school or higher[78]	Total number of children of secondary -school age surveyed			MG C	
57. Children reaching grade five	Proportion of children entering the first grade of primary school that eventually reach grade five[79]		6	2 I 7	MG D	
58. Transition rate to secondar y school	Number of children that were in the last grade of primary school during the previous school year that attend secondary school[80]	Total number of children that were in the last grade of primary school during the previous school year surveyed[81]			MG C	
59. Primary completio n rate	Number of children (of any a ge) attending the last grade of primary school (excluding repeaters)[82]	Total number of children of primary school completion age (age appropriate to final grade of primary school) surveyed[83]	6	2 I 7b	MG D	
60. Adult literacy rate	Number of women aged 15 -24 years that are able to read a short simple statement about everyday life[84]	Total number of women aged 15-24 years surveyed	7	2 I 8	MG F	
61. Gender parity index	Proportion of girls in primary and secondary education [85]	Proportion of boys in primary and secondary education[86]		3 I 9	MG C	

[73] Birth Registration and Early Learning module, UF11=3-4 years AND BR6=1.
[74] Education module, ED6 Level=1, Grade=1 AND ED8 Level=0.
[75] Education module, ED6 Level=1, Grade=1.
[76] Select children of primary-school entry age (for example, HL5=6); Education module, ED4=1 AND ED6 Level=1, Grade=1.
[77] Select children of primary-school age (for example, HL5=6-11); Education module, ED6 Level=1 or 2.
[78] Select children of secondary-school age (for example, HL5=12-17); Education module, ED6 Level = 2 or 3.
[79] This indicator is calculated using transition probabilities for the cohort of children in the sample, which are derived from the Education module ED4 to Ed8.
[80] Education module, ED8 Level=1, Grade=(final grade of primary school, for example, 6) AND ED6 Level=2.
[81] Education module, ED8 Level=1, Grade=(final grade of primary school, for example, 6).
[82] Education module, ED6 Level=1, Grade=(final grade of primary school, or example, 6) AND ED8 Level=1, Grade<>(final grade of primary school).
[83] Select children of the age appropriate to final grade of primary school, for example, HL5=11.
[84] Women's Information Panel, WM14=3 OR WM11=2 OR 3.
[85] Select girls, HL4=2, calculate net attendance rate using Education module, primary ED6=1; secondary ED6=2; higher ED6=3.
[86] Select boys, HL4=1, calculate net attendance rate using Education module, primary ED6=1; secondary ED6=2; higher ED6=3

INDICATOR	NUMERATOR	DENOMINATOR	WSC	MDG	WFFC	Other
CHILD PROTECTION						
62. Birth registration	Number of children aged 0 -59 months whose births are reported registered [87]	Total number of children aged 0 - 59 months surveyed			SA 1	
63. Prevalence of female genital mutilation/cutting (FGM/C)	Number of women aged 15-49 years that reported undergoing any form of genital mutilation/cutting [88]	Total number of women aged 15 - 49 years surveyed			SA 9	
66. Approval for FGM/C	Number of women aged 15-49 years favouring the continuation of female genital mutilation/cutting [89]	Total number of women aged 15 - 49 years surveyed			SA 9	
67. Marriage before age 15 and age 18	Number of women that were first married or in union by the exact age of 15 [90] and the exact age of 18, [91] by age groups	Total number of women aged 15 - 49 years and 20 - 49 years surveyed, by age groups			SA 9	
68. Young women aged 15-19yrs Currently married or in union	Number of women aged 15 -19 years currently married or in union [92]	Total number of women aged 15 - 19 years surveyed			SA 9	
69. Spousal age difference	Number of women married/in union aged 15 -19 years and 20 - 24 years with a difference in age of 10 or more years between them and their current spouse [93]	Total number of women aged 15 - 19 and 20-24 years surveyed that are currently married or in union [94]			SA 9	
70. Polygyny	Number of women in a polygynous union [95]	Total number of women aged 15 - 49 years surveyed that are currently married or in union [96]			SA 9	
71. Child labour	Number of children aged 5 -14 years that are involved in child labour [97]	Total number of children aged 5 - 14 years surveyed			SA 35	
72. Labourer students	Number of children aged 5 -14 years involved in child labour activities that attend school [98]	Total number of children aged 5 - 14 years			SA 36	

[87] Birth Registration and Early Learning module, BR1=1 OR BR2=1.
[88] Female Genital Mutilation/Cutting optional module, FG3=1.
[89] Female Genital Mutilation/Cutting optional module, FG16=1.
[90] Marriage module, (MA6-WM8<15) OR (MA8<15). Calculate using century month codes (CMC) using analysis software. Disaggregate by age groups from 15-19 … 45-49.
[91] Marriage module, (MA6-WM8<18) OR (MA8<18). Calculate using century month codes (CMC) using analysis software. Disaggregate by age groups from 20-24 … 45-49.
[92] Marriage module, MA1=1 OR 2.
[93] Marriage module, MA2<>98 AND ((MA2-(WM6-WM8)>=10) OR (MA2-WM9>=10).
[94] Marriage module, exclude women with MA2=98.
[95] Marriage module optional questions for countries where polygamy exists, MA2A=1.
[96] Marriage module, MA1=1 OR 2.
[97] Child Labour module:
(1) Economic activity: ((CL3=1 OR CL3=2 OR CL8=1) AND CL4+CL9>=MinHours) OR
(2) Domestic chores: (CL6=1 AND CL7>=28 Hours)
For children aged 5-11 years, MinHours=1; for children aged 12-14 years, MinHours=14.
[98] Child Labour module, as defined in footnote 97 AND Education module, ED4 =1.

		involved in child labour activities[99]				
73. Student	Number of children aged 5 -14 years attending school that are involved in child labour[100] activities	Total number of children aged 5-14 years attending school[101]			SA 36	
74. Child discipline	Number of children aged 2 -14 years that (1) experience only non-violent aggression, (2) experience psychological aggression as punishment, (3) experience minor physical punishment, (4) experience severe physical punishment[102]	Total number of children aged 2 -14 years selected and surveyed[103]			SA 2	
INDICATOR	NUMERATOR	DENOMINATOR	WSC	MDG	WFFC	Other
HIV/AIDS						
75. Prevalence of orphans	Number of children under age 18 with at least one dead parent[104]	Total number of children under age 18 surveyed			MG C	
76. School attendance of orphans versus non-orphans	Proportion of double orphans (both mother and father dead) aged 10 -14 years attending school[105]	Proportion of children aged 10-14 years, both of whose parents are alive, that are living with at least one parent and are attending school[106]		6 I 20	SA 10	UN-GASS
77. Children's living arrangements	Number of children aged 0 -17 years not living with a biological parent[107]	Total number of children aged 0-17 years surveyed			SA 11	
82. Comprehensive knowledge about HIV prevention among young people	Number of women ag ed 15-24 years that correctly identify two ways of avoiding HIV infection and reject three common misconceptions about HIV transmission[108]	Total number of women aged 15-24 years surveyed		6 I 19b	SA 2	UN-GASS
83. Condom use with non-regular partners	Number of women aged 15 -24 years reporting the use of a condom during sexual intercourse with their last non -marital, non-cohabiting sex partner in the previous 12 months[109]	Total number of women aged 15-24 years surveyed that had a non-marital, non-cohabiting partner in the previous 12 months[110]		6 I 19a	SA 2	UN-GASS

[99] Child Labour module, as defined in footnote 97.
[100] Child Labour and Education modules, Child Labour module, as defined in footnote 97 AND Education module, ED4 =1.
[101] Education module, ED4=1.
[102] Child Discipline module.
(1) (CD12A=1 OR CD12B=1 OR CD12E=1) AND (CD12C, CD12D, CD12F, CD12G, CD12H, CD12I, CD12J, AND CD12K=2).
(2) (CD12D=1 OR CD12H=1)
(3) (CD12C=1 OR CD12F=1 OR CD12G=1 OR CD12J=1)
(4) (CD12I=1 OR CD12K=1).
[103] Note that only one child aged 2-14 years is selected in each household for the Child Discipline module.
[104] Household Listing module, HL9=2 OR HL11=2.
[105] Household Listing module, numerator is (HL9=2 OR HL11=2) AND ED4=1, denominator is (HL9=2 OR HL11=2).
[106] Household Listing module, numerator is (HL9=1 AND HL11=1 AND (HL10<>00 OR HL12<>00)) AND ED4=1, denominator is (HL9=1 AND HL11=1 AND (HL10<>00 OR HL12<>00)).
[107] Household Listing module, (HL9=2 OR HL10=00) AND (HL11=2 OR HL12=00), that is, mother is not living or not living in same household AND father is not living or not living in same household.
[108] HIV/AIDS module, (HA2=1 AND HA4=1) (Note: these answers reflect correct understanding of how HIV infection can be prevented) AND (HA3=2 AND HA5=2 AND HA8=1) (Note: these answers reflect rejection of the three common misconceptions about HIV transmission.)
[109] Sexual Behaviour module, SB2<>4 AND ((SB3=1 AND SB4<>1) OR (SB7=1 AND SB8<>1)). This indicator should be presented disaggregated by 15-19, 20-24 and 15-24-year-old age groups.
[110] Sexual Behaviour module, SB2<>4 AND (SB4<>1 OR SB8<>1).
[111] Sexual Behaviour module, SB1<>0 AND (SB1<15 (sex before age 15) OR (SB1=95 (first sex at marriage) AND ((MA6-WM8)<15) OR MA8<15)) (marriage before age 15)).
[112] Sexual Behaviour module, SB2<>4 AND (SB4<>1 OR SB8<>1).
[113] Sexual Behaviour module, SB2<>4.
[114] HIV/AIDS module, HA10=1 AND HA11=1 AND HA12=2 AND HA13=1.

84. Age at first sex among young people	Number of women aged 15 -24 years that have had sex before age 15 [111]	Total number of women aged 15-24 surveyed			SA 2	
85. Higher risk sex in the last year	Number of sexually active women aged 15-24 years that have had sex with a non-marital, non-cohabitating partner in the previous 12 months [112]	Total number of women aged 15-24 that were sexually active in the previous 12 months [113]			SA 4	
86. Attitude towards people with HIV/AIDS	Number of women expressing acceptance on all four questions about people with HIV or AIDS [114]	Total number of women surveyed			SA 7	
87. Women who know where to be tested for HIV	Number of women that state knowledge of a place to be tested[115]	Total number of women surveyed			MG B	
88. Women who have been tested for HIV	Number of women that report being tested for HIV [116]	Total number of women surveyed			MG B	
89. Knowledge of mother-to-child transmission of HIV	Number of women that correctly identify all three means of vertic al transmission [117]	Total number of women surveyed			MG B	
90. Counselling coverage for the prevention of mother-to-child transmission of HIV	Number of women that gave birth in the previous 24 months and received antenatal care reporting that they received couns elling on HIV/AIDS during this care[118]	Total number of women that gave birth in the previous 24 months surveyed			MG B	
91. Testing coverage for the prevention of mother-to-child transmission of HIV	Number of women that gave birth in the previous 24 months and received antenatal care reporting that they received the results of an HIV test during this care[119]	Total number of women that gave birth in the previous 24 months surveyed			MG B	
92. Age-mixing among sexual partners	Number of women aged 15 -24 years that had s ex in the past 12 months with a partner who was 10 or more years older than they were [120]	Total number of sexually active women aged 15-24 years surveyed [121]			SA 4	

115 HIV/AIDS module, HA18=1 or HA15=1 or Maternal and Newborn Health module, MN5=1.
[116] HIV/AIDS module and Maternal and Newborn Health module, HA15=1 OR MN5=1.
[117] HIV/AIDS module, HA9A=1 AND HA9B=1 AND HA9C=1.
[118] Maternal and Newborn Health module, MN4=1.
[119] Maternal and Newborn Health module, MN6=1.
[120] Sexual Behaviour module, SB2<>4 AND ((SB5-WM9)>=10 OR (SB9-WM9>=10)). This indicator includes any sexual partner, marital/cohabiting or non-marital/non-cohabiting.
[121] Sexual Behaviour module, SB2<>4.
[122] Security of Tenure and Durability of Housing module and Household Characteristics module:
(1) Natural floor material (HC3=11-19) AND poor condition of dwelling (two or more of HC15I=A-F), OR
(2) Vulnerable to accidents due to both issues: HC15J=A AND B, OR
(3) Located in a hazardous location, (four or more of HC15H=A-I).
[123] Source and Cost of Supplies module:
(1) Source of insecticide-treated nets as defined in footnote 51 AND TN3A=11-19
(2) Source of oral rehydration salts, CA4B=11-19
(3) Source of antibiotics, CA11B=11-19

INDICATOR	NUMERATOR	DENOMINATOR	WSC	MDG	WFFC	Other
ADDITIONAL INDICATORS						
94. Durability of housing	Number of household members living in urban dwellings that are not considered durable[122]	Number of urban household members in households surveyed				
96. Source of supplies	Number of children (or households) for whom supplies were obtained from public provide rs,[123]presented separately for each type of supply: insecticide - treated mosquito nets, oral rehydration salts, antibiotics and antimalarials	Total number of children (or households) for whom supplies were obtained[124]				
97. Cost of supplies	Median cost of supplies obtained, [125] presented separately for each type of supply and whether sourced from public or private providers: insecticide - treated mosquito nets, oral rehydration salts, antibiotics and antimalarials.	Total number of children (or households) for whom supplies were obtained[126]				
100. `Attitudes towards domestic violence	Number of women that consider 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,[127](2) she neglects the children,[128](3) she argues with him,[129](4) she refuses sex with him,[130](5) she burns the food[131]	Total number of women surveyed			SA6	
101. Child disability	Number of children aged 2 -9 years with at least one of nine reported disabilities [11]: (1) delay in sitting, standing or walking, (2) difficulty seeing, either in the daytime or at night, (3) appears to have difficulty hearing, (4) difficulty in understanding instructions, (5) difficulty walking or moving arms or has weakness or stiffness of limbs, (6) has fits, becomes rigid, loses consciousness, (7) does not learn to do things like other children his/her age, (8) cannot speak or cannot be understood in words, (9) appears mentally backward, dull or slow	Total number of children aged 2-9 surveyed			SA3	

(4) Source of antimalarials, ML9A=11-19.
[124] Source and Cost of Supplies module:
(1) Use of insecticide-treated nets as defined in footnote 51
(2) Use of oral rehydration salts, CA2A=1
(3) Use of antibiotics, CA11=A
(4) Use of antimalarials, ML4=A-H OR ML7=A-H.
[125] Source and Cost of Supplies module:
(1) Cost of insecticide-treated nets as defined in footnote 51, and TN3B
(2) Cost of oral rehydration salts, CA4C
(3) Cost of antibiotics, CA11C
(4) Cost of antimalarials, ML9B.
[126] Source and Cost of Supplies module:
(1) Use of insecticide-treated nets as defined in footnote 51
(2) Use of oral rehydration salts, CA2A=1
(3) Use of antibiotics, CA11=A
(4) Use of antimalarials, ML4=A-H OR ML7=A-H.
[127] Attitudes Towards Domestic Violence module: DV1A=1.
[128] Attitudes Towards Domestic Violence module: DV1B=1.
[129] Attitudes Towards Domestic Violence module: DV1C=1.
[130] Attitudes Towards Domestic Violence module: DV1D=1.
[131] Attitudes Towards Domestic Violence module: DV1E=1.
[132] Child Disability module: DA3=1 or DA4=1 or DA5=1 or DA6=2 or DA7=1 or DA8=1 or DA9=2 or DA10=2 or DA13=1.

Annex F — Questionnaires

The three questionnaires were used for the HIRD Supplementary Survey (District MICS), 2007/2008 and these are presented on the following pages in the following order:

- Household Questionnaire
- Woman's Questionnaire
- Under five Questionnaire

HOUSEHOLD QUESTIONNAIRE

Good ……..! My name is …… and I am here on behalf of the Ghana Statistical Service, Ministry of Health and UNICEF Ghana. We are working on a survey concerned with family health and education. We would very much appreciate your participation in this survey. The interview will take about 30 minutes. All the information we obtain will remain strictly confidential and your answers will never be identified. During this time I would like to speak with the household head and all women aged 15-49 in the household.

May I start now? *IF PERMISSION IS GIVEN, BEGIN THE INTERVIEW*

May I start now?

IDENTIFICATION PANEL — **HH**

HH1. LOCALITY NAME _____ E. A. NUMBER: ☐☐☐

HH2. HOUSEHOLD NUMBER: ☐☐

HH3. INTERVIEWER NAME _____ NUMBER: ☐☐☐

HH4. SUPERVISOR NAME _____ NUMBER: ☐☐☐

HH5. DAY/MONTH/YEAR OF INTERVIEW ☐☐ ☐☐ 2 0 ☐☐

HH6. AREA:
- URBAN 1
- RURAL 2

HH7. REGION ☐☐

HH7A. DISTRICT ☐☐

HH 8. NAME OF HEAD OF HOUSEHOLD _____

AFTER ALL QUESTIONNAIRES FOR THE HOUSEHOLD HAVE BEEN COMPLETED, FILL IN THE FOLLOWING INFORMATION.

HH9. RESULT OF HOUSEHOLDINTERVIEW:
- COMPLETED 1
- NOT AT HOME 2
- REFUSED 3
- HOUSEHOLD NOT FOUND /STRUCTURE DESTROYED 4
- OTHER (*specify*)_____ 6

HH10. RESPONDENT TO HOUSEHOLD QUESTIONNAIRE:

NAME:_____

LINE NO: ☐☐

HH11. TOTAL NUMBER OF HOUSEHOLD MEMBERS: ☐☐

HH12. NO. OF WOMEN ELIGIBLE FOR INTERVIEW: ☐☐

HH13. NO. OF WOMEN QUESTIONNAIRES COMPLETED: ☐☐

HH14. NO. OF CHILDREN UNDER AGE 5: ☐☐

HH15. NO. OF UNDER 5 QUESTIONNAIRES COMPLETED: ☐☐

INTERVIEWER/SUPERVISOR NOTES: *USE THIS SPACE TO RECORD NOTES ABOUT THEINTERVIEW WITH THIS HOUSEHOLD, SUCH AS CALL-BACK TIMES, INCOMPLETE INDIVIDUAL INTERVIEW FORMS, NUMBER OF ATTEMPTS TO RE-VISIT, ETC..*

HH16. DATA ENTRY CLERK: ☐☐

MODULE 1: HOUSEHOLD LISTING FORM — HL

First, please tell me the name of each person who usually lives here or spent the last night in this household, 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 HEAD OF HOUSEHOLD (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. THEN, ASK QUESTIONS STARTING WITH HL5 FOR EACH PERSON AT A TIME. ADD A CONTINUATION SHEET IF THERE ARE MORE THAN 15 HOUSEHOLD MEMBERS. TICK HERE IF CONTINUATION SHEET USED . FOR ALL PERSONS LISTED UNDER HL2, ASK IF PERSON IS A VALID HEALTH INSURANCE CARD HOLDER OR NOT.*

					WOMEN'S INTERVIEW	WORKING CHILDREN	UNDER-5 INTERVIEW	HEALTH INSURANCE	*FOR CHILDREN AGE 0-17 YEARS ASK HL9 – HL12*			
HL1.	HL2. *Name*	*HL3. What is the relationship of (NAME) to the head of the household?	HL4. Is (NAME) male or female? 1 MALE 2 FEM.	HL5. How old is (NAME)? How old was (NAME) ON HIS/HER LAST BIRTHDAY? *RECORD IN COMPLETED YEARS* 98=DK	HL6. *CIRCLE LINE NO. IF WOMAN IS AGE 15-49*	HL7. FOR EACH CHILD AGE 5-14: Who is the mother or primary caretaker of this child? RECORD LINE NO. OF MOTHER/ CARE-TAKER	HL8. *FOR EACH CHILD UNDER 5:* Who is the mother or primary caretaker of this child? *RECORD LINE NO. OF MOTHER/ CARETAKER*	*HL8A. FOR EACH PERSON IN HOUSEHOLD* IS (NAME) LISTED UNDER HL2 a valid National Health Insurance (NHIS) Card holder? 1=YES 2= NO *IF RESPONSE IS 'YES' REQUEST TO SEE CARD IF, IT IS VALID FOR THE YEAR.*	HL9. Is (NAME'S) biological mother alive? 1 YES 2 NO HL11 8 DK HL11	HL10. *IF ALIVE:* Does (NAME'S) biological mother live in this household? IF YES: What is her name? *RECORD LINE NO. OF MOTHER OR CODE 00 FOR 'NOT IN HOUSEHOLD'*	HL11. Is (NAME'S) biological father alive? 1 YES 2 NO NEXT MEMBER 8 DK NEXT MEMBER	HL12. *IF ALIVE:* Does (NAME'S) biological father live in this household? IF YES: What is his name? *RECORD LINE NO. OF FATHER OR 00 FOR 'NOT IN HOUSEHOLD'*
LINE NO.	NAME	REL.	M F	AGE	15-49	MOTHER/ CARETAKER	MOTHER/ CARETAKER	YES NO DK	MOTHER Y N DK	MOTHER'S LINE NO.	FATHER Y N DK	FATHER'S LINE NO.
01			1 2		01			1 2 8	1 2 8	___ ___	1 2 8	___ ___
02			1 2		02			1 2 8	1 2 8	___ ___	1 2 8	___ ___
03			1 2		03			1 2 8	1 2 8	___ ___	1 2 8	___ ___
04			1 2		04			1 2 8	1 2 8	___ ___	1 2 8	___ ___
05			1 2		05			1 2 8	1 2 8	___ ___	1 2 8	___ ___

06				1	2			06					1	2	8	1	2	8	___ ___	1	2	8	___ ___
07				1	2			07					1	2	8	1	2	8	___ ___	1	2	8	___ ___
08				1	2			08					1	2	8	1	2	8	___ ___	1	2	8	___ ___
09				1	2			09					1	2	8	1	2	8	___ ___	1	2	8	___ ___
10				1	2			10					1	2	8	1	2	8	___ ___	1	2	8	___ ___
11				1	2			11					1	2	8	1	2	8	___ ___	1	2	8	___ ___
12				1	2			12					1	2	8	1	2	8	___ ___	1	2	8	___ ___
13				1	2			13					1	2	8	1	2	8	___ ___	1	2	8	___ ___
14				1	2			14					1	2	8	1	2	8	___ ___	1	2	8	___ ___
15				1	2			15					1	2	8	1	2	8	___ ___	1	2	8	___ ___
								WOMEN **15-49**		CHILDREN **5-14**		UNDER **5s**											
TOTALS																							

NOW FOR EACH WOMAN AGE 15-49 YEARS, WRITE HER NAME AND LINE NUMBER AND OTHER IDENTIFYING INFORMATION IN THE INFORMATION PANEL OF THE WOMEN'S QUESTIONNAIRE. 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 THE QUESTIONNAIRE FOR CHILDREN UNDER FIVE. YOU SHOULD NOW HAVE A SEPARATE QUESTIONNAIRE FOR EACH ELIGIBLE WOMAN AND EACH CHILD UNDER FIVE IN THE HOUSEHOLD.

CHECK: HL5=CHILD(REN) 0-17 YEARS CONTINUE
CHECK: HL5=NO CHILD 0-17 YEARS ED1

****CODES FOR HL3: RELATIONSHIP TO HEAD OF HOUSEHOLD***

01 = Head
02 = Wife or Husband/ Cohabiting partner
03 = Son or Daughter
04 = Son or Daughter -In-Law
05 = Grandchild
06 = Parent
07 = Parent-In-Law
08 = Brother or Sister
09 = Brother or Sister -In-Law
10 = Co Wife
11 = Other Relative *(specify)*
12 = Adopted/Foster/Stepchild
13 = Not Related
98 = Don't Know

MODULE 2: EDUCATION **ED**

ASK QUESTIONS FOR HOUSEHOLD MEMBERS AGE 3 YEARS AND ABOVE

ED1. *LINE NO* *PLEASE CIRCLE MEMBER ID. .*	ED1A. Name	ED2. Has (NAME) ever attended/is attending school? 1 YES 2 NO → NEXT MEMBER	ED3. What is the highest level of school (NAME) attended? What is the highest grade (NAME) completed at this level? **LEVEL :** 00 = PRE-SCHOOL 10 = PRIMARY 20 = MIDDLE/JSS 30 = SECONDARY /SSS 40 = VOC./COMM/TECH 50 = POST SEC (NURSING/TEACHER TR . 60 = TERTIARY 96 = OTHER (*specify*) 98 = DK **GRADE:** 98 = DK *IF LESS THAN1 GRADE, ENTER00.*	

LINE	COPY NAMES FROMHL2	SCHOOL YES	SCHOOL NO	LEVEL	GRADE
01		1	2		
02		1	2		
03		1	2		
04		1	2		
05		1	2		
06		1	2		
07		1	2		
08		1	2		
09		1	2		
10		1	2		
11		1	2		
12		1	2		
13		1	2		
14		1	2		
15		1	2		

FOR HOUSEHOLD MEMBERS AGE 3-24 YEARS

ED1. LINE NO. *PLEASE CIRCLE MEMBER ID.*	ED4. During the (*2007-2008*) school year, did (NAME) ATTEND/ IS ATTENDING SCHOOL AT ANY TIME? 1 YES 2 NO ☐ ED7	ED4A. What type of school did (NAME) attend? 1 = Public 2 = Private	ED5. Since last (*day of the week*), how many days did (NAME) attend school? *INSERT NUMBER OF DAYS IN SPACE BELOW.*	ED6. During this school year, which level and grade is (NAME) attending? **LEVEL :** 00 = PRE-SCHOOL 10 = PRIMARY 20 = MIDDLE/JSS 30 = SECONDARY /SSS 40 = VOC./COMM/TECH 50 = POST SEC 60 = TERTIARY 96 = OTHER (*specify*) 98 = DK **GRADE :** 98 = DK	ED7. Did (NAME) attend school at any time during the previous school year, that is (*2006-2007*)? 1 YES 2 NO ☐ NEXT MEMBER 8 DK ☐ NEXT MEMBER	ED8. During that previous school year, which level and grade did (NAME) attend? **LEVEL :** 00 = PRE-SCHOOL 10 = PRIMARY 20 = MIDDLE/JSS 30 = SECONDARY /SSS 40 = VOC./COMM/TECH 50 = POST SEC 60 = TERTIARY 96 = OTHER (*specify*) 98 = DK **GRADE :** 98 = DK

	SCHOOL		SCHOOL TYPE					SCHOOL				
LINE	YES	NO	PUB	PRI	DAYS	LEVEL	GRADE	Y	N	DK	LEVEL	GRADE
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		
06	1	2	1	2	___			1	2	8		
07	1	2	1	2	___			1	2	8		
08	1	2	1	2	___			1	2	8		
09	1	2	1	2	___			1	2	8		
10	1	2	1	2	___			1	2	8		
11	1	2	1	2	___			1	2	8		
12	1	2	1	2	___			1	2	8		
13	1	2	1	2	___			1	2	8		
14	1	2	1	2	___			1	2	8		
15	1	2	1	2	___			1	2	8		

MODULE 3: WATER AND SANITATION			WS
WS1. What is the main source of drinking water for members of your household?	**PIPED WATER** Piped into dwelling ..... 11 Piped into yard or plot ..... 12 Public tap/standpipe ..... 13 Borehole ..... 21 **DUG WELL** Protected well ..... 31 Unprotected well ..... 32 Spring ..... 41 Rainwater collection ..... 42 Tanker -truck ..... 51 Cart with small tank/drum ..... 61 **SURFACE WATER** River/stream ..... 71 Dam/lake/pond/canal/ irrigation channel) ..... 72 Sachet water ..... 81 Bottled water ..... 91 Other (*specify*) _____ 96	11 12	WS5 WS5
WS2. What is the main source of water used by your household for other purposes such as cooking and handwashing?	**PIPED WATER** Piped into dwelling ..... 11 Piped into yard or plot ..... 12 Public tap/standpipe ..... 13 Borehole ..... 21 **DUG WELL** Protected well ..... 31 Unprotected well ..... 32 Spring ..... 41 Rainwater collection ..... 42 Tanker -truck ..... 51 Cart with small tank/drum ..... 61 **SURFACE WATER** River/stream ..... 71 Dam/lake/pond/canal/ irrigation channel ..... 72 Sachet water ..... 81 Bottled water ..... 91 Other (*specify*) _____ 96	11 12	WS5 WS5
WS3. How long does it take to go there, get (drinking) water, and come back?	No. of minutes ..... _ __ __ Water on premises ..... 995 DK 998	995	WS5
WS4. Who usually goes to this source to fetch the water for your household? *PROBE:* Is this person under age 15? What sex? *CIRCLE CODE THAT BEST DESCRIBES THIS PERSON.*	Adult woman ..... 11 Adult man ..... 12 Female (under 15) ..... 13 Male (under 15) ..... 14 Children (both sexes) ..... 15 Adult woman + child(ren) ..... 16 Adult man + child(ren) ..... 17 Other *(specify)* ..... 96 DK 98		

WS5. Do you treat your water in any way to make it safer to drink?	Yes ..... 1 No ..... 2 DK 8	 2 WS7 8 WS7
WS6. What do you usually do to the water to make it safer to drink? Anything else? *RECORD ALL ITEMS MENTIONED.*	Boil ..... A Add bleach/chlorine/alloy ..... B Strain it through a cloth ..... C Use water filter (ceramic, sand, composite, etc.) ..... D Solar disinfection ..... E Let it stand and settle ..... F Use pipe Filter.....G Other (*specify*) _____ X DK ..... Z	
WS7. What kind of toilet facility do members of your household usually use? *IF "FLUSH" OR "POUR FLUSH", PROBE:* Where does it flush to? *IF NECESSARY, ASK PERMISSION TO OBSERVE THE FACILITY.*	Flush/pour flush Flush to piped sewer system ..... 11 Flush to septic tank ..... 12 Flush to pit (latrine) ..... 13 Ventilated Improved Pit latrine (VIP) ..... 21 Pit latrine with slab ..... 22 Pit latrine without slab/open pit ..... 23 Bucket ..... 41 No facilities (bush/beach, etc) ..... 95 Other (*specify*) _____ 96	 95 WS10 96 WS10
WS8. Do you share this facility with other households?	Yes ..... 1 No 2	 2 WS10
WS9. How many households in total use this toilet facility?	No. of households (if less than 10) 0 ☐ Ten or more households ..... 10 DK 98	
WS10. How does your household dispose of refuse (solid waste)?	Collected ..... 11 Dump into public container ..... 21 Public dump ..... 22 Dump elsewhere ..... 23 Burned by household ..... 31 Buried by household ..... 32 Other (*specify*) _____ 96	
WS10A. How does your household dispose of liquid waste?	Through the sewerage system ..... 1 Thrown into gutter ..... 2 Thrown onto compound ..... 3 Thrown onto outside compound ..... 4 Other (*specify*) _____ 6	

MODULE 4: HOUSEHOLD CHARACTERISTICS		HC
HC1A. What is the religious affiliation of the head of this household?	Catholic ..... 11 Protestant ..... 12 Pentecostal/Charismatic ..... 13 Deeper Life ..... 14 Jehovah Witness ..... 15 SDA ..... 16 Moslem ..... 21 Traditional ..... 31 Spiritualist ..... 32 No Religion ..... 41 Other (*specify*) _____ 96	
HC1B. What is the mother tongue/native language of the head of this household?	DK ..... 98 Asante ..... 11 Fanti ..... 12 Akuapem ..... 13 Sefwi ..... 14 Brong ..... 15 Nzema ..... 16 Ga ..... 21 Dangme ..... 22 Ewe ..... 31 Guan ..... 41 Buli ..... 51 Mampruli ..... 52 Frafra/Gruni ..... 53 Kassem ..... 54 Dagbani ..... 55 Wali/Dagari ..... 56 Sissali ..... 57 Hausa ..... 58 Kokomba ..... 59 Other language (*specify*) _____ 96 DK 98	
HC1C. To which ethnic group does t he head of this household belong?	Akan ..... 11 Ga/Dangme ..... 12 Ewe ..... 13 Guan ..... 14 Gruma ..... 15 Mole Dagbani ..... 21 Grusi ..... 22 Mande ..... 23 Other ethnic group (*specify*) _____ 96 DK 98	
HC2. How many rooms in this household are used for sleeping?	No. of rooms ..... ☐☐	

HC3. Main material o f the dwelling floor: *RECORD OBSERVATION.*	Earth/mud/mud bricks ..... 11 Wood ..... 21 Stone ..... 31 Burnt bricks ..... 32 Cement/concrete ..... 41 Vinyl tiles ..... 42 Ceramic/marble tiles/porcelain ..... 43 Terrazzo ..... 44 Other (*specify*) _____ 96	
HC4. Main material of the roof. *RECORD OBSERVATION.*	Thatch/palm leaf/raffia ..... 11 Bamboo ..... 12 Mud/mud bricks/earth ..... 21 Wood ..... 31 Corrugated metal sheet ..... 41 Slate/asbestos ..... 42 Cement/concrete ..... 51 Roofing tiles ..... 61 Other (*specify*) _____ 96	
HC5. Main material of the walls. *(RECORD OBSERVATION)*	Palm leaves /thatch (grass)/raffia ..... 11 Mud/mud brick/earth ..... 21 Bamboo ..... 31 Wood ..... 32 Metal sheet or slate/asbestos ..... 41 Landcrete ..... 51 Burnt bricks ..... 61 Cement blocks/concrete ..... 71 Stone ..... 72 Other (*specify*) _____ 96	
HC6. What type of fuel does your household mainly use for cook ing?	Electricity ..... 11 Liquefied Petroleum Gas (LPG) ..... 21 Biogas ..... 22 Kerosene ..... 23 Charcoal ..... 31 Wood ..... 32 Crop residue/sawdust ..... 41 Animal waste ..... 51 None, no cooking ..... 61 Other (*specify*) _____ 96	11 HC8 21 HC8 22 HC8 61 HC9
HC7. In this household, is food cooked on an open fire, an open stove or a closed stove? *PROBE FOR TYPE*	Open fire ..... 1 Open stove/coal pot ..... 2 Closed stove ..... 3 Other (*specify*) _____ 6	
HC8. Is the cooking usually done in the house, in a separate building, or outdoors?	In the house ..... 1 In a separate build ing ..... 2 Outdoors ..... 3 Other (*specify*) _____ 6	

HC9. Does your household have: Electricity? Radio? Television? Computer Clock Mobile telephone? Fixed land line? Refrigerator? Video deck? Freezer DVD/VCD? Wood furniture?	Yes No Electricity ..... 1 2 Radio ..... 1 2 Television ..... 1 2 Computer ..... 1 2 Clock ..... 1 2 Mobile Telephone ..... 1 2 Fixed land line ..... 1 2 Refrigerator ..... 1 2 Video deck ..... 1 2 Freezer ..... 1 2 DVD/VCD ..... 1 2 Furniture 1 2	
HC10. Does any member of your household own: Bicycle? Motorcycle or scooter? Animal-drawn cart? Car or truck? Canoe/Boat without a motor? Canoe/Boat with a motor?	Yes No Bicycle ..... 1 2 Motorcycle/Scooter ..... 1 2 Animal drawn-cart ..... 1 2 Car/Truck ..... 1 2 Canoe/Boat without a motor ..... 1 2 Canoe/Boat with a motor 1 2	
HC11. Does any member of this household own any land that can be used for agriculture?	Yes ..... 1 No 2	2 HC13
HC12. How many hectares/acres/plots of agricultural land do members of this household own? IF MORE THAN 97, RECORD 97 IN RESPECTIVE BOXES	Hectares ..... 1 Acres ..... 2 Plots ..... 3 DK 998	
HC13. Does this household own any livestock, herds, farm animals or poultry?	Yes ..... 1 No 2	2 HC15H
HC14. How many of the following animals does this household have? Cattle? Horses, Donkeys, or Mules? Goats? Sheep? Pig? Other farm animal (*specify)* Chickens? Other poultry? (*specify)* Other? *(specify)* IF NONE, RECORD '0000'. IF MORE THAN 9997, RECORD '9997'. IF UNKNOWN, RECORD ' '9998'.	Cattle ..... ☐☐☐☐ Horses, Donkeys, or Mules ☐☐☐☐ Goats ..... ☐☐☐☐ Sheep ..... ☐☐☐☐ Pigs ..... ☐☐☐☐ Other farm animal ..... ☐☐☐☐ Chickens ..... ☐☐☐☐ Other poultry ..... ☐☐☐☐ Other (specify)_____ ☐☐☐☐	

HC15H. Dwelling located in or near: OBSERVE, AND CIRCLE ALL ITEMSTHAT DESCRIBE THE LOCATION OF DWELLING.	Landslide area ..... A Flood-prone area ..... B River bank ..... C Steep hill ..... D Garbage heap/pile ..... E Industrial pollution area ..... F Railway line ..... G Power plant ..... H Flyover ..... I Public toilet ..... J Poultry farm ..... K Piggery/Pen ..... L Mining/Quarrying ..... M Along the coast line ..... N None of the above ..... Y	
HC15I. Condition of dwelling: RECORD OBSERVATION. RECORD ALL THAT APPLY.	Cracks/openings in walls ..... A No windows ..... B Windows with brok en glass/no glass ..... C Visible holes in the roof ..... D Incomplete roof ..... E Insecure door ..... F No netting ..... G None of the above ..... Y	
HC15J. Dwelling surroundings: RECORD OBSERVATION. RECORD ALL THAT APPLY.	Very narrow passage between houses instead of road ..... A Too many power cables connecting to neighborhood's main distribution post .... B Choked drain ..... C Stagnant water ..... D Bushy surrounding ..... E None of the above ..... Y	

MODULE 5: INSECTICIDE TREATED MOSQUITO NETS — TN

TN1. Does your household have any mosquito net that can be used while sleeping?	Yes ..... 1 No 2	2 NEXT MODULE
TN2. How many mosquito nets does your household have? *IF 7 OR MORE NETS, RECORD '7'.*	Number of nets	
TN3. Is the net (are any of the nets) any of the following brands : *READ EACH BRAND NAME, SHOW PICTURE CARD, AND CIRCLE CODES FOR YES OR NO FOR EACH BRAND. IF POSSIBLE, OBSERVE THE NET TO VERIFY BRAND.*	Y N DK Long-lasting treated nets: Olyset ..... 1 2 8 Permanet ..... 1 2 8 Pre-treated nets: Dawa ..... 1 2 8 Dawa Plus ..... 1 2 8 Other nets: MOH Treated net ..... 1 2 8 Calico net ..... 1 2 8 Second-hand net ..... 1 2 8 Other *(specify)* _____ 1 2 8 DK brand 1 2 8	
TN3A. Where did you get the (NAME OF NET HIGHEST IN THE LIST OF NETS AVAILABLE IN THE HOUSEHOLD, IN TN3) mosquito net ? ASK QUESTION IN RELATION TO THE MOST EFFECTIVE MOSQUITO NET AVAILABLE IN THE HOUSEHOLD (CHECK TN3). IF THERE IS MORE THAN ONE NET IN THE SAME CATEGORY, ASK QUESTION REFERRING TO THE MOST RECENTLY OBTAINED NET.	Public sector Govt. hospital/clinic ..... 11 Govt. health centre ..... 12 Govt. health post ..... 13 Village health worker/CBA ..... 14 Mobile/outreach clinic ..... 15 Other public (*specify*) ..... 16 Private medical sector Private hospital/clinic ..... 21 Private physician ..... 22 Private pharmacy ..... 23 Mobile clinic ..... 24 Other private medical (*specify*) ..... 26 Other source Relative or friend ..... 31 Chemical shop ..... 32 Traditional practitioner ..... 33 Other (*specify*) ..... 96 DK 98	

TN3B. How much did you pay for the (*NAME OF NET HIGHEST IN THE LIST OF NETS AVAILABLE IN THE HOUSEHOLD, IN TN3*) mosquito net? ASK QUESTION IN RELATION TO THE MOST RECENT MOSQUITO NET AVAILABLE IN THE HOUSEHOLD (CHECK TN3). IF THERE IS MORE THAN ONE NET IN THE SAME CATEGORY, ASK QUESTION REFERRING TO THE MOST RECENTLY OBTAINED NET.	Ghana Cedis …… GHC ☐☐.☐☐ Free ..... 99.96 DK 99.98	
TN4. ***CHECK TN3*** *FOR BRAND OF NET(S). GO THROUGH THE ABOVE LIST IN ORDER UNTIL* ***ONE*** *BOX IS CHECKED AND FOLLOW INSTRUCTIONS:* *1. LONG-LASTING TREATED NET (OLYSET OR PERMANET) MENTIONED? GO TO NEXT MODULE* *2. PRE-TREATED NET (DAWA OR DAWA PLUS) MENTIONED? GO TO TN6* *3. OTHER NET (MOH TREATED, CALICO OR SECOND-HAND, OR OTHER (SPECIFY) MENTIONED? CONTINUE WITH TN5*		
TN5. When you got the (most recent) net, was it already treated with an insecticide to kill or repel mosquitoes?	Yes ..... 1 No ..... 2 DK/not sure 8	
TN6. How many months ago was the (most recent) net obtained? *IF LESS THAN 1 MONTH AGO, RECORD '00'.* *IF ANSWER IS "12 MONTHS" OR "1 YEAR", PROBE TO DETERMINE IF NET WAS OBTAINED EXACTLY 12 MONTHS AGO OR EARLIER OR LATER.*	Months ago ..... ☐☐ More than 24 months ago ..... 96 Not sure 98	
TN7. Since you got the net(s) has it (have any of these nets) ever been soaked or dipped in a liquid to kill/repel mosquitoes?	Yes ..... 1 No ..... 2 DK 8	2 NEXT MODULE 8 NEXT MODULE
TN8. How long ago was the most recent soaking/dipping done? *IF LESS THAN 1 MONTH, RECORD '00'.* *IF ANSWER IS "12 MONTHS" OR "1 YEAR", PROBE TO DETERMINE IF NET WAS TREATED EXACTLY 12 MONTHS AGO OR EARLIER OR LATER.*	Months ago ..... ☐☐ More than 24 months ago ..... 96 Not sure 98	

MODULE 6: WORKING CHILDREN — CL

TO BE ADMINISTERED TO MOTHER/CARETAKER OF EACH CHILD IN THE HOUSEHOLD ***AGE 5-14 YEARS***. *FOR HOUSEHOLD MEMBERS BELOW AGE 5 OR ABOVE AGE 14, LEAVE ROWS BLANK.*
Now I would like to ask about any work children in this household may do.

CL1. *Line no.* *COPY FROM HL1* CIRCLE LINE NO. OF APPLICA-BLE CHILD	CL2. *NAME* COPY FROM HL2 ON A RESPECTIVE LINE	CL3. During the past week, did (*NAME*) do any kind of work for someone who is not a member of this household? *IF YES*: for pay in cash or kind? 1 YES, FOR PAY (CASH OR KIND) 2 YES, UNPAID 3 NO **TO CL5**	CL4. *IF YES:* Since last (*DAY OF THE WEEK*), about how many hours did he/she do this work for someone who is not a member of this household? INCLUDE ALL HOURS AT ALL JOBS. IF LESS THAN 1 HOUR, RECORD '00' ***RECORD RESPONSE THEN CL.6***	CL5. At any time during the past year, did (*NAME*) do any kind of work for someone who is not a member of this household? *IF YES*: for pay in cash or kind? 1 YES, FOR PAY (CASH OR KIND) 2 YES, UNPAID 3 NO	CL6. During the past week, did (*NAME*) help with household chores such as shopping, collecting firewood, cleaning, fetching water, or caring for children? 1 YES 2 NO **TO CL8**	CL7. *IF YES*: Since last (*DAY OF THE WEEK*), about how many hours did he/she spend doing these chores?	CL8. During the past week, did (*NAME*) do any other family work (on the farm or in a business or selling goods in the street, road side or market?) 1 YES 2 NO NEXT MEMBER	CL9. *IF YES*: Since last (*DAY OF THE WEEK*), about how many hours did he/she do this work?
LINE NO.	NAME	PD UNPD NO	NO. HOURS	PD UP N	Y N	NO. HOURS	Y N	NO. HOURS
01		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
02		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
03		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
04		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
05		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
06		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
07		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
08		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
09		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
10		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
11		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
12		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
13		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
14		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____
15		1 2 3	____ ____	1 2 3	1 2	____ ____	1 2	____ ____

MODULE 7: CHILD DISCIPLINE

TABLE 1: CHILDREN AGED 2-14 YEARS ELIGIBLE FOR CHILD DISCIPLINE QUESTIONS

Review the household listing and list each of the children aged 2-14 years below in order according to their line number (HL1). Do not include other household members outside of the age range 2-14 years. Record the line number, name, sex, age, and the line number of the mother or caretaker for each child. Then record the total number of children aged 2-14 in the box provided (Cd7).

CD1. Rank no.	CD2. Line No. from HL1.	CD3. Name from HL2.	CD4. Sex from HL4.	CD5. Age from HL5.	CD6. Line no. of mother/ caretaker from HL7 or HL8.
	LINE NO.	NAME	SEX	CHILD'S AGE	LINE NO.
01					
02					
03					
04					
05					
06					
07					
08					
CD7.	TOTAL CHILDREN AGED 2-14 YEARS				

If there is only one child age 2-14 years in the household, then skip table 2 and go to Cd11.

TABLE 2: SELECTION OF RANDOM CHILD FOR CHILD DISCIPLINE QUESTIONS

Use this table 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. Look for the last digit of the household number 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 CD7 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 about whom the questions will be asked. Record the rank number in CD9 below. Finally, record the line number and name of the selected child in CD11 on the next page. Then, find the mother or primary caretaker of that child, and ask the questions, beginning with CD12.

CD8.	TOTAL NUMBER OF CHILDREN (2-14) IN THE HOUSEHOLD							
Last digit of the household number	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

CD9. *RECORD THE RANK NUMBER OF THE SELECTED CHILD*	RANK NUMBER OF CHILD..... ☐☐

MODULE 7: CHILD DISCIPLINE (cont'd.)		CD
*IDENTIFY ELIGIBLE CHLD **AGED 2 TO 14 YEARS** IN THE HOUSEHOLD USING THE TABLES ONTHE PRECEDING PAGE, ACCORDING TO YOUR INSTRUCTIONS. ASK TO INTERVIEW THEMOTHER OR PRIMARY CARETAKER OF THE SELECTED CHILD (IDENTIFIED BY THE LINE NUMBER IN CD6).*		
CD11. *WRITE NAME AND LINE NO. OF THE CHILD SELECTED FOR THE MODULE FROM CD3 AND CD2, BASED ON THE RANK NUMBER IN CD9.*	NAME: _____ LINE NUMBER: .... ☐☐	
CD12. All 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 y ou or anyone else in your household has used this method with (*NAME*) in the past month .		
CD12A. Took away privileges, forbade something *(NAME)* liked or did not allow him/her to leave house).	Yes ..... 1 No 2	
CD12B. Counselling /Explained why something (the beh avior) was wrong .	Yes ..... 1 No 2	
CD12C. Shook him/her.	Yes ..... 1 No 2	
CD12D. Shouted, yelled at or screamed at him/her.	Yes ..... 1 No 2	
CD12E. Gave him/her something else to do.	Yes ..... 1 No 2	
CD12F. Spanked, hit or slapped him/her on the bottom with bare hand.	Yes ..... 1 No 2	
CD12G. Hit him/her on the bottom or elsewhere on the body with something like a belt, hairbrush, stick or other hard object.	Yes ..... 1 No 2	
CD12H. Called him/her dumb, lazy, or another name, etc.	Yes ..... 1 No 2	
CD12I. Hit or slapped him/her on the face, head or ears.	Yes ..... 1 No 2	
CD12J. Hit or slapped him/her on the hand, arm, or leg.	Yes ..... 1 No 2	
CD12K. Beat him/her up with an implement (hit over and over as hard as one could).	Yes ..... 1 No 2	
CD 12L. Use non-verbal	Yes ..... 1 No 2	
CD13. Do you believe that in order to bring up (raise, educate) (*NAME*) properly, you need to physically punish him/her?	Yes ..... 1 No ..... 2 Don't know/No opinion 8	

MODULE 8: DISABILITY

DA

*TO BE ADMINISTERED TO CARETAKERS OF ALL CHILDREN **AGED 2 TO 9 YEARS** LIVING IN THE HOUSEHOLD. FOR HOUSEHOLD MEMBERS BELOW AGE 2 OR ABOVE AGE 9, LEAVE ROWS BLANK*

I would like to ask you if any child in this household aged 2 to 9 years has any of the health conditions I am going to mention to you.

DA1. *Line no.*	DA2. *CHILD'S NAME*	DA3. Compared with other children, does or did (*NAME*) have any serious delay in sitting, standing, or walking?	DA4. Compared with other children, does (*NAME*) have difficulty seeing, either in the daytime or at night?	DA5. Does (*NAME*) appear to have difficulty hearing? (uses hearing aid, hears with difficulty, completely deaf?)	DA6. When you tell (*NAME*) to do something, does he/she seem to understand what you are saying?	DA7. Does (*NAME*) have difficulty in walking or moving his/her arms or does he/she have weakness and/or stiffness in the arms or legs?	DA8. Does (*NAME*) sometimes have fits, become rigid, or lose consc-iousness?	DA9. Does (*NAME*) learn to do things like other children his/her age?	DA10. Does (*NAME*) speak at all (can he/she make him or herself understood in words; can say any recognizable words)?	DA11. ***3-9 YEARS:*** Is (*NAME'S*) speech in any way different from normal (not clear enough to be understood by people other than the immediate family)? **DA13**	DA12. ***AGE 2-ONLY:*** Can (*NAME*) name at least one object (for example, an animal, a toy, a cup, a spoon)?	DA13. Compared with other children of the same age, does (*NAME*) appear in any way mentally backward, dull or slow?
LINE	NAME	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N	Y N
01		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
02		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
03		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
04		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
05		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
06		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
07		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
08		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
09		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
10		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
11		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
12		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
13		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
14		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2
15		1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2	1 2

MODULE 9: NATIONAL HEALTH INSURANCE — NHIS

THIS MODULE IS TO BE ADMINISTERED TO ANY ADULT RESPONDENT:

NH1. Have you ever registered with the National Health Insurance Scheme?	Yes.....1 No 2	1 NH3
NH2. Why have you not registered with the National Health Insurance Scheme (NHIS)?		
NH2A. Have not heard of the National health Insurance Scheme (NHIS)	Not heard of the NHIS — Yes 1 No 2 DK 8	NEXT MODULE
NH2B. Premium too expensive	Premium too expensive — Yes 1 No 2 DK 8	
NH2C. Do not trust the National Health Insurance Scheme (NHIS)	Do not trust the NHIS — Yes 1 No 2 DK 8	
NH2D. Do not know where to register	Do not know where to register — Yes 1 No 2 DK 8	
NH2E. District office too far	District office too far — Yes 1 No 2 DK 8	
NH2F. Other (Specify)_____ *CIRCLE AS MANY AS POSSIBLE, THE RESPONSES GIVEN BY RESPONDENT*	Other (*specify*) ---------- Yes 1 No 2 DK 8	
NH3. 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 I T IS VALID FOR THIS YEAR*	Yes, card seen.....1 Yes, card not seen.....2 No 8	1 NH5 2 NH5
NH4. Why do you not have a valid National Health Insurance Scheme (NHIS) card?		
NH4A. Have registered but, have not paid full amount	Have registered, not paid fully — Yes 1 No 2 DK 8	NH4A: 1 NH8
NH4B. Have registered but, have not received card	Have registered but, card not Received — Yes 1 No 2 DK 8	NH4B: 1 NH8
NH4C. Have not renewed my registration	Not renewed registration — Yes 1 No 2 DK 8	NH4C: 1 NH5
NH4D. Registered but, in the wa iting period	Registered but, in waiting period — Yes 1 No 2 DK 8	NH4D: 1 NH8
Nh4E. *OTHER (SPECIFY)*----------	Other (*specify*) ---------- Yes 1 No 2 DK 8	
NH5. Has joining the National Health Insurance Scheme been beneficial to you?	Yes ..... 1 No 2	2 NH7

NH6. What has been the benefit(s)?		Yes	No	DK	
NH6A. Save d money from paying hospital bills	Saved money	1	2	8	NH8
NH6B. Did not need to borrow to pay for hospital bills	Did not borrow money	1	2	8	
NH6C. Was not afraid using health facilities because of cost	Not afraid using health facilities	1	2	8	
NH6D. Can now use health services to prevent illness becoming severe	Use health services	1	2	8	
NH6E. Other (*specify)*_____ _____	Others *(specify)*_____	1	2	8	
CIRCLE AS MANY AS POSSIBLE THE RESPONSES GIVEN BY RESPONDENT					
NH7. Why haven't you benefited?		Yes	No	DK	
NH7A. Has not fallen sick	Not fallen sick	1	2	8	
NH7B. Health facility is far from where I live	Health facility is far	1	2	8	
NH7C. Transport cost to facility is high	Transport cost to facility high	1	2	8	
NH7D. Did not receive proper treatment at health facility	Did not receive proper treatment	1	2	8	
NH7E. Still pay for some services (e.g. drugs)	Pays for some services	1	2	8	
NH7F. In waiting period	In waiting period	1	2	8	
NH7G. Payment not in full	Payment not in full	1	2	8	
NH7H. Other (*specify)*----------	Other (*specify)* ----------	1	2	8	
CIRCLE AS MANY AS POSSIBLE THE RESPONSES GIVEN BY RESPONDENT					
NH8. Will you continue to be a member of the National Insurance Scheme?	Yes .... 1 No 2				1 NEXT MODULE
NH9. Why would you not continue to be a member of the National Insurance Scheme?		Yes	No	DK	
NH9A.I don't see why I should continue	Don't see why I should continue	1	2	8	
NH9B. Has not been sick	Not been sick	1	2	8	
NH9C. Amount (premium) being paid is high	Premium too high	1	2	8	
NH9D. Not getting the services I needed	Not getting services I need	1	2	8	
NH9E. I still buy drugs after the service	Still buys drugs after service	1	2	8	
NH9F. Other (Sp ecify)_____	Other (Specify)_____	1	2	8	

MODULE 10: SALT IODIZATION	SI
SI1. We would like to check whether the salt used in your household is iodized. May I see a sample of the salt used to cook the main meal eaten by members of your household last night? *ONCE YOU HAVE EXAMINED THE SALT, CIRCLE NUMBER THAT CORRESPONDS TO TEST OUTCOME.*	Not iodized 0 PPM ..... 1 Less than 15 PPM ..... 2 15 PPM or more ..... 3 No salt in home ..... 4 Salt not tested 5

SI2. *DOES ANY ELIGIBLE WOMAN AGE 15-49 RESIDE IN THE HOUSEHOLD?*
CHECK HOUSEHOLD LISTNG, COLUMN HL6. *YOU SHOULD HAVE A QUESTIONNAIRE WITH THE INFORMATION PANEL FILLED IN FOR EACH ELIGIBLE WOMAN.*

YES. GO TO QUESTIONNAIRE FOR INDIVIDUAL WOMEN
TO ADMINISTER THE QUESTIONNAIRE TO THE FIRST ELIGIBLE WOMAN

NO. CONTINUE.

SI3. *DOES ANY CHILD UNDER THE AGE OF 5 RESIDE IN THE HOUSEHOLD?*
CHECK HOUSEHOLD LISTNG, COLUMN HL8. *YOU SHOULD HAVE A QUESTIONNAIRE WITH THE INFORMATION PANEL FILLED IN FOR EACH ELIGIBLE CHILD.*

YES. GO TO QUESTIONNAIRE FOR CHILDREN UNDER FIVE
TO ADMINISTER THE QUESTIONNAIRE TO MOTHER OR CARETAKER OF THE FIRST ELIGIBLE CHILD

NO. END THE INTERVIEW BY THANKING THE RESPONDENT FOR HIS/HER COOPERATION.

GATHER TOGETHER ALL QUESTIONNAIRES FOR THIS HOUSEHOLD AND TAILY THE NUMBER OF INTERVIEWS COMPLETED ON THE COVER PAGE.

IDENTIFICATION PANEL	WM

THIS MODULE IS TO BE ADMINISTERED TO ALL WOMEN AGE 15 THROUGH 49 (SEE COLUMN HL6 OF HH LISTING).
FILL IN ONE FORM FOR EACH ELIGIBLE WOMAN
FILL IN THE CLUSTER AND HOUSEHOLD NUMBER, AND THE NAME AND LINE NUMBER OF THE WOMAN IN THE SPACE BELOW.
FILL IN YOUR NAME, NUMBER AND THE DATE.

WM1. ENUMERATION (E. A.) NUMBER: ☐☐☐	WM2. HOUSEHOLD NUMBER ☐☐
WM3. WOMAN'S NAME: _____	WM4. WOMAN'S LINE NUMBER: ☐☐
WM5. INTERVIEWER NAME AND NUMBER: _____ ☐☐☐	WM6. DAY/MONTH/YEAR OF INTERVIEW: ☐☐ ☐☐ 2008
WM7. RESULT OF WOMEN'S INTERVIEW	COMPLETED ..... 1 NOT AT HOME ..... 2 REFUSED ..... 3 PARTLY COMPLETED ..... 4 INCAPACITATED ..... 5 OTHER (*specify*) _____ 6

REPEAT GREETING IF NOT ALREADY READ TO THIS WOMAN:

Good ……..! My na me is …… and I am here on behalf of the Ghana Statistical Service, Ministry of Health and UNICEF Ghana. We are working on a survey concerned with family health and education. You have been selected as one of the respondents to this survey and we would very much appreciate your participation. The interview will take about 30 minutes. All the information we obtain will remain strictly confidential and your answers will never be identified.

IF PERMISSION IS GIVEN, BEGIN THE INTERVIEW. IF THE WOMAN DOES NOT AGREE TO CONTINUE, THANK HER, COMPLETE WM7, AND GO TO THE NEXT INTERVIEW. DISCUSS THIS RESULT WITH YOUR SUPERVISOR FOR A FUTURE REVISIT.

WM8. In what month and year were you born?	DATE OF BIRTH: Month ..... ☐☐ DK month ..... 98 Year ..... ☐☐☐☐ DK year 9998	
WM9. How old were you at your last birthday?	AGE (IN COMPLETED YEARS) ..... ☐☐	
WM10. Have you ever attended school ?	Yes ..... 1 No 2	2 WM14

WM11. What is the highest level of school you attended: primary, secondary, or higher ?	Pre-school……00 Primary ..... 10 Middle/JSS ..... 20 Secondary/SSS ..... 30 Voc./Comm./Tech. ..... 40 Post Sec ..... 50 Tertiary ..... 60 Other (specify) ..... 96 DK 98	
WM12. What is the highest grade you completed at that level?	Grade ..... ☐☐	
WM13. ***CHECK WM11:*** *SECONDARY/VOC./TECH./COMM. OR HIGHER* *GO TO WM15* *PRIMARY/MIDDLE/JSS.* *CONTINUE WITH WM14*		
WM14. Now I would like you to read this sentence to me. *SHOW SENTENCES TO RESPONDENT.* *IF RESPONDENT CANNOTREAD WHOLE SENTENCE, PROBE:* Can you read part of the sentence to me? *EXAMPLE SENTENCES FORLITERACY TEST:* *1. The child is reading a book.* *2. The rains came late this year.* *3. Parents must care for their children.* *4. Farming is hard work.*	Cannot read at all ..... 1 Able to read only parts of sentence ..... 2 Able to read whole sentence ..... 3 No sentence in required languag e_____ 4 *(specify language)* Blind/mute, visually/speech impaired 5	
WM15. What is your religious affiliation?	Catholic ..... 11 Protestant ..... 12 Pentecostal/Charismatic ..... 13 Deeper Life ..... 14 Jehovah Witness ..... 15 SDA ..... 16 Moslem ..... 21 Traditional ..... 31 Spiritualist ..... 32 No Religion ..... 41 Other (*specify*) _____ 96	
WM16. To which ethnic group do you belong?	Akan ..... 11 Ga/Dangme ..... 12 Ewe ..... 13 Guan ..... 14 Gruma ..... 15 Mole Dagbani ..... 21 Grusi ..... 22 Mande ..... 23 Other ethnic group (*specify*) _____ 96	

WM16A. What is your mother tongue/native language?	Asante……..... .11 Fanti ……12 Akuapem……...13 Sefwi ……14 Brong ……15 Nzema ……16 Ga.....21 Dangme.....22 Ewe .....31 Guan .....41 Buli .....51 Mampruli.....52 Frafra/Gruni.....53 Kassem.....54 Dagbani.....55 Wali/Dagari.....56 Sissali.....57 Kokomba.....58 Hausa.....59 Other language (*specify*) _____ 96 DK…….....98	
WM16B. Which other language(s) do you speak? *CIRCLE ALL ANSWERS GIVEN BY RESPONDENT*	Asante……..…A Fanti ……B Akuapem……C Sefwi ……D Brong ……E Nzema ……F Ga..... .....G Dangme.....H Ewe .....I Guan .....J Buli ....K Mampruli.....L Frafra/Gruni.....M Kassem.....N Dagbani..... .....O Wali/Dagari.....P Sissali.....Q Hausa……..R English.....S French..... .....T Other language (*specify*) _____ X None…….....Y	

MODULE 1: INFANT/CHILD MORTALITY		CM
*THIS MODULE IS TO BE ADMINISTERED TO ALL WOMEN AGE **15-49**.* *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? *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 ..... 1 No 2	2 MARRIAGE /UNION MODULE
CM2A. What was the date of your first birth? I mean the very first time you gave birth, even if the child is no longer living, or whose father is not your current partner . *SKIP TO CM3 ONLY IF YEAR OF FIRST BIRTH IS GIVEN..*	Date of first birth Day ..... ☐☐ DK day ..... 98 Month ..... ☐☐ DK month ..... 98 Year ..... ☐☐☐☐ DK year 9998	 CM3 CM2B
CM2B. How many years ago did you have your first birth?	Completed years since first birth ..... ☐☐	
CM3. Do you have any sons or daughters to whom you h ave given birth who are now living with you?	Yes ..... 1 No 2	2 CM5
CM4. How many sons live with you? How many daughters live with you? (IF NONE, WRITE 00)	Sons at home ..... ☐☐ Daughters at home ..... ☐☐	
CM5. Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	Yes ..... 1 No 2	2 CM7
CM6. How many sons are alive but do not live with you? How many daughters are alive but do not live with you? (IF NONE, WRITE 00)	Sons elsewhere ..... ☐☐ Daughters elsewhere ..... ☐☐	
CM7. Have you ever given birth to a boy or girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	Yes ..... 1 No 2	 2 CM9
CM8. How many boys have died? How many girls have died?	Boys dead ..... ☐☐ Girls dead ..... ☐☐	
CM9. *SUM ANSWERS TO CM4, CM6, AND CM8.*	Sum ..... ☐☐	
CM10. Just to make sure that I have this right, you have had in total (*TOTAL NUMBER*) births during your life. Is this correct? *YES. GO TO CM11A* *NO. CHECK RESPONSES AND MAKE CORRECTIONS BEFORE PROCEEDING TO CM11A*		

CM11A. **Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.**
RECORD NAMES OF ALL THE BIRTHS IN CM11B. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.
(IF THERE ARE MORE THAN 12 BIRTHS, USE AN ADDITIONAL QUESTIONNAIRE, STARTING WITH THE SECOND ROW).

CM11B What name was given to your (first/next) baby? (NAME)	CM11C Were any of these births twins?	CM11D Is (NAME) a boy or a girl?	CM11E In what month and year was (NAME) born? PROBE: What is his/her birthday?	CM11F Is (NAME) still alive?	CM11G. IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COM-PLETED YEARS.	CM11H IF ALIVE: Is (NAME) living with you?	CM11I IF ALIVE: RECORD HOUSE-HOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSE-HOLD).	CM11J IF DEAD: How old was (NAME) when he/she died? IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	CM11K Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
01	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2 ☐☐☐ YEARS . . . 3 ☐☐☐	
02	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
03	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
04	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . .3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
05	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . .3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
06	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . .3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
07	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . 1 . NO . . . 2 → CM11J	AGE IN YEARS ☐☐ →	YES . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . .3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH

CM11B What name was given to your next baby? (NAME)	CM11C Were any of these births twins?	CM11D Is (NAME) a boy or a girl?	CM11E In what month and year was (NAME) born? PROBE: What is his/her birthday?	CM11F Is (NAME) still alive?	CM11G. IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COM-PLETED YEARS.	CM11H IF ALIVE: Is (NAME) living with you?	CM11I IF ALIVE: RECORD HOUSE-HOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSE-HOLD).	CM11J IF DEAD: How old was (NAME) when he/she died? IF '1 YR', PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	CM11K Were there any other live births between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
08	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . . 1 NO . . . . 2 → CM11J	AGE IN YEARS ☐☐ ↓	YES . . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
09	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . . 1 NO . . . . 2 → CM11J	AGE IN YEARS ☐☐ ↓	YES . . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
10	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . . 1 NO . . . . 2 → CM11J	AGE IN YEARS ☐☐ ↓	YES . . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
11	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . . 1 NO . . . 2 → CM11J	AGE IN YEARS ☐☐ ↓	YES . . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
12	SING 1 MULT 2	BOY 1 GIRL 2	MONTH ☐☐ YEAR ☐☐☐☐	YES . . . 1 NO . . . 2 → CM11J	AGE IN YEARS ☐☐ ↓	YES . . . . 1 NO 2	LINE NUMBER ☐☐ (CM11K)	DAYS . . . . 1 ☐☐☐ MONTHS . 2. ☐☐☐ YEARS . . 3 ☐☐☐	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH

CM11L	Have you had any live births since the birth of (NAME OF LAST BIRTH)? IF YES, RECORD BI RTH(S) IN TABLE. 1 2
CM11M	COMPARE CM9 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK: NUMBERS ARE SAME ☐↓ NUMBERS ARE DIFFERENT ☐→ (PROBE AND RECONCILE)
	CHEC K: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED. FOR EACH BIRTH SINCE JANUARY 2002 : MONTH AND YEAR OF BIRTH ARE RECORDED. FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED. FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED. FOR AGE AT DEATH 12 MONTHS OR 1 YEA R: PROBE TO DETERMINE EXACT NUMBER OF MONTHS. ☐☐☐☐☐

CM11O . *CHECK* ***CM11J*** *: DID CHILD DEATH OCCUR WITHIN THE LAST 2 YEARS, THAT IS, SINCE (DAY AND MONTH OF INTERVIEW IN 2006)?*

NO DEATH IN LAST 2 YEARS. *GO TO CM12*

YES, DEATH IN LAST 2 YEARS. *CONTINUE WITH CM11 P*

Name of child _____

CM 11P. Was child registered with the Deaths Registry when he/she died?	Yes ..... 1 No ..... 2 DK..... 8	

CM12. ***CHECK CM11E:*** *DID THE WOMAN'S LAST BIRTH OCCUR WITHIN THE LAST 2 YEARS, THAT IS, SINCE (DAY AND MONTH OF INTERVIEW IN 2006)?*

IF CHILD HAS DIED, TAKE SPECIAL CARE WHEN REFERRING TO THIS CHILD BY NAME IN THE FOLLOWING MODULES.

NO LIVE BIRTH IN LAST 2 YEARS. *GO TO MARRIAGE/UNION MODULE.*

YES, LIVE BIRTH IN LAST 2 YEARS. *CONTINUE WITH CM13*

Name of child _____

CM13. At the time you became pregnant with (*NAME*), did you want to become pregnant then, did you want to wait until later, or did you want no (more) children at all?	Then ..... 1 Later ..... 2 No more 3

MODULE 2 : TETANUS TOXOID (TT) — TT

THIS MODULE IS TO BE ADMINISTERED TO ALL WOMEN WITH A LIVE BIRTH IN THE 2 YEARS PRECEDING DATE OF INTERVIEW.

TT1. Do you have a card or other document with your own immunisations listed? *IF A CARD IS PRESENTED, USE IT TO ASSIST WITH ANSWERS TO THE FOLLOWING QUESTIONS*	Yes (card seen) ..... 1 Yes (card not seen) ..... 2 No ..... 3 DK 8	
TT2. When you were pregnant with your last child, did you receive any injection to prevent your last child from getting tetanus that is convulsions after birth (an anti-tetanus shot, an injection at the top of the arm or shoulder)?	Yes ..... 1 No ..... 2 DK 8	 2 TT5 8 TT5
TT3. *IF YES:* How many times did you receive this anti-tetanus injection during your last pregnancy?	No. of times ..... ☐ DK 8	 8 TT5
TT4. *HOW MANY TT DOSES DURING LAST PREGNANCY WERE REPORTED IN TT3?* *AT LEAST TWO TT INJECTIONS DURING LAST PREGNANCY* *GO TO NEXT MODULE* *FEWER THAN TWO TT INJECTIONS DURING LAST PREGNANCY.* *CONTINUE WITH TT5*		
TT5. Did you receive any tetanus toxoid injection at any ti me before your last pregnancy?	Yes ..... 1 No ..... 2 DK 8	 2 NEXT MODULE 8 NEXT MODULE
TT6. How many times did you receive it?	No. of times ..... ☐☐	
TT7. In what month and year did you receive the last anti-tetanus injection before that last pregnancy? *SKIP TO NEXT MODULE ONLY IF YEAR OF INJECTION IS GIVEN. OTHERWISE, CONTINUE WITH TT8.*	Month ..... ☐☐ DK month ..... 98 Year ..... ☐☐☐☐ DK year 9998	 NEXT MODULE TT8
TT8. How many years ago did you receive the last anti-tetanus injection before that last pregnancy?	Years ago ..... ☐☐	

MODULE 3: 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 CM12 AND RECORD NAME OF LAST-BORN CHILD HERE _____. USE THIS CHILD'S NAME IN THE FOLLOWING QUESTIONS, WHERE INDICATED.

MN1. In the first two months after your last birth [*THE BIRTH OF NAME*], did you receive a Vitamin A dose like this? *SHOW 200,000 IU CAPSULES.*	Yes ..... 1 No ..... 2 DK 8	
MN2. Did you see anyone for an tenatal care for this pregnancy? *IF YES*: Whom did you see? 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 Trained Traditional birth attendant ..... E Untrained Traditional birth attendant ..... F Community health worker ..... G Relative/friend ..... H Other (*specify*) _____ X No one ..... Y	Y MN7
MN2AA. How many months pregnant were you when you first received antenatal care for this pregnancy?	Months ..... ☐☐ Don't Know 98	
MN2BB. How many times did you receive antenatal care during this pregnancy?	Number of times ..... ☐☐ Don't Know 98	
MN3. As part of your antenatal care, were any of the following done at least once?	Yes No	
MN3A. Were you weighed?	Weight 1 2	
MN3B. Was your blood press ure measured?	Blood pressure 1 2	
MN3C. Did you give a urine sample?	Urine sample 1 2	
MN3D. Was your blood sample taken?	Blood sample 1 2	
MN4. During any of the antenatal visits for the pregnancy, were you given any information or counseled about HIV/AIDS virus?	Yes ..... 1 No ..... 2 DK 8	
MN5. I don't want to know the results, but were you tested for HIV/AIDS as part of your antenatal care?	Yes ..... 1 No ..... 2 DK 8	2 MN6A 8 MN6A
MN5A. When was the last time you were tested?	Less than 12 months ..... 1 12-23 months ..... 2 2 years or more 3	

MN6. I don't want to know the results, but did you get the results of the test?	Yes ..... 1 No ..... 2 DK 8	
MN6A. During this pregnancy, did you take any medicine in order to prevent you from getting malaria?	Yes ..... 1 No ..... 2 DK 8	 2 MN6H 8 MN6H
MN6B. Which medicines did you take to prevent malaria?	SP/Fansidar ..... A Chloroquine ..... B Arthesonate-Amodiaquine.....C	
CIRCLE ALL MEDICINESTAKEN. IF TYPE OF MEDICINE IS NOT DETERMINED, SHOW TYPICAL ANTI-MALARIA TO RESPONDENT. MN6C. ***CHECK MN6B*** *FOR MEDICINE TAKEN:* *SP/FANSIDAR TAKEN. CONTINUE WITH MN6CA* *SP/FANSIDAR NOT TAKEN. GO TO MN6H*	Other (*specify*) _____ X DK ..... Z	
MN6CA. How many months were you pregnant when you first took SP/Fansidar?	Up to 4 months ..... 1 4 – 9 months ..... 2 After 9 months 3	
MN6D. How many times did you take SP/Fansidar during this pregnancy to prevent malaria?	Number of times ..... ☐	
MN6E. Was it taken in presence of health worker?	Yes ..... 1 No 2	
MN6F. Did you experience any side effects?	Yes ..... 1 No 2	 2 MN6H
MN6G. What kind of si de effects did you experience?	Skin rashes ..... A Swellings of face, hands, feet, etc ..... B Itching ..... C Yellow colouration of urine/eyes ..... D Other (*specify*) _____ X	
MN6H. The last time you were pregnant, did you sleep under a treated bednet?	Yes ..... 1 No 2	
MN6I. Did you sleep under a treated bednet last night?	Yes ..... 1 No 2	
MN7. Who assisted with the delivery of your last child (*NAME*)? Anyone else? *PROBE FOR THE TYPE OFPERSON ASSISTING AND CIRCLE ALL ANSWERS GIVEN.*	Health professional: Doctor ..... A Nurse/midwife ..... B Auxiliary midwife ..... C Other person Trained Traditional birth attendant ..... E Untrained Traditional birth attendant ..... F Community health worker ..... G Relative/friend ..... H Other (*specify*) _____ X No one ..... Y	

MN8. Where did you give birth to (*NAME*)? *IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE BELOW. PROBE TO IDENTIFY THE TYPE OFSOURCE AND CIRCLE THE APPROPRIATE CODE.* _____ *(NAME OF PLACE)*	Home Your home ..... 11 Other home ..... 12 Public sector Govt. hospital/polyclinic ..... 21 Govt. clinic/health centre ..... 22 Other public (*specify*) _____ 26 Private Medical Sector Private hospital ..... 31 Private clinic ..... 32 Private maternity home ..... 33 Other private (*specify*) _____ 36 Other (*specify*) _____ 96	
MN9. In your opinion when your last child (*NAME*) was born, was he/she very large, larger than average, average, smaller than average, or very small?	Very large ..... 1 Larger than average ..... 2 Average ..... 3 Smaller than average ..... 4 Very small ..... 5 DK 8	
MN10. Was (*NAME*) weighed at birth?	Yes ..... 1 No ..... 2 DK 8	2 MN12 8 MN12
MN11. How much did (*NAME*) weigh? *RECORD WEIGHT FROM HEALTH CARD, IF AVAILABLE*	From card ..... 1 (kgs) ☐☐.☐ From recall ..... 2 (kgs) ☐☐.☐ DK 9998	
MN12. Did you ever breastfeed (*NAME*)?	Yes ..... 1 No 2	2 NEXT MODULE
MN13. How long after birth did you first put (*NAME*) to the breast? *IF LESS THAN1 HOUR, RECORD '00' HOURS.* *IF LESS THAN24 HOURS, RECORD HOURS* *OTHERWISE, RECORD DAYS.*	Immediately ..... 000 Hours ..... 1 ☐☐ *or* Days ..... 2 ☐☐ Don't know/remember 998	

MODULE 4: MARRIAGE/UNION		MA
MA1. Are you currently married or living together with a man as if married?	Yes, currently married ..... 1 Yes, living with a man ..... 2 No, not in union 3	3 MA3
MA2. How old was your husband/partner on his last birthday?	Age in years ..... ☐☐ DK 98	
MA2A. Besides yourself, does your husband/partner have any oth er wives?	Yes ..... 1 No ..... 2 DK.....98	2 MA5 2 MA5
MA2B. How many other wives does he have?	Number ..... ☐☐ DK 98	MA5 98 MA5
MA3. Have you ever been married or lived together with a man?	Yes, formerly married ..... 1 Yes, formerly lived with a man ..... 2 No 3	3 NEXT MODULE
MA4. What is your marital status now: are you widowed, divorced or separated?	Widowed ..... 1 Divorced ..... 2 Separated 3	
MA5. Have you been married or lived with a man only once or more than once?	Only once ..... 1 More than once 2	
MA6. In what mon th and year did you first marry or start living with a man as if married?	Month ..... ☐☐ DK month ..... 98 Year ..... ☐☐☐☐ DK year 9998	
MA7. ***CHECK MA6:*** *BOTH MONTH AND YEAR OF MARRIAGE/UNION KNOWN? GO TO NEXT MODULE* *EITHER MONTH OR YEAROF MARRIAGE/UNION NOT KNOWN? CONTINUE WITHMA8*		
MA8. How old were you when you started living with your first husband/partner?	Age in years ..... ☐☐	

MODULE 5: SECURITY OF TENURE FOR THE WOMEN		ST
ST1. Do you feel secure from eviction from this dwelling?	Yes ..... 1 No ..... 2 DK 8	1 NEXT MODULE 8 NEXT MODULE
ST1A. What is your reason for being insecure?	Husband is sole provider ..... 11 Marriage not registered/recognised ..... 12 No where to go ..... 13 Can't afford accommodation ..... 14 Not working ..... 15 No source of income 16 Other (*specify*) 96	

MODULE 6: CONTRACEPTION		CP
CP1. I would like to talk with you about another subject – family planning – and your reproductive health . Are you pregnant now?	Yes, currently pregnant ..... 1 No ..... 2 Unsure or DK 8	 2 CP2 8 CP2
CP1A. At the time you became p regnant did you want to become pregnant then, did you want to wait until later, or did you not want to have any more children?	Then.....1 Later.....2 Not want more children.....3	CP4B
CP2. Some people use various ways or methods to delay or avoid a pregnancy. Are you currently doing something or using any method to delay or avoid getting pregnant?	Yes ..... 1 No 2	 2 NEXT MODULE
CP3. Which method are you using? *DO NOT PROMPT.* *IF MORE THAN ONE METHOD IS MENTIONED, CIRCLE EACH ONE.*	Female sterilization ..... A Male sterilization ..... B Pill ..... C IUD ..... D Injections ..... E Implants ..... F Male condom ..... G Female condom ..... H Diaphragm ..... I Foam/jelly ..... J Lactational amenorrhoea method (LAM) ..... K Periodic abstinence ..... L Withdrawal ..... M Other (*specify*) _____ X	
CP4A. Now I would like to ask some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? CP4B. *IF CURRENTLY PREGNANT:* Now I would like to ask some questions about the future. After the child y ou are now expecting, would you like to have another child, or would you prefer not to have any (more) children?	Have (a/another) child ..... 1 No more/none ..... 2 Says she cannot get pregnant ..... 3 Undecided/don't know 8	1 CP4C 2 CP4D 3 NEXT MODULE 8 CP4D
CP4C. How long would you like to wait before the birth of (a/another) child?	Months ..... 1 ☐☐ Years ..... 2 ☐☐ Soon/now ..... 993 Says she cannot get pregnant ..... 994 After marriage ..... 995 Other ..... 996 Don't know 998	 994 NEXT MODULE

CP4D. **CHECK CP1:**

CURRENTLY PREGNANT? *GO TO NEXT MODULE*

NOT CURRENTLY PREGNANT OR UNSURE? *CONTINUE WITH CP4E*

CP4E. Do you think you are physically able to get pregnant at this time?	Yes	1
	No	2
	DK	8

MODULE 7: FEMALE GENITAL MUTILATION/CUTTING		FG
FG1. Have you ever heard of female circumcision?	Yes ..... 1 No 2	1 FG3
FG2. In a number of countries, there is a practice in which a girl may have part of her genitals cut. Have you ever heard about this practice?	Yes ..... 1 No 2	2 NEXT MODULE
FG3. Have you yourself ever been circumcised?	Yes ..... 1 No 2	2 FG8
FG4. Now I would like to ask you what was done to you at this time . Was any flesh removed from the genital area?	Yes ..... 1 No ..... 2 DK 8	1 FG6
FG5. Was the genital area just nicked without removing any flesh?	Yes ..... 1 No ..... 2 DK 8	
FG6. Was the genital ar ea sewn closed (or 'sealed')?	Yes ..... 1 No ..... 2 DK 8	
FG7. Who circumcised you?	Traditional persons Traditional 'circumciser' ..... 11 Trained TBA ..... 12 Untrained TBA ..... 13 Other traditional (*specify*) _____ 16 Health professional Doctor ..... 21 Nurse/midwife ..... 22 Other health professional (*specify*) _____ 26 DK 98	
FG7A. What tool/object did this person use for the circumcision?	Razor blades .....1 Knives (specially designed for this).....2 Pieces of glass.....3 Scissors.....4 Surgical blades.....5 Others (*Specify)* ---------- ---------- 6 DK.....8	
FG8. *THE FOLLOWING QUESTIONS APPLY ONLY TO WOMEN WHO HAVE AT LEAST ONE LIVING DAUGHTER* ***CHECK CM4 AND CM6****, CHILD MORTALITY MODULE: WOMAN HAS LIVING DAUGHTER?* *YES. CONTINUE WITH FG9* *NO. GO TO FG16*		
FG9. Have any of your daughters been circumcised? IF YES, how many?	Number of daughters circumcised: . ☐☐ No daughters circumcised 00	00 FG16
FG10. To which of your daughters did this happen most recently?	Name of daughter: _____	

FG11. Now I would like to ask you what was done to (NAME) at that time. Was any flesh removed from the genital area?	Yes ..... 1 No ..... 2 DK 8	1 FG13
FG12. Was the genital area just nicked without removing any flesh?	Yes ..... 1 No ..... 2 DK 8	
FG13. Was the genital area sewn closed (or 'sealed')?	Yes ..... 1 No ..... 2 DK 8	
FG14. How old was (*NAME*) when this occurred? *IF THE RESPONDENT DOES NOT KNOW THE AGE, PROBE TO GET AN ESTIMATE.*	Daughter's age at circumcision..... ☐☐ DK 98	
FG15. Who did the circumcision?	Traditional persons Traditional 'circumciser' ..... 11 Trained TBA ..... 12 Untrained TBA ..... 13 Other traditional (*specify*)_____ 16 Health professional Doctor ..... 21 Nurse/midwife ..... 22 Other health professional (*specify*)_____ 26 DK 98	
FG16. Do you think this practice should be continued or should it be discontinued?	Continued ..... 1 Discontinued ..... 2 Depends ..... 3 DK 8	2 FG16B 8 NEXT MODULE
FG16A. What is your reason why it should be continued?	Religious ..... 1 Traditional ..... 2 Other *(specify)* _____ 6	1 NEXT MODULE 2 NEXT MODULE 6 NEXT MODULE
FG16B. What is your reason to discontinue? *PROBE FOR MORE REASONS AND CIRCLE ALL ANSWERS GIVEN.*	Religious ..... A Traditional ..... B Infertility ..... C Infection ..... D Difficulty in labour ..... E Bleeds to death..... F Destroys the feeling sensation ..... G Harmful..... H Other (*specify)* X	

MODULE 8: ATTITUDETOWARDS DOMESTIC VIOLENCE					DV
DV1. Sometimes a husband is angry/provoked or angered by things t hat his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:		Yes	No	DK	
DV1A. If she goes out without telling him?	Goes out without telling	1	2	8	
DV1B. If she neglects the children?	Neglects children	1	2	8	
DV1C. If she argues with him?	Argues.....	1	2	8	
DV1D. If she refuses se x with him?	Refuses sex	1	2	8	
DV1E. If she burns the food?	Burns food	1	2	8	
DV1F. If she insults him?	Insults.....	1	2	8	
DV1G. If she refuses to give him food?	Refuses to give food	1	2	8	
DV1H. If there is another partner?	Another partner	1	2	8	
DV1I. If she refuses to go to the farm	Refuses to go to the farm……1		2	8	
DV1J. If she is disrespectful	Disrespectful……..1		2	8	
DV1I. Other (specify)	Other (specify) _____	1	2	8	

MODULE 9: SEXUAL BEHAVIOUR (WOMEN AGE 15-49) SB

CHECK FOR THE PRESENCE OF OTHERS. BEFORE CONTINUING, ENSURE PRIVACY.

SB1. Now I need to ask you some questions about sexual activity in order to gain a better understa nding of some family life issues. The information you supply will remain strictly confidential . How old were you when you first had sexual intercourse (if ever)?	Never had intercourse ..... 00 Age in years at first sex ..... ☐☐ First time when started living w ith (first) husband/partner 95	00 NEXT MODULE
SB2. 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 NEXT MODULE
SB3. The last time you had sexual intercourse was a condom used?	Yes .... 1 No 2	2 SB3B
SB3A. What was the main reason for using a condom?	To prevent STD/HIV .... 1 To prevent pregnancy ..... . 2 To prevent both STD/HIV and pregnancy .... 3 Did not trust partner/felt partner had other partners .... 4 Partner requested/insisted ..... 5 Other (*specify*) _____ 6 DK 8	SB4
SB3B. What is your main reason for not using a condom?	Not afraid of contracting ST Ds/AIDS……...01 To make it more enjoyable……02 Wants to get pregnant……03 I trust my partner……....04 Partner refused ……..…...05 Religious reasons……06 Traditional reasons……07 Others *(specify)*_____ 96 DK……98	
SB4. What is your relationship to the man with whom you last had sexual intercourse? *IF MAN IS 'BOYFRIEND' OR 'FIANCÉE', ASK:* Was your boyfriend/fiancée living with you when you last had sex? *IF 'YES', CIRCLE 1 .IF 'NO', CIRCLE 2.*	Spouse / cohabiting partner ..... 1 Man is boyfriend / fiancée ..... 2 Other friend .... 3 Casual acquaintance .... 4 Paid sex .... 5 Other (*specify*) _____ 6	1 SB6
SB5. How old is this person? *IF RESPONSE IS DK, PROBE:* About how old is this person?	Age of sexual partner ..... ☐☐ DK 98	
SB6. Have you had sex with any other man in the last 12 months?	Yes .... 1 No 2	2 NEXT MODULE

SB7. The last time you had sexual intercourse with this other man, was a condom used?	Yes ..... 1 No 2	
SB8. What is your relationship to this man? *IF MAN IS 'BOYFRIEND' OR 'FIANCÉE', ASK:* Was your boyfriend/fiancée living with you when you last had sex? *IF 'YES', CIRCLE 1. IF 'NO', CIRCLE 2.*	Spouse / cohabiting partner ..... 1 Man is boyfriend / fiancée ..... 2 Other friend ..... 3 Casual acquaintance ..... 4 Paid sex ..... 5 Other (*specify*) _____ 6	1 SB10
SB9. How old was this person? *IF RESPONSE IS DK, PROBE:* About how old was this person?	Age of sexual partner ..... ☐☐ DK 98	
SB10. Other than these two men, have you had sex with any other man in the last 12 months?	Yes ..... 1 No 2	2 NEXT MODULE
SB11. In total, with how many different men have you had sex in the last 12 months?	No. of partners ..... ☐☐	

MODULE 10: HIV/AIDS (WOMEN AGE 15-49)		HA
HA1. Now I would like to talk with you about something else . Have you ever heard of the virus HIV or an illness called AIDS?	Yes ..... 1 No 2	2 GO TO MODULE 11 IF IN UPPER EAST OTHERWISE GO TO MODULE 12
HA2. Can people protect themselves from getting infected with the AIDS virus	Yes ..... 1 No 2	
HA3. Can people get infected with the AIDS virus because of w itchcraft or other supernatural means?	DK ..... 8 Yes ..... 1 No 2	
HA4. Can people reduce their chance(s) of getting the AIDS virus by using a condom every time they have sex?	DK ..... 8 Yes ..... 1 No ..... 2 DK 8	
HA5. Can people get the AIDS virus from mosquito bites?	Yes ..... 1 No ..... 2 DK 8	
HA6. Can people reduce their chance(s) of getting infected with the AIDS virus by not having sex at all?	Yes ..... 1 No ..... 2 DK 8	
HA7. Can people get the AIDS virus by sharing food with a person who has AIDS?	Yes ..... 1 No ..... 2 DK 8	
HA7A. Can people get the AIDS viru s by getting injections with a needle that was already used by someone else?	Yes ..... 1 No ..... 2 DK 8	
HA7B. Can people get the AIDS virus by buying uncovered food items?	Yes ..... 1 No ..... 2 DK 8	
HA8. Is it possible for a healthy -looking person to have the AIDS virus?	Yes ..... 1 No ..... 2 DK 8	
HA9. Can the AIDS virus be transmitted from a mother to a baby: HA9A. During pregnancy? HA9B. During delivery? HA9C. By breastfeeding?	Yes No DK During pregnancy ..... 1 2 8 During delivery ..... 1 2 8 By breastfeeding 1 2 8	
HA10. If a female t eacher has the AIDS virus but is not sick, should she be allowed to continue working?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	

HA10A. If a male teacher has the AIDS virus but is not sick, should he be allowed to continue working?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	
HA10B. If a female health worker has the AIDS virus but is not sick, should he be allowed to continue working?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	
HA10C. If a male health worker has the AIDS virus but is not sick, should he be allowed to continue worki ng?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	
HA11. Would you buy from a shopkeeper or food vendor/seller if you knew that this person had the AIDS virus?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	
HA12. If a member of your family became infected with the AIDS virus, wou ld you want it to remain a secret?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	
HA13. If a member of your family became sick with the AIDS virus, would you be willing to care for him or her in your household?	Yes ..... 1 No ..... 2 DK/not sure/depends 8	
HA13A. Is it possible for a person who has the AIDS virus to be completely cured?	Yes ..... 1 No ..... 2 DK……8	2 HA14
HA13B. Where do you think the person will be cured?	Health facility……1 Traditional health practitioners ……2 Religious practitioners…… ……3 Sleeping with a virgin……..4 Others (*specify)*---------- 6	

HA14. ***CHECK MN5**: TESTED FOR HIV DURING ANTENATAL CARE?* *YES. GO TO HA18A* *NO. CONTINUE WITH HA15*		
HA15. I do not want to know the results, bu t have you ever been tested to see if you have HIV, the virus that causes AIDS?	Yes ..... 1 No 2	2 HA18
HA15A. When was the last time you were tested?	Less than 12 months ..... 1 12-23 months ..... 2 2 years or more 3	
HA16. I do not want you to tell me the results of the test, but have you been told the results?	Yes ..... 1 No 2	
HA17. Did you, yourself, ask for the test, was it offered to you and you accepted, or was it required?	Asked for the test ..... 1 Offered and accepted ..... 2 Required 3	2 END MODULE
HA18. At this time, do you know of a place where you can go to get such a test to see if you have the AIDS virus?	Yes 1	
HA18A. *IF TESTED FOR HIV DURING ANTENATAL CARE:* Other than at the antenatal clinic, do you know of a place where you can go to get a test to see if you have the AIDS virus?	No 2	2 GO TO MODULE 12 UNLESS IN **UPPER EAST REGION**

MODULE 11: NATIONAL HEALTH INSURANCE — NHIS

THIS MODULE IS TO BEADMINISTERED TO ANYADULT RESPONDENT.

NH1. Have you ever registered with the National Health Insurance Scheme?	Yes……1 No ……..2	1 NH3
NH2. Why have you not registered with the National Health Insurance Scheme (NHIS)?	Yes No DK	
NH2A. Have not heard of the National health Insurance Scheme (NHIS)	Not heard of the NHIS 1 2 8	NEXT MODULE
NH2B. Premium too expensive	Premium too expensive 1 2 8	
NH2C. Do not trust the National Health Insurance Scheme (NHIS)	Do not trust the NHIS 1 2 8	
NH2D. Do not know where to register	Do not know where to register 1 2 8	
NH2E. District office too far	District office too far 1 2 8	
NH2F. Other (Specify)_____ ____	Other (*specify*) ---------- -- 1 2 8	
NH3. Do you hold a valid National Health Insurance Scheme (NHIS) Card? *IF PERSON HAS VALIDINSURANCE CARD, REQUEST TO SEE IT. CHECK TO MAKE SURE IT IS VALID FOR THIS YEAR*	Yes, card seen……1 Yes, card not seen……..2 No …… ……8	1 NH5 2 NH5
NH4. Why do you not have a valid National Health Insurance Scheme (NHIS) card?	Yes No DK	
NH4A. Have registered but, have not paid full amount	Have registered, not paid fully 1 2 8	NH4A: 1 NH8
NH4B. Have registered but, have not received card	Have registered but, card not Received 1 2 8	NH4B: 1 NH8
NH4C. Have not renewed my registration	Not renewed registration 1 2 8	NH4C: 1 NH5
NH4D. Registered but, in the waiting period	Registered but, i n waiting period 1 2 8	NH4D: 1 NH8
NH4E. Other (*specify*)----------	Other (*specify*) ---------- 1 2 8	
NH5. Has joining the National Health Insurance Scheme been ben eficial to you?	Yes 1 No 2	2 NH7

NH6. What has been the benefit(s)?	Yes No DK	
NH6A. Saved money from paying hospital bills	Saved money 1 2 8	
NH6B. Did not need to borrow to pay for hospital bills	Did not borrow money 1 2 8	
NH6C. Was not afraid using health facilities because of cost	Not afraid using health f acilities 1 2 8	NH8
NH6D. Can now u se health services to prevent illness becoming severe	Use health services 1 2 8	
NH6E. Other (*specify)*_____	Others *(specify)*_____ 1 2 8	
CIRCLE AS MANY AS POSSIBLE THE RESPONSES GIVEN BY RESPONDENT		
NH7. Why haven't you benefited?	Yes No DK	
NH7A. Has not fallen sick	Not fallen sick 1 2 8	
NH7B. Health fa cility is far from where I live	Health facility is far 1 2 8	
NH7C. Transport cost to facility is high	Transport cost to facility high 1 2 8	
NH7D. Did not receive proper treatment at health facility	Did not receive proper treatment 1 2 8	
NH7E. Still pay for some services (e.g. drugs)	Pays for some services 1 2 8	
NH7F. In waiting period	In waiting period 1 2 8	
NH7G. Payment not in full	Payment not in full 1 2 8	
NH7H. Other (*specify)* ----------	Other (*specify)* ---------- 1 2 8	
CIRCLE AS MANY AS POSSIBLE THE RESPONSES GIVEN BY RESPONDENT		
NH8. Will you continue to be a member of the National Insurance Scheme?	Yes……1 No……..2	1 END QUESTIONNAIRE
NH9. Why wouldn't you continue to be a member of the National Insurance Scheme?	Yes No DK	
NH9A.I don't see why I should continue	Don't see why I should continue 1 2 8	
NH9B. Has not been sick	Not been sick 1 2 8	
NH9C. Amount (premium) being paid is high	Premium too high 1 2 8	
NH9D. Not getting the services I needed	Not getting services I need 1 2 8	
NH9E. I still buy drugs after the service	Still buys drugs after service 1 2 8	
NH9F. Other (Specify)_____	Other (Specify)_____ 1 2 8	

CHILDREN UNDER FIVE QUESTIONNAIRE

IDENTIFICATION PANEL — UF

THIS QUESTIONNAIRE IS TO BE ADMINISTERED TO ALL MOTHERS OR CARETAKERS (SEE HOUSEHOLD LISTING, COLUMN HL8) WHO CARE FOR A CHILD THAT LIVES WITH THEM AND IS UNDER THE AGE OF 5 YEARS (SEE HOUSEHOLD LISTING, COLUMN HL5).
A SEPARATE QUESTIONNAIRE SHOULD BE USED FOR EACH ELIGIBLE CHILD.
FILL IN THE CLUSTER AND HOUSEHOLD NUMBER, AND NAMES AND LINE NUMBERS OF THE CHILD AND THE MOTHER/CARETAKER IN THE SPACE BELOW. INSERT YOUR OWN NAME AND NUMBER, AND THE DATE.

UF1. ENUMERATION NUMBER: _____ ☐☐☐

UF2. HOUSEHOLD NUMBER: ☐☐

UF3. CHILD'S NAME: _____

UF4. CHILD'S LINE NUMBER: ☐☐

UF5. MOTHER'S/CARETAKER'S NAME: _____

UF6. MOTHER'S/CARETAKER'S LINE NUMBER: ☐☐

UF7. INTERVIEWER'S NAME AND NUMBER: _____ ☐☐☐

UF8. DAY/MONTH/YEAR OF INTERVIEW: 2 0 0 8

UF9. RESULT OF INTERVIEW FOR CHILDREN UNDER 5

(CODES REFER TO MOTHER/CARETAKER)

COMPLETED.....1
NOT AT HOME.....2
REFUSED.....3
PARTLY COMPLETED.....4
INCAPACITATED.....5
OTHER (specify)_____6

REPEAT GREETING IF NOT ALREADY READ TO THIS WOMAN

Good ……..! My name is …… and I am here on behalf of the Ghana Statistical Service and Ministry of Health. We are working on a nationwide survey concerned with family health and education. You have been selected as one of the respondents to this survey and we would very much appreciate your participation. The interview will take about 30 minutes. All the information we obtain will remain strictly confidential and your answers will never be identified.

IF PERMISSION IS GIVEN, BEGIN THE INTERVIEW. IF THE RESPONDENT DOES NOT AGREE TO CONTINUE, THANK HIM/HER AND GO TO THE NEXT INTERVIEW. DISCUSS THIS RESULT WITH YOUR SUPERVISOR FOR A FUTURE REVISIT.

UF10. Now I would like to ask you some questions about the health of each child under the age of 5 in your care, who lives with you now.
Now I want to ask you about (*NAME*).
In what month and year was (*NAME*) born?
PROBE:
What is his/her birthday?

IF THE MOTHER/CARETAKER KNOWS THE EXACT BIRTH DATE, ALSO ENTER THE DAY, OTHERWISE, CIRCLE 98 FOR DAY.

Date of birth:
Day ..... ☐☐
DK day 98
Month ..... ☐☐
DK month 98
Year ..... ☐☐☐☐
DK year 9998

UF11. How old was (*NAME*) at his/her last birthday?
RECORD AGE IN COMPLETED YEARS.

Age in completed years ..... ☐☐

MODULE 1: BIRTH REGISTRATION AND EARLY LEARNING — BR

BR1. Has (*NAME'S*) birth been registered with the Births and Deaths Registry?	Yes ..... 1 No ..... 2 DK 8	
BR2. Does (*NAME*) have a birth certificate? May I see it?	Yes, seen ..... 1 Yes, not seen ..... 2 No ..... 3 DK 8	3 BR3 8 BR3
CHECK BIRTH CERTIFICATE TO SEE IF IT IS THE ONE ISSUED BY THE BIRTHS AND DEATHS REGISTRY BR2A. Was (*NAME*) birth registered within the first year of birth?	Yes ..... 1 No ..... 2 DK 8	1 BR4A 2 BR4A 8 BR4A
BR3. Why is (*NAME*) birth 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 Do not know where to register ..... 5 Other (*specify*) _____ 6 DK 8	5 BR4A
BR4. Do you know where to register your child's birth?	Yes ..... 1 No 2	
BR4A. Do you know it is free to register your child with the Births and Deaths Registry if child is below age one?	Yes ..... 1 No ..... 2 DK 8	

BR5. ***CHECK AGE OF CHILD IN UF11:*** *CHILD IS 3 OR 4 YEARS OLD?*

YES. *CONTINUE WITH BR6*

NO. *GO TO BR8*

BR6. Does (*NAME*) attend any organised learning or early childhood education programme, such as a private or government facility, including kindergarten or community child care?	Yes ..... 1 No ..... 2 DK 8	2 BR8 8 BR8
BR7. Within the last seven days, about how many hours did (*NAME*) attend?	No. of hours ..... ☐☐	

BR8. In the past 3 days, did you or any household member over 15 years of age engage in any of the following activities with (*NAME*): *IF YES, ASK:* who engaged in this activity with the child - the mother, the child's father or another adult member of the household (including the caretaker/respondent)? *CIRCLE ALL THAT APPLY.*		Mother	Father	Other Adult	No one	
BR8A. Read books or look at picture books with (*NAME*)?	Books	A	B	X	Y	
BR8B. Tell stories to/with (*NAME*)?	Stories	A	B	X	Y	
BR8C. Sing songs to/with (*NAME*)?	Songs	A	B	X	Y	
BR8D. Take (*NAME*) outside the home, compound, yard or enclosure?	Take outside	A	B	X	Y	
BR8E. Play with (*NAME*)?	Play with	A	B	X	Y	
BR8F. Spend time with (*NAME*) naming, counting, and/or drawing things?	Spend time with	A	B	X	Y	

MODULE 2: CHILDHOOD EDUCATION — CE

QUESTION CE1 IS TO BE ADMINISTERED ONLY ONCE TO EACH CARETAKER

CE1. How many books are there in the household? Please include schoolbooks, but not other books meant for children, such as picture books *IF 'NONE' ENTER 0*	Number of non-children's books ..... 0 ☐ Ten or more non-children's books 10	
CE2. How many children's books or picture books do you have for (*NAME*)? *IF 'NONE' ENTER 0*	Number of children's books ..... 0 ☐ Ten or more books 10	
CE3. I am interested in learning about the things that (*NAME*) plays with when he/she is at home. What does (*NAME*) play with? Does he/she play with Household objects, such as bowls, plates, cups or pots? Objects and materials found outside the living quarters, such as sticks, rocks, animals, shells, or leaves? Homemade toys, such as dolls, cars and other toys made at home? Toys purchased from a store? *IF THE RESPONDENT SAYS "YES" TO ANY OF THE PROMPTED CATEGORIES, THEN PROBE TO LEARN SPECIFICALLY WHAT THE CHILD PLAYS WITH TO ASCERTAIN THE RESPONSE* *CODE Y IF CHILD DOES NOT PLAY WITH ANY OF THE ITEMS MENTIONED*	Household objects (bowls, plates, cups, pots) ..... A Objects and materials found outside the living quarters (sticks, rocks, animals, shells, leaves) ..... B Homemade toys (dolls, cars and other toys made at home) C Toys purchased from a store .....D No playthings mentioned ..... Y	
CE4. 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 with others. since last (*DAY OF THE WEEK*) how many times was (*NAME*) left in the care of another child (that is, someone less than 10 years old)? *IF 'NONE' ENTER 00*	Number of times..... ☐☐	
CE5. In the past week, how many times was (*NAME*) left alone? *IF 'NONE' ENTER 00*	Number of times..... ☐☐	

MODULE 3: VITAMIN A - CHILDREN 6 MONTHS AND OLDER — VA

VA1. Has (*NAME*) ever received a vitamin A capsule (supplement) like this one? *SHOW CAPSULES:* *100,000 IU FOR THOSE 6-11 MONTHS OLD,* ***(BLUE)*** *200,000 IU FOR THOSE 12-59 MONTHS OLD* ***(RED)****.*	Yes ..... 1 No ..... 2 DK 8	2 NEXT MODULE 8 NEXT MODULE
VA2. How many months ago did (*NAME*) take the last dose?	Months ago ..... ☐ DK 98	
VA3. Where did (*NAME*) get this last dose?	On routine visit to health facility/CHPS ..... 1 Sick child visit to health facility ..... 2 National Immunization Day campaign ..... 3 Child health week ..... 4 Outreach clinics ..... 5 School Campaign.....6 Other (*specify*) _____ 96 DK 98	
VA3A. How many times did (*NAME*) receive capsule(s) in the last 12 months?	Number of times..... ☐	

MODULE 4: BREASTFEEDING		BF
BF1. Has (*NAME*) ever been breastfed?	Yes ..... 1 No 2	2 BF3
BF2. Is *(NAME)* still being breastfed?	Yes ..... 1 No 2	1 BF2B
BF2A. For how many months did you breastfeed *(NAME)*?	Months ..... ☐☐ DK 98	BF3 98 BF3
BF2B. Was (*NAME*) breastfed yesterday?	Yes ..... 1 No 2	
BF3. Since this time yesterday, did he/she receive any of the following: *READ EACH ITEM ALOUD AND RECORD RESPONSE BEFORE PROCEEDING TO THE NEXT ITEM*	Y N DK	
BF3A. Vitamin, mineral supplements (Abidec, Minadex, etc)?	A. Vitamin supplements 1 2 8	
BF3B. Plain water?	B. Plain water 1 2 8	
BF3C. Sweetened, flavoured water or fruit juice or tea or infusion?	C. Sweetened water or juice 1 2 8	
BF3D. ORS?	D. ORS 1 2 8	
BF3E. Infant formula (e.g. SMA, Lactogen etc)?	E. Infant formula 1 2 8	
BF3F. Tinned, powdered or fresh milk?	F. Milk 1 2 8	
BF3G. Any other liquids (e.g. coconut water)?	G. Other liquids 1 2 8	
BF3H. Solid or semi-solid (mushy) food?	H. Solid or semi-solid food 1 2 8	
BF4. ***CHECK BF3H:*** *CHILD RECEIVED SOLID OR SEMI-SOLID (MUSHY) FOOD?* *YES.* *CONTINUE WITH BF5* *NO OR DK.* *GO TO NEXT MODULE*		
BF5. Since this time yesterday, how many times did (*NAME*) eat solid, semisolid, or soft foods other than liquids? *IF 7 OR MORE TIMES, RECORD '7'.*	No. of times ..... ☐ Don't know 8	

MODULE 5: CARE OF ILLNES		CA
CA1. Has (*NAME*) had diarrhoea in the last two weeks, that is, since (*DAY OF THE WEEK*) of the week before last? *DIARRHOEA IS DETERMINED AS PERCEIVED BY MOTHER OR CARETAKER, OR AS THREE OR MORE LOOSE OR WATERY STOOLS PER DAY, OR BLOOD IN STOOL.*	Yes ..... 1 No ..... 2 DK 8	2 CA5 8 CA5
CA2. During this last episode of diarrhoea, did (*NAME*) drink any of the following: *READ EACH ITEM ALOUD AND RECORD RESPONSE BEFORE PROCEEDING TO THE NEXT ITEM*	Yes No DK	
CA2A. A fluid made from a special packet called (*ORS*)?	A. Fluid from ORS packet 1 2 8	
CA2B. Government-recommended homemade fluid (sugar-salt solution)?	B. Recommended homemade fluid .. 1 2 8	
CA3. During (*NAME'S*) illness, did he/she drink much less, about the same, or more than usual?	Much less or none ..... 1 About the same (or somewhat less) ..... 2 More 3	
CA4. During (*NAME'S*) illness, did he/she eat less, about the same, or more food than usual? *IF "LESS", PROBE:* much less or a little less?	DK ..... 8 None ..... 1 Much less ..... 2 Somewhat less ..... 3 About the same ..... 4 More ..... 5 DK 8	
CA4A. *Check CA2A: ORS packet used?* *Yes. Continue with CA4B* *No. Go to CA5*		
CA4B. Where did you get the *(ORS PACKET FROM CA2A)?*	Public sector Govt. hospital/polyclinic ..... 11 Govt. health centre ..... 12 Govt. health post ..... 13 Village health worker/CHPS ..... 14 Mobile/outreach clinic ..... 15 Other public (*specify*)_____16 Private medical sector Private hospital/clinic ..... 21 Private physician ..... 22 Private pharmacy ..... 23 Mobile clinic ..... 24 Other private medical (*specify*) _____ 26 Other source Relative or friend ..... 31 Chemical shop/Shop ..... 32 Traditional practitioner ..... 33 Drug Peddler ..... 34 Other (*specify*) ..... 96 DK 98	
CA4C. How much did you pay for the *(ORS PACKET FROM CA2A)?*	Ghana Cedis ..... GHC ☐☐ Free ..... 9.96 DK 9.98	

CA4C. How much did you pay for the *(ORS PACKET FROM CA2A)?*	Ghana Cedis……. GHC ☐☐.☐☐ Free ..... 9.96 DK 9.98	
CA5. Has (*NAME*) had an illness with a cough at any time in the last two weeks, that is, since (*DAY OF THE WEEK*) of the week before last?	Yes ..... 1 No ..... 2 DK 8	2 CA12 8 CA12
CA6. When (*NAME*) had an illness with a cough, did he/she breathe faster than usual with short, quick breaths or have difficulty breathing?	Yes ..... 1 No ..... 2 DK 8	2 CA12 8 CA12
CA7. Were the symptoms due to a problem in the chest or a blocked nose?	Problem in chest ..... 1 Blocked nose ..... 2 Both ..... 3 Other (*specify*) _____ 6 DK 8	2 CA12 6 CA12
CA8. Did you seek advice or treatment for the illness outside the home?	Yes ..... 1 No ..... 2 DK 8	2 CA10 8 CA10
CA9. From where did you seek care? Anywhere else? *CIRCLE ALL PROVIDERS MENTIONED, BUT DO NOT PROMPT WITH ANY SUGGESTIONS.* *IF SOURCE IS HOSPITAL, HEALTH CENTER, OR CLINIC, WRITE THE NAME OF THE PLACE BELOW. PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE* *(NAME OF PLACE)*	Public sector Govt. hospital/polyclinic ..... A Govt. health centre ..... B Govt. health post ..... C Village health worker/ CHPS ..... D Mobile/outreach clinic ..... E Other public (*specify*) _____ H Private medical sector Private hospital/clinic ..... I Private physician ..... J Private pharmacy ..... K Mobile clinic ..... L Other private medical (*specify*) _____ O Other source Relative or friend ..... P Chemical shop ..... Q Traditional practitioner ..... R Drug peddlers ..... S Other (*specify*) _____ X	
CA10. Was (*NAME*) given medicine to treat this illness?	Yes ..... 1 No ..... 2 DK 8	2 CA12 8 CA12
CA11. What medicine was (*NAME*) given? *CIRCLE ALL MEDICINES GIVEN.*	Antibiotic ..... A Paracetamol/Panadol/Acetaminophen ..... P Aspirin ..... Q Ibuprofen ..... R Other (*specify*) _____ X DK ..... Z	

CA11A. **CHECK CA11:** *ANTIBIOTIC GIVEN?*
YES. CONTINUE WITH CA11B
NO. GO TO CA12

CA11B. Where did you get the antibiotic?

Public sector
- Govt. hospital/polyclinic 11
- Govt. health centre 12
- Govt. health post 13
- Village health worker/CHPS 14
- Mobile/outreach clinic 15
- Other public (*specify*)_____ 16

Private medical sector
- Private hospital/clinic 21
- Private physician 22
- Private pharmacy 23
- Mobile clinic 24
- Other private medical (*specify*)_____ 26

Other source
- Relative or friend 31
- Chemical shop 32
- Traditional practitioner 33
- Drug peddlers 34
- Other (*specify*)_____ 96

DK 98

CA11C. How much did you pay for the antibiotic?

IF CURRENCY IS GIVEN IN THE NEW GHANA CEDI, CONVERT IT TO THE OLD GHANA CEDI

Ghana Cedis…… GHC

Free 99.96
DK 99.98

CA12. **CHECK UF11:** *CHILD AGED UNDER 3?*
YES. CONTINUE WITH CA13
NO. GO TO CA14

CA13. The last time *(NAME)* passed stools, what was done to dispose of the stools?

Child used toilet/latrine 11
Put/rinsed into toilet or latrine 12
Put/rinsed into drain or ditch 13
Thrown into garbage (solid waste)..... 14
Buried..... 15
Left in the open 16
Other (*specify*) _____ 96
DK 98

ASK THE FOLLOWING QUESTION (CA14) ONLY ONCE FOR EACH MOTHER/CARETAKER.

CA14. 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?

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 sicker..... B
Child develops a fever C
Child has fast breathing ..... D
Child has difficult breathing..... E
Child has blood in stool..... F
Child is drinking poorly..... G
Other (*specify*) _____ X
Other (*specify*) _____ Y
Other (*specify*) _____ Z

MODULE 6: MALARIA FOR UNDER-FIVES — ML

ML1. In the last two weeks, that is, since (*DAY OF THE WEEK*) of the week before last, has (*NAME*) been ill with a fever?	Yes ..... 1 No ..... 2 DK 8	 2 ML10 8 ML10
ML2. Was (*NAME*) seen at a health facility during this illness?	Yes ..... 1 No 2	 2 ML6
ML3. Did (*NAME*) take a medicine for fever or malaria that was provided or prescribed at the health facility?	DK ..... 8 Yes ..... 1 No ..... 2 DK 8	8 ML6 2 ML5 8 ML5
ML4. What medicine did (*NAME*) take that was provided or prescribed at the health facility? *CIRCLE ALL MEDICINES MENTIONED.*	Anti-malarials: SP/Fansidar ..... A Chloroquine ..... B Amodiaquine/camoquine ..... C Quinine ..... D Arthesonate-Amodiaquine ..... E Other anti-malarial (*specify*) _____ H Other medications: Paracetamol/Panadol/Acetaminophen ... P Aspirin ..... Q Ibuprofen ..... R Other (*specify*) _____ X DK ..... Z	
ML5. Was (*NAME*) given medicine for the fever or malaria before being taken to the health facility?	Yes ..... 1 No ..... 2 DK 8	1 ML7 2 ML8 8 ML8
ML6. Was (*NAME*) given medicine for fever or malaria during this illness?	Yes ..... 1 No ..... 2 DK 8	 2 ML8 8 ML8
ML7. What medicine was (*NAME*) given? *CIRCLE ALL MEDICINES GIVEN. ASK TO SEE THE MEDICATION IF TYPE IS NOT KNOWN. IF TYPE OF MEDICATION IS STILL NOT DETERMINED, SHOW TYPICAL ANTI-MALARIALS TO RESPONDENT.*	Anti-malarials: SP/Fansidar ..... A Chloroquine ..... B Amodiaquine/camoquine ..... C Quinine ..... D Arthesonate-Amodiaquine ..... E Other anti-malarial (*specify*) _____ H Other medications: Paracetamol/Panadol/Acetaminophen ... P Aspirin ..... Q Ibuprofen ..... R Other (*specify*) _____ X DK ..... Z	

ML8. ***CHECK ML4 AND ML7:*** *ANTI-MALARIAL MENTIONED (CODES A - H)?*

YES. *CONTINUE WITH ML9*

NO. *GO TO ML10*

ML12. What brand is this net? *IF THE RESPONDENT DOES NOT KNOW THE BRAND OF THE NET, SHOW PICTORIALS, OR IF POSSIBLE, OBSERVE THE NET.*		
LONG LASTING TREATED NETS: *Olyset*	Long lasting treated net: Olyset 11	11 NEXT MODULE
Permanet	Permanet 12	12 NEXT MODULE
PRE-TREATED NETS: *Dawa*	Pre-treated net: Dawa 21	21 ML14
Dawa Plus	Dawa Plus 22	22 ML14
OTHER NETS: *MOH Treated net*	Other net: MOH Treated net 31	
Calico net	Calico net 32	
Second-hand net	Second-hand net 36	
Other *(specify)*	Other *(specify)*_____ *96*	
DK brand	DK brand 98	
ML13. When you got that net, was it already treated with an insecticide to kill or repel mosquitoes?	Yes ..... 1 No ..... 2 DK/not sure 8	
ML14. Since you got the mosquito net, was it ever soaked or dipped in a liquid to kill/repel mosquitoes or bugs?	Yes ..... 1 No ..... 2 DK 8	2 NEXT MODULE 8 NEXT MODULE
ML15. How long ago was the net last soaked or dipped? *IF LESS THAN 1 MONTH, RECORD '00'.* *IF ANSWER IS "12 MONTHS" OR "1 YEAR", PROBE TO DETERMINE IF NET WAS TREATED EXACTLY 12 MONTHS AGO OR EARLIER OR LATER.*	Months ago ..... ☐☐ More than 24 months ago ..... 96 DK 98	

MODULE 7: IMMUNIZATION — IM

IF AN IMMUNIZATION CARD IS AVAILABLE, COPY THE DATES IN IM2-IM8 FOR EACH TYPE OF IMMUNIZATION OR VITAMIN A DOSE RECORDED ON THE CARD. IM10-IM18 ARE FOR RECORDING VACCINATIONS THAT ARE NOT RECORDED ON THE CARD. IM10-IM18 WILL ONLY BE ASKED WHEN A CARD IS NOT AVAILABLE .

IM1. Is there a vaccination card for (*NAME*)?

Yes, seen 1
Yes, not seen 2
No 3

2 IM10
3 IM10

(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.

		Date of Immunization								
		DAY		MONTH		YEAR				
IM2. BCG	BCG									
IM3A. Polio at birth	OPV0									
IM3B. Polio 1	OPV1									
IM3C. Polio 2	OPV2									
IM3D. Polio 3	OPV3									
IM5A. HepB1Hib (or DPTHepB1Hib)	(DPT)HH1									
IM5B. HepB2Hib (or DPTHepB2Hib)	(DPT)HH2									
IM5C. HepB3Hib (or DPTHepB3Hib)	(DPT)HH3									
IM6. Measles (or MMR)	Measles									
IM7. Yellow Fever	YF									
IM8A. Vitamin A (1)	VitA1									
IM8B. Vitamin A (2)	VitA2									

IM9. In addition to the vaccinations and vitamin A capsules shown on this card, did (*NAME*) receive any other vaccinations – including vaccinations received in campaigns or immunization days?

RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, OPV 0-3, DPT 1-3, HEPATITIS B 1-3, MEASLES, YELLOW FEVER VACCINE(S), VITAMIN A SUPPLEMENTS OR IPTI.

Yes 1
(PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN ON IM2 TO IM8B.)
No 2
DK 8

1 IM19
2 IM19
8 IM19

IM10. Has (*NAME*) ever received any vaccinations to prevent him/her from getting diseases, including vaccinations received in a campaign or immunization day?

Yes 1
No 2
DK 8

2 IM19
8 IM19

IM11. Has (*NAME*) ever been given a BCG vaccination against tuberculosis – that is, an injection in the arm or shoulder that caused a scar?

Yes 1
No 2

IM12. Has (*NAME*) ever been given any "vaccination drops in the mouth" to protect him/her from getting diseases – that is, polio?

DK 8
Yes 1
No 2
DK 8

2 IM15
8 IM15

IM13. How old was he/she when the first dose was given – just after birth (within two weeks) or later?	Just after birth (within two weeks)..... 1 Later..... 2	
IM14. How many times has he/she been given these drops?	No. of times..... ☐☐	
IM15. Has (*NAME*) ever been given "DPT or [DPT]HH vaccination injections" – that is, an injection in the thigh – to prevent him/her from getting tetanus, whooping cough, diphtheria? (sometimes given at the same time as polio)	Yes..... 1 No..... 2 DK..... 8	 2 IM17 8 IM17
IM16. How many times?	No. of times..... ☐☐	
IM17. Has (*NAME*) ever been given "Measles vaccination injections" – that is, a shot in the arm at the age of **9** months or older - to prevent him/her from getting measles?	Yes..... 1 No..... 2 DK..... 8	
IM18. Has (*NAME*) ever been given "Yellow Fever vaccination injections" – that is, a shot in the arm at the age of **9** months or older - to prevent him/her from getting yellow fever? (sometimes given at the same time as measles)	Yes..... 1 No..... 2 DK..... 8	
IM19. Please tell me if (*NAME*) has benefited from any of the following campaigns, national immunization in the last year and/or vitamin A or child health week or De-worming: IM19A. National Immunization last year *IM19B.* Vitamin A campaign *IM19C.* Child health week *IM19D.* De-worming campaign	Y N DK National Immunization ..... 1 2 8 Vitamin A..... 1 2 8 Child health ..... 1 2 8 De-worming……1 2 8	

IM20. *DOES ANOTHER ELIGIBLE CHILD RESIDE IN THE HOUSEHOLD FOR WHOM THIS RESPONDENT IS MOTHER/CARETAKER?*
CHECK HOUSEHOLD LISTING, COLUMN HL8.

YES. END THE CURRENT QUESTIONNAIRE AND THEN GO TO QUESTIONNAIRE FOR CHILDREN UNDER FIVE TO ADMINISTER THE QUESTIONNAIRE FOR THE NEXT ELIGIBLE CHILD.

NO. END THE INTERVIEW WITH THIS RESPONDENT BY THANKING HIM/HER FOR HIS/HER COOPERATION IF THIS IS THE LAST ELIGIBLE CHILD IN THE HOUSEHOLD, GO ON TO ANTHROPOMETRY MODULE.

MODULE 8: 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.

AN1. Child's weight.	Kilograms (kg)..... ☐☐.☐	
AN2. Child's length or height. ***CHECK AGE OF CHILD IN UF11:*** *CHILD UNDER 2 YEARS OLD. MEASURE LENGTH (LYING DOWN).* *CHILD AGE 2 OR MORE YEARS. MEASURE HEIGHT (STANDING UP).*	Length (cm) Lying down .....1 ☐☐☐.☐ Height (cm) Standing up .....2 ☐☐☐.☐	
AN3. Measurer's identification code.	Measurer code..... ☐☐	
AN4. Result of measurement.	Measured .....1 Not present .....2 Refused.....3 ☐ Other (*specify*) _____6	

AN5. *IS THERE ANOTHER CHILD IN THE HOUSEHOLD WHO IS ELIGIBLE FOR MEASUREMENT?*

YES. RECORD MEASUREMENTS FOR NEXT CHILD

NO. END THE INTERVIEW WITH THIS HOUSEHOLD BY THANKING ALL PARTICPANTS FOR THEIR COOPERATION

GATHER TOGETHER ALL QUESTIONNAIRES FOR THIS HOUSEHOLD AND CHECK THAT ALL IDENTIFICATION NUMBERS ARE INSERTED ON EACH PAGE. TALLY ON THE HOUSEHOLD INFORMATION PANEL THE NUMBER OF INTERVIEWS COMPLETED.

Consolidated Report

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