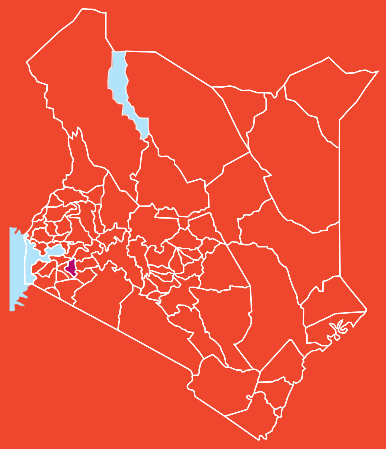
Kenya, Nyamira County



Monitoring the situation of children and women

Multiple Indicator Cluster Survey 2011

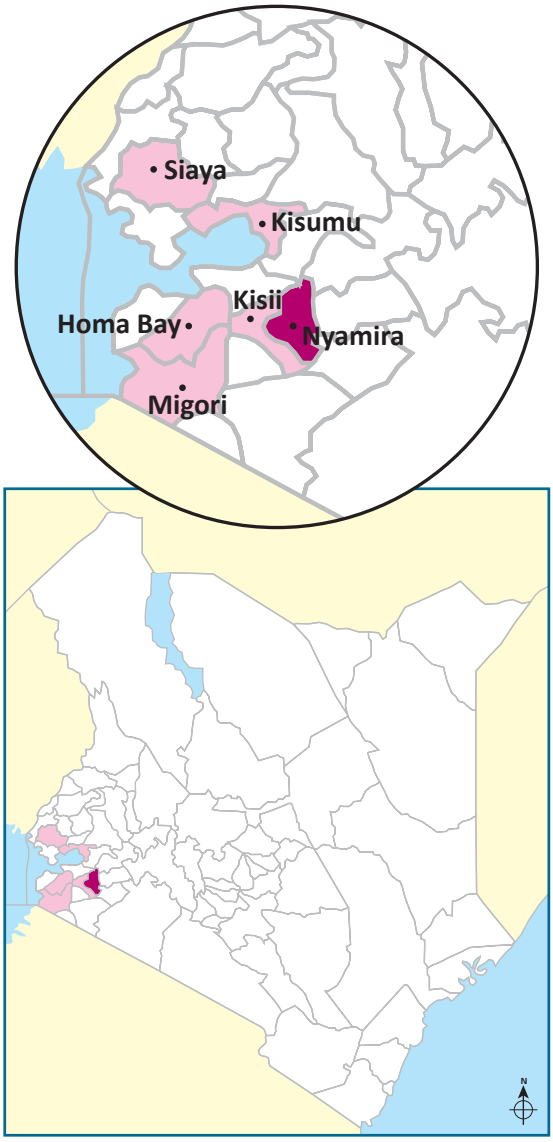
Kenya National Bureau of Statistics

United Nations Children's Fund

MICS

Nyamira County

Multiple Indicator Cluster Survey 2011



July, 2013

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MICS

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KENYA NATIONAL BUREAU OF STATISTICS
Keeping you Informed

The Nyamira County Multiple Indicator Cluster Survey (MICS) was carried out in 2011 by Kenya National Bureau of Statistics in collaboration with the County and Provincial administration. Financial and technical support was provided by the United Nations Children's Fund (UNICEF).

MICS is an international household survey programme developed by UNICEF. The Nyamira County MICS was conducted as part of the fourth global round of MICS surveys (MICS4). MICS provides up-to-date information on the situation of children and women and measures key indicators that allow countries to monitor progress towards the Millennium Development Goals (MDGs) and other internationally agreed upon commitments. Additional information on the global MICS project may be obtained from www.childinfo.org. In Kenya, this information is important to guide the planning and implementation of new development plans targeting the new administrative county-levels of governance.

Suggested citation:

Kenya National Bureau of Statistics. 2013. Nyamira County Multiple Indicator Cluster Survey 2011, Final Report. Nairobi, Kenya: Kenya National Bureau of Statistics.

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List of Abbreviations

AIDS	Acquired Immune Deficiency Syndrome
ANC	Antenatal Care
BCG	Bacillus Calmette Guerin (Tuberculosis)
C-section	Caesarian Section
CSPro	Census and Survey Processing System
DPT	Diphtheria Pertussis Tetanus
DPT-HeB-Hib	DiptheriaPertusis Tetanus Hepatitis B Haemophyllus Influenza B
EA	Enumeration Area
ECDI	Early Childhood Development Index
EPI	Expanded Programme on Immunization
ERS	Economic Recovery Strategy
FGM/C	Female Genital Mutilation/ Cutting
GOK	Government of Kenya
GPI	Gender Parity Index
HIV	Human Immunodeficiency Virus
IDD	Iodine Deficiency Disorders
IPTp	Intermittent Preventive Treatment of Malaria in Pregnancy
IRS	Indoor Residual Spraying
ITN	Insecticide Treated Net
IUD	Intrauterine Device
IYCF	Infant and Young Child Feeding Practices
JMP	Joint Monitoring Programme
KAIS	Kenya AIDS Indicator Survey
KDHS	Kenya Demographic Health Survey
KEPI	Kenya Expanded Programme on Immunization
KESSP	Kenya Education Sector Support Programme
KNBS	Kenya National Bureau of Statistics
LAM	Lactational Amenorrhea Method
LLIN	Long Lasting Insecticide Treated Nets
MDG	Millennium Development Goals
MICS	Multiple Indicator Cluster Survey
MoH	Ministry of Health
MOMS	Ministry of Medical Services
MOPHS	Ministry of Public Health and Sanitation
NAR	Net Attendance Rate
NPA	National Plan of Action
ORT	Oral Rehydration Therapy
OVC	Orphans and Vulnerable Children
PMTCT	Prevention of Mother to Child Transmission
ppm	Parts Per Million
PRS	Poverty Reduction Strategy
PPS	Probability proportional to Size
PSU	Primary Sampling Units
RHF	Recommended Home Made Fluids
SP	Sulphadoxine- Pyrimethamine
SPSS	Statistical Package for Social Sciences
STIs	Sexually Transmitted Infections
TBA	Traditional Birth Attendant
TFR	Total Fertility Rate
U5MR	Under 5 mortality
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
VIP	Ventilated Improved Latrine
WFFC	World Fit For Children
WHO	World Health Organization
WSC	World Summit for Children

Foreword

The lives of children and women have improved significantly in the recent past, both at the global and national level. Inspite of this, statistics and data presented at national levels often conceal disparities evident among the poor households in terms of access to basic services such as health care, education and protection. In addition, urban residents often present higher levels of achievement in most of the indicators compared to their rural counterparts. This may be attributed to their proximity to essential services ranging from infrastructure to provision of improved services like electricity and piped water.

The Multiple Indicator Cluster Survey (MICS) 2011 was conducted to provide comprehensive and disaggregated data to fill the existing gap, particularly at the county level. The survey, which was the first of its kind to be conducted at the devolved level, was a follow-up to the MICS 2008 conducted in 13 districts in Eastern Province and the 2009 Mombasa Informal Settlement Survey. The objective of Nyamira MICS 2011 was to provide lower-level estimates relating to children and women residing in the six counties of the region. Particular emphasis was on reproductive health, child health and mortality, nutrition, child protection, childhood development, water and sanitation, hand washing practices, education, disability and HIV/AIDS, andorphanhood.

The results of Nyamira MICS 2011 presented in this Report will therefore provide requisite baseline information and facilitate evidence-based planning and programming by policymakers and stakeholders in the development sphere.

This Report is a culmination of concerted efforts of various organizations and individuals. I acknowledge the technical and financial assistance from the United Nations Children's Fund (UNICEF). I sincerely applaud the UNICEF Kenya Country Office staff, lead by Dr. Robert Ndugwa - Research and Evaluation Specialist, for diligently managing and availing technical oversight of both the survey and report production. I also commend the hard work and dedication of Kenya National Bureau of Statistics (KNBS) staff, under the capable leadership of Mr. Macdonald Obudho – Director of Population and Social Statistics and Mr. James Gatungu- Director Production Statistics in the planning and implementation of the Survey.

I remain indebted to households for generously and voluntarily responding to survey questions and allowing the survey teams to measure the weights and heights of children below 5 years of age.

I urge all stakeholders to use the information presented in this report to impact positively on the lives of our people.

Zachary Mwangi
Director General
Kenya National Bureau of Statistics

Executive Summary

The Nyamira County Multiple Indicator Survey (MICS) is a representative sample survey conducted in 2011 and was drawn using the 2009 Kenya Population and Housing Census. The urban and rural areas within were identified as the main sampling strata and the sample was selected in two stages. The primary sampling units (PSUs) were the enumeration areas (EAs) while the households were the ultimate units. A total of 50 EAs were sampled using the Probability Proportional to Size (PPS) sampling methodology. After a household listing was carried out, a systematic sample of 25 households was drawn in each sample enumeration area. Information from a total of 3,004 household members, 1,485 males and 1,519 female was collected in1,118 households. Approximately 43 per cent of the sampled households' population is below 15 years, 53 per cent are aged between 15-64 years and 4 per cent are aged above 65 years.

The survey was implemented by the Kenya National Bureau of Statistics (KNBS) with support from UNICEF Kenya. The survey provides valuable information on the situation of children and women in Nyamira County, and was largely based on the need for high quality disaggregated data at county level as Kenya transitions from a central to a devolved governance structure in 2013.

The summary of the findings from the survey are presented below.

Child Mortality

For the ten years preceding the survey, the neonatal, infant and under-five mortality rates are 26, 43 and 52 deaths per 1000 live births respectively. The estimated child mortality rate is 10 deaths per 1000 children surviving to the first birthday in the same period.

Nutritional Status, Breastfeeding and Low Birth weight

Based on WHO criteria, approximately 13 per cent of children under age five in Nyamira County are moderately or severely underweight whilst 3 per cent are classified as severely underweight. About one in 4 (25 per cent) is moderately or severely stunted or too short for their age whereas about 1 in 10 (10 per cent) is severely stunted. About 3 per cent are moderately or severely wasted or too thin for their height, while a similar proportion is classified as overweight.

Only 41 per cent of babies in Nyamira County are breastfed within one hour of birth. Overall, 61 per cent of children aged less than 2 years are appropriately fed for their age. It is noteworthy that despite the risk of contamination, about 9 per cent of children aged 0-23 months in Nyamira County are reported to have been fed using a bottle with a nipple.

Only71 per cent of children in Nyamira County are weighed at birth and it is also estimated that 7 per cent of all children are born with low birth weight.

Iodization and Vitamin A supplementation

Nearly 82 per cent of households in Nyamira County consume salt containing the recommended levels of iodine (15 ppm).

Within the six months prior to the MICS, 39 per cent of children aged 6-59 months received a high dose Vitamin A supplement.

Immunization

Only 79 per cent of children in Nyamira County receive the recommended vaccinations by their first birthday. There is high vaccine uptake by the children's first birthday (BCG – 97 per cent, Polio – 89 per cent, DPT – 95 per cent and Yellow fever – 88 per cent). Sixty (60) per cent of women who have had a live birth in the last 2 years are protected against tetanus.

Care of Illness

Approximately 13 per cent of under five children had diarrhoea in the two weeks preceding the survey. Only 34 per cent of children with diarrhoea receive oral rehydration solutions (ORS) or other recommended homemade fluids, a proportion markedly lower than that reported in the 2008-9 KDHS report (above 70 per cent at both national and provincial levels). The proportion issimilar to the Nyanza province MICS.

About 10 per cent of children aged 0-59 months were reported to have had symptoms of pneumonia during the two weeks preceding the survey. Slightly over half (51 per cent) of the children with suspected pneumonia are taken to an appropriate provider. Just 31 per cent of children under 5 years with suspected pneumonia had received an antibiotic during the two weeks prior to the survey.

Malaria Prevention

The level of net ownership in Nyamira County is high with 93 per cent of households having at least one insecticide treated net and 92 per cent having at least one mosquito net. About 80 per cent of children under the age of five sleep under any type of mosquito net and 78 per cent sleep under an insecticide treated net.

About 14 per cent of under five children were ill with fever in the two weeks prior to the survey. Less than 1 per cent of children who have had fever in the last two weeks were treated with artemisinin combination drugs (the recommended first line antimalarials). About 13 per cent of children receive anti-malarial drugs within 24 hours or on the next day after onset of symptoms. Twenty-seven per cent of women who gave birth in the two years preceding the survey reported receivingat least one dose of sulphadoxine –pyrimethamine (SP) forintermittent preventive therapy (IPT) of malaria in pregnancy whilst only 14 per cent received the recommended IPT dose (2 or more times).

Solid fuel use

The majority of households (98 per cent) in Nyamira County use solid fuels for cooking with the most common fuel being charcoal and wood.

Water and sanitation

About 2 out of 3 (65 per cent) households members in Nyamira use an improved source of drinking water. This is higher than the provincial MICS estimate of 48 per cent. The most frequently used improved drinking water source is protected springs (49 per cent) whilst the most commonly used unimproved source of drinking water is unprotected springs (29 per cent). Of the residents using unimproved drinking water, 55 per cent use appropriate water treatment method. The most commonly used water treatment method is boiling. Thirty three per cent of the population use improved sanitation facilities, with 20 per cent using pit latrines with slab. Less than 1 per cent have no sanitation facilities.

Safe disposal of stool for children aged 0 to 2 years is done for 9 in 10 children (91 per cent). About 3 per cent of households have designated handwashing places observed. Soap was present in only 2 per cent of the households. Seventy seven per cent of the households have soap anywhere in the dwelling where a place for Handwashing was not observed.

Reproductive Health

The Total Fertility Rate in Nyamira County is 4.2 children per woman. The adolescent birth rate is 122 births per 1000 women during the same period. Age-specific fertility rate is highest in the 20-24 age group with 221 births per 1000 women. Generally, fertility seems to decline in all age groups with the exception of age group 40-44 where fertility seems to increase over the last decade before the survey.

Teenage pregnancy (the proportion of women aged 15-19 years who have begun childbearing) is 30 per cent and is slightly lower than the provincial MICS of 34 per cent. Nine per cent of women aged 15-49 years have had a live birth before age 15 while at least a third (35 per cent) of women aged 20-49 years have had a live birth before age 18.

More than half (59 per cent) of currently married or in union women use modern contraceptive methods while 2 per cent use traditional methods. Injectable contraceptives are by far the most popular method and are used by nearly half (46 per cent) of married women.

Coverage of antenatal care by any skilled personnel is relatively high with 94 per cent of women who gave birth in the two years preceding the survey receiving antenatal care, majority of whom received care from a nurse or midwife (47 per cent). Eighty-five per cent of mothers received antenatal care more than once whilst 40 per cent received antenatal care at least four times.

Sixty-one per cent of births were delivered in a health facility and more than half (56 per cent) were delivered by skilled personnel in the two years preceding the survey.

Child development

In Nyamira County, 47 per cent of children aged 36-59 months are attending pre-school. About 20 per cent of children underfive had an adult household member engage in more than four activities that promote learning and school readiness during the 3 days preceding the survey. About 30 per cent of children engaged in one or more activities with their fathers. About 7 per cent of children are living in households where at least 3 children's books are present. Sixty-seven per cent of children aged 0-59 months have 2 or more playthings to play with in their homes. About half (50 per cent) of children were left with inadequate care during the week preceding the survey. About 40 per cent of children aged 36-59 months are developmentally on track.

Literacy and Education

In Nyamira County, only 95 per cent of women aged 15-24 years are literate. Only 70 per cent of children who are currently attending the first grade of primary school attended pre-school the previous year. Primary school completion rate is 82 per cent but transition to secondary school is only 68 per cent. The net primary school attendance rate is 84 per cent, while that of secondary school is 35 per cent.

Child protection

About 53 per cent of children under five years who live in Nyamira County have their births registered. About 13 per cent of children whose births are not registered have mothers/caretakers who know how to register births.

Fifty one per cent of children aged 5-14 years are engaged in child labour.About 2 out of 3 (67 per cent) children aged 2-14 years are subjected to at least one form of violent discipline method by their mothers/caretakers and 63 per cent have been subjected to psychological aggression.

About 10 per cent of women aged 15-49 years were married before age 15 while 35 per cent of women aged 20-49 years are married before age 18. About 16 per cent of adolescent girls aged 15-19 years old in Nyamira County are currently married or in union. About 24 per cent of women aged 15-19 years and 14 per cent of women aged 20-24 years are married to husbands/partners who are at least 10 years older than them.

Female genital mutilation/cutting (FGM/C)

Almost all the women aged 15-49 years in Nyamira County have heard of FGM/C and 94 per cent have had some form of FGM/C. About 28 per cent of women aged 15-49 years believe that the practice should be continued.

Domestic violence

Majority of women (76 per cent) aged 15-49 years feel that a husband/partner has a right to hit or beat his wife/partner for at least one of a variety of reasons. For example, they justify wife beating 'if she neglects the children' (57 per cent), "if she argues with him" (45 per cent), "if she refuses sex with him" (43 per cent), or "if she goes out without telling him" (42 per cent).

HIV and AIDS

All women in Nyamira County have heard of AIDS, however, only 41 per cent have comprehensive knowledge of HIV prevention methods and transmission.

Knowledge of mother-to-child transmission of HIV is near universal (94 per cent) however, only 42 per cent of women know of all three ways of transmission.

Stigma and discrimination are still fairly high in Nyamira County as only 32 per cent of women expressed accepting attitudes on all four indicators on attitudes toward people living with HIV namely: would care for family member sick with AIDS; would buy fresh vegetables from a vendor who was HIV positive; thinks that a female teacher who is HIV positive should be allowed to teach in school; and would not want to keep HIV status of a family member a secret.

Knowledge of a place for HIV testing is nearly universal (96 per cent) however, only 52 per cent of women have ever been tested. Sixty nine per cent of all women who gave birth in the last two years preceding the survey received HIV counselling during antenatal care, only 68 per cent were offered a HIV test and received the results.

About 43 per cent of never-married young women aged 15-24 years have never had sex while a quarter (25 per cent) of young women aged 15-24 years had sex before age 15. Twelve per cent of young women aged 15-24 years had sex with a man 10 or more years older in the year preceding the survey.

Less than 2 per cent of women report having sex with more than one partner in the year preceding the survey. Moreover, about 9 per cent of young women aged 15-24 years have had sex with a non-marital, non-cohabiting partner in the same period.

Orphaned and Vulnerable Children

About 12 per cent of children below 18 years are not living with any biological parent and about 1 in 10 (11 per cent) have lost at least one parent. About 2 per cent of children aged 10-14 years have lost both parents.

Summary Table of Findings

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

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value	Units
SAMPLE					
Households			Households interviewed	1080	number
Women			Number of women interviewed	970	number
Children			Number of children under-5 years with completed information	696	number
CHILD MORTALITY					
Child mortality	1.1	*4.1*	Under-five mortality rate	58	per thousand
	1.2	*4.2*	Infant mortality rate	46	per thousand
	1.3		Neonatal mortality rate	30	per thousand
	1.4		Post-neonatal mortality rate	16	per thousand
	1.5		Child mortality rate	13	per thousand
NUTRITION					
Nutritional status		*1.8*	Underweight prevalence	12.9	per cent
	2.1a		Moderate and severe (- 2 SD)	2.5	per cent
	2.1b		Severe (- 3 SD)		
			Stunting prevalence		
	2.2a		Moderate and severe (- 2 SD)	25.0	per cent
	2.2b		Severe (- 3 SD)	9.5	per cent
			Wasting prevalence		
	2.3a		Moderate and severe (- 2 SD)	3.4	per cent
	2.3b		Severe (- 3 SD)	0.2	per cent
Breastfeeding and infant feeding	2.4		Children ever breastfed	94.6	per cent
	2.5		Early initiation of breastfeeding	40.5	per cent
	2.10		Duration of breastfeeding	20.8	months
	2.11		Bottle feeding	9.0	per cent
	2.13		Minimum meal frequency	40.4	per cent
	2.14		Age-appropriate breastfeeding	61.3	per cent
Salt iodization	2.16		Iodized salt consumption	81.0	per cent
Vitamin A	2.17		Vitamin A supplementation (children under age 5)	39.4	per cent
Low birth weight	2.18		Low birth weight infants	7.2	per cent
	2.19		Infants weighed at birth	71.0	per cent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value	Units
CHILD HEALTH					
Vaccinations	3.1		Tuberculosis immunization coverage	96.5	per cent
	3.2		Polio immunization coverage	89.2	per cent
	3.3		Immunization coverage for diphtheria, pertussis and tetanus (DPT)	94.8	per cent
	3.4	*4.3*	Measles immunization coverage	96.2	per cent
	3.5		Yellow fever vaccine coverage	87.6	per cent
Tetanus toxoid	3.7		Neonatal tetanus protection	59.7	per cent
Care of illness	3.8		Oral rehydration therapy with continued feeding	35.6	per cent
Solid fuel use	3.11		Solid fuels	97.9	per cent
Malaria	3.12		Household availability of insecticide-treated nets (ITNs)	92.1	per cent
	3.13		Households protected by a vector control method	93.0	per cent
	3.14		Children under age 5 sleeping under any mosquito net	80.1	per cent
	3.15	*6.7*	Children under age 5 sleeping under insecticide-treated nets (ITNs)	78.2	per cent
	3.17		Antimalarial treatment of children under 5 the same or next day	12.6	per cent
	3.18	*6.8*	Antimalarial treatment of children under age 5	19.7	per cent
	3.20		Intermittent preventive treatment for malaria	13.5	per cent
WATER AND SANITATION					
Water and sanitation	4.1	*7.8*	Use of improved drinking water sources	64.6	per cent
	4.2		Water treatment	55.0	per cent
	4.3	*7.9*	Use of improved sanitation facilities	21.9	per cent
	4.4		Safe disposal of child's faeces	90.9	per cent
	4.6		Availability of soap	76.7	per cent
REPRODUCTIVE HEALTH					
Contraception and unmet need	5.1	*5.4*	Adolescent birth rate	122	per thousand
	5.2		Early childbearing	34.0	per cent
	5.3	*5.3*	Contraceptive prevalence rate	61.0	per cent
Maternal and new-born health		*5.5*	Antenatal care coverage		
	5.5a		At least once by skilled personnel	94.2	per cent
	5.5b		At least four times by any provider	39.7	per cent
	5.6		Content of antenatal care	58.0	per cent
	5.7	*5.2*	Skilled attendant at delivery	56.4	per cent
	5.8		Institutional deliveries	61.1	per cent
	5.9		Caesarean section	7.3	per cent
CHILD DEVELOPMENT					
Child development	6.1		Support for learning	19.9	per cent
	6.2		Father's support for learning	29.6	per cent
	6.3		Learning materials: children's books	6.8	per cent
	6.4		Learning materials: playthings	66.6	per cent
	6.5		Inadequate care	50.3	per cent
	6.6		Early child development index	40.2	per cent
	6.7		Attendance to early childhood education	46.5	per cent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value	Units
EDUCATION					
Literacy and education	7.1	2.3	Literacy rate among young women	94.5	per cent
	7.2		School readiness	70.4	per cent
	7.3		Net intake rate in primary education	36.9	per cent
	7.4	*2.1*	Primary school net attendance ratio (adjusted)	83.7	per cent
	7.5		Secondary school net attendance ratio (adjusted)	33.6	per cent
	7.6	*2.2*	Children reaching last grade of primary	92.2	per cent
	7.7		Primary completion rate	82.4	per cent
	7.8		Transition rate to secondary school	68.4	per cent
	7.9		Gender parity index (primary school)	1.02	ratio
	7.10		Gender parity index (secondary school)	1.11	ratio
CHILD PROTECTION					
Birth registration	8.1		Birth registration	53.1	per cent
Child labour	8.2		Child labour	51.1	per cent
	8.3		School attendance among child labourers	96.4	per cent
	8.4		Child labour among students	51.2	per cent
Child discipline	8.5		Violent discipline	83.8	per cent
Early marriage and polygyny	8.6		Marriage before age 15	9.8	per cent
	8.7		Marriage before age 18	34.7	per cent
	8.8		Young women age 15-19 currently married or in union	15.9	per cent
	8.9		Polygyny	0.0	per cent
Spousal age difference	8.10b		Women age 20-24 currently married or in union with a husband/partner at least 10 years older	13.7	per cent
Female genital mutilation/ cutting	8.11		Approval for female genital mutilation/cutting (FGM/C)	28.0	per cent
	8.12		Prevalence of female genital mutilation/cutting (FGM/C) among women	93.9	per cent
Domestic violence	8.14		Attitudes towards domestic violence	75.6	per cent
HIV/AIDS, SEXUAL BEHAVIOUR, AND ORPHANED AND VULNERABLE CHILDREN					
HIV/AIDS knowledge and attitudes	9.1		Comprehensive knowledge about HIV prevention	40.7	per cent
	9.2	*6.3*	Comprehensive knowledge about HIV prevention among young people	44.5	per cent
	9.3		Knowledge of mother-to-child transmission of HIV	42. 4	per cent
	9.4		Accepting attitude towards people living with HIV	32.0	per cent
	9.5		Women who know where to be tested for HIV	95.8	per cent
	9.7		Sexually active young women who have been tested for HIV and know the results	40.6	per cent
	9.8		HIV counselling during antenatal care	69.2	per cent
	9.9		HIV testing during antenatal care	67.7	per cent

Topic	MICS4 Indicator Number	MDG Indicator Number	Indicator	Value	Units
Sexual behaviour	9.10		Young women who have never had sex	42.8	per cent
	9.11		Sex before age 15 among young women	25.1	per cent
	9.12		Age-mixing among sexual partners	12.3	per cent
	9.13		Sex with multiple partners	1.3	per cent
	9.15		Sex with non-regular partners	8.9	per cent
Orphaned children	9.17		Children's living arrangements	11.6	per cent
	9.18		Prevalence of children with at least one parent dead	10.9	per cent
	9.20	*6.4*	School attendance of non-orphans	98.6	per cent

I. Introduction

Background

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

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

A Commitment to Action: National and International Reporting Responsibilities

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

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

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

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

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

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

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

Kenya is committed to improving the welfare of its people particularly women and children who are more vulnerable to social-economic hardships. In regard to children, the Government of Kenya (GOK) formulated the National Plan of Action (NPA) for children in 1992 soon after the World Summit for Children (WSC) which was held in 1990. The main objective of this programme was to identify issues affecting children and the strategies to address them. Measuring indicators of progress towards declared goals through proper monitoring and evaluation of projects/programmes and other interventions e.g. emergency response and humanitarian assistance, are vital components of the NPA.

Proper monitoring and evaluation of targeted projects and programmes by the government and development partners requires a wide range of data to track progress towards achievement of desired outcomes. In this respect, MICS data from the county will be helpful in appraising national programme such as Poverty Reduction Strategy (PRS), Economic Recovery Strategy (ERS) and Kenya Education Sector Support Programme (KESSP) 2005-2010 among other programmes. The MICS findings also fit into an overall plan to assess the Millennium Development Goals as the target year 2015 approaches, the World Fit for Children goals, the UNICEF Country Programme, UN Development Assistance Framework (UNDAF), and reporting on the Convention on the Rights of the Child and the Convention on the Elimination of All Forms of Discrimination against Women.

The GOK /UNICEF programme has a sizeable component of production of high quality and sufficiently disaggregated data for effective child friendly policy formulation and programme implementation. This final report presents the results of the indicators and topics covered in the Nyamira county survey.

Survey Objectives

The 2011 Nyamira County Multiple Indicator Cluster Survey has as its primary objectives:

- To provide up-to-date information for assessing the situation of children and women in Nyamira County;
- To furnish data needed for monitoring progress toward goals established in the Millennium Declaration and other internationally agreed upon goals, as a basis for future action;
- To contribute to the improvement of data and monitoring systems in Nyamira County and to strengthen technical expertise in the design, implementation, and analysis of such systems.
- To generate data on the situation of children and women, including the identification of vulnerable groups and of disparities, to inform policies and interventions.

II. Sample and Survey Methodology

Sample Design

The sample for the Nyamira County Multiple Indicator Cluster Survey (MICS) was designed to provide estimates for a large number of indicators on the situation of children and women at county level, for urban and rural areas. The urban and rural areas within Nyamira County were identified as the main sampling strata and the sample was selected in two stages. Therefore, to attain the desired sample size, a two-stage stratified sampling design was applied. The primary sampling units (PSUs) for the survey were the recently created enumeration areas (EAs) based on the 2009 Kenya Population and Housing Census while the households were the ultimate units.

A stand-alone statistical frame for Nyamira county which is located within the old Nyanza provincewas created based on the 2009 census EAs for the purpose of MICS 4 survey. Within each stratum, a specified number of census enumeration areas were selected systematically with probability proportional to size. A complete listing of all households in the selected EAs was undertaken by identifying and mapping all existing structures and households. The listing process ensured that the EAs had one measure of size (MoS). One MoS was defined as an EA having an average of 100 households. Prior to undertaking the fieldwork that informed the development of the frame, office processing of the EAs in the selected districts was done so that each EA with less than 50 households was amalgamated with the most convenient adjoining EA. On the other hand, the EAs with more than 149 households were segmented during household listing and eventually one segment scientifically selected and developed into a cluster. After a household listing was carried out within the selected enumeration areas, a systematic sample of 25households was drawn in each sample enumeration area. In total there were 50 enumeration areas in Nyamira County. The sample was stratified by urban and rural areas, and is not self-weighting. For reporting county level results, sample weights are used. A more detailed description of the sample design can be found in Appendix A.

Questionnaires

Three sets of questionnaires were used in the survey: 1) a household questionnaire which was used to collect information on all *de jure* household members (usual residents), the household, and the dwelling; 2) a women's questionnaire administered in each household to all women aged 15-49 years; and 3) an under-5 questionnaire, administered to mothers or caretakers for all children under 5 living in the household. The questionnaires included the following modules:

The Household Questionnaire included the following modules:

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

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

- Women's Background
- Child Mortality
- Planning of the last pregnancy Maternal and New-born Health
- Illness Symptoms
- Contraception
- Female Genital Mutilation/Cutting
- Attitudes Towards Domestic Violence
- Marriage/Union
- Sexual Behaviour
- HIV/AIDS

The Questionnaire for Children Under Five was administered to mothers or caretakers of children under 5 years of age[1] living in the households. Normally, the questionnaire was administered to mothers of under-5 children; in cases when the mother was not listed in the household roster, a primary caretaker for the child was identified and interviewed. The questionnaire included the following modules:

- Age
- Birth Registration
- Early Childhood Development
- Breastfeeding
- Care of Illness
- Malaria
- Immunization
- Anthropometry

The questionnaires are based on the MICS4 model questionnaire[2]. From the MICS4 model English version, the questionnaires were translated into Swahili and Kisii which are the commonly spoken languages in Nyamira County and back-translated to ensure that the meaning and context of the translations remained the same. Based on the results of the back-translations, adjustments were made to the wording and translation of the questionnaires. A copy of the MICS questionnaires used in Nyamira County is provided in Appendix F.

In addition to the administration of questionnaires, fieldwork teams tested the salt used for cooking in the households for iodine content, observed the places for handwashing and measured the weights and heights of children aged under 5 years. Salt samples were also collected and labelled in incidences where the testing kits were not available and testing undertaken within the local offices. Details and findings of these measurements are provided in the respective sections of the report.

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

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

Training and Fieldwork

Training for the fieldwork was conducted for 19 days in August/September, 2011. Training included lectures on interviewing techniques and the contents of the questionnaires, and mock interviews between trainees to gain practice in asking questions. Towards the end of the training period, trainees spent 2 days in practice interviewing in Kisumu County within clusters that were not sampled for the main survey exercise.

The data were collected by 2 teams; each was comprised of 5 interviewers, one driver, one editor, one measurer and a supervisor. Fieldwork began in October 2011 and concluded in December 2011.

Data Processing

Data were entered using the CSPro software. The data were entered on 43 microcomputers and carried out by 28 data entry operators and 3 data entry supervisors. In order to ensure quality control, all questionnaires were double entered and internal consistency checks were performed. Procedures and standard programs developed under the global MICS4 programme and adapted to the NyamiraCounty questionnaire were used throughout. Data processing began simultaneously with data collection in October 2011 and was completed in January 2012. Data were analysed using the Statistical Package for Social Sciences (SPSS) software program, Version 18, and the model syntax and tabulation plans developed by UNICEF were used for this purpose.

III. Sample Coverage and the Characteristics of Households and Respondents

Sample Coverage

Of the 1250 households selected for the sample, 1118 were found to be occupied. Of these, 1080 were successfully interviewed resulting in a household response rate of 96.6 per cent. In the interviewed households, 1122 women (age 15-49 years) were identified. Of these, 970 were successfully interviewed, yielding a response rate of 86.5 per cent within interviewed households. In addition, 729 children under age five were listed in the household questionnaire. Questionnaires were completed for 696 of these children, which corresponds to a response rate of 95.5 per cent within interviewed households. Overall response rates of 83.5 and 92.2 are calculated for the women's and under-5's interviews respectively (Table HH.1).

Table HH.1: Results of household and individual interviews

Number of households, women, and children under 5 by results of the interviews, and household, women's and under-5's response rates, Nyamira County, 2011	
Households	
Sampled	1250
Occupied	1118
Interviewed	1080
Household response rate	96.6
Women	
Eligible	1122
Interviewed	970
Women's response rate	86.5
Women's overall response rate	83.5
Children under 5	
Eligible	729
Mothers/caretakers interviewed	696
Under-5's response rate	95.5
Under-5's overall response rate	92.2

Characteristics of Households

The weighted age and sex distribution of survey population is provided in Table HH.2. The distribution is also used to produce the population pyramid in Figure HH.1. In the 1080 households successfully interviewed in the survey, 3004 household members were listed. Of these, 1485 were males, and 1519 were females. The age distribution from Table HH.2 shows that 43 per cent of the sampled households' population is below 15 years of age, 53 per cent are aged between 15-64 years and 4 per cent are aged above 65 years. The child population aged between 0-17 years is 50 per cent, highlighting a high dependency burden in Nyamira County. The population pyramid shows an irregular structure among females aged 5-9 and 50-54 years.

Table HH.2: Household age distribution by sex

Percentage and frequency distribution of the household population by five-year age groups, dependency age groups, and by child (age 0-17 years) and adult populations (age 18 or more), by sex, Nyamira County, 2011

		Males		Females		Total	
		Number	Per cent	Number	Per cent	Number	Per cent
Age	0-4	237	15.9	205	13.5	442	14.7
	5-9	220	14.8	237	15.6	456	15.2
	10-14	192	12.9	204	13.4	396	13.2
	15-19	174	11.8	152	10.0	327	10.9
	20-24	117	7.9	144	9.5	260	8.7
	25-29	114	7.7	140	9.2	254	8.4
	30-34	82	5.5	76	5.0	157	5.2
	35-39	78	5.2	79	5.2	157	5.2
	40-44	54	3.6	47	3.1	101	3.4
	45-49	46	3.1	50	3.3	95	3.2
	50-54	41	2.7	63	4.1	104	3.4
	55-59	41	2.8	41	2.7	82	2.7
	60-64	34	2.3	24	1.6	58	1.9
	65-69	19	1.3	20	1.3	40	1.3
	70-74	13	0.9	16	1.0	29	1.0
	75-79	12	0.8	8	0.5	20	0.7
	80-84	8	0.5	10	0.7	18	0.6
	85+	4	0.3	2	0.1	6	0.2
Dependency age groups	0-14	648	43.6	646	42.5	1293	43.1
	15-64	779	52.5	815	53.6	1594	53.1
	65+	57	3.8	56	3.7	113	3.7
Child and adult populations	Children age 0-17 years	758	51.0	735	48.4	1493	49.7
	Adults age 18+ years	726	48.9	781	51.4	1507	50.2
Total		**1485**	**100**	**1519**	**100**	**3004**	**100**

Figure HH.1: Age and sex distribution of household population, Nyamira County, 2011

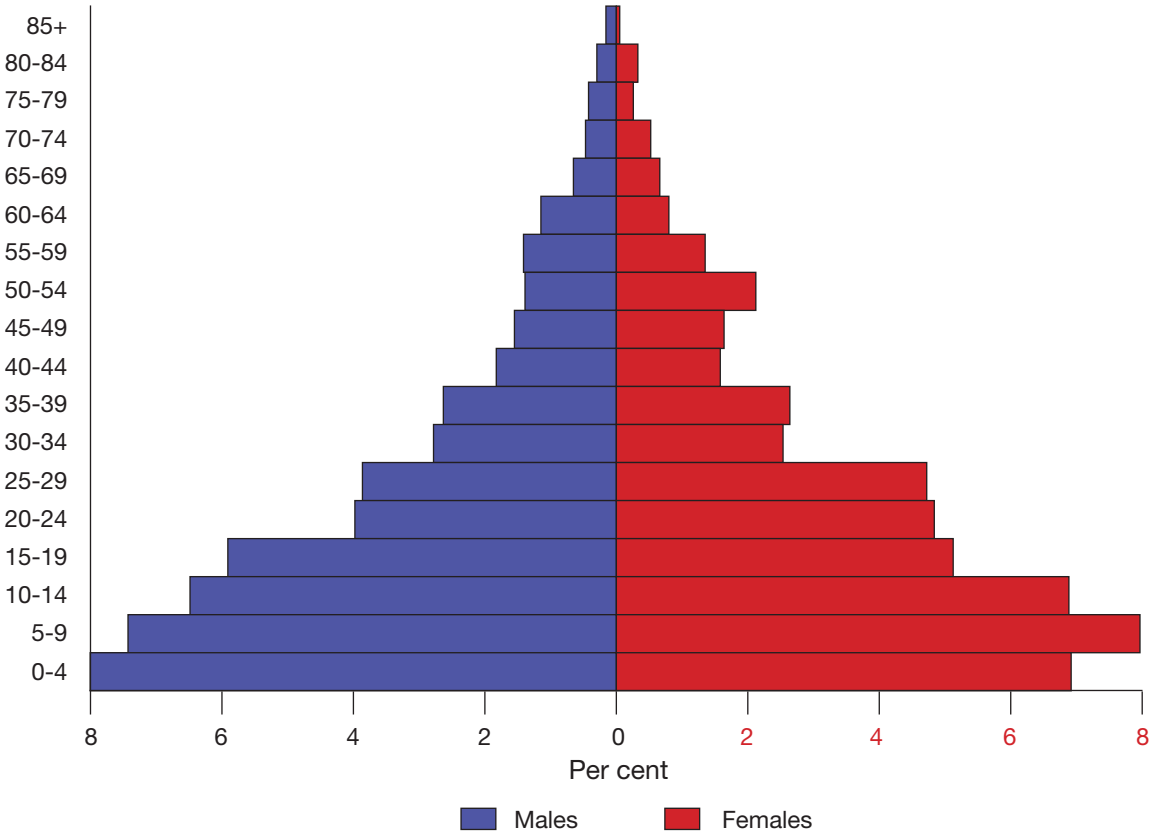


Table HH.3 - HH.5 provide basic information on the households, female respondents age 15-49, and children under-5 by presenting the unweighted, as well as the weighted numbers. Information on the basic characteristics of households, women and children under-5 interviewed in the survey is essential for the interpretation of findings presented later in the report and can provide an indication of the representativeness of the survey. See Appendix A for more details about the weighting.

Table HH.3 provides basic background information on the households. Within households, the sex of the household head, residence, number of household members, and education of the household head are shown in the table. These background characteristics are used in subsequent tables in this report; the figures in the table are also intended to show the numbers of observations by major categories of analysis in the report.At the overall provincial level that covers the 6 counties included for this survey the weighted and unweighted numbers of households are equal, since sample weights were normalized (See Appendix A of overall Nyanza Report). For the specific Nyamira county report the weighted and unweighted numbers are not equal. The table also shows the proportions of households with at least one child under 18, at least one child under 5, and at least one eligible woman age 15-49. The table also shows the weighted average household size estimated by the survey.

In Nyamira County, about 98per cent of the residents live in the rural areas. The mean household size is 4.6 persons which is comparable to thenational mean household size of 4.2 reported in the 2008-09 KDHS. About 26per cent of the households are reportedly headed by females and approximately 50per cent of the households have at least one child below 5 years of age. About 82per cent of the households have at least one child below 18 years of age and 79 per cent have at least one female in the reproductive age group 15-49 years. About 17per cent of the household head have no education, 46 per cent have attained primary education and 37per cent have attained secondary education.

Table HH.3: Household composition

Percentage and frequency distribution of households by selected characteristics, Nyamira County, 2011			
	Weighted per cent	Number of households	
		Weighted	Unweighted
Sex of household head			
Male	73.6	484	796
Female	26.4	174	284
Residence			
Urban	1.8	12	23
Rural	98.2	645	1057
Number of household members			
1	7.7	51	88
2	8.1	54	84
3	16.6	109	176
4	20.1	132	217
5	16.6	109	187
6	13.5	89	145
7	8.2	54	82
8	4.8	32	51
9	2.1	14	23
10+	2.3	15	27
Education of household head			
None	16.8	111	184
Primary	45.8	301	497
Secondary+	37.2	244	397
Missing/DK	0.2	1	2
Total	**100.0**	**657**	**1080**
Households with at least			
one child age 0-4 years	49.9	657	1080
one child age 0-17 years	81.8	657	1080
one woman age 15-49 years	78.7	657	1080
Mean household size	**4.6**	**657**	**1080**

Characteristics of Female Respondents 15-49 Years of Age and Children Under-5

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

Table HH.4: Women's background characteristics

Percentage and frequency distribution of women age 15-49 years by selected background characteristics, Nyamira County, 2011			
	Weighted per cent	Number of women	
		Weighted	Unweighted
Residence			
Urban	1.6	10	17
Rural	98.4	613	953
Age			
15-19	19.7	10	17
20-24	20.2	123	186
25-29	20.9	126	197
30-34	11.6	130	200
35-39	12.4	72	116
40-44	7.3	77	122
45-49	8.0	45	72
Marital/Union status			
Currently married/in union	65.8	410	640
Widowed	4.7	29	46
Divorced	1.8	11	16
Separated	3.4	21	36
Never married/in union	24.2	151	232
Motherhood status			
Ever gave birth	80.5	502	780
Never gave birth	19.5	121	190
Births in last two years			
Had a birth in last two years	26.3	164	256
Had no birth in last two years	73.7	459	714
Education			
None	3.7	23	37
Primary	48.5	302	478
Secondary+	47.7	297	455
Wealth index quintile			
Poorest	19.9	124	193
Second	23.4	146	217
Middle	19.8	123	190
Fourth	18.9	118	186
Richest	18.0	112	184
Total	**100**	**623**	**970**

Table HH.4 provides background characteristics of female respondents 15-49 years of age. The table includes information on the distribution of women according to residence, age, marital status, motherhood status, births in the last two years, education[3], and wealth index quintiles[4].

In Nyamira County, most of the women aged 15-49 years are in the age category of 25 to 29 years, accounting for 21 per cent of the sample. About 66 per cent of the women aged 15-49 years are currently married whilst 24 per cent report never having been married or in a union. The percentage of married women is comparable to what was reported for the national level (58 per cent) of women who were reported as married in the 2008-09 KDHS. Eighty-one per cent of the women are reported to havegiven birth, while 19 per cent have never given birth. Twenty-six per cent of women had had a birth in the last two years. Almost half (49 per cent) of the women have attained primary education only,and only 48 per cent have attained secondary education. About 18 per cent of the women are from the highest wealth index households, while 20 per centare from the lowest wealth index households.

Some background characteristics of children under 5 are presented in Table HH.5. These include the distribution of children by several attributes: sex, residence, age, mother's or caretaker's education, and wealth index. The results show that the proportion of male to female children aged 0-4 years differed slightly with boys accounting for 54 per cent. About 11 per cent of children aged below five years belong to the 0-5 months age group, while 8 per cent are in the 6-11 months category. The highest proportion(23 per cent) of children is in the middle age categories of 36 to 47 months. Fifty-three per cent of children have mothers who have attained primary level education, while forty-two per cent have mothers who have attained at least secondary education. The distribution of children below five years by wealth index shows that 24 per cent come from households categorised as low wealth index households, 15 per cent are from high wealth index households, and the remaining 61 per cent from medium wealth index households.

3 Unless otherwise stated, "education" refers to educational level attended by the respondent throughout this report when it is used as a background variable.

4 Principal components analysis was performed by using information on the ownership of consumer goods, dwelling characteristics, water and sanitation, and other characteristics that are related to the household's wealth to assign weights (factor scores) to each of the household assets. Each household was then assigned a wealth score based on these weights and the assets owned by that household. The survey household population was then ranked according to the wealth score of the household they are living in, and was finally divided into 5 equal parts (quintiles) from lowest (poorest) to highest (richest). The assets used in these calculations were as follows: source of drinking water, type of sanitation, persons per sleeping room, type of floor, roof, wall, cooking fuel; possession of electricity, radio, black and white Tv, color Tv, mobile phone, non-mobile phone, fridge, blender, water heater, washing machine, computer, internet, watch, bicycle, car or truck, motorcycle, boat, boat with motor, ownership of dwelling unit, land, cattle, cows, goats, sheep, chicken, horse or donkey, sewing machine, air conditioner, VCR or DVD). 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. 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 *Filmer, D. and Pritchett, L., 2001. "Estimating wealth effects without expenditure data – or tears: An application to educational enrolments in states of India". Demography 38(1): 115-132. Gwatkin, D.R., Rutstein, S., Johnson, K. , Pande, R. and Wagstaff. A., 2000. Socio-Economic Differences in Health, Nutrition, and Population. HNP/Poverty Thematic Group, Washington, DC: World Bank. Rutstein, S.O. and Johnson, K., 2004. The DHS Wealth Index. DHS Comparative Reports No. 6. Calverton, Maryland: ORC Macro.*

Table HH.5: Under-5's background characteristics

Percentage and frequency distribution of children under five years of age by selected characteristics, Nyamira County, 2011			
	Weighted per cent	Number of under-5 children	
		Weighted	Unweighted
Sex			
Male	53.9	238	374
Female	46.1	204	322
Residence			
Urban	1.1	5	9
Rural	98.9	437	687
Age			
0-5 months	10.6	47	73
6-11 months	8.1	36	58
12-23 months	18.1	80	125
24-35 months	20.4	90	144
36-47 months	23.0	102	162
48-59 months	19.8	87	134
Mother's education*			
None	(4.8)	21	34
Primary	52.9	234	376
Secondary+	42.2	187	286
Wealth index quintile			
Poorest	24.3	107	165
Second	24.1	106	161
Middle	20.9	93	149
Fourth	16.1	71	115
Richest	14.6	65	106
Total	**100**	**442**	**696**

* Mother's education refers to educational attainment of mothers and caretakers of children under 5.

IV. Child Mortality

One of the overarching goals of the Millennium Development Goals (MDGs) is the reduction of infant and under-five mortality. Specifically, the MDGs call for the reduction in under-five mortality by two-thirds between 1990 and 2015. Monitoring progress towards this goal is an important but difficult objective. Measuring childhood mortality may seem easy, but attempts using direct questions, such as "Has anyone in this household died in the last year?" give inaccurate results.

The Nyamira County Multiple Indicator Cluster Survey utilised direct measures of child mortality from birth histories which is one of the best ways of obtaining this information. The birth history obtained from women aged 15-49 years includes number of children ever born and living by sex, and date of birth of each child born. If the child is not alive at the time of the survey, information on age of the child at the time of death is also obtained. This method is being used by the Demographic and Health Surveys (DHS) worldwide including the Kenya Demographic and Health Survey (KDHS). This allows us to compare the mortality rates obtained by MICS with those of KDHS.

The Infant Mortality Rate (IMR) is the probability of dying before the first birthday. The Under-five Mortality Rate (U5MR) is the probability of dying before the fifth birthday. The neonatal mortality rate is the probability of dying before one month of life. Post neonatal mortality rate is the probability of dying between one month and one year of life. The child mortality rate refers to probability of dying between one and five year of life. All mortality rates mentioned above are expressed per 1,000 live births, except for child mortality rate, which is expressed per 1,000 children surviving up to 12 months of age.

Though direct estimates of mortality obtained from birth histories are the best, the quality of these mortality estimates depend on the completeness of information obtained in the birth histories. In many cases women tend to avoid reporting their dead children and this tends to under estimate the mortality levels.

Table CM.1 provides estimates of early childhood mortality for five year periods preceding the MICS survey. For the ten years immediately preceding the survey, the infant mortality rate is estimated at 43 deaths per 1000 live births, while the probability of dying under age 5 (U5MR) is around 52 deaths per 1000 live births. This implies that 1 in every 21 children born in Nyamira County dies before their first birthday, while 1 in every 16does not survive to age five. Based on the 2008-9 KDHS, the infant mortality rate nationally was 52 while the under-five mortality was 74 for the five years immediately preceding the survey (approximate calendar years 2004-2008). The estimated neonatal mortality rate is 30 per thousand live births while the post-neonatal mortality rate is 16 per thousand live births, for the tenyears immediately preceding the MICS survey. The estimated child mortality rate is 13 deaths per 1000 children for the ten-year period preceding the survey.

Table CM.1: Early childhood mortality rates

Neonatal, post-neonatal, Infant, child and under-five mortality rates for ten year periods preceding the survey, Nyamira County, 2011

Years preceding the survey	Neonatal mortality rate [1]	Post-neonatal mortality rate [2]	Infant mortality rate [3]	Child mortality rate [4]	Under-five mortality rate [5]
0-9	26	17	43	10	52
10-19	14	20	34	27	60

[1] MICS indicator 1.3
[2] MICS indicator 1.4
[3] MICS indicator 1.2; MDG indicator 4.2
[4] MICS indicator 1.5
[5] MICS indicator 1.1; MDG indicator 4.1
Post-neonatal mortality rates are computed as the difference between the infant and neonatal mortality rates

V. Nutrition

Nutritional Status

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

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

In a well-nourished population, there is a reference distribution of height and weight for children under age five. Under-nourishment in a population can be gauged by comparing children to a reference population. The reference population used in this report is based on new WHO growth standards[5]. Each of the three nutritional status indicators can be expressed in standard deviation units (z-scores) from the median of the reference population.

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

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

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

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

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

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

Table NU.1: Nutritional status of children

Percentage of children under age 5 by nutritional status according to three anthropometric indices: weight for age, height for age, and weight for height, Nyamira County,2011

	Weight for height				Height for age				Weight for height				
	Underweight per cent below		Mean Z-Score (SD)	Number of children under age 5	Stunted per cent below		Mean Z-Score (SD)	Number of children under age 5	Wasted per cent below		Overweight per cent above + 2 SD	Mean Z-Score (SD)	Number of children under age 5
	- 2 SD [1]	- 3 SD [2]			- 2 SD [3]	- 3 SD [4]			- 2 SD [5]	- 3 SD [6]			
Sex													
Male	14.1	2.1	-0.8	230	27.1	9.0	-1.3	230	5.2	0.4	3.4	-0.1	230
Female	11.6	3.0	-0.8	198	22.6	10.1	-1.1	198	1.4	0.0	2.2	-0.1	198
Residence													
Urban	(*)	(*)	(*)	4	(*)	(*)	(*)	4	(*)	(*)	(*)	(*)	4
Rural	13.0	2.5	-0.8	424	25.0	9.6	-1.2	424	3.5	0.2	2.7	-0.1	424
Age													
0-5 months	(2.8)	(0.0)	(5)	40	(5.9)	(0.0)	(-0.2)	40	1.5	(0.0)	(12.3)	(0.8)	40
6-11 months	(11.2)	(3.3)	(-.6)	35	(18.5)	(2.5)	(-.7)	35	(9.2)	(0.0)	(7.0)	(-.1)	35
12-23 months	20.0	3.0	-1.2	77	36.6	10.2	-1.6	77	6.7	1.2	2.0	-0.3	77
24-35 months	18.6	5.4	-1.0	90	23.1	7.2	-1.2	90	4.1	0.0	1.4	-0.3	90
36-47 months	9.3	1.1	-0.9	99	28.4	16.8	-1.4	99	2.1	0.0	1.1	0.0	99
48-59 months	10.2	1.5	-0.9	87	24.4	10.2	-1.3	87	.0	0.0	1.1	-0.1	87
Mother's education													
None	(*)	(*)	(*)	21	(*)	(*)	(*)	21	(*)	(*)	(*)	(*)	21
Primary	14.7	2.8	-0.9	228	30.1	9.5	-1.3	228	3.3	0.0	1.6	-0.1	228
Secondary	11.0	2.0	-0.7	180	19.8	9.0	-1.0	180	4.1	0.5	4.4	0.0	180
Wealth index quintile													
Poorest	16.1	3.7	-0.9	103	29.1	9.8	-1.3	103	2.8	0.0	.5	-0.1	103
Second	15.9	2.6	-1.0	106	26.6	9.1	-1.2	106	5.9	0.9	.9	-0.3	106
Middle	11.0	.7	-0.7	89	23.6	8.3	-1.1	89	2.4	0.0	3.2	0.0	89
Fourth	11.0	2.2	-0.7	70	25.4	11.8	-1.1	70	2.3	0.0	4.2	0.1	70
Richest	7.2	3.3	-0.6	61	17.2	8.8	-1.2	61	3.1	0.0	8.3	0.2	61
Total	**12.9**	**2.5**	**-0.8**	**428**	**25.0**	**9.5**	**-1.2**	**428**	**3.4**	**0.2**	**2.9**	**-0.1**	**428**

[1] MICS indicator 2.1a and MDG indicator 1.8
[2] MICS indicator 2.1b
[3] MICS indicator 2.2a, [4] MICS indicator 2.2b
[5] MICS indicator 2.3a, [6] MICS indicator 2.3b
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases.
Notes: The first two columns for each anthropometric indicator refer to children whose z-scores for the anthropometric indicator (i.e. the exact number of standard deviations from the median) fall below -2 standard deviations (moderately and severely underweight, stunted, or wasted) and -3 standard deviations (severely underweight, stunted, or wasted) from the median of the WHO Child Growth Standards for the same anthropometric indicator. The table also includes mean z-scores for each anthropometric indicator, and the percentage of children who are overweight, which takes into account those children whose weight for height is above 2 standard deviations from the median of the WHO Child Growth Standards.
The per cent 'below –2 standard deviations' includes those who fall -3 standard deviations below the median.
Indices used in this table are not comparable to those based on the NCHS/CDC/WHO reference. For the nutritional status table based on the NCHS/CDC/WHO, see the tables in the appendix.

Children whose full birth date (month and year) were not obtained, and children whose measurements are outside a plausible range are excluded from Table NU.1. Children are excluded from one or more of the anthropometric indicators when their weights and heights have not been measured, whichever is applicable. For example if a child has been weighed but his/her height has not been measured, the child is included in underweight calculations, but not in the calculations for stunting and wasting. Percentages of children by age and reasons for exclusion are shown in the data quality tables DQ.6 and DQ.7. Overall, all children in Nyamira County had either their month or year of birth taken, 98 per cent had their height measured, 98 had their weight measured whilst 98 per cent had either their weights or heights measured (Table DQ.6). Table DQ.7 shows that due to incomplete dates of birth, implausible measurements, and missing weight and/or height, less than 1 per cent of children have been excluded from calculations of the weight-for-age indicator, whilst a comparable proportion have been excluded from the height-for-age and the weight-for-height indicators.

Approximately 13 per cent of children under age five in Nyamira County are moderately or severely underweight (below -2SD from the WHO reference mean) whilst 3 per cent are classified as severely underweight (below -3SD from the WHO reference mean) (Table NU.1). About one in four (25 per cent) children is moderately or severely stunted or too short for their age whilst about 1 in 10 (10 per cent) is severely stunted. A little more than 3 per cent are moderately or severely wasted or too thin for their height, whilst 3 per cent are classified as overweight.

Malnutrition status does not vary by the level of mother's education. The proportion of overweight children increases with increasing levels of the wealth index of the households.

Breastfeeding and Infant and Young Child Feeding

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

WHO/UNICEF have the following feeding recommendations:

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

It is also recommended that breastfeeding be initiated within one hour of birth.

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

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

Table NU.2 provides the proportion of children born in the last two years who were ever breastfed, and those who were first breastfed within one hour and also those breastfed within the first day of birth. Overall, the majority (95 per cent) of children born in the 2 years preceding the survey in Nyamira County were ever breastfed. However, although a very important step in management of lactation and establishment of a physical and emotional bond between the baby and the mother, only two out of every five (41 per cent) babies are breastfed for the first time within one hour of birth. The proportion breastfed within one hour of birth is ranges from 45 per cent for children in the 0-11 months age group () to 37 per cent among those aged 12-23 months (Table NU.2 and Figure NU.1). About 80 per cent of newborn children start breastfeeding within one day of birth.

Figure NU.3: Infant feeding patterns by age: Percentage distribution of children aged under 2 years by feeding pattern by age group, Nyamira County, Nyanza province, Kenya, 2011

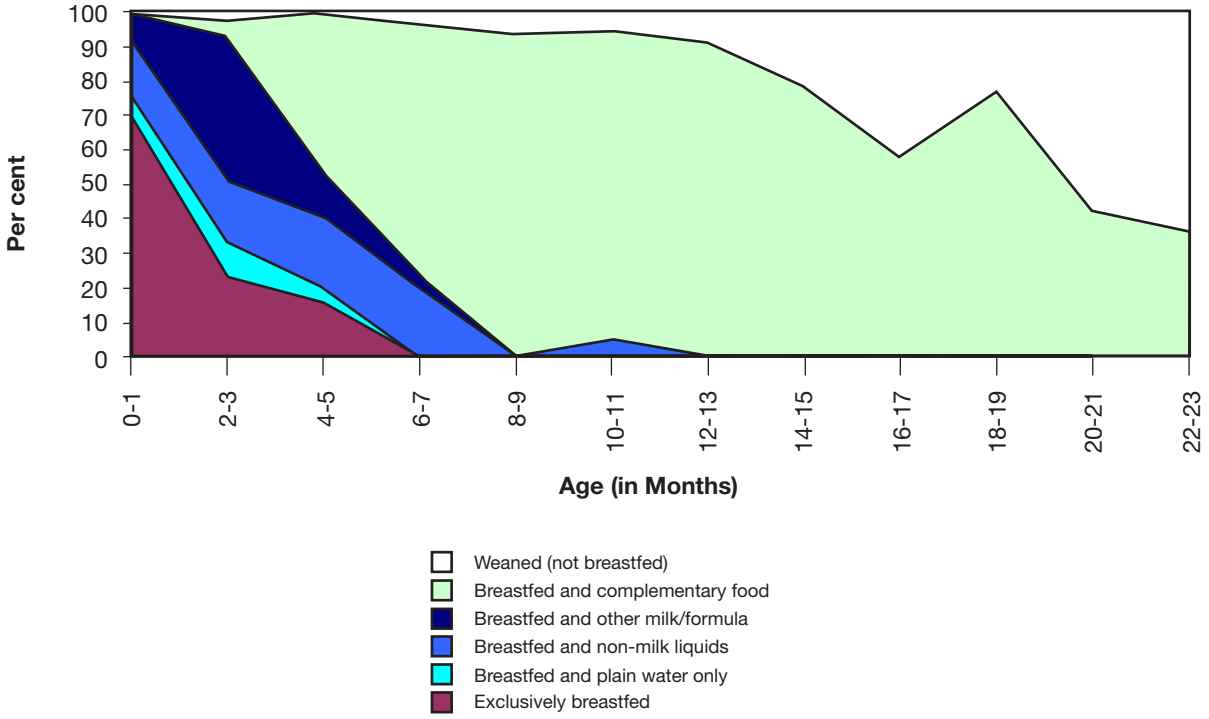


Table NU.2: Initial breastfeeding

Percentage of last-born children in the 2 years preceding the survey who were ever breastfed, percentage who were breastfed within one hour of birth and within one day of birth, Nyamira County, 2011

	Percentage who were ever breastfed [1]	Percentage who were first breastfed:		Number of last-born children in the two years preceding the survey
		Within one hour of birth [2]	Within one day of birth	
Residence				
Urban	(*)	(*)	(*)	2
Rural	94.9	40.9	80.3	162
Months since birth				
0-11 months	95.9	45.2	78.8	83
12-23 months	97.1	36.9	83.9	71
Assistance at delivery				
Skilled attendant	98.6	40.2	86.1	102
Traditional birth attendant	(*)	(*)	(*)	22
Place of delivery				
Public sector health facility	98.8	45.9	89.3	64
Private sector health facility	(98.2)	(31.2)	(80.6)	36
Home	94.1	41.2	74.8	58
Mother's education				
None	(*)	(*)	(*)	7
Primary	96.6	39.4	77.9	85
Secondary+	93.8	42.1	85.0	71
Wealth index quintile				
Poorest	(94.0)	(30.0)	(75.5)	34
Second	(92.0)	(49.1)	(81.1)	39
Middle	(97.7)	(44.5)	(80.8)	39
Fourth	(92.3)	(36.6)	(82.6)	27
Richest	(*)	(*)	(*)	24
Total	**94.6**	**40.5**	**80.2**	**164**

1 MICS indicator 2.4

2 MICS indicator 2.5

(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases

Figure NU.1: Percentage of mothers who started breastfeeding within one hour and within one day of birth, Nyamira County, 2011

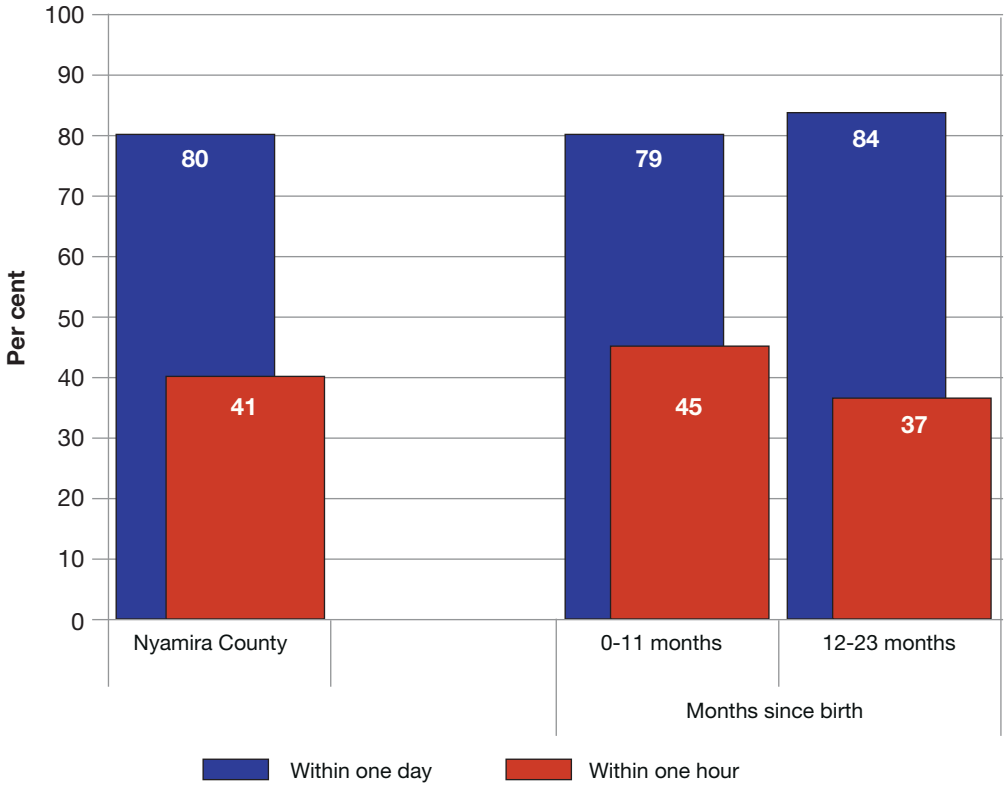


Table NU.3 shows the median duration of breastfeeding by selected background characteristics. Among children under age 3, the median duration is approximately 20 months for any breastfeeding, 2 months for exclusive breastfeeding, and 3 months for predominant breastfeeding. The duration of breastfeeding does not vary across the wealth quintiles.

Table NU.3: Duration of breastfeeding

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

	Median duration (in months) of			Number of children age 0-35 months
	Any breastfeeding [1]	Exclusive breastfeeding	Predominant breastfeeding	
Sex				
Male	19.0	1.9	2.2	142
Female	21.8	1.6	2.3	111
Residence				
Urban	(*)	(*)	(*)	4
Rural	20.8	1.8	2.2	249
Mother's education				
None	(*)	(*)	(*)	13
Primary	21.2	2.1	2.3	133
Secondary+	19.9	1.3	2.2	107
Wealth index quintile				
Poorest	18.3	1.7	2.0	56
Second	21.4	3.5	3.5	62
Middle	23.3	0.7	1.6	55
Fourth	(18.6)	(2.5)	(2.9)	41
Richest	(20.6)	(1.9)	(2.7)	40
Median	**20.8**	**1.8**	**2.3**	**253**

[1] MICS indicator 2.10

( ) Based on 25-49 unweighted cases

a) Median duration of any breastfeeding is calculated as the age in months when 50 per cent of children age 0-35 months did not receive breast milk during the previous day. Median durations of exclusive and predominant breastfeeding are calculated the same way.

b) Median and mean durations are based on current status. The table is based only on living children at the time of survey.

c) For definitions of exclusive and predominant breastfeeding, see footnotes below Table NU.3.

The adequacy of infant feeding in children less than 24 months 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 6-23 months are considered to be adequately fed if they are receiving breast milk and solid, semi-solid or soft food. In Nyamira County, about 71 per cent of children in the 6-23 months age group are adequately fed. Overall, about 61 per cent of children aged 0-23 months are appropriately fed.

Among children aged 0-23 months, the proportion appropriately fed ranges from 67 per cent for girls to 57 per cent among boys.

Table NU.4: Age-appropriate breastfeeding

Percentage of children age 0-23 months who were appropriately breastfed during the previous day, Nyamira County, 2011

	Children age 0-5 months		Children age 6-23 months		Children age 0-23 months	
	Per cent exclusively breastfed [1]	Number of children	Per cent currently breastfeeding and receiving solid, semi-solid or soft foods	Number of children	Per cent appropriately breastfed [2]	Number of children
Sex						
Male	(39.5)	28	64.5	66	57.0	95
Female	(*)	18	79.9	50	67.4	68
Residence						
Urban	(*)	1	(*)	2	(*)	2
Rural	(37.6)	46	70.7	114	61.2	161
Mother's education						
None	(*)	2	(*)	5	(*)	7
Primary	41.9	28	71.5	61	62.2	88
Secondary	(*)	17	72.9	50	60.8	67
Wealth index quintile						
Poorest	(*)	14	(*)	21	(47.9)	36
Second	(*)	7	(73.1)	30	(70.2)	37
Middle	(*)	11	(85.5)	28	(67.8)	38
Fourth	(*)	10	(*)	17	(54.9)	27
Richest	(*)	5	(*)	19	(64.4)	25
Total	**(37.1)**	**47**	**71.1**	**116**	**61.3**	**163**

[1] MICS indicator 2.6
[2] MICS indicator 2.14
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases

Table NU.5 presents the proportion of children age 6-23 months who received semi-solid or soft foods the minimum number of times or more during the previous day according to breastfeeding status (see the note in Table NU.5 for a definition of minimum number of times for different age groups). Overall, about two out of every five (40 per cent) children in Nyamira County are receiving solid, semi-solid and soft foods the minimum number of times. About 46 per cent of male children received solid, semi-solid and soft foods the minimum number of times versus 33 per cent to their female counterparts.

Table NU.5: Minimum meal frequency

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

	Currently breastfeeding		Currently not breastfeeding			All	
	Per cent receiving solid, semi-solid and soft foods the minimum number of times	Number of children age 6-23 months	Per cent receiving at least 2 milk feeds [1]	Per cent receiving solid, semi-solid and soft foods or milk feeds 4 times or more	Number of children age 6-23 months	Per cent with minimum meal frequency [2]	Number of children age 6-23 months
Sex							
Male	(46.6)	43	(*)	(*)	23	45.9	66
Female	(31.0)	43	(*)	(*)	7	33.2	50
Age							
6-8 months	(*)	15	(*)	(*)	1	(*)	17
9-11 months	(*)	18	(*)	(*)	1	(*)	19
12-17 months	(40.0)	30	(*)	(*)	8	(43.5)	38
18-23 months	(*)	22	(*)	(*)	20	(31.8)	42
Residence							
Urban	(*)	2	(*)	(*)	0	(*)	2
Rural	38.8	85	(37.9)	(45.0)	30	40.4	114
Mother's education							
None	(*)	2	(*)	(*)	3	(*)	5
Primary	(42.4)	46	(*)	(*)	15	42.0	61
Secondary	(33.6)	38	(*)	(*)	12	37.5	50
Wealth index quintile							
Poorest	(*)	15	(*)	(*)	6	(*)	21
Second	(*)	23	(*)	(*)	7	(43.5)	30
Middle	(*)	24	(*)	(*)	4	(47.2)	28
Fourth	(*)	10	(*)	(*)	7	(*)	17
Richest	(*)	14	(*)	(*)	5	(*)	19
Total	**38.9**	**86**	**(37.9)**	**(45.0)**	**30**	**40.4**	**116**

[1] MICS indicator 2.15
[2] MICS indicator 2.13
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases.
Note: Among currently breastfeeding children age 6-8 months, minimum meal frequency is defined as children who also received solid, semi-solid or soft foods 2 times or more. Among currently breastfeeding children age 9-23 months, receipt of solid, semi-solid or soft foods at least 3 times constitutes minimum meal frequency. For non-breastfeeding children age 6-23 months, minimum meal frequency is defined as children receiving solid, semi-solid or soft foods, and milk feeds, at least 4 times during the previous day.

The continued practice of bottle-feeding is a concern because of the possible contamination due to unsafe water and lack of hygiene in preparation. Table NU.6 shows that bottle-feeding is still occurring to a small extent in Nyamira County with 9 per cent of children aged 0-23 months reported to have been fed using a bottle with a nipple.

Table NU.6: Bottle feeding

Percentage of children age 0-23 months who were fed with a bottle with a nipple during the previous day, Nyamira County, 2011		
	Percentage of children age 0-23 months fed with a bottle with a nipple [1]	Number of children age 0-23 months
Sex		
Male	8.5	95
Female	9.7	68
Age		
0-5 months	(11.2)	47
6-11 months	(13.3)	36
12-23 months	5.8	80
Residence		
Urban	(*)	2
Rural	9.1	161
Mother's education		
None	(*)	7
Primary	7.5	88
Secondary	8.9	67
Wealth index quintile		
Poorest	(14.9)	36
Second	(7.2)	37
Middle	(6.3)	38
Fourth	(7.2)	27
Richest	(9.2)	25
Total	**9.0**	**163**

[1] MICS indicator 2.11
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases.

Salt Iodization

Iodine Deficiency Disorders (IDD) is the world's leading cause of preventable mental retardation and impaired psychomotor development in young children. In its most extreme form, iodine deficiency causes cretinism. It also increases the 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. The international goal is to achieve sustainable elimination of iodine deficiency by 2005. The WHO and UNICEF recommend universal salt iodization as a safe, cost-effective and sustainable strategy to ensure sufficient intake of iodine by all individuals. In line with international recommendations, the Kenya Ministry of Public Health and Sanitation (MOPHS) recommends that all salts meant for human consumption in Kenya be iodized. The indicator is the percentage of households consuming adequately iodized salt (>15 parts per million).

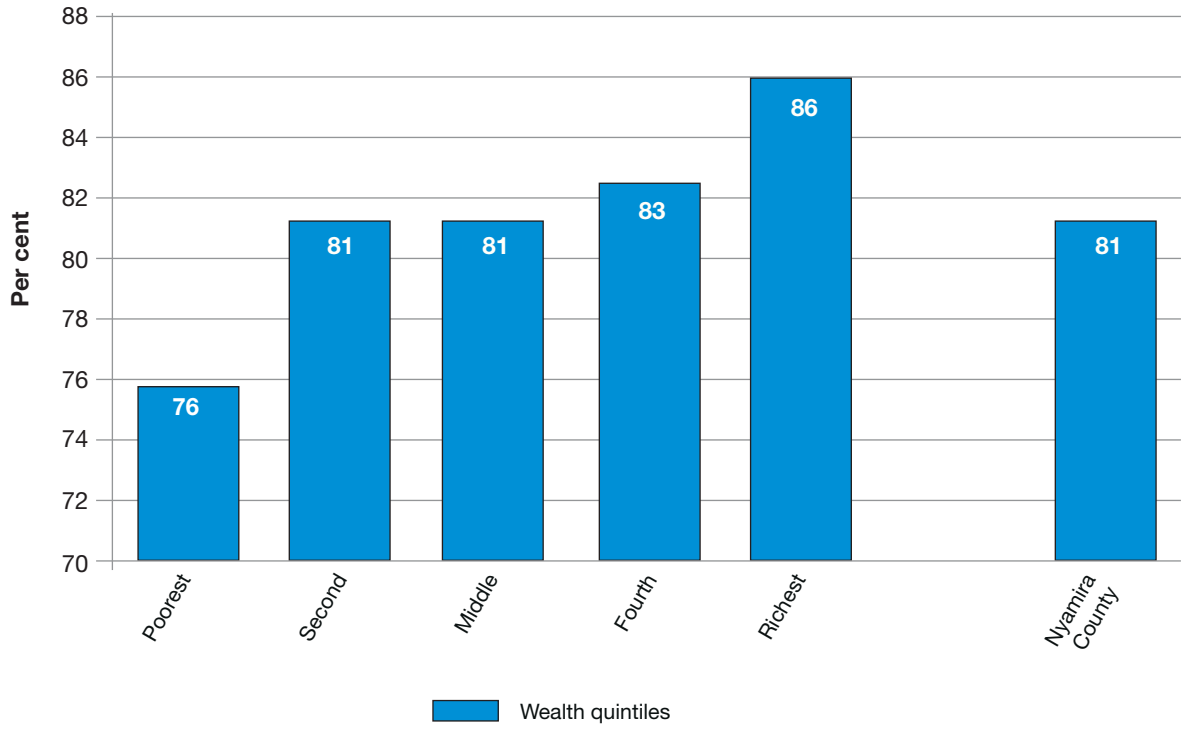
Table NU.7: Iodized salt consumption

Percentage distriqbution of households by consumption of iodized salt, Nyamira County, 2011								
	Percentage of households in which salt was tested	Number of households	Per cent of households with				Total	Number of households in which salt was tested or with no salt
				Salt test result				
			No salt	Not iodized 0 PPM	>0 and <15 PPM	15+ PPM [1]		
Residence								
Urban	(*)	12	(*)	(*)	(*)	(*)	(*)	12
Rural	81.5	645	17.2	1.0	.8	81.0	100.0	636
Wealth index quintile								
Poorest	76.1	144	23.1	0.7	0.3	75.8	100.0	143
Second	82.6	135	16.8	0.7	1.3	81.2	100.0	134
Middle	82.8	138	15.8	2.6	0.7	80.8	100.0	135
Fourth	81.9	122	16.0	0.0	1.4	82.5	100.0	119
Richest	85.3	118	13.5	0.5	0.0	86.0	100.0	116
Total	**81.6**	**657**	**17.2**	**1.0**	**.8**	**81.0**	**100.0**	**648**

[1] MICS indicator 2.16
Note: Adequately iodized salt is defined as salt that contains at least 15 parts per million of iodine

In about 82 per cent of households, salt used for cooking was analysed for iodine content by using salt test kits to test for the presence of potassium iodate. Table NU.7 shows that whilst salt in 81 per cent of households had the required 15 ppm of iodine, there was no salt available in 17 per cent of households. As expected, the proportion of households having the required 15 ppm ranges from 76 per cent in households from the poorest wealth quintile to 86 per cent in households from the richest wealth quintile (Figure NU.2).

Figure NU.2: Percentage of households consuming adequately iodized salt, Nyamira County, 2011



Children's Vitamin A Supplementation

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

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

For countries with vitamin A deficiency problems, current international recommendations call for high-dose vitamin A supplementation every four to six months, targeted to all children between the ages of six to 59 months living in affected areas. Providing young children with two high-dose vitamin A capsules a year is a safe, cost-effective and 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 programs, the definition of the indicator is the per cent of children 6-59 months of age receiving at least one high dose vitamin A supplement in the last six months.

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

Within the six months prior to the MICS survey, 2 out of every 5 (40 per cent) of children aged 6-59 months received a high dose of vitamin A supplement in Nyamira county (Table NU.8). The proportion of children receiving vitamin A supplementation ranges from 44 per cent amongst children whose mothers have secondary level education to 35 per cent amongst those whose mothers have primary level education. In Nyamira County, the proportion of children receiving vitamin A supplementation increases as wealth status improves; it is lowest amongst children from households in the poorest quintile (30 per cent) and highest amongst those from households in the richest wealth quintile (48 per cent).

Table NU.8: Children's vitamin A supplementation

Percentage distribution of children age 6-59 months by receipt of a high dose vitamin A supplement in the last 6 and 12 months, Nyamira County, 2011						
	Percentage who received Vitamin A according to:				Percentage of children who received Vitamin A during the last 6 months [1]	Number of children age 6-59 months
	Child health book/card/ vaccination card in the last 12 months	Child health book/card/ vaccination card in last 6 months	Mother's report any time prior to 12 months	Mother's report less than 6 months		
Sex						
Male	11.0	7.2	48.9	38.4	39.5	210
Female	11.7	7.8	50.3	37.3	39.2	186
Residence						
Urban	(*)	(*)	(*)	(*)	(*)	4
Rural	11.1	7.2	49.4	37.6	39.1	391
Age						
6-11 months	(26.3)	(26.3)	(71.2)	(66.4)	(69.7)	36
12-23 months	33.0	16.8	74.1	48.7	52.1	80
24-35 months	5.3	3.6	47.2	36.6	37.8	90
36-47 months	2.9	2.2	37.5	27.2	27.2	102
48-59 months	1.4	1.4	34.7	30.2	31.0	87
Mother's education						
None	(*)	(*)	(*)	(*)	(*)	19
Primary	9.1	6.3	47.0	34.4	35.3	206
Secondary	13.7	8.9	51.8	41.6	43.8	170
Wealth index quintile						
Poorest	7.0	5.5	39.9	28.7	29.8	93
Second	9.3	5.7	50.8	37.0	38.9	100
Middle	17.3	9.3	50.0	38.3	39.7	82
Fourth	11.0	8.0	54.2	43.0	45.4	62
Richest	13.7	10.6	57.2	48.2	48.2	59
Total	**11.3**	**7.5**	**49.6**	**37.9**	**39.4**	**395**

[1] MICS indicator 2.17

(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases

Low Birth Weight

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

In the developing world, low birth weight stems primarily from the mother's poor health and nutrition. Three factors have most impact: the mother's poor nutritional status before conception, short stature (due mostly to under nutrition and infections during her childhood), and poor nutrition during the pregnancy. Inadequate weight gain during pregnancy is particularly important since it accounts for a large proportion

of foetal growth retardation. Moreover, diseases such as diarrhoea and malaria, which are common in many developing countries, can significantly impair foetal growth if the mother becomes infected while pregnant.

In the industrialized world, cigarette smoking during pregnancy is the leading cause of low birth weight. In developed and developing countries alike, teenagers who give birth when their own bodies have yet to completethe growth phase are at an increased risk of bearing underweight babies.

One of the major challenges in measuring the incidence of low birth weight is the fact that more than half of infants in the developing world are not weighed. In the past, most estimates of low birth weight for developing countries were based on data compiled from health facilities. However, these estimates are biased for most developing countries because the majority of new-borns are not delivered in 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[6].

Table NU.9: Low birth weight infants

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

	Per cent of live births:		Number of last born children in the 2 years preceding the survey
	Below 2500 grams [1]	Weighed at birth [2]	
Residence			
Urban	(*)	(*)	2
Rural	7.1	71.0	162
Mother's education			
None	(*)	(*)	7
Primary	6.8	65.3	85
Secondary+	7.5	78.0	71
Wealth index quintile			
Poorest	(6.5)	(67.5)	34
Second	(6.3)	(63.6)	39
Middle	(6.7)	(66.5)	39
Fourth	(11.2)	(78.0)	27
Richest	(*)	(*)	24
Total	**7.2**	**71.0**	**164**

[1] MICS indicator 2.18
[2] MICS indicator 2.19
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases.

Overall, 71 per cent of children are weighed at birth and approximately 7 per cent of infants are estimated to have weighed less than 2500 grams at birth (Table NU.9). It is noteworthy that the proportion of children weighed at birth ranges from 65 per cent among children whose mothers have primary level education to 78 per cent among children whose mothers have secondary level education.

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

VI. Child Health

Vaccinations

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

A World Fit for Children goal is to ensure full immunization of children under the age one year of age at 90 per cent nationally, with at least 80 per cent coverage in every district or equivalent administrative unit.

The Kenya National Expanded Programme on Immunization (KEPI) recommends that a child should receive a BCG vaccination to protect against tuberculosis, three doses of DPT-HeB-Hib (Pentavalent) vaccine to protect against diphtheria, pertussis, tetanus, Hepatitis B and invasive Hemophilus *influenzae* type B disease, four doses of polio vaccine and a single dose of measles vaccine by the age of 9 months. Mothers were asked to provide vaccination cards for children under the age of five. Interviewers copied vaccination information from the cards onto the MICS questionnaire.

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

Overall, 84 per cent of children had health cards (Table CH.2). If the child did not have a card, the mother was asked to recall whether or not the child had received each of the vaccinations for DPT and Polio and how many times they had received the vaccinations. The percentage of children age 12 to 23 months who received each of the vaccinations is shown in Table CH.1. The denominator for the table is comprised of children age 12-23 months so that only children who are old enough to be fully vaccinated are counted. In the first and second columns, the numerator includes all children who were vaccinated at any time before the survey according to the vaccination card or the mother's report. In the last column, only those who were vaccinated before their first birthday, as recommended, are included. For children without vaccination cards, the proportion of vaccinations given before the first birthday is assumed to be the same as for children with vaccination cards.

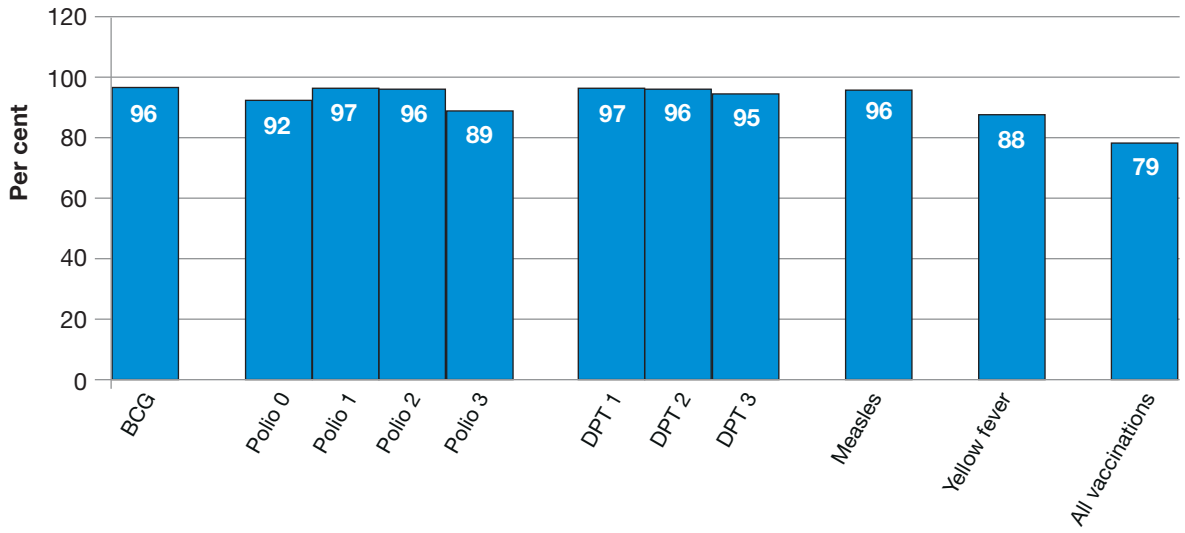
Table CH.1: Vaccinations in first year of life

Percentage of children age 12-23 months immunized against childhood diseases at any time before the survey and before the first birthday, Nyamira County, 2011				
	Vaccinated at any time before the survey according to			Vaccinated by 12 months of age
	Vaccination card	Mother's report	Either	
BCG [1]	81.5	16.7	98.3	96.5
Polio				
At birth	81.5	10.7	92.2	92.2
1	84.4	12.2	96.6	96.6
2	85.1	10.6	95.7	95.7
3 [2]	84.4	4.9	89.2	89.2
DPT				
1	84.4	13.0	97.4	96.6
2	84.4	12.4	96.8	96.0
3 [3]	84.4	10.4	94.8	94.8
Measles [4]	84.4	13.8	98.2	96.2
Yellow fever [5]	80.2	7.4	87.6	87.6
All vaccinations	82.9	0.0	82.9	78.6
No vaccinations	0.0	1.7	1.7	1.7
Number of children age 12-23 months	**80.2**	**80.2**	**80.2**	**80.2**

[1] MICS indicator 3.1;
[2] MICS indicator 3.2;
[3] MICS indicator 3.3
[4] MICS indicator 3.4; MDG indicator 4.3
[5] MICS indicator 3.6
Notes:
a) For each antigen, the total number of 12-23 month old children vaccinated before 12 months is calculated, as validated by card or mother's recall. To estimate the number of children without a card who have received vaccine before the 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 first birthday.
b) The use of the 12-23 months age group is based on the assumption that measles is given at 9 months of age. In countries where measles vaccination is given later, an older age group should be used.
c) Children receiving all vaccinations (fully immunized children) needs to be determined at the country level, in accordance with the existing vaccination schedule and the vaccinations included in the table should be revised / adapted accordingly.

There is almost universal coverage of immunisation of BCG and the first doses of Polio and DPT amongst children aged 12-23 month by their 12 month of age in Nyamira County. For example, 97 per cent of children have received a BCG vaccination, 97 per cent have received first dose of DPT and 92 per cent have received Polio vaccine at birth and 96 per cent have received their Measles vaccine. However, the proportion of children who have received the second and third doses of DPT and Polio decreases (Figure CH.1). For instance, DPT vaccine coverage falls slightly to 95 per cent, whilst for Polio; coverage falls to 89 per cent by their third dose. Eighty-eight (88) per cent of children are vaccinated against yellow fever by their first birthday, the lowest vaccine uptake compared to the other vaccines coverage. Due to the lower proportions of children who have received their second and third vaccines in Nyamira County, the overall proportion of children who have received all recommended vaccinations by their first birthday is 79 per cent.

Figure CH.1: Percentage of children aged 12-23 months who received the recommended vaccinations by 12 months, Nyamira County, 2011



The Hepatitis B vaccine is included in the immunization schedule in Kenya as part of the Pentavalent vaccine whilst yellow fever vaccine is recommended (at 9 months) in four districts in Rift Valley Province. Although not on the national immunization schedule, the meningococcal vaccine is also recommended for children between 6 weeks and 1 year. The HiB and Pneumomococcal conjugate (PCV) vaccines were introduced into the national immunization Programme in the year 2011. However data for immunization before 12 months of age for these vaccines was not collected in this MICS survey.

Table CH.2 shows vaccination coverage rates among children 12-23 months by background characteristics. The figures indicate children receiving the vaccinations at any time up to the date of the survey, and are based on information from both the vaccination cards and mothers'/caretakers' reports. Overall, 83 per cent of children aged 12-23 months receive all the vaccinations (BCG, 3 doses of DPT, 4 doses of polio, yellow fever and measles) at any time up to the date of the survey, and not necessarily by their 1st birthday. About 2 per cent of children in Nyamira County do not receive any of the vaccines.

Table CH.2: Vaccinations by background characteristics

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

	Percentage of children who received:											Percentage with vaccination card seen	Number of children age 12-23 months
		Polio				DPT							
	BCG	At birth	1	2	3	1	2	3	Measles	Yellow fever	None	All		
Sex														
Male	99.0	91.6	96.4	94.9	90.2	99.0	99.0	95.8	99.0	87.6	1.0	83.5	84.9	50
Female	(97.0)	(93.3)	(97.0)	(97.0)	(87.6)	(94.9)	(93.3)	(93.3)	(97.0)	(87.6)	(3.0)	(81.9)	(81.9)	30
Area														
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Rural	98.2	92.1	96.6	96.0	89.4	97.4	96.8	94.8	98.2	87.8	1.8	83.0	83.9	79
Mother's education														
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	4
Primary	(96.9)	(94.6)	(95.3)	(94.6)	(88.2)	(96.9)	(95.8)	(93.9)	(96.9)	(88.2)	(3.1)	(84.5)	(84.5)	45
Secondary	(100.0)	(88.1)	(100.0)	(96.7)	(89.4)	(98.0)	(98.0)	(95.5)	(100.0)	(88.5)	(0.0)	(83.5)	(83.5)	32
Wealth index quintile														
Poorest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	12
Second	(96.3)	(96.2)	(93.6)	(96.1)	(93.4)	(96.2)	(96.2)	(96.2)	(96.2)	(91.0)	(3.7)	(88.6)	(88.6)	25
Middle	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	18
Fourth	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	10
Richest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	16
Total	**98.3**	**92.2**	**96.6**	**95.7**	**89.2**	**97.4**	**96.8**	**94.8**	**98.2**	**87.6**	**1.7**	**82.9**	**83.8**	**80**

(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases.

Notes:

a) In this table, the calculation is the same as the third column of Table CH.1 (i.e. the child's age at vaccination is not taken into account). Children who were vaccinated at any time before the survey are included in the numerator.

b) Children receiving all vaccinations (fully immunized children) needs to be determined at the country level, in accordance with the existing vaccination schedule. Vaccinations included in the table should be revised/adapted accordingly.

Neonatal Tetanus Protection

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

Prevention of maternal and neonatal tetanus is to assure all pregnant women receive at least two doses of tetanus toxoid vaccine. However, if women have not received two doses of the vaccine during the pregnancy, they (and their new-born) are also considered to be protected if the following conditions are met:

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

Table CH.3 shows the protection status from tetanus of women who have had a live birth within the last 2 years. Figure CH.2 shows the protection of women against neonatal tetanus by major background characteristics. Forty nine (49) per cent of women in Nyamira County received at least 2 doses of neonatal tetanus during their last pregnancy. Overall, about 6 out of every 10 (60 per cent) women who had had a live birth in the last 2 years are protected against tetanus. The proportion of women who are protected is ranges from 68 per cent amongst women with secondary level education to 54 per cent among those with primary level education .

Table CH.3: Neonatal tetanus protection

Percentage of women age 15-49 years with a live birth in the last 2 years protected against neonatal tetanus, Nyamira County, 2011

	Percentage of women who received at least 2 doses during last pregnancy	Percentage of women who did not receive two or more doses during last pregnancy but received:				Protected against tetanus [1]	Number of women with a live birth in the last 2 years
		2 doses, the last within prior 3 years	3 doses, the last within prior 5 years	4 doses, the last within prior 10 years	5 or more doses during lifetime		
Area							
Urban	(*)	(*)	(*)	(*)	(*)	(*)	2
Rural	48.9	10.2	0.0	0.0	0.3	59.5	162
Education							
None	(*)	(*)	(*)	(*)	(*)	(*)	7
Primary	43.8	9.2	0.0	0.0	0.7	53.7	85
Secondary+	55.0	12.5	0.0	0.0	0.0	67.5	71
Wealth index quintile							
Poorest	(43.7)	(6.9)	(0.0)	(0.0)	(0.0)	(50.6)	34
Second	(51.6)	(13.2)	(0.0)	(0.0)	(1.4)	(66.2)	39
Middle	(49.7)	(8.5)	(0.0)	(0.0)	(0.0)	(58.1)	39
Fourth	(46.6)	(8.8)	(0.0)	(0.0)	(0.0)	(55.4)	27
Richest	(*)	(*)	(*)	(*)	(*)	(*)	24
Total	**48.7**	**10.6**	**0.0**	**0.0**	**0.3**	**59.7**	**164**

[1] MICS indicator 3.7
(*) Not shown, based on less than 25-unweighted cases.
( ) Based on 25-49 unweighted cases

Oral Rehydration Treatment

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

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

The indicators are:

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

In the MICS questionnaire, mothers (or caretakers) were asked to report whether their child had had diarrhoea in the two weeks prior to the survey. If so, the mother was asked a series of questions about what the child had to drink and eat during the episode and whether this was more or less than the child usually ate and drank.

Overall, 13 per cent of children under five had diarrhoea in the two weeks preceding the survey (Table CH.4). The peak of diarrhoea prevalence (approximately 21 per cent) occurs in the 12-23 months age group. The least affected age group are children between 48 and 59 months who have prevalence rate of 5 per cent. The prevalence of diarrhoea by gender was 12 per cent among female and 15 per cent among male children. There is no relationship between increasing prevalence of diarrhoea and decreasing or increasing wealth status of the households.

Table CH.4: Oral rehydration solutions and recommended homemade fluids

Percentage of children age 0-59 months with diarrhoea in the last two weeks, and treatment with oral rehydration solutions and recommended homemade fluids, Nyamira County, 2011

	Had diarrhoea in last two weeks	Number of children age 0-59 months	Children with diarrhoea who received:				Number of children age 0-59 months with diarrhoea in last two weeks
			ORS (Fluid from ORS packet or pre-packaged ORS fluid)	Recommended homemade fluids		ORS or any recommended homemade fluid	
				Sugar and salt solution	Any recommended homemade fluid		
Sex							
Male	14.5	238	(29.0)	(15.2)	(15.2)	(38.0)	35
Female	11.7	204	(*)	(*)	(*)	(*)	24
Area							
Urban	(*)	5	(*)	(*)	(*)	(*)	1
Rural	13.2	437	(23.6)	14.0	14.0	33.9	58
Age							
0-11 months	14.8	83	(*)	(*)	(*)	(*)	12
12-23 months	21.2	80	(*)	(*)	(*)	(*)	17
24-35 months	15.6	90	(*)	(*)	(*)	(*)	14
36-47 months	10.5	102	(*)	(*)	(*)	(*)	11
48-59 months	5.2	87	(*)	(*)	(*)	(*)	5
Mother's education							
None	(*)	21	(*)	(*)	(*)	(*)	1
Primary	17.2	234	(22.9)	(10.2)	(10.2)	(31.6)	40
Secondary	9.0	187	(*)	(*)	(*)	(*)	17
Wealth index quintile							
Poorest	13.7	107	(*)	(*)	(*)	(*)	15
Second	12.2	106	(*)	(*)	(*)	(*)	13
Middle	15.4	93	(*)	(*)	(*)	(*)	14
Fourth	8.0	71	(*)	(*)	(*)	(*)	6
Richest	16.8	65	(*)	(*)	(*)	(*)	11
Total	**13.2**	**442**	**23.4**	**13.9**	**13.9**	**33.6**	**58**

(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases

Table CH.4 also shows the percentage of children receiving various types of recommended liquids during the episode of diarrhoea. Since mothers were able to name more than one type of liquid, the percentages do not necessarily add to 100. Amongst the children in Nyamira County who had experienced diarrhoea, only eight per cent are given more to drink, and 42 per cent are given about the same or more to eat. Only about 1 out of 3 children with diarrhoea (34 per cent) receive oral rehydration therapy (ORS) or other recommended homemade fluids. Whilst the higher proportion (about 23 per cent) receive fluids from ORS packets or pre-packaged ORS fluids, 14 per cent receive sugar and salt solutions or other recommended homemade fluids.

Only 8 per cent of children who have had diarrhoea are given more to drink and 59 are given about the same or somewhat less to drink. With regards to the amount of food given to these children, 40 per cent are given about the same to eat and 2 per cent being given more to eat which is in line with the strategies for managing diarrhoea to prevent dehydration and malnutrition by maintaining and/or increasing fluid and food intake. (Table CH.5). Thirty three per cent of the children are given less to drink and 45 per cent of children eat much less or nothing at all, increasing the chances of dehydration and malnutrition.

Table CH.6 provides the proportion of children age 0-59 months with diarrhoea in the last two weeks who received oral rehydration therapy with continued feeding, and the percentage of children with diarrhoea who received other treatments. Overall, 36 per cent of children with diarrhoea received ORS or increased fluids whilst 53 per cent received ORT (ORS or recommended homemade fluids or increased fluids). Combining the information in Table CH.5 with that in Table CH.4 on oral rehydration therapy, it is observed that 36 per cent of children received ORT with continued feeding as is the recommendation. Of more concern is the finding that, close to half (47 per cent) the population of children who had diarrhoea two weeks prior to the survey in Nyamira county received no treatment at all.

Table CH.5: Feeding practices during diarrhoea

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

	Had diarrhoea in last two weeks	Number of children age 0-59 months	Drinking practices during diarrhoea:				Eating practices during diarrhoea:						Number of children age 0-59 months with diarrhoea in last two weeks
			Given much less to drink	Given about the same or somewhat less	Given more to drink	Total	Given nothing to eat	Given much less to eat	Given somewhat less to eat	Given about the same to eat	Given more to eat	Total	
Sex													
Male	14.5	238	(41.2)	(46.9)	(11.9)	(100.0)	(2.3)	(42.6)	(9.2)	(43.5)	(2.4)	(100.0)	35
Female	11.7	204	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	24
Area													
Urban	(*)	5	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Rural	13.2	437	33.7	58.1	8.2	100.0	3.9	41.5	12.8	39.4	2.4	100.0	58
Age													
0-11 months	14.8	83	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	12
12-23 months	21.2	80	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	17
24-35 months	15.6	90	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
36-47 months	10.5	102	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
48-59 months	5.2	87	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	5
Mother's education													
None	(*)	21	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Primary	17.2	234	(33.9)	(60.6)	(5.5)	(100.0)	(0.0)	(42.4)	(13.6)	(42.6)	(1.3)	(100.0)	40
Secondary	9.0	187	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	17
Wealth index quintile													
Poorest	13.7	107	37.4	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	15
Second	12.2	106	43.0	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Middle	15.4	93	37.6	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
Fourth	8.0	71	12.5	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Richest	16.8	65	21.3	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
Total	**13.2**	**442**	**33.3**	**58.6**	**8.1**	**100.0**	**3.8**	**41.1**	**12.6**	**40.1**	**2.3**	**100.0**	**58**

(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

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

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

	Children with diarrhoea who received:			Other treatments:												
				Pill or syrup					Injection							
	ORS or increased fluids	ORT (ORS or recommended homemade fluids or increased fluids)	ORT with continued feeding [1]	Anti-biotic	Anti-motility	Zinc	Other	Unknown	Anti-biotic	Non-antibiotic	Unknown	Intravenous	Home remedy, herbal medicine	Other	Not given any treatment or drug	Number of children age 0-59 months with diarrhoea in last two weeks
Sex																
Male	(40.4)	(57.1)	(33.0)	(4.5)	(0.0)	(1.9)	(1.1)	(4.9)	(0.0)	(0.0)	(0.0)	(0.0)	(19.0)	(3.8)	(42.9)	35
Female	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	24
Area																
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Rural	36.3	53.9	36.0	6.8	1.1	1.1	0.6	3.0	0.0	0.0	0.0	0.0	16.9	4.1	46.1	58
Age																
0-11 months	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	12
12-23 months	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	17
24-35 months	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
36-47 months	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
48-59 months	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	5
Mother's education																
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Primary	(32.9)	(54.9)	(35.2)	(6.8)	(0.0)	(0.0)	(0.9)	(2.3)	(0.0)	(0.0)	(0.0)	(0.0)	(18.2)	(4.3)	(45.1)	40
Secondary	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	17
Wealth index quintile																
Poorest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	15
Second	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Middle	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
Fourth	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Richest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
Total	**35.9**	**53.4**	**35.6**	**6.7**	**1.1**	**1.1**	**0.6**	**2.9**	**0.0**	**0.0**	**0.0**	**0.0**	**16.7**	**4.0**	**46.6**	**58**

[1] MICS indicator 3.8
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases
In this table, the percentages of children receiving various treatments will not add to 100 since some children may have received more than one type of treatment.

Care Seeking and Antibiotic Treatment of Pneumonia

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

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

The indicators are:

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

Table CH.7 presents the prevalence of suspected pneumonia and, if care was sought outside the home, the site of care. Ten per cent of children aged 0-59 months were reported to have had symptoms of pneumonia during the two weeks preceding the survey.

Table CH.7 also presents the use of antibiotics for the treatment of suspected pneumonia in under-5s by sex, age, region, residence, age, and socioeconomic factors.

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

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

	Children with suspected pneumonia who were taken to:																	Percentage of children with suspected pneumonia who received antibiotics in the last two weeks [2]	Number of children age 0-59 months with suspected pneumonia in the last two weeks
			Public sources				Private sources					Other source							
	Had suspected pneumonia in the last two weeks	Number of children age 0-59 months	Govt. hospital	Govt. health centre	Dispen-sary	Other public	Mission hospital	Private hospital /clinic	Nursing/ maternity home	private phar-macy	Other private medical	Mobile clinic	Com-munity health worker	Shop	Traditi-onal practi-tioner	Other	Any appro-priate provider [1]		
Sex																			
Male	12.1	238	(12.3)	(10.6)	(24.0)	(0.0)	(0.0)	(9.9)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(55.0)	(34.3)	29
Female	6.9	204	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
Area																			
Urban	(*)	5	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Rural	9.5	437	(8.5)	(9.6)	(24.5)	(0.0)	(0.0)	(8.0)	(0.0)	(1.1)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(49.3)	(29.3)	42
Age																			
0-11 months	4.5	83	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	4
12-23 months	9.8	80	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	8
24-35 months	15.2	90	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
36-47 months	10.6	102	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
48-59 months	7.9	87	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	7
Mother's education																			
None	(*)	21	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Primary	13.1	234	(6.4)	(9.6)	(19.8)	(0.0)	(0.0)	(9.4)	(0.0)	(1.6)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(43.4)	(23.0)	31
Secondary	5.9	187	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
Wealth index quintile																			
Poorest	11.8	107	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Second	12.0	106	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Middle	5.0	93	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	5
Fourth	9.1	71	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Richest	10.0	65	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Total	**9.7**	**442**	**(9.8)**	**(9.3)**	**(25.2)**	**(0.0)**	**(0.0)**	**(7.8)**	**(0.0)**	**(1.1)**	**(0.0)**	**(0.0)**	**(0.0)**	**(0.0)**	**(0.0)**	**(0.0)**	**(50.8)**	**(31.4)**	**43**

[1] MICS indicator 3.9
[2] MICS indicator 3.10
Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases
Note: In this table, percentages of children taken to various providers will not add to 100 since some children may have been taken to see more than one type of provider.

Solid Fuel Use

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

Table CH.9: Solid fuel use

Percentage distribution of household members according to type of cooking fuel used by the household, and percentage of household members living in households using solid fuels for cooking, Nyamira County, 2011

	Percentage of household members in household using													Number of household members
	Liquid propane gas (LPG)	Natural gas	Biogas	Kerosene	Coal/ Lignite	Charcoal	Wood	Straw/ Shrubs/ Grass	Agriculture crop residue	Other	Missing	Total	Solid fuels for cookin [1]	
Area														
Urban	(10.2)	(2.0)	(0.0)	(8.8)	(0.0)	(71.6)	(7.3)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	(79.0)	42
Rural	0.6	0.3	0.1	0.5	0.1	5.6	87.1	5.0	0.4	0.2	0.0	100.0	98.2	2962
Education of household head														
None	1.9	0.2	0.5	1.2	0.0	5.7	86.6	1.4	2.0	0.5	0.0	100.0	95.7	436
Primary	0.0	0.0	0.0	0.2	0.3	5.0	87.1	7.1	0.3	0.0	0.0	100.0	99.8	1423
Secondary	1.3	0.8	0.1	1.0	0.0	8.6	84.3	3.5	0.0	0.4	0.1	100.0	96.4	1139
Wealth index quintiles														
Poorest	0.0	0.0	0.0	0.0	0.0	0.0	98.9	0.6	0.5	0.0	0.0	100.0	100.0	653
Second	0.0	0.0	0.0	0.0	0.6	0.0	91.7	7.7	0.0	0.0	0.0	100.0	100.0	661
Middle	0.0	0.0	0.0	0.1	0.0	0.6	89.4	8.4	0.4	1.2	0.0	100.0	98.7	603
Fourth	0.0	0.0	0.0	0.1	0.0	6.7	86.3	5.5	1.3	0.0	0.0	100.0	99.9	568
Richest	4.3	1.9	0.6	3.5	0.0	29.5	58.2	1.9	0.0	0.0	0.1	100.0	89.6	519
Total	**0.8**	**0.3**	**0.1**	**0.7**	**0.1**	**6.5**	**86.0**	**4.9**	**0.4**	**0.2**	**0.0**	**100.0**	**97.9**	**3004**

[1] MICS indicator 3.11
( ) Based on 25-49 unweighted cases

Nearly all (98 per cent) of household members in Nyamira County are using solid fuels for cooking (Table CH.9). The use of solid fuels does not vary markedly by education level of household head. The proportion of those using solid fuel decreases with increasing wealth quintiles. For example, all residents in households in the poorest wealth quintile rely on solid fuel for cooking and it drops to 89 per cent of residents living in households in the richest quintile. The most common sources of solid fuel are wood (86 per cent) and charcoal (7 per cent).

Solid fuel use alone is a poor proxy for indoor air pollution, since the concentration of the pollutants is different when the same fuel is burnt in different stoves or fires. Use of closed stoves with chimneys minimizes indoor pollution, while open stove or fire with no chimney or hood means that there is no protection from the harmful effects of solid fuels. Solid fuel use by place of cooking is depicted in Table CH.10.

More than half (53 per cent) of the Nyamira county residents use a separate building as a kitchen whilst 4 per cent use solid fuels outdoors. On the other hand, as many as a fifth (21 per cent) of the residents use a room used for living/sleeping as their kitchen area. The proportion cooking in a place used for living or sleeping is highest in the poorest households (31 per cent) whilst the proportion cooking in a separate room used as a kitchen is highest in the richest households (40 per cent).

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

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

	Place of cooking:						Number of household members in households using solid fuels for cooking
	In a room used for living / sleeping	In a separate room used as a kitchen	In a separate building used as a kitchen	Outdoors	Missing	Total	
Area							
Urban	(56.4)	(30.6)	(9.3)	(3.7)	(0.0)	(100.0)	33
Rural	20.4	22.0	53.4	3.8	0.4	100.0	2908
Education of household head							
None	16.2	26.3	54.6	2.9	0.0	100.0	417
Primary	22.9	23.1	49.3	4.2	0.5	100.0	1420
Secondary+	19.9	19.3	56.9	3.6	0.3	100.0	1099
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	6
Wealth index quintiles							
Poorest	31.3	23.6	40.5	4.1	0.5	100.0	653
Second	17.8	15.1	62.0	4.5	0.6	100.0	661
Middle	20.4	16.1	62.2	1.2	0.1	100.0	595
Fourth	13.2	19.9	61.9	4.4	0.6	100.0	567
Richest	20.4	40.2	34.6	4.8	0.0	100.0	465
Total	**20.8**	**22.1**	**52.9**	**3.8**	**0.4**	**100.0**	**2941**

(*) Not shown, based on less than 25 unweighted cases. ( ) based on less than 25-49 unweighted cases

Malaria

Malaria is a leading cause of death of children under age five in Kenya. It also contributes to anaemia in children and is a common cause of school absenteeism. Preventive measures, especially the use of mosquito nets treated with insecticide (ITNs), can dramatically reduce malaria mortality rates among children. In Kenya, the Ministry of Public Health and Sanitation (MOPHS) and the Ministry of Medical Services (MOMS) recommend that, owing to widespread resistance to anti-malarial drugs chloroquine,

Sulphadoxine-Pyrimethamine (SP/Fansidar) and amodiaquine, these have been replaced with artemisininbased combinations therapy for first line treatment of malarial fevers in Kenya. All patients with fever or history of fever should be tested for malaria and only patients who test positive should be treated with artemisinin combination therapy.

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 younger children should continue breastfeeding. To prevent malaria in pregnancy, Intermittent Preventive Treatment of malaria in Pregnancy (IPTp) with 3 doses of SP is recommended. To augment malaria control efforts, integrated vector control methods (such as the use of long lasting insecticide treated nets (LLINs) and indoor residual spraying (IRS) are recommended.

The MICS questionnaire incorporates questions on the availability and use of bed nets, both at household level and among children under five years of age and pregnant women, as well as anti-malarial treatment, IPTp, and IRS of households.

Table CH.11: Household availability of insecticide treated nets and protection by a vector control method

Percentage of households with at least one mosquito net, percentage of households with at least one long-lasting treated net, percentage of households with at least one insecticide treated net (ITN) and percentage of households which either have at least one ITN or have received spraying through an indoor residual spraying (IRS) campaign in the last 12 months, Nyamira County, 2011

	Percentage of households with at least one mosquito net	Percentage of households with at least one long-lasting treated net	Percentage of households with at least one ITN [1]	Percentage of households with at least one ITN or received IRS during the last 12 months [2]	Number of households
Area					
Urban	(*)	(*)	(*)	(*)	12
Rural	92.4	91.5	91.9	92.9	645
Education of household head					
None	88.2	88.8	88.8	89.4	111
Primary	91.8	91.2	91.4	91.9	301
Secondary	95.5	93.5	94.4	95.9	244
Missing/DK	(*)	(*)	(*)	(*)	1
Wealth index quintiles					
Poorest	85.4	84.5	84.9	86.7	144
Second	96.3	95.5	95.9	96.7	135
Middle	93.7	91.4	92.2	93.1	138
Fourth	95.6	95.6	95.6	95.6	122
Richest	92.7	92.4	92.9	93.7	118
Total	**92.6**	**91.7**	**92.1**	**93.0**	**657**

[1] MICS indicator 3.12, 2 MICS indicator 3.13
(*) Not shown, based on less than 25 unweighted cases.

In Nyamira County, the survey results indicate a high level of net ownership with 92 per cent of households having at least one ITN and 93 per cent having at least one mosquito net and a similar proportion having at least one LLIN (Table CH.11). Ninety three per cent of Nyamira households have at least one ITN or have received IRS during the last 12 months prior to the survey. The availability of nets and vector control methods does not vary markedly by background characteristics.

Table CH.12: Children sleeping under mosquito nets

Percentage of children age 0-59 months who slept under a mosquito net during the previous night, by type of net, Nyamira County, 2011

	Percentage of children age 0-59 who stayed in the household the previous night	Number of children age 0-59 months	Percentage of children who:		Number of children age 0-59 months who slept in the household the previous night	Percentage of children who slept under an ITN living in households with at least one ITN	Number of children age 0-59 living in households with at least one ITN
			Slept under any mosquito net [1]	Slept under an insecticide treated net [2]			
Sex							
Male	100.0	238	80.6	79.3	238	82.5	229
Female	100.0	204	79.6	76.8	204	81.3	193
Area							
Urban	(*)	5	(*)	(*)	5	(*)	5
Rural	100.0	437	80.1	78.1	437	81.9	417
Age							
0-11 months	100.0	83	83.6	82.9	83	85.4	80
12-23 months	100.0	80	84.7	83.2	80	87.4	76
24-35 months	100.0	90	79.9	78.5	90	83.6	85
36-47 months	100.0	102	72.9	71.1	102	75.1	96
48-59 months	100.0	87	81.2	77.0	87	79.7	84
Mother's education							
None	(*)	21	(*)	(*)	21	(*)	20
Primary	100.0	234	78.4	76.3	234	79.8	224
Secondary	100.0	187	81.9	80.3	187	84.0	178
Wealth index quintiles							
Poorest	100.0	107	72.3	70.6	107	76.8	99
Second	100.0	106	83.5	81.0	106	82.0	105
Middle	100.0	93	81.9	79.3	93	84.0	87
Fourth	100.0	71	82.1	82.1	71	83.2	70
Richest	100.0	65	83.0	80.2	65	86.0	60
Total	**100.0**	**442**	**80.1**	**78.2**	**442**	**81.9**	**422**

[1] MICS indicator 3.14
[2] MICS indicator 3.15; MDG indicator 6.7
(*) Not shown, based on less than 25 unweighted cases.

Eighty per cent of children under the age of five years slept under a mosquito net the night prior to the survey and 78 per cent slept under an insecticide treated net (Table CH.12). There is little variation in net ownership by the household wealth status. For example, the proportion of children sleeping under an ITN differs by about 10 per cent from those in the poorest (71 per cent) quintiles to those in the richest quintiles (80 per cent).

Table CH.13: Treatment of children with anti-malarial drugs

Percentage of children age 0-59 months who had fever in the last two weeks who received anti-malarial drugs, Nyamira County, 2011

	Had a fever in last two weeks	Number of children age 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:					Percentage who took an anti-malarial drug same or next day [2]	
			SP/ Fansidar	Chloroquine	Amodia-quine	Quinine	Combination with artemisinin	Other anti-malarial	Any anti-malarial drug [1]	Paracetamol/ Panadol/ Acetamino-phen	Aspirin	Ibuprofen	Other	Don't Know		
Sex																
Male	17.5	238	(0.0)	(2.9)	(8.2)	(1.4)	(1.2)	(6.4)	(20.1)	(41.9)	(2.3)	(3.9)	(22.7)	(16.9)	(13.8)	42
Female	10.8	204	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	22
Area																
Urban	(*)	5	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	0
Rural	14.6	437	4.0	1.9	7.2	2.0	0.8	4.8	19.7	45.9	5.5	4.7	19.8	16.6	12.6	64
Age																
0-11 months	11.4	83	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	9
12-23 months	17.3	80	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
24-35 months	14.5	90	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
36-47 months	13.8	102	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	14
48-59 months	15.4	87	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Mother's education																
None	(*)	21	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Primary	16.0	234	(1.7)	(2.0)	(3.3)	(1.9)	(0.0)	(4.8)	(13.6)	(27.8)	(4.3)	(3.7)	(22.8)	(17.0)	(7.8)	37
Secondary	13.5	187	(7.5)	(1.9)	(13.3)	(0.0)	(1.9)	(5.0)	(27.3)	(72.5)	(7.4)	(6.4)	(16.3)	(14.5)	(17.9)	25
Wealth index quintiles																
Poorest	14.4	107	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	16
Second	16.0	106	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	17
Middle	13.9	93	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Fourth	11.5	71	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	8
Richest	15.8	65	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	10
Total	**14.4**	**442**	**4.0**	**1.9**	**7.2**	**2.0**	**0.8**	**4.8**	**19.7**	**45.9**	**5.5**	**4.7**	**19.8**	**16.6**	**12.6**	**64**

[1] MICS indicator 3.18; MDG indicator 6.8
[2] MICS indicator 3.17
(*) Not shown, based on less than 25 unweighted cases. ( ) Based on 25-49 unweighted cases.

Questions on the prevalence and treatment of fever were asked for all children under age five. Fourteen per cent of children fewer than five years of age were ill with fever in the two weeks prior to the survey (Table CH.13). The prevalence of fever was 11 per cent among girls and 18 per cent in boys.

Mothers were asked to report all of the medicines given to a child to treat the fever, including both medicines given at home and medicines given or prescribed at a health facility. Overall, about 1 in every five (20 per cent) children is treated with any anti-malarial. Less than 1 per cent were treated with the recommended first line anti-malarial- artemisinin combination therapy. A huge proportion of children are treated with drugs which are not recommended owing to malaria drug resistance. For instance, 7 per cent of the children are treated with amodiaquine, 4 per cent with SP/Fansidar and 2 per cent for both chloroquine and quinine. Other than antimalarials, children with fever are given other types of medicines including anti-pyretics such as paracetemol (46 per cent), ibuprofen (5 per cent), and aspirin (6 per cent).

Thirteen per cent of children reported to have had fever received anti-malarial drugs within 24 hours or on the next day after onset of symptoms.

Pregnant women living in places where malaria is highly prevalent are four times more likely than other adults to get malaria and twice as likely to die of the disease. Once infected, pregnant women risk anaemia, premature delivery and stillbirth. Their babies are likely to be of low birth weight, which makes them unlikely to survive their first year of life. For this reason, steps are taken to protect pregnant women from malaria in preganancy by distributing insecticide-treated mosquito nets and treatment during antenatal check-ups with drugs that prevent malaria infection (intermittent preventive treatment or IPT). In the Nyamira County MICS, women were asked of the medicines they had received in their last pregnancy during the 2 years preceding the survey. Women are considered to have received intermittent preventive therapy if they have received at least 2 doses of SP/Fansidar during the pregnancy.

Intermittent preventive treatment for malaria in pregnant women who gave birth in the two years preceding the survey is presented in Table CH.14. Overall, 94 per cent of women aged 15-49 who have had a live birth in the 2 years preceding the survey receive antenatal care. Sixty nine (69) per cent receive any anti-malarials during their antenatal visit and twenty-seven per cent receive at least 1 dose of SP/Fansidar. Only 14 per cent receive the recommended IPT dose (SP/Fanisdar 2 or more times).

Table CH.14: Intermittent preventive treatment for malaria

Percentage of women age 15-49 years who had a live birth during the two years preceding the survey and who received intermittent preventive treatment (IPT) for malaria during pregnancy at any antenatal care visit, Nyamira County, 2011

	Percentage of women who received antenatal care (ANC)	Number of women who gave birth in the last two years	Percentage of pregnant women who took:			Number of women who had a live birth in the last two years and who received antenatal care
			Any medicine to prevent malaria at any ANC visit during pregnancy	SP/Fansidar at least once	SP/Fansidar two or more times1	
Area						
Urban	(*)	2	(*)	(*)	(*)	2
Rural	94.5	162	69.4	27.0	13.6	153
Education						
None	(*)	7	(*)	(*)	(*)	6
Primary	96.4	85	63.7	22.2	12.4	82
Secondary	91.9	71	74.3	31.6	16.2	66
Wealth index quintiles						
Poorest	(94.0)	34	(56.1)	(18.2)	(16.1)	32
Second	(92.6)	39	(72.9)	(23.4)	(7.4)	37
Middle	(97.3)	39	(71.7)	(29.9)	(17.2)	38
Fourth	(90.9)	27	(72.3)	(36.9)	(22.6)	25
Richest	(*)	24	(*)	(*)	(*)	23
Total	**94.2**	**164**	**69.1**	**27.1**	**13.5**	**154**

[1] MICS indicator 3.20
(*) Not shown, based on less than 25 unweighted cases
( ) Based on 25-49 unweighted cases.

VII. Water and Sanitation

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

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

The list of indicators used in MICS is as follows:
Water
- Use of improved drinking water sources
- Use of adequate water treatment method
- Time to source of drinking water
- Person collecting drinking water

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

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

Use of Improved Water Sources

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

Table WS.1: Use of improved water sources

Percentage distribution of household population according to main source of drinking water and percentage of household population using improved drinking water sources, Nyamira County, 2011

	Main source of drinking water																	
	Improved sources								Unimproved sources								Percentage using improved sources of drinking water [1]	Number of household members
	Piped water																	
	Into dwelling	Into compound, yard or plot	To neighbour	To water kiosk	Public tap/ Stand	Tube well/ Bore hole	Protected well	Protected spring	Rainwater collection	Unprotected well	Unprotected spring	Cart with small tank/ drum	Surface water	Bottled water	Other	Total		
Area																		
Rural	1.0	2.9	0.3	0.5	4.0	0.3	3.9	49.7	5.5	3.6	23.0	0.0	5.2	0.0	0.2	100.0	64.1	2962
Urban	(16.7)	(77.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(6.3)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	(100.0)	42
Education of household head																		
None	2.3	3.6	0.0	0.0	6.2	0.2	1.9	45.1	11.1	3.6	20.4	0.1	5.5	0.0	0.0	100.0	64.2	436
Primary	0.4	2.3	0.5	0.0	3.7	0.3	3.2	53.7	3.5	3.9	23.6	0.0	4.8	0.0	0.0	100.0	64.0	1423
Secondary +	1.8	6.1	0.2	1.2	3.3	0.3	5.5	44.8	5.8	3.1	22.2	0.0	5.3	0.0	0.4	100.0	65.6	1139
Missing /DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Wealth index quintiles																		
Poorest	0.0	0.0	0.0	0.0	1.9	0.0	1.0	55.2	0.5	3.5	30.7	0.0	7.1	0.0	0.0	100.0	56.7	653
Second	0.0	0.0	0.9	0.0	2.8	0.7	3.9	55.4	1.0	3.2	24.0	0.0	7.3	0.0	0.8	100.0	62.0	661
Middle	0.0	1.7	0.1	1.0	7.7	0.1	2.8	55.4	2.7	4.0	21.7	0.0	2.7	0.0	0.0	100.0	63.8	603
Fourth	3.1	5.0	0.5	1.4	5.2	0.0	4.8	45.4	5.3	4.1	19.7	0.0	5.5	0.0	0.0	100.0	65.5	568
Richest	3.4	15.5	0.0	0.0	1.9	0.6	7.7	29.9	20.8	2.8	15.2	0.1	2.1	0.1	0.0	100.0	77.8	519
Total	**1.2**	**4.0**	**0.3**	**0.5**	**3.9**	**0.3**	**3.9**	**49.1**	**5.4**	**3.5**	**22.7**	**0.0**	**5.1**	**0.0**	**0.2**	**100.0**	**64.6**	**3004**

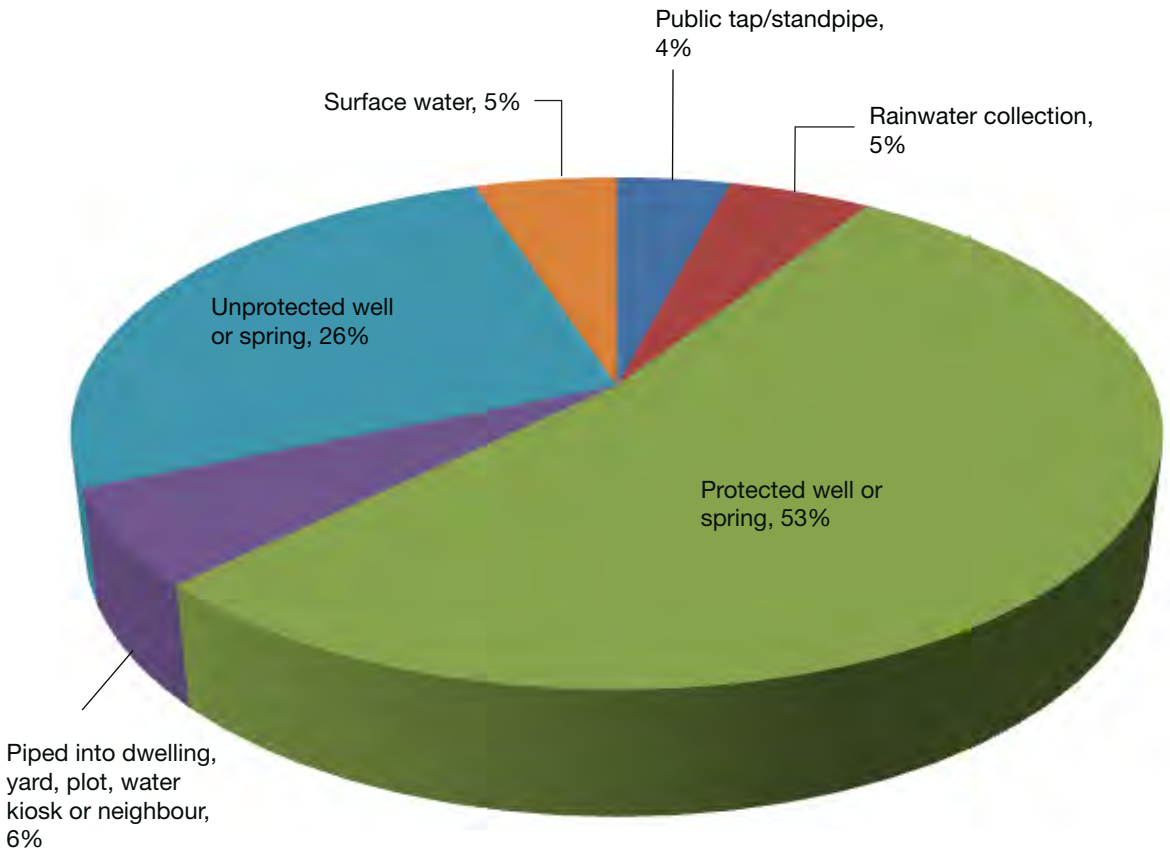
[1] MICS indicator 4.1; MDG indicator 7.8
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.
Note: Households using bottled water as the main source of drinking water are classified into improved or unimproved drinking water users according to the water source used for other purposes such as cooking and handwashing.

About 2 out of 3 (65 per cent) of Nyamira County household members use an improved source of drinking water. Sixty-four per cent of household members in rural areas use an improved source of drinking water. Countywide, the most frequently used form of improved drinking water source is protected springs (49 per cent) whilst the most commonly used unimproved source of drinking water is unprotected springs (23 per cent).

Disparities exist in the use of improved sources of drinking water by wealth status of the household. The population using improved sources of drinking water varies from 78 per cent among those from the richest wealth quintile households to 57 per cent among those from the poorest households. There is, however, no variation between the use of improved sources of drinking water and the education status of the household head.

Figure WS.1 demonstrates the most relied upon source of drinking water in Nyamira County. Improved sources of drinking water include: protected well/springs- 53 per cent, piped water- 6 per cent, rainwater collection - 5 per cent and public tap/stand pipe - 4per cent. The remaining minority (31 per cent) relies on unimproved sources of drinking water (unprotected wells/springs - 26 per cent and surface water - 5 per cent).

Figure WS.1: Percentage distribution of household members by source of drinking water, Nyamira County, 2011



Use of Adequate Water Treatment Method

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

Overall, 55 per cent of Nyamira County residents using unimproved drinking water sources use an appropriate water treatment method. The water treatment methods commonly used in these households is boiling water (47 per cent) or adding bleach/chlorine (10 per cent). On the other hand, 45 per cent of the households whose water sources are unimproved are not using any water treatment methods.

The proportion of household members in households using unimproved drinking water sources that are using an appropriate water treatment method varies from 42 per cent for those from households in poorest quintile compared to 71 and 72 per cent among those from the richest and second richest quintile. Members from households that fall in the richest quintile are more likely to treat their water by adding chlorine compared to those from households in the poorest quintile (22 per cent versus 6 per cent).

Table WS.2: Household water treatment

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

	Water treatment method used in the household									Number of household members	Percentage of household members in households using unimproved drinking water sources and using an appropriate water treatment method [1]	Number of household members in households using unimproved drinking water sources
	None	Boil	Add bleach/ chlorine	Strain through a cloth	Use water filter	Solar disinfection	Let it stand and settle	Other	DK			
Residence												
Urban	(14.0)	(53.7)	(55.7)	(0.0)	(0.0)	(0.0)	(0.0)	(2.9)	(0.0)	42	-	-
Rural	45.9	46.6	9.0	0.8	0.9	0.0	3.4	0.4	0.2	2962	55.0	946
Education of household head												
None	37.1	58.4	10.2	1.2	3.7	0.0	2.0	0.3	0.0	436	57.5	129
Primary	51.9	39.7	7.5	0.5	0.4	0.0	3.6	0.1	0.4	1423	52.3	459
Secondary+	40.6	50.9	12.1	1.2	0.5	0.0	3.5	0.8	0.0	1139	57.2	354
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	4
Wealth index quintiles												
Poorest	58.3	34.8	5.9	1.6	1.7	0.0	4.5	0.6	0.0	653	42.1	270
Second	49.1	44.6	6.0	1.1	0.0	0.0	5.1	0.0	0.0	661	53.3	233
Middle	53.4	40.1	7.7	0.0	0.8	0.0	3.0	0.0	0.9	603	52.0	172
Fourth	38.9	53.5	8.7	0.0	0.9	0.0	2.0	0.6	0.0	568	71.7	166
Richest	22.4	64.5	22.3	1.4	1.0	0.0	1.6	0.8	0.0	519	70.9	105
Total	**45.4**	**46.7**	**9.6**	**0.8**	**0.9**	**0.0**	**3.3**	**0.4**	**0.2**	**3004**	**55.0**	**946**

[1] MICS indicator 4.2
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Time to source of drinking water

The amount of time it takes to obtain water is presented in Table WS.3 and the person who usually collected the water in Table WS.4. Note that these results refer to one roundtrip from home to drinking water source. Information on the number of trips made in one day is not collected.

Overall, Table WS.3 shows a bigger proportion of household members (33 per cent for users of improved and 16 per cent for users of unimproved) take long to fetch drinking water - 30 minutes or more. Twelve per cent of householdspopulation have the drinking water source on the premises. This proportion also increases as the wealth status of the households improves (1 per cent among those from the the poorest quintile to 39 per cent for those from the richest households).

Table WS.3: Time to source of drinking water

Percentage distribution of household population according to time to go to source of drinking water, get water and return, for users of improved and unimproved drinking water sources, Nyamira County, 2011

	Time to source of drinking water								
	Users of improved drinking water sources				Users of unimproved drinking water sources				
	Water on premises	Less than 30 minutes	30 minutes or more	Missing/ DK	Water on premises	Less than 30 minutes	30 minutes or more	Total	Number of household members
Residence									
Urban	(93.7)	(6.3)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	42
Rural	10.4	24.6	33.1	0.1	0.9	14.9	16.1	100.0	2962
Education of household head									
None	17.6	23.2	29.3	0.2	0.7	18.0	10.9	100.0	436
Primary	7.0	25.6	35.1	0.0	1.1	13.5	17.7	100.0	1423
Secondary+	14.9	23.4	30.7	0.0	0.7	14.8	15.6	100.0	1139
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Wealth index quintile									
Poorest	0.5	23.5	34.6	0.1	0.2	18.8	22.4	100.0	653
Second	2.0	24.5	38.4	0.0	1.3	13.3	20.6	100.0	661
Middle	5.1	27.9	38.4	0.0	1.1	14.4	13.0	100.0	603
Fourth	16.7	25.5	28.4	0.1	1.4	13.7	14.2	100.0	568
Richest	39.3	19.8	20.5	0.1	0.3	13.0	7.0	100.0	519
Total	**11.5**	**24.3**	**32.6**	**0.1**	**0.9**	**14.7**	**15.9**	**100.0**	**3004**

(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Person Collecting Water

Table WS.4 shows that for the majority of households (74 per cent) where the source of drinking water are not on the premises), an adult female is usually the person collecting the water. This is as expected as results elsewhere in Kenya show that water collection activities have traditionally remained an activity for women, particularly those in rural areas. The level of education of the household head is also an important factor that determines the proportion of adult women responsible for water collection. This proportion increases with increasing level of education of household head – from 68 per cent in households headed by one who has no education to 78 per cent where the head has secondary education or higher.

Table WS.4: Person collecting water

Percentage of households without drinking water on premises, and per cent distribution of households without drinking water on premises according to the person usually collecting drinking water used in the household, Nyamira County, 2011

	Percentage of households without drinking water on premises	Number of households	Person usually collecting drinking water							Number of households without drinking water on premises
			Adult woman	Adult man	Female child under age 15	Male child under age 15	DK	Missing	Total	
Residence										
Urban	(*)	12	(*)	(*)	(*)	(*)	(*)	(*)	(*)	0
Rural	87.8	645	74.4	9.4	11.5	4.4	0.1	0.2	100.0	619
Education of household head										
None	81.5	111	67.5	16.5	12.7	2.5	0.8	0.0	100.0	104
Primary	90.3	301	74.0	7.7	12.0	6.0	0.0	0.3	100.0	290
Secondary+	83.5	244	77.7	8.7	10.5	3.1	0.0	0.0	100.0	224
Missing/DK	(*)	1	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Wealth index quintile										
Poorest	99.1	144	72.6	6.3	16.4	4.8	0.0	0.0	100.0	144
Second	96.6	135	78.2	5.8	9.6	5.8	0.0	0.7	100.0	135
Middle	92.8	138	74.5	11.2	11.8	2.0	0.6	0.0	100.0	135
Fourth	81.5	122	76.2	10.7	8.6	4.6	0.0	0.0	100.0	113
Richest	56.2	118	67.7	18.5	8.9	4.9	0.0	0.0	100.0	91
Total	**86.3**	**657**	**74.3**	**9.5**	**11.5**	**4.4**	**0.1**	**0.2**	**100.0**	**619**

(*) Not shown, based on less than 25 unweighted cases.

Overall, adult men collect water in only 1 out of 10 households in Nyamira County (10 per cent). The proportion of households where an adult man usually collects water ranges from 6 per cent among those from the poorest households to 19 per cent among those from richest households.

Female or male children under age 15 engage in water collection activities in 16 per cent of the households; female children collect water in 11 per cent of households whilst male children collect water in 4 per cent of households. Generally, the proportion of female children who are engaged in water collection ranges from 16 per cent for those from the poorest households to 9 per cent for those from the richest households.

Use of Improved Sanitation Facilities

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

As shown in Table WS.5, 33 per cent of the population in Nyamira County is living in households using improved sanitation facilities - flush to septic tank, VIP, pit latrine with slab and composting toilet (Table WS.5). Overall, pit latrines with slabs are the most frequently used improved sanitation facility (20 per cent). Only 2 per cent use flush system in their households and the rest use VIP sanitation facilities (11 per cent). Majority (67 per cent) of the households use unimproved sanitation facilities with the greatest proportion using pit latrines without slabs (66 per cent). Less than 1 per cent simply has no facilities.

None of the members in households that fall in the lowest and second lowest wealth index category have access to VIP improved sanitation facilities, while the figure is 45 per cent for those living in the richest wealth index households. The converse occurs for unimproved sanitation facilities users. For example, majority of the population in the poorest households use pit latrines without slabs compared to those in richest households (97 per cent compared to 19 per cent).

Table WS.5: Types of sanitation facilities

Percentage distribution of household population according to type of toilet facility used by the household, Nyamira County, 2011

	Type of toilet facility used by household													
	Improved sanitation facility							Unimproved sanitation facility						
	Flush to													
	Piped sewer system	Septic tank	Pit (latrine)	Some where else	Ventilated Improved Pit latrine (VIP)	Pit latrine with slab	Composting toilet	Pit latrine without slab/ open pit	Hanging toilet/ hanging latrine	Other	Missing	No facilities or bush or field or ocean	Total	Number of household members
Area														
Urban	(27.9)	(19.0)	(0.0)	(6.3)	(12.3)	(33.9)	(0.0)	(0.6)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	42
Rural	0.0	0.8	0.3	0.0	10.9	20.0	0.2	66.7	0.1	0.1	0.0	0.8	100.0	2962
Education of household head														
None	0.7	3.3	0.4	0.6	14.8	21.1	1.7	56.5	0.0	0.0	0.0	0.8	100.0	436
Primary	0.2	0.2	0.2	0.0	6.8	17.0	0.0	74.4	0.0	0.1	0.0	1.1	100.0	1423
Secondary+	0.5	1.1	0.5	0.0	14.4	23.7	0.0	58.9	0.3	0.0	0.0	0.4	100.0	1139
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Wealth index quintile														
Poorest	0.0	0.0	0.0	0.0	0.0	0.4	0.2	96.9	0.0	0.0	0.0	2.4	100.0	653
Second	0.0	0.0	0.0	0.0	0.0	8.3	0.0	90.6	0.0	0.0	0.0	1.1	100.0	661
Middle	0.0	0.0	0.0	0.0	6.2	38.8	1.0	53.8	0.0	0.0	0.1	0.1	100.0	603
Fourth	0.0	0.0	0.9	0.0	9.9	32.1	0.0	56.8	0.0	0.3	0.0	0.0	100.0	568
Richest	2.4	5.9	0.9	0.5	45.1	25.7	0.0	18.8	0.7	0.0	0.0	0.0	100.0	519
Total	**0.4**	**1.0**	**0.3**	**0.1**	**10.9**	**20.2**	**0.2**	**65.8**	**0.1**	**0.1**	**0.0**	**0.8**	**100.0**	**3004**

(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Use and sharing of sanitation facilities

Access to safe drinking-water and to basic sanitation is measured by the proportion of population using an improved sanitation facility. MDGs and WHO / UNICEF Joint Monitoring Programme (JMP) for Water Supply and Sanitation classify households as using an unimproved sanitation facility if they are using otherwise acceptable sanitation facilities but sharing a facility between two or more households or using a public toilet facility.

As shown in Table WS.6, cumulatively, 33 per cent of Nyamira County residents use improved sanitation facilities. About 1 in 10 (11 per cent) household members use either public or shared improved sanitation facilities. The larger proportion of those who share improved sanitation facilities share among 5 households or less (8 per cent). About 2 out of 3 (67 per cent) household members use unimproved sanitation facilities of which they most frequently share with 5 households or less (13 per cent).

Twenty-two per cent of household members use private improved sanitation facilities that are not shared whereas 51 per cent use private unimproved sanitation facilities that are not shared. The proportion of household members who do not share improved sanitation facilities increases as the wealth status of the household appreciates (from less than 1 per cent in the poorest households to 53 per cent in the richest households). The opposite trend is observed among household members who do not share unimproved sanitation facilities where members from richer households are less likely to share than those in poorer households.

Table WS.6: Use and sharing of sanitation facilities

Percentage distribution of household population by use of private and public sanitation facilities and use of shared facilities, by users of improved and unimproved sanitation facilities, Nyamira County, 2011

	Users of improved sanitation facilities					Users of unimproved sanitation facilities				Open defecation (no facility, bush, field)	Total	Number of household members
			Shared by					Shared by				
	Not shared [1]	Public facility	5 households or less	More than 5 households	Missing/ DK	Not shared	Public facility	5 households or less	More than 5 households			
Residence												
Urban	(22.9)	(0.0)	(16.4)	(60.1)	(0.0)	(0.0)	(0.0)	(0.6)	(0.0)	(0.0)	(100.0)	42
Rural	21.9	0.2	8.0	1.8	0.4	51.7	0.6	13.0	1.4	0.8	100.0	2962
Education of household head												
None	27.5	0.8	11.0	2.7	0.7	42.9	0.0	13.2	0.4	0.8	100.0	436
Primary	15.3	0.0	6.7	2.0	0.4	57.2	0.4	14.7	1.6	1.1	100.0	1423
Secondary+	27.8	0.0	8.8	3.3	0.4	46.5	1.0	10.5	1.3	0.4	100.0	1139
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Wealth index quintile												
Poorest	0.1	0.0	0.6	0.0	0.0	74.8	0.2	20.7	1.1	2.4	100.0	653
Second	5.7	0.0	2.6	0.0	0.0	77.4	0.0	10.9	1.6	1.1	100.0	661
Middle	28.8	0.4	16.4	0.5	0.0	43.1	0.0	9.8	0.3	0.1	100.0	603
Fourth	30.0	0.6	10.0	0.4	2.0	39.2	2.0	14.1	1.8	0.0	100.0	568
Richest	53.2	0.0	13.0	13.8	0.3	9.5	0.7	7.5	1.9	0.0	100.0	519
Total	**21.9**	**0.2**	**8.1**	**2.6**	**0.4**	**51.0**	**0.6**	**12.8**	**1.3**	**0.8**	**100.0**	**3004**

[1] MICS indicator 4.3; MDG indicator 7.9
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Disposal of child's faeces

Safe disposal of a child's faeces is discarding of the child's stool, by the child using a toilet or by rinsing the stool into a toilet or latrine. Disposal of faeces of children 0-2 years of age is presented in Table WS.7.

Overall,about 9 out of 10 (91 per cent) children aged 0-2 years have their stools disposed safely. There is no difference between the proportion of children whose stools are disposed safely in dwellings where there is improved and those that have unimproved sanitation facilities (both 91 per cent).

For households which have improved sanitation facilities, majority of the children's stools are disposed by rinsing into toilet or latrines (86 per cent). Other methods of disposal include children using toilet/ latrines (5 per cent) and rinsing into a ditch or drain or throwing into garbage (2 per cent). This is similar for households with unimproved sanitation facilities; majority disposed by rinsing into toilet or latrine (85 per cent).

Safe disposal of a child's faeces ranges from 96 per cent among children whose mothers have secondary or higher education to 88 per cent among those with primary education.

Drinking water and sanitation ladders

In its 2008 report[7], the JMP developed a new way of presenting the access figures, by disaggregating and refining the data on drinking-water and sanitation and reflecting them in "ladder" format. This ladder allows a disaggregated analysis of trends in a three rung ladder for drinking-water and a four-rung ladder for sanitation. For sanitation, this gives an understanding of the proportion of population with no sanitation facilities at all, of those reliant on technologies defined by JMP as "unimproved," of those sharing sanitation facilities of otherwise acceptable technology, and those using "improved" sanitation facilities. Table WS.8 presents the percentages of household population by drinking water and sanitation ladders. The table also shows the percentage of household members using improved sources of drinking water and sanitary means of excreta disposal.

In Nyamira County, 16 per cent of household population use both improved drinking water sources and improved sanitation. Hardly any household member in the poorest quintile use both improved drinking water and sanitation facilities compared to 43 per cent forhousehold members from the richest household quintile.

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

Table WS.7: Disposal of child's faeces

Percentage distribution of children age 0-2 years according to place of disposal of child's faeces, and the percentage of children age 0-2 years whose stools were disposed of safely the last time the child passed stools, Nyamira County, 2011

	Place of disposal of child's faeces									Percentage of children whose stools were disposed of safely [1]	Number of children age 0-2 years
	Child used toilet/ latrine	Put/ rinsed into toilet or latrine	Put/ rinsed into drain or ditch	Thrown into garbage	Buried	Left in the open	Other	Missing	Total		
Type of sanitation facility in dwelling											
Improved	5.3	86.0	4.2	1.7	0.0	0.9	0.6	1.2	100.0	91.4	77
Unimproved	6.8	84.5	2.3	1.6	0.6	1.1	1.1	1.5	100.0	91.3	171
Open defecation	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	2
Residence											
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	4
Rural	6.1	84.7	3.0	1.6	0.9	1.0	1.0	1.5	100.0	90.8	246
Mother's education											
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	12
Primary	5.1	82.6	3.7	2.6	1.3	1.4	1.3	1.4	100.0	87.7	132
Secondary+	8.4	87.3	2.3	0.0	0.5	0.0	0.6	1.1	100.0	95.7	106
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	9
Wealth index quintile											
Poorest	5.5	82.4	2.4	2.9	2.2	2.5	1.2	1.0	100.0	87.9	55
Second	8.7	82.9	2.2	0.9	0.7	0.0	1.1	2.3	100.0	91.6	62
Middle	4.1	87.1	2.6	2.3	0.9	2.1	0.0	0.9	100.0	91.2	55
Fourth	(7.2)	(84.2)	(3.1)	(0.0)	(0.0)	(0.0)	(2.6)	(2.8)	(100.0)	(91.4)	40
Richest	(5.7)	(87.7)	(5.0)	(1.7)	(0.0)	(0.0)	(0.0)	(0.0)	(100.0)	(93.4)	38
Total	**6.3**	**84.7**	**2.9**	**1.6**	**0.9**	**1.0**	**0.9**	**1.4**	**100.0**	**90.9**	**251**

[1] MICS indicator 4.4
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Table WS.8: Drinking water and sanitation ladders

Percentage of household population by drinking water and sanitation ladders, Nyamira County, 2011

	Percentage of household population using:										
	Improved drinking water [1]					Unimproved sanitation					
	Piped into dwelling, plot or yard	Other improved	Unimproved drinking water	Total	Improved sanitation [2]	Shared improved facilities	Unimproved facilities	Open defecation	Total	Improved drinking water sources and improved sanitation	Number of households
Area											
Rural	3.9	60.2	35.9	100.0	21.9	10.4	66.9	0.8	100.0	15.6	2962
Urban	(93.7)	(6.3)	(0.0)	(100.0)	(22.9)	(76.5)	(0.6)	(0.0)	(100.0)	(22.9)	42
Education of household head											
None	5.9	58.2	35.8	100.0	27.5	15.1	56.5	0.8	100.0	20.2	436
Primary	2.7	61.3	36.0	100.0	15.3	9.1	74.5	1.1	100.0	11.2	1423
Secondary +	7.9	57.8	34.4	100.0	27.8	12.5	59.3	0.4	100.0	19.7	1139
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Wealth index quintiles											
Poorest	0.0	56.7	43.3	100.0	0.1	0.6	96.9	2.4	100.0	0.1	653
Second	0.0	62.0	38.0	100.0	5.7	2.6	90.6	1.1	100.0	4.5	661
Middle	1.7	62.1	36.2	100.0	28.8	17.3	53.8	0.1	100.0	17.3	603
Fourth	8.1	57.3	34.5	100.0	30.0	12.9	57.1	0.0	100.0	20.7	568
Richest	18.9	58.9	22.2	100.0	53.2	27.2	19.6	0.0	100.0	42.7	519
Total	**5.1**	**59.5**	**35.4**	**100.0**	**21.9**	**11.3**	**66.0**	**0.8**	**100.0**	**15.7**	**3004**

[1] MICS indicator 4.1; MDG indicator 7.8
[2] MICS indicator 4.3; MDG indicator 7.9
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Handwashing

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

In Nyamira County, only 3 per cent of households had their designated handwashing places observed. The biggest proportion of households where a place for hand washing was observed is in the richest quintile (13 per cent). For the rest of the 97 per cent of households where it was not observed, the handwashing place is not in the dwelling/plot/yard (Table WS.9).

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

Percentage of households where place for handwashing was observed and per cent distribution of households by availability of water and soap at place for handwashing, Nyamira County, 2011

	Percentage of households where place for handwashing was observed	Percentage of households where place for handwashing was not observed		Total	Number of households	Per cent distribution of households where place for handwashing was observed, where:				Total	Number of households where place for handwashing was observed
		Not in dwelling/ plot/yard	No permission to see			Water and soap are available [1]	Water is available, soap is not available	Water is not available, soap is available	Water and soap are not available		
Area											
Rural	2.8	97.2	0.0	100.0	645	(*)	(*)	(*)	(*)	(*)	18
Urban	(*)	(*)	(*)	(*)	12	(*)	(*)	(*)	(*)	(*)	4
Education of household head											
None	5.7	94.1	0.2	100.0	111	(*)	(*)	(*)	(*)	(*)	6
Primary	2.2	97.8	0.0	100.0	301	(*)	(*)	(*)	(*)	(*)	7
Secondary +	3.7	96.3	0.0	100.0	244	(*)	(*)	(*)	(*)	(*)	9
Missing/DK	(*)	(*)	(*)	(*)	1	(*)	(*)	(*)	(*)	(*)	0
Wealth index quintiles											
Poorest	0.4	99.6	0.0	100.0	144	(*)	(*)	(*)	(*)	(*)	1
Second	0.4	99.6	0.0	100.0	135	(*)	(*)	(*)	(*)	(*)	1
Middle	1.3	98.7	0.0	100.0	138	(*)	(*)	(*)	(*)	(*)	2
Fourth	2.8	97.2	0.0	100.0	122	(*)	(*)	(*)	(*)	(*)	3
Richest	13.1	86.7	0.2	100.0	118	(*)	(*)	(*)	(*)	(*)	15
Total	**3.3**	**96.6**	**0.0**	**100.0**	**657**	**(*)**	**(*)**	**(*)**	**(*)**	**(*)**	**22**

[1] MICS indicator 4.5
(*) Not shown, based on less than 25 unweighted cases.

Availability of soap

Overall, 77 per cent of households in Nyamira County have soap anywhere in the dwelling, not necessarily at the designated hand washing place (Table WS.10).

Where a place for handwashing was observed, only 2 per cent of households had soap observed at the place for handwashing, 1 per cent showed soap, while less than 1 per cent had either no soap in the household or respondent was not able or did not want to show soap. Where a place for handwashing was not observed, soap was shown in 74 per cent of households, 19 per cent had no soap in the household while in 4 per cent of households the respondent was not able or did not want to show soap.

The proportion of households that have soap available anywhere in their dwelling ranges from 81 per cent among households headed by a member who has attained secondary education or higher to 75 per cent for those where the head has primary ( ) or 72 per cent for those withno education. Similarly, 69 per cent of households in the poorest quintile have soap anywhere in the dwelling compared to 86 per cent of households in the richest quintile.

Table WS.10: Availability of soap

Percentage distribution of households by availability of soap in the dwelling, Nyamira County, 2011

	Place for handwashing observed					Place for handwashing not observed					
		Soap not observed at place for handwashing									
	Soap observed	Soap shown	No soap in household	Not able/ Does not want to show soap	Total	Soap shown	No soap in household	Not able/ Does not want to show soap	Total	Percentage of households with soap anywhere in the dwelling [1]	Number of households
Area											
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	12
Rural	1.5	0.9	0.3	0.2	2.8	74.1	19.2	3.9	97.2	76.6	645
Education of household head											
None	3.7	1.1	0.0	1.0	5.7	66.8	26.8	0.6	94.3	71.5	111
Primary	1.0	0.9	0.3	0.0	2.2	73.0	19.7	5.1	97.8	74.8	301
Secondary+	2.6	0.8	0.3	0.0	3.7	77.9	14.8	3.7	96.3	81.3	244
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	1
Wealth index quintile											
Poorest	0.0	0.0	0.4	0.0	0.4	68.9	25.9	4.8	99.6	68.9	144
Second	0.0	0.4	0.0	0.0	0.4	69.7	24.3	5.7	99.6	70.1	135
Middle	0.7	0.3	0.3	0.0	1.3	76.3	17.6	4.8	98.7	77.2	138
Fourth	1.5	0.9	0.4	0.0	2.8	81.5	13.3	2.3	97.2	83.9	122
Richest	9.0	3.1	0.0	0.9	13.1	73.7	12.2	1.0	86.9	85.9	118
Total	**2.0**	**0.9**	**0.2**	**0.2**	**3.3**	**73.8**	**19.0**	**3.8**	**96.7**	**76.7**	**657**

{1} MICS indicator 4.6
* Not shown, based on less than 25 unweighted cases.

VIII. Reproductive Health

Fertility

In MICS4, Age Specific Fertility Rates (ASFR) and Total Fertility Rates (TFR) are calculated by using information on birth histories of women aged 15-49 years from the sampled households. Birth histories include details of all children ever born alive to a woman, such as child's name, sex, month and year of birth, survival status and if dead, the age at death. Current fertility rates are based on the date of last birth of each woman for the three years preceding the survey. Rates are underestimated by a very small margin due to absence of information on multiple births (twins, triplets etc.) and on women having multiple deliveries during the periods preceding the survey.

ASFRs are calculated by dividing the number of births to women in a specific age group by the number of women years' lived during a given period, and is expressed per 1000 women. The total fertility rate (TFR) is calculated by summing the age-specific fertility rates calculated for each of the 5-year age groups of women, from age 15 through to age 49. The TFR denotes the average number of children to which a woman will have given birth by the end of her reproductive years if current fertility rates prevailed.

Table RH.1 shows age specific fertility rates and total fertility rate. For the three year period preceding the MICS survey, the total fertility rate in Nyamira County was 4.2 children per woman. The adolescent birth rate (age-specific fertility rate for women age 15-19) during the same period is122 births per 1000 women. ASFR was highest in the 20-24 years age group with 221 births per 1000 women. Generally, fertility seems to decline in all age groups with the exception of age group 40-44 years where fertility seems to increase over the last decade before the survey.

Table RH.1: Current fertility

Age specific fertility rates (ASFR) and total fertility rate (TFR) for three year periods preceding the survey, Nyamira County, 2011

	Age specific fertility rates (ASFR)				
	Number of years preceding the survey				
	0-2	3-5	6-8	9-11	12-14
Age					
15-19	1221	159	154	147	140
20-24	221	235	245	250	281
25-29	192	244	211	242	275
30-34	136	159	179	142	224
35-39	105	162	137	112	135
40-44	53	32	56	0	-
45-49	4	57	-	-	-
Total Fertility Rate	**4.2**	**5.2**	**4.9**	**4.5**	**5.3**

[1] MICS indicator 5.1; MDG indicator 5.4
Note: Age-specific fertility rates are per 1,000 women.

Children ever born and children surviving

Table RH.1a presents the distribution of children ever born and surviving for all women by age groups. The mean number of children ever born to all women aged 15-49 years is 2.7 and that of surviving is 2.5. Women in Nyamira County attain a parity of 5.6 children per woman at the end of their childbearing period, which is 1.4 children above the current total fertility rate (4.2 children per woman).

Table RH.1a: Children ever born and children surviving

Mean and total numbers of children ever born and children surviving by age of women, Nyamira County, 2011					
	Children ever born		Children surviving		
	Mean	Total	Mean	Total	Number of women
Age					
15-19	0.3	57	0.3	51	186
20-24	1.4	276	1.4	266	197
25-29	2.6	511	2.4	486	200
30-34	3.5	403	3.3	387	116
35-39	4.6	556	4.3	529	122
40-44	5.3	384	4.8	345	72
45-49	5.6	429	5.1	395	77
Total	**2.7**	**2616**	**2.5**	**2459**	**970**

Sexual activity and childbearing early in life carry significant risks for young people all around the world.

Early childbearing

As shown in Table RH.2, more than a quarter (27 per cent) of women aged 15-19 have already had a birth, 2 per cent are pregnant with their first child, 30 per cent have begun childbearing and 9 per cent have had a live birth before age 15.

At least a third (34 per cent) of the women aged 20-24 years have had a live birth before age 18.

Table RH.2: Early childbearing

Percentage of women age 15-19 years who have had a live birth or who are pregnant with the first child and percentage of women age 15-19 years who have begun childbearing, percentage of women who have had a live birth before age 15, and percentage of women age 20-24 who have had a live birth before age 18, Nyamira County, 2011							
	Percentage of women age 15-19 who:				Number of women age 15-19	Percentage of women age 20-24 who have had a live birth before age 18 [1]	Number of women age 20-24
	Have had a live birth	Are pregnant with first child	Have begun childbearing	Have had a live birth before age 15			
Residence							
Urban	(*)	(*)	(*)	(*)	2	(*)	2
Rural	27.9	2.3	30.2	9.6	120	34.5	124
Education							
None	(*)	(*)	(*)	(*)	2	(*)	9
Primary	40.6	1.3	42.0	16.2	53	(57.2)	48
Secondary +	17.9	3.1	21.0	4.3	67	20.9	69
Wealth index quintile							
Poorest	(41.1)	(0.0)	(41.1)	(18.7)	25	(46.2)	26
Second	(21.6)	(5.0)	(26.6)	(4.6)	29	(33.4)	26
Middle	(*)	(*)	(*)	(*)	22	(30.9)	25
Fourth	(*)	(*)	(*)	(*)	24	(32.9)	28
Richest	(*)	(*)	(*)	(*)	23	(*)	20
Total	**27.4**	**2.3**	**29.7**	**9.4**	**123**	**34.0**	**126**

[1] MICS indicator 5.2
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Trends in early childbearing

Overall, 9 per cent of women aged 15-49 years have had a live birth before age 15 while at least a third (35 per cent) of women aged 20-49 years have had a live birth before age 18 as shown in Table RH.3.

Table RH.3: Trends in early childbearing

Percentage of women who have had a live birth, by age 15 and 18, by residence and age group, Nyamira County, 2011				
	All			
	Percentage of women with a live birth before age 15	Number of women age 15-49 years	Percentage of women with a live birth before age 18	Number of women age 20-49 years
Age				
15-19	9.4	123	-	0
20-24	9.5	126	34	126
25-29	9.8	130	36	130
30-34	6.5	72	33.3	72
35-39	8.7	77	32.5	77
40-44	-9.4	45	-41.3	45
45-49	6.8	50	31.8	50
Total	**8.8**	**623**	**34.6**	**501**

Contraception

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

Current use of contraception was reported by more than half (61 per cent) of women who are currently married or in union (Table RH.5). Modern methods of contraception are more commonly used (59 per cent) than traditional methods (2 per cent) with injectables being the most popular method which was used by nearly half (46 per cent) of married women in Nyamira County. The next most popular methods are the pill and female sterilization which are used by 5 per cent of married women each. Less than 2 per cent of married women reported use of intrauterine devices (IUDs), implants, the male condom, periodic abstinence and lactational amenorrhoea method (LAM).

Sixty four per cent of the women with secondary or higher education used any contraceptive method , while the figure is 58 per cent forthose with primary education. There is, however, no variation in contraceptive prevalence based on household wealth quintiles.

While injectable contraceptives are the most commonly used contraceptives across all age groups, women aged 15-19 years are more likely to use the male condom than their older counterparts and women aged 35-39 years are more likely use the pill than their counterparts.

Non use of contraceptives has important implications on fertility and hence child bearing and consequently population growth. The proportion of married women who are not using any form of contraceptives in Nyamira County is 39 per cent.

Table RH.4: Use of contraception

Percentage of women age 15-49 years currently married or in union who are using (or whose partner is using) a contraceptive method, Nyamira County, Kenya, 2011

	Not using any method	Per cent of women (currently married or in union) who are using:																Number of women currently married or in union
		Female sterilization	Male sterilization	IUD	Injectables	Implants	Pill	Male condom	Female condom	Diaphragm/ Foam/ Jelly	Lactational amenorrhoea method (LAM)	Periodic abstinence	Withdrawal	Other	Any modern method	Any traditional method	Any method [1]	
Residence																		
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6
Rural	39.1	4.6	0.0	1.7	45.4	1.3	5.1	0.9	0.0	0.0	1.7	0.0	0.1	0.1	59.0	1.9	60.9	405
Age																		
15-19	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	20
20-24	47.8	0.0	0.0	2.0	40.8	2.0	4.8	0.0	0.0	0.0	2.2	0.0	0.3	0.0	49.6	2.6	52.2	83
25-29	28.9	0.7	0.0	0.5	59.1	1.1	5.4	0.7	0.0	0.0	3.7	0.0	0.0	0.0	67.4	3.7	71.1	103
30-34	35.5	1.6	0.0	2.0	50.8	2.1	5.2	1.0	0.0	0.0	1.8	0.0	0.0	0.0	62.8	1.8	64.5	61
35-39	25.6	8.5	0.0	1.7	53.4	1.0	9.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	74.4	0.0	74.4	70
40-44	(45.0)	(12.2)	(0.0)	(3.7)	(31.6)	(1.9)	(1.3)	(2.8)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(1.5)	(53.5)	(1.5)	(55.0)	37
45-49	(58.1)	(17.6)	(0.0)	(2.1)	(18.6)	(0.0)	(3.6)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(0.0)	(41.9)	(0.0)	(41.9)	37
Number of living children																		
0	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	15
1	46.8	0.0	0.0	3.4	44.7	1.1	3.0	0.0	0.0	0.0	0.6	0.0	0.4	0.0	52.2	1.0	53.2	63
2	41.1	0.0	0.0	0.0	50.0	1.5	4.4	0.8	0.0	0.0	2.2	0.0	0.0	0.0	56.7	2.2	58.9	84
3	28.3	2.3	0.0	0.0	56.1	1.5	9.0	0.0	0.0	0.0	2.9	0.0	0.0	0.0	68.9	2.9	71.7	80
4+	35.1	10.0	0.0	2.7	43.1	1.4	4.8	1.3	0.0	0.0	1.3	0.0	0.0	0.3	63.3	1.6	64.9	168
Education																		
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	13
Primary	42.0	5.9	0.0	1.4	42.4	1.1	4.6	0.8	0.0	0.0	1.7	0.0	0.0	0.3	56.1	1.9	58.0	215
Secondary +	36.5	3.3	0.0	1.7	49.6	1.5	5.0	1.1	0.0	0.0	1.2	0.0	0.0	0.0	62.3	1.2	63.5	183
Wealth index quintile																		
Poorest	42.3	7.1	0.0	0.8	41.3	1.8	4.6	0.9	0.0	0.0	1.4	0.0	0.0	0.0	56.4	1.4	57.7	78
Second	33.2	5.1	0.0	2.1	51.3	1.0	3.9	0.8	0.0	0.0	2.0	0.0	0.0	0.5	64.2	2.5	66.8	99
Middle	45.1	3.0	0.0	1.5	43.2	1.2	3.8	0.7	0.0	0.0	1.5	0.0	0.0	0.0	53.4	1.5	54.9	88
Fourth	37.5	4.9	0.0	2.1	44.0	1.7	7.1	0.9	0.0	0.0	2.0	0.0	0.0	0.0	60.6	2.0	62.5	77
Richest	37.4	2.5	0.0	1.7	47.6	1.0	6.7	1.4	0.0	0.0	1.3	0.0	0.4	0.0	60.9	1.7	62.6	69
Total	**39.0**	**4.5**	**0.0**	**1.7**	**45.7**	**1.3**	**5.1**	**0.9**	**0.0**	**0.0**	**1.6**	**0.0**	**0.1**	**0.1**	**59.2**	**1.8**	**61.0**	**410**

[1] MICS indicator 5.3; MDG indicator 5.3
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Antenatal Care

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

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

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

The type of personnel providing antenatal care to women aged 15-49 years who gave birth in the two years preceding is presented in Table RH.5. Coverage of antenatal care (by a doctor, nurse, midwife, clinical officer or community nurse) is relatively high in Nyamira County with 94 per cent of women receiving antenatal care at least once during the pregnancy. Almost half (47 per cent) of mothers received care from a nurse or midwife. Less than 1 per cent of women received antenatal care from traditional birth attendants while another 3 per cent did not receive any antenatal care.

Table RH.5: Antenatal care coverage

Percentage distribution of women age 15-49 who gave birth in the two years preceding the survey by type of personnel providing antenatal care, Nyamira County, 2011

	Person providing antenatal care							No antenatal care received	Total	Any skilled personnel [1]	Number of women who gave birth in the preceding two years
	Medical doctor	Community nurse	Clinical officer	Nurse/ Midwife	Traditional birth attendant	Community health worker	Other				
Residence											
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	2
Rural	33.2	3.8	10.9	46.6	0.2	0.7	1.7	2.9	100.0	94.5	162
Mother's age at birth											
Less than 20	(36.9)	(3.9)	(13.8)	(36.1)	(0.0)	(2.2)	(2.9)	(4.2)	(100.0)	(90.7)	32
20-34	32.0	4.3	10.3	49.0	0.3	0.3	1.4	2.4	100.0	95.5	113
35-49	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	19
Education											
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	7
Primary	33.2	3.1	12.7	47.4	0.4	0.4	1.0	1.7	100.0	96.4	85
Secondary +	31.3	4.9	9.5	46.2	0.0	1.0	2.6	4.5	100.0	91.9	71
Wealth index quintiles											
Poorest	(27.5)	(2.0)	(11.0)	(53.4)	(0.0)	(0.0)	(4.1)	(1.9)	(100.0)	(94.0)	34
Second	(30.3)	(6.1)	(9.4)	(46.8)	(0.0)	(0.0)	(3.4)	(4.0)	(100.0)	(92.6)	39
Middle	(41.8)	(4.3)	(8.5)	(42.6)	(0.0)	(1.8)	(0.0)	(1.0)	(100.0)	(97.3)	39
Fourth	(26.2)	(1.4)	(18.5)	(44.8)	(1.4)	(0.0)	(0.0)	(7.7)	(100.0)	(90.9)	27
Richest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	24
Total	**33.1**	**3.7**	**10.8**	**46.6**	**0.2**	**0.7**	**2.1**	**2.9**	**100.0**	**94.2**	**164**

[1] MICS indicator 5.5a; MDG indicator 5.5
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Number of antenatal care visits

UNICEF and WHO recommend a minimum of at least four antenatal care visits during pregnancy. Table RH.6 shows number of antenatal care visits during the last pregnancy during the two years preceding the survey, regardless of provider by selected characteristics. Eighty-five per cent of mothers received antenatal care more than once whilst 40 per cent received antenatal care at least four times.

Table RH.6: Number of antenatal care visits

Per cent distribution of women who had a live birth during the two years preceding the survey by number of antenatal care visits by any provider, Nyamira County, 2011

	Per cent distribution of women who had:							
	No antenatal care visits	One visit	Two visits	Three visits	4 or more visits [1]	Missing/DK	Total	Number of women who had a live birth in the preceding two years
Residence								
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	2
Rural	2.9	7.4	14.6	30.7	39.7	4.7	100.0	162
Mother's age at birth								
Less than 20	(4.2)	(11.3)	(16.9)	(20.4)	(39.4)	(7.8)	(100.0)	32
20-34	2.4	5.4	14.0	31.6	42.3	4.3	100.0	113
35-49	(*)	(*)	(*)	(*)	(*)	(*)	(*)	19
Education								
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	7
Primary	1.7	10.3	14.2	39.0	30.3	4.5	100.0	85
Secondary +	4.5	4.6	16.0	22.5	47.9	4.5	100.0	71
Wealth index quintile								
Poorest	(1.9)	(9.5)	(13.5)	(39.2)	(30.2)	(5.7)	(100.0)	34
Second	(4.0)	(6.2)	(11.7)	(41.7)	(29.7)	(6.6)	(100.0)	39
Middle	(1.0)	(7.0)	(16.6)	(29.1)	(43.2)	(3.1)	(100.0)	39
Fourth	(7.7)	(9.3)	(23.5)	(20.6)	(36.8)	(2.1)	(100.0)	27
Richest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	24
Total	**2.9**	**7.3**	**14.4**	**30.7**	**39.7**	**5.0**	**100.0**	**164**

[1] MICS indicator 5.5b; MDG indicator 5.5
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Content of antenatal care

The types of services pregnant women received are shown in table RH.7. Among those women who have given birth to a child during the two years preceding the survey, 64 per cent reported that a blood sample had been taken during antenatal care visits, 93 per cent reported that their blood pressure had been checked whilst urine samples were taken in 86 per cent of cases. More than half (58 per cent) of women received all three services (had their blood pressure measured, urine sample taken, and blood sample taken) during antenatal care visits.

Table RH.7: Content of antenatal care

Percentage of women age 15-49 years who had their blood pressure measured, urine sample taken, and blood sample taken as part of antenatal care, Nyamira County, 2011

	Percentage of pregnant women who had:				Number of women who had a live birth in the preceding two years
	Blood pressure measured	Urine sample taken	Blood sample taken	Blood pressure measured, urine and blood sample taken1	
Residence					
Urban	(*)	(*)	(*)	(*)	2
Rural	93.1	86.5	63.4	57.8	162
Mother's age at birth					
Less than 20	(87.9)	(81.6)	(61.6)	(53.4)	32
20-34	94.9	89.3	64.9	60.4	113
35-49	(*)	(*)	(*)	(*)	19
Education					
None	(*)	(*)	(*)	(*)	7
Primary	94.2	87.3	64.4	58.6	85
Secondary +	91.4	84.5	62.9	57.2	71
Wealth index quintile					
Poorest	(91.5)	(84.9)	(60.7)	(52.3)	34
Second	(93.7)	(85.3)	(58.8)	(55.4)	39
Middle	(93.5)	(84.9)	(58.1)	(49.5)	39
Fourth	(90.3)	(85.6)	(70.7)	(65.1)	27
Richest	(*)	(*)	(*)	(*)	24
Total	**92.8**	**86.2**	**63.5**	**58.0**	**164**

[1] MICS indicator 5.6
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Assistance at Delivery

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

The MICS included a number of questions to assess the proportion of births attended by a skilled attendant. *A skilled attendant* includes a doctor, nurse, midwife, clinical officer or community nurse.

More than half (56 per cent) of births occurring in the two years preceding the Nyamira MICS survey were delivered by skilled personnel (Table RH.8). Although it is expected that deliveries in health facilities be assisted by a skilled attendant, only 90 per cent of births were assisted by a skilled attendant in public health facilities. The highest proportion of births (31 per cent) was delivered with the assistance of a nurse or midwife in the two years preceding the MICS survey. Doctors, community nurses and clinical officers assisted with the delivery of 22, 4 and 6 per cent of births, respectively. Traditional birth attendants still play a substantial role in Nyamira County and assisted with the delivery of 13 per cent of births. Thirteen per cent of births were assisted by a relative or friend while another 9 per cent of births had no attendant. Seven per cent of births were delivered by caesarean section.

Table RH.8: Assistance during delivery

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

	Person assisting at delivery												
	Medical doctor	Community nurse	Nurse/ midwife	Community health worker	Relative / Friend	Clinical Officer	Traditional birth attendant	Other/ Missing	No attendant	Total	Delivery assisted by any skilled attendant [1]	Per cent delivered by C-section [2]	Number of women who had a live birth in preceding two years
Residence													
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	2
Rural	22.1	3.7	30.4	0.3	13.2	6.0	13.6	1.9	8.6	100.0	56.3	7.4	162
Mother's age at birth													
Less than 20	(26.9)	(2.3)	(21.6)	(0.0)	(14.8)	(7.2)	(19.1)	(2.9)	(5.1)	(100.0)	(50.9)	(7.2)	32
20-34	21.8	2.8	35.3	0.5	12.9	6.1	12.1	1.7	6.8	100.0	59.9	6.7	113
35-49	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	19
Place of delivery													
Public sector health facility	30.9	8.8	49.9	0.9	0.0	9.5	0.0	0.0	0.0	100.0	89.6	14.8	64
Private sector health facility	(44.4)	(0.0)	(45.3)	(0.0)	(0.0)	(10.2)	(0.0)	(0.0)	(0.0)	(100.0)	(89.8)	(6.9)	36
Home	0.0	0.6	4.2	0.0	34.5	0.0	38.2	1.4	21.2	100.0	4.8	0.0	58
Other	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	3
Missing/DK	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	3
Education													
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	7
Primary	24.3	2.7	22.0	0.7	14.6	6.7	15.7	1.0	12.3	100.0	49.0	8.0	85
Secondary +	18.0	4.4	43.0	0.0	12.4	4.4	10.0	3.1	4.8	100.0	65.4	6.8	71
Wealth index quintiles													
Poorest	(20.4)	(0.0)	(28.3)	(0.0)	(19.0)	(1.9)	(14.7)	(4.1)	(11.7)	(100.0)	(48.7)	(9.1)	34
Second	(15.8)	(4.6)	(33.2)	(0.0)	(17.5)	(8.5)	(13.7)	(2.2)	(4.4)	(100.0)	(53.6)	(3.3)	39
Middle	(23.6)	(2.7)	(25.6)	(0.0)	(15.4)	(3.3)	(15.0)	(2.0)	(12.3)	(100.0)	(51.9)	(8.1)	39
Fourth	(16.0)	(2.6)	(39.4)	(2.1)	(4.7)	(11.1)	(16.0)	(0.0)	(8.2)	(100.0)	(58.0)	(8.7)	27
Richest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	24
Total	**21.9**	**3.7**	**30.9**	**0.3**	**13.0**	**6.0**	**13.4**	**2.3**	**8.5**	**100.0**	**56.4**	**7.3**	**164**

[1] MICS indicator 5.7; MDG indicator 5.2
[2] MICS indicator 5.9
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Place of Delivery

Increasing the proportion of births that are delivered in health facilities is an important factor in reducing the health risks to both the mother and the baby. Proper medical attention and hygienic conditions during delivery can reduce the risks of complications and infection that can cause morbidity and mortality to either the mother or the baby. Table RH.9 presents the per cent distribution of women aged 15-49 years who had a live birth in the two years preceding the survey by place of delivery and the percentage of births delivered in a health facility, according to background characteristics.

Sixty-one per cent of births were delivered in a health facility. More than a third (39 per cent) of deliveries occurred in public sector facilities whilst 22 per cent occurred in private sector facilities. Interestingly, more than a third (35 per cent) of births occurred at home.

Table RH.9: Place of delivery

Percentage distribution of women age 15-49 who had a live birth in two years preceding the survey by place of delivery, Nyamira County, 2011

	Place of delivery					Total	Delivered in health facility [1]	Number of women who had a live birth in preceding two years
	Public sector health facility	Private sector health facility	Home	Other	Missing/DK			
Residence								
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	2
Rural	39.4	21.6	35.7	1.7	1.7	100.0	60.9	162
Mother's age at birth								
Less than 20	(35.5)	(20.2)	(41.3)	(0.0)	(2.9)	(100.0)	(55.8)	32
20-34	40.7	24.6	31.4	1.8	1.4	100.0	65.3	113
35-49	(*)	(*)	(*)	(*)	(*)	(*)	(*)	19
Number of antenatal care visits								
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	5
1-3 visits	33.1	21.2	44.9	0.8	0.0	100.0	54.3	86
4+ visits	50.4	24.7	22.8	2.2	0.0	100.0	75.1	65
Education								
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	7
Primary	32.0	22.7	42.1	1.7	1.6	100.0	54.7	85
Secondary +	48.2	19.6	28.4	1.8	2.0	100.0	67.8	71
Wealth index quintiles								
Poorest	(29.7)	(18.9)	(45.4)	(1.9)	(4.1)	(100.0)	(48.5)	34
Second	(38.4)	(21.0)	(36.3)	(2.0)	(2.2)	(100.0)	(59.5)	39
Middle	(31.1)	(21.4)	(47.5)	(0.0)	(0.0)	(100.0)	(52.5)	39
Fourth	(63.6)	(7.6)	(24.7)	(2.4)	(1.7)	(100.0)	(71.2)	27
Richest	(*)	(*)	(*)	(*)	(*)	(*)	(*)	24
Total	**39.0**	**22.1**	**35.2**	**1.7**	**2.1**	**100.0**	**61.1**	**164**

[1] MICS indicator 5.8
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

IX. Child Development

Early Childhood Education and Learning

Attendance to pre-school education in an organized learning or child education program is important for the readiness of children to school. 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 a major determinant of the child's development during this period. In this context, adult activities with children, presence of books at home, for the child, and the conditions of care are important indicators of quality of child care. A World Fit for Children goal is that "children should be physically healthy, mentally alert, emotionally secure, socially competent and ready to learn". Information on a number of activities that support early learning and development was collected in the Nyamira County Multiple indicator Survey. These included the involvement of adults with children in the following activities: reading books or looking at picture books, telling stories, singing songs, taking children outside the home, compound or yard, playing with children, and spending time with children naming, counting, or drawing things.

Table CD.1 shows the percentage of children age 36-59 months currently attending early childhood education disaggregated by selected characteristics.

Table CD.1: Early childhood education

Percentage of children age 36-59 months who are attending an organized early childhood education programme, Nyamira County, 2011

	Percentage of children age 36-59 months currently attending early childhood education [1]	Number of children age 36-59 months
Sex		
Male	44.0	97
Female	49.2	93
Residence		
Urban	(*)	1
Rural	46.7	188
Age of child		
36-47 months	29.2	102
48-59 months	66.7	87
Mother's education		
None	(*)	9
Primary	41.0	101
Secondary+	52.6	79
Wealth index quintile		
Poorest	35.9	52
Second	(35.4)	45
Middle	(63.9)	37
Fourth	(47.2)	31
Richest	(61.8)	25
Total	**46.5**	**189**

[1] MICS indicator 6.7
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

About 47 per cent of children aged 36-59 months are attending pre-school (Table CD.1). Pre-school attendance increases with improving levels of mother's education. Only 41 per cent of children born to mothers with primary education attended pre-school compared to 53 per cent of children born to mother with at least secondary education. There are minor differences in school attendance by gender. For example, attendance among boys is at 44 per cent compared to 50 per cent among girls. The proportions of children attending pre-school at ages 36-47 months and 48-59 months are 29 and 67 per cent respectively.

Findings on adult participation in childhood development are presented in Table CD.2. For almost 20 per cent of children under five, an adult household member engaged in more than four activities that promote learning and school readiness during the 3 days preceding the survey. The differentials by selected characteristics show that the involvement of parents in childhood development activities increases with increasing mother's educational level. The proportion is 16 and 24 per cent for children whose mothers have primary education and secondary or higher education respectively. Adult household members were marginally more engaged in four or more activities with female children (23 per cent) compared to male children (17 per cent).

The table also indicates that the father's involvement in such activities was somewhat limited. Overall, the proportion of children with whom the father engaged in one or more activities is 30 per cent. There are no majorgender differentials in terms of father's involvement in such activities; father's involvement with female children is 32 per cent compared to 27 per cent with male children.

Notably, 37 per cent of children living in a household without their fathers. There is no variation in the proportion of children who live without their fathers by child's age or gender.

Table CD.2: Support for learning

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

	Percentage of children age 36-59 months		Mean number of activities		Percentage of children not living with their natural father	Number of children age 36-59 months
	With whom adult household members engaged in four or more activities [1]	With whom the father engaged in one or more activities [2]	Any adult household member engaged with the child	The father engaged with the child		
Sex						
Male	16.9	26.9	1.9	0.5	37.5	97
Female	23.1	32.3	2.2	0.6	37.2	93
Residence						
Urban	(*)	(*)	(*)	(*)	(*)	1
Rural	20.0	29.7	2.0	0.6	37.5	188
Age						
36-47 months	18.4	31.1	2.0	0.6	37.2	102
48-59 months	21.8	27.9	2.0	0.5	37.6	87
Mother's education						
None	(*)	(*)	(*)	(*)	(*)	9
Primary	16.4	23.5	1.9	0.4	39.2	101
Secondary+	23.8	37.8	2.2	0.7	31.8	79
Father's education						
None	(*)	(*)	(*)	(*)	(*)	8
Primary	21.3	36.1	2.1	0.6	0.0	61
Secondary+	(24.0)	(54.2)	(2.2)	(1.0)	(0.0)	49
Father not in household	15.1	5.0	1.8	0.1	100.0	71
Wealth index quintiles						
Poorest	9.2	21.6	1.5	0.4	45.0	52
Second	(21.8)	(30.1)	(2.3)	(0.5)	(32.9)	45
Middle	(19.1)	(25.7)	(2.0)	(0.5)	(45.0)	37
Fourth	(22.7)	(38.1)	(2.1)	(0.8)	(34.5)	31
Richest	(36.7)	(40.5)	(2.5)	(0.8)	(21.9)	25
Total	**19.9**	**29.6**	**2.0**	**0.6**	**37.4**	**189**

[1] MICS indicator 6.1
[2] MICS Indicator 6.2
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

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

In Nyamira County, only 7 per cent of children aged 0-59 months are living in households where at least 3 children's books are present (Table CD.3). The proportion of children with 10 or more children's books in the household is less than 1 per cent. There is no major difference in the proportion of households reporting 3 or more books for children by child's gender. As expected, the proportion of households with more than 3 children's books is higher among households with older children (9 per cent for children aged 24-59 months compared to 2 per cent for children aged 0-23 months). The proportion of households with 3 or more children's books is 19 per cent among richest households compared to 1 per cent among the

poorest households. The proportion of households with 3 or more children's books is 9 per cent among children whose mothers have secondary or higher education and 4 per cent among those whose mothers have primary education.

Table CD.3: Learning materials

Percentage of children under age 5 by numbers of children's books present in the household, and by playthings that child plays with, Nyamira County, 2011

	Household has for the child:		Child plays with:				
	3 or more children's books [1]	10 or more children's books	Homemade toys	Toys from a shop/ manufactured toys	Household objects/ objects found outside	Two or more types of playthings [2]	Number of children under age 5
Sex							
Male	7.7	0.8	67.1	26.2	83.3	67.1	238
Female	5.7	0.0	64.8	23.8	85.2	66.1	204
Residence							
Urban	(*)	(*)	(*)	(*)	(*)	(*)	5
Rural	6.6	0.4	65.9	24.7	84.1	66.5	437
Age							
0-23 months	2.2	0.7	47.6	19.9	68.3	48.1	163
24-59 months	9.4	0.3	76.7	28.2	93.4	77.4	280
Mother's education							
None	(*)	(*)	(*)	(*)	(*)	(*)	21
Primary	4.2	0.2	65.3	17.7	82.2	63.7	234
Secondary	8.8	0.7	68.1	31.7	87.1	70.4	187
Wealth index quintiles							
Poorest	0.6	0.0	53.0	13.0	79.6	51.8	107
Second	4.6	0.0	69.8	15.5	86.3	67.1	106
Middle	5.2	0.5	69.2	24.4	86.2	71.1	93
Fourth	10.0	1.7	68.2	26.6	84.6	68.5	71
Richest	19.2	0.4	74.3	60.7	85.0	81.9	65
Total	**6.8**	**0.4**	**66.0**	**25.1**	**84.2**	**66.6**	**442**

[1] MICS indicator 6.3
[2] MICS indicator 6.4
(*) Not shown, based on less than 25 unweighted cases.

Table CD.3 also shows that 67 per cent of children aged 0-59 months have 2 or more playthings to play with in their homes. The playthings in MICS included homemade toys (such as dolls and cars, or other toys made at home), toys that came from a store, and household objects (such as pots and bowls) or objects and materials found outside the home (such as sticks, rocks, animal shells, or leaves). About 25 per cent of children play with toys that come from a store while 66 per cent play with homemade toys. Majority of children (84 per cent) play with household objects or other objects found outside the home. The proportion of children who have 2 or more playthings to play with is 67 per cent among male children and 66 per cent among female children. There are differentials in the proportion of children with 2 or more playthings by age group: - 48 per cent for children aged 0-23 months and 77 per cent for children aged 24-59 months. Moderate differences in the proportion of children with 2 or more playthings are observed in terms of mother's education: - 70 per cent of children whose mothers have at least secondary education, while the proportion drop to 64 per cent for children whose mothers have primary education.

Differences in the proportion of children with 2 or more playthings are large by socioeconomic status of the households: - 52 per cent among children from the poorest households and 82 per cent among children from the richest households.

Leaving children alone or in the presence of other young children is known to increase the risk of accidents, and equally affects the child's growth and development. In Nyamira County MICS, two questions were asked to find out whether children aged 0-59 months were left alone during the week preceding the interview date, and whether children were left in the care of other children under 10 years of age.

Table CD.4 shows that 18 per cent of children aged 0-59 months were left in the care of another child younger than 10 years of age, while 45 per cent were left alone during the week preceding the interview. Combining the two care indicators, findings show that about half (50 per cent) of children were left with inadequate care during the week preceding the survey, either by being left alone or in the care of another child. No major differences are observed by the sex of the child – 52 per cent and 48 per cent among male and female children respectively. A difference of about 27 per cent was observed between children from the poorest households versus those from the richest households: - 63 per cent among children from the poorest households and 34 per cent among children from the richest households. Inadequate care was less prevalent among children whose mothers have at least secondary education (42 per cent), as opposed to children whose mothers have primary education (58 per cent). Children aged 24-59 months were left with inadequate care more (58 per cent) than those who were aged 0-23 months (37 per cent).

Table CD.4: Inadequate care

Percentage of children under age 5 left alone or left in the care of another child younger than 10 years of age for more than one hour at least once during the past week, Nyamira County, 2011

	Percentage of children under age 5			
	Left alone in the past week	Left in the care of another child younger than 10 years of age in the past week	Left with inadequate care in the past week [1]	Number of children under age 5
Sex				
Male	45.2	20.5	52.0	238
Female	44.1	14.2	48.3	204
Residence				
Urban	(*)	(*)	(*)	5
Rural	44.6	17.8	50.2	437
Age				
0-23 months	36.6	8.4	37.1	163
24-59 months	49.5	23.0	58.0	280
Mother's education				
None	(*)	(*)	(*)	21
Primary	52.3	20.9	57.6	234
Secondary+	36.1	14.5	42.1	187
Wealth index quintiles				
Poorest	56.2	17.7	62.7	107
Second	38.3	18.6	45.2	106
Middle	52.5	23.6	58.3	93
Fourth	40.5	13.5	42.3	71
Richest	29.7	11.8	35.7	65
Total	**44.7**	**17.6**	**50.3**	**442**

[1] MICS indicator 6.5
(*) Not shown, based on less than 25 unweighted cases.

Early Childhood Development

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

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

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

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

ECDI is then calculated as the percentage of children who are developmentally on track in at least three of these four domains. The results are presented in Table CD.5.

Table CD.5: Early child development index

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

	Percentage of children age 36-59 months who are developmentally on track for indicated domains				Early child development index score [1]	Number of children age 36-59 months
	Literacy-numeracy	Physical	Social-Emotional	Learning		
Sex						
Male	31.5	94.4	39.2	59.2	38.8	97
Female	45.6	92.7	41.3	54.3	41.6	93
Residence						
Urban	(*)	(*)	(*)	(*)	(*)	1
Rural	38.5	93.5	40.3	56.6	40.3	188
Age						
36-47 months	23.8	93.5	42.2	57.7	30.9	102
48-59 months	55.3	93.6	37.8	55.7	51.0	87
Preschool attendance						
Attending preschool	63.4	96.3	38.8	59.3	56.3	88
Not attending preschool	16.6	91.2	41.4	54.6	26.2	101
Mother's education						
None	(*)	(*)	(*)	(*)	(*)	9
Primary	31.6	92.5	41.8	52.2	36.4	101
Secondary +	45.2	94.9	39.1	63.1	45.1	79
Wealth index quintiles						
Poorest	27.0	89.3	36.8	55.3	31.8	52
Second	(35.4)	(94.0)	(39.2)	(48.6)	(33.6)	45
Middle	(41.4)	(95.7)	(37.0)	(58.5)	(40.2)	37
Fourth	(44.5)	(95.2)	(48.0)	(58.2)	(51.6)	31
Richest	(55.3)	(96.5)	(44.0)	(70.2)	(55.3)	25
Total	**38.4**	**93.6**	**40.2**	**56.8**	**40.2**	**189**

[1] MICS indicator 6.6
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

MICS indicator 6.6, Early child development index is calculated as the percentage of children who are developmentally on track in at least three of the four component domains (literacy-numeracy, physical, social-emotional, and learning).

In Nyamira County, 40 per cent of children aged 36-59 months are developmentally on track. ECDI is comparable among boys (39 per cent) and girls (42 per cent). As expected, ECDI is much higher in older compared to younger children (51 per cent among 48-59 months old compared to 31 per cent among 36-47 months old), since children accumulate more skills with increasing age. Higher ECDI is seen in children attending pre-school compared to those not attending preschool (56 per cent compared to 26 per cent respectively. The analysis of four domains of child development shows that 94 per cent of children are on track in the physical domain, but much less on social-emotional (40 per cent), literacy-numeracy (38 per cent) and learning (57 per cent) domains. In both literacy-numeracy and learning domains, higher scores are observed among children attending preschool and among those born to mothers with at least secondary education. No major differences are observed in ECDI scores in the physical domain based on a child's age, gender, preschool attendance or mothers' education.

X. Literacy and Education

Literacy among Young Women

One of the World Fit for Children goals is to assure adult literacy. Adult literacy is also an MDG indicator, relating to both men and women. In 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.

Table ED.1 shows the percentage of women aged 15 – 24 who are literate in Nyamira County. The data shows that only 95 per cent of young women in Nyamira County are literate and that literacy status varies by education level. About 87per cent of women who have attained primary school level of education were able to read the statement shown to them compared to all the women who have at least secondary education. Results further indicate that there is no much difference in terms of literacy among women aged 15-19 (95 per cent) and those aged 20-24 (94 per cent) in Nyamira County.

Table ED.1: Literacy among young women

Percentage of women age 15-24 years who are literate, Nyamira County, 2011			
	Percentage literate [1]	Percentage not known	Number of women age 15-24 years
Residence			
Urban	(*)	(*)	4
Rural	94.4	0.7	245
Education			
None	(*)	(*)	11
Primary	87.4	1.2	101
Secondary+	99.7	0.3	136
Age			
15-19	95.1	0.5	123
20-24	93.9	0.9	126
Wealth index quintile			
Poorest	88.3	1.2	51
Second	95.2	0.0	56
Middle	(95.9)	(0.0)	46
Fourth	98.2	0.0	52
Richest	(95.1)	(2.5)	43
Total	**94.5**	**0.7**	**248**

[1] MICS indicator 7.1; MDG indicator 2.3
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

School Readiness

Pre-school education attendance in an organised learning or child education programme is important for the readiness of children to start formal schooling. Table ED.2 shows the percentage of children attending first grade of primary school who attended pre-school the previous years. Overall, 70 per cent of children who are currently attending the first grade of primary school attended pre-school the previous year. The results indicate that more female (75 per cent) than male (67 per cent) children per cent attending the first grade of primary school attended pre-school the previous years).

Table ED.2: School readiness

Percentage of children attending first grade of primary school who attended pre-school the previous year, Nyamira County, 2011		
	Percentage of children attending first grade who attended preschool in previous year [1]	Number of children attending first grade of primary school
Sex		
Male	66.7	58
Female	74.7	51
Residence		
Urban	(*)	0
Rural	70.6	109
Mother's education		
None	(*)	8
Primary	67.6	68
Secondary+	(80.5)	30
Wealth index quintile		
Poorest	(76.9)	28
Second	(71.5)	30
Middle	(*)	21
Fourth	(*)	18
Richest	(*)	13
Total	**70.4**	**109**

[1] MICS indicator 7.2
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

Primary and Secondary School Participation

Universal access to basic education and the achievement of primary education by the world's children is one of the most important goals of the Millennium Development Goals and 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
- Primary school net attendance ratio (adjusted)
- Secondary school net attendance ratio (adjusted)
- Female to male education ratio (or gender parity index - GPI) in primary and secondary school

The indicators of school progression include:

- Children reaching last grade of primary
- Primary completion rate
- Transition rate to secondary school

Table ED.3 presents the results of children of primary school entry age 6 attending grade 1 (net intake rate) of primary school in Nyamira County. About 37 per cent of the children are attending the first grade of primary school.

Table ED.3: Primary school entry

Percentage of children of primary school entry age entering grade 1 (net intake rate), Nyamira County, 2011		
	Percentage of children of primary school entry age entering grade 1 [1]	Number of children of primary school entry age
Sex		
Male	(28.7)	39
Female	(43.5)	49
Residence		
Urban	(*)	0
Rural	36.9	88
Mother's education		
None	(*)	9
Primary	34.2	52
Secondary+	(40.7)	27
Wealth index quintile		
Poorest	(*)	20
Second	(*)	22
Middle	(*)	19
Fourth	(*)	17
Richest	(*)	11
Total	**36.9**	**89**

[1] MICS indicator 7.3
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.
Primary school entry age is defined at the country level (usually based on UNESCO's ISCED classification).

Table ED.4 provides the percentage of children of primary school age 6 to 13 years who are attending primary or secondary school[8]. The majority of children of primary school age are attending school (84 per cent) which is below the Nyanza provincial level of 86 per cent reported in the 2008-09 KDHS. However, 16 per cent of children of school age are out of school when they are expected to be participating in learning. As expected, primary school attendance increases with age of child, increasing education of the mother and household wealth index. For example, 77 per cent of primary school age children from the poorest households are currently attending primary school compared with 89 per cent from the richest households. The data further shows that the proportion of children of primary school age who are attending primary school ranges from 82 per cent for those with mothers having primary education, 87 per cent for those with at least secondary or higher to 79 per cent for those whose mothers have no education.

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

Table ED.4: Primary school attendance

Percentage of children of primary school age attending primary or secondary school (adjusted net attendance ratio), Nyamira County, 2011

	Male		Female		Total	
	Net attendance ratio (adjusted)	Number of children	Net attendance ratio (adjusted)	Number of children	Net attendance ratio (adjusted) [1]	Number of children
Residence						
Urban	(*)	3	(*)	4	(*)	7
Rural	82.9	317	84.4	328	83.6	644
Age at beginning of school year						
6	(34.1)	39	(44.8)	49	40.0	89
7	(73.7)	50	72.9	53	73.3	102
8	(83.4)	42	(91.0)	40	87.1	82
9	(86.6)	37	(97.6)	35	91.9	71
10	99.0	51	(96.6)	45	97.9	96
11	(98.3)	32	(100.0)	29	99.1	61
12	(96.8)	31	(97.6)	46	97.3	77
13	(94.6)	37	(92.6)	35	93.6	72
Mother's education						
None	(*)	20	(77.3)	31	79.1	51
Primary	80.2	185	84.4	200	82.4	385
Secondary +	87.0	115	87.0	101	87.0	216
Wealth index quintile						
Poorest	73.9	66	78.4	85	76.5	151
Second	88.4	89	83.8	79	86.2	168
Middle	81.3	53	88.6	72	85.5	125
Fourth	81.1	61	(85.5)	48	83.0	109
Richest	87.7	51	(89.8)	48	88.7	99
Total	**82.7**	**319**	**84.6**	**332**	**83.7**	**651**

[1] MICS indicator 7.4; MDG indicator 2.1
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

Table ED.5[9] shows the secondary school net attendance ratio. Unlike in primary school where 84 per cent of the children are attending school, only 35 per cent of children of secondary school age are attending secondary school. The remaining 65 per cent are either out of school or are still attending primary school. The results further show that 56 per cent of the children of secondary school age are attending primary school while they should be attending secondary school. Nine per cent are not attending school at all. Attendance of secondary school generally improves with the mother's education level, age of the child and household wealth index. For instance, the proportion of children who are attending secondary school is lower (28 per cent) among children whose mothers have primary education only compared to those whose mothers have at least secondary education (45 per cent).

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

Table ED.5: Secondary school attendance

Percentage of children of secondary school age attending secondary school or higher (adjusted net attendance ratio) and percentage of children attending primary school, Nyamira County, 2011

	Male			Female			Total		
	Net attendance ratio (adjusted) [1]	Per cent attending primary school	Number of children	Net attendance ratio (adjusted) [1]	Per cent attending primary school	Number of children	Net attendance ratio (adjusted) [1]	Per cent attending primary school	Number of children
Residence									
Urban	(*)	(*)	2	(*)	(*)	3	(*)	(*)	5
Rural	33.6	58.8	149	36.2	53.3	136	34.8	56.2	284
Age at beginning of school year									
14	(12.1)	(84.8)	40	(18.8)	78.8	49	15.8	81.5	89
15	(16.5)	(81.1)	40	(28.1)	59.7	29	21.4	72.1	70
16	(51.8)	(39.1)	28	(55.6)	34.2	30	53.8	36.5	59
17	(58.8)	(25.7)	41	(57.5)	20.2	30	58.3	23.4	72
Mother's education									
None	(*)	(*)	8	(*)	(*)	11	(*)	(*)	19
Primary	26.9	69.5	80	28.7)	66.7	67	27.7	68.2	148
Secondary +	(39.3)	(56.1)	38	(51.0)	(45.5)	34	44.8	51.1	71
Mother not in household	(*)	(*)	24	(35.0)	(26.8)	27	40.8	29.7	51
Wealth index quintile									
Poorest	(29.7)	(62.1)	37	(25.7)	(64.8)	33	27.8	63.3	70
Second	(33.5)	(62.2)	33	(30.2)	(64.2)	25	32.1	63.1	58
Middle	(31.3)	(58.2)	32	(35.6)	(50.3)	26	33.2	54.7	57
Fourth	(31.7)	(60.0)	28	(35.2)	(49.6)	31	33.5	54.6	59
Richest	(*)	(*)	20	(63.7)	(28.9)	25	(56.4)	(37.0)	45
Total	**33.6**	**58.9**	**150**	**37.2**	**52.2**	**139**	**35.3**	**55.7**	**289**

[1] MICS indicator 7.5

The percentage of children entering first grade who eventually reach the last grade of primary school is presented in Table ED.6. Of all children starting grade one, the majority of them (92 per cent) will eventually reach grade eight. Notice that this number includes children who repeat grades and who eventually move up to reach last grade. Progression between different grades shows high progression levels (over 99 per cent) in most grades. Children living in the rural areas have 92 per cent progression rate to grade 8. About 91 per cent of children born to mothers with no education reach grade eight compared to all of the children born to mothers with at least secondary education.

Table ED.6: Children reaching last grade of primary school

Percentage of children entering first grade of primary school who eventually reach the last grade of primary school (Survival rate to last grade of primary school), Nyamira County, 2011								
	Per cent attending grade 1 last school year who are in grade 2 this school year	Per cent attending grade 2 last school year who are attending grade 3 this school year	Per cent attending grade 3 last school year who are attending grade 4 this school year	Per cent attending grade 4 last school year who are attending grade 5 this school year	Per cent attending grade 5 last school year who are attending grade 6 this school year	Per cent attending grade 6 last year who are attending grade 7 this year	Per cent attending grade 7 last year who are attending grade 8 this year	Per cent who reach grade 8 of those who enter grade 1 [1]
Sex								
Male	99.4	98.5	100.0	100.0	96.4	98.5	97.9	91.1
Female	98.8	100.0	100.0	100.0	100.0	100.0	94.4	93.3
Residence								
Urban	100.0	-	100.0	100.0	-	100.0	100.0	-
Rural	99.1	99.2	100.0	100.0	98.3	99.3	96.1	92.2
Mother's education								
None	100.0	100.0	100.0	100.0	100.0	91.7	100.0	91.7
Primary	99.5	100.0	100.0	100.0	98.7	100.0	100.0	98.2
Secondary+	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mother not in household	-	100.0	-	100.0	100.0	100.0	71.7	-
Wealth index quintile								
Poorest	100.0	100.0	100.0	100.0	100.0	96.8	100.0	96.8
Second	98.9	100.0	100.0	100.0	95.2	100.0	100.0	94.1
Middle	100.0	100.0	100.0	100.0	96.6	100.0	92.1	88.9
Fourth	100.0	95.8	100.0	100.0	100.0	100.0	92.4	88.6
Richest	96.3	100.0	100.0	100.0	100.0	100.0	100.0	96.3
Total	**99.1**	**99.2**	**100.0**	**100.0**	**98.3**	**99.3**	**96.1**	**92.2**

[1] MICS indicator 7.6; MDG indicator 2.2

The primary completion rate is the ratio of the total number of students, regardless of age, entering the last grade of primary school for the first time, to the number of children of the primary graduation age at the beginning of the current (or most recent) school year. The primary school completion rate and transition rate to secondary education are presented in Table ED.7. The results for Nyamira County indicate that the primary school completion rate is 82 per cent,out of whom slightly more than two-thirds (68 per cent) transit to secondary schools.

Table ED.7: Primary school completion and transition to secondary school

Primary school completion rates and transition rate to secondary school, Nyamira County, 2011				
	Primary school completion rate [1]	Number of children of primary school completion age	Transition rate to secondary school [2]	Number of children who were in the last grade of primary school the previous year
Sex				
Male	(81.6)	37	(63.7)	32
Female	(83.2)	35	(74.0)	27
Residence				
Urban	(*)	2	(*)	2
Rural	83.6	71	69.2	57
Mother's education				
None	(*)	4	(*)	4
Primary	(65.9)	41	(*)	20
Secondary+	(66.9)	28	(*)	13
Mother not in household			(*)	9
Wealth index quintile				
Poorest	(*)	15	(*)	12
Second	(*)	19	(*)	13
Middle	(*)	12	(*)	11
Fourth	(*)	16	(*)	14
Richest	(*)	10	(*)	10
Total	**82.4**	**72**	**68.4**	**60**

[1] MICS indicator 7.7
[2] MICS indicator 7.8
( ) Based on 25-49 unweighted cases.
(*) Not shown, based on less than 25 unweighted cases.

The ratios of girls to boys attending primary and secondary education are provided in Table ED.8. These ratios are better known as the Gender Parity Index (GPI). Notice that the ratios included here are obtained from net attendance ratios rather than gross attendance ratios. The last ratios provide an erroneous description of the GPI mainly because in most of the cases the majority of over-aged children attending primary education tend to be boys.

Table ED.8 presents the results of education gender parity for Nyamira County. The results show that gender parity for primary school is 1.02. This indicates that there is no marked difference in the primary school attendance between girls and boys. However, the GPI increases to 1.11 for secondary school attendance. Gender Parity Index for primary school varies with place of residence. The GPI for primary school in rural areas is 1.46 compared to 1.02 in urban areas. Moreover, GPI for secondary school varies by place of residence and household wealth index. For instance, the GPI for secondary school in rural areas is 1.09 compared to 2.73 in urban areas while the GPI for secondary school among children from the poorest households is 0.86 compared to 1.35 among children living in the richest households.

Table ED.8: Education gender parity

Ratio of adjusted net attendance ratios of girls to boys, in primary and secondary school, Nyamira County, 2011

	Primary school adjusted net attendance ratio (NAR), girls	Primary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for primary school adjusted NAR [1]	Secondary school adjusted net attendance ratio (NAR), girls	Secondary school adjusted net attendance ratio (NAR), boys	Gender parity index (GPI) for secondary school adjusted NAR [2]
Residence						
Urban	100.0	68.3	1.46	91.1	33.3	2.73
Rural	84.6	82.9	1.02	36.2	33.2	1.09
Mother's education						
None	77.3	81.8	0.95	53.2	32.6	1.63
Primary	84.4	80.2	1.05	28.7	26.9	1.07
Secondary+	87.7	87.0	1.01	51.0	39.3	1.30
Mother not in household	-	-	-	35.0	47.2	0.74
Wealth index quintile						
Poorest	78.4	73.9	1.06	25.7	29.7	0.86
Second	84.6	88.4	0.96	30.2	33.5	0.90
Middle	88.6	81.3	1.09	35.6	31.3	1.14
Fourth	85.5	81.1	1.05	35.2	31.7	1.11
Richest	89.8	87.7	1.02	63.7	47.3	1.35
Total	**84.8**	**82.7**	**1.02**	**37.2**	**33.6**	**1.11**

[1] MICS indicator 7.9; MDG indicator 3.1
[2] MICS indicator 7.10; MDG indicator 3.1
The gender parity index (GPI) is the ratio of female to male adjusted net attendance ratios (primary or secondary). The primary and secondary adjusted net attendance ratios are presented in more detail in tables ED.4 and ED.5.

The primary schools adjusted NAR for girls and boys are 85 per cent and 83 per cent respectively. Similarly, the NAR for secondary school adjusted for girls and boys are 37 and 34 per cent respectively. The disadvantage of rural areas is particularly pronounced on primary school attendance. The results also show variations in the primary schools adjusted NAR by residence (urban/rural), mother's education and household wealth index for both boys and girls. For secondary schools adjusted NAR, the disadvantage of children from poorest households and rural areas is particularly evident in Nyamira County.

XI. Child Protection

Birth Registration

The International Convention on the Rights of the Child 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 World Fit for Children states the goal to develop systems to ensure the registration of every child at or shortly after birth, and fulfil his or her right to acquire a name and a nationality, in accordance with national laws and relevant international instruments. The indicator is the percentage of children under 5 years of age whose birth is registered.

Details on birth registration by selected characteristics in Nyamira County are presented in Table CP.1. The results show that Nyamira County registered over half (53 per cent) of the births of children under five.The proportions of registered births are similar between male and female children (53 per cent). The proportion of children whose births are registered declines with increasing age of a child from 58 per cent among those aged 0-11 months to 47 per cent among those aged 48-59 months. About 57 per cent of children whose mothers have at least secondary education have their births registered compared to 49 per cent for those whose mothers have primary education. The proportion of registered children ranges from 77 per cent among those from the richest households to 51 per cent among those from the poorest households.

Two out of five (40 per cent) children under five years whose births are registered do not possess birth certificates. Birth certificates were observed in only 6 per cent of children under 5. Not all children who are registered may have a birth certificate because some certificates may have been lost or never issued. Thirteen per cent of children whose births are not registered have mothers/caretakers who know how to register births.

Table CP.1: Birth registration

Percentage of children under age 5 by whether birth is registered and percentage of children not registered whose mothers/caretakers know how to register birth, Nyamira County, 2011

	Children under age 5 whose birth is registered with civil authorities					Children under age 5 whose birth is not registered	
	Has birth certificate						
	Seen	Not seen	No birth certificate	Total registered [1]	Number of children	Per cent of children whose mother/ caretaker knows how to register birth	Number of children without birth registration
Sex							
Male	5.3	6.9	41.1	53.3	238	11.9	111
Female	5.8	9.5	37.7	53.0	204	14.4	96
Residence							
Urban	(*)	(*)	(*)	(*)	5	(*)	1
Rural	5.4	7.8	39.6	52.8	437	13.1	207
Age							
0-11 months	5.4	5.4	47.6	58.4	83	(14.7)	34
12-23 months	7.6	8.8	41.9	58.3	80	(13.6)	33
24-35 months	6.1	6.7	40.0	52.8	90	(8.2)	43
36-47 months	6.1	9.7	34.3	50.0	102	15.4	51
48-59 months	2.5	9.7	35.2	47.4	87	(13.3)	46
Mother's education							
None	(*)	(*)	(*)	(*)	21	(*)	8
Primary	5.6	7.3	36.5	49.3	234	10.3	119
Secondary+	4.2	8.8	43.9	56.9	187	17.9	81
Wealth index quintile							
Poorest	4.3	6.2	40.9	51.4	107	15.6	52
Second	6.1	7.8	31.1	44.9	106	13.7	59
Middle	3.1	5.0	37.7	45.8	93	11.0	50
Fourth	2.7	8.9	44.5	56.2	71	(11.9)	31
Richest	13.2	15.6	48.0	76.7	65	(*)	15
Total	**5.5**	**8.1**	**39.5**	**53.1**	**442**	**13.0**	**207**

[1] MICS indicator 8.1
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Child Labour

Article 32 of the Convention on the Rights of the Child states: "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. In the MICS questionnaire, a number of questions addressed the issue of child labour, that is, children 5-14 years of age involved in labour activities. A child is considered 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 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 explained above. Table CP.2 presents the results of child labour by the type of work. Percentages do not add up to the total child labour as children may be involved in more than one type of work.

In Nyamira County, about half (51 per cent) of children aged 5-14 years are engaged in child labour. Child labour is more pronounced among children aged 5 – 11 years (66 per cent) compared to that of children aged 12 – 14 years (13 per cent). There is no marked difference in the proportion of children involved in child labour between male and female children. The proportion of children involved in child labour varied by household wealth index. Generally, while 32 per cent children from richest householdsengaged in child labour, the corresponding figure for those from the poorest households is 55 per cent. Similarly, 55 per cent of children whose mothers have attained primary level of educationengaged in child labour compared to 46 per cent forthose whose mothers have at least secondary level of education ( ).

Child labour in this county mainly consists of economic work. Two out of three (66 per cent) children aged 5-11 years were involved in at least one hour of economic work while 12 per cent of children aged 12-14 years were involved in 14 hours or more of economic work in the week preceding the survey. The economic activity in which children were engaged in mainly involved working for family business (65 per cent of children aged 5-11 years and 75 per cent of children aged 12-14 years). Children working outside the household were mostly involved in unpaid than paid work.

Table CP.2: Child labour

Percentage of children by involvement in economic activity and household chores during the past week, according to age groups, and percentage of children age 5-14 involved in child labour, Nyamira County, 2011

	Percentage of children age 5-11 involved in							Number of children age 5-11	Percentage of children age 12-14 involved in								Number of children age 12-14	Total child labour [1]	Number of children age 5-14 years
	Economic activity								Economic activity										
	Working outside household		Working for family business	Economic activity for at least one hour	House hold chores less than 28 hours	House hold chores for 28 hours or more	Child labour		Working outside household		Working for family business	Economic activity less than 14 hours	Economic activity for 14 hours or more	House hold chores less than 28 hours	House hold chores for 28 hours or more	Child labour			
	Paid work	Unpaid work							Paid work	Un-paid work									
Sex																			
Male	1.3	3.7	63.4	64.2	54.4	0.6	64.2	303	3.5	3.8	74.8	65.3	10.6	76.9	0.9	11.1	108	50.2	411
Female	0.7	5.3	66.4	67.8	61.6	0.8	68.1	310	3.5	6.4	75.3	63.7	12.7	78.9	1.0	13.7	130	52.0	441
Residence																			
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	5	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	5	(*)	10
Rural	1.0	4.5	65.1	66.2	58.0	0.7	66.3	608	3.6	5.4	75.2	64.5	11.7	77.6	0.9	12.5	234	51.4	841
School attendance																			
Yes	1.0	4.6	65.2	66.3	59.2	0.6	66.4	587	3.2	5.4	75.9	64.9	11.9	78.9	0.9	12.7	232	51.2	820
No	(0.0)	(1.7)	(58.3)	(58.3)	(32.0)	(3.6)	(60.1)	26	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	6	(49.6)	32
Mother's education																			
None	(0.0)	(0.0)	(61.0)	(61.0)	(49.2)	(2.6)	(61.0)	40	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	22	42.7	62
Primary	1.1	4.4	68.7	69.3	58.3	0.7	69.5	367	3.5	5.2	81.4	67.9	14.3	76.9	1.6	15.6	137	54.8	505
Secondary+	1.0	5.5	58.9	61.0	59.3	0.4	61.2	206	3.0	5.8	65.7	57.7	7.9	79.4	0.0	7.9	79	46.4	285
Wealth index quintile																			
Poorest	0.4	2.6	71.5	71.9	55.1	0.4	71.9	152	5.2	3.2	78.4	73.1	7.3	77.1	0.0	7.3	53	55.1	205
Second	1.5	5.2	71.2	73.0	55.4	0.7	73.0	149	4.3	6.6	83.1	66.6	16.6	79.1	0.6	16.6	60	56.9	209
Middle	1.9	7.5	70.7	72.1	68.3	0.7	72.5	124	(6.3)	(6.8)	(76.3)	(66.9)	(10.6)	(81.9)	(2.6)	(13.3)	48	56.0	172
Fourth	0.7	1.4	61.6	62.6	60.6	1.9	63.0	96	(0.0)	(1.1)	(74.5)	(60.4)	(14.2)	(79.0)	(0.0)	(14.2)	43	48.0	138
Richest	0.0	5.6	39.5	40.4	50.7	0.0	40.4	92	(0.0)	(9.0)	(55.9)	(49.3)	(8.9)	(71.1)	(1.6)	(10.6)	35	32.1	128
Total	**1.0**	**4.5**	**64.9**	**66.0**	**58.1**	**0.7**	**66.2**	**613**	**3.5**	**5.2**	**75.1**	**64.4**	**11.7**	**78.0**	**0.9**	**12.5**	**239**	**51.1**	**852**

[1] MICS indicator 8.2
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Child labour and school attendance

Table CP.3 presents the percentage of children age 5-14 years classified as student labourers or as labourer students by selected characteristics. Student labourers are children attending schoolbut at the same time also involved in child labour activities at the time of the survey. Among the 96 per cent of the children 5-14 years of age attending school, at least half (51 per cent) are also involved in child labour activities (student labourers). On the other hand, out of the 51 per cent of child labourers, the majority of them were attending school (96 per cent). This may indicate that being involved in child labour does not necessarily affect school attendance.

The prevalence of student labourers varies by age of the child. The younger age group (5-11 years) is about 5 times more likely to be student labourers than their older (12-14 years) counterparts (66 per cent versus 13 per cent). There is, however, very little difference between male and female student labourers. Interestingly, 44 per cent of children whose mothers have no education are student labourers, while the figure is 55 per cent for those children whose mothers have primary, and 46 per cent for those with at least secondary education. Fifty-six per cent of children from the poorest households (were student labourers, compared to 31 per cent among those from the richest household.

Table CP.3: Child labour and school attendance

Percentage of children age 5-14 years involved in child labour who are attending school, and percentage of children age 5-14 years attending school who are involved in child labour, Nyamira County, 2011

	Percentage of children involved in child labour	Percentage of children attending school	Number of children age 5-14 years	Percentage of child labourers who are attending school [1]	Number of children age 5-14 years involved in child labour	Percentage of children attending school who are involved in child labour [2]	Number of children age 5-14 years attending school
Sex							
Male	50.2	96.4	411	96.4	206	50.2	396
Female	52.0	96.1	441	96.3	229	52.1	424
Residence							
Urban	(*)	(*)	10	(*)	3	(*)	10
Rural	51.4	96.2	841	96.3	432	51.5	809
Age							
5-11	66.2	95.8	613	96.2	405	66.4	587
12-14	12.5	97.3	239	(98.4)	30	12.7	232
Mother's education							
None	42.7	96.3	62	(98.7)	27	43.8	60
Primary	54.8	95.3	505	95.5	277	54.9	481
Secondary+	46.4	97.9	285	97.7	132	46.3	279
Wealth index quintile							
Poorest	55.1	94.0	205	95.8	113	56.1	193
Second	56.9	96.9	209	97.3	119	57.2	202
Middle	56.0	96.1	172	96.2	96	56.1	165
Fourth	48.0	98.4	138	97.6	66	47.6	136
Richest	32.1	96.6	128	(93.5)	41	31.0	123
Total	**51.1**	**96.2**	**852**	**96.4**	**435**	**51.2**	**820**

[1] MICS indicator 8.3
[2] MICS indicator 8.4
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

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 Nyamira County MICS survey, mothers/caretakers of children age 2-14 years were asked a series of questions on the different ways parents use to discipline their children when they misbehave. Note that for the child discipline module, one child aged 2-14 per household was selected randomly during fieldwork. Out 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: Child discipline

Percentage of children age 2-14 years according to method of disciplining the child, Nyamira County, 2011

	Percentage of children age 2-14 years who experienced:					Number of children age 2-14 years	Respondent believes that the child needs to be physically punished	Respondents to the child discipline module
			Physical punishment					
	Only non-violent discipline	Psycho-logical aggression	Any	Severe	Any violent discipline method [1]			
Sex								
Male	9.4	70.3	71.5	25.5	88.1	561	61.9	242
Female	15.3	64.7	65.1	21.3	79.5	574	48.8	244
Residence								
Rural	12.0	67.7	68.4	23.4	84.1	1120	55.8	478
Urban	(*)	(*)	(*)	(*)	(*)	15	(*)	7
Age								
2-4 years	9.2	64.7	77.7	25.6	87.2	260	57.8	127
5-9 years	9.5	73.5	77.1	27.3	87.9	450	57.5	192
10-14 years	17.4	62.9	53.1	17.9	77.3	426	50.9	166
Education of household head								
None	20.7	64.8	61.9	24.1	78.3	127	54.4	58
Primary	10.7	70.7	70.1	25.0	85.1	570	61.6	237
Secondary +	12.3	64.0	67.6	21.1	83.6	438	47.7	189
Missing/DK	(*)	(*)	(*)	(*)	(*)	1	(*)	1
Respondent's education								
None	12.8	72.0	60.3	16.4	87.2	60	(59.1)	28
Primary	10.3	70.5	71.6	24.6	85.6	606	60.1	254
Secondary +	15.0	63.0	64.9	22.7	80.9	470	48.8	203
Wealth index quintile								
Poorest	13.3	73.0	68.0	22.0	84.3	277	56.2	110
Second	6.2	68.4	66.9	25.4	87.0	278	57.8	107
Middle	11.9	64.9	70.6	29.2	85.3	226	57.3	100
Fourth	14.8	60.0	68.9	19.6	81.2	186	54.9	87
Richest	19.2	68.8	67.1	19.0	78.4	169	48.9	81
Total	**12.4**	**67.5**	**68.3**	**23.4**	**83.8**	**1135**	**55.3**	**486**

[1] MICS indicator 8.5
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

In Nyamira County, about 84 per cent children aged 2-14 years are subjected to at least one form of violent discipline method by their mothers/caretakers or other household members. More importantly, about 23per cent of children have been subjected to severe physical punishment. On the other hand, 55 per cent of mothers/caretakers believed that children should be physically punished, while 68per cent of children are reported to experience any form of physical violence.A higher proportion of male children (88.1per cent) have been subjected to violent discipline methods compared to their female counterparts (79per cent). On the other hand, 12 per cent of children have experienced non-violent forms of discipline only, with the proportion ranging from 15 per cent among girls to 9 per cent among boys who have experienced only non-violent forms. Likewise, 68 per cent of children have experienced psychological discipline, with the proportion ranging from 65 per cent among girls to 70 per cent among boys.

Early Marriage and Polygyny

Marriage before the age of 18 is a reality for many young girls. According to UNICEF's worldwide estimates, over 64 million women age 20-24 were married/in union before the age of 18. Factors that influence child marriage rates include: the state of the country's civil registration system, which provides proof of age for children; the existence of an adequate legislative framework with an accompanying enforcement mechanism to address cases of child marriage; and the existence of customary or religious laws that condone the practice.

In many parts of the world parents encourage the marriage of their daughters while they are still children in hopes that the marriage will benefit them both financially and socially, while also relieving financial burdens on the family. In actual fact, child marriage is a violation of human rights, compromising the development of girls and often resulting in early pregnancy and social isolation, with little education and poor vocational training reinforcing the gendered nature of poverty. The right to 'free and full' consent to a marriage is recognized in 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.

The Convention on the Elimination of all Forms of Discrimination against Women mentions the right to protection from child marriage in article 16, which states: "The betrothal and the marriage of a child shall have no legal effect, and all necessary action, including legislation, shall be taken to specify a minimum age for marriage..." While marriage is not considered directly in the Convention on the Rights of the Child, child marriage is linked to other rights - such as the right to express their views freely, the right to protection from all forms of abuse, and the right to be protected from harmful traditional practices - and is frequently addressed by the Committee on the Rights of the Child. Other international agreements related to child marriage are the Convention on Consent to Marriage, Minimum Age for Marriage and Registration of Marriages and the African Charter on the Rights and Welfare of the Child and the Protocol to the African Charter on Human and People's Rights on the Rights of Women in Africa. Child marriage was also identified by the Pan-African Forum against the Sexual Exploitation of Children as a type of commercial sexual exploitation of children.

Young married girls are a unique, though often invisible, group. They are required to perform heavy amounts of domestic work, are under pressure to demonstrate fertility, and be responsible for raising children while still children themselves. Married girls and child mothers face constrained decision-making and reduced life choices. Boys are also affected by child marriage but the issue impacts girls in far larger numbers and with more intensity. Cohabitation - when a couple lives together as if married - raises the same human rights concerns as marriage. Where a girl lives with a man and takes on the role of caregiver for him, the assumption is often that she has become an adult woman, even if she has not yet reached the age of 18. Additional concerns due to the informality of the relationship - for example, inheritance, citizenship and social recognition - might make girls in informal unions vulnerable in different ways than those who are in formally recognized marriages.

Research suggests that many factors interact to place a child at risk of marriage. Poverty, protection of girls, family honour and the provision of stability during unstable social periods are considered as significant factors in determining a girl's risk of becoming married while still a child. Women who married at younger ages were more likely to believe that it is sometimes acceptable for a husband to beat his wife and were more likely to experience domestic violence themselves. The age gap between partners is thought to contribute to these abusive power dynamics and to increase the risk of untimely widowhood. Closely related to the issue of child marriage is the age at which girls become sexually active. Women who are married before the age of 18 tend to have more children than those who marry later in life. Pregnancy related deaths are known to be a leading cause of mortality for both married andunmarried girls between the ages of 15 and 19. There is evidence to suggest that girls who marry at young ages are more likely to marry older men which puts them at increased risk of HIV infection. Parents seek to marry off their girls to protect their honour, and men often seek younger women as wives as a means to avoid choosing a wife who might already be infected. The demand for this young wife to reproduce and the power imbalance resulting from the age differential leads to very low condom use among such couples.

The percentage of women married at various ages and the percentage of women in a polygynous union are provided in Table CP.5.

Table CP.5 shows that 1 out of 10 (10 per cent) of 15-49 year old women in Nyamira County are married before age 15 years whereas 35 per cent of women aged 20-49 years who are married/in union were married before age 18. Eleven per cent of women aged 20-49 years are married before their fifteenth birthday. Sixteen per cent of adolescent girls aged 15-19 years are presently married/in union.

About 6 per cent of women aged 15-49 years who have at least secondary education are married before age 15 years compared 14 per cent for those with primary education . Similarly, 45 per cent of women aged 20-49 years who have primary education are married before age 18 year compared to 27 per cent among those with secondary or higher levels of education. Also, 15 per cent of women from the poorest households are married before age 15 compared to 8 per cent among those from the richest households.

Table CP.5: Early marriage and polygyny

Percentage of women age 15-49 years who first married or entered a marital union before their 15th birthday, percentages of women age 20-49 years who first married or entered a marital union before their 15th and 18th birthdays, percentage of women age 15-19 years currently married or in union, and the percentage of women currently married or in union who are in a polygynous marriage or union, Nyanza Province, Kenya, 2011a

	Percentage married before age 15 [1]	Number of women age 15-49 years	Percentage married before age 15	Percentage married before age 18 [2]	Number of women age 20-49 years	Percentage of women 15-19 years currently married/in union [3]	Number of women age 15-19 years	Percentage of women age 15-49 years in polygynous marriage/ union [4]	Number of women age 15-49 years currently married/ in union
County									
NYAMIRA	**9.8**	**623**	**11.4**	**34.7**	**501**	**15.9**	**123**	**9.5**	**410**
Residence									
Rural	9.8	613	11.3	35.0	493	16.2	120	9.3	405
Urban	13.2	10	17.0	20.3	8	0.0	2	22.8	6
Age									
15-19	3.6	123	.	.	0	15.9	123	6.2	20
20-24	12.3	126	12.3	34.0	126	.	0	3.8	83
25-29	10.0	130	10.0	35.3	130	.	0	9.6	103
30-34	8.8	72	8.8	30.0	72	.	0	7.2	61
35-39	10.4	77	10.4	34.5	77	.	0	9.4	70
40-44	19.0	45	19.0	51.0	45	.	0	13.9	37
45-49	10.8	50	10.8	27.9	50	.	0	23.2	37
Education									
None	6.6	23	7.4	7.4	21	0.0	2	9.8	13
Primary	14.3	302	15.6	44.5	249	24.7	53	10.6	215
Secondary+	5.5	297	7.1	26.7	230	9.5	67	8.2	183
Wealth index quintile									
Poorest	14.7	124	16.3	38.5	100	17.4	25	9.4	78
Second	11.9	146	14.1	34.0	117	22.2	29	10.4	99
Middle	6.1	123	5.8	37.9	102	19.5	22	8.5	88
Fourth	7.9	118	9.9	32.2	94	12.1	24	6.7	77
Richest	8.1	112	10.1	30.6	89	7.0	23	12.7	69
Total	**9.8**	**623**	**11.4**	**34.7**	**501**	**15.9**	**123**	**9.5**	**410**

1 MICS indicator 8.6
2 MICS indicator 8.7
3 MICS indicator 8.8
4 MICS indicator 8.9
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.
NA Not applicable

Trends in early marriage

Table CP.6 presents the proportion of women who were first married or entered into a marital union before age 15 and 18 years by residence and age groups. Examining the percentages of the women who were married before age 15 and 18 by different age groups allow us to give trends in early marriage over time.

Overall, in Nyamira County, 10 per cent of women aged 15-49 years are married before the age of 15 and this proportion increases to 35 per cent for those married before the age of 18.

Table CP.6: Trends in early marriage

Percentage of women who were first married or entered into a marital union before age 15 and 18, by residence and age groups, Nyamira County, 2011

	Rural				Urban				All			
	Per cent-age of women married before age 15	Number of women	Per cent -age of women married before age 18	Number of women	Per cent-age of women married before age 15	Number of women	Per cent-age of women married before age 18	Number of women	Per cent-age of women married before age 15	Number of women	Per cent-age of women married before age 18	Number of women
Age												
15-19	3.7	120	NA	0	(*)	2	NA	0	3.6	123	NA	0
20-24	12.0	124	33.7	124	(*)	2	(*)	2	12.3	126	34.0	126
25-29	10.1	128	35.8	128	(*)	2	(*)	2	10.0	130	35.3	130
30-34	8.0	72	29.5	72	(*)	1	(*)	1	8.8	72	30.0	72
35-39	10.8	75	35.6	75	(*)	3	(*)	3	10.4	77	34.5	77
40-44	(19.3)	45	(51.8)	45	(*)	1	(*)	1	(19.0)	45	(51.0)	45
45-49	10.8	50	27.9	50	(*)	0	(*)	0	10.8	50	27.9	50
Total	**9.8**	**613**	**35.0**	**493**	**(*)**	**10**	**(*)**	**8**	**9.8**	**623**	**34.7**	**501**

Figures in the total row are based on women age 15-49 and 20-49 for marriage before age 15 and age 18, respectively
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.
NA Not applicable

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.7 presents the results of the age difference between husbands and wives.

Overall, the biggest proportion (46 per cent) of women aged 20-24 years is currently married/in union with a husband/partner who is 0-4 years older. About 14 per cent of women age 20-24 years is married to husbands/partners who are older by ten years or more. Only 1 per cent of women aged 20-24 years have partners/husbands who areyounger than them.

Table CP.7: Spousal age difference

Per cent distribution of women currently married/in union age 15-19 and 20-24 years according to the age difference with their husband or partner, Nyamira County, 2011

	Percentage of currently married/in union women age 15-19 years whose husband or partner is:						Number of women age 15-19 years currently married/ in union	Percentage of currently married/in union women age 20-24 years whose husband or partner is:						Number of women age 20-24 years currently married/ in union
	Younger	0-4 years older	5-9 years older	10+ years older1	Husband/ partner's age unknown	Total		Younger	0-4 years older	5-9 years older	10+ years older2	Husband/ partner's age unknown	Total	
Residence														
Urban	(*)	(*)	(*)	(*)	(*)	0.0	0	(*)	(*)	(*)	(*)	(*)	(*)	2
Rural	(*)	(*)	(*)	(*)	(*)	100.0	20	0.5	46.1	34.1	14.0	5.3	100.0	81
Age														
15-19	(*)	(*)	(*)	(*)	(*)	100.0	20	NA	NA	NA	NA	NA	NA	NA
20-24	NA	NA	NA	NA	NA	NA	NA	0.5	46.3	34.3	13.7	5.2	100.0	83
Education														
None	(*)	(*)	(*)	(*)	(*)	0.0	0	(*)	(*)	(*)	(*)	(*)	100.0	2
Primary	(*)	(*)	(*)	(*)	(*)	100.0	13	(1.0)	(37.4)	(35.5)	(19.0)	(7.2)	100.0	39
Secondary +	(*)	(*)	(*)	(*)	(*)	100.0	6	(0.0)	(54.5)	(32.0)	(9.7)	(3.7)	100.0	42
Wealth index quintile														
Poorest	(*)	(*)	(*)	(*)	(*)	100.0	4	(*)	(*)	(*)	(*)	(*)	100.0	20
Second	(*)	(*)	(*)	(*)	(*)	100.0	6	(*)	(*)	(*)	(*)	(*)	100.0	15
Middle	(*)	(*)	(*)	(*)	(*)	100.0	4	(*)	(*)	(*)	(*)	(*)	100.0	19
Fourth	(*)	(*)	(*)	(*)	(*)	100.0	3	(*)	(*)	(*)	(*)	(*)	100.0	16
Richest	(*)	(*)	(*)	(*)	(*)	100.0	2	(*)	(*)	(*)	(*)	(*)	100.0	13
Total	**(*)**	**(*)**	**(*)**	**(*)**	**(*)**	**100.0**	**20**	**0.5**	**46.3**	**34.3**	**13.7**	**5.2**	**100.0**	**83**

[1] MICS indicator 8.10a
[2] MICS indicator 8.10b
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.
NA Not applicable

Female Genital Mutilation/Cutting

Female genital mutilation/cutting (FGM/C) is the partial or total removal of the female external genitalia or other injury to the female genital organs. FGM/C is always traumatic with immediate complications including excruciating pain, shock, urine retention, ulceration of the genitals and injury to adjacent tissue. Other complications include septicaemia, infertility, obstructed labour, and even death.

Female genital cutting or circumcision is widely practiced in many Kenyan communities. According to the 2008/09 KDHS, up to 27 per cent of women in Kenya are circumcised. The procedure is generally carried out on girls between the ages of 4 and 14 years. 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. In the absence of any perceived medical necessity, it subjects girls and women to health risks and has life-threatening consequences. Among those rights violated are the rights to the highest attainable standard of health and to bodily integrity. Furthermore, it could be argued that girls (under 18) cannot be said to give informed consent to such a potentially damaging practice as FGM/C.

Table CP.8 presents the prevalence of FGM/C among women and the type and extent of the procedure. Overall, the prevalence of FGM amongst women in Nyamira Countyis very high with 94 per cent of women having had some form of FGM/C.

The proportion of women from the poorest households that have had FGM/C is 97 per cent compared to 88 per cent among those fromthe richest households.

Table CP.8: Female genital mutilation/cutting (FGM/C) among women

Percentage distribution of women age 15-49 years by FGM/C status, Nyamira County, 2011								
	Per cent distribution of women age 15-49 years:							
		Who had FGM/C						
	No FGM/C	Had flesh removed	Were nicked	Were sewn closed	Form of FGM/C not determined	Total	Percentage who had any form of FGM/C [1]	Number of women age 15-49 years
Residence								
Urban	(*)	(*)	(*)	(*)	(*)	100.0	(*)	10
Rural	6.0	72.2	9.5	2.7	9.6	100.0	94.0	613
Age								
15-19	8.2	66.6	7.7	3.2	14.2	100.0	91.8	123
20-24	9.1	73.3	6.3	1.3	10.0	100.0	90.9	126
25-29	5.3	71.2	13.3	4.1	6.0	100.0	94.7	130
30-34	6.0	78.1	7.8	0.9	7.2	100.0	94.0	72
35-39	4.9	76.2	9.3	3.3	6.4	100.0	95.1	77
40-44	(1.6)	(60.2)	(18.2)	(4.1)	(15.8)	100.0	(98.4)	45
45-49	2.0	76.3	10.6	2.0	9.1	100.0	98.0	50
Education								
None	(*)	(*)	(*)	(*)	(*)	100.0	(*)	23
Primary	5.3	69.6	11.0	3.2	11.0	100.0	94.7	302
Secondary+	6.1	75.0	8.6	2.0	8.3	100.0	93.9	297
Wealth index quintile								
Poorest	3.3	73.1	13.4	2.6	7.6	100.0	96.7	124
Second	5.3	76.0	7.1	2.5	9.2	100.0	94.7	146
Middle	6.5	73.2	7.7	1.6	10.9	100.0	93.5	123
Fourth	4.4	73.0	9.6	1.0	11.9	100.0	95.6	118
Richest	11.7	61.9	11.9	6.2	8.4	100.0	88.3	112
Total	**6.1**	**71.8**	**9.8**	**2.7**	**9.6**	**100.0**	**93.9**	**623**

[1] MICS indicator 8.12
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Approval of Female Genital Mutilation/Cutting

Table CP.9 presents the woman's attitudes towards FGM/C. Almost all the women age 15-49 years in NyamiraCounty have heard of FGM/C. Regarding opinion as to whether the practice should be continued or discontinued, majority of the women believe that the practise should be discontinued (66 per cent). However, 28 per cent of women still want FGM/C practice to continue.

The proportion of women with knowledge on FGM/C was comparable between all the age and wealth quintiles categories. The proportion of women who believe the practice of FGM/C should be discontinued ranges from 71 per cent among women with secondary or higher education 61 per cent among those with primary education only.

Table CP.9: Approval of female genital mutilation/cutting (FGM/C)

Percentage of women age 15-49 years who have heard of FGM/C, and per cent distribution of women according to attitudes towards whether the practice of FGM/C should be continued, Nyamira County, 2011

	Percentage of women who have heard of FGM/C	Number of women age 15-49 years	Per cent distribution of women who believe the practice of FGM/C should be:					Number of women age 15-49 years who have heard of FGM/C
			Continued [1]	Discontinued	Depends	Don't know	Total	
Residence								
Urban	(*)	10	(*)	(*)	(*)	(*)	(*)	10
Rural	99.6	613	28.1	65.7	2.1	4.1	100.0	611
Age								
15-19	100.0	123	27.1	66.7	0.3	6.0	100.0	123
20-24	99.3	126	34.2	60.9	1.8	3.1	100.0	125
25-29	100.0	130	29.5	64.2	2.8	3.5	100.0	130
30-34	99.1	72	29.0	67.3	0.5	3.2	100.0	72
35-39	100.0	77	19.8	75.6	3.2	1.4	100.0	77
40-44	(100.0)	45	(19.8)	(71.2)	(2.6)	(6.4)	(100.0)	45
45-49	98.9	50	(29.0)	(59.3)	(5.0)	(6.7)	(100.0)	49
Education								
None	(*)	23	(*)	(*)	(*)	(*)	(*)	23
Primary	99.7	302	30.8	61.2	2.7	5.4	100.0	302
Secondary+	99.6	297	25.1	70.9	1.3	2.8	100.0	296
FGM/C experience								
No FGM/C	(94.3)	38	(5.9)	(89.2)	(0.0)	(4.9)	(100.0)	36
Had FGM/C	100.0	585	29.3	64.5	2.2	4.0	100.0	585
Wealth index quintile								
Poorest	100.0	124	33.3	60.1	2.1	4.5	100.0	124
Second	100.0	146	26.7	65.3	2.9	5.2	100.0	146
Middle	99.0	123	30.4	62.7	3.6	3.4	100.0	122
Fourth	100.0	118	23.1	71.9	0.4	4.6	100.0	118
Richest	99.2	112	26.2	70.4	1.0	2.3	100.0	111
Total	**99.7**	**623**	**28.0**	**65.9**	**2.1**	**4.1**	**100.0**	**621**

[1] MICS indicator 8.11
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

Attitudes toward Domestic Violence

A number of questions were addressed to women aged 15-49 years to assess their attitudes towards whether husbands are justified to hit or beat their wives/partners for a variety of scenarios. These questions were asked to have an indication of cultural beliefs that tend to be associated with the prevalence of violence against women by their husbands/partners. The main assumption here is that women that agree with the statements indicating that husbands/partners are justified to beat their wives/partners under the situations described in reality tend to be abused by their own husbands/partners. The responses to these questions can be found in Table CP.10.

Overall, a large proportion (76 per cent) of women aged 15-49 years feel that a husband/partner has a right to hit or beat his wife/partner for at least one of a variety of reasons mentioned in Table CP.10. The most common reason reported for justifying wife beating is 'if she neglects the children' (57 per cent). Other justified reasons given by women were "if she argues with him" (45 per cent), "if she refuses sex with him" (43 per cent), or "if she goes out without telling him" (42 per cent). The proportion of women who believe a husband is justified in beating his wife/partner is higher among women who are currently or

were formerly married/in unions than among women who have never married/in union (77 per cent versus 70 per cent). Moreover, this proportion of those who accept domestic violence ranges from 72 per cent amongwomen with secondary or higher education to 81 per cent among those with primary education. The proportions of women who accept domestic violence tends to generally decline with increasing household wealth. The proportion of women who believe a husband is justified in beating his wife/partner is 80 per cent among women from the poorest households while it is 69 per cent among those from the richest households.

Table CP.10: Attitudes toward domestic violence

Percentage of women age 15-49 years who believe a husband is justified in beating his wife/partner in various circumstances, Nyamira County, 2011

	Percentage of women age 15-49 years who believe a husband is justified in beating his wife/ partner:						
	If goes out without telling him	If she neglects the children	If she argues with him	If she refuses sex with him	If she burns the food	For any of these reasons [1]	Number of women age 15-49 years
Residence							
Urban	(*)	(*)	(*)	(*)	(*)	(*)	10
Rural	42.2	56.7	45.4	43.6	16.6	75.7	613
Age							
15-19	37.4	54.0	38.6	30.7	16.9	74.1	123
20-24	43.6	56.9	40.2	43.1	17.2	76.3	126
25-29	40.2	60.3	45.2	46.4	16.6	74.0	130
30-34	47.8	55.3	50.0	48.7	12.6	74.6	72
35-39	45.1	57.3	54.9	50.9	15.2	79.9	77
40-44	(39.9)	(53.3)	(41.9)	(37.7)	(14.2)	(72.5)	45
45-49	39.9	60.5	51.4	51.6	22.5	79.0	50
Marital/Union status							
Currently married/in union	42.0	58.8	47.4	45.9	15.8	77.4	410
Formerly married/in union	49.5	65.0	50.0	53.8	23.9	77.0	62
Never married/in union	37.9	48.5	35.9	31.8	15.2	70.0	151
Education							
None	(*)	(*)	(*)	(*)	(*)	(*)	23
Primary	46.7	63.1	50.4	49.2	20.3	80.7	302
Secondary+	39.0	52.8	41.4	38.4	13.5	72.4	297
Wealth index quintile							
Poorest	43.8	59.6	42.3	48.8	19.9	80.0	124
Second	47.3	57.2	51.7	52.7	17.7	81.6	146
Middle	41.9	57.9	45.6	36.9	14.6	73.6	123
Fourth	38.6	53.0	42.5	38.2	14.1	71.6	118
Richest	35.5	56.7	40.8	37.1	15.5	69.1	112
Total	**41.8**	**56.9**	**44.9**	**43.3**	**16.4**	**75.6**	**623**

[1] MICS indicator 8.14
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases.

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

XII. HIV/AIDS, Sexual Behaviour, and Orphans

Knowledge about HIV Transmission and Misconceptions about HIV/AIDS

One of the most important prerequisites for reducing the rate of HIV infection is accurate knowledge of how HIV is transmitted and strategies for preventing transmission. Correct information is the first step toward raising awareness and giving young people the tools to protect themselves from infection. Misconceptions about HIV are common and can confuse young people and hinder prevention efforts. Different regions are likely to have variations in misconceptions although some appear to be universal (for example that sharing food can transmit HIV or mosquito bites can transmit HIV). The UN General Assembly Special Session on HIV/AIDS (UNGASS) called on governments to improve the knowledge and skills of young people to protect themselves from HIV. The indicators to measure this goal as well as the MDG of reducing HIV infections by half include improving the level of knowledge of HIV and its prevention, and changing behaviours to prevent further spread of the disease. The HIV module was administered to women 15-49 years of age.

One indicator which is both an MDG and UNGASS indicator is the per cent of young women who have comprehensive and correct knowledge of HIV prevention and transmission. In Nyamira County MICS, all women who have heard of AIDS were asked whether they knew of the three main ways of HIV prevention – having only one faithful uninfected partner, using a condom every time, and abstaining from sex. The results are presented in Table HA.1.

In Nyamira County, all of the interviewed women have heard of AIDS, however, 63 per cent of women know of the three ways of preventing HIV transmission. Ninety-four per cent of women know of having only one faithful uninfected sex partner, 70 per cent know of using a condom every time, and 91 per cent know of abstaining from sex. Similarly, 92 per cent of women aged 15-49 years knew that HIV transmission can be prevented by having one faithful uninfected sex partner, 75 per cent knew of using a condom every time, and 88 per cent knew of abstaining from sex nationally (KDHS, 2008-9). There are marginal differences in the proportion of women who know all three ways across age, marital status, education levels and wealth index.

The proportion of women who know of the two main ways of preventing HIV transmission (having only one faithful uninfected sex partner and using a condom every time) is 67 per cent.

Once again, there are no major variations in the proportion of women who know both ways of preventing HIV transmission across women marital status, household wealth index and education levels. For example, among the richest households, the proportion is 75 per cent for women who know both ways versus 68 and 66 per cent among the middle and poorest wealth index households.

Table HA.1: Knowledge about HIV transmission, misconceptions about HIV/AIDS, and comprehensive knowledge about HIV transmission

Percentage of women age 15-49 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can have the AIDS virus, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission Nyamira County, 2011

	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:			Percentage of women who know both ways [2]	Percentage of women who know all three ways	Percentage who know that a healthy looking person can have the AIDS virus	Percentage who know that HIV cannot be transmitted by:			Percentage who reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus	Percentage with comprehensive knowledge [1]	Number of women age 15-24
		Having only one faithful uninfected sex partner	Using a condom every time	By abstaining				Mosquito bites	Supernatural means	Sharing food with someone with AIDS			
Residence													
Rural	100.0	93.9	69.6	90.9	67.1	62.6	92.1	68.4	75.0	83.4	56.0	40.5	613
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	10
Age													
15-24	100.0	91.7	70.1	91.1	66.2	62.1	89.9	76.5	79.2	86.1	62.5	44.5	248
25-29	100.0	95.6	74.6	89.3	72.1	65.9	95.1	64.2	72.1	82.9	54.8	42.1	130
30-39	100.0	96.3	71.5	91.9	70.0	65.1	92.1	63.2	73.3	80.6	51.4	38.3	150
40-49	100.0	92.3	59.6	92.3	58.3	55.9	93.9	63.2	69.1	83.2	50.2	32.3	95
Marital status													
Ever married/ in union	100.0	95.4	69.8	92.0	67.9	64.0	92.6	64.9	72.5	82.2	52.6	39.2	472
Never married/in union	100.0	88.4	69.7	88.2	64.8	58.7	90.6	80.7	81.7	88.3	68.2	45.3	151
Women's education													
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	23
Primary	100.0	93.3	66.2	90.8	63.3	59.2	90.0	57.8	67.9	80.6	45.4	32.0	302
Secondary +	100.0	94.1	72.6	90.9	69.9	64.8	94.3	78.9	81.2	87.0	67.2	48.5	297
Wealth index quintiles													
Poorest	100.0	95.9	67.4	88.9	66.2	63.0	90.4	60.9	70.6	82.5	50.3	34.2	124
Second	100.0	93.9	70.1	87.7	66.4	58.2	90.1	67.6	70.1	84.6	54.2	39.9	146
Middle	100.0	94.5	69.9	92.5	68.1	64.1	91.3	69.1	77.2	83.9	56.2	40.1	123
Fourth	100.0	90.9	63.9	93.0	60.7	57.6	94.9	71.6	77.1	81.4	59.2	39.5	118
Richest	100.0	93.1	78.1	94.3	74.8	71.9	94.6	75.3	80.2	85.7	63.1	50.6	112
Total	**100.0**	**93.7**	**69.8**	**91.1**	**67.1**	**62.7**	**92.1**	**68.7**	**74.8**	**83.7**	**56.4**	**40.7**	**623**

[1] MICS indicator 9.1
[2] Know having one uninfected faithful partner and condom use every time
(*) Not shown, based on less than 25 unweighted cases.

Table HA.2: Knowledge about HIV transmission, misconceptions about HIV/AIDS, and comprehensive knowledge about HIV transmission among young women

Percentage of young women age 15-24 years who know the main ways of preventing HIV transmission, percentage who know that a healthy looking person can have the AIDS virus, percentage who reject common misconceptions, and percentage who have comprehensive knowledge about HIV transmission Nyamira County, 2011

	Percentage who have heard of AIDS	Percentage who know transmission can be prevented by:		Percentage who know that HIV cannot be transmitted by:						Percentage who reject the two most common misconceptions and know that a healthy looking person can have the AIDS virus	Percentage with comprehensive knowledge1	Number of women age 15-24
		Having only one faithful uninfected sex partner	Using a condom every time	By abstaining	Percentage of women who know both ways2	Percentage of women who know all three ways	Percentage who know that a healthy looking person can have the AIDS virus	Mosquito bites	Supernatural means	Sharing food with someone with AIDS			
Residence													
Rural	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	4
Urban	100.0	65.4	75.9	100.0	41.4	41.4	82.7	93.2	65.4	100.0	75.9	24.1	245
Age													
15-19	100.0	88.6	65.3	89.2	60.7	56.5	87.2	80.0	82.4	90.5	67.5	42.6	123
20-24	100.0	94.8	74.7	92.9	71.5	67.6	92.5	73.0	76.1	81.7	57.7	46.3	126
Marital status													
Ever married/ in union	100.0	95.7	72.3	93.4	69.3	66.3	89.3	69.8	75.5	81.2	53.1	42.5	114
Never married/in union	100.0	88.3	68.2	89.0	63.5	58.5	90.4	82.1	82.4	90.2	70.6	46.2	134
Women's education													
None	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	11
Primary	100.0	93.5	65.3	88.9	62.5	58.1	85.8	66.7	71.1	80.2	49.0	35.9	101
Secondary +	100.0	90.0	71.9	92.2	66.9	62.8	92.4	82.6	84.9	91.2	72.0	49.3	136
Wealth index quintiles													
Poorest	100.0	95.0	64.9	91.7	63.5	61.5	87.1	69.0	76.1	86.2	56.7	36.7	51
Second	100.0	94.7	73.0	87.5	68.5	60.1	87.4	80.2	82.8	88.0	64.8	48.7	56
Middle	(100.)	(96.4)	(71.9)	(94.7)	(69.5)	(66.5)	(89.1)	(77.7)	(81.8)	(85.1)	(60.5)	(42.7)	46
Fourth	100.0	84.8	62.5	90.7	58.1	55.9	94.7	76.0	73.8	84.5	64.6	42.1	52
Richest	(100.)	(87.4)	(79.5)	(91.4)	(72.5)	(68.4)	(91.3)	(79.7)	(82.)	(86.4)	(66.2)	(53.)	43
Total	**100.0**	**91.7**	**70.1**	**91.1**	**66.2**	**62.1**	**89.9**	**76.5**	**79.2**	**86.1**	**62.5**	**44.5**	**248**

[1] MICS indicator 9.2; MDG indicator 6.3
[2] Know having one uninfected faithful partner and condom use every time
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

The results for women aged 15-24 are separately presented in Table HA.2. Sixty two per cent of young women know of the three ways of HIV prevention. About nine out of ten (91.7 per cent) young women know of having only one faithful uninfected sex partner, 70 per cent know of using a condom every time, and 91 per cent know of abstaining from sex as main ways of preventing HIV transmission. There is no major difference in proportion with knowledge of the three ways of HIV prevention between women aged 15-19 and 20-24 years. The proportion of women who know all three ways does not vary much across marital status, household wealth index and women's education levels.

Two-thirds (66 per cent) of women aged 15-24 years know of the two main ways of HIV prevention (having only one faithful uninfected sex partner and using a condom every time).

About 72 per cent of young women aged 20-24 years know of the two main ways of HIV prevention, while the figure is 61 per cent among their younger counterparts age 15-19 years. Similarly, young women who have ever married or been in union are equally likely to know of the two main ways of HIV prevention than their never married or in union counterparts (69 per cent compared with 64 per cent).

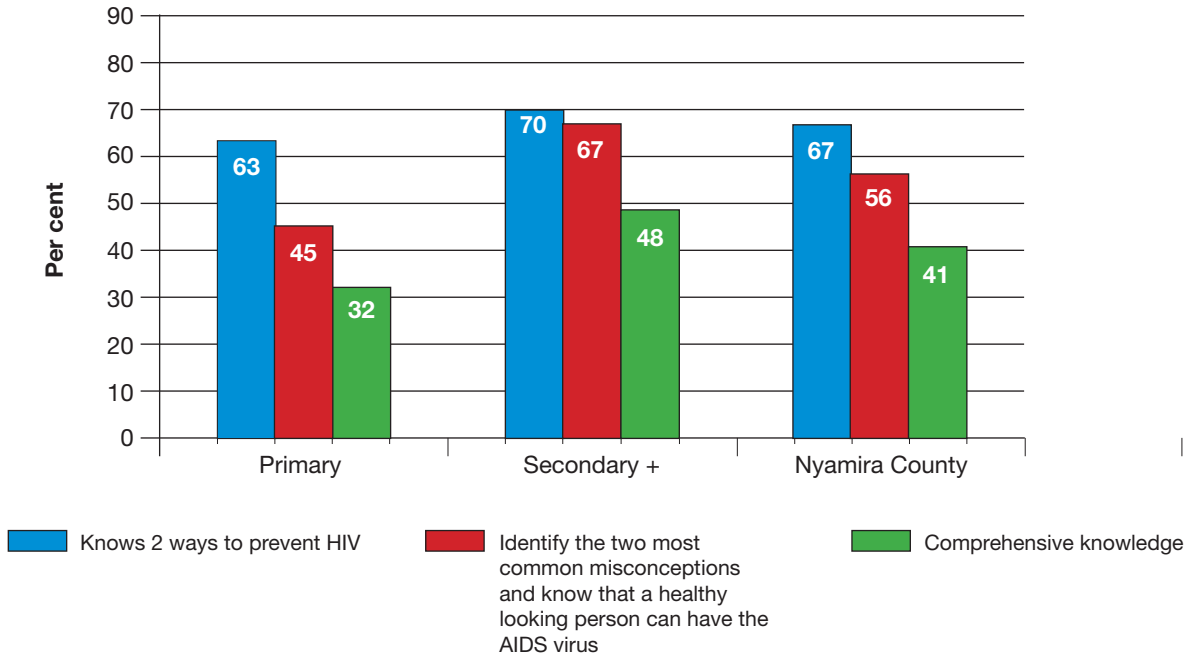
Table HA.1 and HA.2 also presents the findings for women who can correctly identify misconceptions concerning HIV. The indicator is based on the two most common and relevant misconceptions in Kenya i.e. that HIV can be transmitted by mosquito bites and supernatural means. The table also provides information on whether women know that HIV cannot be transmitted by sharing food with someone with AIDS. Of the interviewed women, 56 per cent reject the two most common misconceptions and know that a healthy-looking person can be infected. Sixty-nine per cent of women know that HIV cannot be transmitted by mosquito bites, 75 per cent of women know that HIV cannot be transmitted by supernatural means while 92 per cent of women know that a healthy-looking person can be infected.

The proportion of women who reject the two most common misconceptions and have knowledge that a healthy looking person can have the AIDS virus seems to decline with increasing age of a woman. The proportion of women who reject the two most common misconceptions and know that a health looking person can have AIDS is higher among women who have never been married or in union (68 per cent) versus those who have ever married of been in union (53 per cent). Although not so clear, the proportion of women who reject the two most common misconceptions and have knowledge that a healthy looking person can have the AIDS virus tends to increase with increasing levels of household wealth index.

Women who have comprehensive knowledge about HIV prevention include women who know of the two ways of HIV prevention (having only one faithful uninfected partner and using a condom every time, who know that a healthy looking person can have the AIDS virus, and who reject the two most common misconceptions). Tables HA.1 and HA.2 also present the percentage of women with comprehensive knowledge. Comprehensive knowledge of HIV prevention methods and transmission is still fairly low in Nyamira County (41 per cent).

The proportion of women with comprehensive knowledge of HIV prevention methods and transmission seems to decline with increasing age of women. Moreover, the proportion of women with comprehensive knowledge is 45 per cent among those who have never married or been in union , the figure is 39 per cent among the ever married or in union counterparts. Comprehensive knowledge of HIV prevention methods and transmission seems to increase with increasing levels of education (from primary to secondary or higher) of a woman - see Figure HA.1.

Figure HA.1: Percentage of women who have comprehensive knowledge of HIV/AIDS transmission by level of education, Nyamira County, 2011



The proportion of women with comprehensive knowledge increases with increasing levels of household wealth index. For example, the proportion ranges from 34 per cent among women from the poorest households to 51 per cent among those from the richest households.

Among younger women aged 15-24 years, comprehensive knowledge of HIV prevention and transmission is 45 per cent. There is, however, a marginal difference in the proportion of women with comprehensive knowledge of HIV prevention methods and transmission across young women's age.

Knowledge of mother-to-child transmission of HIV is also an important first step for women to seek HIV testing when they are pregnant to avoid infection of the baby. Women should know 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 presented in Table HA.3. Overall, 94 per cent of women know that HIV can be transmitted from mother to child. The proportion of women who know all three ways of mother-to-child transmission is 42 per cent, while 6 per cent of women did not know of any specific way.

Knowledge of all three ways of mother-to-child transmission is highest (50 per cent) among women aged 30-39 years. The proportion of women who know all three ways is higher among those who have ever been married or in union (44 per cent) versus those who have never been married (38 per cent). This proportion of women who know all three means is very comparable across the household wealth index. For example, among women from the poorest households the figure is 45 per cent versus 44 per cent among those from the richest households.

Table HA.3: Knowledge of mother-to-child HIV transmission

Percentage of women age 15-49 years who correctly identify means of HIV transmission from mother to child, Nyamira County, 2011							
	Percentage who know HIV can be transmitted from mother to child	Per cent who know HIV can be transmitted:				Does not know any of the specific means	Number of women
		During pregnancy	During delivery	By breast-feeding	All three means [1]		
Residence							
Urban	(*)	(*)	(*)	(*)	(*)	(*)	10
Rural	94.0	53.1	67.5	88.7	42.5	6.0	613
Age group							
15-24	94.5	45.4	64.1	90.2	35.5	5.5	248
25+	93.6	58.0	69.7	87.9	47.0	6.4	375
Age group							
15-19	94.8	44.3	64.4	89.7	34.6	5.2	123
20-24	94.2	46.5	63.8	90.6	36.3	5.8	126
25-29	93.8	55.2	66.5	89.1	44.7	6.2	130
30-39	94.4	61.1	72.7	87.0	49.6	5.6	150
40-49	92.3	56.9	69.3	87.6	46.2	7.7	95
Marital status							
Ever married/ in union	93.5	53.7	67.5	88.3	43.8	6.5	472
Never married/in union	95.3	50.8	67.5	90.5	37.9	4.7	151
Education							
None	(*)	(*)	(*)	(*)3	(*)	(*)	23
Primary	92.7	54.5	63.2	87.7	42.8	7.3	302
Secondary +	95.4	52.5	70.6	90.4	43.1	4.6	297
Wealth index quintiles							
Poorest	94.7	56.1	66.8	90.8	45.4	5.3	124
Second	93.8	55.7	67.7	86.9	43.3	6.2	146
Middle	91.9	56.0	67.2	87.2	46.4	8.1	123
Fourth	94.3	46.2	61.2	87.9	32.2	5.7	118
Richest	95.3	49.7	74.8	91.8	44.3	4.7	112
Total	**94.0**	**53.0**	**67.5**	**88.8**	**42.4**	**6.0**	**623**

[1] MICS indicator 9.3
(*) Not shown, based on less than 25 unweighted cases.

Accepting Attitudes toward People Living with HIV/AIDS

The indicators on attitudes toward people living with HIV measure stigma and discrimination in the community. Stigma and discrimination are low if respondents report an accepting attitude on the following four questions: 1) would care for family member sick with AIDS; 2) would buy fresh vegetables from a vendor who was HIV positive; 3) thinks that a female teacher who is HIV positive should be allowed to teach in school; and 4) would not want to keep HIV status of a family member a secret.

Table HA.4 presents the attitudes of women towards people living with HIV/AIDS. In Nyamira County, almost all (98 per cent) of women who have heard of AIDS agree with at least one accepting attitude. The least common accepting attitude is 'would not want to keep HIV status of a family member a secret' (53 per cent).

Table HA.4: Accepting attitudes toward people living with HIV/AIDS

Percentage of women age 15-49 years who have heard of AIDS who express an accepting attitude towards people living with HIV/AIDS, Nyamira County, 2011

	Percentage of women who:						
	Are willing to care for a family member with the AIDS virus in own home	Would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus	Believe that a female teacher with the AIDS virus and is not sick should be allowed to continue teaching	Would not want to keep secret that a family member got infected with the AIDS virus	Agree with at least one accepting attitude	Express accepting attitudes on all four indicators [1]	Number of women who have heard of AIDS
Residence							
Urban	(*)	(*)	(*)	(*)	(*)	(*)	10
Rural	90.6	79.5	76.1	53.6	98.3	32.1	613
Age							
15-24	88.7	83.5	80.8	50.3	98.7	32.3	248
15-19	87.9	80.3	81.9	50.0	99.0	30.5	123
20-24	89.3	86.6	79.7	50.6	98.4	34.1	126
25-29	90.1	73.4	74.7	58.9	97.8	31.1	130
30-39	92.8	82.6	76.4	52.5	98.6	33.7	150
40-49	93.7	73.6	66.6	54.9	97.7	29.4	95
Marital status							
Ever married/in union	92.1	78.1	73.8	54.6	98.4	31.4	472
Never married/in union	86.3	84.4	84.0	49.2	98.3	33.7	151
Education							
None	(*)	(*)	(*)	(*)	(*)	(*)	23
Primary	89.9	74.4	68.7	56.4	97.4	29.9	302
Secondary +	92.0	84.9	83.8	50.0	99.6	32.9	297
Wealth index quintiles							
Poorest	88.6	71.2	59.2	49.0	96.6	21.8	124
Second	90.8	80.7	81.5	55.3	97.6	34.9	146
Middle	88.1	76.7	71.9	55.3	98.9	26.8	123
Fourth	92.1	87.2	83.3	51.0	98.9	36.9	118
Richest	94.4	83.0	85.8	55.9	100.0	39.9	112
Total	**90.7**	**79.7**	**76.3**	**53.3**	**98.3**	**32.0**	**623**

[1] MICS indicator 9.4
(*) Not shown, based on less than 25 unweighted cases

There is no major variation in the proportion of women having accepting attitudes towards people living with HIV/AIDS between across women's marital status. Similarly, this proportion does not vary much across age of women, and education levels. However, there observed differences across household wealth index. For example, among women from the poorest households, 22 per cent express accepting attitudes on all four indicators versus 40 per cent among those from the richest households (Table HA.4).

Knowledge of a Place for HIV Testing, Counselling and Testing during Antenatal Care

Another important indicator is the knowledge of where to be tested for HIV and use of such services. In order to protect themselves and to prevent infecting others, it is important for individuals to know their HIV status. Knowledge of one's status is also a critical factor in the decision to seek treatment. Questions related to knowledge among women of a facility for HIV testing and whether they have ever been tested is presented in Table HA.5. In Nyamira County, 96 per cent of women know where to be tested, while only 56 per cent have actually been tested.

Table HA.5: Knowledge of a place for HIV testing

Percentage of women age 15-49 years who know where to get an HIV test, percentage of women who have ever been tested, percentage of women who have been tested in the last 12 months, and percentage of women who have been tested and have been told the result, Nyamira county, Nyanza Province, Kenya, 2011[a]

		Percentage of women who:			
		Know a place to get tested [1]	Have ever been tested	Have been tested and have been told result [2]	Number of women
Area	Rural	95.9	51.2	45.6	613
	Urban	(*)	(*)	(*)	10
Age	15-19	92.6	39.8	34.9	123
	20-24	96.8	46.6	40.6	126
	25-29	96.1	56.1	50.8	130
	30-34	98.2	59.0	51.8	72
	35-39	95.6	56.8	53.0	77
	40-44	(95.1)	(60.5)	(56.4)	45
	45-49	98.1	53.8	44.6	50
Marital status	Ever married/in union	97.2	53.6	48.4	472
	Never married/in union	91.6	44.9	38.1	151
Education	None	(*)	(*)	(*)	23
	Primary	94.1	45.2	41.8	302
	Secondary +	97.3	56.9	49.6	297
Wealth index quintiles	Poorest	94.3	45.6	41.2	124
	Second	94.8	49.8	42.7	146
	Middle	97.4	47.3	44.8	123
	Fourth	94.1	57.1	50.5	118
	Richest	98.9	59.2	51.8	112
Total		**95.8**	**51.5**	**45.9**	**623**

[1] MICS indicator 9.5
[2] MICS indicator 9.6
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Women who have ever married or been in union are more likely to know of a place to get tested and to have ever been tested compared to those who have never married or been in union. The proportion of women who have been tested is higher among those with at least secondary level education (57 per cent) than among those with primary education (45 per cent). The proportion of women who have ever been tested increases with improving levels of the household wealth index. The proportion ranges from 46 per cent among women from the poorest households to 59 per cent among those from the richest households.

Table HA.6 presents similar results as HA.5 but for sexually active young women. The proportion of young women who have been tested and have been told the result provides a measure of the effectiveness of interventions that promote HIV counselling and testing among young people. This is important to know, because young people may feel that there are barriers to accessing services related to sensitive issues, such as sexual health.

Table HA.6: Knowledge of a place for HIV testing among sexually active young women

Percentage of women age 15-24 years who have had sex in the last 12 months, and among women who have had sex in the last 12 months, the percentage who know where to get an HIV test, percentage of women who have ever been tested and percentage of women who have been tested and have been told the result, Nyamira County, 2011

	Percentage who have had sex in the last 12 months	Number of women age 15-24 years	Percentage of women who:			Number of women age 15-24 years who have had sex in the last 12 months
			Know a place to get tested	Have ever been tested	Have been tested and have been told result [1]	
Residence						
Urban	(*)	4	(*)	(*)	(*)	2
Rural	61.2	245	96.1	45.6	40.6	150
Age						
15-19	37.3	123	(95.8)	(49.2)	(45.1)	46
20-24	83.9	126	96.2	43.9	38.6	106
Marital status						
Ever married/in union	95.7	114	98.2	41.6	37.9	110
Never married/ in union	31.1	134	(90.7)	(55.7)	(47.8)	42
Education						
None	(*)	11	(*)	(*)	(*)	8
Primary	66.1	101	94.0	38.2	34.8	67
Secondary +	56.2	136	97.6	50.3	45.4	77
Wealth index quintiles						
Poorest	64.8	51	(97.0)	(43.9)	(41.9)	33
Second	58.4	56	(90.8)	(47.6)	(40.1)	32
Middle	(66.7)	46	(97.1)	(29.4)	(28.2)	31
Fourth	55.4	52	(98.3)	(55.9)	(51.7)	29
Richest	(59.9)	43	(97.8)	(52.5)	(41.8)	26
Total	60.9	248	96.1	45.5	40.6	151

[1] MICS indicator 9.7
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Sixty-one per cent of women aged 15-24 years had sex in the last 12 months preceding the survey but only 46 per cent of them have ever been tested. Almost a third (31 per cent) of young women who have never married or been in union had sex in the last 12 months preceding the survey. The proportion of women who had sex in the last 12 months is higher among women aged 20-24 years (84 per cent) versus those aged 15-19 years. The proportion of women who have been tested and told the results is relatively higher among those with secondary or higher levels of education (45 per cent versus 35 per cent for those with primary education levels).

Among women who had given birth within the two years preceding the survey, the per cent who received counselling and HIV testing during antenatal care is presented in Table HA.7. A high proportion (94 per cent) of women who gave birth in the last two years received antenatal care from a health care professional during the last pregnancy. Although 69 per cent of the women received HIV counselling during antenatal care, 68 per cent were offered an HIV test and were tested for HIV during antenatal care.

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

Among women age 15-49 who gave birth in the last 2 years, percentage of women who received antenatal care from a health professional during the last pregnancy, percentage who received HIV counselling, percentage who were offered and accepted an HIV test and received the results, Nyamira County, 2011

	Percentage of women who:					
	Received antenatal care from a health care professional for last pregnancy	Received HIV counselling during antenatal care [1]	Were offered an HIV test and were tested for HIV during antenatal care	Were offered an HIV test and were tested for HIV during antenatal care, and received the results [2]	Received HIV counselling, were offered an HIV test, accepted and received the results	Number of women who gave birth in the 2 years preceding the survey
Residence						
Urban	(*)	(*)	(*)	(*)	(*)	2
Rural	94.5	69.6	69.2	88.6	68.1	162
Young women						
15-24	93.6	67.4	66.5	88.2	65.0	75
Age						
15-19	(*)	(*)	(*)	(*)	(*)	22
20-24	95.2	66.4	66.4	92.8	64.3	53
25-29	(95.3)	(72.1)	(72.1)	(90.3)	(70.9)	48
30-34	(*)	(*)	(*)	(*)	(*)	18
35-49	(*)	(*)	(*)	(*)	(*)	22
Marital status						
Ever married/in union	95.2	69.4	69.4	89.8	68.9	141
Never married/ in union	(*)	(*)	(*)	(*)	(*)	23
Education						
None	(*)	(*)	(*)	(*)	(*)	7
Primary	96.4	68.7	68.7	90.3	67.9	85
Secondary +	91.9	70.7	69.7	85.8	68.2	71
Wealth index quintiles						
Poorest	(94.0)	(61.3)	(61.3)	(89.0)	(61.3)	34
Second	(92.6)	(65.4)	(65.4)	(87.5)	(64.2)	39
Middle	(97.3)	(69.1)	(69.1)	(87.7)	(65.7)	39
Fourth	(90.9)	(75.5)	(73.0)	(89.7)	(73.0)	27
Richest	(*)	(*)	(*)	(*)	(*)	24
Total	**94.2**	**69.2**	**68.8**	**88.4**	**67.7**	**164**

[1] MICS indicator 9.8
[2] MICS indicator 9.9
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Sexual Behaviour Related to HIV Transmission

Promoting safer sexual behaviour is critical for reducing HIV prevalence. The use of condoms during sex, especially with non-regular partners, is especially important for reducing the spread of HIV. In Kenya over half of new HIV infections are among young people 15-24 years thus a change in behaviour among this age group will be especially important to reduce new infections. A module of questions was administered to women 15-24 years of age to assess their risk of HIV infection. Risk factors for HIV include sex at an early age, sex with older men, sex with a non-marital non-cohabitating partner, and failure to use a condom. The frequency of sexual behaviours that increase the risk of HIV infection among women is presented in Table HA.8 and Figure HA.2.

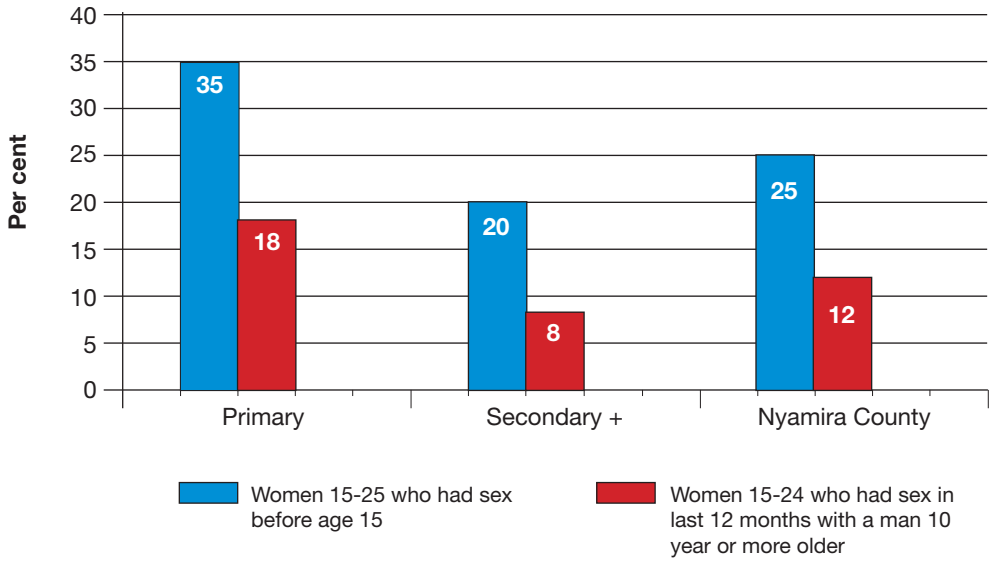
Table HA.8: Sexual behaviour that increases the risk of HIV infection

Percentage of never-married young women age 15-24 years who have never had sex, percentage of young women age 15-24 years who have had sex before age 15, and percentage of young women age 15-24 years who had sex with a man 10 or more years older during the last 12 months, Nyamira County, 2011

	Percentage of never-married women age 15-24 years who have never had sex [1]	Number of never-married women age 15-24 years	Percentage of women age 15-24 years who had sex before age 15 [2]	Number of women age 15-24 years	Percentage of women age 15-24 years who had sex in the last 12 months with a man 10 or more years older [3]	Number of women age 15-24 years who had sex in the 12 months preceding the survey
Residence						
Urban	(*)	2	(*)	4	(*)	2
Rural	42.0	132	25.1	245	12.4	150
Age						
15-19	53.1	100	27.6	123	(11.1)	46
20-24	(11.6)	33	22.7	126	12.8	106
Marital status						
Ever married/in union	-	0	28.8	114	17.0	110
Never married/ in union	42.8	134	22.0	134	(0.0)	42
Education						
None	(*)	8	(*)	11	(*)	8
Primary	(51.6)	43	34.7	101	18.3	67
Secondary +	41.6	84	19.8	136	8.4	77
Wealth index quintiles						
Poorest	(45.1)	25	38.0	51	(15.6)	33
Second	(44.5)	32	20.6	56	(14.9)	32
Middle	(*)	20	(27.1)	46	(12.2)	31
Fourth	(46.4)	31	20.1	52	(9.0)	29
Richest	(43.0)	25	(19.6)	43	(8.8)	26
Total	42.8	134	25.1	248	12.3	151

[1] MICS indicator 9.10
[2] MICS indicator 9.11
[3] MICS indicator 9.12
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Figure HA.2 Sexual behaviour that increases risk of HIV infection by education level, Nyamira County, 2011



Less than half (43 per cent) of never-married young women aged 15-24 years have never had sex. A quarter (25 per cent) of young women aged 15-24 years had sex before age 15. The proportion of young women who had sex before aged 15 is 29 per cent among those who have ever been married or in union versus 22 per cent for those who have never been married or in-union. Similarly, the proportion of young women aged 15-19 years who have had sex before age 15 is 28 per cent , while the figure is 23 per cent among those aged 20-24 years.

Twelve per cent of young women aged 15-24 years had sex in the last 12 months with a man 10 or more years older. Generally, the proportion of young women who have had sex in the last 12 months with a man 10 or more years older seems to decline with increasing household wealth index. Overall, the proportion of young women who engage in sexual behaviours that increase the risk of HIV infection is lower among those with at least secondary education is lower for those compared to those with primary education as shown in Figure HA.2.

Sexual behaviour and condom use during sex with more than one partner was assessed in all women and separately for women age 15-24 years of age who had sex with such a partner in the previous year (Tables HA.9 and HA.10). Less than 2 per cent of women aged 15-49 years report having had sex with more than one partner in the last 12 months.

Table HA.9: Sex with multiple partners

Percentage of women age 15-49 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with more than one partner in the last 12 months and among those who had sex with multiple partners, the percentage who used a condom at last sex, Nyamira County, 2011

	Percentage of women who:			Number of women age 15-49 years	Per cent of women age 15-49 years who had more than one sexual partner in the last 12 months, who also reported that a condom was used the last time they had sex [2]	Number of women age 15-49 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in last 12 months [1]			
Residence						
Urban	(*)	(*)	(*)	10	-	0
Rural	90.9	77.0	1.3	613	(*)	8
Age						
15-19	56.4	37.3	4.6	123	(*)	6
20-24	96.9	83.9	0.9	126	(*)	1
25-29	99.5	90.7	1.0	130	(*)	1
30-34	100.0	90.6	0.0	72	-	0
35-39	100.0	90.5	0.0	77	.	0
40-44	(100.0)	(79.8)	(0.0)	45	.	0
45-49	100.0	75.2	0.0	50	.	0
Marital status						
Ever married/in union	100.0	90.7	0.7	472	(*)	3
Never married/in union	61.6	32.9	3.3	151	(*)	5
Education						
None	(*)	(*)	(*)	23	(*)	1
Primary	92.7	80.0	1.5	302	(*)	5
Secondary +	88.1	73.2	0.7	297	(*)	2
Wealth index quintiles						
Poorest	90.8	73.8	0.3	124	(*)	0
Second	90.1	78.4	1.6	146	(*)	2
Middle	94.9	79.7	0.9	123	(*)	1
Fourth	87.9	75.8	2.9	118	(*)	3
Richest	89.7	75.6	0.9	112	(*)	1
Total	**90.7**	**76.8**	**1.3**	**623**	**(*)**	**8**

[1] MICS indicator 9.13
[2] MICS indicator 9.14
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Overall, 77 per cent of young women aged 15-24 have ever had sex, 61 per cent had sex in the last 12 months preceding the survey and about 3 per cent had sex with more than one partner in the last 12 months (see Table HA.10).

Table HA.10: Sex with multiple partners among young women

Percentage of women age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with more than one partner in the last 12 months and among those who had sex with multiple partners, the percentage who used a condom at last sex, Nyamira County, 2011

	Percentage of women age 15-24 years who:				Per cent of women age 15-24 years who had more than one sexual partner in the last 12 months, who also reported that a condom was used the last time they had sex	Number of women age 15-24 years who had more than one sexual partner in the last 12 months
	Ever had sex	Had sex in the last 12 months	Had sex with more than one partner in last 12 months	Number of women age 15-24 years		
Residence						
Urban	(*)	(*)	(*)	4	-	0
Rural	77.4	61.2	2.8	245	(*)	7
Age						
15-19	56.4	37.3	4.6	123	(*)	6
20-24	96.9	83.9	0.9	126	(*)	1
Marital status						
Ever married/in union	100.0	95.7	2.0	114	(*)	2
Never married/in union	57.2	31.1	3.4	134	(*)	5
Education						
None	(*)	(*)	(*)	11	(*)	1
Primary	78.2	66.1	3.3	101	(*)	3
Secondary +	74.5	56.2	1.5	136	(*)	2
Wealth index quintiles						
Poorest	77.5	64.8	0.7	51	.	0
Second	73.9	58.4	4.1	56	(*)	2
Middle	(86.5)	(66.7)	(2.4)	46	(*)	1
Fourth	72.7	55.4	4.7	52	(*)	2
Richest	(75.0)	(59.9)	(1.5)	43	(*)	1
Total	**76.9**	**60.9**	**2.8**	**248**	**(*)**	**7**

(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Tables HA.11 presents the percentage of women age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with a non-marital, non-cohabiting partner in the last 12 months and among those who had sex with a non-marital, non-cohabiting partner, the percentage who used a condom the last time they had sex with such a partner.

About 9 per cent of young women aged 15-24 years have had sex with a non-marital, non-cohabiting partner in the last 12 months preceding the survey.

Table HA.11: Sex with non-regular partners

Percentage of women age 15-24 years who ever had sex, percentage who had sex in the last 12 months, percentage who have had sex with a non-marital, non-cohabiting partner in the last 12 months and among those who had sex with a non-marital, non-cohabiting partner, the percentage who used a condom the last time they had sex with such a partner, Nyamira County, 2011

	Percentage of women 15-24 who:		Number of women age 15-24 years	Percentage who had sex with a non-marital, non-cohabiting partner in the last 12 months [1]	Number of women age 15-24 years who had sex in the last 12 months	Percentage of women age 15-24 years who had sex with a non-marital, non-cohabiting partner in the last 12 months, who also reported that a condom was used the last time they had sex with such a partner [2]	Number of women age 15-24 years who had sex in last 12 months with a non-marital, non-cohabiting partner
	Ever had sex	Had sex in the last 12 months					
Residence							
Urban	(*)	(*)	4	(*)	2	-	0
Rural	77.4	61.2	245	9.0	150	(*)	13
Age							
15-19	56.4	37.3	123	(13.3)	46	(*)	6
20-24	96.9	83.9	126	7.0	106	(*)	7
Marital status							
Ever married/in union	100.0	95.7	114	4.3	110	(*)	5
Never married/in union	57.2	31.1	134	(21.0)	42	(*)	9
Education							
None	(*)	(*)	(*)	(*)	8	(*)	2
Primary	78.2	66.1	101	6.6	67	(*)	4
Secondary +	74.5	56.2	136	8.7	77	(*)	7
Wealth index quintiles							
Poorest	77.5	64.8	51	(6.2)	33	(*)	2
Second	73.9	58.4	56	(7.1)	32	(*)	2
Middle	(86.5)	(66.70	46	(6.5)	31	(*)	2
Fourth	72.7	55.4	52	(8.4)	29	(*)	2
Richest	(75.0)	(59.9)	43	(18.1)	26	(*)	5
Total	**76.9**	**60.9**	**248**	**8.9**	**151**	**(*)**	**13**

[1] MICS indicator 9.15
[2] MICS indicator 9.16; MDG indicator 6.2
(*) Not shown, based on less than 25 unweighted cases.
( ) Based on 25-49 unweighted cases

Orphans

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 if the parents are not available to assist them. 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. Orphans are defined as children under age 18 who have lost one or both parents.

The frequency of children living with neither parent, mother only, and father only is presented in Table HA.12. More than half (59 per cent) of children aged 0-17 years in Nyamira County live with both parents. There is, however, no major difference between the proportions of male and female children who live with both parents.

Table HA.12: Children's living arrangements and orphanhood

Percentage distribution of children age 0-17 years according to living arrangements, percentage of children age 0-17 years in households not living with a biological parent and percentage of children who have one or both parents dead, Nyamira County, 2011

	Living with both parents	Living with neither parent				Living with mother only		Living with father only		Impossible to determine	Total	Not living with a biological parent [1]	One or both parents dead [2]	Number of children age 0-17 years
		Only father alive	Only mother alive	Both are alive	Both are dead	Father alive	Father dead	Mother alive	Mother dead					
Sex														
Male	61.6	0.6	1.2	6.3	2.0	15.0	6.9	0.5	0.8	5.1	100.0	10.0	11.7	758
Female	57.1	1.0	0.9	10.0	1.5	16.7	5.1	0.9	0.7	6.2	100.0	13.3	10.0	735
Residence														
Urban	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	(*)	22
Rural	59.4	0.8	1.0	8.1	1.7	15.6	6.1	0.7	0.8	5.7	100.0	11.7	11.0	1471
Age														
0-4	62.8	0.5	0.0	3.6	0.6	22.2	3.7	0.4	0.1	6.1	100.0	4.7	5.3	442
5-9	58.6	0.8	1.2	9.3	1.0	16.1	5.8	0.6	0.6	6.0	100.0	12.3	9.9	456
10-14	59.6	1.3	1.9	10.6	1.8	11.1	7.6	0.6	1.3	4.2	100.0	15.6	14.4	396
15-17	53.5	0.3	1.1	10.4	5.5	10.7	8.6	1.8	1.4	6.7	100.0	17.3	18.4	200
Wealth index quintiles														
Poorest	49.3	1.1	0.3	10.7	1.3	21.5	11.0	0.2	0.3	4.2	100.0	13.5	14.1	357
Second	68.5	0.5	1.0	5.4	0.5	9.9	6.8	1.1	0.6	5.7	100.0	7.3	9.9	352
Middle	56.1	0.3	0.9	7.2	2.7	18.1	4.6	0.9	0.7	8.6	100.0	11.0	10.8	300
Fourth	59.1	0.4	1.9	8.6	3.3	15.0	3.9	0.0	2.2	5.7	100.0	14.3	11.8	256
Richest	65.9	1.8	1.2	8.8	1.3	14.2	1.5	1.4	0.0	3.9	100.0	13.0	6.4	229
Total	**59.4**	**0.8**	**1.0**	**8.1**	**1.7**	**15.9**	**6.0**	**0.7**	**0.7**	**5.7**	**100.0**	**11.6**	**10.9**	**1493**

[1] MICS indicator 9.17
[2] MICS indicator 9.18
(*) Not shown, based on less than 25 unweighted cases.

As expected, the proportion of children living with both parents decreases with increasing age of child, while the pattern is unclear in regards to household wealth index, but with a nearly 15 percentage difference among those from the poorest and richest households.

Twelve per cent of children below 18 years are not living with a biological parent. As expected, the proportion of children not living with a biological parent increases with increasing age of a child. There is, however, no major variation in the proportions of children not living with a biological parent across gender or levels of the household wealth index.

About 1 in 10 (11 per cent) children aged 0-17 years have one or both parents dead. The proportion of children who had one or both parents dead increases with increasing age of a child (from 5 per cent among children aged 0-4 years to 18 per cent for those aged 15-17 years).

One of the measures developed for the assessment of the status of orphaned children relative to their peers looks at the school attendance of children 10-14 for children who have lost both parents versus children whose parents are alive (and who live with at least one of these parents). If children whose parents have died do not have the same access to school as their peers, then families and schools are not ensuring that these children's rights are being met.

In Nyamira County, less than 2 per cent of children aged 10-14 years have lost both parents with no major difference across gender of child (Table HA.13).

Table HA.13: School attendance of orphans and non-orphans

School attendance of children age 10-14 years by orphanhood, Nyamira County, 2011

	Percentage of children whose mother and father have died (orphans)	Percentage of children of whom both parents are alive and child is living with at least one parent (non-orphans)	Number of children age 10-14 years	Percentage of children who are orphans and are attending school [1]	Total number of orphan children age 10-14 years	Percentage of children who are non-orphans and are attending school [2]	Total number of non-orphan children age 10-14 years	Orphans to non-orphans school attendance ratio
Sex								
Male	2.5	74.2	192	(*)	5	99.2	142	(*)
Female	1.3	68.4	204	(*)	3	98.0	140	(*)
Residence								
Urban	(*)	(*)	6	-	-	(*)	4	-
Rural	1.9	71.2	390	(*)	7	98.6	278	(*)
Total	**1.8**	**71.2**	**396**	**(*)**	**7**	**98.6**	**282**	**(*)**

[1] MICS indicator 9.19; MDG indicator 6.4
[2] MICS indicator 9.20; MDG indicator 6.4
(*) Not shown, based on less than 25 unweighted cases.

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Appendix A. Sample Design

The major features of the sample design are described in this appendix. Sample design features include target sample size, sample allocation, sampling frame and listing, choice of domains, sampling stages, stratification, and the calculation of sample weights.

The primary objective of the sample design for the Nyamira County Multiple Indicator Cluster Survey was to produce statistically reliable estimates of most indicators, at the county level, for urban and rural areas. The urban and rural areas within Nyamira County were identified as the main sampling strata.

A multi-stage, stratified cluster sampling approach was used for the selection of the survey sample.

Sample Size and Sample Allocation

The target sample size for the Nyamira County MICS was calculated as 1250 households. For the calculation of the sample size, the key indicator used was the underweight prevalence among children aged 0-4 years The following formula was used to estimate the required sample size for this indicator:

$$n = \frac{[4(r)(1-r)(f)\ (1.1)]}{[(0.12r)^2\ (p)\ (\bar{n})]}$$

Where

- n is the required sample size, expressed as number of households
- *4* is a factor to achieve the 95 per cent level of confidence
- r is the predicted or anticipated value of the indicator, expressed in the form of a proportion
- *1.1* is the factor necessary to raise the sample size by 10 per cent for the expected non-response [the actual factor will be based on the non-response level experienced in previous surveys in the country]
- f is the shortened symbol for *deff* (design effect)
- *0.12r* is the margin of error to be tolerated at the 95 per cent level of confidence, defined as 12 per cent of r (relative margin of error of r)
- p is the proportion of the total population upon which the indicator, r, is based
- $\bar{n}$ is the average household size (number of persons per household).

For the calculation, r (underweight prevalence) was assumed to be 30.9 per cent as per the 2008/9 KDHS. The value of *deff* (design effect) was taken as 1.4 based on the 2008-09 KDHS, p (percentage of children aged 0-59 months in Nyanza) was taken as 15 per cent and n_h (average household size in Nyamira County) was taken as [6.2] households. Both p and n_h were based on the results from the 2009 Kenya Population Census. The margin of error to be tolerated at the 95 per cent level of confidence was fixed at 0.13r.

The resulting number of households from this exercise was 1250. The average number of households selected per cluster for the Nyamira County MICS was determined as 25 households, based on a number of considerations, including the design effect, the budget available, and the time that would be needed per team to complete one cluster. Dividing the total number of households by the number of sample households per cluster, it was calculated that 85 sample clusters would need to be selected in each region.

Equal allocation of the total sample size to the six regions was used. Therefore, 50 clusters were allocated to each region, with the final sample size calculated at 7500 households (50 clusters * 6 counties * 25 sample households per cluster). In each county, the clusters (primary sampling units) were distributed to urban and rural domains, proportional to the size of urban and rural populations in that region. The table below shows the allocation of clusters to the sampling strata.

Table SD.1: Allocation of Sample Clusters (Primary Sampling Units) to Sampling Strata

County	Total	Population (2009 Estimates)			Number of Clusters		
		Rural	Urban	Peri-urban	Urban	Rural	Total
Siaya	833984	745922	66605	21457	5	45	50
Kisumu	952828	461145	291625	200053	27	23	50
Homa Bay	955203	820029	62981	72193	7	43	50
Migori	907743	603728	125434	178581	18	32	50
Kisii	1142032	917260	87884	136888	11	39	50
Nyamira	**592324**	**516335**	**23618**	**52371**	**7**	**43**	**50**
Total					**75**	**225**	**300**

Sampling Frame and Selection of Clusters

The 2009 census frame was used for the selection of clusters. Census enumeration areas were defined as primary sampling units (PSUs), and were selected from each of the sampling strata by using systematic pps (probability proportional to size) sampling procedures, based on the estimated sizes of the enumeration areas from the 2009 Population Census. The first stage of sampling was thus completed by selecting the required number of enumeration areas from Nyamira County, separately by urban and rural strata.

Listing Activities

The sampling team created a stand-alone statistical frame for each of the Nyanza counties based on the 2009 census EAs for the purpose of MICS 4. To create the sampling frame, a complete listing of the selected EAs was undertaken by identifying and mapping all existing structures and households. The listing process ensured that the EAs had one measure of size (MoS). One MoS was defined as an EA having an average of 100 households. Prior to undertaking the fieldwork that informed the development of the frame, office processing of the EAs in the selected districts was done so that each EA with less than 50 households is amalgamated with the most convenient adjoining one. On the other hand, the EAs with more than 149 households were segmented during household listing and eventually one segment scientifically selected and developed into a cluster. From this master frame, households were selected to participate in the MICS4 main survey.

The listing and mapping teams were oriented in a 4 day training program in Kisumu, which included class room sessions and field practice. The training was facilitated by experts from KNBS and UNICEF. The listing and mapping team consisted of 12 teams; each having a lister and a mapper. The teams were led by a Supervisor, overseen by the District Statistical Officer (DSO) on a daily basis, who also attended the 4 days training programme. The county team was led by a county coordinator who was in charge of managing all the quality assurance activities of the teams in each county. One team was given two days to list an EA. The whole exercise of listing was also monitored by the UNICEF independent team that included a consultant.

Selection of Households

Lists of households were prepared by the listing teams in the field for each enumeration area. The households were then sequentially numbered from 1 to n (the total number of households in each enumeration area) at the KNBS Office, where the selection of 25 households in each enumeration area was carried out using random systematic selection procedures.

Calculation of Sample Weights

The Nyamira County Multiple Indicator Cluster Survey sample is not self-weighting. Essentially, by allocating equal 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 stratum (h) and PSU (i):

$$W_{hi} = \frac{1}{f_{hi}}$$

The term fhi, the sampling fraction for the i-th sample PSU in the h-th stratum, is the product of probabilities of selection at every stage in each sampling stratum:

$$f_{hi} = P_{1hi} x P_{2hi} x P_{3hi}$$

where P_{shi} is the probability of selection of the sampling unit at stages for the *i-th* sample PSU in the *h-th* sampling stratum.

Since the estimated number of households in each enumeration area (PSU) in the sampling frame used for the first stage selection and the updated number of households in the enumeration area from the listing were different, individual sampling fractions for households in each sample enumeration area (cluster) were calculated. The sampling fractions for households in each enumeration area (cluster) therefore included the first stage probability of selection of the enumeration area in that particular sampling stratum and the second stage probability of selection of a household in the sample enumeration area (cluster).

A second component in the calculation of sample weights takes into account the level of non-response for the household and individual interviews. The adjustment for household non-response is equal to the inverse value of:

RR_h = *Number of interviewed households in stratum h/ Number of occupied households listed in stratum h*

After the completion of fieldwork, response rates were calculated for each sampling stratum. These were used to adjust the sample weights calculated for each cluster. Response rates in the Nyamira County Multiple Indicator Cluster Survey are shown in Table HH.1 in this report.

Similarly, the adjustment for non-response at the individual level (women and under-5 children) for each stratum is equal to the inverse value of:

RR_h = *Completed women's (or under-5's) questionnaires in stratum h / Eligible women (or under-5s) in stratum h*

The non-response adjustment factors for women's and under-5's questionnaires are applied to the adjusted household weights. Numbers of eligible women and under-5 children were obtained from the roster of household members in the Household Questionnaire for households where interviews were completed.

The design weights for the households were calculated by multiplying the above factors for each enumeration area. These weights were then standardized (or normalized), one purpose of which is to make the weighted sum of the interviewed sample units equal the total sample size at the national level.

Normalization is performed by dividing the aforementioned design weights by the average design weight at the national level. The average design weight is calculated as the sum of the design weights divided by the unweighted total). A similar standardization procedure was followed in obtaining standardized weights for the 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.

Appendix B. List of Personnel Involved in the Survey

Survey Director

A.K Kilele, Director General, KNBS 2011

Technical Co-ordinators

James Gatungu, KNBS
Macdonald Obudho, KNBS
Robert Peter Ndugwa, UNICEF
Data collection County coordinators
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Listing Enumerators

Nyamira County Team

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Rajab Mbaruku
Rogers M. Munywoki
Data Analysists
Mutua Kakinyi
Cleophas Kiio

UNICEF Survey support team

Robert Peter Ndugwa
Godfrey Ndeng'e
Violet Kinuthia
Susan Govedi
Isa Achoba
John Ndegwa Wagai
Joanne Bosworth

Appendix C. Estimates of Sampling Errors

The sample of respondents selected in the Nyamira County Multiple Indicator Cluster Survey is only one of the samples that could have been selected from the same population, using the same design and size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between the estimates from all possible samples. The extent of variability is not known exactly, but can be estimated statistically from the survey data.

The following sampling error measures are presented in this appendix for each of the selected indicators:

- Standard error (*se*): Sampling errors are usually measured in terms of standard errors for particular indicators (means, proportions etc). Standard error is the square root of the variance of the estimate. The Taylor linearization method is used for the estimation of standard errors.
- Coefficient of variation (*se*/*r*) is the ratio of the standard error to the value of the indicator, and is a measure of the relative sampling error.
- Design effect (*deff*) is the ratio of the actual variance of an indicator, under the sampling method used in the survey, to the variance calculated under the assumption of simple random sampling. The square root of the design effect (*deft*) is used to show the efficiency of the sample design in relation to the precision. A deft value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a deft value above 1.0 indicates the increase in the standard error due to the use of a more complex sample design.
- Confidence limits are calculated to show the interval within which the true value for the population can be reasonably assumed to fall, with a specified level of confidence. For any given statistic calculated from the survey, the value of that statistic will fall within a range of plus or minus two times the standard error ($r + 2.se$ or $r - 2.se$) of the statistic in 95 per cent of all possible samples of identical size and design.

For the calculation of sampling errors from MICS data, SPSS Version 18 Complex Samples module has been used. The results are shown in the tables that follow. In addition to the sampling error measures described above, the tables also include weighted and unweighted counts of denominators for each indicator.

Sampling errors are calculated for indicators of primary interest, for the national level, for the regions, and for urban and rural areas. Three of the selected indicators are based on households, 8 are based on household members, 13 are based on women, and 15 are based on children under 5. 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. Table SE.2 show the calculated sampling errors for selected domain.

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List of indicators selected for sampling error calculations, and base populations (denominators) for each indicator, Nyanza province, 2011		
MICS4 Indicator		**Base Population**
HOUSEHOLDS		
2.16	Iodized salt consumption	All households in which salt was tested or with no salt
3.12	Household availability of insecticide-treated nets (ITNs)	All households
HOUSEHOLD MEMBERS		
4.1	Use of improved drinking water sources	All household members
4.3	Use of improved sanitation facilities	All household members
7.5	Secondary school net attendance ratio (adjusted)	Children of secondary school age
8.2	Child labour	Children age 5-14 years
9.18	Prevalence of children with at least one parent dead	Children age 0-17 years
9.19	School attendance of orphans	Children age 10-14 years who have lost both parents
9.20	School attendance of non-orphans	Children age 10-14 years, whose parents are alive, and who are living with at least one parent
8.5	Violent discipline	Children age 2-14 years
WOMEN		
-	Pregnant women	Women age 15-49 years
3.19	Pregnant women sleeping under insecticide-treated nets (ITNs)	Pregnant women
3.20	Intermittent preventive treatment for malaria	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.2	Early childbearing	Women age 20-24 years
5.3	Contraceptive prevalence	Women age 15-49 years who are currently married or in union
5.4	Unmet need	Women age 15-49 years who are currently married or in union
5.5a	Antenatal care coverage - at least once by skilled personnel	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.5b	Antenatal care coverage – at least four times by any provider	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.7	Skilled attendant at delivery	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.8	Institutional deliveries	Women age 15-49 years with a live birth in the 2 years preceding the survey
5.9	Caesarean section	Women age 15-49 years with a live birth in the 2 years preceding the survey
7.1	Literacy rate among young women	Women age 15-24 years
8.7	Marriage before age 18	Women age 20-49 years
8.9	Polygyny	Women age 15-49 years who are currently married or in union
8.12	Prevalence of female genital mutilation/cutting (FGM/C) among women	Women age 15-49 years
9.2	Comprehensive knowledge about HIV prevention among young people	Women age 15-24 years
9.3	Knowledge of mother- to-child transmission of HIV	Women age 15-49 years
9.4	Accepting attitudes towards people living with HIV	Women age 15-49 years who have heard of HIV
9.6	Women who have been tested for HIV and know the results	Women age 15-49 years

MICS4 Indicator		Base Population
9.7	Sexually active young women who have been tested for HIV and know the results	Women age 15-24 years who have had sex in the 12 months preceding the survey
9.11	Sex before age 15 among young women	Women age 15-24 years
9.16	Condom use with non-regular partners	Women age 15-24 years who had a non-marital, non-cohabiting partner in the 12 months preceding the survey
8.13	Prevalence of female genital mutilation/cutting (FGM/C) among girls	Girls age 0-14 years
UNDER-5s		
2.1a	Underweight prevalence	Children under age 5
2.2a	Stunting prevalence	Children under age 5
2.3a	Wasting prevalence	Children under age 5
2.6	Exclusive breastfeeding under 6 months	Total number of infants under 6 months of age
2.14	Age-appropriate breastfeeding	Children age 0-23 months
-	Tuberculosis immunization coverage	Children age 12-23 months
-	Received polio immunization	Children age 12-23 months
-	Received DPT immunization	Children age 12-23 months
-	Received measles immunization	Children age 12-23 months
-	Received Hepatitis B immunization	Children age 12-23 months
-	Diarrhoea in the previous 2 weeks	Children under age 5
-	Illness with a cough in the previous 2 weeks	Children under age 5
-	Fever in last two weeks	Children under age 5
3.8	Oral rehydration therapy with continued feeding	Children under age 5 with diarrhoea in the previous 2 weeks
3.10	Antibiotic treatment of suspected pneumonia	Children under age 5 with suspected pneumonia in the previous 2 weeks
3.15	Children under age 5 sleeping under insecticide-treated nets (ITNs)	Children under age 5
3.18	Anti-malarial treatment of children under age 5	Children under age 5 reported to have had fever in the previous 2 weeks
6.1	Support for learning	Children age 36-59 months
6.7	Attendance to early childhood education	Children age 36-59 months
8.1	Birth registration	Children under age 5

Table SE.1: Sampling errors

Standard errors, coefficients of variation, design effects (deff), square root of design effects (deft) and confidence intervals for selected indicators, Nyamira County, 2011

	MICS Indicator	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se*/*r*)	Design effect (*deff*)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
HOUSEHOLDS										
Iodized salt consumption	2.16	0.810	0.010	0.013	0.732	0.856	648	1064	0.790	0.831
HOUSEHOLD MEMBERS										
Use of improved drinking water sources	4.1	0.646	0.044	0.068	9.201	3.033	3004	1080	0.558	0.734
Use of improved sanitation facilities	4.3	0.218	0.021	0.096	2.764	1.663	3004	1080	0.176	0.260
Secondary school net attendance ratio (adjusted)	7.5	0.353	0.016	0.045	0.511	0.715	289	466	0.322	0.385
Child labour	8.2	0.511	0.018	0.034	1.717	1.310	852	1392	0.476	0.546
Prevalence of children with at least one parent dead	9.18	0.109	0.011	0.099	2.895	1.702	1493	2446	0.087	0.130
School attendance of non-orphans	9.2	0.986	0.007	0.007	1.521	1.233	282	457	0.973	1.000
Violent discipline	8.5	0.838	0.016	0.019	1.408	1.187	1135	796	0.807	0.869
WOMEN										
Pregnant women	-	0.060	0.009	0.146	1.319	1.148	623	970	0.042	0.077
Pregnant women sleeping under insecticide-treated nets (ITNs)	3.19	0.770	0.027	0.034	0.227	0.476	37	58	0.717	0.823
Intermittent preventive treatment for malaria	3.2	0.135	0.020	0.148	0.818	0.905	154	240	0.095	0.175
Early childbearing	5.2	0.340	0.031	0.092	0.854	0.924	126	197	0.278	0.403
Contraceptive prevalence	5.3	0.610	0.020	0.033	1.072	1.036	410	640	0.570	0.650
Antenatal care coverage - at least once by skilled personnel	5.5a	0.942	0.012	0.013	0.714	0.845	164	256	0.917	0.967
Antenatal care coverage – at least four times by any provider	5.5b	0.397	0.029	0.072	0.877	0.937	164	256	0.339	0.454

	MICS Indicator	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se*/*r*)	Design effect (*deff*)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
Skilled attendant at delivery	5.7	0.624	0.027	0.044	0.810	0.900	164	256	0.569	0.679
Institutional deliveries	5.8	0.611	0.027	0.044	0.766	0.875	164	256	0.557	0.664
Caesarean section	5.9	0.073	0.016	0.223	1.001	1.001	164	256	0.040	0.106
Literacy rate among young women	7.1	0.947	0.009	0.009	0.598	0.773	248	383	0.929	0.965
Marriage before age 18	8.7	0.347	0.014	0.040	0.652	0.807	501	784	0.320	0.375
Polygyny	8.9	0.0951	0.01144	0.12	0.972	0.986	410	640	0.073	0.118
Comprehensive knowledge about HIV prevention among young people	9.2	0.445	0.032	0.073	1.621	1.273	248	383	0.380	0.510
Knowledge of mother- to-child transmission of HIV	9.3	0.424	0.019	0.045	1.428	1.195	623	970	0.386	0.462
Accepting attitudes towards people living with HIV	9.4	0.320	0.018	0.057	1.487	1.219	623	970	0.283	0.356
Women who have been tested for HIV and know the results	9.6	0.459	0.014	0.031	0.775	0.880	623	970	0.431	0.487
Sexually active young women who have been tested for HIV and know the results	9.7	0.455	0.028	0.062	0.755	0.869	151	233	0.398	0.512
Sex before age 15 among young women	9.11	0.251	0.021	0.084	0.895	0.946	248	383	0.209	0.293
UNDER-5s										
Underweight prevalence	2.1a	0.129	0.014	0.111	1.231	1.110	428	673	0.100	0.158
Stunting prevalence	2.2a	0.250	0.026	0.103	2.363	1.537	428	673	0.199	0.302
Wasting prevalence	2.3a	0.034	0.007	0.217	1.129	1.063	428	673	0.020	0.049
Exclusive breastfeeding under 6 months	2.6	0.371	0.060	0.162	1.115	1.056	47	73	0.251	0.491
Age-appropriate breastfeeding	2.14	0.613	0.044	0.071	2.052	1.432	163	256	0.526	0.701
Tuberculosis immunization coverage	-	0.983	0.013	0.013	1.212	1.101	80	125	0.957	1.000
Received polio immunization	-	0.892	0.025	0.028	0.819	0.905	79	123	0.842	0.943
Received DPT immunization	-	0.948	0.021	0.023	1.155	1.075	80	124	0.905	0.991

	MICS Indicator	Value (*r*)	Standard error (*se*)	Coefficient of variation (*se*/*r*)	Design effect (*deff*)	Square root of design effect (deft)	Weighted count	Unweighted count	Confidence limits	
									r - 2*se*	*r* + 2*se*
Received measles immunization	-	0.982	0.013	0.013	1.212	1.101	80	124	0.956	1.000
Diarrhoea in the previous 2 weeks	-	0.132	0.013	0.097	0.995	0.997	442	696	0.107	0.158
Illness with a cough in the previous 2 weeks	-	0.097	0.013	0.134	1.349	1.162	442	696	0.071	0.123
Fever in last two weeks	-	0.144	0.015	0.106	1.319	1.148	442	696	0.114	0.175
Oral rehydration therapy with continued feeding	3.8	0.497	0.046	0.092	0.755	0.869	58	92	0.406	0.588
Antibiotic treatment of suspected pneumonia	3.1	0.314	0.064	0.205	1.291	1.136	43	68	0.185	0.443
Children under age 5 sleeping under insecticide-treated nets (ITNs)	3.15	0.782	0.023	0.030	2.222	1.491	442	696	0.735	0.828
Anti-malarial treatment of children under age 5	3.18	0.126	0.034	0.269	1.022	1.011	64	99	0.058	0.193
Support for learning	6.1	0.199	0.026	0.131	1.252	1.119	189	296	0.147	0.251
Attendance to early childhood education	6.7	0.465	0.033	0.071	1.312	1.145	189	296	0.399	0.532
Birth registration	8.1	0.531	0.026	0.048	1.825	1.351	442	696	0.480	0.583

Appendix D: Data Quality Tables

Table DQ.1: Age distribution of household population

Single-year age distribution of household population by sex, Nyamira County, 2011							
		Sex					
		Male		Female		Missing	
		Number	Per cent	Number	Per cent	Number	Per cent
Age	0	44	3.0	37	2.4	0	0.0
	1	46	3.1	31	2.0	0	0.0
	2	50	3.4	43	2.8	0	0.0
	3	53	3.6	49	3.2	0	0.0
	4	43	2.9	46	3.0	0	0.0
	5	51	3.5	60	3.9	0	0.0
	6	39	2.7	49	3.3	0	0.0
	7	50	3.3	53	3.5	0	0.0
	8	42	2.8	40	2.6	0	0.0
	9	37	2.5	35	2.3	0	0.0
	10	51	3.4	45	3.0	0	0.0
	11	32	2.2	29	1.9	0	0.0
	12	31	2.1	46	3.1	0	0.0
	13	37	2.5	35	2.3	0	0.0
	14	40	2.7	49	3.2	0	0.0
	15	40	2.7	29	1.9	0	0.0
	16	28	1.9	30	2.0	0	0.0
	17	41	2.8	30	2.0	0	0.0
	18	37	2.5	40	2.6	0	0.0
	19	28	1.9	22	1.5	0	0.0
	20	30	2.0	28	1.9	0	0.0
	21	26	1.7	25	1.6	0	0.0
	22	22	1.5	34	2.3	0	0.0
	23	19	1.3	28	1.8	0	0.0
	24	20	1.4	28	1.9	0	0.0
	25	33	2.2	33	2.1	0	0.0
	26	16	1.1	25	1.7	0	0.0
	27	19	1.3	25	1.6	0	0.0
	28	30	2.0	38	2.5	0	0.0
	29	16	1.0	20	1.3	0	0.0
	30	32	2.2	21	1.4	0	0.0
	31	8	0.5	11	0.8	0	0.0
	32	19	1.3	19	1.2	0	0.0
	33	12	0.8	16	1.1	0	0.0
	34	10	0.7	8	0.5	0	0.0
	35	25	1.7	17	1.1	0	0.0
	36	14	0.9	19	1.3	0	0.0
	37	12	0.8	12	0.8	0	0.0
	38	16	1.1	16	1.0	0	0.0
	39	11	0.7	15	1.0	0	0.0
	40	19	1.3	12	0.8	0	0.0

		Sex					
		Male		Female		Missing	
		Number	Per cent	Number	Per cent	Number	Per cent
	41	7	0.4	11	0.7	0	0.0
	42	10	0.6	8	0.5	0	0.0
	43	17	1.2	9	0.6	0	0.0
	44	2	0.1	7	0.5	0	0.0
	45	13	0.8	10	0.7	0	0.0
	46	6	0.4	6	0.4	0	0.0
	47	8	0.6	8	0.5	0	0.0
	48	11	0.8	14	1.0	0	0.0
	49	7	0.5	11	0.7	0	0.0
	50	9	0.6	16	1.1	0	0.0
	51	8	0.5	15	1.0	0	0.0
	52	9	0.6	11	0.7	0	0.0
	53	7	0.5	12	0.8	0	0.0
	54	7	0.5	8	0.5	0	0.0
	55	10	0.7	11	0.7	0	0.0
	56	10	0.6	7	0.4	0	0.0
	57	13	0.9	6	0.4	0	0.0
	58	3	0.2	9	0.6	0	0.0
	59	6	0.4	8	0.5	0	0.0
	60	11	0.8	12	0.8	0	0.0
	61	5	0.4	4	0.2	0	0.0
	62	6	0.4	4	0.3	0	0.0
	63	9	0.6	3	0.2	0	0.0
	64	2	0.2	2	0.1	0	0.0
	65	6	0.4	9	0.6	0	0.0
	66	3	0.2	2	0.2	0	0.0
	67	2	0.2	2	0.1	0	0.0
	68	2	0.2	5	0.3	0	0.0
	69	5	0.4	2	0.1	0	0.0
	70	7	0.5	6	0.4	0	0.0
	71	2	0.1	2	0.2	0	0.0
	72	2	0.1	4	0.2	0	0.0
	73	1	0.1	3	0.2	0	0.0
	74	1	0.1	1	0.0	0	0.0
	75	5	0.4	4	0.3	0	0.0
	76	1	0.0	2	0.2	0	0.0
	77	1	0.1	1	0.0	0	0.0
	78	4	0.3	1	0.0	0	0.0
	79	2	0.1	0	0.0	0	0.0
	80+	13	0.9	15	1.0	0	0.0
	DK/missing	0	0.0	0	0.0	0	0.0
Total		**1485**	**100.0**	**1519**	**100.0**	**0**	**0.0**

Table DQ.2: Age distribution of eligible and interviewed women

Household population of women age 10-54, interviewed women age 15-49, and percentage of eligible women who were interviewed, by five-year age groups, Nyamira County, 2011					
		Household population of women age 10-54	Interviewed women age 15-49		Percentage of eligible women interviewed (Completion rate)
		Number	Number	Per cent	
Age	10-14	204	-	-	-
	15-19	152	117	19.5	76.8
	20-24	144	122	20.3	84.7
	25-29	140	125	20.9	89.4
	30-34	76	70	11.6	92.0
	35-39	79	74	12.3	93.4
	40-44	47	44	7.3	92.9
	45-49	50	48	8.0	96.4
	50-54	63	-	-	-
Total (15-49)		**687**	**598**	**100.0**	**87.1**

Table DQ.3: Age distribution of under-5s in household and under-5 questionnaires

Household population of children age 0-7, children age 0-4 whose mothers/caretakers were interviewed, and percentage of under-5 children whose mothers/caretakers were interviewed, by single ages, Nyamira County, 2011					
		Household population of children 0-7 years	Interviewed under-5 children		Percentage of eligible under-5s interviewed (Completion rate)
		Number	Number	Per cent	
Age	0	81	79	18.6	97.2
	1	77	75	17.7	97.8
	2	92	86	20.2	92.7
	3	102	98	23.2	96.9
	4	89	86	20.3	97.0
	5	111	-	-	-
	6	89	-	-	-
	7	102	-	-	-
Total (0-4)		**442**	**425**	**100.0**	**96.3**

Table DQ.4: Women's completion rates by socio-economic characteristics of households

Household population of women age 15-49, interviewed women age 15-49, and percentage of eligible women who were interviewed, by selected social and economic characteristics of the household, Nyamira County, 2011

		Household population of women age 15-49 years		Interviewed women age 15-49 years		Percent of eligible women interviewed (Completion rates)
		Number	Per cent	Number	Per cent	
Area	Rural	674	98.1	589	98.4	87.4
	Urban	13	1.9	9	1.6	71.1
Household size	1-3	490	71.3	104	17.4	94.0
	4-6	168	24.4	326	54.4	87.8
	7+	30	4.3	169	28.2	82.2
Education of household head	None	85	12.3	65	10.9	77.2
	Primary	313	45.5	218	47.0	89.9
	Secondary +	288	41.9	251	41.9	87.2
	Missing/DK	2	0.3	1	0.2	70.0
Wealth index quintiles	Poorest	135	19.6	119	19.9	88.6
	Second	148	21.6	140	23.4	94.6
	Middle	136	19.8	119	19.8	87.2
	Fourth	136	19.8	113	18.9	83.1
	Richest	132	19.3	108	18.0	81.4
Total		**687**	**100.0**	**598**	**100.0**	**87.1**

Table DQ.5: Completion rates for under-5 questionnaires by socio-economic characteristics of households

Household population of under-5 children, under-5 questionnaires completed, and percentage of under-5 children for whom interviews were completed, by selected socio-economic characteristics of the household, Nyamira County, 2011

		Household population of under-5 children		Interviewed under-5 children		Per cent of eligible under-5s with completed under-5 questionnaires (Completion rates)
		Number	Per cent	Number	Per cent	
Area	Rural	433	98.2	420	98.9	96.9
	Urban	8	1.8	5	1.1	59.3
Household size	1-3	66	15.0	51	12.0	92.5
	4-6	258	58.4	248	58.4	97.4
	7+	118	26.7	126	29.6	95.7
Education of household head	None	51	11.6	46	10.9	90.0
	Primary	218	49.4	210	49.5	96.4
	Secondary +	171	38.8	168	39.4	97.9
	Missing/DK	1	0.2	1	0.2	100.0
Wealth index quintiles	Poorest	107	24.1	103	24.3	96.8
	Second	104	23.5	102	24.1	98.5
	Middle	91	20.6	89	20.9	97.8
	Fourth	74	16.8	68	16.1	92.2
	Richest	66	14.9	32	14.6	94.3
Total		**442**	**100.0**	**425**	**100.0**	**96.3**

Table DQ.6: Completeness of reporting

Percentage of observations that are missing information for selected questions and indicators, Nyamira County, 2011		
	Per cent with missing/ incomplete information*	Number of cases
Age	0.0	4930
Household		
Salt testing	0.2	657
Starting time of interview	0.8	657
Ending time of interview	0.2	657
Women		
Woman's date of birth: Only month	41.4	623
Woman's date of birth: Both month and year	1.7	623
Date of first birth: Only month	3.4	502
Date of first birth: Both month and year	0.1	502
Completed years since first birth	0.0	502
Date of last birth: Only month	2.2	502
Date of last birth: Both month and year	0.1	502
Date of first marriage/union: Only month	4.5	472
Date of first marriage/union: Both month and year	2.7	472
Age at first marriage/union	0.0	472
Age at first intercourse	0.0	191
Time since last intercourse	0.0	191
Starting time of interview	0.3	623
Ending time of interview	0.4	623
Under-5		
Date of birth: Only month	0.0	442
Date of birth: Both month and year	0.0	442
Anthropometric measurements: Weight	1.7	442
Anthropometric measurements: Height	2.0	442
Anthropometric measurements: Both weight and height	1.7	442
Starting time of interview	0.4	442
Ending time of interview	0.6	442

Table DQ.7a: Completeness of information for anthropometric indicators

Distribution of children under 5 by completeness of information for anthropometric indicators, Nyamira County, 2011

		Valid weight and date of birth	Reason for exclusion from analysis				Total	Per cent of children excluded from analysis	Number of children under 5
			Weight not measured	Incomplete date of birth	Weight not measured, incomplete date of birth	Flagged cases (outliers)			
Weight by age	<6 months	94.5	5.5	0.0	0.0	0.0	100.0	0.0	73
	6-11 months	100.0	0.0	0.0	0.0	0.0	100.0	0.0	58
	12-23 months	97.6	2.4	0.0	0.0	0.0	100.0	0.8	125
	24-35 months	99.3	0.7	0.0	0.0	0.0	100.0	0.0	144
	36-47 months	96.3	3.7	0.0	0.0	0.0	100.0	0.0	162
	48-59 months	100.0	0.0	0.0	0.0	0.0	100.0	0.0	134
Total		**98.0**	**2.0**	**0.0**	**0.0**	**0.0**	**100.0**	**0.1**	**696**

Table DQ.7b: Completeness of information for anthropometric indicators

Distribution of children under 5 by completeness of information for anthropometric indicators, Nyanza Province, Kenya, 2011

		Valid height and date of birth	Reason for exclusion from analysis				Total	Percent of children excluded from analysis	Number of children under 5
			Height not measured	Incomplete date of birth	Height not measured, incomplete date of birth	Flagged cases (outliers)			
Height by age	<6 months	90.4	9.6	0.0	0.0	0.0	100.0	4.1	73
	6-11 months	100.0	0.0	0.0	0.0	0.0	100.0	0.0	58
	12-23 months	98.4	1.6	0.0	0.0	0.0	100.0	0.0	125
	24-35 months	99.3	0.7	0.0	0.0	0.0	100.0	0.0	144
	36-47 months	96.3	3.7	0.0	0.0	0.0	100.0	0.0	162
	48-59 months	100.0	0.0	0.0	0.0	0.0	100.0	0.0	134
Total		**97.7**	**2.3**	**0.0**	**0.0**	**0.0**	**100.0**	**0.4**	**696**

Table DQ.7c: Completeness of information for anthropometric indicators

Distribution of children under 5 by completeness of information for anthropometric indicators, Nyanza Province, Kenya, 2011

		Valid weight and height	Reason for exclusion from analysis						Total	Per cent of children excluded from analysis	Number of children under 5
			Weight not measured	Height not measured	Incomplete date of birth	Weight not measured, incomplete date of birth	Height not measured, incomplete date of birth	Weight and height not measured, incomplete date of birth	Flagged cases (outliers)			
Weight by height	<6 months	90.4	0.0	4.1	0.0	0.0	0.0	0.0	0.0	100.0	9.6	73
	6-11 months	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	58
	12-23 months	97.6	0.8	0.0	0.0	0.0	0.0	0.0	0.0	100.0	2.4	125
	24-35 months	99.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.7	144
	36-47 months	96.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	3.7	162
	48-59 months	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	134
Total		**96.7**	**0.1**	**0.4**	**0.0**	**0.0**	**0.0**	**0.0**	**0.0**	**100.0**	**2.4**	**696**

Table DQ.8: Heaping in anthropometric measurements

Distribution of weight and height/length measurements by digits reported for decimals, Nyamira County, 2011

		Weight		Height	
		Number	Per cent	Number	Per cent
Digits	0	84	12.3	152	22.3
	1	65	9.5	46	6.7
	2	73	10.7	55	8.1
	3	66	9.7	57	8.3
	4	75	11.0	56	8.2
	5	69	10.1	131	19.2
	6	72	10.6	50	7.3
	7	64	9.4	69	10.1
	8	66	9.7	37	5.4
	9	48	7.0	30	4.4
	0 or 5	153	22.4	283	41.4
Total		**682**	**100.0**	**683**	**100.0**

Table DQ.9: Observation of bednets and places for hand washing

Percentage of bednets in all households interviewed observed by the interviewer, and percentage of places for handwashing observed by the interviewer in all interviewed households, Nyamira County, 2011[a]

		Percentage of bednets observed by interviewer	Total number of bednets	Observation of places for handwashing: Observed	Place for handwashing not in dwelling	No permission to see handwashing place	Total	Number of households interviewed
Area	Rural	85.2	2967	2.8	97.2	0.0	100.0	1057
	Urban	79.7	57	30.4	65.2	4.3	100.0	23
Wealth index quintiles	Poorest	88.0	557	0.4	99.6	0.0	100.0	231
	Second	88.3	627	0.5	99.5	0.0	100.0	214
	Middle	85.1	604	1.8	98.2	0.0	100.0	222
	Fourth	84.4	624	2.4	97.6	0.0	100.0	205
	Richest	79.5	612	12.5	87.0	0.5	100.0	208
Total		**85.1**	**3024**	**3.4**	**96.5**	**0.1**	**100.0**	**1080**

Table DQ.10: Observation of women's health cards

Percentage distribution of women with a live birth in the last 2 years by presence of a health card, and the percentage of health cards seen by the interviewers, Nyamira County, 2011[a]

		Woman does not have health card	Woman has health card		Missing/ DK	Total	Per cent of health cards seen by the interviewer [1]/ [1+2]*100	Number of women with a live birth in the last two years
			Seen by the interviewer [1]	Not seen by the interviewer [2]				
Area	Rural	13.9	64.7	19.0	2.4	100.0	77.3	252
	Urban	0.0	50.0	25.0	25.0	100.0	66.7	4
Wealth index quintiles	Poorest	15.1	56.6	24.5	3.8	100.0	69.8	53
	Second	11.7	75.0	10.0	3.3	100.0	88.2	60
	Middle	16.7	68.3	15.0	0.0	100.0	82.0	60
	Fourth	14.0	55.8	25.6	4.7	100.0	68.6	43
	Richest	10.0	62.5	25.0	2.5	100.0	71.4	40
Total		**13.7**	**64.5**	**19.1**	**2.7**	**100.0**	**77.1**	**256**

Table DQ.11: Observation of under-5s birth certificates

Percentage distribution of children under 5 by presence of birth certificates, and percentage of birth calendar seen, Nyamira County, 2011[a]

		Child does not have birth certificate	Child has birth certificate		Missing/ DK	Total	Per cent of birth certificates seen by the interviewer [1]/[1+2]*100	Number of children under age 5
			Seen by the interviewer [1]	Not seen by the interviewer [2]				
Area	Rural	86.2	5.5	7.4	0.9	100.0	42.7	687
	Urban	44.4	22.2	33.3	0.0	100.0	40.0	9
Child's age	0	88.5	5.4	5.4	0.8	100.0	50.0	130
	1	81.6	8.8	8.8	0.8	100.0	50.0	125
	2	86.5	5.0	6.4	2.1	100.0	43.8	141
	3	83.5	6.7	9.1	0.6	100.0	42.3	164
	4	88.2	2.9	8.8	0.0	100.0	25.0	136
Total		**85.6**	**5.7**	**7.8**	**0.9**	**100.0**	**42.6**	**696**

Table DQ.12: Observation of vaccination cards

Per cent distribution of children under 5 by presence of a vaccination card, and the percentage of vaccination cards seen by the interviewers, Nyamira County, 2011[a]

		Child has vaccination card			Missing/ DK	Total	Per cent of vaccination cards seen by the interviewer [1]/ [1+2]*100	Number of children under age 5
		Has, Seen by the interviewer [1]	Has, not seen by the interviewer [2]	Child has no vaccination card				
Area	Rural	70.2	20.4	9.5	0.0	100.0	77.5	687
	Urban	55.6	44.4	0.0	0.0	100.0	55.6	9
Child's age	0	89.2	6.9	3.8	0.0	100.0	92.8	130
	1	82.4	15.2	2.4	0.0	100.0	84.4	125
	2	70.2	22.0	7.8	0.0	100.0	76.2	141
	3	57.3	28.0	14.6	0.0	100.0	67.1	164
	4	55.1	28.7	16.2	0.0	100.0	65.8	136
Total		**70.0**	**20.7**	**9.3**	**0.0**	**100.0**	**77.2**	**696**

Table DQ.13: 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, Nyamira County, 2011[a]

		Mother in the household	Mother not in the household	Total	Number of children under 5
		Mother interviewed	Other adult male interviewed		
Age	0	99.2	0.8	100.0	81
	1	96.0	4.0	100.0	77
	2	92.0	8.0	100.0	92
	3	90.5	9.5	100.0	102
	4	88.8	11.2	100.0	89
Total		**93.0**	**7.0**	**100.0**	**442**

Table DQ.14: Selection of children age 2-14 years for the child discipline module

Percentage of households with at least two children age 2-14 years where correct selection of one child for the child discipline module was performed, Nyamira County, 2011[a]

		Per cent of households where correct selection was performed	Number of households with 2 or more children age 2-14 years
Area	Rural	96.8	566
	Urban	75.0	8
Number of households by number of children 2-14	2	98.5	266
	3	92.4	171
	4	97.8	137
Total		**96.5**	**574**

Table DQ.15: School attendance by single age

Distribution of household population age 5-24 by educational level and educational level and grade attended in the current (or most recent) school year, Nyamira County, 2011[a]

		Not attending school	Preschool/ kindergarten	Primary								Post primary				Secondary	Higher	Non-standard curriculum	DK	Total	Number of household members
				1	2	3	4	5	6	7	8	1	2	3	4						
Age at beginning of school year	5	12.4	71.8	11.9	1.2	1.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8	100.0	111
	6	4.2	55.5	25.0	12.1	3.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	89
	7	2.4	23.7	35.0	27.2	8.1	1.8	0.6	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.6	100.0	102
	8	1.3	11.6	16.1	33.7	23.2	6.9	5.6	1.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	82
	9	2.2	5.1	13.9	17.2	28.7	23.6	8.4	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	71
	10	0.5	1.6	2.4	12.7	20.6	34.7	19.0	6.6	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	96
	11	0.9	0.0	4.6	7.8	11.1	34.2	26.9	10.4	3.0	1.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	61
	12	2.1	0.6	2.0	6.0	6.6	17.8	20.3	22.9	18.5	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	77
	13	2.2	0.0	0.0	0.9	3.9	8.7	17.0	22.9	26.3	14.8	0.0	0.0	0.0	0.0	3.3	0.0	0.0	0.0	100.0	72
	14	2.7	0.0	0.5	0.0	0.0	9.6	9.4	14.5	27.3	20.2	0.0	0.0	0.0	0.0	15.8	0.0	0.0	0.0	100.0	89
	15	6.6	0.0	8.4	0.0	0.0	0.7	6.3	15.2	29.1	12.4	0.0	0.0	0.0	0.0	21.4	0.0	0.0	0.0	100.0	70
	16	8.9	0.0	0.0	0.0	0.0	00	1.0	5.7	13.5	16.3	0.0	0.0	0.0	0.0	53.8	0.0	0.0	0.8	100.0	59
	17	18.4	0.0	1.2	0.0	1.3	0.0	2.7	2.5	6.0	9.7	0.9	0.0	0.0	0.0	57.4	0.0	0.0	0.0	100.0	72
	18	34.2	00	0.7	0.0	0.6	0.0	1.8	2.3	4.8	9.6	0.8	0.0	0.0	0.0	42.9	1.9	0.4	0.0	100.0	77
	19	50.3	0.0	1.3	0.0	0.0	0.0	0.0	2.2	0.0	0.0	0.0	0.0	0.0	0.0	42.9	3.2	0.0	0.0	100.0	50
	20	61.8	0.0	0.6	0.0	0.0	0.9	0.0	0.0	0.9	3.3	0.0	0.6	0.0	1.6	26.2	4.0	0.0	0.0	100.0	59
	21	75.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	20.2	3.3	0.0	0.9	100.0	51
	22	72.1	0.0	0.0	0.0	0.0	1.5	0.0	0.0	0.0	0.6	0.0	0.0	0.0	0.0	19.3	6.5	0.0	0.0	100.0	56
	23	81.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	3.5	0.0	10.4	4.5	0.7	0.0	100.0	46
	24	88.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	2.4	6.0	0.0	1.5	100.0	48

Table DQ.16: Sex ratio at birth among children ever born and living

Sex ratio (number of males per 100 females) among children ever born (at birth), children living, and deceased children, by age of women, Nyamira County, 2011

		Children Ever Born			Children Living			Children Deceased			
		Number of sons ever born	Number of daughters ever born	Sex ratio	Number of sons living	Number of daughters living	Sex ratio	Number of deceased sons	Number of deceased daughters	Sex ratio	Number of women
Age	15-19	31	26	1.19	27	24	1.13	4	2	2.00	186
	20-24	153	123	1.24	148	118	1.25	5	5	1.00	197
	25-29	265	246	1.08	249	237	1.05	16	9	1.78	200
	30-34	199	204	0.98	189	198	0.95	10	6	1.67	116
	35-39	275	281	0.98	261	268	0.97	14	13	1.08	122
	40-44	203	181	1.12	184	161	1.14	19	20	0.95	72
	45-49	226	203	1.11	205	190	1.08	21	13	1.62	77
Total		**1352**	**1264**	**1.10**	**1263**	**1196**	**1.08**	**89**	**68**	**1.44**	**970**

Table NU.1a. Feeding patterns by age

Percentage distribution of children age 0-23 months by feeding pattern, Nyamira County, 2011

		Infant feeding patterns							
		Exclusively breastfed	Breastfed and plain water only	Breastfed and non-milk liquids	Breastfed and other milk / formula	Breastfed and complementary foods	Weaned (not breastfed)	Total	Number of children
Age	0-1	73.1	0.0	14.1	12.8	0.0	0.0	100.0	10
	2-3	65.4	14.3	20.3	0.0	0.0	0.0	100.0	7
	4-5	33.1	13.4	17.8	35.6	0.0	0.0	100.0	5
	6-7	15.6	14.6	16.9	41.3	7.5	4.0	100.0	8
	8-9	14.3	7.5	19.8	19.5	38.9	0.0	100.0	9
	10-11	17.9	0.0	21.8	5.0	55.4	0.0	100.0	7
	12-13	0.0	0.0	32.6	0.0	67.4	0.0	100.0	8
	14-15	0.0	0.0	0.0	8.0	81.3	10.7	100.0	5
	16-17	0.0	0.0	0.0	0.0	81.4	18.6	100.0	4
	18-19	0.0	0.0	0.0	0.0	100.0	0.0	100.0	7
	20-21	0.0	0.0	8.5	0.0	91.5	0.0	100.0	8
	22-23	0.0	0.0	0.0	0.0	85.6	14.4	100.0	5
	24-25	0.0	0.0	0.0	0.0	100.0	0.0	100.0	6
	26-27	0.0	0.0	0.0	0.0	86.0	14.0	100.0	9
	28-29	0.0	0.0	0.0	0.0	90.9	9.1	100.0	7
	30-31	0.0	0.0	0.0	0.0	67.7	32.3	100.0	8
	32-33	0.0	0.0	0.0	0.0	58.7	41.3	100.0	6
	34-35	0.0	0.0	0.0	0.0	56.1	43.9	100.0	3

Appendix E: MICS4 Indicators - Numerators and Denominators

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
1. MORTALITY					
1.1	Under-five mortality rate[12]	CM - BH	Probability of dying by exact age 5 years		MDG 4.1
1.2	Infant mortality rate[13]	CM - BH	Probability of dying by exact age 1 year		MDG 4.2
1.3	Neonatal mortality rate	BH	Probability of dying within the first month of life, during the 5-year period preceding the survey		
1.4	Post-neonatal mortality rate	BH	Difference between infant and neonatal mortality rates, during the 5-year period preceding the survey		
1.5	Child mortality rate	BH	Probability of dying between exact ages one and five, during the 5-year period preceding the survey		
2. NUTRITION					
2.1a 2.1b	Underweight prevalence	AN	Number of children under age 5 who (a) fall below minus two standard deviations (moderate and severe) (b) fall below minus three standard deviations (severe) from the median weight for age of the WHO standard	Total number of children under age 5	MDG 1.8
2.2a 2.2b	Stunting prevalence	AN	Number of children under age 5 who (a) fall below minus two standard deviations (moderate and severe) (b) fall below minus three standard deviations (severe) from the median height for age of the WHO standard	Total number of children under age 5	
2.3a 2.3b	Wasting prevalence	AN	Number of children under age 5 who (a) fall below minus two standard deviations (moderate and severe) (b) fall below minus three standard deviations (severe) from the median weight for height of the WHO standard	Total number of children under age 5	
2.5	Early initiation of breastfeeding	MN	Number of women with a live birth in the 2 years preceding the survey who put the newborn infant to the breast within 1 hour of birth	Total number of women with a live birth in the 2 years preceding the survey	

[M] Indicates that the indicator is also calculated for men, for the same age group, in surveys where the Questionnaire for Individual Men has been included. Calculations are carried out by using modules in the Men's Questionnaire

10 Some indicators are constructed by using questions in several modules. In such cases, only the module(s) which contains most of the necessary information is indicated.

11 MDG indicators as of February 2010

12 Indicator is defined as "Probability of dying between birth and fifth birthday, during the 5-year period preceding the survey" when estimated from the birth history

13 Indicator is defined as "Probability of dying between birth and the first birthday, during the 5-year period preceding the survey" when estimated from the birth history

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
2.6	Exclusive breastfeeding under 6 months	BF	Number of infants under 6 months of age who are exclusively breastfed[14]	Total number of infants under 6 months of age	
2.7	Continued breastfeeding at 1 year	BF	Number of children age 12-15 months who are currently breastfeeding	Total number of children age 12-15 months	
2.8	Continued breastfeeding at 2 years	BF	Number of children age 20-23 months who are currently breastfeeding	Total number of children age 20-23 months	
2.9	Predominant breastfeeding under 6 months	BF	Number of infants under 6 months of age who received breast milk as the predominant source of nourishment[15] during the previous day	Total number of infants under 6 months of age	
2.10	Duration of breastfeeding	BF	The age in months when 50 per cent of children age 0-35 months did not receive breast milk during the previous day		
2.11	Bottle feeding	BF	Number of children age 0-23 months who were fed with a bottle during the previous day	Total number of children age 0-23 months	
2.12	Introduction of solid, semi-solid or soft foods	BF	Number of infants age 6-8 months who received solid, semi-solid or soft foods during the previous day	Total number of infants age 6-8 months	
2.13	Minimum meal frequency	BF	Number of children age 6-23 months receiving solid, semi-solid and soft foods (plus milk feeds for non-breastfed children) the minimum times[16] or more, according to breastfeeding status, during the previous day	Total number of children age 6-23 months	
2.14	Age-appropriate breastfeeding	BF	Number of children age 0-23 months appropriately fed[17] during the previous day	Total number of children age 0-23 months	
2.15	Milk feeding frequency for non-breastfed children	BF	Number of non-breastfed children age 6-23 months who received at least 2 milk feedings during the previous day	Total number of non-breastfed children age 6-23 months	
2.16	Iodized salt consumption	SI	Number of households with salt testing 15 parts per million or more of iodide/iodate	Total number of households in which salt was tested or with no salt	
2.17	Vitamin A supplementation (children under age 5)	IM	Number of children age 6-59 months who received at least one high-dose vitamin A supplement in the 6 months preceding the survey	Total number of children age 6-59 months	

14 Infants receiving breast milk, and not receiving any other fluids or foods, with the exception of oral rehydration solution, vitamins, mineral supplements and medicines

15 Infants who receive breast milk and certain fluids (water and water-based drinks, fruit juice, ritual fluids, oral rehydration solution, drops, vitamins, minerals, and medicines), but do not receive anything else (in particular, non-human milk and food-based fluids)

16 Breastfeeding children: Solid, semi-solid, or soft foods, two times for infants age 6-8 months, 3 times for children 9-23 months; Non-breastfeeding children: Solid, semi-solid, or soft foods, or milk feeds, four times for children age 6-23 months

17 Infants age 0-5 who are exclusively breastfed, and children age 6-23 months who are breastfed and ate solid, semi-solid or soft foods

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
2.18	Low-birthweight infants	MN	Number of last live births in the 2 years preceding the survey weighing below 2,500 grams at birth	Total number of last live births in the 2 years preceding the survey	
2.19	Infants weighed at birth	MN	Number of last live births in the 2 years preceding the survey who were weighed at birth	Total number of last live births in the 2 years preceding the survey	
3. CHILD HEALTH					
3.1	Tuberculosis immunization coverage	IM	Number of children age 12-23 months who received BCG vaccine before their first birthday	Total number of children age 12-23 months	
3.2	Polio immunization coverage	IM	Number of children age 12-23 months who received OPV3 vaccine before their first birthday	Total number of children age 12-23 months	
3.3	Immunization coverage for diphtheria, pertussis and tetanus (DPT)	IM	Number of children age 12-23 months who received DPT3 vaccine before their first birthday	Total number of children age 12-23 months	
3.4	Measles immunization coverage	IM	Number of children age 12-23 months who received measles vaccine before their first birthday	Total number of children age 12-23 months	MDG 4.3
3.5	Hepatitis B immunization coverage	IM	Number of children age 12-23 months who received measles vaccine before their first birthday	Total number of children age 12-23 months	
3.6	Yellow fever immunization coverage	IM	Number of children age 12-23 months who received yellow fever vaccine before their first birthday	Total number of children age 12-23 months	
3.7	Neonatal tetanus protection	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who were given at least two doses of tetanus toxoid vaccine within the appropriate interval[18] prior to giving birth	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
3.8	Oral rehydration therapy with continued feeding	CA	Number of children under age 5 with diarrhoea in the previous 2 weeks who received ORT (ORS packet or recommended homemade fluid or increased fluids) and continued feeding during the episode of diarrhoea	Total number of children under age 5 with diarrhoea in the previous 2 weeks	
3.9	Care-seeking for suspected pneumonia	CA	Number of children under age 5 with suspected pneumonia in the previous 2 weeks who were taken to an appropriate health provider	Total number of children under age 5 with suspected pneumonia in the previous 2 weeks	
3.10	Antibiotic treatment of suspected pneumonia	CA	Number of children under age 5 with suspected pneumonia in the previous 2 weeks who received antibiotics	Total number of children under age 5 with suspected pneumonia in the previous 2 weeks	

18 See MICS4 manual for a detailed description

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
3.11	Solid fuels	HC	Number of household members in households that use solid fuels as the primary source of domestic energy to cook	Total number of household members	
3.12	Household availability of insecticide-treated nets (ITNs)[19]	TN	Number of households with at least one insecticide treated net (ITN)	Total number of households	
3.13	Households protected by a vector control method	TN - IR	Number of households with at least one insecticide-treated net (ITN) and/or that received spraying through an IRS[20] campaign in the last 12 months preceding the survey	Total number of households	
3.14	Children under age 5 sleeping under any type of mosquito net	TN	Number of children under age 5 who slept under any type of mosquito net the previous night	Total number of children under age 5	
3.15	Children under age 5 sleeping under insecticide-treated nets (ITNs)	TN	Number of children under age 5 who slept under an insecticide-treated mosquito net (ITN) the previous night	Total number of children under age 5	MDG 6.7
3.17	Anti-malarial treatment of children under age 5	ML	Number of children under age 5 reported to have had fever in the previous 2 weeks who were treated with any anti-malarial drug within the same or next day of onset of symptoms	Total number of children under age 5 reported to have had fever in the previous 2 weeks	
3.18	Anti-malarial treatment of children under age 5	ML	Number of children under age 5 reported to have had fever in the previous 2 weeks who received any antimalarial treatment	Total number of children under age 5 reported to have had fever in the previous 2 weeks	MDG 6.8
3.19	Pregnant women sleeping under insecticide-treated nets (ITNs)	TN	Number of pregnant women who slept under an insecticide-treated net (ITN) the previous night	Total number of pregnant women	
3.20	Intermittent preventive treatment for malaria	MN	Number of women age 15-49 years who received at least 2 doses of SP/Fansidar to prevent malaria during antenatal care visits for their last pregnancy leading to a live birth in the 2 years preceding the survey	Total number of women age 15-49 years who have had a live birth in the 2 years preceding the survey	
4. WATER AND SANITATION					
4.1	Use of improved drinking water sources	WS	Number of household members using improved sources of drinking water	Total number of household members	MDG 7.8
4.2	Water treatment	WS	Number of household members using unimproved drinking water who use an appropriate treatment method	Total number of household members in households using unimproved drinking water sources	

19 An ITN is (a) a factory treated net which does not require any treatment, (b) a pretreated net obtained within the past 12 months, or (c) a net that has been soaked with insecticide within the past 12 months

20 Indoor residual spraying

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
4.3	Use of improved sanitation facilities	WS	Number of household members using improved sanitation facilities	Total number of household members	MDG 7.9
4.4	Safe disposal of child's faeces	CA	Number of children age 0-2 years whose (last) stools were disposed of safely	Total number of children age 0-2 years	
4.5	Place for handwashing	HW	Number of households with a designated place for hand washing where water and soap are present	Total number of households	
4.6	Availability of soap	HW	Number of households with soap anywhere in the dwelling	Total number of households	
5. REPRODUCTIVE HEALTH					
5.1	Adolescent birth rate[21]	CM - BH	Age-specific fertility rate for women age 15-19 years		MDG 5.4
5.2	Early childbearing	CM - BH	Number of women age 20-24 years who had at least one live birth before age 18	Total number of women age 20-24 years	
5.3	Contraceptive prevalence rate	CP	Number of women age 15-49 years currently married or in union who are using (or whose partner is using) a (modern or traditional) contraceptive method	Total number of women age 15-49 years who are currently married or in union	MDG 5.3
5.5a 5.5b	Antenatal care coverage	MN	Number of women age 15-49 years who were attended during pregnancy in the 2 years preceding the survey (a) at least once by skilled personnel (b) at least four times by any provider	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	MDG 5.5
5.6	Content of antenatal care	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who had their blood pressure measured and gave urine and blood samples during the last pregnancy	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
5.7	Skilled attendant at delivery	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who were attended during childbirth by skilled health personnel	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	MDG 5.2
5.8	Institutional deliveries	MN	Number of women age 15-49 years with a live birth in the 2 years preceding the survey who delivered in a health facility	Total number of women age 15-49 years with a live birth in the 2 years preceding the survey	
5.9	Caesarean section	MN	Number of last live births in the 2 years preceding the survey who were delivered by caesarean section	Total number of last live births in the 2 years preceding the survey	

21 Indicator is defined as "Age-specific fertility rate for women age 15-19 years, for the 3-year period preceding the survey" when estimated from the birth history.

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
5.11	Post-natal health check for the newborn	PN	Number of last live births in the last 2 years who received a health check while in facility or at home following delivery, or a post-natal care visit within 2 days after birth	Total number of last live births in the last 2 years	
6. CHILD DEVELOPMENT					
6.1	Support for learning	CE	Number of children age 36-59 months with whom an adult has engaged in four or more activities to promote learning and school readiness in the past 3 days	Total number of children age 36-59 months	
6.2	Father's support for learning	CE	Number of children age 36-59 months whose father has engaged in one or more activities to promote learning and school readiness in the past 3 days	Total number of children age 36-59 months	
6.3	Learning materials: children's books	CE	Number of children under age 5 who have three or more children's books	Total number of children under age 5	
6.5	Inadequate care	CE	Number of children under age 5 left alone or in the care of another child younger than 10 years of age for more than one hour at least once in the past week	Total number of children under age 5	
6.6	Early child development Index	CE	Number of children age 36-59 months who are developmentally on track in literacy-numeracy, physical, social-emotional, and learning domains	Total number of children age 36-59 months	
6.7	Attendance to early childhood education	CE	Number of children age 36-59 months who are attending an early childhood education programme	Total number of children age 36-59 months	
7. LITERACY AND EDUCATION					
7.1	Literacy rate among young women[M]	WB	Number of women age 15-24 years who are able to read a short simple statement about everyday life or who attended secondary or higher education	Total number of women age 15-24 years	MDG 2.3
7.2	School readiness	ED	Number of children in first grade of primary school who attended pre-school during the previous school year	Total number of children attending the first grade of primary school	
7.3	Net intake rate in primary education	ED	Number of children of school-entry age who enter the first grade of primary school	Total number of children of school-entry age	
7.4	Primary school net attendance ratio (adjusted)	ED	Number of children of primary school age currently attending primary or secondary school	Total number of children of primary school age	MDG 2.1
7.5	Secondary school net attendance ratio (adjusted)	ED	Number of children of secondary school age currently attending secondary school or higher	Total number of children of secondary-school age	
7.6	Children reaching last grade of primary	ED	Proportion of children entering the first grade of primary school who eventually reach last grade		MDG 2.2

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
7.7	Primary completion rate	ED	Number of children (of any age) attending the last grade of primary school (excluding repeaters)	Total number of children of primary school completion age (age appropriate to final grade of primary school)	
7.8	Transition rate to secondary school	ED	Number of children attending the last grade of primary school during the previous school year who are in the first grade of secondary school during the current school year	Total number of children who are attending the first grade of secondary school	
7.9	Gender parity index (primary school)	ED	Primary school net attendance ratio (adjusted) for girls	Primary school net attendance ratio (adjusted) for boys	MDG 3.1
7.10	Gender parity index (secondary school)	ED	Secondary school net attendance ratio (adjusted) for girls	Secondary school net attendance ratio (adjusted) for boys	MDG 3.1
8. CHILD PROTECTION					
8.1	Birth registration	BR	Number of children under age 5 whose births are reported registered	Total number of children under age 5	
8.2	Child labour	CL	Number of children age 5-14 years who are involved in child labour	Total number of children age 5-14 years	
8.3	School attendance among child labourers	ED - CL	Number of children age 5-14 years who are involved in child labour and are currently attending school	Total number of children age 5-14 years involved in child labour	
8.4	Child labour among students	ED - CL	Number of children age 5-14 years who are involved in child labour and are currently attending school	Total number of children age 5-14 years attending school	
8.5	Violent discipline	CD	Number of children age 2-14 years who experienced psychological aggression or physical punishment during the past month	Total number of children age 2-14 years	
8.6	Marriage before age 15[M]	MA	Number of women age 15-49 years who were first married or in union by the exact age of 15	Total number of women age 15-49 years	
8.7	Marriage before age 18[M]	MA	Number of women age 20-49 years who were first married or in union by the exact age of 18	Total number of women age 20-49 years	
8.8	Young women age 15-19 years currently married or in union[M]	MA	Number of women age 15-19 years who are currently married or in union	Total number of women age 15-19 years	
8.9	Polygyny[M]	MA	Number of women age 15-49 years who are in a polygynous union	Total number of women age 15-49 years who are currently married or in union	
8.10a 8.10b	Spousal age difference	MA	Number of women currently married or in union whose spouse is 10 or more years older, (a) for women age 15-19 years, (b) for women age 20-24 years	Total number of women currently married or in union (a) age 15-19 years, (b) age 20-24 years	

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
8.11	Approval for female genital mutilation/cutting (FGM/C)	FG	Number of women age 15-49 years favouring the continuation of female genital mutilation/cutting (FGM/C)	Total number of women age 15-49 years who have heard of FGM/C	
8.12	Prevalence of female genital mutilation/cutting (FGM/C) among women	FG	Number of women age 15-49 years who report to have undergone any form of female genital mutilation/cutting (FGM/C)	Total number of women age 15-49 years	
8.14	Attitudes towards domestic violence[M]	DV	Number of women who state that a husband/partner is justified in hitting or beating his wife in at least one of the following circumstances: (1) she goes out without telling him, (2) she neglects the children, (3) she argues with him, (4) she refuses sex with him, (5) she burns the food	Total number of women age 15-49 years	
9. HIV/AIDS, SEXUAL BEHAVIOUR AND ORPHANS					
9.1	Comprehensive knowledge about HIV prevention[M]	HA	Number of women age 15-49 years who correctly identify two ways of preventing HIV infection[22], know that a healthy looking person can have HIV, and reject the two most common misconceptions about HIV transmission	Total number of women age 15-49 years	
9.2	Comprehensive knowledge about HIV prevention among young people[M]	HA	Number of women age 15-24 years who correctly identify two ways of preventing HIV infection[12], know that a healthy looking person can have HIV, and reject the two most common misconceptions about HIV transmission	Total number of women age 15-24 years	MDG 6.3
9.3	Knowledge of mother-to-child transmission of HIV[M]	HA	Number of women age 15-49 years who correctly identify all three means[23] of mother-to-child transmission of HIV	Total number of women age 15-49 years	
9.4	Accepting attitudes towards people living with HIV[M]	HA	Number of women age 15-49 years expressing accepting attitudes on all four questions[24] toward people living with HIV	Total number of women age 15-49 years who have heard of HIV	
9.5	Women who know where to be tested for HIV[M]	HA	Number of women age 15-49 years who state knowledge of a place to be tested for HIV	Total number of women age 15-49 years	

22 Using condoms and limiting sex to one faithful, uninfected partner

23 Transmission during pregnancy, during delivery, and by breastfeeding

24 Women (1) who think that a female teacher with the AIDS virus should be allowed to teach in school, (2) who would buy fresh vegetables from a shopkeeper or vendor who has the AIDS virus, (3) who would not want to keep it as a secret if a family member became infected with the AIDS virus, and (4) who would be willing to care for a family member who became sick with the AIDS virus

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
9.7	Sexually active young women who have been tested for HIV and know the results[M]	HA	Number of women age 15-24 years who have had sex in the 12 months preceding the survey, who have been tested for HIV in the 12 months preceding the surveyand who know their results	Total number of women age 15-24 years who have had sex in the 12 months preceding the survey	
9.8	HIV counselling during antenatal care	HA	Number of women age 15-49 years who gave birth in the 2 years preceding the survey and received antenatal care, reporting that they received counselling on HIV during antenatal care	Total number of women age 15-49 years who gave birth in the 2 years preceding the survey	
9.9	HIV testing during antenatal care	HA	Number of women age 15-49 years who gave birth in the 2 years preceding the survey and received antenatal care, reporting that they were offered and accepted an HIV test during antenatal care and received their results	Total number of women age 15-49 years who gave birth in the 2 years preceding the survey	
9.10	Young women who have never had sex[M]	SB	Number of never married women age 15-24 years who have never had sex	Total number of never married women age 15-24 years	
9.11	Sex before age 15 among young women[M]	SB	Number of women age 15-24 years who have had sexual intercourse before age 15	Total number of women age 15-24 years	
9.12	Age-mixing among sexual partners[M]	SB	Number of women age 15-24 years who had sex in the 12 months preceding the survey with a partner who was 10 or more years older than they were	Total number of women age 15-24 years who have had sex in the 12 months preceding the survey	
9.13	Sex with multiple partners[M]	SB	Number of women age 15-49 years who have had sexual intercourse with more than one partner in the 12 months preceding the survey	Total number of women age 15-49 years	
9.14	Condom use during sex with multiple partners[M]	SB	Number of women age 15-49 years who report having had more than one sexual partner in the 12 months preceding the survey who also reported that a condom was used the last time they had sex	Total number of women age 15-49 years who reported having had more than one sexual partner in the 12 months preceding the survey	
9.15	Sex with non-regular partners[M]	SB	Number of sexually active women age 15-24 years who have had sex with a non-marital, non-cohabitating partner in the 12 months preceding the survey	Total number of women age 15-24 years who have had sex in the 12 months preceding the survey	

MICS4 INDICATOR [M]		Module[10]	Numerator	Denominator	MDG[11]
9.16	Condom use with non-regular partners[M]	SB	Number of women age 15-24 years reporting the use of a condom during sexual intercourse with their last non-marital, non-cohabiting sex partner in the 12 months preceding the survey	Total number of women age 15-24 years who had a non-marital, non-cohabiting partner in the 12 months preceding the survey	MDG 6.2
9.17	Children's living arrangements	HL	Number of children age 0-17 years not living with a biological parent	Total number of children age 0-17 years	
9.18	Prevalence of children with at least one parent dead	HL	Number of children age 0-17 years with at least one dead parent	Total number of children age 0-17 years	
9.19	School attendance of orphans	HL - ED	Number of children age 10-14 years who have lost both parents and are attending school	Total number of children age 10-14 years who have lost both parents	MDG 6.4
9.20	School attendance of non-orphans	HL - ED	Number of children age 10-14 years, whose parents are alive, who are living with at least one parent, and who are attending school	Total number of children age 10-14 years, whose parents are alive, and who are living with at least one parent	MDG 6.4

Appendix F: Questionnaires

a) Household Questionnaire

b) Individual Women's Questionnaire

c) Children under 5 years Questionnaire

HOUSEHOLD QUESTIONNAIRE

HOUSEHOLD INFORMATION PANEL	HH
HH-A. Province Name & Code: _____ ___ ___	HH-B. County Name & Code: _____ ___ ___
HH-C. District Name & Code: _____ ___ ___ ___	
HH1. Cluster number: ___ ___ ___ ___	HH2. Household number: ___ ___ ___
HH3. Interviewer name and number: Name _____ _____	HH4. Supervisor (name and number): Name _____ _____
HH5. Day/Month/Year of interview: ___ ___ / ___ ___ / ___ ___ ___ ___	
HH6. Area: Urban.....2 Rural.....1	
HH8. Name of head of household: _____	

After all questionnaires for the household have been completed, fill in the following information:

HH9. Result of household interview: Completed.....01 No household member or no competent respondent at home at time of visit.....02 Entire household absent for extended period of time .....03 Refused .....04 Dwelling vacant / Address not a dwelling .....05 Dwelling destroyed.....06 Dwelling not found .....07 Other (specify) 96	HH10. Respondent to household questionnaire: Name: _____ Line No: _____ HH11. Total number of household members:
HH12. No of women age 15-49 years: _____	HH13. No of women age 15-49 years forms completed: _____
HH14. No of children under age 5: _____	HH15. No of under-5 questionnaires completed: _____

Interviewer/editor/supervisor notes: *Use this space to record notes about the interview with this household, such as call-back times, incomplete individual interview forms, number of attempts to re-visit, etc.*

HH16. Field edited by (Name and number): Name: _____	HH17. Data entry clerk(Name and number): Name: _____

INTRODUCTION

WE ARE FROM KENYA NATIONAL BUREAU OF STATISTICS (KNBS). WE ARE CONDUCTING A FAMILY HEALTH AND EDUCATION SURVEY. I WOULD LIKE TO TALK TO YOU ABOUT THIS. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE IDENTIFIED. MAY I START NOW?

IF PERMISSION IS GIVEN, BEGIN THE INTERVIEW.

HOUSEHOLD LISTING FORM **HL**

HL0. Record the time

Hour _ _ —

Minutes _ _ —

FIRST, PLEASE TELL ME THE NAME OF EACH PERSON WHO USUALLY LIVES HERE, STARTING WITH THE HEAD OF THE HOUSEHOLD. *List the head of the household in line 01. List all household members (HL2), their relationship to the household head (HL3), and their sex (HL4)*

Then ask: ARE THERE ANY OTHERS WHO LIVE HERE, EVEN IF THEY ARE NOT AT HOME NOW? (THESE MAY INCLUDE CHILDREN 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 is not enough room on this page.

Tick here if continuation sheet used ☐

						ELIGIBILITY FOR WOMEN'S INTERVIEW	MOTHER OR CARETAKER OF CHILD 5-14	ELIGIBILITY FOR UNDER-5 INTERVIEW	Ask if age 18-59 years	*Ask if age 0-17 years*					
HL1. *Line no*	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)*? Probe: HOW OLD WAS *(name)* ON HIS/ HER LAST BIRTHDAY? *Record age in completed years*	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/ caretaker*	HL8. *For each child under 5:* WHO IS THE MOTHER OR PRIMARY CARETAKER OF THIS CHILD? *Record line no. of mother/ caretaker*	HL8A. HAS *(name)* BEEN VERY SICK FOR AT LEAST 3 MONTHS DURING THE PAST 12 MONTHS?	HL9. IS *(name's)* NATURAL MOTHER ALIVE? 1 Yes 2 No —▸HL11 8 DK —▸HL11	HL10. *If alive:* DOES (name) S NATURAL MOTHER LIVE IN THIS HOUSEHOLD? *Record line no. of mother or 00 for 'no'*	HL10A. *If mother does not live in household:* HAS *(name's)* MOTHER BEEN VERY SICK FOR AT LEAST 3 MONTHS IN THE PAST 12 MONTHS?	HL11. IS *(name's)* NATURAL FATHER ALIVE? 1 Yes 2 No —▸ Next Line 8 DK —▸ Next Line	HL12. *If alive:* DOES *(name)* S NATURAL FATHER LIVE IN THIS HOUSEHOLD? *Record line no. of father or 00 for 'no'*	HL12A. *If father does not live in household:* HAS *(name's)* FATHER BEEN VERY SICK FOR AT LEAST 3 MONTHS IN THE PAST 12 MONTHS?
Line	Name	Relation	M	F	Age	15-49	Mother	Mother	Y N DK	Y N DK	Mother	Y N DK	Y N DK	Father	Y N DK
01		01	1	2		01			128	128		128	128		128
02			1	2		02			128	128		128	128		128
03			1	2		03			128	128		128	128		128
04			1	2		04			128	128		128	128		128
05			1	2		05			128	128		128	128		128
06			1	2		06			128	128		128	128		128
07			1	2		07			128	128		128	128		128
08			1	2		08			128	128		128	128		128
09			1	2		09			128	128		128	128		128
10			1	2		10			128	128		128	128		128
11			1	2		11			128	128		128	128		128

12			1	2		12			128	128		128	128		128
13			1	2		13			128	128		128	128		128
14			1	2		14			128	128		128	128		128
15			1	2		15			128	128		128	128		128

ARE THERE ANY OTHER PERSONS LIVING HERE – EVEN IF THEY ARE NOT MEMBERS OF YOUR FAMILY OR DO NOT HAVE PARENTS LIVING IN THIS HOUSEHOLD? INCLUDING CHILDREN AT WORK OR AT SCHOOL? *If yes, insert name and complete form.*

Probe for additional household members.
Probe especially for any infants or small children not listed, and others who may not be members of the family (such as servants, friends) but who usually live in the household.
Insert names of additional members in the household list and complete form accordingly.

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 Under 5 Questionnaire.
You should now have a separate questionnaire for each eligible woman and each child under five in the household.

** Codes for HL3: Relationship to head of household:*
01 = Head
02 = Wife or Husband
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 = Uncle/Aunt
11 = Niece/Nephew
12 = Other Relative
14 = Adopted/Foster/Stepchild
15 = Not Related
98 = Don't Know

EDUCATION **ED**

For household members age 5 and above							For household members age 5-24 years									
ED1. *Line no.*	ED1A. *Name and age*		ED2. HAS (*name*) EVER ATTENDED SCHOOL, PRESCHOOL OR ANY NON-FORMAL EDUCATION? 1 Yes—►ED3 2 No—►Next Line		ED3. WHAT IS THE HIGHEST LEVEL OF SCHOOL (*name*) ATTENDED? WHAT IS THE HIGHEST GRADE (STANDARD/ FORM/CLASS) (*name*) COMPLETED AT THIS LEVEL? Level: 0 Preschool 1 Primary 2 Post-Primary/Vocational 3 Secondary, A level 4 Higher 6 Non-formal education 8 DK Grade/Standard/Form/Class: 98 DK *If less than 1 grade, enter 00 If Level=0 or 6, leave Grade blank*		ED4. DURING THE CURRENT (2011) SCHOOL YEAR, DID (*name*) ATTEND SCHOOL, PRESCHOOL OR NON-FORMAL EDUCATION AT ANY TIME? 1 Yes 2 No—►ED7		ED5. SINCE LAST (day of the week), HOW MANY DAYS DID (*name*) ATTEND SCHOOL? *Insert number of days. Exclude the day of interview.* 8 DK 9 School closed	ED6. DURING THIS SCHOOL YEAR, WHICH LEVEL AND GRADE (STANDARD/ FORM/CLASS) IS (*name*) ATTENDING? Level: 0 Preschool 1 Primary 2 Post-Primary/ Vocational 3 Secondary, A level 4 Higher 6 Non-formal education 8 DK Grade/Standard/Form/Class: 98 DK *If Level=0 or 6, leave Grade blank*		ED7. DID (*name*) ATTEND SCHOOL, PRESCHOOL OR NON-FORMAL EDUCATION AT ANY TIME DURING THE PREVIOUS SCHOOL YEAR, THAT IS 2010? 1 Yes 2 No—►Next Line 8 DK—►Next Line			ED8. DURING THE PREVIOUS SCHOOL YEAR, WHICH LEVEL AND GRADE (STANDARD/FORM/ CLASS) DID (*name*) ATTEND? Level: 0 Preschool 1 Primary 2 Post-Primary/ Vocational 3 Secondary, A level 4 Higher 6 Non-formal education 8 DK Grade/Standard/Form/ Class: 98 DK *If Level=0 or 6, leave Grade blank*	
Line	Name	Age	Yes	No	Level	Grade	Yes	No	Days	Level	Grade	Y	N	DK	Level	Grade
01			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
02			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
03			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
04			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
05			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
06			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
07			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
08			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
09			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
10			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
11			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
12			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
13			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
14			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	
15			1	2—►Next Line	0 1 2 3 4 6 8		1	2		0 1 2 3 4 6 8		1	2	8	0 1 2 3 4 6 8	

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 compound, yard or plot ... 12 Piped to neighbor ... 13 Piped to water kiosk ... 14 Public tap/standpipe ... 15 Tubewell/Borehole ... 21 Dug well Protected well ... 31 Unprotected well ... 32 Water from spring Protected spring ... 41 Unprotected spring ... 42 Rainwater collection ... 51 Tanker-truck ... 61 Cart with small tank/drum ... 71 Surface water (river, stream, dam, lake, pond, canal, irrigation channel) ... 81 Bottled water ... 91 Other (*specify*) ... 96	11 —▸WS5 12 —▸WS5 —▸WS3 96 —▸WS3
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 Piped to neighbor ... 13 Piped to water kiosk ... 14 Public tap/standpipe ... 15 Tubewell/Borehole ... 21 Dug well Protected well ... 31 Unprotected well ... 32 Water from spring Protected spring ... 41 Unprotected spring ... 42 Rainwater collection ... 51 Tanker-truck ... 61 Cart with small tank/drum ... 71 Surface water (river, stream, dam, lake, pond, canal, irrigation channel) ... 81 Other (*specify*) ... 96	11 —▸WS5 12 —▸WS5
WS3. HOW LONG DOES IT TAKE TO GO THERE, GET WATER, AND COME BACK?	No. of minutes ... __ __ __ Water on premises ... 995 DK ... 998	995 —▸WS5
WS4. WHO USUALLY GOES TO THIS SOURCE TO COLLECT THE WATER FOR YOUR HOUSEHOLD? *Probe:* IS THIS PERSON UNDER AGE 15? WHAT SEX?	Adult woman (15+ years) ... 1 Adult man (15+ years) ... 2 Female child (under 15) ... 3 Male child (under 15) ... 4 DK ... 8	
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? *Probe:* ANYTHING ELSE? *Record all items mentioned.*	Boil ..... A Add bleach/chlorine ..... B Strain it through a cloth ..... C Use water filter (ceramic, sand, composite, etc.) ..... D Solar disinfection ..... E Let it stand and settle ..... F Other (*a*) ..... 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 Flush to somewhere else ..... 14 Flush to unknown place/not sure/DK where ..... 15 Ventilated Improved Pit latrine (VIP) ..... 21 Pit latrine with slab ..... 22 Pit latrine without slab/open pit ..... 23 Composting toilet ..... 31 Bucket ..... 41 Hanging toilet/hanging latrine ..... 51 No facilities or bush or field or ocean ..... 95 Other (*specify*) 96	95—►NEXT MODULE
WS8. DO YOU SHARE THIS FACILITY WITH OTHER HOUSEHOLDS?	Yes ..... 1 No 2	2—►NEXT MODULE
WS8A. DO YOU SHARE THIS FACILITY ONLY WITH OTHER HOUSEHOLDS THAT YOU KNOW, OR IS THE FACILITY OPEN TO THE USE OF THE GENERAL PUBLIC?	Other households only (not public) ..... 1 Public facility 2	2—►NEXT MODULE
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	

HOUSEHOLD CHARACTERISTICS		HC
HC1A. WHAT IS THE RELIGION OF THE HEAD OF THIS HOUSEHOLD?	Roman Catholic ..... 1 Protestant and Other Christian ..... 2 Muslim ..... 3 No Religion ..... 4 Others (*specify*)_____ 6	
HC2. HOW MANY ROOMS IN THIS HOUSEHOLD ARE USED FOR SLEEPING?	No. of rooms ..... __ __	
HC3. MAIN MATERIAL OF THE DWELLING FLOOR: *Record observation.*	Natural floor Earth/sand ..... 11 Dung ..... 12 Rudimentary floor Wood planks ..... 21 Palm/bamboo ..... 22 Finished floor Parquet or polished wood ..... 31 Vinyl or asphalt strips ..... 32 Ceramic tiles ..... 33 Cement ..... 34 Carpet ..... 35 Other (*specify*) 96	
HC4. MAIN MATERIAL OF THE ROOF. *Record observation.*	Natural roofing No Roof ..... 11 Grass/Thatch/Makuti ..... 12 Dung/Mud ..... 13 Rudimentary Roofing Corrugated iron (Mabati) ..... 21 Tin cans ..... 22 Finished roofing Asbestos sheet ..... 31 Concrete ..... 32 Tiles ..... 33 Other (*specify*) 96	
HC5. MAIN MATERIAL OF THE WALLS. *Record observation.*	Natural walls No walls ..... 11 Cane/palm/trunks ..... 12 Dirt ..... 13 Rudimentary walls Bamboo with mud ..... 21 Stone with mud ..... 22 Uncovered adobe ..... 23 Plywood ..... 24 Cardboard ..... 25 Reused wood ..... 26 Finished walls Cement ..... 31 Stone with lime/cement ..... 32 Bricks ..... 33 Cement blocks ..... 34 Covered adobe ..... 35 Wood planks/shingles ..... 36 Other (*specify*) 96	2—►WS7 8—►WS7

HC6. WHAT TYPE OF FUEL DOES YOUR HOUSEHOLD MAINLY USE FOR COOKING?	Electricity ..... 01 Liquefied Petroleum Gas (LPG) ..... 02 Natural gas ..... 03 Biogas ..... 04 Kerosene ..... 05 Coal / Lignite ..... 06 Charcoal ..... 07 Wood ..... 08 Straw/shrubs/grass ..... 09 Animal dung ..... 10 Agricultural crop residue ..... 11 Other (*specify*) ..... 96 No food cooked in household 97	01—►HC9 02—►HC9 03—►HC9 04—►HC9 05—►HC9 97—►HC9
HC8. IS THE COOKING USUALLY DONE IN THE INDOOR LIVING SPACE, IN A SEPARATE KITCHEN/BUILDING, OR OUTDOORS?	In a room used for living/sleeping ..... 1 In a separate room used as kitchen ..... 2 In a separate building used as kitchen ..... 3 Outdoors ..... 4 Other (*specify*) 6	
HC9. DOES YOUR HOUSEHOLD HAVE:	Yes No	
A. ELECTRICITY?	Electricity 1 2	
B. RADIO?	Radio 1 2	
C. COLOR TELEVISION?	Color Television 1 2	
D. B&W TELEVISION?	B&W Television 1 2	
E. MOBILE TELEPHONE?	Mobile Telephone 1 2	
F. NON-MOBILE TELEPHONE?	Non-Mobile Telephone 1 2	
G. REFRIGERATOR?	Refrigerator 1 2	
H. BLENDER OR MIXER?	Blender or Mixer 1 2	
I. WATER HEATER?	Water Heater 1 2	
J. WASHING MACHINE?	Washing Machine 1 2	
K. COMPUTER?	Computer 1 2	
L. INTERNET CONNECTION?	Internet connection 1 2	
M. VCR, VCD OR DVD?	VCR, VCD or DVD 1 2	
N. AIR CONDITIONER?	Air Conditioner 1 2	
O. SEWING MACHINE?	Sewing Machine 1 2	
HC10. DOES ANY MEMBER OF YOUR HOUSEHOLD OWN:	Yes No	
A. A WATCH?	Watch 1 2	
B. A BICYCLE?	Bicycle 1 2	
C. A MOTORCYCLE OR SCOOTER?	Motorcycle/Scooter 1 2	
D. AN ANIMAL-DRAWN CART?	Animal drawn-cart 1 2	
E. A CAR OR TRUCK?	Car/Truck 1 2	
F. A BOAT WITH A MOTOR?	Boat with motor 1 2	
HC10A. DO YOU OR SOMEONE LIVING IN THIS HOUSEHOLD OWN THIS DWELLING, OR DO YOU RENT THIS DWELLING?	Own ..... 1 Rent ..... 2 Rent free/squatter/other 3	
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 ACRES OF AGRICULTURAL LAND DO MEMBERS OF THIS HOUSEHOLD OWN? *If less than 1, record "00". If more than 97, record '97'. If unknown, record '98'.*	Acres ..... ___ ___	
HC13. DOES THIS HOUSEHOLD OWN ANY LIVESTOCK, HERDS, OR FARM ANIMALS?	Yes ..... 1 No 2	2—►NEXT MODULE
HC14. HOW MANY OF THE FOLLOWING ANIMALS DOES THIS HOUSEHOLD HAVE? A. LOCAL CATTLE (INDIGENOUS)? B. MILK COWS OR BULLS? C. HORSES, DONKEYS, OR MULES? D. GOATS? E. SHEEP? F. CHICKENS? *If none, record '00'.* *If more than 97, record '97'.* *If unknown, record '98'.*	Cattle ..... ___ ___ Milk cows or bulls ..... ___ ___ Horses, donkeys, or mules ..... ___ ___ Goats ..... ___ ___ Sheep ..... ___ ___ Chickens ..... ___ ___	

INDOOR RESIDUAL SPRAYING		IR
IR1. AT ANY TIME IN THE PAST 12 MONTHS, HAS ANYONE SPRAYED THE INTERIOR WALLS OF YOUR DWELLING AGAINST MOSQUITOES?	Yes ..... 1 No 2	2—►NEXT MODULE
IR2. HOW MANY MONTHS AGO WAS THE HOUSE SPRAYED? *If less than one month, record "00".*	Months ago ..... __ __	
IR3. WHO SPRAYED THE HOUSE?	Government worker/program ..... 1 Private company ..... 2 Household member ..... 3 Other (*specify*) ..... 6 DK 8	

ITN		TN
TN1. DOES YOUR HOUSEHOLD HAVE ANY MOSQUITO NETS THAT CAN BE USED WHILE SLEEPING?	Yes .... 1 No 2	2→NEXT MODULE
TN2. HOW MANY MOSQUITO NETS DOES YOUR HOUSEHOLD HAVE?	Months ago .... __ __	
TN2A. *Ask the respondent to show you the nets in the household. If unable to observe the net(s), ask the respondent to determine the brand/type of net.* *If more than 3 nets, use additional questionnaire(s).* *Tick here if additional questionnaire is used* [ ]		

	1ST NET	2ND NET	3RD NET
TN3. *Mosquito net observed?*	Observed .... 1 Not observed 2	Observed .... 1 Not observed 2	Observed .... 1 Not observed 2
TN4. HOW MANY MONTHS AGO DID YOUR HOUSEHOLD OBTAIN THE MOSQUITO NET? *If less than one month, record "00"*	Months ago .... __ __ 37+ months ago .... 95 Not sure 98	Months ago .... __ __ 37+ months ago .... 95 Not sure 98	Months ago .... __ __ 37+ months ago .... 95 Not sure 98
TN5. *Observe or ask the brand/ type of mosquito net*	Long-lasting treated nets Perma Net .... 11 Olyset .... 12 Supernet .... 13 Other (*specify*) .... 16 DK brand .... 18 Pre-treated nets Supanet .... 21 Other (*specify*) .... 26 DK brand .... 28 Other net (*specify*) ______ 31 DK brand/type 98	Long-lasting treated nets Perma Net .... 11 Olyset .... 12 Supernet .... 13 Other (*specify*) .... 16 DK brand .... 18 Pre-treated nets Supanet .... 21 Other (specify) .... 26 DK brand .... 28 Other net (*specify*) ______ 31 DK brand/type 98	Long-lasting treated nets Perma Net .... 11 Olyset .... 12 Supernet .... 13 Other (*specify*) .... 16 DK brand .... 18 Pre-treated nets Supanet .... 21 Other (*specify*) .... 26 DK brand .... 28 Other net (*specify*) ______ 31 DK brand/type 98
TN5A. WHERE DID YOU GET THE MOSQUITO NET? ______ (Name of place)	Public sector Govt. hospital .... 11 Govt. health centre ... 12 Govt. health post/ Dispensary .... 13 Village hlth worker .... 14 Mobile/outreach clinic .... 15 Other public (*specify*)______ 16 Private medical sector Private hospital/clinic21 Private physician ...... 22 Private pharmacy .... 23 Mobile clinic .... 24 Other private medical (*specify*)______ 26 Other source Relative or friend ...... 31 Shop .... 32 Trad. practitioner ..... 33 Other (*specify*)______96 DK 98	Public sector Govt. hospital .... 11 Govt. health centre ... 12 Govt. health post/ Dispensary .... 13 Village hlth worker .... 14 Mobile/outreach clinic .... 15 Other public (*specify*)______ 16 Private medical sector Private hospital/clinic21 Private physician ...... 22 Private pharmacy .... 23 Mobile clinic .... 24 Other private medical (*specify*)______ 26 Other source Relative or friend ...... 31 Shop .... 32 Trad. practitioner ..... 33 Other (*specify*)______96 DK 98	Public sector Govt. hospital .... 11 Govt. health centre ... 12 Govt. health post/ Dispensary .... 13 Village hlth worker .... 14 Mobile/outreach clinic .... 15 Other public (*specify*)______ 16 Private medical sector Private hospital/clinic21 Private physician ...... 22 Private pharmacy .... 23 Mobile clinic .... 24 Other private medical (*specify*)______ 26 Other source Relative or friend ...... 31 Shop .... 32 Trad. practitioner ..... 33 Other (*specify*)______96 DK 98

TN5B. HOW MUCH DID YOU PAY FOR THE MOSQUITO NET?	Shillings .....__ __ __ __ Free .....9995 DK.....9998	Shillings .....__ __ __ __ Free .....9995 DK.....9998	Shillings .....__ __ __ __ Free .....9995 DK.....9998
TN6. *Check TN5 for type of net*	[ ] Long-lasting—►TN10 [ ] Pretreated—►TN8 [ ] Else—►Continue	[ ] Long-lasting—►TN10 [ ] Pretreated—►TN8 [ ] Else—►Continue	[ ] Long-lasting—►TN10 [ ] Pretreated—►TN8 [ ] Else—►Continue
TN7. WHEN YOU GOT THE NET, WAS IT TREATED WITH AN INSECTICIDE TO KILL OR REPEL MOSQUITOS?	Yes.....1 No.....2 DK/Not sure.....8	Yes.....1 No.....2 DK/Not sure.....8	Yes.....1 No.....2 DK/Not sure.....8
TN8. SINCE YOU GOT THE MOSQUITO NET, WAS IT EVER SOAKED OR DIPPED IN A LIQUID TO KILL OR REPEL MOSQUITOS?	Yes.....1 No.....2 —►TN10 DK/Not sure.....8 —►TN10	Yes.....1 No.....2 —►TN10 DK/Not sure.....8 —►TN10	Yes.....1 No.....2 —►TN10 DK/Not sure.....8 —►TN10
TN9. HOW MANY MONTHS AGO WAS THE NET LAST SOAKED OR DIPPED? *If less than one month, record "00"*	Months ago ..... ___ ___ More than 24 mo. ago .95 Not sure.....98	Months ago ..... ___ ___ More than 24 mo. ago .95 Not sure.....98	Months ago ..... ___ ___ More than 24 mo. ago .95 Not sure.....98
TN10. DID ANYONE SLEEP UNDER THIS MOSQUITO NET LAST NIGHT?	Yes.....1 No.....2 —►TN12 DK/Not sure.....8 —►TN12	Yes.....1 No.....2 —►TN12 DK/Not sure.....8 —►TN12	Yes.....1 No.....2 —►TN12 DK/Not sure.....8 —►TN12
TN11. WHO SLEPT UNDER THIS MOSQUITO NET LAST NIGHT? *Record the person's line number from the household listing form* *If someone not in the household list slept under the mosquito net, record "00"*	Name..... Line no..... ___ ___ Name..... Line no..... ___ ___ Name..... Line no..... ___ ___ Name..... Line no..... ___ ___	Name..... Line no..... ___ ___ Name..... Line no..... ___ ___ Name..... Line no..... ___ ___ Name..... Line no..... ___ ___	Name..... Line no..... ___ ___ Name..... Line no..... ___ ___ Name..... Line no..... ___ ___ Name..... Line no..... ___ ___
TN12.	*Go back to TN3 for next net. If no more nets, go to next module*	*Go back to TN3 for next net. If no more nets, go to next module*	*Go back to TN3 for next net. If no more nets, go to next module*

ORPHANED & VULNERABLE CHILDREN		**OV**
OV1. Check HL5: any children 0-17? [ ] *Yes —► Continue to OV2* [ ] *No —► Child Labour Module*		
OV2. I WOULD LIKE YOU TO THINK BACK OVER THE PAST 12 MONTHS. HAS ANY USUAL MEMBER OF YOUR HOUSEHOLD DIED IN THE LAST 12 MONTHS?	Yes ..... 1 No 2	2—►OV5
OV3. (OF THOSE WHO DIED IN THE PAST 12 MONTHS) WERE ANY OF THESE PEOPLE BETWEEN THE AGES OF 18 AND 59?	Yes ..... 1 No 2	2—►OV5
OV4. (OF THOSE WHO DIED IN THE PAST 12 MONTHS AND WERE BETWEEN THE AGES OF 18 AND 59) WERE ANY OF THESE PEOPLE VERY SICK FOR 3 OF THE 12 MONTHS BEFORE HE/SHE DIED?	Yes ..... 1 No 2	1—►OV8
OV5. Return to the Household Listing and check the following: *OV5A. Check HL9 and HL11.* [ ] *At least one mother or father dead. —► Go to OV8* [ ] *No mother or father dead*		
OV5B. Check HL8A. [ ] *At least one adult aged 18-59 very sick 3 of last 12 months —► Go to OV8* [ ] *No adult aged 18-59 very sick 3 of last 12 months*		
OV5C. Check HL10A and HL12A. [ ] *At least one mother or father very sick 3 of last 12 months —► Go to OV8* [ ] *No mother or father very sick 3 of last 12 months —► Go to Child Labour Module*		

OV8. *List all children aged 0-17 below. Record names, line numbers and ages of all children, beginning with the first child and continue in order in which listed in the household listing module. Use an additional questionnaire if there are more than 4 children age 0-17 in the household. Ask all questions for one child before moving to the next child.*

Tick here if additional questionnaire is used [ ]

	1ST CHILD	2ND CHILD	3RD CHILD	4TH CHILD
Name (from HL2)	_____	_____	_____	_____
Line number (from HL1)	_____	_____	_____	_____
Age (from HL5)	_____	_____	_____	_____

I WOULD LIKE TO ASK YOU ABOUT ANY FORMAL, ORGANIZED HELP OR SUPPORT THAT YOUR HOUSEHOLD MAY HAVE RECEIVED FOR (name) AND FOR WHICH YOU DID NOT HAVE TO PAY. BY FORMAL ORGANIZED SUPPORT I MEAN HELP PROVIDED BY SOMEONE WORKING FOR A PROGRAM. THIS PROGRAM COULD BE GOVERNMENT, PRIVATE, RELIGIOUS, CHARITY, OR COMMUNITY-BASED. REMEMBER THIS SHOULD BE SUPPORT FOR WHICH YOU DID NOT PAY.

OV10. NOW I WOULD LIKE TO ASK YOU ABOUT THE SUPPORT YOUR HOUSEHOLD RECEIVED FOR (*name*). IN THE LAST 12 MONTHS, HAS YOUR HOUSEHOLD RECEIVED ANY MEDICAL SUPPORT FOR (*name*), SUCH AS MEDICAL CARE, SUPPLIES OR MEDICINE?	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8
OV11. IN THE LAST 12 MONTHS, HAS YOUR HOUSEHOLD RECEIVED ANY EMOTIONAL OR PSYCHOLOGICAL SUPPORT FOR (*name*), SUCH AS COMPANIONSHIP, COUNSELING FROM A TRAINED COUSELOR, OR SPIRITUAL SUPPORT, WHICH YOU RECEIVED AT HOME?	Yes..... 1 No..... 2 —►OV13 DK..... 8	Yes..... 1 No..... 2 —►OV13 DK..... 8	Yes..... 1 No..... 2 —►OV13 DK..... 8	Yes..... 1 No..... 2 —►OV13 DK..... 8
OV12. DID YOUR HOUSEHOLD RECEIVE ANY OF THIS SUPPORT IN THE PAST 3 MONTHS?	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8
OV13. IN THE LAST 12 MONTHS, HAS YOUR HOUSEHOLD RECEIVED ANY MATERIAL SUPPORT FOR (*name*), SUCH AS CLOTHING, FOOD OR FINANCIAL SUPPORT?	Yes..... 1 No..... 2 —►OV15 DK..... 8	Yes..... 1 No..... 2 —►OV15 DK..... 8	Yes..... 1 No..... 2 —►OV15 DK..... 8	Yes..... 1 No..... 2 —►OV15 DK..... 8
OV14. DID YOUR HOUSEHOLD RECEIVE ANY OF THIS SUPPORT IN THE PAST 3 MONTHS?	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8
OV15. IN THE LAST 12 MONTHS, HAS YOUR HOUSEHOLD RECEIVED ANY SOCIAL SUPPORT FOR (*name*), SUCH AS HELP IN HOUSEHOLD WORK, TRAINING FOR A CAREGIVER, OR LEGAL SERVICES?	Yes..... 1 No..... 2 —►OV17 DK..... 8	Yes..... 1 No..... 2 —►OV17 DK..... 8	Yes..... 1 No..... 2 —►OV17 DK..... 8	Yes..... 1 No..... 2 —►OV17 DK..... 8
OV16. DID YOUR HOUSEHOLD RECEIVE ANY OF THIS SUPPORT IN THE PAST 3 MONTHS?	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8
OV17. *Check OV8 for age of child:*	[ ] *Age 0-4* —►*Next child* [ ] *Age 5-17* —► *OV18*	[ ] *Age 0-4* —►*Next child* [ ] *Age 5-17* —► *OV18*	[ ] *Age 0-4* —►*Next child* [ ] *Age 5-17* —► *OV18*	[ ] *Age 0-4* —►*Next child* [ ] *Age 5-17* —► *OV18*
OV18. IN THE LAST 12 MONTHS, HAS YOUR HOUSEHOLD RECEIVED ANY SUPPORT FOR (*name's*) SCHOOLING, SUCH AS ALLOWANCE, FREE ADMISSION, BOOKS OR SUPPLIES?	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8	Yes..... 1 No..... 2 DK..... 8

CHILD LABOUR **CL**

To be administered for children in the household age 5 through 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.	CL2. Name and age		CL3. DURING THE PAST WEEK, DID (name) DO ANY KIND OF WORK FOR SOMEONE WHO IS NOT A MEMBER OF THIS HOUSEHOLD? *If yes:* PROBE FOR (PAY IN CASH OR KIND) OR UNPAID? 1 Yes, for pay (cash or kind) 2 Yes, unpaid 3 No —► 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? *If more than one job, include all hours at all jobs*	CL5. DURING THE PAST WEEK, DID (*name*) FETCH WATER OR COLLECT FIREWOOD FOR HOUSEHOLD USE? 1 Yes 2 No —► To CL7		CL6. *If yes:* SINCE LAST (*day of the week*), ABOUT HOW MANY HOURS DID HE/SHE FETCH WATER OR COLLECT FIREWOOD FOR HOUSEHOLD USE?	CL7. DURING THE PAST WEEK, DID (*name*) DO ANY PAID OR UNPAID WORK ON A FAMILY FARM OR IN A FAMILY BUSINESS OR SELLING GOODS? Include work for a business run by the child, alone or with one or more partners. 1 Yes 2 No —► CL9		CL8. *If yes:* SINCE LAST (*day of the week*), ABOUT HOW MANY HOURS DID HE/SHE DO THIS WORK FOR HIS/HER FAMILY OR HIMSELF/HERSELF?	CL9. DURING THE PAST WEEK, DID (*name*) HELP WITH HOUSEHOLD CHORES SUCH AS SHOPPING, CLEANING, WASHING CLOTHES, COOKING; OR CARING FOR CHILDREN, OLD OR SICK PEOPLE? 1 Yes 2 No —► Next Line		CL10. *If yes:* SINCE LAST (*day of the week*), ABOUT HOW MANY HOURS DID HE/SHE SPEND DOING THESE CHORES?
			YES		NO										
LINE	NAME	AGE	PAID	UNPAID		NO. HOURS	YES	NO	NO. HOURS	YES	NO	NO. HOURS	YES	NO	NO. HOURS
01			1	2	3		1	2		1	2		1	2	
02			1	2	3		1	2		1	2		1	2	
03			1	2	3		1	2		1	2		1	2	
04			1	2	3		1	2		1	2		1	2	
05			1	2	3		1	2		1	2		1	2	
06			1	2	3		1	2		1	2		1	2	
07			1	2	3		1	2		1	2		1	2	
08			1	2	3		1	2		1	2		1	2	
09			1	2	3		1	2		1	2		1	2	
10			1	2	3		1	2		1	2		1	2	
11			1	2	3		1	2		1	2		1	2	
12			1	2	3		1	2		1	2		1	2	
13			1	2	3		1	2		1	2		1	2	
14			1	2	3		1	2		1	2		1	2	
15			1	2	3		1	2		1	2		1	2	

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, and age 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.
RANK	LINE	NAME	M	F	AGE
1			1	2	
2			1	2	
3			1	2	
4			1	2	
5			1	2	
6			1	2	
7			1	2	
8			1	2	

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 CD9; write down the rank number of the child and continue with 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.

CD8.	TOTAL NUMBER OF ELIGIBLE CHILDREN 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 _____

CHILD DISCIPLINE		CD
Identify eligible child aged 2 to 14 in the household using the tables on the preceding page, according to your instructions.		
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_____	
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 YOU 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. EXPLAINED WHY SOMETHING (THE BEHAVIOR) 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 LIKE THAT.	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	
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	

DISABILITY **DA**

To be administered for all children 2 through 9 years old 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 CHILDREN IN THIS HOUSEHOLD AGED 2 THROUGH 9 HAS ANY OF THE HEALTH CONDITIONS I AM GOING TO MENTION TO YOU.

DA1. *Line no.*	DA2. *Child's name and age*		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 CONSCIOUSNESS?		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. (*For 3-9 year olds*): IS (*name*)'S SPEECH IN ANY WAY DIFFERENT FROM NORMAL (NOT CLEAR ENOUGH TO BE UNDERSTOOD BY PEOPLE OTHER THAN THE IMMEDIATE FAMILY)?		DA12. (*For 2-year-olds*): 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	AGE	Y	N	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	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	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	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	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	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	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	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	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	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	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	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	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	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	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	1	2

HANDWASHING FACILITY		HW
HW1. WE WOULD LIKE TO SEE THE PLACE WHERE MEMBERS OF YOUR HOUSEHOLD MOST OFTEN WASH THEIR HANDS? MAY I SEE THIS PLACE?	Place for hand washing observed ..... 1 No specific place for hand washing ..... 2 No permission to see 3	 2—►HW5 3—►HW5
HW1A. Place where household members most often wash their hands? *Ask to see and observe. Record only one hand washing place. This is the hand washing place most often used by household members. Estimate the distance of "within 10 paces".*	Inside Toilet facility ..... 01 Kitchen/Cooking place ..... 02 Within 10 paces of Both toilet and kitchen ..... 03 Toilet facility (but farther from kitchen) ..... 04 Kitchen (but farther from toilet facility) ..... 05 Elsewhere Elsewhere in home or yard ..... 06 Elsewhere outside the yard ..... 07 Other (*specify*) 96	
HW2. Water available at the place for hand washing? *If there is a tap or pump at the specific place for hand washing, open the tap or operate the pump to see if water is coming out. If there is a bucket, basin or other type of water container, examine to see whether water is present in the container. Record observation.*	Water available ..... 1 Water not available 2	
HW3. Soap or detergent present at the specific place for hand washing? *Record observation. Circle all that apply.*	Bar soap ..... A Detergent (powder/liquid/paste) ..... B Liquid soap ..... C None ..... Y	A—►NEXT MODULE B—►NEXT MODULE C—►NEXT MODULE D—►NEXT MODULE
HW5. DO YOU HAVE ANY SOAP OR DETERGENT IN YOUR HOUSEHOLD FOR WASHING HANDS?	Yes ..... 1 No 2	 2—►NEXT MODULE
HW6. CAN YOU PLEASE SHOW IT TO ME? *Record observation. Circle all that apply*	Bar soap ..... A Detergent (powder/liquid/paste) ..... B Liquid soap ..... C Not able/Does not want to show ..... Y	

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? MAY I TEST A SAMPLE OF THIS SALT? *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 ..... 6 Salt not tested 7	

SI1A. Record the time.	Hour and minutes	__ __ : __ __

SI2. *Does any eligible woman age 15-49 reside in the household?*
Check household listing, column HL6.You should have a questionnaire with the Information Panel filled in for each eligible woman.

[ ] *Yes. —► Go to women's Questionnaire*
to administer the questionnaire to the first eligible woman.. If this woman has a child under age 5, continue to interview her on her under-5 child(ren)

[ ] *No. —► Continue.*

SI3. *Does any child under the age of 5 reside in the household?*
Check household listing, column HL8. You should have a questionnaire with the Information Panel filled in for each eligible child.

[ ] *Yes. —► Go to Under-5 Questionnaire*
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 tally the number of interviews completed on the cover page.

REMARKS AND OBSERVATIONS

SUPERVISOR
FIELD EDITOR
FIELD MONITORS/CO-ORDINATORS
OFFICE EDITOR

QUESTIONNAIRE FOR CHILDREN UNDER FIVE

UNDER-FIVE CHILD INFORMATION 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.*	
UF-A. Province Name & Code: _____	UF-B. County Name & Code: _____
UF-C. District Name & Code: _____	
UF1. Cluster 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 name and number: _____	UF8. Day/Month/Year of interview: ___ ___ /___ ___ / ___ ___ ___ ___

Repeat greeting if not already read to this respondent:

WE ARE FROM KENYA NATIONAL BUREAU OF STATISTICS (KNBS). WE ARE WORKING ON A PROJECT CONCERNED WITH FAMILY HEALTH AND EDUCATION. I WOULD LIKE TO TALK TO YOU ABOUT THIS. THE INTERVIEW USUALLY TAKES AROUND 20-25 MINUTES. ALL THE INFORMATION WE OBTAIN WILL REMAIN STRICTLY CONFIDENTIAL AND YOUR ANSWERS WILL NEVER BE IDENTIFIED. ALSO, YOU ARE NOT OBLIGED TO ANSWER ANY QUESTION YOU DON'T WANT TO, AND YOU MAY WITHDRAW FROM THE INTERVIEW AT ANY TIME. MAY I START NOW?

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.

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

Interviewer/editor/supervisor notes: *Use this space to record notes about the interview with this household, such as call-back times, incomplete individual interview forms, number of attempts to re-visit, etc.*

UF91. Supervisor (name and number): Name_____	UF92. Field edited by (name and number): Name_____
UUF93. Data Entry (name and number): Name_____	

UF9A. *Record the time.*	Hour and minutes.....__ __ : __ __	
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* *MONTH AND YEAR MUST BE RECORDED.*	Date of birth: Day ..... __ __ DK day ..... 98 Month..... __ __ Year.....__ __ __ __	
UF11. HOW OLD WAS (*name*) AT HIS/HER LAST BIRTHDAY? *Record age in completed years.*	Age in completed years.....__	

BIRTH REGISTRATION AND EARLY LEARNING		BR
BR1. DOES (*name*) HAVE A BIRTH CERTIFICATE? MAY I SEE IT?	Yes, seen ..... 1 Yes, not seen ..... 2 No ..... 3 DK 8	1—►BR5
BR2. HAS (*name's*) BIRTH BEEN NOTIFIED OR REGISTERED WITH THE CIVIL AUTHORITIES?	Yes ..... 1 No ..... 2 DK 8	1—►BR5 8—►BR4
BR3. WHY IS (*name's*) 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 Does not know where to register ..... 5 Other (*specify*) ..... 6 DK 8	
BR4. DO YOU KNOW HOW TO REGISTER YOUR CHILD'S BIRTH?	Yes ..... 1 No 2	
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 ORGANIZED 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. SINCE (*day of the week*), EXCLUDING TODAY, 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*): *For each item:* *If yes, ask:* WHO ENGAGED IN THIS ACTIVITY WITH (*name*) - THE MOTHER, THE CHILD'S FATHER OR ANOTHER ADULT MEMBER OF THE HOUSEHOLD (INCLUDING THE CARETAKER/ RESPONDENT)? *Circle all that apply.* BR8A. READ BOOKS, LOOK AT PICTURE BOOKS, OR TELL STORIES TO/WITH (*name*)? BR8D. TAKE (*name*) OUTSIDE THE HOME, COMPOUND, YARD OR ENCLOSURE? BR8E. PLAY WITH (*name*)? BR8F. NAME, COUNT, OR DRAW THINGS TO/WITH (*name*)?		Mother	Father	Other	No one	
	Books/Stories	A	B	X	Y	
	Take outside	A	B	X	Y	
	Play with	A	B	X	Y	
	Name/count	A	B	X	Y	

CHILD DEVELOPMENT		CE
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	1—►BR5
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 OR OBJECTS FOUND OUTSIDE (SUCH AS BOWLS OR POTS, STICKS, ROCKS, ANIMAL SHELLS OR LEAVES)? HOMEMADE TOYS (SUCH AS DOLLS, CARS, OR OTHER TOYS MADE AT HOME)? TOYS THAT CAME FROM A SHOP? *If the respondent says "YES" to the categories above, then probe to learn specifically what the child plays with to ascertain the response*	Y N DK Household objects or outside objects 1 2 8 Homemade toys 1 2 8 Toys that came from a shop 1 2 8	
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. ON HOW MANY DAYS IN THE PAST WEEK WAS (*name*): LEFT ALONE? LEFT IN THE CARE OF ANOTHER CHILD (THAT IS, SOMEONE LESS THAN 10 YEARS OLD)? *If 'none' enter 0*	Number of days left alone .....__ Number of days left with other child .....__	
CE5. *Check UF11: Age of child 3 or 4?* [ ] *Age 0, 1 or 2 —► Go to Next Module* [ ] *Age 3 or 4 —► Continue with CE6*		

CE6. I WOULD LIKE TO ASK YOU SOME QUESTIONS ABOUT THE HEALTH AND DEVELOPMENT OF YOUR CHILD. CHILDREN DO NOT ALL DEVELOP AND LEARN AT THE SAME RATE. FOR EXAMPLE, SOME WALK EARLIER THAN OTHERS. THESE QUESTIONS ARE RELATED TO SEVERAL ASPECTS OF YOUR CHILD'S DEVELOPMENT. CAN (*name*) IDENTIFY/NAME AT LEAST TEN LETTERS OF THE ALPHABET?	Yes ..... 1 No ..... 2 DK 8	
CE7. CAN (*name*) ATTACH SOUNDS TO MOST OR MORE THAN HALF OF THE LETTERS?	Yes ..... 1 No ..... 2 DK 8	
CE8. CAN (*name*) READ AT LEAST FOUR SIMPLE, ONE-SYLLABLE, POPULAR WORDS?	Yes ..... 1 No ..... 2 DK 8	
CE9. IS (*name*) INTERESTED IN NUMBERS, COUNTING, SORTING OR ADDING?	Yes ..... 1 No ..... 2 DK 8	
CE10. DOES (*name*) KNOW THE NAME AND RECOGNIZE THE SYMBOL OF ALL NUMBERS FROM 1 TO 10 MOST OF THE TIME?	Yes ..... 1 No ..... 2 DK 8	
CE11. WHEN YOU COMPARE TWO NUMBERS UP TO 10, DOES (*name*) KNOW WHICH ONE IS BIGGER MOST OF THE TIME?	Yes ..... 1 No ..... 2 DK 8	
CE12. IS (*name*) ABLE TO USE AND MANIPULATE SMALL OBJECTS AND TOYS?	Yes ..... 1 No ..... 2 DK 8	
CE13. IS (*name*) SOMETIMES TOO TIRED, SLEEPY OR SICK TO PLAY?	Yes ..... 1 No ..... 2 DK 8	
CE14. IS (*name*) SOMETIMES TOO HUNGRY TO PLAY?	Yes ..... 1 No ..... 2 DK 8	
CE15. DOES (*name*) DO EVERYDAY ROUTINE ACTIVITIES WITHOUT BEING REMINDED? ACTIVITIES SUCH AS BRUSHING TEETH, TIDYING UP AFTER PLAY OR A MEAL, OR HELPING WITH CHORES? *If yes:* WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	

CE16. DOES (*name*) FOLLOW SIMPLE DIRECTIONS ON HOW TO DO SOMETHING CORRECTLY? *If yes:* WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	
CE17. IS (name) ABLE TO WORK ON A TASK, INCLUDING PLAY TASKS, BY HIMSELF/HERSELF? If yes: WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	
CE18. DOES (name) PLAY WITH SIBLINGS OR OTHER CHILDREN FOR A CONSIDERABLE TIME WITHOUT GETTING INTO TROUBLE? If yes: WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	
CE19. DOES (*name*) SHOW RESPECT FOR OTHER CHILDREN? *Probe:* DOES (name) LISTEN TO WHAT ANOTHER CHILD HAS TO SAY AND RECOGNIZE THAT HE OR SHE MAY BE DIFFERENT OR WANT DIFFERENT THINGS? *If yes:* WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	
CE20. WHAT IS (*name*)'S ABILITY TO GET ALONG WITH OTHER CHILDREN? WOULD YOU SAY IT IS VERY GOOD, AVERAGE, OR POOR/BAD?	Very good ..... 1 Average ..... 2 Poor/Bad ..... 3 DK 8	
CE21. HOW OFTEN DOES (*name*) BULLY OTHER CHILDREN OR IS MEAN TO OTHER CHILDREN? *Probe:* DOES (*name*) OFTEN MAKE OTHER CHILDREN AFRAID OF HIM/HER, OR SAY MEAN/BAD WORDS TO OTHER CHILDREN? *If yes:* WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	

CE22. HOW OFTEN DOES (*name*) KICK, BITE, OR HIT OTHER CHILDREN OR ADULTS? *If yes:* WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	
CE23. DOES (name) OFTEN GET VERY EASILY/QUICKLY DISTRACTED? *If yes:* WOULD YOU SAY OFTEN OR SOMETIMES?	Often/Most of the time ..... 1 Sometimes ..... 2 Rarely or never ..... 3 DK 8	

VITAMIN A		VA
VA1. HAS (*name*) EVER RECEIVED A VITAMIN A CAPSULE (SUPPLEMENT) LIKE THIS ONE? *Show capsule or dispenser for different doses – 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 ..... 1 Sick child visit to health facility ..... 2 National Immunization Day campaign ..... 3 Other (*specify*) ..... 6 DK 8	

BREASTFEEDING		BF
BF1. HAS (*name*) EVER BEEN BREASTFED?	Yes ..... 1 No ..... 2 DK 8	 2 —►BF3 8 —►BF3
BF2. IS HE/SHE STILL BEING BREASTFED?	Yes ..... 1 No ..... 2 DK 8	
BF3. I WOULD LIKE TO ASK YOU ABOUT LIQUIDS THAT (*name*) MAY HAVE HAD YESTERDAY DURING THE DAY OR THE NIGHT. I AM INTERESTED IN WHETHER (name) HAD THE ITEM EVEN IF IT WAS COMBINED WITH OTHER FOODS. DID (*name*) DRINK OR EAT ANY (*item from list*): YESTERDAY, DURING THE DAY OR NIGHT? *Read each item aloud and record response before proceeding to the next item. Ask the number of times the child had infant formula, milk, yogurt and solid, semi-solid foods.*	Y N DK Vitamin supplements ..... 1 2 8 ORS 1 ..... 2 8 Plain water ..... 1 2 8 Infant formula ..... 1 2 8 Number of times ..... __ __ Milk ..... 1 2 8 Number of times ..... __ __ Juice ..... 1 2 8 Soup ..... 1 2 8 Any other liquid ..... 1 2 8 Yogurt ..... 1 2 8 Number of times ..... __ __ Porridge ..... 1 2 8 Solid or semi-solid food .... 1 2 8 Number of times ..... __ __	 2 OR 8 —►BF3E 2 OR 8 —►BF3F 2 OR 8 —►BF3J 2 OR 8 —►BF3L
BF3L. DID (*name*) DRINK ANYTHING FROM A BOTTLE WITH A NIPPLE YESTERDAY DURING THE DAY OR NIGHT?	Yes ..... 1 No ..... 2 DK 8	

CARE OF ILLNESS		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
CA1A. WAS THERE BLOOD IN THE STOOLS?	Yes ..... 1 No ..... 2 DK 8	
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.* CA2A. A FLUID MADE FROM A SPECIAL PACKET CALLED ORS? CA2B. HOMEMADE SUGAR AND SALT SOLUTION? CA2C. A PRE-PACKAGED ORS FLUID FOR DIARRHOEA?	Yes No DK A. Fluid from ORS packet ..... 1 2 8 B. Sugar and salt solution ..... 1 2 8 C. Pre-packaged ORS fluid 1 2 8	
CA2D. WAS ANYTHING (ELSE) GIVEN TO TREAT THE DIARRHOEA?	Yes ..... 1 No ..... 2 DK 8	 2—►CA3 8—►CA3
CA2E. WHAT (ELSE) WAS GIVEN TO TREAT THE DIARRHOEA? *Probe:* ANYTHING ELSE? *Record all treatments given*	Pill or Syrup Antibiotic ..... A Antimotility ..... B Zinc ..... C Other (Not antibiotic, antimotility or zinc) ..... D Unknown pill or syrup ..... E Injection Antibiotic ..... F Non-antibiotic ..... G Unknown injection ..... H Intravenous ..... I Home remedy/herbal medicine ..... J Other (*specify*) X	
CA2F. *Check CA2E: Zinc given?* [ ] *Yes.—► Continue with CA2G* [ ] *No.—► Go to CA3*		

CA2G. HOW MANY TIMES WAS (*name*) GIVEN ZINC?	Number of times ..... __ __	
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 DK 8	
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?	None ..... 1 Much less ..... 2 Somewhat less ..... 3 About the same ..... 4 More ..... 5 DK 8	
CA4B. WHERE DID YOU GET THE ORS PACKET FROM? _____ (Name of place)	Public Sector Government hospital ..... 21 Government health center ..... 22 Government dispensary ..... 23 Other public (*specify*) ..... 26 Private medical sector Mission hospital/clinic ..... 31 Private hospital/clinic ..... 32 Nursing/maternity home ..... 33 Pharmacy ..... 34 Other private medical (*specify*) ..... 36 Mobile clinic ..... 41 Community health worker ..... 42 Other source Shop ..... 51 Traditional practitioner ..... 52 Relative/friend ..... 53 Other (*specify*) ..... 96 DK 98	
CA4C. HOW MUCH DID YOU PAY FOR THE (*local name for ORS packet from CA2A*)?	Shillings ..... __ __ __ __ Free ..... 9995 DK 9998	
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—►CA12 8—►CA12
CA9. FROM WHERE DID YOU SEEK CARE? *Probe:* 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 Government hospital .....C Government health center .....D Government dispensary.....E Other public (*specify*) .....F Private medical sector Mission hospital/clinic .....G Private hospital/clinic.....H Nursing/maternity home ..... I Pharmacy..... J Other private medical (*specify*) .....K Mobile clinic ..... L Community health worker ..... M Other source Shop .....O Traditional practitioner .....P Relative/friend.....Q 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? *Probe:* ANYTHING ELSE? *Circle all medicines given.*	Antibiotic .....A Paracetamol/Panadol/Acetaminophen .....P Aspirin .....Q Ibupropfen.....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? _____ (*Name of place*)	Public Sector Government hospital ..... 21 Government health center ..... 22 Government dispensary..... 23 Other public (*specify*) ..... 26 Private medical sector Mission hospital/clinic ..... 31 Private hospital/clinic..... 32 Nursing/maternity home ..... 33 Pharmacy..... 34 Other private medical (*specify*) ..... 36 Mobile clinic ..... 41 Community health worker ..... 42 Other source Shop ..... 51 Traditional practitioner ..... 52 Relative/friend..... 53 Other (*specify*) ..... 96 DK 98	
CA11C. HOW MUCH DID YOU PAY FOR THE ANTIBIOTIC?	Shillings ..... __ __ __ __ Free ..... 9995 DK 9998	
CA12. *Check UF11: Child aged under 3?* [ ] *Yes. —► Continue with CA13* [ ] *No.—► Go to Next Module*		
CA13. THE LAST TIME (*name*) PASSED STOOLS, WHAT WAS DONE TO DISPOSE OF THE STOOLS?	Child used toilet/latrine..... 01 Put/rinsed into toilet or latrine ..... 02 Put/rinsed into drain or ditch..... 03 Thrown into garbage (solid waste) ..... 04 Buried ..... 05 Left in the open ..... 06 Other (*specify*) ..... 96 DK 98	

MALARIA		ML
ML1. IN THE LAST TWO WEEKS, 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—►NEXT MODULE 8—►NEXT MODULE
ML2. WAS (*name*) SEEN AT A HEALTH FACILITY DURING THIS ILLNESS?	Yes ..... 1 No ..... 2 DK 8	 2—►ML6 8—►ML6
ML3. DID (name) TAKE MEDICINE FOR FEVER OR MALARIA THAT WAS PROVIDED OR PRESCRIBED AT THE HEALTH FACILITY?	Yes ..... 1 No ..... 2 DK 8	 2—►ML5 8—►ML5
ML4. WHAT MEDICINE DID (name) TAKE THAT WAS PROVIDED OR PRESCRIBED AT THE HEALTH FACILITY? *Probe:* ANYTHING ELSE? *Circle all medicines mentioned.*	Anti-malarials: SP/Fansidar ..... A Chloroquine ..... B Amodiaquine ..... C Quinine ..... D Artemisinin-based combinations ..... 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 ..... C Quinine ..... D Artemisinin-based combinations ..... 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 Next Module*		
ML9. HOW LONG AFTER THE FEVER STARTED DID (*name*) FIRST TAKE (*name of anti-malarial from ML4 or ML7*)? *If multiple anti-malarials mentioned in ML4 or ML7, name all anti-malarial medicines mentioned.* *Record the code for the day on which the first anti-malarial was given.*	Same day ..... 0 Next day ..... 1 2 days after the fever ..... 2 3 days after the fever ..... 3 4 or more days after the fever ..... 4 DK 8	
ML9A. WHERE DID YOU GET THE (name of anti-malarial from ML4 or ML7)? If more than one anti-malarial is mentioned in ML4 or ML7, refer to the first anti-malarial given for the fever (the anti-malarial given on the day recorded in ML9). _____ (*Name of place*)	Public Sector Government hospital ..... 21 Government health center ..... 22 Government dispensary ..... 23 Other public (*specify*) ..... 26 Private medical sector Mission hospital/clinic ..... 31 Private hospital/clinic ..... 32 Nursing/maternity home ..... 33 Pharmacy ..... 34 Other private medical (*specify*) ..... 36 Mobile clinic ..... 41 Community health worker ..... 42 Other source Shop ..... 51 Traditional practitioner ..... 52 Relative/friend ..... 53 Other (*specify*) ..... 96 DK 98	
ML9B. HOW MUCH DID YOU PAY FOR THE (*name of anti-malarial from ML4 or ML7*)? *Refer to the same anti-malarial as in ML9A above*	Shillings ..... __ __ __ __ Free ..... 9996 DK 9998	

IMMUNIZATION											**IM**
If an immunization card is available, copy the dates in IM2-IM8B for each type of immunization or vitamin A dose recorded on the card. IM10-IM18 will only be asked when a card is not available or not shown.											
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											
IM4A. DPT1–HepB + Hib: 1 (Pentavalent-1) DPT1											
IM4B. DPT1–HepB + Hib: 2 (Pentavalent-2) DPT2											
IM4C. DPT1–HepB + Hib: 3 (Pentavalent-3) DPT3											
IM6. MEASLES MEASLES											
IM7. YELLOW FEVER YF											
IM8A. VITAMIN A (1) (*Last but one*) VITA1											
IM8B. VITAMIN A (2) (*Most recent*) 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), or Vitamin A supplements*	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 DK 8	
IM12. HAS (*name*) EVER BEEN GIVEN ANY POLIO VACCINATION, THAT IS, VACCINATION DROPS IN THE MOUTH TO PROTECT HIM/HER FROM GETTING DISEASES?	Yes ..... 1 No ..... 2 DK 8	2—►IM15 8—►M15
IM13. HOW OLD WAS HE/SHE WHEN THE FIRST DOSE WAS GIVEN – WITHIN THE TWO WEEKS AFTER BIRTH 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 VACCINATION INJECTIONS" – THAT IS, AN INJECTION IN THE THIGH OR BUTTOCKS – 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 participated in any of the following campaigns, national immunization days and/or vitamin A or child health days:		Y	N	DK	
IM19A. National Immunization Day in 2010?	National Imm Day 2010	1	2	8	
IM19B. Malezibora, in May 2010?	Malezibora May 2010	1	2	8	
IM19C. Malezibora, in November 2010?	Malezibora Nov 2010	1	2	8	

UT2. Record the time.	Hour and minutes __ __ : __ __

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 Under-5 Questionnaire 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.*

ANTHROPOMETRY MODULE		NA
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.		
AN0A. Measurer's identification code.	Measurer code ..... __ __	
AN0B. Result of measurement	Measured..... 1 Not present..... 2 Refused ..... 3 Other (*specify*) 6	 2—►ANS5 3—►ANS5 6—►ANS5
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. WHETHER THE CHILD IS HAVING OEDEMA? (OBSERVE AND RECORD)	Checked Oedema present ..... 1 Oedema not present ..... 2 Unsure ..... 3 Not checked (*specify reason*) 7	

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 participants 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.

REMARKS AND OBSERVATIONS

SUPERVISOR
FIELD EDITOR
FIELD MONITORS/CO-ORDINATORS
OFFICE EDITOR

Kenya, Nyamira County
Multiple Indicator Cluster Survey
2011