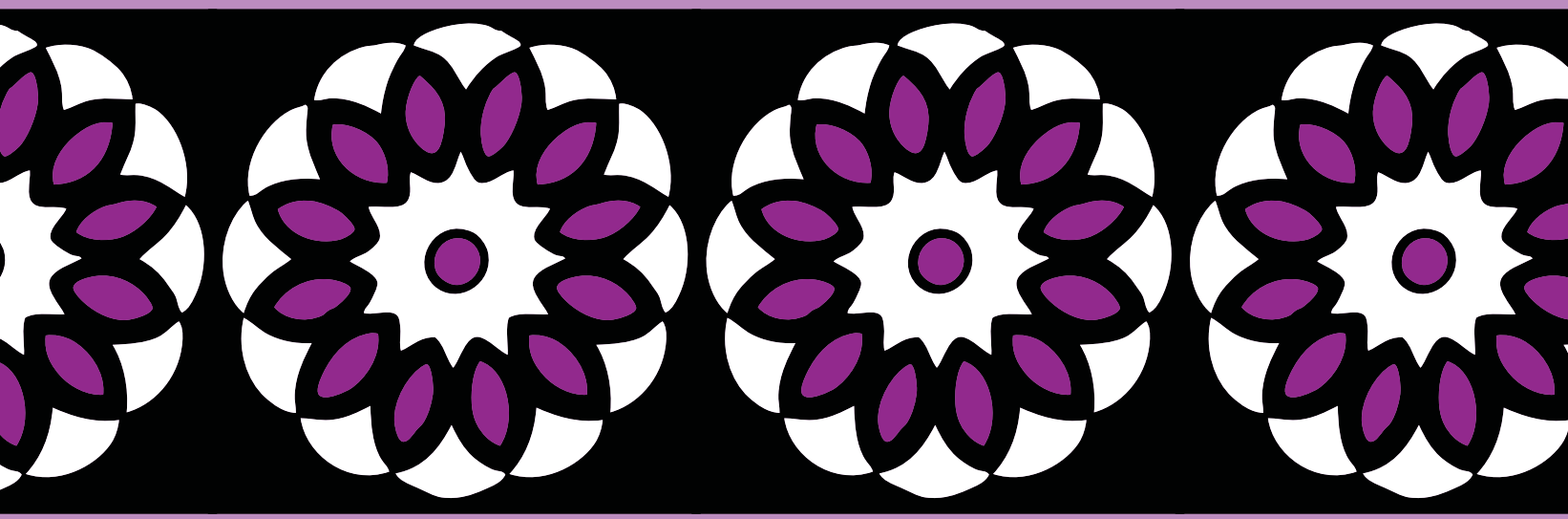
Kenya



Demographic and Health Survey

2008-09

KENYA
DEMOGRAPHIC AND HEALTH SURVEY
2008-09

Kenya National Bureau of Statistics
Nairobi, Kenya

National AIDS Control Council
Nairobi, Kenya

National AIDS/STD Control Programme
Nairobi, Kenya

Ministry of Public Health and Sanitation
Nairobi, Kenya

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This report summarises the findings of the 2008-09 Kenya Demographic and Health Survey (KDHS) carried out by the Kenya National Bureau of Statistics (KNBS) in partnership with the National AIDS Control Council (NACC), the National AIDS/STD Control Programme (NASCOP), the Ministry of Health and Sanitation, the Kenya Medical Research Institute (KEMRI), and the National Coordinating Agency for Population and Development (NCAPD). ICF Macro provided technical assistance for the survey through the USAID-funded MEASURE DHS programme, which is designed to assist developing countries to collect data on fertility, family planning, and maternal and child health. Funding for the KDHS was received from USAID/Kenya, the United Nations Population Fund (UNFPA), the United Nations Children's Fund (UNICEF), UNAIDS, and the World Bank. The opinions expressed in this report are those of the authors and do not necessarily reflect the views of the donor organisations.

Additional information about the survey may be obtained from the Kenya National Bureau of Statistics (KNBS), P.O. Box 30266, Nairobi (Telephone: 254.20.340.929; Fax: 254.20.315.977, email: director@cbs.go.ke).

Additional information about the DHS programme may be obtained from MEASURE DHS, ICF Macro, 11785 Beltsville Drive, Suite 300, Calverton, MD 20705, U.S.A. (Telephone: 1.301.572.0200; Fax: 1.301.572.0999; e-mail: reports@macrointernational.com).

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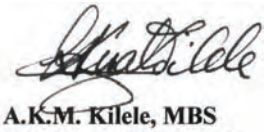
FOREWORD

The primary objective of the 2008-09 KDHS, like its predecessors, is to provide up-to-date information for policymakers, planners, researchers, and programme managers. This information guides the planning, implementation, monitoring, and evaluation of population and health programmes in Kenya. Specifically, the survey collects data on the following: fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood and maternal mortality, maternal and child health, malaria and use of mosquito nets, domestic violence, awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections (STIs), and HIV prevalence among adults.

The results of the current survey present evidence of a resumption of the fertility decline observed in the 1980s and the 1990s in Kenya. The total fertility rate (TFR) of 4.6 children per woman is the lowest rate ever recorded for Kenya. This decline in fertility could be attributed to an increase in the proportion of currently married women using contraception, which rose from 7 percent in 1978 to 46 percent in 2008-09.

Survey results also indicate a resumption in the decline of childhood mortality. The under-five-mortality rate decreased to 74 deaths per 1,000 live births in 2008-09, down from 115 deaths in 2003, while the infant mortality rate was 52 deaths per 1,000 live births, down from 77 deaths reported in 2003. The improvement in child survival is corroborated by increases in child vaccination coverage, in ownership and use of mosquito bednets, and in antenatal care coverage, all of which have been shown to reduce child mortality. Overall, 77 percent of children age 12-23 months are fully vaccinated, and only three percent have not received any vaccines. Use of mosquito nets is considered to be one of the strongest strategies in the fight against malaria. The survey found that 61 percent of households own at least one mosquito net (treated or untreated), and 56 percent report owning at least one insecticide-treated net (ITN). Fifty-one percent of children under five years and 53 percent of pregnant women slept under a mosquito net the night prior to the interview. The results also indicate that 9 in 10 mothers visited a health professional at least once for antenatal care for the most recent birth in the five-year period preceding the survey. These trends and a plethora of other important findings imply that the deterioration in the quality of life among the Kenyan population seen in earlier surveys has been reversed.

The Kenya National Bureau of Statistics (KNBS) wishes to acknowledge the contributions of the various agencies and institutions that culminated in the compilation of the 2008-09 Kenya Demographic and Health Survey (KDHS). The survey was conducted in close collaboration with the National Public Health Laboratory Services (NPHLS), the National Coordinating Agency for Population and Development (NCAPD), the Kenya Medical Research Institute (KEMRI), the National AIDS Control Council (NACC), ICF Macro, the United Nations Fund for Population Activities (UNFPA), the United Nations Children's Fund (UNICEF), and the United States Agency for International Development (USAID). These institutions provided technical, administrative, and logistical support to the process, for which we are exceedingly grateful. Special thanks go to staff of the Kenya National Bureau of Statistics, Ministry of Public Health and Sanitation, National AIDS Control Council (NACC), National Coordinating Agency for Population and Development (NCAPD), and Kenya Medical Research Institute (KEMRI) who coordinated the survey. Lastly, we acknowledge the financial support provided by USAID, UNFPA, the World Bank, and UNICEF.



A.K.M. Kilele, MBS
Director General

SUMMARY OF FINDINGS

The 2008-09 Kenya Demographic and Health Survey (KDHS) is a nationally representative sample survey of 8,444 women age 15 to 49 and 3,465 men age 15 to 54 selected from 400 sample points (clusters) throughout Kenya. It is designed to provide data to monitor the population and health situation in Kenya as a follow-up to the 1989, 1993, 1998, and 2003 KDHS surveys. The survey utilised a two-stage sample based on the 1999 Population and Housing Census and was designed to produce separate estimates for key indicators for each of the eight provinces in Kenya. Data collection took place over a three-month period, from 13 November 2008 to late February 2009.

The survey obtained detailed information on fertility levels, marriage, sexual activity, fertility preferences, awareness and use of family planning methods, breastfeeding practices, nutritional status of women and young children, childhood and maternal mortality, maternal and child health, and awareness and behaviour regarding HIV/AIDS. The survey also included collection information on ownership and use of mosquito nets, domestic violence, and HIV testing of adults.

The 2008-09 KDHS was implemented by the Kenya National Bureau of Statistics (KNBS) in collaboration with the Ministry of Public Health and Sanitation (including the National AIDS and STIs Control Programme-NASCOP), the Ministry of Medical Services, the Ministry of Gender, the Kenya Medical Research Institute (KEMRI), the National Coordinating Agency for Population Development (NCAPD), and the National AIDS Control Council (NACC). The National Public Health Laboratory Services assisted in recruitment and training of the health field workers, supported the voluntary counselling and testing of respondents, and implemented the HIV testing in the laboratory. Technical assistance was provided through the international MEASURE DHS programme at ICF Macro and NCAPD. Financial support for the survey was provided by the Government of Kenya and the U.S. Agency for International Development (USAID), the United Nations Population Fund (UNFPA), and the United Nations Children's Fund (UNICEF).

FERTILITY

Fertility Levels and Trends. One of the most important findings from the 2008-09 KDHS is that fertility rates—which had stagnated in the late 1990s—have declined somewhat. The total fertility rate of 4.6 children per woman for the three-year period preceding the survey (2006-2008) is lower than the rate of 4.9 derived from the 2003 KDHS and the rate of 5.0 from the 1999 Population and Housing Census.

Fertility Differentials. There are substantial differences in fertility levels throughout Kenya. The total fertility rate is considerably higher in the rural areas (5.2 children per woman) than in the urban areas (2.9 children per woman). Regional differences are also marked. Fertility is lowest in Nairobi province (2.8 children per woman) and highest in North Eastern province (5.9 children per woman). Fertility in Central province is also relatively low (3.4), compared with Western (5.6) and Nyanza (5.4) provinces.

Education of women is strongly associated with low fertility. The total fertility rate (TFR) decreases dramatically from 6.7 for women with no education to 3.1 for women with at least some secondary education. Over time, fertility has actually increased among women with no education and has only declined among those with primary incomplete education.

Unplanned Fertility. Despite a relatively high level of contraceptive use, the 2008-09 KDHS data indicate that unplanned pregnancies are common in Kenya. Overall, 17 percent of births in Kenya are unwanted, while 26 percent are mistimed (wanted later). Overall, the proportion of births considered unwanted has decreased slightly, compared with the 2003 KDHS, while the proportion mistimed has hardly changed at all.

Fertility Preferences. There have been some changes in fertility preferences since 2003. The proportion of currently married women who want another child soon has declined slightly (from 16 to 14 percent), as has the proportion who want another child later in life (from 29 to 27 percent). The proportion of married women who either want no more children or who have been sterilised increased from 49 percent in 2003 to 54 percent in 2008-09. The mean ideal family size among currently married women has declined from 4.3 to 4.0.

FAMILY PLANNING

Knowledge of Contraception. Knowledge of family planning is nearly universal, with 95 percent of all women and 97 percent of men age 15 to 49 knowing at least one modern method of family planning. Among all women, the most widely known methods of family planning are male condoms, injectables, and pills, with about 89 percent of all women saying that they know these methods. Around 6 in 10 women have heard of female sterilisation, the IUD, implants, and the female condom. With regard to traditional methods, about two-thirds of women have heard of the rhythm method, and just under half know about withdrawal, while folk methods are the least likely to be mentioned.

There has been little change in levels of knowledge of contraceptive methods among all women since 2003. The level of knowledge of female and male sterilisation and of the IUD has declined since 2003, while knowledge of implants and withdrawal has increased slightly.

Use of Contraception. Slightly less than half of married women (46 percent) in Kenya are using a method of family planning. Most are using a modern method (39 percent of married women), but 6 percent use a traditional method. Injectables are by far the most commonly used contraceptive method; they are used by 22 percent of married women, while pills are used by 7 percent of women, and female sterilisation and periodic abstinence are each used by 5 percent of married women.

Trends in Contraceptive Use. Contraceptive use has increased since 2003, from 39 to 46 percent of married women. Between 2003 and 2008-09, use of modern methods increased from 32 to 39 percent of married women, while use of traditional methods over the same time period actually decreased from 8 to 6 percent of married women. The 2008-09 KDHS corroborates trends in method mix, namely, a continuing increase in use of injectables and decrease in use of the pill as was the case in earlier KDHS surveys.

Differentials in Contraceptive Use. As expected, contraceptive use increases with level of education. Use of any method increases from 14 percent among married women with no education to 60 percent among women with at least some secondary education. Urban women (53 percent) are more likely to use contraception than rural women (43 percent).

Source of Modern Methods. In Kenya, public (government) facilities provide contraceptives to more than half (57 percent) of modern method users, while 36 percent are supplied through private medical sources, and 6 percent are supplied through other sources.

Contraception Discontinuation. Overall, more than one in three women (36 percent) discontinue use within 12 months of adopting a method. The 12-month discontinuation rates for injectables (29 percent) and periodic abstinence (33 percent) are lower than the rates for the pill (43 percent) and for the male condom (59 percent).

Unmet Need for Family Planning. One-quarter of currently married women in Kenya have an unmet need for family planning, which remains unchanged since 2003. Unmet need is evenly split between women who want to wait two or more years before having their next child (spacers) and those who want no more children (limiters).

MATERNAL HEALTH

Antenatal Care. The 2008-09 KDHS data indicate that 92 percent of women in Kenya receive antenatal care from a medical professional, either from doctors (29 percent) or nurses or midwives (63 percent). The 2008-09 data indicate a slight increase since 2003 in medical antenatal care coverage, from 88 percent to 92 percent.

Just over half of women (55 percent) received two or more tetanus toxoid injections dur-

ing pregnancy for their most recent birth in the five years preceding the survey, slightly higher than the 52 percent level in 2003. Taking into account previous injections, almost three in four births are protected against tetanus.

Delivery Care. Proper medical attention and hygienic conditions during delivery can reduce the risk of serious illness among mothers and their babies. The 2008-09 KDHS found that two out of five births (43 percent) are delivered in a health facility, while 56 percent are delivered at home. This represents a slight improvement in the proportion of births occurring at a health facility, from 40 percent in 2003 to 43 percent in 2008-09.

Similarly, 44 percent of births in Kenya are delivered under the supervision of a health professional, mainly a nurse or midwife. Traditional birth attendants continue to play a vital role in delivery, assisting with 28 percent of births. Relatives and friends assist in 21 percent of births. The proportion of births assisted by medically trained personnel increased slightly since 2003. Only 6 percent of births are delivered by Caesarean section, a slight increase since 2003.

Maternal Mortality. Data on the survival of respondents' sisters were used to calculate a maternal mortality ratio for the 10-year period before the survey, which was estimated as 488 maternal deaths per 100,000 live births. This is statistically insignificantly different from the rate of 414 maternal deaths per 100,000 live births for the ten-year period prior to the 2003 KDHS Thus, it is impossible to say with confidence that maternal mortality has changed.

CHILD HEALTH

Childhood Mortality. Data from the 2008-09 KDHS show remarkable declines in child mortality levels compared with the 2003 survey. Comparing data for the five-year period before each survey, under-five mortality has declined from 115 to 74 deaths per 1,000 births, while infant mortality has dropped from 77 to 52 deaths per 1,000 live births.

Childhood Vaccination Coverage. In the 2008-09 KDHS, mothers were able to show a health card with immunisation data for 70 percent of children age 12-23 months. Accordingly, estimates of coverage are based on both data from health cards and mothers' recall. The data show that 77 percent of children 12-23 months are fully vaccinated against the major childhood illnesses. Only 3 percent of children 12-23 months have not received any of the recommended immunisations. These results represent an improvement in immunisation coverage for children since 2003 when only 57 percent of children age 12-23 months were fully immunised.

Child Illness and Treatment. Among children under five years of age, 8 percent were reported to have had symptoms of acute respiratory illness in the two weeks preceding the survey, 24 percent had a fever in the two weeks preceding the survey, and 17 percent had diarrhoea. Around half of children with symptoms of acute respiratory illness, fever, or diarrhoea were taken to a health facility or provider for treatment. For example, 49 percent of children with diarrhoea were taken to a facility for treatment, while 78 percent were given either a solution prepared from oral rehydration salt (ORS) packets or increased fluids.

NUTRITION

Breastfeeding Practices. Breastfeeding is nearly universal in Kenya; 97 percent of children are breastfed. The median duration of breastfeeding is 21 months, similar to the duration documented in the 2003 KDHS. The 2008-09 KDHS data indicate that complementary feeding of children begins early. For example, among newborns less than two months of age, 24 percent are receiving complementary foods or liquids other than water. The median duration of exclusive breastfeeding is estimated at less than one month.

Bottle-feeding is common in Kenya; 25 percent of children under 6 months are fed with bottles with teats. Nevertheless, use of infant formula milk is minimal; only a tiny fraction of children below six months receive commercially produced infant formula.

Intake of Vitamin A. Ensuring that children between six months and 59 months receive enough vitamin A may be the single most effective child survival intervention, since deficiencies in this micronutrient can cause blindness and can increase the severity of infections such

as measles and diarrhoea. Overall, 77 percent of children age 6-35 months consumed vitamin A-rich foods in the day before the survey, and 30 percent of children age 6-59 months received a vitamin A supplement in the six months preceding the survey.

Nutritional Status of Children. Survey data show that the nutritional status of children under five has improved only slightly in the past few years. At the national level, 35 percent of children under five are stunted (low height-for-age), while 7 percent of children are wasted (low weight-for-height) and 16 percent are underweight (low weight-for-age).

Nutritional Status of Women. The mean body mass index (BMI) for women age 15-49 is 23, identical to what it was in 2003.

MALARIA

The country has witnessed an impressive rise in household ownership of insecticide-treated mosquito nets (ITNs). The 2008-09 KDHS shows that 56 percent of households have at least one ITN, up from 48 percent recorded in the 2007 Kenya Malaria Indicator Survey and 6 percent recorded in the 2003 KDHS.

Just under half of children under five (47 percent) were reported to have slept under an ITN the night before the survey, compared with only five percent in 2003. The 2008-09 KDHS data show that 49 percent of pregnant women slept under an ITN the night before the survey, and 14 percent received intermittent preventive treatment with antimalarial medication during antenatal care visits.

Among children with fever in the two weeks preceding the survey, 8 percent were given the recommended medicine, ACT, while 3 percent were given the second-line drug, sulfadoxine-pyrimethamine or SP. Only about half of children receive these drugs within a day of the onset of the fever.

HIV/AIDS

Awareness of AIDS. Almost all Kenyan women and men (more than 99 percent) have heard of AIDS. More than 90 percent of women and men indicate that the chances of getting the AIDS virus can be reduced by limiting sex to one faithful partner. Similarly, 75 percent of women and 81 percent of men age 15-49 know that using condoms can reduce the risk of contracting the HIV virus. As expected, the proportion of both women and men who know that abstaining from sex reduces the chances of getting the AIDS virus is high—88 percent among women and 90 percent among men.

Almost 9 in 10 women and men (87 percent) know that HIV can be transmitted by breastfeeding, and 7 in 10 know that the risk of maternal-to-child transmission can be reduced by the mother taking certain drugs during pregnancy. Ninety percent of women and 92 percent of men age 15-49 are aware that a healthy-looking person can have the AIDS virus.

Attitudes towards HIV-Infected People. Large majorities of Kenyan women and men (90 and 94 percent, respectively) express a willingness to care for a relative sick with AIDS in their own household, while far fewer (68 and 80 percent, respectively) say they would be willing to buy fresh vegetables from a vendor who has the AIDS virus. Survey results further indicate that 76 and 80 percent of women and men, respectively, believe that a female teacher who has the AIDS virus should be allowed to continue teaching in school. Finally, 54 percent of women and 69 percent of men say that if a member of their family got infected with the virus that causes AIDS, they would not necessarily want it to remain a secret.

HIV-Related Behavioural Indicators. Comparison of data from the 2008-09 KDHS with similar data from the 2003 KDHS indicates that there has been a slight increase in the age at first sexual experience. The median age at first sex has increased from 17.8 to 18.2 among women age 20-49 and 17.1 to 17.6 among men aged 20-54. Since the most important mechanism of HIV transmission is sexual intercourse, it is important to know the extent of multiple sexual partners. The 2008-09 KDHS data show that only 1 percent of women and 9 percent of men report having had more than one sexual partner in the 12 months prior to the survey.

HIV Prevalence. In the one-half of the households selected for the man's survey, all women and men who were interviewed were asked to voluntarily provide some drops of blood for HIV testing in the laboratory. Results indi-

cate that 6 percent of Kenyan adults age 15-49 are infected with HIV, only slightly lower than the level of 7 percent measured in the 2003 KDHS and the 2007 Kenya AIDS Indicator Survey (KAIS). HIV prevalence is 8 percent among women age 15-49 and 4 percent among men 15-49. The peak prevalence among women is at age 40-44 (14 percent), while prevalence among men is highest at age 35-39 (10 percent).

Patterns of HIV Prevalence. The HIV epidemic shows regional heterogeneity. Nyanza province has an overall prevalence of 14 percent, double the level of the next highest provinces—Nairobi and Western, at 7 percent each. All other provinces have levels between 3 percent and 5 percent overall, except North Eastern province where the prevalence is about 1 percent. HIV prevalence is by far the highest among women who are widowed (43 percent). Both women and men who are divorced or separated also have relatively high HIV prevalence (17 and 10 percent, respectively). Survey findings indicate that there is a strong relationship between HIV prevalence and male circumcision; 13 percent of men who are uncircumcised are HIV infected compared with 3 percent of those who are circumcised. Among couples who are married or living together, 6 percent are discordant, with one partner infected and the other uninfected.

GENDER-RELATED VIOLENCE

Violence Since Age 15. In the 2008-09 KDHS, women were asked if they had experienced violence since age 15. The data show that 39 percent of women have experienced violence since they were 15 and one in four reported experiencing violence in the 12 months preceding the survey. The main perpetrators are husbands, and to a lesser extent, teachers, mothers, fathers, and brothers.

Marital Violence. Thirty percent of ever-married women report having experienced emotional violence by husbands, 37 percent report physical violence, and 17 percent report sexual violence. Almost half (47 percent) of ever-married women report suffering emotional, physical, or sexual violence, while 10 percent have experienced all three forms of violence by their current or most recent husband. The factor most strongly related to marital violence is husband's alcohol use; violence is 2-3 times more prevalent among women who say their husbands get drunk often compared with those whose husbands do not drink.

Attitudes Towards Marital Violence. To gauge the acceptability of domestic violence, women and men interviewed in the 2008-09 KDHS were asked whether they thought a husband would be justified in hitting or beating his wife in each of the following five situations: if she burns the food; if she argues with him; if she goes out without telling him; if she neglects the children; and if she refuses to have sexual relations with him. Results show that 53 percent of Kenyan women and 44 percent of men agree that at least one of these factors is sufficient justification for wife beating.

Female Genital Cutting. Survey data show that there has been a gradual decline in the proportion of Kenyan women who are circumcised, from 38 percent in 1998 to 32 percent in 2003 and to 27 percent in 2008-09.

Source:1999 Kenya Population Census

INTRODUCTION 1

Collins Opiyo, Christopher Omolo, and Macdonald Obudho

1.1 GEOGRAPHY, HISTORY, AND THE ECONOMY

1.1.1 Geography

Kenya is situated in the eastern part of the African continent. The country lies between 5 degrees north and 5 degrees south latitude and between 24 and 31 degrees east longitude. It is almost bisected by the equator. Kenya is bordered by Ethiopia (north), Somalia (northeast), Tanzania (south), Uganda and Lake Victoria (west), and Sudan (northwest). It is bordered on the east by the Indian Ocean. The 536-kilometre coastline, which contains swamps of East African mangroves and the port in Mombasa, enables the country to trade easily with other countries.

The country is divided into 8 provinces and 158 districts (as of the 2009 Population and Housing Census). It has a total area of 582,646 square kilometres of which 571,466 square kilometres form the land area. Approximately 80 percent of the land area of the country is arid or semiarid, and only 20 percent is arable. The country has diverse physical features, including the Great Rift Valley, which runs from north to south; Mount Kenya, the second highest mountain in Africa; Lake Victoria, the largest freshwater lake on the continent; Lake Nakuru, a major tourist attraction because of its flamingos; Lake Magadi, famous for its soda ash; a number of rivers, including Tana, Athi, Yala, Nzoia, and Mara; and numerous wildlife reserves containing thousands of different animal species.

The country falls into two regions: lowlands, including the coastal and Lake Basin lowlands, and highlands, which extend on both sides of the Great Rift Valley. Rainfall and temperatures are influenced by altitude and proximity to lakes or the ocean. The climate along the coast is tropical with rainfall and temperatures being higher throughout the year. There are four seasons in a year: a dry period from January to March, the long rainy season from March to May, followed by a long dry spell from May to October, and then the short rains between October and December.

1.1.2 History

Kenya is a former British colony. The independence process was met with resistance and an armed struggle by Kenyans against the British colonial rulers. The Mau Mau rebellion in the 1950s paved the way for constitutional reform and political development in the following years. The country achieved self-rule in June 1963 and gained independence (*Uhuru*) on December 12, 1963. Exactly one year later, Kenya became a republic. The country was a multiparty state until 1981, when the relevant parts of the constitution were amended to create a one-party state. However, in the early 1990s, the country reverted to a multiparty state. From independence until December 2002, the country was ruled by the Kenya African National Union (KANU). During the 2002 general elections, the National Alliance of Rainbow Coalition ascended to power through a landslide victory. Currently, the country is run by a coalition government that brings together the Party of National Unity (PNU) and the Orange Democratic Movement (ODM).

Various ethnic groups are distributed throughout the country. The major tribes include Kikuyu, Luo, Kalenjin, Luhya, Kamba, Kisii, Mijikenda, Somali, and Meru. In Kenya, English is used as the official language, and Kiswahili is the national language. The main religions in the country are Christianity and Islam.

1.1.3 Economy

The Kenyan economy is predominantly agricultural with a strong industrial base. There has been a gradual decline in the share of the gross domestic product (GDP) attributed to agriculture, from over 30 percent during the period 1964-1979 to 25 percent in 2000-2002. The agricultural sector directly contributed 22 and 23 percent of the GDP in 2007 and 2008 respectively. Coffee, tea, and horticulture (flowers, fruits, and vegetables) are the main agricultural export commodities; in 2008, these three commodities jointly accounted for 45 percent of the total export earnings (Kenya National Bureau of Statistics, 2009). The manufacturing sector contributes significantly to export earnings, especially from the Common Market for Eastern and Southern Africa (COMESA) region. The manufacturing sector has increased slightly from about 10 percent of the GDP in 1964-1973 to 11 percent of the GDP in 2008.

The performance of the Kenyan economy since the country became independent has been mixed. In the first decade after the country's independence, the economy grew an average of 7 percent per annum, with the growth attributed to expansion in the manufacturing sector and an increase in agricultural production. Since then, there has been a consistent decline in the economy, which reached its lowest GDP growth level of about 0.2 percent in 2000. The consistently poor growth performance has failed to keep pace with population growth. The weak performance has been caused by external shocks and internal structural problems, including the drought of the 1980s, low commodity prices, world recession, bad weather, and poor infrastructure. The poor growth of the economy has contributed to deterioration in the overall welfare of the Kenyan population. Similarly, the economy has been unable to create jobs at a rate to match the rising labour force.

To reverse the trend of decline, the government prepared the Economic Recovery Strategy (ERS) for Wealth and Employment Creation in 2003 with the objectives of restoring economic growth and creating employment and social development. During implementation from 2003 to 2007, the ERS evolved a four-pillar strategy to meet the following objectives:

- Restoring economic growth within the context of a sustainable macroeconomic framework
- Strengthening the institutions of governance
- Restoring and expanding the infrastructure
- Investing in human capital

The ERS enabled the economy to grow steadily from 0.5 percent in 2002 to 7 percent in 2007. One of the lessons learned through the implementation of the ERS was that employment creation is the most effective strategy for halting increasing poverty. In 2008, the government of Kenya launched Vision 2030 and its Medium Term Plan (MTP) to provide continuity by consolidating the gains made under the ERS. The goal was to transform Kenya into a newly industrialized middle-income country by 2030.

After remarkable growth, which averaged 6 percent in the period 2004-2007 and peaked at 7.1 percent in 2007, real GDP growth slowed to 1.7 percent in 2008. The slowdown resulted from both domestic and external shocks, including post-election violence, high food and fuel prices, drought, and the global financial crisis. These shocks had a negative impact on key sectors of the economy, including tourism, manufacturing, transport, and agriculture. They weakened the country's balance of payments position.

These factors dampened prospects for growth in 2009 and beyond. Specifically, the slow and fragile recovery in more advanced countries is likely to continue to lower demand for Kenya's main exports and to reduce earnings from tourism, remittances, and private capital flows. On the domestic front, while the short rains have helped to reduce the magnitude of shortages of food, water, and

energy, the negative effects of climate change are likely to worsen unless deliberate and appropriate policy measures are taken to reverse environmental degradation.

1.2 POPULATION

Kenya's population was 10.9 million in 1969, and by 1999 it had almost tripled to 28.7 million (Central Bureau of Statistics, 1994, 2001a) (see Table 1.1). The country's population is projected to reach 39.4 million in 2009. Results of previous censuses indicate that the annual population growth rate was 2.9 percent per year during the 1989-1999 period, down from 3.4 percent reported for the 1979-1989 inter-censal period. Currently, growth is estimated to be about 2.8 percent. The decline in population growth is a realisation of the efforts called for by the National Population Policy for Sustainable Development (National Council for Population and Development, 2000) and is a result of the decline in fertility rates over recent decades. Fertility levels have declined from 8.1 births per woman in the late 1970s to the current level of 4.6 births per woman. The decline in fertility levels is expected to be manifested in the age distribution of the country's population. Mortality rates also have risen since the 1980s, presumably due to increased deaths from the HIV/AIDS epidemic, deterioration of health services, and widespread poverty (National Council for Population and Development, 2000). The crude birth rate increased from 50 births per 1,000 population in 1969 to 54 per 1,000 in 1979 but thereafter declined to 48 and 41 per 1,000 in 1989 and 1999, respectively. The crude death rate increased from 11 per 1,000 population in 1979-1989 to 12 per 1,000 for the 1989-1999 period. The infant mortality rate, which had steadily decreased from 119 deaths per 1,000 live births in 1969 to 88 deaths per 1,000 live births in 1979, and then to 66 deaths per 1,000 live births in 1989, increased briefly in 1999 to 77 per 1,000 but then resumed its decline in 2009.

Table 1.1 Basic demographic indicators

Selected demographic indicators for Kenya, 1969, 1979, 1989, 1999, and 2009

Indicator	1969	1979	1989	1999	2009
Population (millions)	10.9	16.2	23.2	28.7	39.4[a]
Density (pop./km^2)	19.0	27.0	37.0	49.0	67.7[a]
Percent urban	9.9	15.1	18.1	19.4	21.0[a]
Crude birth rate	50.0	54.0	48.0	41.3	34.8[b]
Crude death rate	17.0	14.0	11.0	11.7	u
Inter-censal growth rate	3.3	3.8	3.4	2.9	2.8[a]
Total fertility rate	7.6	7.8	6.7	5.0	4.6[b]
Infant mortality rate (per 1,000 births)	119	88	66	77.3	52.0[b]
Life expectancy at birth	50	54	60	56.6	58.9[a]

[a] Revised projection figures
[b] KDHS results (see later chapters)
u = unknown
Source: CBS, 1970; CBS, 1981; CBS, 1994; CBS, 2002a

1.3 POPULATION AND FAMILY PLANNING POLICIES AND PROGRAMMES

Owing to its high fertility and declining mortality, Kenya is characterised by a youthful population. Projections show about 43 percent of the population is younger than 15 years (CBS, 2006). This implies that over three-fifths of Kenya's population, or about 25 million people in 2009, are less than 25 years old. Consequently, Kenya faces the formidable challenge of providing its youth with opportunities for a safe, healthy, and economically productive future. The 1994 International Conference on Population and Development (ICPD) endorsed the right of adolescents and young adults to obtain the highest levels of health care. In line with the ICPD recommendations, Kenya has put in place an Adolescent Reproductive Health and Development policy (ARH&D). Broadly, the policy addresses the following adolescent reproductive health issues and challenges: adolescent sexual health and reproductive rights; harmful practices, including early marriage, female genital cutting, and gender-based violence; drug and substance abuse; socioeconomic factors; and the special needs of adolescents and young people with disabilities (Odini, 2008).

The Ministry of Health (MOH) formally approved and adopted the National Reproductive Health Policy with the theme: 'Enhancing the Reproductive Health Status for all Kenyans'. The policy provides a framework for equitable, efficient, and effective delivery of quality reproductive health services throughout the country and emphasises reaching those in greatest need who are most vulnerable. Its aim is to guide planning, standardisation, implementation, and monitoring and evaluation of reproductive health care provided by various stakeholders. The new policy will allow the government to incorporate and address key issues such as security of reproductive health commodities, prevention of mother-to-child transmission of HIV, emergency obstetric care, adolescent reproductive health issues, gender-based violence, reproductive health needs of persons with disabilities, and integration of reproductive and HIV health care (Health Policy Initiative, 2009). This policy emphasises priority actions for the achievement of the ICPD goals and the Millennium Development Goals (MDGs) of improving maternal health, reducing neonatal and child mortality, reducing the spread of HIV/AIDS, and achieving women's empowerment and gender equality. Attainment of sexual and reproductive health and rights will have positive effects on poverty reduction and reduction of infant mortality, maternal mortality, and new cases of HIV/AIDS. A key challenge to attainment of the MDGs will be strengthening the health system by building the capacity to manage programmes and addressing critical bottlenecks, especially a shortage of skilled health workers, an inadequate budget for the health sector, poor procurement and supply systems, and other critical management problems (Division of Reproductive Health, 2005).

In 2000, the government of Kenya launched the National Population Policy for Sustainable Development (National Council for Population and Development, 2000). This policy builds on the strength of Kenya's first national population policy outlined in Sessional Paper No. 4 of 1984 on Population Policy Guidelines. The current policy—whose implementation period ends in 2010—outlines ways to implement the programme of action developed at the 1994 International Conference on Population and Development in Cairo, Egypt. The implementation of this policy is being guided by national and district plans of action. The policy also addresses the issues of environment, gender, and poverty, as well as the problems facing certain segments of the Kenyan population, such as its youth. Goals of the population policy include the following:

- Improvement of the standard of living and quality of life
- Improvement of the health and welfare of the people through provision of information and education on how to prevent illness and premature deaths among risk groups, especially among mothers and children
- Sustenance of the ongoing demographic transition to further reduce fertility and mortality, especially infant and child mortality
- Continuing motivation and encouragement of Kenyans to adhere to responsible parenthood
- Promotion of stability of the family, taking into account equality of opportunity for family members, especially the rights of women and children
- Empowerment of women and the improvement of their status in all spheres of life and elimination of all forms of discrimination, especially against the girl child
- Sustainability of the population programme
- Elimination of retrogressive sociocultural practices through education.

The policy has the following targets, some of which have been achieved according to the current KDHS results:

- Reduction of the infant mortality rate (deaths per 1,000 live births) from 71 in 1998 to 67 by 2005 and to 63 by 2010
- Reduction of the under-five mortality rate (deaths per 1,000 live births) from 112 in 1998 to 104 by 2005 and to 98 by 2010
- Reduction of the maternal mortality rate (deaths per 100,000 live births) from 590 in 1998 to 230 by 2005 and to 170 by 2010
- Maintenance of the crude death rate at 12 per 1,000 population up to the year 2000 and reduction to 10 by 2005 and to 9 by 2010

- Minimisation of the decline in life expectancy at birth for both sexes, from age 58 in 1995 to age 53 in 2010;
- Stabilisation of the population growth rate at 2.1 percent per year by 2010.

1.4 Health Priorities and Programmes

The major health care providers in Kenya are the Ministry of Public Health and Sanitation and the Ministry of Medical Services. These two ministries operate more than half of all health facilities in the country. The public delivery system is organised in a traditional pyramidal structure. First-level care is provided at dispensaries and medical clinics. The next level comprises health centres and sub-district hospitals. Third-level care is provided at district hospitals and provincial general hospitals. There are two national hospitals—Moi Referral and Teaching Hospital in Eldoret and Kenyatta National Hospital in Nairobi. Resources for health are scarce, and the disease burden is high in the country, just as in other countries in the region (Glenngård, A.H. and T.M. Maina, 2007)

Making adequate health care services universally available requires striking a delicate balance between a population's health needs and available resources. It also requires the equitable and efficient allocation of resources. Without proper health care financing strategies, no government can hope to successfully meet the health needs of its citizens. In 1989, the Kenyan government introduced cost sharing in an effort to bridge the growing gap between health sector expenses and available resources. Since then, the government has strived to achieve a mix of health care financing strategies and systems that will enable the country to provide its citizens with universal access to adequate basic health services (Health Policy Initiative, 2009).

Since attaining independence, the government has prioritized the improvement of the health status of Kenyans. It recognises that good health is a prerequisite to socioeconomic development. A number of government policy documents and successive national development plans have stated that the provision of health services should meet the basic needs of the population, place health services within easy reach of Kenyans, and emphasize preventive, promotive, and rehabilitative services without ignoring curative services. Perhaps as a result of these policies, both infant mortality and life expectancy at birth, which are basic indicators of health status, have improved significantly (Ngigi and Macharia, 2006).

The second National Health Sector Strategic Plan (NHSSP II) by the MOH aims to reverse the downward trends in health indicators observed during the years of the first strategic plan (NHSSP I, 1999–2004), while applying the lessons learned and searching for innovative solutions. NHSSP II re-invigorates the Kenya Health Policy Framework elaborated in 1994. The health goals formulated in the framework underlined the need to pursue the principles of primary health care to improve the health status of the Kenyan population.

The Kenya Health Policy Framework set the following strategic imperatives:

1. Ensure equitable allocation of government of Kenya resources to reduce disparities in health status.

2. Increase cost-effectiveness and efficiency of resource allocation and use.

3. Manage population growth.

4. Enhance the regulatory role of the government in health care provision.

5. Create an enabling environment for increased private sector and community involvement in service provision and financing.

6. Increase and diversify per capita financial flows to the health sector.

The policies that the government has pursued over the years have had a direct impact on improving the health status of Kenyans. Despite a decline in economic performance, cumulative gains have been made in the health sector as evidenced by the improvement in the basic health indicators (Odini, 2008).

1.5 Strategic Framework to Combat the HIV/AIDS Epidemic

To meet the challenge of the HIV/AIDS epidemic in the country, in September 1997, the government of Kenya approved Sessional Paper No. 4 on AIDS in Kenya. The government clearly intended to support effective programmes to control the spread of AIDS, to protect the human rights of those with HIV or AIDS, and to provide care for those infected and affected by HIV/AIDS. The goal set forth by the paper is to 'provide a policy framework within which AIDS prevention and control efforts will be undertaken for the next 15 years and beyond'. Specifically, it has the following objectives:

- Give direction on how to handle controversial issues while taking into account prevailing circumstances and the sociocultural environment
- Enable the government to play the leadership role in AIDS prevention and control activities (Challenges posed by AIDS call for a multisectoral approach, necessitating involvement from a diversity of actors)
- Recommend an appropriate institutional framework for effective management and coordination of HIV/AIDS programme activities

The sessional paper recognises that responding effectively to the HIV/AIDS crisis will require a strong political commitment at the highest level; implementation of a multisectoral prevention and control strategy focused on young people; mobilisation of resources for financing HIV prevention, care, and support; and establishment of a National AIDS Control Council (NACC) to provide leadership at the highest level.

Kenya is experiencing a mixed and geographically heterogeneous HIV epidemic. Its characteristics are those of both a generalised epidemic among the mainstream population and a concentrated epidemic among the most at risk population. The HIV epidemic affects all sectors of the economy. It is equally a developmental and an epidemiological challenge, encompassing identification and development of a series of appropriate sectoral responses and their applications at the local level. Nationally, most new infections (44 percent) occur in couples who engage in heterosexual activity within a union or regular partnership (National AIDS Control Council, 2009). Men and women who engage in casual sex contribute 20 percent of the new infections, while sex workers and their clients account for 14 percent. Men who have sex with men and prison populations contribute 15 percent, and injecting drug users account for 4 percent. Health facility-related infections contribute 3 percent of new cases. The NACC launched the third Kenya National AIDS Strategic Plan (KNASP III) in 2009 to address the challenges posed by HIV infection. The KNASP III aims to achieve Kenya's universal access targets for quality integrated services at all levels to prevent new HIV infections, reduce HIV-related illnesses and deaths, and mitigate the effects of the epidemic on households and communities (National AIDS Control Council, 2009).

1.6 Objectives of the Survey

The 2008-09 Kenya Demographic and Health Survey (KDHS) is a population and health survey that Kenya conducts every five years. It was designed to provide data to monitor the population and health situation in Kenya and also to be used as a follow-up to the previous KDHS surveys in 1989, 1993, 1998, and 2003.

From the current survey, information was collected on fertility levels; marriage; sexual activity; fertility preferences; awareness and use of family planning methods; breastfeeding practices; nutritional status of women and young children; childhood and maternal mortality; maternal and child

health; and awareness and behaviour regarding HIV/AIDS and other sexually transmitted infections. The 2008-09 KDHS is the second survey to collect data on malaria and the use of mosquito nets, domestic violence, and HIV testing of adults.

The specific objectives of the 2008-09 KDHS were to:

- Provide data, at the national and provincial levels, that allow the derivation of demographic rates, particularly fertility and childhood mortality rates, to be used to evaluate the achievements of the current national population policy for sustainable development
- Measure changes in fertility and contraceptive prevalence use and study the factors that affect these changes, such as marriage patterns, desire for children, availability of contraception, breastfeeding habits, and other important social and economic factors
- Examine the basic indicators of maternal and child health in Kenya, including nutritional status, use of antenatal and maternity services, treatment of recent episodes of childhood illness, use of immunisation services, use of mosquito nets, and treatment of children and pregnant women for malaria
- Describe the patterns of knowledge and behaviour related to the transmission of HIV/AIDS and other sexually transmitted infections
- Estimate adult and maternal mortality ratios at the national level
- Ascertain the extent and pattern of domestic violence and female genital cutting in the country
- Estimate the prevalence of HIV infection at the national and provincial levels and by urban-rural residence, and use the data to corroborate the rates from the sentinel surveillance system

The 2008-09 KDHS information provides data to assist policymakers and programme implementers as they monitor and evaluate existing programmes and design new strategies for demographic, social, and health policies in Kenya. The data will be useful in many ways, including the monitoring of the country's achievement of the Millennium Development Goals.

As in 2003, the 2008-09 KDHS survey was designed to cover the entire country, including the arid and semi-arid districts, and especially those areas in the northern part of the country that were not covered in the earlier KDHS surveys. The survey collected information on demographic and health issues from a sample of women at the reproductive age of 15-49 and from a sample of men age 15-54 years in a one-in-two subsample of households.

1.7 SURVEY ORGANISATION

The Kenya National Bureau of Statistics (KNBS) implemented the 2008-09 KDHS in collaboration with the Ministry of Public Health and Sanitation, including the National AIDS and STIs Control Programme (NASCOP), the Ministry of Medical Services, the Ministry of Gender, the Kenya Medical Research Institute (KEMRI), the National Coordinating Agency for Population Development (NCAPD), and the National AIDS Control Council (NACC). The National Public Health Laboratory Services assisted in recruitment and training of the health field workers, supported the voluntary counselling and testing of respondents who wanted to know their HIV status, and implemented the HIV testing in the laboratory. As in the previous surveys, technical assistance was provided through the international MEASURE DHS programme at ICF Macro. This is a project sponsored by the United States Agency for International Development (USAID) to carry out population and health surveys in developing countries.

Financial support for the KDHS was provided by the government of Kenya, the U.S. Government (USAID), UNICEF, and UNFPA. UNICEF provided vehicles and drivers for use in the arid and semi-arid lands (ASAL) districts.

1.8 SAMPLE DESIGN

The survey is household-based, and therefore the sample was drawn from the population residing in households in the country. A representative sample of 10,000 households was drawn for the 2008-09 KDHS. This sample was constructed to allow for separate estimates for key indicators for each of the eight provinces in Kenya, as well as for urban and rural areas separately. Compared with the other provinces, fewer households and clusters were surveyed in North Eastern province because of its sparse population. A deliberate attempt was made to oversample urban areas to get enough cases for analysis. As a result of these differing sample proportions, the KDHS sample is not self-weighting at the national level; consequently, all tables except those concerning response rates are based on weighted data.

The KNBS maintains master sampling frames for household-based surveys. The current one is the fourth National Sample Survey and Evaluation Programme (NASSEP IV), which was developed on the platform of a two-stage sample design. The 2008-09 KDHS adopted the same design, and the first stage involved selecting data collection points ('clusters') from the national master sample frame. A total of 400 clusters—133 urban and 267 rural—were selected from the master frame. The second stage of selection involved the systematic sampling of households from an updated list of households. The Bureau developed the NASSEP frame in 2002 from a list of enumeration areas covered in the 1999 population and housing census. A number of clusters were updated for various surveys to provide a more accurate selection of households. Included were some of the 2008-09 KDHS clusters that were updated prior to selection of households for the data collection.

All women age 15-49 years who were either usual residents or visitors present in sampled households on the night before the survey were eligible to be interviewed in the survey. In addition, in every second household selected for the survey, all men age 15-54 years were also eligible to be interviewed. All women and men living in the households selected for the Men's Questionnaire and eligible for the individual interview were asked to voluntarily give a few drops of blood for HIV testing.

1.9 QUESTIONNAIRES

Three questionnaires were used to collect the survey data: the Household, Women's, and Men's Questionnaires. The contents of these questionnaires were based on model questionnaires developed by the MEASURE DHS programme that underwent only slight adjustments to reflect relevant issues in Kenya. Adjustment was done through a consultative process with all the relevant technical institutions, government agencies, and local and international organisations. The three questionnaires were then translated from English into Kiswahili and 10 other local languages (Kalenjin, Kamba, Kikuyu, Kisii, Luhya, Luo, Maasai, Meru, Mijikenda, and Somali). The questionnaires were further refined after the pretest and training of the field staff.

In each of the sampled households, the Household Questionnaire was the first to be administered and was used to list all the usual members and visitors. Basic information was collected on the characteristics of each person listed, including age, sex, education, and relationship to the head of the household. The main purpose of the Household Questionnaire was to identify women age 15-49 and men age 15-54 who were eligible for the individual interviews. The questionnaire also collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor, walls, and roof of the house, ownership of various durable goods, ownership of agricultural land, ownership of domestic animals, and ownership and use of mosquito nets. In addition, this questionnaire was used to capture information on height and weight

measurements of women age 15-49 years and children age five years and below, and, in households eligible for collection of blood samples, to record the respondents' consent to voluntarily give blood samples. A detailed description of HIV testing procedures is given in Section 1.10 below.

The Women's Questionnaire was used to capture information from all women age 15-49 years and covered the following topics:

- Respondent's background characteristics (e.g., education, residential history, media exposure)
- Reproductive history
- Knowledge and use of family planning methods
- Antenatal, delivery, and postnatal care
- Breastfeeding
- Immunisation, nutrition, and childhood illnesses
- Fertility preferences
- Husband's background characteristics and woman's work
- Marriage and sexual activity
- Infant and child feeding practices
- Childhood mortality
- Awareness and behaviour about HIV/AIDS and other sexually transmitted diseases
- Knowledge of tuberculosis
- Health insurance
- Adult and maternal mortality
- Domestic violence
- Female genital cutting

The set of questions on domestic violence sought to obtain information on women's experience of violence. The questions were administered to one woman per household. In households with more eligible women, special procedures (use of a 'Kish grid') were followed to ensure that the woman interviewed about domestic violence was randomly selected.

The Men's Questionnaire was administered to all men age 15-54 years living in every second household in the sample. The Men's Questionnaire collected information similar to that collected in the Women's Questionnaire, but it was shorter because it did not contain questions on reproductive history, maternal and child health, nutrition, maternal mortality, and domestic violence.

Two pilot projects were conducted in 12 districts for the KDHS, the first from July 1-7, 2008, and the second from October 13-17, 2008, to test the questionnaires, which were written in English and then translated into eleven other languages. The pilot was repeated because the first pilot did not include the HIV blood testing component. Twelve teams (one for each language) were formed, each with one female interviewer, one male interviewer, and one health worker. A total of 260 households were covered in the pilots. The lessons learnt from the pilot surveys were used to finalise the survey instruments and set up strong, logistical arrangements to ensure the success of the survey.

1.10 HIV TESTING

As was done in the previous KDHS, in all households selected for the Men's Questionnaire, all eligible women and men who were interviewed were asked to voluntarily provide some drops of blood for HIV testing. The protocol for blood specimen collection and analysis was based on the anonymous linked protocol developed by the DHS programme and was revised and enhanced by KEMRI and NACC. It was reviewed and approved by the Scientific and Ethical Review Committee of KEMRI. The protocol allowed for the linking of the HIV results to the sociodemographic data collected in the individual questionnaires, provided that the information that could potentially identify an individual was destroyed before the linking took place. This required that identification codes be

deleted from the data file and that the part of the Household Questionnaire containing the barcode labels and names of respondents be destroyed prior to merging the HIV results with the individual data file.

Considerable care was necessary to prepare respondents for the blood sample, and for this reason, two health workers were assigned to each of the 23 survey teams. They were recruited through the Ministry of Public Health. To obtain informed consent for taking blood for HIV testing, the health worker explained the procedures, the confidentiality of the data, and the fact that test results could not be traced back to or made available to the subject. For those who were interested in knowing their HIV status, the health worker provided information about how they could obtain it through voluntary counselling and testing (VCT) services. If consent was granted, the health worker then collected a dried blood spot (DBS) sample on a filter paper card from a finger prick, using a single-use, spring-loaded, sterile lancet. Each DBS sample was given a barcode label, with a duplicate label attached to the Household Questionnaire on the line showing consent for that respondent. The health worker affixed a third copy of the same barcode label to a Blood Sample Transmittal Form in order to track the blood samples from the field to the laboratory. Filter papers were dried overnight in a plastic drying box after which the health worker packed them in individual Ziploc bags with desiccant and a humidity indicator card and placed them in a larger Ziploc bag with other blood spots for that particular cluster. Blood samples were periodically collected in the field along with the completed questionnaires and transported to KNBS headquarters in Nairobi for logging in, after which they were taken to the National Public Health Laboratory Services headquarters in Nairobi for HIV testing.

At the laboratory, the DBS samples were each assigned a laboratory number and kept frozen until testing was started in early June 2009. After the samples were allowed to attain room temperature, hole punches were used to cut a circle at least 6.3 mm in diameter. The blots were placed in cryo-vials that contained 200 µl of elution PBS buffer and were labelled with the laboratory number. The vials were left to elute overnight at 4°C, then they were centrifuged at 2,500 rpm for 10 minutes. These eluates were then tested with a Vironostika Anti-HIV-1/2 Plus enzyme-linked immunosorbent assay (ELISA) test kit (DADE Behring HIV-1/2) for verification purposes. All positive samples and 5 percent of negative samples were then tested with a Murex HIV-1/2 MicroELISA System. For quality assurance, all positive samples and a 10 percent random sample of the negative samples were retested at the KEMRI HIV laboratory using the same testing algorithm of both Vironostika and Murex MicroELISA systems. Finally, 30 discrepant samples were tested by polymerase chain reaction (PCR) DNA at KEMRI laboratory.

1.11 TRAINING

KNBS recruited research assistants and supervisors in the month of October 2008 based on a set of qualifications and experience, especially in past KDHSs or other health-related sample surveys, such as the Kenya Aids Indicator (KAIS) Survey, the Kenya Malaria Indicator Survey (KMIS), and the Multiple Indicator Cluster Survey (MICS). The process brought on board a number of qualified people with the skills necessary to undertake the survey.

Different categories of personnel were recruited and trained to undertake the KDHS. These included 23 supervisors, 52 health workers, 92 female research assistants, 23 male research assistants, 23 field editors, 6 office editors, 4 quality assurance personnel, and 5 reserves.

A three-week training course was conducted from October 21 to November 8 in Nakuru. Because of the large number of people involved, trainees were divided into five groups and trained in three different locations on questionnaire administration. They came together in plenary sessions for special lectures. Four trainers were assigned to each group. The trainers were officers of KNBS, the Ministry of Public Health, and NCAPD, as well as staff from ICF Macro. The training team developed a programme that allowed for some topics to be shared in plenary sessions while others were conducted in the smaller classes to allow for better explanation of technical details. In addition to the main regular trainers, guest lecturers gave presentations in plenary sessions on specialised

topics such as family planning, anthropometric measurements, HIV/AIDS, and Kenya's VCT programme.

The DHS standard approach to training was used, including class presentations, mock interviews in class, and practice interviews in the field. Participants were also given tips on interviewing techniques. Three tests were given to help participants understand the survey concepts and how to complete each of the three questionnaires. Anthropometric measurement was given special attention by inviting an expert who conducted training and also provided many hours of demonstrations and practical exercises to each group.

A separate class was organised for the health workers. Staff from KEMRI and NACC trained the health workers on how to administer the consent procedures, how to take blood spots for HIV testing, and how to minimise risks in handling blood products ('universal precautions').

All trainees were taken for practice interviews in households in selected areas in the town of Nakuru. Towards the end of training, the final field teams were formed and supervisors, enumerators, editors, and quality assurance personnel were identified. This was based on performance both in class and in the field, as well as on the leadership skills displayed during training. Both supervisors and editors were taken through further training on how to supervise fieldwork and edit questionnaires in the field.

1.12 FIELDWORK

Fieldwork started on 13 November 2008 and was completed in late February 2009. Each of the 23 field teams was composed of one supervisor, one field editor, four female interviewers, one male interviewer, two health workers, two VCT counsellors, and one driver. There were a few teams that had two vehicles and two drivers. Staff from KNBS and ICF Macro participated in field supervision.

In related surveys, many respondents expressed interest in learning their HIV status, so to ensure that this need would be met, the National AIDS Control Programme (NASCOP) engaged a parallel team of two VCT counsellors to work with each of the data collection teams. The mobile VCT teams followed the same protocol applied in fixed VCT sites, according to the National Guidelines for Voluntary Counselling and Testing for HIV (Ministry of Health, 2003). This included pretest counselling of the clients followed by anonymous testing for HIV for those requesting the service. A finger prick was performed to collect drops of blood for simultaneous (parallel) testing performed with two simple, rapid HIV test kits (Abbott Determine HIV 1/2 and Trinity Biotech Uni-Gold); for quality control, a dried blood spot filter paper was collected on every tenth client for testing in the laboratory. During the 15 minutes while the test was developing, prevention counselling was provided. If the two test results were discrepant, a third test (Instascreen) was performed as a 'tiebreaker'. Post-test counselling was then provided.

The sensitivity of the survey required a good plan for social mobilisation in areas where the survey was conducted. NACC organised and implemented a series of mobilisation activities in the clusters sampled for the KDHS before the survey teams moved in to conduct interviews. This process appeared to have had a positive impact on the survey, likely contributing to the high response rates.

NACC also printed a brochure on HIV/AIDS and VCT for the team's health workers to provide to all households and survey respondents. Similarly, numbered vouchers were printed and left with eligible respondents. The vouchers were to be given to the mobile VCT teams or the fixed VCT site when the eligible respondents went for VCT. NASCOP also made arrangements with the fixed VCT sites charging for services, so that they would provide free services to KDHS clients. Finally, although the VCT teams were to give priority to clients presenting the KDHS vouchers, they also accepted any other clients from the sampled communities.

1.13 DATA PROCESSING

A data processing team was constituted and trained at the KNBS offices in Nyayo House in Nairobi after the data collection teams started fieldwork. This team was supported by technical assistance from ICF Macro. Data processing commenced at the beginning of December 2008 and was finalised in early March 2009. Tabulation of the results was done by June 2009 by KNBS in collaboration with ICF Macro. Data processing for blood draws was delayed at the National HIV Reference Laboratory to allow for completion of data cleaning and validation and to remove all personal identifiers from the stored questionnaires. The KDHS preliminary report was prepared and launched in November 2009.

1.14 RESPONSE RATES

A total of 9,936 households were selected in the sample, of which 9,268 were occupied at the time of fieldwork and thus eligible for interviews (Table 1.2). Of the eligible households, 9,057 households were successfully interviewed, yielding a response rate of 98 percent. The shortfall in the number of households was largely due to structures that were found to be vacant or destroyed and households whose members were absent for an extended period during data collection.

From the households interviewed, 8,767 women were found to be eligible and 8,444 were interviewed, giving a response rate of 96 percent. Interviews with men covered 3,465 of the eligible 3,910 men, yielding a response rate of 89 percent. The response rates are generally higher in rural than in urban areas.

The main reason for no response among both eligible men and eligible women was the failure to find individuals at home despite repeated callbacks made to the household by the interviewers. On some occasions the interviewers would visit respondents at their work places without success. The lower response rates for men are a result of their more frequent absences from home.

Table 1.2 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Kenya 2008-2009

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	3,286	6,650	9,936
Households occupied	3,015	6,253	9,268
Households interviewed	2,910	6,147	9,057
Household response rate[1]	96.5	98.3	97.7
Interviews with women age 15-49			
Number of eligible women	2,735	6,032	8,767
Number of eligible women interviewed	2,615	5,829	8,444
Eligible women response rate[2]	95.6	96.6	96.3
Interviews with men age 15-54			
Number of eligible men	1,269	2,641	3,910
Number of eligible men interviewed	1,084	2,381	3,465
Eligible men response rate[2]	85.4	90.2	88.6

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

HOUSEHOLD POPULATION AND HOUSING CHARACTERISTICS

2

John Bore and James Ng'ang'a

This chapter summarizes demographic and socioeconomic characteristics of the population in the households sampled in the 2008-09 KDHS. For the purpose of the 2008-09 KDHS, a household was defined as a person or a group of persons, related or unrelated, who live together and who share a common source of food. The Household Questionnaire (see Appendix E) included a schedule collecting basic demographic and socioeconomic information (e.g., age, sex, education attainment, and current school attendance) for all usual residents and visitors who spent the night preceding the interview in the household. This method of data collection allows analysis of the results for either the de jure (usual residents) or de facto (those present at the time of the survey) populations. The household questionnaire also obtained information on housing facilities (e.g., sources of water supply and sanitation facilities) and household possessions.

The information presented in this chapter is intended to facilitate interpretation of the key demographic, socioeconomic, and health indices presented later in the report. It is also intended to assist in the assessment of the representativeness of the survey sample.

2.1 POPULATION BY AGE AND SEX

Age and sex are important demographic variables and are the primary basis of demographic classification. The distribution of the de facto household population in the 2008-09 KDHS is shown in Table 2.1 by five-year age groups, according to sex and residence. The household population constitutes 38,019 persons, of which 49 percent are male and 51 percent are female. There are more persons in the younger age groups than in the older age groups for both sexes, with those age 0-19 accounting for more than half of the population.

Table 2.1 Household population by age, sex, and residence

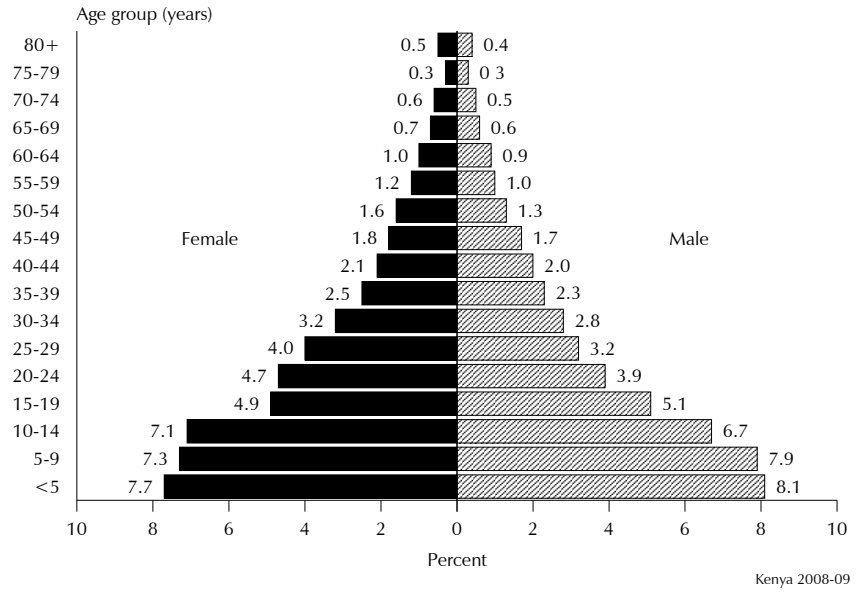
Percent distribution of the de facto household population by five-year age groups, according to sex and residence, Kenya 2008-09

	Urban			Rural			Total		
Age	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5	14.3	13.0	13.6	17.1	15.4	16.2	16.6	14.9	15.7
5-9	12.4	11.0	11.6	17.2	15.1	16.1	16.3	14.3	15.2
10-14	8.1	9.6	8.9	15.2	14.8	15.0	13.8	13.7	13.8
15-19	8.0	9.0	8.5	11.2	9.7	10.4	10.6	9.5	10.0
20-24	10.8	14.6	12.8	7.3	8.0	7.6	8.0	9.3	8.6
25-29	10.9	13.5	12.2	5.6	6.5	6.0	6.6	7.8	7.2
30-34	10.3	8.1	9.1	4.7	5.9	5.3	5.8	6.3	6.0
35-39	7.1	6.1	6.6	4.1	4.5	4.3	4.7	4.8	4.7
40-44	6.6	4.6	5.6	3.6	3.9	3.8	4.2	4.1	4.1
45-49	4.1	2.8	3.5	3.2	3.8	3.5	3.4	3.6	3.5
50-54	2.2	2.9	2.6	2.7	3.3	3.0	2.6	3.2	2.9
55-59	2.1	1.9	2.0	2.0	2.3	2.2	2.0	2.3	2.2
60-64	1.5	1.4	1.4	2.0	2.1	2.0	1.9	1.9	1.9
65-69	0.5	0.5	0.5	1.4	1.6	1.5	1.2	1.4	1.3
70-74	0.5	0.1	0.3	1.1	1.4	1.3	1.0	1.1	1.1
75-79	0.3	0.6	0.4	0.7	0.7	0.7	0.6	0.7	0.6
80 +	0.1	0.4	0.3	1.0	1.2	1.1	0.8	1.1	1.0
Don't know/missing	0.0	0.1	0.1	0.1	0.1	0.1	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	3,586	3,830	7,416	14,917	15,686	30,602	18,503	19,516	38,019

Figure 2.1 illustrates the age-sex structure of the Kenyan population in a population pyramid. As was the case in 2003, the household population age-sex structure is still wide at its base, as depicted by the population pyramid. The share of the Kenyan population under 15 years of age is 45 percent; those age 15-64 constitute 51 percent, and those age 65 years and older make up 4 percent of the total Kenyan household population. This means that the age dependency ratio in Kenya has increased slightly, from 92 in 2003 to 96 in 2008-09.[1]

The pyramid shows a rather sharp drop in population between women age 10-14 and those age 15-19. This may be partly due to a possible tendency on the part of some interviewers to estimate the ages of women to be under the cutoff age of 15 for eligibility for the individual interview, thus reducing their workload.

Figure 2.1 Population Pyramid



2.2 HOUSEHOLD COMPOSITION

Information on key aspects of the composition of households, including the sex of the head of the household and the size of the household, is presented in Table 2.2. These characteristics are important because they are associated with the welfare of the household. Households headed by women are, for example, typically poorer than households headed by men. Economic resources are often more limited in large households than in small households. Moreover, where the size of the household is large, crowding can lead to health problems.

The data for household composition show that, at the national level, women head 34 percent of Kenyan households, a slightly higher proportion than was observed in the 2003 KDHS (32 percent). There are modest differences in female-headed households between urban (29 percent) and rural areas (36 percent).

The data also show that the mean size of a Kenyan household is 4.2 persons, slightly fewer than the mean household size of 4.4 found in the 2003 KDHS. As expected, rural households are larger on average (4.6 persons) than are urban households (3.1).

[1] The dependency ratio is defined as the sum of all persons under 15 years or over 64 years of age, divided by the number of persons age 15-64, multiplied by 100.

Table 2.2 Household composition

Percent distribution of households by sex of head of household and by household size (mean size of household), according to residence), Kenya 2008-09

Characteristic	Residence		Total
	Urban	Rural	
Household headship			
Male	71.4	64.2	66.1
Female	28.6	35.8	33.9
Total	100.0	100.0	100.0
Number of usual members			
1	23.9	11.7	14.9
2	18.3	10.7	12.6
3	20.3	13.9	15.5
4	17.7	16.5	16.8
5	9.2	15.0	13.5
6	5.5	11.7	10.1
7	2.0	8.1	6.5
8	1.5	5.2	4.2
9+	1.5	7.2	5.8
Total	100.0	100.0	100.0
Mean size of households	3.1	4.6	4.2
Number of households	2,350	6,707	9,057

Note: Table is based on de jure household members, i.e., usual residents.

2.3 EDUCATION OF THE HOUSEHOLD POPULATION

Education is a key determinant of the lifestyle and status an individual enjoys in a society. Studies have consistently shown that educational attainment has a strong effect on health behaviours and attitudes. Results from the 2008-09 KDHS can be used to look at educational attainment among household members and school attendance ratios among youth.

For the analysis presented here, the official age for entry into the primary level is six years. The official duration of primary school is eight years (i.e., from standard 1 to standard 8), and the number of years assumed for completion of secondary school is four years.

2.3.1 Educational Attainment

Tables 2.3.1 and 2.3.2 present data on educational attainment of household members age six and older for each sex. The data show a slight decrease in the proportion of women and men with no education (19 percent for women and 13 percent for men) compared with the 2003 KDHS (23 percent for women and 16 percent for men). As expected, more men have either completed secondary (12 percent) or attained more than secondary (6 percent) compared with 9 percent and 5 percent of women who have completed secondary or attained more than secondary, respectively.

Compared with the 2003 KDHS, there has been a slight decrease in the proportion of children and young adults who have never attended school, particularly among those age 10-14 years and 15-19 years.

In most of the age groups, there are fewer men than women who have no education at all, a pattern that was observed in the 2003 KDHS. The gap between the proportion of men who have no education and women who have no education increases with age. For instance, in the 6-9 age group, male children are actually more likely than female children to have no education, while in the 65 and over age group, 77 percent of women have never been to school, compared with only 40 percent of men.

Table 2.3.1 Educational attainment of the female household population

Percent distribution of the de facto female household populations age six and over by highest level of schooling attended or completed and median grade completed, according to background characteristics, Kenya 2008-09

Background characteristic	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Don't know/ missing	Total	Number	Median years completed
Age										
6-9	39.7	60.1	0.1	0.0	0.0	0.0	0.0	100.0	2,242	0.3
10-14	4.5	90.0	4.3	1.0	0.0	0.0	0.2	100.0	2,680	3.7
15-19	4.5	43.6	22.0	21.7	7.3	0.8	0.1	100.0	1,862	7.1
20-24	7.5	25.2	29.4	11.0	18.1	8.7	0.0	100.0	1,806	7.6
25-29	8.3	24.0	33.0	9.6	15.2	10.0	0.0	100.0	1,529	7.5
30-34	7.9	32.2	24.8	9.6	16.2	9.2	0.1	100.0	1,232	7.4
35-39	11.0	32.0	22.9	7.6	17.0	9.1	0.4	100.0	933	7.3
40-44	14.5	20.7	29.1	8.3	19.4	7.8	0.2	100.0	791	6.6
45-49	22.0	25.9	24.2	9.4	13.6	4.9	0.0	100.0	697	6.1
50-54	34.5	27.5	18.1	4.7	8.3	6.6	0.4	100.0	625	3.9
55-59	43.9	24.7	16.6	3.6	4.5	6.2	0.6	100.0	439	2.2
60-64	55.6	23.7	10.8	1.4	2.8	4.9	0.8	100.0	380	0.0
65+	76.8	16.7	3.2	0.4	0.5	1.3	1.1	100.0	828	0.0
Residence										
Urban	11.3	27.2	18.1	9.6	20.2	13.4	0.1	100.0	3,257	7.6
Rural	21.3	47.3	16.7	6.5	5.7	2.2	0.2	100.0	12,805	4.5
Province										
Nairobi	6.1	20.4	17.8	9.6	20.5	25.3	0.3	100.0	1,014	9.6
Central	10.9	38.2	25.3	10.0	11.2	4.2	0.1	100.0	1,726	6.5
Coast	33.1	36.8	13.1	5.3	8.5	3.2	0.0	100.0	1,265	3.4
Eastern	20.8	45.9	17.3	6.5	6.6	2.7	0.3	100.0	2,847	4.5
Nyanza	13.4	49.3	17.4	9.3	6.4	4.0	0.2	100.0	2,594	5.7
Rift Valley	21.5	43.7	16.9	5.7	9.0	3.1	0.2	100.0	4,369	4.9
Western	14.2	55.4	14.2	7.3	6.9	1.6	0.4	100.0	1,833	5.0
North Eastern	69.6	23.9	2.4	1.4	1.6	1.0	0.1	100.0	413	0.0
Wealth quintile										
Lowest	40.2	46.5	9.5	2.4	0.7	0.3	0.3	100.0	3,089	1.5
Second	20.0	55.0	15.8	5.6	3.1	0.3	0.2	100.0	3,154	4.2
Middle	17.1	48.7	19.4	7.3	6.1	1.2	0.2	100.0	3,238	5.1
Fourth	12.9	40.8	20.3	10.7	11.0	4.0	0.3	100.0	3,270	6.3
Highest	7.5	26.0	19.7	9.4	21.4	15.9	0.1	100.0	3,310	7.8
Total	19.3	43.2	17.0	7.2	8.7	4.5	0.2	100.0	16,061	5.2

Note: Total includes 17 women whose age was not stated.
[1] Completed Grade 8 at the primary level, for those under age 40; because of the change in the school system in the 1980s, those age 40 and above are considered to have completed primary if they completed Grade 7.
[2] Completed Form 4 at the secondary level

About twice as many women and men in rural areas have no education at all compared with those in urban areas. Although North Eastern province has the highest proportion of those without education, a significant drop was observed between 2003 and 2008-09 for both genders in the province. As expected, the proportion with no education decreases dramatically as wealth increases.

Nationally, the median number of years of schooling completed is slightly higher for males (6.0 years) than females (5.2 years). Over the years, the median number of years of schooling completed has been increasing, although the increase has been small. For example, the median number of years of schooling increased from 4.3 in 2003 to 5.2 in 2008-09 for the female population age 6 and above and from 5.0 in 2003 to 6.0 in 2008-09 for the male population.

Table 2.3.2 Educational attainment of the male household population

Percent distribution of the de facto male household populations age six and over by highest level of schooling attended or completed and median grade completed, according to background characteristics, Kenya 2008-09

Background characteristic	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Don't know/ missing	Total	Number	Median years completed
Age										
6-9	42.9	56.9	0.0	0.1	0.0	0.0	0.1	100.0	2,453	0.2
10-14	4.9	91.5	2.6	1.0	0.0	0.0	0.0	100.0	2,557	3.6
15-19	1.6	49.4	18.4	23.7	6.5	0.4	0.1	100.0	1,952	6.9
20-24	3.2	22.6	26.3	13.6	23.9	10.2	0.1	100.0	1,472	8.0
25-29	4.1	23.8	26.2	9.4	23.3	13.2	0.1	100.0	1,226	7.8
30-34	4.4	24.2	28.8	7.1	22.1	13.1	0.2	100.0	1,067	7.7
35-39	4.0	22.4	25.2	9.1	27.5	11.7	0.1	100.0	863	8.0
40-44	6.0	14.8	31.1	6.5	26.1	15.3	0.1	100.0	774	7.8
45-49	7.9	18.7	30.9	6.3	24.1	12.0	0.1	100.0	629	6.9
50-54	12.6	18.6	30.5	9.5	18.9	9.5	0.4	100.0	476	6.7
55-59	13.9	22.2	26.5	7.9	17.5	10.6	1.3	100.0	378	6.7
60-64	21.4	18.6	27.0	9.5	11.6	11.4	0.5	100.0	347	6.7
65+	39.6	33.5	12.3	3.4	6.4	4.6	0.2	100.0	678	2.3
Residence										
Urban	6.8	24.3	16.2	9.0	23.9	19.5	0.3	100.0	2,997	8.8
Rural	14.7	48.3	17.1	7.7	9.4	2.7	0.1	100.0	11,884	5.2
Province										
Nairobi	4.6	16.9	12.7	7.4	27.0	31.1	0.4	100.0	1,002	11.1
Central	5.3	41.8	23.7	9.1	14.7	5.3	0.1	100.0	1,568	6.7
Coast	17.6	34.1	19.6	7.5	14.7	6.4	0.1	100.0	1,145	6.4
Eastern	14.2	48.6	17.7	7.2	9.2	2.8	0.3	100.0	2,638	5.2
Nyanza	8.9	48.4	17.6	9.7	9.3	5.9	0.2	100.0	2,461	6.1
Rift Valley	16.5	43.4	15.4	6.6	13.5	4.4	0.1	100.0	3,897	5.4
Western	9.9	53.6	15.3	10.3	8.5	2.3	0.1	100.0	1,754	5.3
North Eastern	49.1	35.7	6.6	3.1	3.2	2.3	0.1	100.0	417	0.0
Wealth quintile										
Lowest	29.6	50.9	11.8	4.5	2.5	0.4	0.2	100.0	2,702	2.8
Second	14.0	53.0	18.2	7.4	6.5	0.9	0.1	100.0	2,986	4.8
Middle	11.0	49.8	19.6	8.6	9.5	1.3	0.1	100.0	3,000	5.6
Fourth	8.3	41.8	18.2	9.9	16.1	5.3	0.4	100.0	3,048	6.6
Highest	4.6	23.6	16.2	8.9	25.1	21.4	0.2	100.0	3,145	9.6
Total	13.1	43.5	16.9	7.9	12.3	6.1	0.2	100.0	14,881	6.0

Note: Total includes 9 men whose age was not stated.
[1] Completed Grade 8 at the primary level, for those under age 40; because of the change in the school system in the 1980s, those age 40 and above are considered to have completed primary if they completed Grade 7.
[2] Completed Form 4 at the secondary level

2.3.2 School Attendance Rates

Table 2.4 presents the primary school and secondary school net and gross attendance ratios (NAR and GAR) for the school year that started in 2008 by household residence and zones. The NAR for primary school is the percentage of the primary-school-age (6-13 years) population that is attending primary school. The NAR for secondary school is the percentage of the secondary-school-age (14-17 years) population that is attending secondary school. By definition, the NAR cannot exceed 100 percent. The GAR for primary school is the total number of primary school students, of any age, expressed as a percentage of the official primary-school-age population. The GAR for secondary school is the total number of secondary school students, of any age, expressed as a percentage of the official secondary-school-age population. If there are significant numbers of over-age and under-age students at a given level of schooling, the GAR can exceed 100 percent. Youth are considered to be attending school currently if they attended formal academic school at any point during the given school year.

The gender parity index (GPI) assesses sex-related differences in school attendance rates and is calculated by dividing the GAR for the female population by the GAR for the male population. A GPI less than 1 indicates a gender disparity in favour of the male population, i.e., a higher proportion of males than females attends that level of schooling. A GPI greater than 1 indicates a gender disparity in favour of females. A GPI of 1 indicates parity or equality between the rates of participation for the sexes.

Table 2.4 School attendance ratios

Net attendance ratios (NAR) and gross attendance ratios (GAR) for the de facto household population by sex and level of schooling; and the gender parity index (GPI), according to background characteristics, Kenya 2008-09

Background characteristic	Net attendance ratio[1]				Gross attendance ratio[2]			
	Male	Female	Total	Gender parity index[3]	Male	Female	Total	Gender parity index[3]
PRIMARY SCHOOL								
Residence								
Urban	85.4	82.5	83.9	0.97	106.8	100.4	103.5	0.94
Rural	76.4	79.6	77.9	1.04	114.3	111.2	112.8	0.97
Province								
Nairobi	89.8	92.1	91.1	1.03	102.7	100.2	101.3	0.98
Central	89.4	90.5	89.9	1.01	117.5	117.1	117.3	1.00
Coast	69.4	73.1	71.4	1.05	106.3	95.3	100.6	0.90
Eastern	80.3	84.7	82.5	1.06	116.9	114.6	115.8	0.98
Nyanza	85.3	87.5	86.3	1.03	128.7	121.5	125.3	0.94
Rift Valley	70.5	73.2	71.9	1.04	100.8	101.0	100.9	1.00
Western	79.0	82.0	80.5	1.04	127.8	128.5	128.1	1.01
North Eastern	55.7	50.5	53.4	0.91	88.0	66.6	78.3	0.76
Wealth quintile								
Lowest	62.8	66.2	64.5	1.05	95.9	93.8	94.9	0.98
Second	77.0	84.3	80.5	1.09	120.9	124.0	122.4	1.03
Middle	81.8	84.0	82.9	1.03	127.0	118.1	122.6	0.93
Fourth	84.7	82.7	83.7	0.98	116.2	109.4	112.8	0.94
Highest	88.7	86.4	87.5	0.97	106.9	102.9	104.8	0.96
Total	77.6	80.0	78.8	1.03	113.3	109.6	111.5	0.97
SECONDARY SCHOOL								
Residence								
Urban	43.7	32.0	37.5	0.73	79.4	61.1	69.8	0.77
Rural	13.1	16.0	14.5	1.23	46.6	34.3	40.5	0.73
Province								
Nairobi	55.0	51.1	53.0	0.93	102.0	84.7	92.9	0.83
Central	18.6	31.2	25.3	1.68	56.8	57.5	57.2	1.01
Coast	22.1	14.6	18.5	0.66	34.2	29.9	32.1	0.87
Eastern	15.8	17.8	16.7	1.13	50.9	43.2	47.4	0.85
Nyanza	16.1	23.6	19.6	1.46	47.8	42.5	45.3	0.89
Rift Valley	14.4	14.4	14.4	1.00	58.3	31.8	43.8	0.55
Western	14.0	6.2	10.3	0.44	43.9	22.2	33.6	0.51
North Eastern	10.6	10.0	10.4	0.95	24.1	17.9	21.4	0.74
Wealth quintile								
Lowest	7.2	5.6	6.4	0.78	26.7	12.5	19.8	0.47
Second	9.3	7.8	8.6	0.83	41.9	24.3	33.4	0.58
Middle	12.7	19.1	15.6	1.49	45.6	40.4	43.2	0.89
Fourth	19.7	28.2	24.3	1.43	73.6	56.8	64.5	0.77
Highest	53.3	37.0	44.7	0.69	86.8	64.3	74.9	0.74
Total	17.0	18.4	17.7	1.08	50.8	38.2	44.6	0.75

[1] The NAR for primary school is the percentage of the primary-school age (6-13 years) population that is attending primary school. The NAR for secondary school is the percentage of the secondary-school age (14-17 years) population that is attending secondary school. By definition the NAR cannot exceed 100 percent.
[2] The GAR for primary school is the total number of primary school students, expressed as a percentage of the official primary-school-age population. The GAR for secondary school is the total number of secondary school students, expressed as a percentage of the official secondary-school-age population. If there are significant numbers of overage and underage students at a given level of schooling, the GAR can exceed 100 percent.
[3] The Gender Parity Index for primary school is the ratio of the primary school NAR(GAR) for females to the NAR(GAR) for males. The Gender Parity Index for secondary school is the ratio of the secondary school NAR(GAR) for females to the NAR(GAR) for males.

The data for NAR in Table 2.4 indicates that 79 percent of children of primary school age are attending school, which is identical to the finding of the 2003 KDHS. Surprisingly, the NAR is slightly higher for girls (80 percent) than for boys (78 percent). As expected, the NAR for primary school is higher in urban (84 percent) than in rural (78 percent) areas. The NAR for primary school increases with the increase in the wealth quintile, from 65 percent at the lowest wealth quintile to 88 percent at the highest wealth quintile.

The GAR indicates that there are children in primary school who are not of primary school age, with ratios of 113 and 110 for males and females, respectively.

As expected, the NAR and GAR are lower at the secondary school level than at the primary level. However, there has been a considerable improvement in the secondary school NAR in 2008-09 compared with the 2003 KDHS, where the 2008-09 NAR is 5 percentage points higher than the one observed in the 2003 KDHS. The gap between the secondary school NAR in the lowest wealth quintile and that in the highest wealth quintile is very wide, ranging from 6 percent to 45 percent.

The gender parity index shows the ratio of the female to male GARs. In primary school, there is parity between the sexes because the index is close to 1. However, the GPI for secondary school drops to 0.75, indicating a bias in favour of males. Comparison with data from the 2003 KDHS shows that the GPI for primary school has not changed much, though there is a notable increase in parity between the sexes in North Eastern province since 2003. For the secondary school level, the GPI in 2008-09 is lower than the one observed in 2003.

Table 2.5 shows the percentage of the population age 6-24 who attended school in 2008 by age, sex and residence. Ninety-three percent of those age 6-15 attended school in 2008, with urban attendance accounting for a higher proportion (96 percent) than rural attendance (93 percent). Attendance by those age 21-24 is relatively low, with about one of five (18 percent) having attended school in 2008.

Table 2.5 School attendance

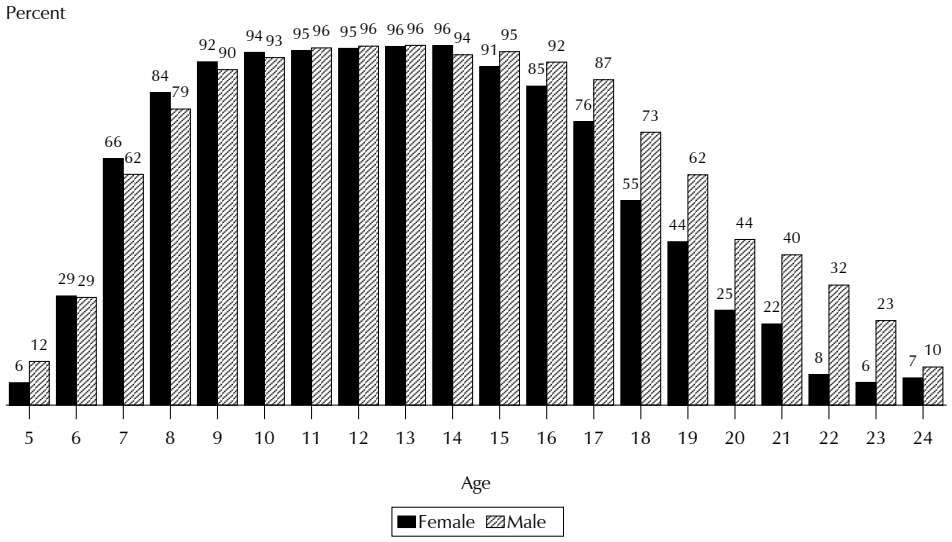
Percentage of the de facto population age 6-24 years who attended school in 2008 by age, sex and residence, Kenya 2008-09

	Male			Female			Residence		
Age	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
6-10	96.5	90.4	91.3	97.7	90.2	91.3	97.1	90.3	91.3
11-15	97.1	95.1	95.4	94.2	95.2	95.0	95.4	95.2	95.2
6-15	96.7	92.5	93.1	96.2	92.5	93.0	96.4	92.5	93.0
16-20	66.7	74.0	72.7	42.1	61.5	57.1	52.5	67.9	64.9
21-24	19.2	29.8	26.9	10.7	10.6	10.6	14.4	19.5	18.0

Attendance rates for both male and female youth are at par at the age groups 6-10 (91 percent) and 11-15 (95 percent). However, at age group 16-20, there is a noticeably big gap in attendance between males and females; 73 percent of males attended school in 2008 compared with 57 percent of females. This pattern continues in the 21-24 age group in which more than twice as many males attended school in 2008 as females (27 percent for males and 11 percent for females). Urban attendance is higher (96 percent) compared with rural attendance (93 percent) only for the 6-15 age group. In the 16-20 and 21-24 age groups, more people in rural areas than in urban areas attended school in 2008.

Figure 2.2 illustrates age-specific attendance rates, i.e., the percentage of a given age cohort who attend school, regardless of the level attended (primary, secondary, or higher). At age 5, attendance by males is twice that of females (12 percent for males versus 6 percent for females). However, from age 6 to age 10, female attendance is higher than that of males. Attendance peaks at age 13 for males and 14 for females where the peak attendance rate is identical (96 percent) for both genders. From age 14 onward, as school attendance begins to decline, the gender differential increases, with more male than female youths attending.

***Figure 2.2* Age-specific Attendance Rates of the de-facto Population 5 to 24 Years**



Kenya 2008-09

2.4 HOUSEHOLD ENVIRONMENT

The physical characteristics of the dwelling in which a household lives are important determinants of the health status of household members, especially children. They can also be used as indicators of the socioeconomic status of households. Respondents in the 2008-09 KDHS were asked a number of questions about their household environment, including questions on the source of drinking water; type of sanitation facility; type of flooring, walls, and roof; and number of rooms in the dwelling. The results are presented here in terms of households and of the de jure population.

2.4.1 Drinking Water

Increasing access to improved drinking water is one of the Millennium Development Goals that Kenya along with other nations worldwide has adopted (United Nations General Assembly 2001). Table 2.6 includes a number of indicators that are useful in monitoring household access to improved drinking water (WHO and UNICEF, 2005). The source of drinking water is an indicator of whether it is suitable for drinking. Sources that are likely to provide water suitable for drinking are identified as improved sources in Table 2.6. They include a piped source within the dwelling or plot, public tap, tube well or borehole, protected well or spring, and rainwater.[2] Lack of ready access to a water source may limit the quantity of suitable drinking water that is available to a household. Even if the water is obtained from an improved source, moreover, water that must be fetched from a source that is not immediately accessible to the household may be contaminated during transport or storage. Another factor in considering the accessibility of water sources is that the burden of going for water often falls disproportionately on female members of the household. Finally, home water treatment can be effective in improving the quality of household drinking water.

As shown in Table 2.6, three out of five households in Kenya (63 percent) get drinking water from an improved source. However, disparities exist by residence, with a higher proportion of urban households (91 percent) having an improved source of drinking water compared with rural households (54 percent). Among the improved sources, piped water into the plot accounts for the highest proportion (15 percent) of households, but mainly in urban areas (33 percent), while the most common improved category for rural households is a protected dug well (12 percent).

[2] The categorization into improved and non-improved follows that proposed by the WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (WHO and UNICEF, 2004).

More than one-third of Kenyan households get their drinking water from a non-improved source, mainly surface water from lakes, streams, and rivers (24 percent of households). Although only 6 percent of urban households use non-improved sources for drinking water, the proportion is far higher for rural households (46 percent).

Table 2.6 Household drinking water

Percent distribution of households and de jure population by source, time to collect, and person who usually collects drinking water; and percentage of households and the de jure population by treatment of drinking water, according to residence, Kenya 2008-09

	Households			Population		
Characteristic	Urban	Rural	Total	Urban	Rural	Total
Source of drinking water						
Improved source	89.3	53.8	63.0	89.7	53.1	60.2
Piped water into dwelling	22.8	4.7	9.4	24.4	3.5	7.5
Piped water into plot	33.1	9.0	15.2	30.7	7.5	12.0
Public tap/standpipe	19.8	6.1	9.7	21.3	6.2	9.1
Tube well or borehole	6.7	9.5	8.8	5.6	9.7	8.9
Protected dug well	4.7	11.6	9.8	5.1	12.9	11.4
Protected spring	1.6	10.2	8.0	1.9	11.0	9.2
Rainwater	0.6	2.7	2.2	0.7	2.4	2.1
Non-improved source	6.3	45.8	35.5	6.2	46.5	38.7
Unprotected dug well	1.3	6.2	4.9	1.5	6.4	5.5
Unprotected spring	0.9	7.2	5.6	1.0	7.7	6.4
Tanker truck/cart with small tank	2.1	1.1	1.3	1.8	1.1	1.2
Surface water	1.9	31.3	23.7	2.0	31.3	25.6
Bottled water, improved source for cooking/washing[1]	1.4	0.0	0.4	1.2	0.0	0.2
Bottled water, non-improved source for cooking/washing[1]	0.1	0.0	0.1	0.1	0.1	0.1
Other	2.8	0.4	1.0	2.7	0.3	0.8
Total	100.0	100.0	100.0	100.0	100.0	100.0
Percentage using any improved source of drinking water	90.8	53.8	63.4	91.0	53.1	60.4
Time to obtain drinking water (round trip)						
Water on premises	64.7	26.2	36.2	64.1	23.4	31.2
Less than 30 minutes	26.9	33.9	32.1	26.1	34.4	32.8
30 minutes or longer	6.3	39.3	30.7	7.8	41.9	35.3
Don't know/missing	2.2	0.5	1.0	2.1	0.4	0.7
Total	100.0	100.0	100.0	100.0	100.0	100.0
Person who usually collects drinking water						
Adult female 15+	21.5	58.0	48.5	24.9	64.3	56.7
Adult male 15+	9.8	9.1	9.2	6.6	5.4	5.7
Female child under age 15	0.7	3.9	3.1	0.9	4.5	3.8
Male child under age 15	0.3	1.9	1.5	0.4	1.8	1.6
Other	2.9	0.9	1.4	3.1	0.5	1.0
Water on premises	64.7	26.2	36.2	64.1	23.4	31.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Treatment of water[2]						
Boiled	38.0	25.4	28.6	37.6	24.0	26.6
Bleach/chlorine	21.5	16.3	17.6	22.9	17.0	18.2
Strained through cloth	0.3	1.5	1.2	0.4	1.7	1.4
Ceramic, sand, or other filter	1.7	0.5	0.8	1.6	0.6	0.8
Solar disinfection	0.0	0.2	0.1	0.0	0.2	0.1
Allowed to settle	0.2	0.5	0.4	0.1	0.4	0.4
Other	0.3	0.1	0.1	0.3	0.1	0.1
No treatment	42.5	59.1	54.8	42.1	59.7	56.3
Percentage using an appropriate treatment method[3]	57.1	40.2	44.6	57.5	39.8	43.2
Number	2,350	6,707	9,057	7,365	30,704	38,069

[1] Because the quality of bottled water is not known, households using bottled water for drinking are classified as using an improved or non-improved source according to their water source for cooking and washing.
[2] Respondents may report multiple treatment methods, so the sum of treatment may exceed 100 percent.
[3] Appropriate water treatment methods include boiling, bleaching, straining, filtering, and solar disinfecting.

Almost one-third of households are within 30 minutes of the source of their drinking water, and more than a third have water on the premises. The remaining 31 percent of households must travel 30 minutes or longer to get drinking water. Notably, 39 percent of rural households travel at least 30 minutes to obtain drinking water, compared with only 6 percent of urban households. Similarly, a huge urban-rural disparity exists in the proportion of households with water on the premises, with nearly two-thirds (65 percent) of urban households having water compared with 26 percent of rural households.

Women in Kenya, especially those in rural areas, bear the burden of collecting drinking water. In nearly half of Kenyan households (49 percent), adult women are responsible for water collection. In rural households, adult women are six times more likely than adult men to be the ones to fetch water (58 percent of households compared with 9 percent, respectively). Even in urban households, women are more than twice as likely as men to collect water (22 and 10 percent of households). It is encouraging to note that children under age 15 are usually responsible for fetching drinking water in only 5 percent of households.

Less than half of Kenyan households (45 percent) treat their drinking water. The main method of treatment is boiling (29 percent of households), while 18 percent of households add bleach or chlorine to make water safer for drinking. Appropriate water treatment methods are more common among urban households (57 percent) than among rural households (40 percent).

2.4.2 Household Sanitation Facilities

Ensuring adequate sanitation facilities is a Millennium Development Goal that Kenya shares with other countries. A household is classified as having an improved toilet if the toilet is used only by members of one household (i.e., it is not shared) and if the facility used by the household separates the waste from human contact (WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation, 2004).

As shown in Table 2.7, less than one-quarter of households use an improved toilet facility that is not shared with other households. Urban households are only slightly more likely than rural households to have an improved toilet facility (30 percent and 20 percent, respectively). The most common type of toilet facility in rural areas is an open pit latrine or one without a slab (47 percent of rural households), while in urban areas toilet facilities are mainly shared with other households (52 percent). Overall, 12 percent of households have no toilet facility at all; they are almost exclusively rural, accounting for 16 percent of rural households.

Table 2.7 Household sanitation facilities

Percent distribution of households and de jure population by type of toilet/latrine facilities, according to residence, Kenya 2008-09

	Households			Population		
Type of toilet/latrine facility	Urban	Rural	Total	Urban	Rural	Total
Improved, not shared facility	**29.8**	**20.1**	**22.6**	**34.3**	**21.8**	**24.3**
Flush/pour flush to piped sewer system	18.7	0.6	5.3	20.2	0.6	4.4
Flush/pour flush to septic tank	5.5	0.3	1.7	6.6	0.3	1.5
Flush/pour flush to pit latrine	1.5	0.2	0.5	1.6	0.2	0.5
Ventilated improved pit (VIP) latrine	2.3	9.0	7.3	3.4	9.5	8.4
Pit latrine with slab	1.8	10.0	7.8	2.5	11.2	9.5
Non-improved facility	**70.1**	**79.8**	**77.3**	**65.7**	**78.1**	**75.7**
Any facility shared with other households	52.2	16.7	25.9	47.6	13.5	20.1
Flush/pour flush not to sewer/ septic tank/pit latrine	3.3	0.2	1.0	3.3	0.1	0.7
Pit latrine without slab/open pit	13.5	46.5	37.9	13.3	46.4	40.0
Bucket/Hanging toilet, latrine	0.2	0.4	0.4	0.4	0.4	0.4
No facility/bush/field	0.9	16.0	12.1	1.1	17.7	14.5
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	2,350	6,707	9,057	7,365	30,704	38,069

2.4.3 Housing Characteristics

Table 2.8 presents characteristics of the dwellings in which Kenyan households live. These characteristics reflect the household's socioeconomic situation. They also may influence environmental conditions—for example, in the case of the use of biomass fuels, exposure to indoor pollution—that have a direct bearing on the health and welfare of household members.

Table 2.8 Household characteristics

Percent distribution of households and de jure population by housing characteristics and percentage using solid fuel for cooking, according to residence, Kenya 2008-09

	Households			Population		
Housing characteristic	Urban	Rural	Total	Urban	Rural	Total
Electricity						
Yes	65.6	8.1	23.0	64.8	6.9	18.1
No	34.3	91.9	76.9	35.1	93.1	81.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Flooring material						
Earth, sand	8.0	44.1	34.8	8.8	44.7	37.7
Dung	2.4	26.6	20.3	2.6	29.0	23.9
Wood planks	0.4	0.3	0.3	0.4	0.3	0.3
Parquet, polished wood	1.6	0.1	0.5	1.5	0.1	0.3
Vinyl, asphalt strips	1.4	0.1	0.4	1.0	0.1	0.3
Ceramic tiles	3.6	0.2	1.1	3.8	0.2	0.9
Cement	77.8	27.9	40.8	76.6	25.1	35.0
Carpet	4.9	0.5	1.7	5.2	0.5	1.4
Other/missing	0.1	0.1	0.0	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Rooms used for sleeping						
One	65.6	41.9	48.0	53.9	34.1	37.9
Two	22.5	36.1	32.6	28.1	39.0	36.9
Three or more	11.8	22.0	19.4	17.9	26.9	25.1
Missing	0.1	0.1	0.1	0.2	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Place for cooking						
In the house	84.5	33.1	46.4	80.4	27.7	37.9
In a separate building	7.3	59.5	46.0	9.9	65.1	54.4
Outdoors	6.7	6.7	6.7	9.0	7.1	7.4
Other	0.1	0.1	0.1	0.0	0.0	0.0
Missing	1.4	0.6	0.8	0.6	0.2	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0
Cooking fuel						
Electricity	1.6	0.1	0.5	1.4	0.0	0.3
LPG/Natural gas	21.7	1.2	6.5	21.2	0.9	4.8
Kerosene	26.9	1.5	8.1	20.9	0.6	4.5
Coal, lignite	0.1	1.1	0.8	0.0	1.1	0.9
Charcoal	41.1	10.8	18.7	45.2	8.7	15.8
Wood	6.1	83.3	63.3	9.4	87.0	71.9
Straw/shrubs/grass	0.8	1.4	1.2	1.0	1.6	1.5
Agricultural crop	0.0	0.1	0.1	0.0	0.1	0.1
No food cooked in household	1.4	0.6	0.8	0.6	0.2	0.3
Other/missing	0.3	0.0	0.1	0.4	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Percentage using solid fuel for cooking[1]	48.0	96.6	84.0	55.6	98.4	90.1
Number	2,350	6,707	9,057	7,365	30,704	38,069

LPG = Liquid petroleum gas
[1] Includes coal/lignite, charcoal, wood, straw/shrubs/grass, and agricultural crops

Almost one-quarter (23 percent) of Kenyan households have electricity, an increase from the 16 percent recorded in the 2003 KDHS. There is a large imbalance between urban and rural areas, with two-thirds (66 percent) of urban households having electricity compared with only 8 percent of rural households.

More than half of Kenyan households (55 percent) live in dwellings with floors made of earth, sand, or dung. The next most common type of flooring material is cement, accounting for 41 percent of households. Most urban households have floors made of cement (78 percent), while those in rural areas mainly have floors made from earth, sand, or dung (71 percent).

The number of rooms used for sleeping is an indicator of the extent of crowding in households. Overcrowding increases the risk of contracting diseases like acute respiratory infections, tuberculosis, and skin diseases. Overall, almost half of Kenyan households use only one room for sleeping, while one-third use two rooms and the remainder use three or more rooms for sleeping. Urban households tend to have fewer rooms for sleeping; two-thirds use only one room for sleeping, compared with 42 percent of rural households.

With regard to cooking arrangements, Kenyan households are evenly divided between cooking in the house and cooking in a separate building (46 percent each). Seven percent of households do their cooking outdoors. There is large variation in the place of cooking by residence, with urban households mostly cooking in the house (85 percent) and rural households mainly cooking in a separate building (60 percent).

Cooking and heating with solid fuels can lead to high levels of indoor smoke, a complex mix of health-damaging pollutants that could increase the risks of acute respiratory diseases. Solid fuels are defined as coal, charcoal, wood, straw, shrubs, and agricultural crops. In the 2008-09 KDHS, households were asked about their primary source of fuel for cooking. Their answers show that 84 percent of households use solid fuel for cooking. The use of solid fuel is nearly universal in households in rural areas (97 percent), compared with less than half of those in urban areas. The most common cooking fuel in Kenya is wood, used by close to two-thirds (63 percent) of households. Although wood is widely used in rural areas (83 percent of households), urban households rely mainly on charcoal (41 percent), kerosene (27 percent), and liquid petroleum gas or natural gas (22 percent).

2.5 HOUSEHOLD POSSESSIONS

The availability of durable consumer goods is a useful indicator of a household's socioeconomic status. Moreover, particular goods have specific benefits. For instance, having access to a radio or a television exposes household members to innovative ideas; a refrigerator prolongs the wholesomeness of foods; and a means of transport allows greater access to many services away from the local area. Table 2.9 shows the availability of selected consumer goods by residence.

Ownership of durable goods varies according to residence and the nature of the asset. Of the 16 selected items asked about in the survey, radios, homes, agricultural land, farm animals, and the land on which the dwelling is located stand out as the assets most commonly owned by households. Seventy-four percent of Kenyan households own a radio, while about two-thirds own land, their dwelling, and agricultural animals. Notably, 62 percent of households own a mobile telephone. Somewhat fewer households own a clock (45 percent), a bicycle (30 percent), or a television (28 percent), while fewer than one in ten households own a refrigerator, car, truck, motorcycle, animal cart, motorboat, solar panel, or land-line telephone.

There is noticeable urban-rural variation in the proportion of households owning specific goods. Most of the electronic goods are considerably more prevalent in urban areas, but farm-oriented possessions are more commonly found in rural areas. For example, 21 percent of urban households own a refrigerator compared with only 1 percent of rural households. Similarly, 57 percent of urban households own a television compared with 18 percent of rural households. Differentials in ownership of mobile phones are also apparent (86 percent for urban households and 53 percent for rural households). Radio possession is high among both urban and rural households (82 percent and 71 percent, respectively). It is evident that less than 20 percent of households in urban areas own the dwelling in which they reside or the land on which the dwelling is built, compared with over 80 percent of rural households. As expected, ownership of farm animals (cattle, cows, bulls, horses, donkeys, mules, goats, sheep, or chickens) is high in rural areas (80 percent of households).

Table 2.9 Household durable goods

Percentage of households and de jure population possessing various household effects, means of transportation, agricultural land, and livestock/farm animals by residence, Kenya 2008-09

	Households			Population		
Possession	Urban	Rural	Total	Urban	Rural	Total
Clock	65.3	37.5	44.7	67.3	39.1	44.5
Radio	82.0	70.6	73.6	82.6	72.3	74.3
Television	57.1	17.9	28.1	60.1	18.8	26.8
Mobile telephone	85.6	53.0	61.5	85.2	55.5	61.3
Non-mobile telephone	6.6	0.5	2.0	8.1	0.5	2.0
Refrigerator	21.2	1.2	6.4	24.0	1.2	5.6
Solar panel	2.9	5.8	5.0	3.3	6.5	5.9
Bicycle	17.7	34.4	30.1	20.6	38.3	34.9
Animal drawn cart	1.0	3.2	2.6	1.5	3.7	3.3
Motorcycle/scooter	2.8	1.9	2.1	3.7	2.1	2.4
Car/truck	13.4	2.9	5.6	14.4	2.9	5.2
Boat with a motor	0.3	0.3	0.3	0.2	0.3	0.3
Ownership of dwelling	17.9	84.4	67.2	23.4	88.8	76.1
Ownership of land on which dwelling is built	16.4	81.2	64.4	21.1	85.5	73.0
Ownership of agricultural land	35.3	78.1	67.0	39.7	80.3	72.4
Ownership of farm animals[1]	27.2	79.6	66.0	30.6	84.7	74.3
Number	2,350	6,707	9,057	7,365	30,704	38,069

[1] Cattle, cows, bulls, horses, donkeys, mules, goats, sheep, or chickens

There has been an increase in the percentage of households owning some items since the 2003 KDHS. The most dramatic increase has been with ownership of telephones; the proportion of households with either a mobile or non-mobile telephone has increased from 13 percent in 2003 to at least 62 percent in 2008-09.[3] This increase could be a result of increased availability of affordable phones together with an increase in the number of service providers and the extent of geographical coverage. The proportion of households owning televisions also increased, from 18 percent in 2003 to 28 percent in 2008-09. Ownership of other items increased minimally.

2.6 WEALTH INDEX

The wealth index is a background characteristic that is used throughout the report as a proxy for the long-term standard of living of the household. It is based on the data from the household's ownership of consumer goods; dwelling characteristics; type of drinking water source; toilet facilities; and other characteristics that relate to a household's socioeconomic status. To construct the index, each of these assets was assigned a weight (factor score) generated through principal component analysis, and the resulting asset scores were standardised in relation to a standard normal distribution, with a mean of zero and a standard deviation of one (Gwatkin et al., 2000). Each household was then assigned a score for each asset, and the scores were summed for each household. Individuals were ranked according to the total score of the household in which they resided. The sample was then divided into quintiles from one (lowest) to five (highest). A single asset index was developed on the basis of data from the entire country sample, and this index is used in all the tabulations presented.

Table 2.10 shows the distribution of the de jure household population into five wealth levels (quintiles) based on the wealth index by residence. These distributions indicate the degree to which wealth is evenly (or unevenly) distributed by geographic areas.

[3] In the 2003 KDHS, mobile and non-mobile telephones were combined into one category, but in the 2008-09 KDHS, the two were separated.

Table 2.10 Wealth quintiles

Percent distribution of the de jure population by wealth quintiles, according to residence and region, Kenya 2008-09

Residence/region	Wealth quintile					Total	Number of population
	Lowest	Second	Middle	Fourth	Highest		
Residence							
Urban	0.5	1.5	2.7	16.8	78.5	100.0	7,365
Rural	24.7	24.4	24.2	20.7	6.0	100.0	30,704
Province							
Nairobi	0.0	0.0	0.2	4.2	95.5	100.0	2,352
Central	2.2	11.1	29.2	36.0	21.4	100.0	3,870
Coast	26.3	12.4	9.4	16.2	35.7	100.0	2,953
Eastern	16.7	22.3	27.6	26.3	7.1	100.0	6,629
Nyanza	17.6	28.4	23.9	17.7	12.3	100.0	6,324
Rift Valley	28.2	19.2	16.1	17.8	18.7	100.0	10,375
Western	17.9	33.0	25.1	18.8	5.2	100.0	4,506
North Eastern	75.9	5.6	5.5	4.9	8.0	100.0	1,059
Total	20.0	20.0	20.0	19.9	20.1	100.0	38,069

Wealth is concentrated in the urban areas, with 79 percent of the urban population falling in the highest wealth quintile. In contrast, those in rural areas are poorer, with one quarter in the lowest wealth quintile and only 6 percent in the highest quintile. Nairobi province, which is entirely urban, has 96 percent of its population in the highest quintile, while North Eastern province has over three-quarters of its population in the lowest quintile. Other provinces have varying distributions of population in different wealth quintiles. Coast, Eastern, Nyanza, Rift Valley, and Western provinces show a substantial distribution across all the quintiles. On the other hand, Central province has most of its population within the highest three quintiles.

2.7 BIRTH REGISTRATION

The registration of births is the inscription of the facts of the birth into an official log kept at the registrar's office. A birth certificate is issued at the time of registration or later as proof of the registration of the birth. Birth registration is basic to ensuring a child's legal status and, thus, basic rights and services (UNICEF, 2006; United Nations General Assembly, 2002).

Table 2.11 gives the percentage of children under five years of age whose births were officially registered and the percentage who had a birth certificate at the time of the survey. Not all children who are registered may have a birth certificate because some certificates may have been lost or never issued. However, all children with a certificate have been registered.

Three of every five children in Kenya under age five have been registered with civil authorities, and close to one-quarter (24 percent) have a birth certificate. The distribution by age brackets and gender shows a nearly equal proportion of birth registration. However, differentials exist according to residence, province, and wealth quintile. For example, the births of 76 percent of children in urban areas have been registered, compared with only 57 percent in rural areas. Nairobi province leads in the proportion of children registered (86 percent), followed by Central province (81 percent), with Nyanza province having the lowest proportion registered (42 percent). The results show that children in higher wealth quintiles are more likely to be registered and to possess a birth certificate than those in lower wealth quintiles.

Table 2.11 Birth registration of children under age five

Percentage of de jure children under five years of age whose births are registered with the civil authorities, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage of children whose births are registered: Had a birth certificate	Did not have a birth certificate	Total registered	Number of children
Age				
<2	20.7	38.9	59.5	2,303
2-4	26.0	34.3	60.3	3,653
Sex				
Male	24.9	36.0	60.9	3,051
Female	22.9	36.2	59.1	2,904
Residence				
Urban	37.1	39.2	76.3	996
Rural	21.3	35.4	56.7	4,960
Province				
Nairobi	38.5	47.9	86.4	307
Central	24.9	55.9	80.9	471
Coast	31.6	35.9	67.5	488
Eastern	16.2	49.1	65.3	932
Nyanza	24.2	17.9	42.1	1,090
Rift Valley	23.2	40.7	63.9	1,708
Western	23.2	22.2	45.4	778
North Eastern	24.1	23.7	47.8	184
Wealth quintile				
Lowest	19.0	29.2	48.2	1,490
Second	18.3	35.4	53.7	1,247
Middle	20.3	39.1	59.4	1,150
Fourth	29.9	35.9	65.8	1,040
Highest	35.8	43.8	79.6	1,028
Total	23.9	36.1	60.0	5,956

Various reasons were given for failure to register births. These reasons are presented in Table 2.12. More than one-quarter (27 percent) of mothers or caretakers cited a lack of awareness of the existence of registration, and 16 percent said that registration is not necessary. Nine percent said that they did not register the child's birth because the registration required them to travel too far, and an equal percentage gave insecurity or nomadic lifestyle as the reason the birth was not registered. Reasons presented do not vary much according to age and sex of the child. However, differentials exist according to residence, province, and wealth index. For example, 10 percent of children in rural areas are not registered because the place of registration was too far, as compared with 4 percent of children in urban areas. As expected, for a majority of children in North Eastern province, insecurity or nomadic lifestyle was cited as the key hindrance to their registration. Notably, for nearly half (48 percent) of those children in Coast province whose births were not registered, the main reason given was lack of awareness about registration. This reason is also commonly cited in Eastern and Western provinces (33 percent and 34 percent, respectively). Lack of awareness of registration and the perception that registration is not necessary feature prominently across all the wealth quintiles as reasons for not registering births.

Table 2.12 Reason for not registering birth

Percent distribution of de jure children under five years of age whose birth was not registered with the civil authorities, according to background characteristics, Kenya 2008-09

Background characteristic	Reason child's birth was never registered							Total	Number of children
	Too far	Lacked money	Not aware	Not necessary	Nomadic life/ insecurity	Other	Missing		
Age									
<2	8.8	4.4	25.4	16.0	7.4	36.9	1.2	100.0	875
2-4	9.1	5.7	28.1	15.8	9.6	29.9	1.7	100.0	1,241
Sex									
Male	8.2	5.7	28.8	15.8	9.3	30.9	1.4	100.0	1,059
Female	9.8	4.6	25.1	16.0	8.1	34.7	1.6	100.0	1,057
Residence									
Urban	3.9	5.8	24.5	20.7	1.5	42.6	1.1	100.0	203
Rural	9.5	5.1	27.2	15.4	9.4	31.8	1.5	100.0	1,913
Province									
Nairobi	(0.9)	(3.9)	(17.8)	(29.9)	(0.0)	(47.6)	(0.0)	100.0	28
Central	7.5	11.1	14.4	23.5	0.0	43.4	0.0	100.0	70
Coast	13.8	2.0	47.9	19.8	0.2	15.7	0.6	100.0	138
Eastern	6.1	4.6	33.0	27.1	3.5	21.8	4.0	100.0	276
Nyanza	7.9	4.0	24.6	10.1	0.2	51.2	2.0	100.0	577
Rift Valley	10.3	4.8	18.9	20.8	21.7	23.1	0.4	100.0	550
Western	9.1	7.9	34.3	8.8	0.2	38.1	1.5	100.0	384
North Eastern	12.2	5.9	21.9	3.2	56.4	0.0	0.4	100.0	92
Wealth quintile									
Lowest	9.8	5.1	32.3	12.0	21.4	18.9	0.6	100.0	730
Second	10.1	6.6	28.2	16.3	1.1	36.1	1.6	100.0	505
Middle	9.2	4.2	22.3	14.6	2.5	45.3	2.0	100.0	413
Fourth	7.8	5.8	17.5	22.0	3.1	40.9	2.9	100.0	302
Highest	4.2	2.4	28.4	24.4	1.3	38.1	1.2	100.0	167
Total	9.0	5.2	26.9	15.9	8.7	32.8	1.5	100.0	2,116

Note: Numbers in parentheses are based on 25-49 unweighted cases.

CHARACTERISTICS OF RESPONDENTS 3

Vivianne Nyarunda and Gladys Mbaluku

This chapter provides a profile of the respondents who were interviewed in the 2008-09 Kenya Demographic and Health Survey (KDHS), i.e., women age 15-49 and men age 15-54. First, information is presented on a number of basic characteristics, including age at the time of the survey, religion, marital status, residence, education, literacy, and media access. Then, the chapter explores adults' employment status, occupation, and earnings. This information is useful for understanding the factors that influence reproductive behaviour and contraceptive use as they provide a context for the interpretation of demographic and health indices. An analysis of these variables provides the socioeconomic context within which demographic and reproductive health issues are examined in the subsequent chapters.

3.1 CHARACTERISTICS OF SURVEY RESPONDENTS

Table 3.1 presents the distribution of 8,444 women and 3,256 men, age 15-49, by age, marital status, residence, province, education, wealth, religion, and ethnicity. The distribution of the respondents according to age shows a generally similar pattern for men and women. As expected in Kenya's age structure, the proportion of respondents in each age group declines with increasing age for both sexes. Forty-one percent of women and 43 percent of men are in the 15-24 age group, 32 percent of women and 29 percent of men are age 25-34, and the remaining respondents are age 35-49.

Fifty-eight percent of the women are currently married or living with a partner, compared with 49 percent of the men. The proportion of men who have never married is almost equal to those in some form of union (47 percent), but only 31 percent of the women have never married. Whereas 4 percent of the women are widowed and 6 percent are either divorced or separated, less than 1 percent of the men are widowed, and 4 percent are divorced or separated.

The proportion of men in urban areas (27 percent) is just slightly above that of the women (25 percent). Within the eight provinces in Kenya, the Rift Valley province has the largest proportion of respondents (27 percent), and the North Eastern province has the smallest (2 percent).

As shown in Table 3.1, 9 percent of women have no education, compared with 3 percent of their male counterparts. Furthermore, 30 percent of the men have completed secondary or higher education, compared with 22 percent of the women.

About half of those interviewed (47 percent of the female and 51 percent of the male populations) are in the two highest wealth quintiles, and the smallest proportions are in the lowest quintile (17 percent of the women and 14 percent of the men). Overall, the proportions increase across the quintiles for both men and women.

The distribution of respondents by religion shows a pattern similar to that seen in the 2003 KDHS, with nine of ten respondents being Christian. There is a slight decline in the proportion of men who report that they practice no religion (4 percent, compared with 7 percent in 2003), but for women, the proportion remains at 2 percent.

Ethnic affiliation is associated with various demographic behaviours because of differences in cultural beliefs. For example, in Kenya, certain ethnic groups encourage the practice of female genital cutting. Survey data show that the Kikuyu and Luhya ethnic groups are the largest, accounting for about 16-19 percent.

Table 3.1 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Kenya 2008-09

Background characteristic	Women			Men		
	Weighted percent	Weighted	Unweighted	Weighted percent	Weighted	Unweighted
Age						
15-19	20.8	1,761	1,767	23.8	776	763
20-24	20.3	1,715	1,744	19.3	630	620
25-29	17.2	1,454	1,423	14.8	483	488
30-34	14.3	1,209	1,180	14.2	461	482
35-39	10.4	877	930	10.6	344	359
40-44	9.1	768	730	9.4	306	291
45-49	7.8	661	670	7.9	257	253
Marital status						
Never married	31.2	2,634	2,540	46.8	1,524	1,501
Married	54.2	4,578	4,682	46.9	1,527	1,574
Living together	4.1	350	359	2.0	65	58
Divorced/separated	6.1	512	512	3.8	123	107
Widowed	4.4	369	351	0.6	19	16
Residence						
Urban	25.4	2,148	2,615	26.6	866	1,023
Rural	74.6	6,296	5,829	73.4	2,392	2,233
Province						
Nairobi	8.6	728	952	9.6	314	399
Central	10.7	905	973	10.7	347	365
Coast	8.0	674	1,149	7.7	252	419
Eastern	16.3	1,376	1,127	16.3	530	417
Nyanza	16.4	1,389	1,318	16.0	520	511
Rift Valley	26.8	2,262	1,278	27.2	885	517
Western	11.0	927	1,039	10.7	349	429
North Eastern	2.2	184	608	1.9	62	199
Highest level of schooling						
No education	8.9	752	1,242	3.4	112	171
Some primary	29.9	2,526	2,431	27.1	883	889
Completed primary	26.9	2,272	1,973	24.7	804	800
Some secondary	12.2	1,030	961	14.6	477	429
Completed secondary	14.7	1,243	1,123	20.5	666	612
More than secondary	7.3	620	714	9.7	316	355
Wealth quintile						
Lowest	16.5	1,393	1,699	14.0	457	543
Second	17.6	1,483	1,284	17.7	577	543
Middle	19.1	1,613	1,455	17.6	574	547
Fourth	20.6	1,736	1,617	22.3	725	675
Highest	26.3	2,220	2,389	28.4	926	948
Religion						
Roman Catholic	21.9	1,852	1,684	25.6	834	775
Protestant/other Christian	68.1	5,748	5,152	63.4	2,065	1,892
Muslim	7.4	626	1,358	6.2	204	421
No religion	2.2	185	184	4.1	133	127
Missing	0.0	3	9	0.2	7	2
Ethnicity						
Embu	1.4	120	145	2.1	70	80
Kalenjin	13.2	1,115	750	13.3	432	297
Kamba	10.9	923	666	11.6	378	274
Kikuyu	19.4	1,642	1,504	17.5	569	545
Kisii	6.9	579	447	7.0	228	179
Luhya	16.3	1,373	1,266	17.7	578	539
Luo	13.0	1,098	1,113	13.0	425	458
Maasai	1.3	113	124	1.2	39	42
Meru	4.9	415	367	5.1	168	155
Mijikenda/Swahili	5.1	430	717	4.0	131	240
Somali	2.8	240	679	2.1	69	202
Taita/Taveta	0.9	79	124	1.1	37	48
Other	3.7	317	542	4.2	136	197
Total 15-49	100.0	8,444	8,444	100.0	3,258	3,256
Men age 50-54	na	na	na	na	207	209
Total men 15-54	na	na	na	na	3,465	3,465

na = Not applicable

3.2 EDUCATIONAL ATTAINMENT BY BACKGROUND CHARACTERISTICS

Tables 3.2.1 and 3.2.2 present an overview of the relationship between the respondent's level of education and other background characteristics. As mentioned, male respondents are more educated than their female counterparts. The proportion of men with no education is less than 10 percent in all age groups. The proportion of women in groups age 35 and above with no education are all greater than 10 percent; indeed, one of every five women age 45-49 has no education.

Educational attainment by type of place of residence shows that respondents in urban areas are more educated than their rural counterparts. Fifty-three percent of males in urban areas have completed secondary school or higher, compared with 22 percent in the rural areas. Among women, 45 percent of those in urban areas have completed secondary education or higher, compared with only 14 percent of their counterparts in rural areas. Educational attainment by province shows an improvement from the 2003 levels. For example, North Eastern province still has the largest proportion of respondents with no education (41 percent for males and 78 percent for females). This is, however, an improvement from 71 percent and 93 percent for the men and women in 2003, respectively.

Educational attainment by wealth quintile shows that there is improvement with higher wealth status for both men and women. For example, only 2 percent of women in the highest quintile have no education, compared with 31 percent in the lowest quintile. On the other hand, only 3 percent of women in the lowest quintile have completed secondary school, compared with 28 percent in the highest quintile. This pattern is similar to that depicted among men, with only 9 percent of the men in the lowest quintile having completed at least secondary education, but 55 percent of those in the highest quintile having attained that level.

Table 3.2.1 Educational attainment: Women

Percent distribution of women age 15-49 by highest level of schooling attended or completed, and median grade completed, according to background characteristics, Kenya 2008-09

Background characteristic	Highest level of schooling						Total	Median years completed	Number of women
	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary			
Age									
15-24	5.6	33.1	26.1	16.9	12.9	5.3	100.0	7.4	3,475
15-19	4.1	41.2	22.9	22.7	8.2	0.9	100.0	7.2	1,761
20-24	7.2	24.9	29.4	11.0	17.8	9.8	100.0	7.6	1,715
25-29	8.3	24.5	32.6	10.7	13.7	10.2	100.0	7.5	1,454
30-34	7.8	31.6	25.7	8.4	16.9	9.6	100.0	7.4	1,209
35-39	10.7	33.9	21.9	6.4	17.3	9.8	100.0	7.3	877
40-44	14.1	20.4	30.0	8.5	19.6	7.4	100.0	6.7	768
45-49	21.3	27.8	23.9	9.5	13.3	4.2	100.0	6.0	661
Residence									
Urban	4.7	14.0	23.7	12.8	27.2	17.6	100.0	9.8	2,148
Rural	10.4	35.3	28.0	12.0	10.5	3.8	100.0	7.0	6,296
Province									
Nairobi	2.5	7.9	21.5	12.2	24.8	31.1	100.0	11.1	728
Central	0.7	21.4	36.5	16.6	19.0	5.8	100.0	7.7	905
Coast	24.3	25.6	21.6	9.3	14.2	4.9	100.0	6.7	674
Eastern	5.7	36.1	29.8	12.1	11.6	4.7	100.0	7.2	1,376
Nyanza	2.1	37.4	27.4	15.8	11.0	6.4	100.0	7.3	1,389
Rift Valley	12.2	28.8	27.8	9.7	16.2	5.3	100.0	7.2	2,262
Western	4.1	45.2	22.7	12.7	11.8	3.4	100.0	6.9	927
North Eastern	77.7	8.7	5.5	2.9	3.5	1.8	100.0	0.0	184
Wealth quintile									
Lowest	31.1	41.7	19.4	4.7	2.4	0.8	100.0	4.9	1,393
Second	6.5	46.8	28.1	11.3	6.1	1.2	100.0	6.7	1,483
Middle	5.5	35.4	32.2	13.5	11.2	2.2	100.0	7.1	1,613
Fourth	4.7	24.7	28.8	17.6	17.6	6.5	100.0	7.6	1,736
Highest	2.4	11.3	25.5	12.3	28.4	20.0	100.0	10.2	2,220
Total	8.9	29.9	26.9	12.2	14.7	7.3	100.0	7.3	8,444

[1] Completed Grade 8 at the primary level, for those under age 40; because of the change in the school system in the 1980s, those age 40 and above are considered to have completed primary if they completed Grade 7.
[2] Completed Form 4 at the secondary level

Table 3.2.2 Educational attainment: Men

Percent distribution of men age 15-49 by highest level of schooling attended or completed, and median grade completed, according to background characteristics, Kenya 2008-09

Background characteristic	Highest level of schooling						Total	Median years completed	Number of men
	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary			
Age									
15-24	1.9	34.8	21.8	19.6	16.2	5.7	100.0	7.6	1,406
15-19	1.0	46.1	18.7	25.0	8.9	0.3	100.0	7.2	776
20-24	3.1	20.9	25.6	13.0	25.2	12.3	100.0	8.6	630
25-29	3.0	23.1	25.6	11.3	25.3	11.7	100.0	8.0	483
30-34	3.9	26.3	26.6	10.6	19.2	13.3	100.0	7.8	461
35-39	3.5	18.3	22.8	14.1	27.2	14.2	100.0	9.1	344
40-44	6.2	19.4	30.3	11.7	21.3	11.0	100.0	7.6	306
45-49	8.2	15.0	31.2	5.4	26.6	13.6	100.0	6.9	257
Residence									
Urban	1.4	11.6	16.1	18.3	31.4	21.2	100.0	10.7	866
Rural	4.2	32.7	27.8	13.3	16.5	5.5	100.0	7.4	2,392
Province									
Nairobi	1.5	5.2	15.2	8.2	37.7	32.2	100.0	11.5	314
Central	1.1	22.3	33.7	13.4	22.0	7.6	100.0	7.8	347
Coast	3.1	20.5	27.0	14.3	25.6	9.4	100.0	8.3	252
Eastern	1.3	37.0	24.1	15.8	15.3	6.4	100.0	7.4	530
Nyanza	0.8	30.5	25.6	17.9	16.1	9.1	100.0	7.7	520
Rift Valley	6.0	26.4	23.5	15.8	21.6	6.8	100.0	7.7	885
Western	1.7	39.5	27.1	13.3	13.3	5.2	100.0	7.3	349
North Eastern	41.2	18.9	14.6	9.8	8.1	7.4	100.0	4.5	62
Wealth quintile									
Lowest	12.9	45.0	23.4	9.3	8.0	1.4	100.0	6.4	457
Second	1.8	39.7	30.0	12.5	13.5	2.6	100.0	7.1	577
Middle	2.4	29.7	31.1	14.1	19.3	3.3	100.0	7.5	574
Fourth	2.8	27.3	21.5	19.3	21.0	8.0	100.0	8.0	725
Highest	0.9	8.6	20.6	15.2	31.2	23.5	100.0	10.9	926
Total 15-49	3.4	27.1	24.7	14.6	20.5	9.7	100.0	7.8	3,258
Men age 50-54	14.2	18.3	34.8	7.6	13.5	11.6	100.0	6.5	207
Total men 15-54	4.1	26.6	25.3	14.2	20.0	9.8	100.0	7.7	3,465

[1] Completed Grade 8 at the primary level, for those under age 40; because of the change in the school system in the 1980s, those age 40 and above are considered to have completed primary if they completed Grade 7.
[2] Completed Form 4 at the secondary level

3.3 LITERACY

The ability to read and write is an important personal asset, allowing individuals increased opportunities in life. Knowing the distribution of the literate population can help programme managers, especially those in health and family planning, decide how to reach women and men with their messages. The 2008-09 KDHS assessed the ability to read among women and men who had never been to school or who had attended only primary school by asking respondents to read a simple, short sentence.[2] Tables 3.3.1 and 3.3.2 show the percent distribution of female and male respondents, respectively, by level of literacy and overall percentage of literacy, according to background characteristics.

Data reveal that the proportion of illiterate women is double that of men; 14 percent of Kenyan women age 15-49 cannot read at all, compared with 7 percent of men in the same age group. Literacy levels among women decrease with increasing age, from 92 percent for women age 15-19 to 62 percent for those in the 45-49 age group. This pattern is less pronounced among men as literacy in all age groups is above 85 percent.

[2] These sentences include the following: 1. The child is reading a book. 2. Farming is hard work. 3. Parents should care for their children. 4. The rains were heavy this year.

Literacy levels for respondents in urban areas are higher than those in rural areas, and the gap between men and women is narrower. One of every five women (21 percent) in North Eastern province is literate, which is the lowest level compared with the other provinces that all have levels above 72 percent. The highest literacy levels are observed among women in Nairobi and Central provinces (96 percent and 95 percent, respectively). Literacy levels for men are also lowest for North Eastern province (64 percent), but they are three times the literacy level among the women from this province.

Women in the lowest wealth quintile have the lowest level of literacy (59 percent) compared with those from higher quintiles (e.g., 95 percent among those in the highest quintile). Men from the lowest wealth quintile (with a literacy level of 80 percent) are not as disadvantaged as their female counterparts.

Table 3.3.1 Literacy: Women

Percent distribution of women age 15-49 by level of schooling attended and level of literacy, and percentage literate, according to background characteristics, Kenya 2008-09

Background characteristic	Secondary school or higher	No schooling or primary school: Can read a whole sentence	Can read part of a sentence	Cannot read at all	No card with required language	Blind/ visually impaired	Missing	Total	Percentage literate[1]	Number
Age										
15-19	31.9	51.8	8.3	7.2	0.6	0.0	0.2	100.0	92.0	1,761
20-24	38.6	38.9	11.5	10.7	0.0	0.1	0.2	100.0	89.0	1,715
25-29	34.6	40.7	12.1	12.0	0.5	0.0	0.1	100.0	87.4	1,454
30-34	34.9	38.9	11.4	14.2	0.4	0.1	0.1	100.0	85.2	1,209
35-39	33.5	33.9	14.8	16.2	1.2	0.3	0.2	100.0	82.2	877
40-44	35.6	30.6	10.6	22.1	0.5	0.6	0.0	100.0	76.8	768
45-49	27.0	19.0	16.2	35.2	0.9	1.4	0.3	100.0	62.2	661
Residence										
Urban	57.6	27.8	7.2	6.9	0.1	0.2	0.3	100.0	92.6	2,148
Rural	26.3	42.9	13.0	16.7	0.7	0.2	0.1	100.0	82.3	6,296
Province										
Nairobi	68.1	20.5	7.3	3.6	0.0	0.1	0.5	100.0	95.8	728
Central	41.4	44.8	9.1	3.9	0.1	0.4	0.3	100.0	95.3	905
Coast	28.4	38.7	5.2	27.4	0.0	0.2	0.1	100.0	72.4	674
Eastern	28.4	51.1	7.5	12.8	0.0	0.2	0.1	100.0	86.9	1,376
Nyanza	33.2	45.1	11.5	9.4	0.1	0.5	0.1	100.0	89.8	1,389
Rift Valley	31.2	34.5	16.4	15.9	1.8	0.2	0.0	100.0	82.1	2,262
Western	28.0	38.6	17.8	15.3	0.0	0.0	0.3	100.0	84.4	927
North Eastern	8.2	9.0	4.1	78.4	0.0	0.2	0.2	100.0	21.2	184
Wealth quintile										
Lowest	7.8	35.3	15.8	38.5	2.2	0.3	0.1	100.0	58.9	1,393
Second	18.6	50.6	16.0	14.4	0.3	0.2	0.0	100.0	85.2	1,483
Middle	26.9	47.5	12.3	12.6	0.3	0.3	0.1	100.0	86.8	1,613
Fourth	41.8	39.5	9.0	9.1	0.2	0.1	0.3	100.0	90.3	1,736
Highest	60.8	27.2	7.4	4.0	0.0	0.3	0.2	100.0	95.4	2,220
Total	34.3	39.1	11.5	14.2	0.5	0.2	0.1	100.0	84.9	8,444

[1] Refers to women who attended secondary school or higher and women who can read a whole sentence or part of a sentence

Table 3.3.2 Literacy: Men

Percent distribution of men age 15-49 by level of schooling attended and level of literacy, and percentage literate, according to background characteristics, Kenya 2008-09

Background characteristic	Secondary school or higher	No schooling or primary school: Can read a whole sentence	Can read part of a sentence	Cannot read at all	No card with required language	Blind/ visually impaired	Missing	Total	Percentage literate[1]	Number
Age										
15-19	34.2	51.2	9.4	4.0	1.0	0.1	0.1	100.0	94.8	776
20-24	50.4	30.6	10.1	8.0	0.6	0.0	0.2	100.0	91.2	630
25-29	48.4	27.0	15.7	7.0	1.3	0.2	0.4	100.0	91.1	483
30-34	43.1	34.0	12.8	9.4	0.4	0.0	0.3	100.0	89.9	461
35-39	55.4	28.6	9.5	5.3	0.8	0.0	0.4	100.0	93.5	344
40-44	44.1	29.9	15.7	9.7	0.5	0.0	0.0	100.0	89.7	306
45-49	45.6	30.8	8.9	12.8	1.5	0.4	0.0	100.0	85.3	257
Residence										
Urban	70.9	20.4	5.4	3.2	0.0	0.0	0.1	100.0	96.7	866
Rural	35.3	40.6	13.7	8.9	1.2	0.1	0.2	100.0	89.6	2,392
Province										
Nairobi	78.1	12.5	7.0	2.2	0.0	0.0	0.2	100.0	97.7	314
Central	43.0	43.2	7.2	6.3	0.4	0.0	0.0	100.0	93.3	347
Coast	49.4	42.7	4.9	2.8	0.0	0.0	0.2	100.0	97.0	252
Eastern	37.6	43.1	14.6	3.9	0.0	0.1	0.7	100.0	95.3	530
Nyanza	43.1	38.7	10.0	7.9	0.0	0.2	0.1	100.0	91.8	520
Rift Valley	44.1	29.4	14.4	8.9	3.0	0.0	0.1	100.0	88.0	885
Western	31.7	41.4	14.9	11.8	0.0	0.2	0.0	100.0	88.0	349
North Eastern	25.3	27.5	10.7	36.4	0.0	0.0	0.0	100.0	63.6	62
Wealth quintile										
Lowest	18.7	44.5	16.5	17.7	2.4	0.2	0.0	100.0	79.7	457
Second	28.6	41.6	21.3	8.0	0.3	0.2	0.0	100.0	91.5	577
Middle	36.8	48.4	7.8	5.7	1.1	0.0	0.3	100.0	92.9	574
Fourth	48.3	31.8	11.1	7.3	0.8	0.1	0.6	100.0	91.2	725
Highest	69.9	21.1	5.6	2.9	0.4	0.0	0.0	100.0	96.7	926
Total 15-49	44.8	35.2	11.5	7.4	0.9	0.1	0.2	100.0	91.5	3,258
Men age 50-54	32.7	32.9	14.0	18.6	1.4	0.2	0.3	100.0	79.6	207
Total men 15-54	44.1	35.1	11.7	8.0	0.9	0.1	0.2	100.0	90.8	3,465

[1] Refers to men who attended secondary school or higher and men who can read a whole sentence or part of a sentence

3.4 ACCESS TO MASS MEDIA

Information access is essential for increasing people's knowledge and awareness of what is taking place around them, which may eventually affect their perceptions and behaviour. It is important to know the types of persons who are more or less likely to be reached by the media for purposes of planning programmes intended to spread information about health and family planning. In the survey, exposure to the media was assessed by asking how often a respondent reads a newspaper, watches television, or listens to a radio. Tables 3.4.1 and 3.4.2 show the percentage of women and of men who were exposed to different types of media by age, urban or rural residence, province, level of education, and wealth quintile.

As has been the case in previous surveys, men have more access to all forms of mass media than women. For example, only 24 percent of women read a newspaper at least once a week, compared with 46 percent of men (Figure 3.1). The tables show that radio is the most popular medium for both women and men, while newspapers are the least popular medium. The proportion of women who are not exposed to any type of media at least once a week generally increases gradually with age. The largest proportion of women who do not have access to any media at least once a week are those age 45-49 (27 percent). Among men, those age 15-19 are the largest proportion with no access to any form of media at least once a week.

Table 3.4.1 Exposure to mass media: Women

Percentage of women age 15-49 who are exposed to specific media on a weekly basis, by background characteristics, Kenya 2008-09

Background characteristic	Reads a newspaper at least once a week	Watches television at least once a week	Listens to the radio at least once a week	All three media at least once a week	No media at least once a week	Number
Age						
15-19	26.3	31.6	76.6	14.0	19.5	1,761
20-24	27.3	37.2	80.6	17.7	15.8	1,715
25-29	26.2	39.4	78.5	20.7	18.0	1,454
30-34	24.4	31.7	77.0	15.9	19.1	1,209
35-39	22.5	34.5	73.9	16.2	20.3	877
40-44	20.0	33.0	76.0	15.5	21.3	768
45-49	14.2	26.7	70.7	10.4	26.6	661
Residence						
Urban	49.2	69.3	83.1	41.5	9.3	2,148
Rural	15.8	22.1	74.9	7.6	22.6	6,296
Province						
Nairobi	59.1	86.1	87.8	52.5	5.0	728
Central	22.9	44.7	91.0	14.6	6.3	905
Coast	25.7	34.6	65.2	16.7	28.3	674
Eastern	14.0	23.8	68.7	8.1	27.6	1,376
Nyanza	24.6	26.8	80.5	12.9	15.0	1,389
Rift Valley	23.6	30.2	77.1	16.7	20.7	2,262
Western	17.4	23.4	80.4	7.6	16.4	927
North Eastern	6.9	9.5	25.7	4.3	71.9	184
Education						
No education	0.8	8.6	35.4	0.3	62.3	752
Primary incomplete	6.9	16.3	72.3	2.6	24.9	2,526
Primary complete	16.3	32.0	83.1	8.7	13.8	2,272
Secondary+	51.9	58.0	87.2	38.3	7.4	2,894
Wealth quintile						
Lowest	4.3	2.9	42.3	0.4	56.3	1,393
Second	9.7	6.8	77.5	1.5	20.3	1,483
Middle	15.1	19.8	84.9	5.2	13.5	1,613
Fourth	24.6	42.1	85.3	15.0	11.1	1,736
Highest	53.0	76.1	86.2	45.1	5.9	2,220
Total	24.3	34.1	77.0	16.3	19.2	8,444

Urban women have more access to all forms of mass media compared with their rural counterparts; for example, only 16 percent of women in rural areas read a newspaper at least once a week, compared with 49 percent of women in urban areas. Although 69 percent of women in urban areas watch television at least once a week, only 22 percent of those residing in rural areas do so. Access to all three forms of mass media is highest among residents of Nairobi and lowest among residents of North Eastern province for both women and men.

Access to mass media increases with educational attainment and wealth quintile for both women and men. For example, the proportion of women who listen to the radio at least once a week increases from 35 percent of women with no education to 87 percent of those with at least some secondary schooling. Similarly, the proportion of women who watch television at least once a week increases from only 3 percent of those in the poorest wealth quintile to 76 percent of those in the highest quintile.

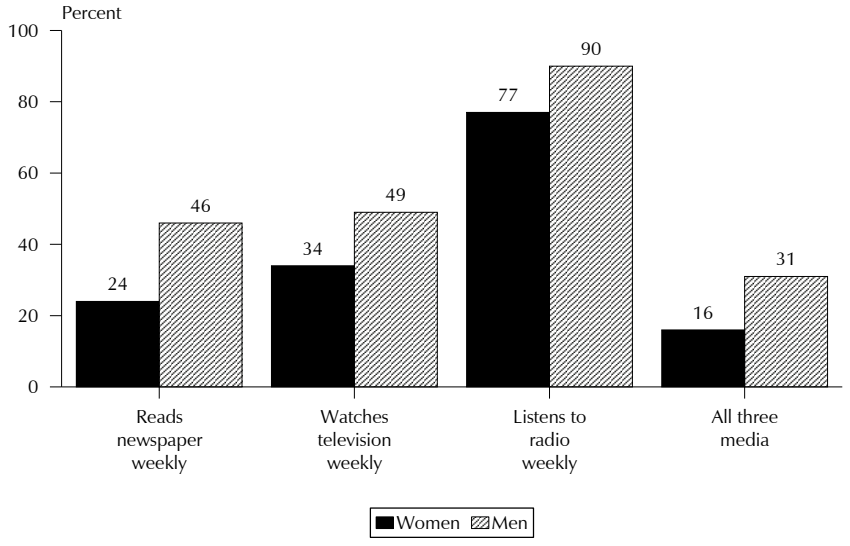
The percentage of women who access all three types of mass media at least once a week has increased since 2003 from 13 percent to 16 percent for women age 15 to 49 and from 27 percent to 31 percent for men age 15-49.

Table 3.4.2 Exposure to mass media: Men

Percentage of men age 15-49 who are exposed to specific media on a weekly basis, by background characteristics, Kenya 2008-09

Background characteristic	Reads a newspaper at least once a week	Watches television at least once a week	Listens to the radio at least once a week	All three media at least once a week	No media at least once a week	Number
Age						
15-19	37.9	40.2	87.2	20.9	8.7	776
20-24	48.4	53.7	90.9	33.5	4.7	630
25-29	48.6	54.4	90.9	35.5	6.5	483
30-34	47.2	53.5	90.0	35.8	6.5	461
35-39	51.2	56.8	92.3	41.2	5.9	344
40-44	49.7	45.9	92.6	31.4	5.2	306
45-49	46.9	44.2	90.1	28.4	6.4	257
Residence						
Urban	72.5	78.3	92.5	59.9	1.7	866
Rural	36.5	38.9	89.3	21.0	8.2	2,392
Province						
Nairobi	84.5	89.7	92.9	75.0	0.3	314
Central	63.3	57.6	95.0	43.0	1.4	347
Coast	40.1	41.2	87.9	23.0	9.5	252
Eastern	39.6	39.6	88.4	21.4	7.4	530
Nyanza	45.8	49.6	95.4	29.4	2.9	520
Rift Valley	38.0	45.9	87.1	26.0	10.0	885
Western	32.8	38.2	87.5	20.6	9.0	349
North Eastern	25.9	26.5	85.9	17.4	12.0	62
Education						
No education	0.7	15.4	63.3	0.0	32.3	112
Primary incomplete	19.4	28.6	86.0	7.8	12.0	883
Primary complete	39.5	43.7	92.2	22.5	5.5	804
Secondary+	69.3	67.7	93.6	52.9	1.7	1,459
Wealth quintile						
Lowest	15.3	16.8	75.2	5.0	23.9	457
Second	23.7	22.0	90.1	7.8	7.6	577
Middle	42.7	38.6	93.3	21.3	4.1	574
Fourth	48.9	56.9	92.4	32.2	4.4	725
Highest	74.9	83.3	93.7	64.6	0.3	926
Total 15-49	46.1	49.4	90.1	31.3	6.5	3,258
Men age 50-54	40.3	41.2	84.6	25.9	8.8	207
Total men 15-54	45.7	48.9	89.8	31.0	6.6	3,465

Figure 3.1 Access to Mass Media



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3.5 EMPLOYMENT

Respondents were asked whether they were employed at the time of the survey and, if not, whether they were employed in the 12 months that preceded the survey. Because employment is viewed as a stock concept (measured at a particular point in time), the corresponding statistics must, in principle, refer to a precise instant in time. Respondents are asked a number of questions to elicit their current employment status and continuity of employment in the 12 months prior to the survey. Employed individuals are those who say that they are currently working (i.e., worked or held a job in the past 7 days) and those who worked at any time during the 12 months prior to the survey (referred to as usual employment).

Table 3.5.1 Employment status: Women

Percent distribution of women age 15-49 by employment status, according to background characteristics, Kenya 2008-09

Background characteristic	Employed in the 12 months preceding the survey		Not employed in the 12 months preceding the survey	Total	Number of women
	Currently employed[1]	Not currently employed			
Age					
15-19	19.3	1.8	78.9	100.0	1,761
20-24	50.5	3.7	45.7	100.0	1,715
25-29	66.6	3.1	30.3	100.0	1,454
30-34	71.4	2.1	26.5	100.0	1,209
35-39	73.7	1.5	24.8	100.0	877
40-44	78.7	1.8	19.5	100.0	768
45-49	74.2	1.3	24.5	100.0	661
Marital status					
Never married	35.4	1.8	62.8	100.0	2,634
Married or living together	63.9	2.7	33.4	100.0	4,928
Divorced/separated/ widowed	79.5	2.2	18.3	100.0	881
Number of living children					
0	31.8	1.9	66.3	100.0	2,397
1-2	61.9	3.1	35.0	100.0	2,579
3-4	70.5	2.1	27.4	100.0	1,899
5+	69.1	2.2	28.7	100.0	1,569
Residence					
Urban	59.7	2.2	38.1	100.0	2,148
Rural	55.5	2.5	42.0	100.0	6,296
Province					
Nairobi	58.5	2.4	39.2	100.0	728
Central	66.4	2.5	31.1	100.0	905
Coast	48.3	4.2	47.5	100.0	674
Eastern	55.4	4.4	40.1	100.0	1,376
Nyanza	65.6	1.7	32.5	100.0	1,389
Rift Valley	57.6	1.8	40.6	100.0	2,262
Western	45.2	0.9	54.0	100.0	927
North Eastern	17.1	0.3	82.6	100.0	184
Education					
No education	50.6	3.0	46.4	100.0	752
Primary incomplete	52.7	2.6	44.7	100.0	2,526
Primary complete	60.1	2.9	37.0	100.0	2,272
Secondary+	58.8	1.7	39.5	100.0	2,894
Wealth quintile					
Lowest	48.4	3.6	48.0	100.0	1,393
Second	54.0	1.7	44.2	100.0	1,483
Middle	57.2	2.1	40.7	100.0	1,613
Fourth	55.8	2.4	41.8	100.0	1,736
Highest	63.7	2.3	34.1	100.0	2,220
Total	56.6	2.4	41.0	100.0	8,444

[1] 'Currently employed' is defined as having done work in the past seven days. Includes persons who did not work in the past seven days but who are regularly employed and were absent from work for leave, illness, vacation, or any other such reason.

Table 3.5.2 Employment status: Men

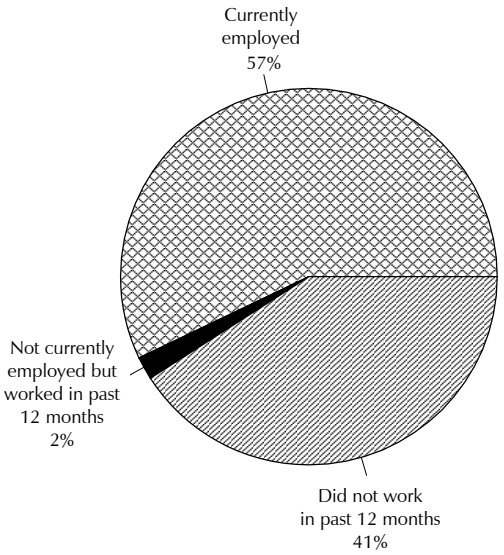
Percent distribution of men age 15-49 by employment status, according to background characteristics, Kenya 2008-09

Background characteristic	Employed in the 12 months preceding the survey: Currently employed[1]	Employed in the 12 months preceding the survey: Not currently employed	Not employed in the 12 months preceding the survey	Total	Number of men
Age					
15-19	59.9	3.9	36.3	100.0	776
20-24	86.9	2.8	10.3	100.0	630
25-29	97.4	0.7	1.9	100.0	483
30-34	95.4	2.5	2.1	100.0	461
35-39	98.6	0.5	0.9	100.0	344
40-44	98.6	1.0	0.4	100.0	306
45-49	97.9	0.9	1.2	100.0	257
Marital status					
Never married	73.8	3.0	23.2	100.0	1,524
Married or living together	97.8	1.2	0.9	100.0	1,592
Divorced/separated/ widowed	94.4	3.1	2.5	100.0	142
Number of living children					
0	75.3	3.0	21.7	100.0	1,626
1-2	97.2	1.1	1.7	100.0	691
3-4	97.2	1.7	1.1	100.0	559
5+	98.5	1.1	0.4	100.0	381
Residence					
Urban	85.8	1.5	12.7	100.0	866
Rural	86.7	2.4	11.0	100.0	2,392
Province					
Nairobi	86.7	1.3	12.0	100.0	314
Central	91.4	2.0	6.7	100.0	347
Coast	79.6	1.4	19.0	100.0	252
Eastern	94.2	0.3	5.6	100.0	530
Nyanza	83.2	5.7	11.0	100.0	520
Rift Valley	86.2	1.2	12.6	100.0	885
Western	84.5	2.5	13.0	100.0	349
North Eastern	59.8	7.3	33.0	100.0	62
Education					
No education	93.7	3.2	3.1	100.0	112
Primary incomplete	81.7	3.2	15.1	100.0	883
Primary complete	93.9	0.7	5.4	100.0	804
Secondary+	84.6	2.2	13.2	100.0	1,459
Wealth quintile					
Lowest	82.6	3.3	14.1	100.0	457
Second	86.1	2.2	11.7	100.0	577
Middle	89.0	1.8	9.2	100.0	574
Fourth	85.1	1.9	13.0	100.0	725
Highest	88.0	1.8	10.2	100.0	926
Total 15-49	86.4	2.1	11.4	100.0	3,258
Men age 50-54	97.6	1.5	1.0	100.0	207
Total men 15-54	87.1	2.1	10.8	100.0	3,465

[1] 'Currently employed' is defined as having done work in the past seven days. Includes persons who did not work in the past seven days but who are regularly employed and were absent from work for leave, illness, vacation, or any other such reason.

Tables 3.5.1 and 3.5.2 and Figure 3.2 show the percent distribution of adult women and men according to current and usual employment. As shown, 57 percent of women and 86 percent of men age 15-49 are categorised as currently employed. The proportion of women currently employed increases with age up to 44 years and then declines slightly for those in the 45-49 age group. The data on men show little variation with age over age 25 or by type of place of residence, education level, or wealth status. The proportion of currently employed women and men increases with number of living children except for women with five or more children.

Figure 3.2 Women's Employment Status in the Past 12 Months



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Current employment status for women by province shows that women from North Eastern province have the least chance of being employed (17 percent are currently employed) and those from Central and Nyanza have the highest proportions employed (66 percent). Women who are divorced, separated, or widowed have the highest proportions employed (80 percent), followed by those who are married (64 percent), and only 35 percent of the never-married are employed. There is little variation in employment of women by urban or rural residence.

3.6 OCCUPATION

The term occupation refers to the job held or the kind of work performed during the reference period. Respondents who were currently employed were asked to state their occupation, and the results are presented in Tables 3.6.1 and 3.6.2 for women and men, respectively. Thirty-nine percent of working women and men age 15-49 are engaged in agricultural occupations, a drop from the 49 percent and 42 percent, respectively, recorded in 2003. The next major occupation category among working women and men is that of professional, technical, or managerial occupations, which accounts for 31 percent of working women and 19 percent of working men age 15-49. Among employed women, the next largest category is sales and services, accounting for 13 percent of employment, followed by domestic service (7 percent) and skilled manual labour (6 percent). Among working men age 15-49, however, 16 percent are employed in unskilled manual jobs, while 9 percent each are employed in sales and services and skilled manual jobs.

There has been a shift in the distribution by occupation since 2003. The proportion of working women and men who are employed in professional, technical, and managerial occupations appears to have increased since 2003 as the proportion employed in agriculture has declined. Occupations in the sales and services sector accounted for a larger share of employment in 2003 than in 2008-09.

Table 3.6.1 Occupation: Women

Percent distribution of women age 15-49 employed in the 12 months preceding the survey by occupation, according to background characteristics, Kenya 2008-09

Background characteristic	Professional/ technical/ managerial	Clerical	Sales and services	Skilled manual	Unskilled manual	Domestic service	Agri-culture	Missing	Total	Number of women
Age										
15-19	12.9	0.4	11.2	6.6	3.0	14.6	49.9	1.4	100.0	371
20-24	31.5	2.2	16.0	6.9	1.4	10.3	31.4	0.4	100.0	931
25-29	29.4	3.6	13.6	8.8	2.9	7.9	33.3	0.6	100.0	1,014
30-34	34.0	1.4	13.5	4.8	3.2	3.4	39.5	0.3	100.0	889
35-39	31.7	3.3	12.8	4.4	2.7	4.6	39.8	0.7	100.0	659
40-44	36.8	1.7	8.2	4.0	2.5	6.1	40.7	0.1	100.0	618
45-49	27.9	1.2	8.9	4.0	1.8	3.8	52.5	0.0	100.0	499
Marital status										
Never married	28.6	4.7	11.8	8.9	2.8	16.3	26.1	0.9	100.0	980
Married or living together	32.4	1.7	12.2	5.2	1.9	2.9	43.3	0.4	100.0	3,280
Divorced/separated/ widowed	24.4	0.8	15.6	5.0	4.6	12.8	36.6	0.1	100.0	720
Number of living children										
0	30.6	5.0	12.1	7.5	2.0	14.7	27.2	0.9	100.0	807
1-2	32.4	3.1	15.7	7.1	1.9	7.2	32.1	0.6	100.0	1,676
3-4	31.6	1.1	12.0	4.8	2.9	5.0	42.3	0.2	100.0	1,379
5+	26.0	0.2	9.0	4.4	3.1	3.4	53.7	0.2	100.0	1,118
Residence										
Urban	45.7	6.5	18.0	5.4	3.3	14.5	5.9	0.7	100.0	1,330
Rural	24.9	0.6	10.6	6.1	2.2	4.2	51.0	0.4	100.0	3,650
Province										
Nairobi	45.4	10.2	14.6	4.9	5.7	15.0	2.7	1.5	100.0	443
Central	19.9	1.4	12.5	5.3	2.8	6.2	51.5	0.5	100.0	624
Coast	38.1	5.8	16.2	6.0	2.1	13.2	18.7	0.0	100.0	354
Eastern	22.0	0.6	8.8	1.5	3.1	6.8	56.9	0.4	100.0	824
Nyanza	27.5	0.7	12.8	5.4	1.1	4.4	47.9	0.3	100.0	936
Rift Valley	33.0	1.5	14.0	8.4	1.5	5.1	36.1	0.4	100.0	1,343
Western	37.3	0.6	9.9	10.1	3.8	5.2	33.0	0.1	100.0	427
North Eastern	52.5	3.2	16.4	0.3	2.3	23.8	0.0	1.6	100.0	32
Education										
No education	24.2	0.4	13.1	10.5	5.4	5.8	40.5	0.1	100.0	403
Primary incomplete	21.4	0.0	11.9	2.8	2.8	6.4	54.5	0.3	100.0	1,395
Primary complete	24.1	0.5	13.1	10.1	2.2	8.9	40.5	0.6	100.0	1,431
Secondary+	44.4	5.7	12.6	3.9	1.8	6.1	25.0	0.5	100.0	1,751
Wealth quintile										
Lowest	18.3	0.0	8.5	7.1	4.0	4.0	58.1	0.1	100.0	725
Second	24.6	0.2	8.9	5.1	2.2	4.3	54.4	0.3	100.0	827
Middle	20.1	0.8	8.2	6.6	1.8	3.8	58.4	0.2	100.0	956
Fourth	32.0	0.9	13.3	6.5	1.3	4.9	40.5	0.5	100.0	1,010
Highest	45.5	6.2	19.2	4.9	3.1	13.4	7.0	0.8	100.0	1,463
Total	30.5	2.2	12.6	5.9	2.5	7.0	39.0	0.4	100.0	4,981

Table 3.6.2 Occupation: Men

Percent distribution of men age 15-49 employed in the 12 months preceding the survey by occupation, according to background characteristics, Kenya 2008-09

Background characteristic	Professional/ technical/ managerial	Clerical	Sales and services	Skilled manual	Unskilled manual	Domestic service	Agri-culture	Missing	Total	Number of men
Age										
15-19	2.8	0.0	5.5	3.3	9.7	2.3	56.6	19.9	100.0	495
20-24	15.6	0.3	10.9	9.4	13.7	2.9	44.2	2.8	100.0	565
25-29	24.5	1.0	13.5	8.5	18.5	4.6	29.5	0.0	100.0	474
30-34	22.3	1.3	7.8	14.0	20.1	2.6	31.9	0.0	100.0	451
35-39	31.9	2.2	7.5	7.8	18.9	1.5	30.3	0.0	100.0	341
40-44	25.0	1.5	10.7	9.1	15.1	2.2	36.5	0.0	100.0	305
45-49	22.2	1.3	8.5	7.3	13.0	4.5	42.9	0.1	100.0	254
Marital status										
Never married	10.0	0.7	9.5	6.3	11.8	3.1	49.0	9.6	100.0	1,169
Married or living together	26.8	1.3	9.0	9.7	18.1	2.7	32.4	0.1	100.0	1,578
Divorced/separated/ widowed	14.3	0.3	11.2	14.4	17.1	4.2	38.4	0.1	100.0	138
Number of living children										
0	12.8	0.6	9.7	6.3	11.8	3.6	46.4	8.8	100.0	1,273
1-2	28.7	1.4	8.8	10.6	18.2	2.8	29.2	0.3	100.0	679
3-4	24.1	1.7	9.7	11.6	20.0	2.0	30.9	0.1	100.0	553
5+	17.9	0.4	8.4	7.5	16.9	2.2	46.6	0.0	100.0	380
Residence										
Urban	39.1	2.6	13.4	11.0	22.1	5.6	4.3	1.9	100.0	756
Rural	12.4	0.4	7.9	7.6	13.2	1.9	51.9	4.7	100.0	2,129
Province										
Nairobi	38.1	5.8	12.6	15.7	20.0	5.4	2.2	0.2	100.0	276
Central	14.7	0.0	11.4	9.7	20.4	2.5	40.9	0.4	100.0	324
Coast	30.6	2.2	17.9	11.8	15.8	8.0	13.8	0.0	100.0	204
Eastern	14.4	0.1	5.8	3.4	7.2	5.2	43.5	20.4	100.0	500
Nyanza	14.4	0.9	6.8	10.9	15.1	0.9	49.6	1.3	100.0	462
Rift Valley	21.2	0.3	10.1	5.1	15.5	1.3	46.2	0.3	100.0	774
Western	8.9	0.0	5.0	12.3	20.3	1.5	51.8	0.3	100.0	303
North Eastern	36.5	1.4	15.3	5.1	17.2	0.0	21.9	2.6	100.0	41
Education										
No education	9.9	0.0	9.7	8.6	12.5	2.4	57.0	0.0	100.0	108
Primary incomplete	4.9	0.1	9.1	6.8	16.8	2.9	53.6	5.8	100.0	749
Primary complete	10.1	0.4	12.7	13.8	17.7	2.4	39.8	2.9	100.0	761
Secondary+	34.4	1.9	7.3	6.3	13.7	3.3	29.2	3.9	100.0	1,266
Wealth quintile										
Lowest	8.2	0.3	5.5	6.0	14.5	1.2	58.6	5.7	100.0	392
Second	10.0	0.5	5.8	8.9	13.1	1.3	56.6	3.8	100.0	509
Middle	7.6	0.0	6.3	7.7	15.8	1.2	55.3	6.0	100.0	521
Fourth	16.3	0.9	11.9	7.0	12.7	4.5	42.7	4.0	100.0	631
Highest	40.2	2.2	13.1	11.1	19.5	4.5	7.4	2.0	100.0	832
Total 15-49	19.4	1.0	9.3	8.5	15.5	2.9	39.4	4.0	100.0	2,885
Men age 50-54	28.2	1.8	8.1	6.4	7.0	1.1	46.9	0.4	100.0	205
Total men 15-54	20.0	1.0	9.2	8.4	15.0	2.8	39.9	3.7	100.0	3,090

3.7 EARNINGS AND TYPE OF EMPLOYMENT

Table 3.7 presents the percent distribution of employed women age 15-49 by type of earnings and employer characteristics, according to type of employment (agricultural or non-agricultural). Seventy-five percent of women receive cash for their work. This is similar to the percentage recorded in 2003. Almost one-quarter of working women are not paid (Figure 3.3). Women employed in agricultural work are much more likely to be unpaid and much less likely to be paid in cash only, compared with women employed in non-agricultural occupations.

More than three in five working women (62 percent) are self-employed. Thirty percent are employed by a non-family member, and 9 percent are employed by a family member. Those working in agricultural jobs are more likely to be self-employed or employed by a family member than are women working in non-agricultural jobs.

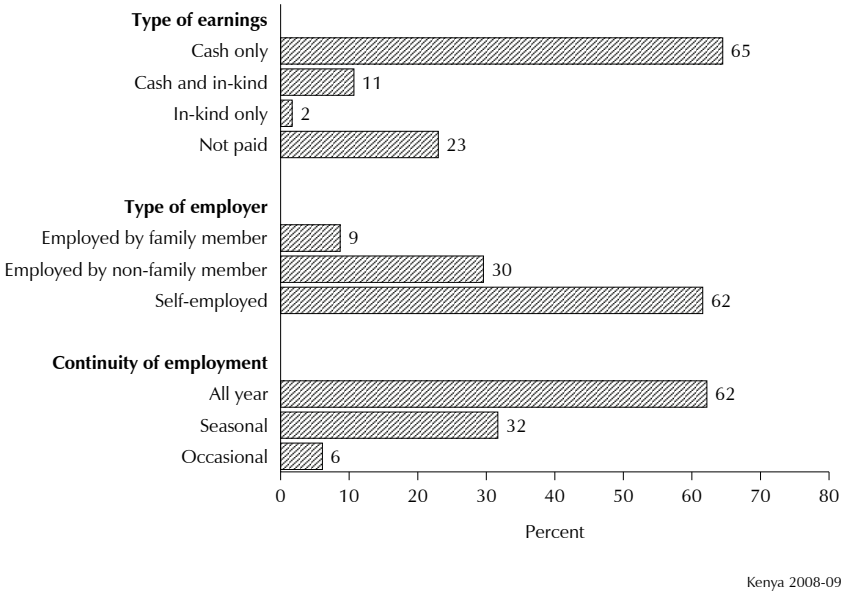
Table 3.7 Type of employment among women

Percent distribution of women age 15-49 employed in the 12 months preceding the survey by type of earnings, type of employer, and continuity of employment, according to type of employment (agricultural or non-agricultural), Kenya 2008-09

Employment characteristic	Agricultural work	Non-agricultural work	Total
Type of earnings			
Cash only	33.2	84.6	64.5
Cash and in-kind	14.7	8.3	10.7
In-kind only	3.7	0.5	1.7
Not paid	48.5	6.7	23.0
Total	100.0	100.0	100.0
Type of employer			
Employed by family member	16.8	3.4	8.7
Employed by non-family member	14.8	39.1	29.6
Self-employed	68.3	57.4	61.6
Total	100.0	100.0	100.0
Continuity of employment			
All year	49.9	70.1	62.2
Seasonal	44.9	23.4	31.7
Occasional	5.2	6.5	6.1
Total	100.0	100.0	100.0
Number of women employed during the last 12 months	1,941	3,017	4,981

Note: Total includes women with information missing on type of employment who are not shown separately.

Figure 3.3 Employment Characteristics among Working Women



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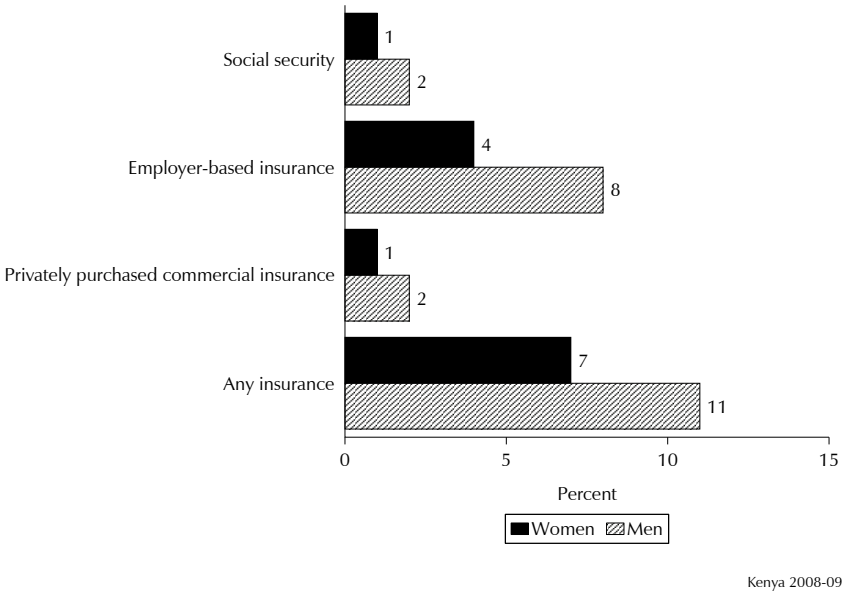
Sixty-two percent of working women are employed all year; another 32 percent have seasonal jobs and 6 percent work only occasionally. Women who are engaged in non-agricultural work (70 percent) are more assured of continuity in employment than those engaged in agricultural activities, whose employment is more prone to consist of seasonal work.

3.8 HEALTH INSURANCE COVERAGE

Medical insurance provides peace of mind, and most important, necessary care to save the life and/or well-being of the enrolee. In the 2008-09 KDHS, women and men were asked if they were covered by any health insurance and, if so, what type of insurance. Results shown in Figure 3.4 indicate that few Kenyans have health insurance. Only 7 percent of women and 11 percent of men age 15-49 are covered by medical insurance. The largest category of insurance is employer-based policies.

Figure 3.4 **Health Insurance Coverage**



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3.9 KNOWLEDGE AND ATTITUDES CONCERNING TUBERCULOSIS

The 2008-09 KDHS collected data on women's and men's knowledge and attitudes concerning tuberculosis (TB). Tables 3.8.1 and 3.8.2 show the percentage of women and men who have heard of TB, and among those who have heard of TB, the percentage who know that TB is spread through air by coughing, the percentage who believe that TB can be cured, and the percentage who would want a family member's TB to be kept a secret.

Results show that awareness of TB is almost universal in Kenya; 98 percent of women and 99 percent of men have heard about TB. Moreover, knowledge of other aspects of TB is also widespread. Seventy-six percent of women and 80 percent of men age 15-49 who have heard of TB know that it is spread through the air by coughing, and 89 percent of women and 92 percent of men know that TB can be cured. Finally, stigma related to TB is not so common in Kenya. Only one in four women and less than one in ten men say that, if a family member had TB, they would want to keep it a secret.

Differences by background characteristics show that, as expected, rural women and men are less likely than urban residents to know that TB is spread through the air by coughing and to believe that TB can be cured. Among women who have heard about TB, women in Coast province are least likely to know that TB is spread through the air by coughing (66 percent), while those in Nyanza province are most likely to want a family member's TB kept a secret. Similarly, men in Coast province are least likely to know that TB is spread through the air by coughing, and men in Eastern province are most likely to want a family member's TB kept a secret.

Table 3.8.1 Knowledge and attitude concerning tuberculosis: Women

Percentage of women age 15-49 who have heard of tuberculosis (TB), and among women who have heard of TB, the percentages who know that TB is spread through the air by coughing, the percentage who believe that TB can be cured, and the percentage who would want to keep secret that a family member has TB, by background characteristics, Kenya 2008-09

	Among all respondents		Among respondents who have heard of TB			
Background characteristic	Percentage who have heard of TB	Number	Percentage who report that TB is spread through the air by coughing	Percentage who believe that TB can be cured	Percentage who would want a family member's TB kept secret	Number
Age						
15-19	96.6	1,761	74.4	81.4	33.4	1,701
20-24	98.3	1,715	75.7	89.8	25.8	1,687
25-29	98.5	1,454	74.2	89.7	20.5	1,432
30-34	98.5	1,209	79.2	94.1	22.0	1,190
35-39	98.8	877	78.6	93.8	20.6	867
40-44	99.4	768	81.0	90.6	17.9	763
45-49	98.7	661	71.7	91.1	24.7	652
Residence						
Urban	99.1	2,148	85.2	92.2	24.3	2,128
Rural	97.9	6,296	73.0	88.3	24.6	6,164
Province						
Nairobi	98.5	728	90.1	96.6	19.2	717
Central	99.5	905	81.5	91.3	29.0	900
Coast	98.9	674	65.9	93.6	20.3	666
Eastern	98.9	1,376	72.4	87.1	20.4	1,361
Nyanza	97.9	1,389	77.0	89.4	33.2	1,359
Rift Valley	97.4	2,262	75.3	87.8	24.1	2,203
Western	97.4	927	73.3	84.1	23.0	902
North Eastern	99.3	184	79.3	94.2	17.8	183
Education						
No education	94.2	752	58.4	84.9	20.4	709
Primary incomplete	96.9	2,526	64.8	83.5	28.2	2,449
Primary complete	99.4	2,272	77.5	90.1	26.4	2,258
Secondary+	99.4	2,894	89.2	94.7	20.9	2,877
Wealth quintile						
Lowest	95.8	1,393	62.7	83.9	20.7	1,334
Second	98.2	1,483	71.2	87.3	24.2	1,456
Middle	99.0	1,613	74.1	87.7	27.7	1,597
Fourth	98.3	1,736	80.9	91.0	25.7	1,707
Highest	99.0	2,220	85.5	93.7	23.8	2,198
Total	98.2	8,444	76.2	89.3	24.5	8,292

Table 3.8.2 Knowledge and attitude concerning tuberculosis: Men

Percentage of men age 15-49 who have heard of tuberculosis (TB), and among men who have heard of TB, the percentages who know that TB is spread through the air by coughing, the percentage who believe that TB can be cured, and the percentage who would want to keep secret that a family member has TB, by background characteristics, Kenya 2008-09

	Among all respondents		Among respondents who have heard of TB			
Background characteristic	Percentage who have heard of TB	Number	Percentage who report that TB is spread through the air by coughing	Percentage who believe that TB can be cured	Percentage who would want a family member's TB kept secret	Number
Age						
15-19	98.5	776	79.6	87.8	14.2	765
20-24	96.8	630	80.0	92.5	10.8	610
25-29	99.2	483	77.4	93.5	4.8	479
30-34	99.6	461	79.1	93.9	8.5	459
35-39	99.9	344	87.0	90.9	5.5	344
40-44	99.9	306	80.7	91.2	5.6	306
45-49	99.2	257	81.9	94.3	8.2	255
Residence						
Urban	99.8	866	88.4	95.8	8.3	864
Rural	98.4	2,392	77.4	90.0	9.4	2,353
Province						
Nairobi	99.7	314	94.4	95.6	6.8	313
Central	99.3	347	76.6	89.3	9.9	344
Coast	100.0	252	73.7	96.7	5.5	252
Eastern	99.6	530	85.1	91.6	16.6	528
Nyanza	99.3	520	84.4	91.9	9.0	516
Rift Valley	97.8	885	75.4	90.8	5.8	866
Western	96.7	349	76.1	87.0	11.2	337
North Eastern	100.0	62	74.9	96.7	1.9	62
Education						
No education	91.7	112	66.9	84.3	5.7	103
Primary incomplete	97.4	883	71.9	87.2	10.7	860
Primary complete	99.1	804	78.0	92.9	9.3	797
Secondary+	100.0	1,459	87.5	94.0	8.3	1,459
Wealth quintile						
Lowest	96.8	457	75.0	89.5	5.0	442
Second	98.1	577	75.9	90.6	9.8	566
Middle	98.9	574	79.2	89.2	10.2	567
Fourth	99.5	725	79.5	90.6	10.9	721
Highest	99.5	926	87.0	95.4	8.6	922
Total 15-49	98.8	3,258	80.3	91.6	9.1	3,218
Men age 50-54	98.5	207	72.8	93.5	8.4	204
Total men 15-54	98.8	3,465	79.9	91.7	9.1	3,422

Among women who have heard about TB, those with no education (58 percent) and those in the lowest wealth quintile (63 percent) are less likely to know that TB is spread through the air by coughing than women with some education and those in the higher wealth quintiles. Similarly, among men who have heard about TB, men with no education (67 percent) and in the lowest wealth quintile (75 percent) are less likely to know that TB is spread through the air by coughing than men with some education and those in the higher wealth quintiles.

3.10 SMOKING

In order to measure the extent of smoking among Kenyan adults, women and men who were interviewed in the 2008-09 KDHS were asked if they currently smoked cigarettes or used tobacco. Less than 2 percent of women said they used tobacco of any kind, and less than 1 percent said they smoked cigarettes (data not shown). Nineteen percent of men age 15-49 use tobacco products, with 18 percent saying that they smoke cigarettes. The proportion of women who smoke is too small to show details, but differentials in smoking among men can be shown (Table 3.9).

Table 3.9 Use of tobacco: Men

Percentage of men age 15-49 who smoke cigarettes or a pipe or use other tobacco products and the percent distribution of cigarette smokers by number of cigarettes smoked in preceding 24 hours, according to background characteristics, Kenya 2008-09

Background characteristic	Cigarettes	Pipe	Other tobacco	Does not use tobacco	Number of men	Number of cigarettes in the last 24 hours						Total	Number of cigarette smokers
						0	1-2	3-5	6-9	10+	Don't know/ missing		
Age													
15-19	2.7	0.0	0.3	97.1	776	*	*	*	*	*	*	100.0	21
20-24	15.1	0.4	1.5	84.3	630	0.0	19.0	45.4	11.4	23.8	0.5	100.0	95
25-29	20.1	1.1	2.2	78.9	483	0.0	25.3	33.9	16.9	23.3	0.6	100.0	97
30-34	25.5	1.6	3.4	73.1	461	0.0	19.9	31.9	14.3	32.2	1.7	100.0	118
35-39	24.5	1.7	4.1	73.2	344	0.4	8.6	44.2	8.2	38.6	0.0	100.0	84
40-44	25.9	3.0	4.7	71.2	306	3.8	15.3	36.5	15.8	28.6	0.0	100.0	79
45-49	29.6	2.7	9.1	66.2	257	1.1	10.4	27.5	25.3	35.5	0.2	100.0	76
Residence													
Urban	17.2	0.3	0.8	82.7	866	1.7	12.3	28.6	19.4	36.1	1.9	100.0	149
Rural	17.6	1.5	3.5	80.6	2,392	0.6	19.7	38.3	14.1	27.0	0.4	100.0	421
Province													
Nairobi	17.1	0.7	0.9	82.7	314	3.2	2.5	39.6	18.0	36.4	0.3	100.0	54
Central	30.4	2.4	2.2	69.3	347	0.0	16.7	41.6	16.3	25.0	0.4	100.0	105
Coast	22.6	0.0	1.8	76.3	252	0.0	24.5	19.2	11.9	44.3	0.0	100.0	57
Eastern	26.0	0.0	4.6	72.8	530	0.6	22.2	31.8	23.2	22.2	0.0	100.0	138
Nyanza	7.9	0.0	2.0	91.1	520	(0.0)	(35.2)	(34.1)	(11.2)	(11.8)	(7.7)	100.0	41
Rift Valley	14.3	2.7	3.8	82.9	885	0.6	10.7	41.6	9.4	37.2	0.5	100.0	127
Western	11.2	0.0	1.4	88.3	349	4.4	23.7	40.1	10.7	21.2	0.0	100.0	39
North Eastern	15.6	4.4	2.4	82.8	62	(0.0)	(4.5)	(16.6)	(20.8)	(58.1)	(0.0)	100.0	10
Education													
No education	19.8	1.2	18.3	68.4	112	(0.0)	(13.8)	(38.7)	(1.8)	(45.8)	(0.0)	100.0	22
Primary incomplete	19.1	2.3	4.0	79.1	883	1.5	17.4	41.3	15.8	24.0	0.0	100.0	169
Primary complete	19.8	1.0	3.0	78.7	804	0.5	15.7	37.6	14.4	31.9	0.0	100.0	160
Secondary+	15.1	0.5	0.7	84.7	1,459	0.8	19.9	29.9	17.4	30.1	2.0	100.0	220
Wealth quintile													
Lowest	16.7	2.9	6.3	78.6	457	1.1	31.3	38.1	6.7	22.8	0.0	100.0	76
Second	17.1	1.0	3.9	81.4	577	0.8	20.6	26.9	18.2	32.5	1.2	100.0	99
Middle	19.3	1.6	3.8	79.3	574	0.8	9.8	52.7	12.5	23.8	0.4	100.0	110
Fourth	19.6	0.9	1.8	79.7	725	0.6	19.8	30.7	15.3	33.5	0.0	100.0	142
Highest	15.4	0.2	0.4	84.5	926	1.2	12.6	32.5	20.8	30.9	2.0	100.0	143
Total 15-49	17.5	1.1	2.8	81.1	3,258	0.9	17.7	35.8	15.5	29.4	0.8	100.0	570
Men age 50-54	28.6	5.1	9.7	62.2	207	0.0	11.2	26.3	26.1	36.4	0.0	100.0	59
Total men 15-54	18.2	1.4	3.2	80.0	3,465	0.8	17.1	34.9	16.5	30.0	0.7	100.0	630

Note: Numbers in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

Men in the highest wealth quintile and those with secondary and higher education are less likely to smoke cigarettes than are men with less education and in the lower wealth quintiles. This is in contrast to what was recorded in 2003, where men in the lowest wealth quintile and with no education were reported to be less likely to smoke cigarettes. In addition, men in the highest wealth quintile are more likely not to use tobacco products (85 percent) than men in the lower wealth quintiles. Conversely, in 2003, men in the lowest and middle wealth quintiles were reported as less likely to use tobacco products (77 percent did not use).

Among the provinces, men in Central province have the highest level of smoking cigarettes, whereas men in Nyanza province have the lowest level of smoking. In 2003, men in Eastern province had the highest level of smoking. Men in Nyanza have over time continued to be the least likely to smoke.

Among men age 15-49 who smoke cigarettes, the largest proportion said they smoked 3-5 sticks in the previous 24 hours (36 percent), followed by those who smoked 10 or more sticks in a day (29 percent).

FERTILITY LEVELS, TRENDS, AND DIFFERENTIALS 4

James N. Munguti and Robert Buluma

4.1 INTRODUCTION

This chapter analyses the fertility data collected in the 2008-09 KDHS. Levels, trends, and differentials in fertility are described by selected background characteristics; lifetime fertility (children ever born and living); and age at first birth and birth intervals. Thereafter, a brief discussion on teenage fertility, which has become critical to the changes in fertility in Kenya, is presented.

The 2008-09 KDHS was conducted against the backdrop of a stall in an ongoing fertility decline. Indeed, Bongaarts (2006), while examining fertility trends in countries with multiple DHS surveys, found that Kenya was one among seven countries where fertility had stalled in mid-transition in the 1990s. Fertility was high (more than six births per woman) in the 1950s in each of these countries but declined to fewer than five births per woman in the early or mid-1990s, before coming to a standstill. The fertility levels varied by country, ranging from 4.7 births per woman in Kenya to 2.5 births per woman in Turkey. An analysis of trends in the determinants of fertility in these countries revealed a systematic pattern of leveling or near leveling in a number of determinants, including contraceptive use, demand for contraception, and number of wanted births, but no significant increases in unwanted births or in the unmet need for contraception.

4.2 CURRENT FERTILITY

Findings on measures of current fertility are presented in Table 4.1. These include the total fertility rate (TFR), general fertility rate (GFR), and crude birth rate (CBR). The point estimates refer to the three-year period immediately preceding the 2008-09 survey, or approximately 2006-08. Age-specific fertility rates (ASFRs) are calculated by dividing the number of births to women in a specific age group by the number of woman-years lived during a given period.[1] The total fertility rate (TFR) is defined as the average number of children a woman would have if she went through her entire reproductive period, from 15 to 49 years, reproducing at the prevailing ASFRs. The general fertility rate (GFR) represents the annual number of births per 1,000 women age 15-44, and the crude birth rate (CBR) represents the annual number of births per 1,000 population. The CBR was estimated using the birth history data in conjunction with the population data collected in the household schedule.

Table 4.1 Current fertility

Age-specific and total fertility rate, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence, Kenya 2008-09

Age group	Residence		Total
	Urban	Rural	
15-19	92	107	103
20-24	146	280	238
25-29	147	248	216
30-34	104	197	175
35-39	60	135	118
40-44	28	56	50
45-49	7	13	12
TFR	2.9	5.2	4.6
GFR	112	179	161
CBR	32.5	35.3	34.8

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

A TFR of 4.6 children per woman was reported for the three years before the survey (see Table 4.1) compared with a TFR of 4.9 children reported for the period 2000-02 based on the 2003 KDHS. As expected, rural areas recorded higher fertility than urban areas (TFR of 5.2 and 2.9, respectively). This pattern is reflected by every age group, and the difference increases with the age of the women, with the fertility

[1] Numerators for the age-specific fertility rates are calculated by summing all births that occurred during the 1 to 36 months preceding the survey, classified by the age of the mother at the time of birth in 5-year age groups. The denominators are the number of woman-years lived in each specific 5-year age group during the 1 to 36 months preceding the survey.

of the rural women age 20 and older being about twice that of the urban women of the same age cohort.

Nationally and in rural areas, the peak fertility occurs early, at age 20-24, while in urban areas, fertility has a broader peak, being almost equally high for the 20-24 and 25-29 age cohorts. Fertility rates, however, fall dramatically after age 39 in both rural and urban areas.

The disparities in fertility among rural and urban women could be attributed to the significant role played by education in population growth. When literacy of women improves, fertility rates tend to decrease. Similarly, fertility rates tend to be lower where women have access to decent jobs, good health care, and family planning resources—which are more available in urban areas than in rural ones.

Table 4.2 and Figure 4.1 show the differentials in fertility levels by urban-rural residence, province, educational attainment, and wealth quintile.

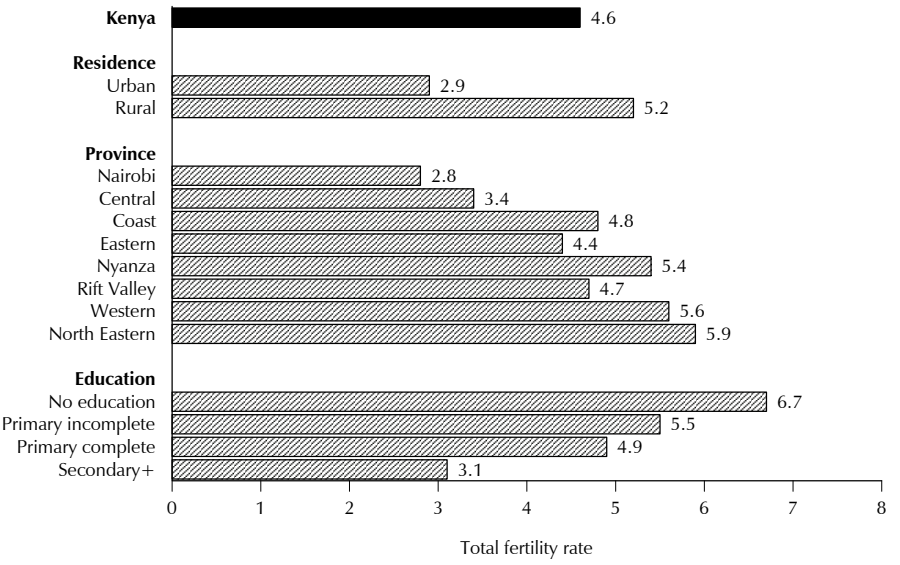
Table 4.2 Fertility by background characteristics

Total fertility rate for the three years preceding the survey, percentage of women age 15-49 currently pregnant, and mean number of children ever born to women age 40-49 years, by background characteristics, Kenya 2008-09

Background characteristic	Total fertility rate	Percentage of women age 15-49 currently pregnant	Mean number of children ever born to women age 40-49
Residence			
Urban	2.9	6.7	3.6
Rural	5.2	7.1	6.1
Province			
Nairobi	2.8	5.5	3.4
Central	3.4	5.0	4.4
Coast	4.8	7.8	5.6
Eastern	4.4	6.5	5.6
Nyanza	5.4	8.1	6.1
Rift Valley	4.7	6.7	5.9
Western	5.6	8.9	6.6
North Eastern	(5.9)	11.0	6.7
Education			
No education	6.7	9.9	6.9
Primary incomplete	5.5	7.9	6.9
Primary complete	4.9	7.7	5.4
Secondary+	3.1	5.0	4.1
Wealth quintile			
Lowest	7.0	9.9	7.1
Second	5.6	7.3	6.8
Middle	5.0	6.9	6.1
Fourth	3.7	5.1	4.9
Highest	2.9	6.5	3.4
Total	4.6	7.0	5.6

Note: Total fertility rates are for the period 1-36 months prior to interview. Total fertility rates in parentheses are based on 500-750 unweighted women.

Figure 4.1 Total Fertility Rates by Background Characteristics



Kenya 2008-09

Fertility is lowest in Nairobi province (2.8 children per woman), followed by Central province at 3.4 children per woman, and highest in North Eastern province (5.9 children per woman). Fertility in Western (5.6), Nyanza (5.4), Coast (4.8), and Rift Valley (4.7) provinces is slightly above the national average. These differentials in fertility are closely associated with disparities in educational levels and knowledge and use of family planning methods (see Chapter 5).

Several studies have shown that education of women is negatively associated with fertility. In the 2008-09 KDHS, the TFR decreased from a high of 6.7 for women with no education to 3.1 for women with at least some secondary education. The data show that women who have completed primary education have almost two fewer children per woman when compared with women who have no education. Fertility is also very closely associated with wealth. The disparity in fertility between the poorest, who have the most children, and the richest women, who have the fewest, is four children per woman.

Of all the women interviewed, 7 percent were pregnant at the time of the survey as indicated in Table 4.2. This estimate likely is an underestimate, as women in the early stages of pregnancy may be unaware or unsure that they are pregnant, and some may refuse to declare that they are pregnant. Noticeably, differentials in pregnancy rates are generally consistent with the pattern of fertility depicted across the various subgroups. Women in North Eastern province reported the highest levels of current pregnancy (11 percent), while those in Central province had the lowest at 5 percent. The data further show that the proportion of women who were pregnant at the time of the survey declines uniformly as education of the women increases, from 10 percent of those with no education to 5 percent of those with at least some secondary schooling.

Comparison of the mean number of lifetime births to older women with the current TFR can provide some insight into changes in fertility over the previous two decades or so. For example, the survey indicates that the mean number of children ever born to women age 40-49 is 5.6, one child more than the TFR, an indication of the decline in fertility during the late 1980s and 1990s. On average, rural women age 40-49 have given birth to 6.1 children, compared with only 3.6 for their urban counterparts. Provincial differentials indicate that women age 40-49 in Nairobi have the lowest mean number of children ever born (3.4), compared with a high of 6.7 for North Eastern province. The largest absolute differences between completed fertility at ages 40-49 and the level of current fertility occur in Rift Valley and Eastern provinces (1.2 children). The mean number of children ever born also relates to the level of education and wealth.

4.3 FERTILITY TRENDS

Since 1989, Kenya has undertaken demographic and health surveys regularly, in addition to other surveys and censuses, all of which have endowed the country with a wealth of data for examining fertility trends. Accordingly, changes in fertility levels over time can be tracked by examining fertility estimates from these surveys and censuses. Such data have been used to track fertility trends spanning the last three decades as summarised in Table 4.3 and Figure 4.2. The data indicate that the TFR declined during the 1980s and 1990s, changing from a high of 8.1 children per woman in the late 1970s to 6.7 in the late 1980s, and dropping to 4.7 during the last half of the 1990s. However, fertility seemed to rise, albeit marginally, after 1998, reaching a TFR of 4.9 children per woman during the 2000-02 period.[2] The TFR then seems to resume its decline, reaching a low of 4.6 children per woman during the 2006-08 period as shown in Figure 4.2.

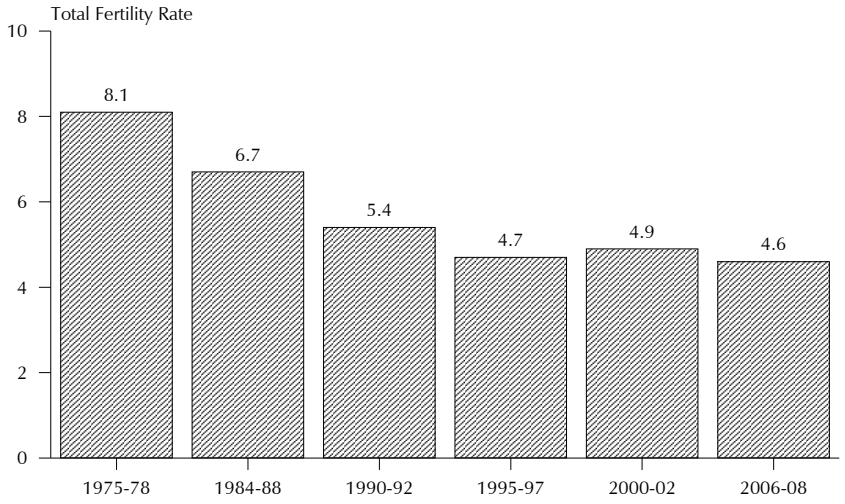
Table 4.3 Trends in age-specific fertility rates

Age-specific fertility rates and total fertility rates from selected surveys and censuses, Kenya 1975-2009

Age group	1977/78 KFS[1] 1975-78	1989 KDHS[1] 1984-88	1993 KDHS[1] 1990-92	1998 KDHS[1] 1995-97	1999 Census	2003 KDHS 2000-02	2008-09 KDHS 2006-08
15-19	168	152	110	111	142	114	103
20-24	342	314	257	248	254	243	238
25-29	357	303	241	218	236	231	216
30-34	293	255	197	188	185	196	175
35-39	239	183	154	109	127	123	118
40-44	145	99	70	51	56	55	50
45-49	59	35	50	16	7	15	12
TFR	8.1	6.7	5.4	4.7	5.0	4.9	4.6

Note: Age-specific fertility rates are per 1,000 women. Rates refer to the three-year period preceding the surveys except for the 1989 KDHS, which used a five-year period and the 1999 census, which used a period that varied with the age groups used to make the adjustment.
Sources: NCPD et al., 1999; Central Bureau of Statistics, 2002b.
[1] Excludes the north part of the country.

Figure 4.2 **Trends in Total Fertility Rate, Kenya 1975-2008***



*The first four surveys excluded North Eastern province and several northern districts in Eastern and Rift Valley provinces, while the data for 2000-02 and 2006-08 include the entire country.

[2] Although the census data and both the 2003 and the 2008-09 KDHSs are nationally representative, data from all previous surveys exclude the northern half of the country.

Several other fertility correlates studied in the 2008-09 KDHS are internally consistent with this new trend: contraceptive use has increased from 39 percent of married women in 2003 to 46 percent in 2008-09; the proportion of women who want no more children has increased from 49 percent in 2003 to 54 percent in 2008-09; and under-five mortality and infant mortality have declined from 115 and 77 to 74 and 52 deaths per 1,000 live births in 2008-09, respectively.

The data presented in Table 4.4 on trends in fertility by selected background characteristics indicate that while the TFR dropped from 4.9 children per woman in the 2003 KDHS to 4.6 in the 2008-09 KDHS, the decline was steeper for women in urban areas (12 percent decline) than for those in rural areas (4 percent). Overall, the TFR declined from 3.3 to 2.9 in urban areas and from 5.4 to 5.2 in rural areas. The same drop is observed across provinces, except in Nairobi where fertility increased slightly and in Central province where it stagnated. Rift Valley province recorded the largest decrease in TFR (19 percent), dropping from 5.8 to 4.7 births per woman. The data also show that fertility remained the same for women with no education but decreased for those with incomplete primary education and for those who have at least some secondary education.

Table 4.4 Trends in fertility by background characteristics

Total fertility rates according to province, residence, and education, Kenya 1995-2009

Background characteristic	1998 KDHS 1995-98	2003 KDHS 2000-03	2008-09 KDHS 2006-08
Residence			
Urban	3.1	3.3	2.9
Rural	5.2	5.4	5.2
Province			
Nairobi	2.6	2.7	2.8
Central	3.7	3.4	3.4
Coast	5.1	4.9	4.8
Eastern	4.7	4.8	4.4
Nyanza	5.0	5.6	5.4
Rift Valley	5.3	5.8	4.7
Western	5.6	5.8	5.6
North Eastern	u	(7.0)	(5.9)
Education			
No education	5.8	6.7	6.7
Primary incomplete	5.2	6.0	5.5
Primary complete	4.8	4.8	4.9
Secondary+	3.5	3.2	3.1
Total	4.7	4.9	4.6

u = Unknown (not available)
Note: Total fertility rates are for the period 1-36 months prior to interview. Data for the 1998 KDHS exclude North Eastern province and several other northern districts. Total fertility rates in parentheses are based on fewer than 750 unweighted women.

Table 4.5 presents the age specific fertility rate (ASFRs) for five-year periods preceding the 2008-09 KDHS. For the first time, fertility seems to have declined in all age groups.

Table 4.5 Trends in age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of the birth, Kenya 2008-09

Mother's age at birth	Number of years preceding survey			
	0-4	5-9	10-14	15-19
15-19	106	137	144	138
20-24	239	253	255	267
25-29	216	252	251	258
30-34	182	193	209	[260]
35-39	113	139	[190]	-
40-44	51	[96]	-	-
45-49	[12]	-	-	-

Note: Age-specific fertility rates are per 1,000 women. Estimates in brackets are truncated. Rates exclude the month of interview.

4.4 CHILDREN EVER BORN AND CHILDREN SURVIVING

The distributions of all women and of currently married women age 15-49 by the number of children ever born are presented in Table 4.6. Overall, 28 percent of all women age 15-49 have never given birth. This proportion is far higher among women age 15-19, more than four-fifths of whom (86 percent) have never given birth. This indicates that the vast majority of women age 15-19 delayed the onset of childbearing, with only 15 percent having started the process. Similarly, one-third (34 percent) of women age 20-24 and one in ten (11 percent) of those age 25-29 have never given birth. However, this proportion declines rapidly to around 3 percent for women age 30 years and above, indicating that childbearing among Kenyan women is nearly universal. The data further show that Kenyan women attain a parity of 6.3 children per woman at the end of their childbearing period. This is 1.7 children above the total fertility rate (4.6 children per woman), a discrepancy that is attributable to the decline in fertility during the previous two decades.

Table 4.6 Children ever born and living

Percent distribution of all women and currently married women by number of children ever born, mean number of children ever born, and mean number of living children, according to age group, Kenya 2008-09

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19	85.5	12.4	1.7	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,761	0.17	0.16
20-24	33.5	28.7	22.5	10.3	3.6	1.1	0.3	0.1	0.0	0.0	0.0	100.0	1,715	1.27	1.17
25-29	10.5	16.5	28.5	20.3	12.7	6.6	3.8	1.1	0.0	0.0	0.0	100.0	1,454	2.49	2.29
30-34	3.4	8.9	16.4	21.6	17.4	13.4	10.3	6.2	1.3	0.9	0.2	100.0	1,209	3.69	3.40
35-39	2.8	6.1	10.0	17.2	15.2	13.3	12.7	9.5	7.4	4.0	1.8	100.0	877	4.62	4.17
40-44	2.6	4.7	10.7	14.1	17.3	12.1	11.0	7.2	8.4	6.0	6.0	100.0	768	5.00	4.47
45-49	0.7	2.3	3.9	9.1	12.6	12.5	15.0	9.4	13.8	7.6	13.0	100.0	661	6.29	5.56
Total	27.5	13.8	14.5	12.5	9.6	6.7	5.7	3.5	2.8	1.7	1.8	100.0	8,444	2.68	2.43
CURRENTLY MARRIED WOMEN															
15-19	36.1	51.2	9.7	2.4	0.6	0.0	0.0	0.0	0.0	0.0	0.0	100.0	212	0.80	0.75
20-24	9.9	32.4	33.1	16.5	5.8	1.8	0.5	0.1	0.0	0.0	0.0	100.0	958	1.83	1.68
25-29	3.9	14.2	28.4	24.9	14.4	7.8	5.0	1.5	0.0	0.0	0.0	100.0	1,088	2.82	2.62
30-34	1.5	6.2	14.3	22.3	19.6	15.1	11.3	7.1	1.6	0.6	0.3	100.0	962	3.95	3.64
35-39	1.3	4.2	9.9	16.7	16.1	14.1	12.3	10.3	8.6	4.5	2.1	100.0	694	4.86	4.44
40-44	1.7	2.2	9.2	14.2	18.4	11.7	12.0	8.4	8.3	6.8	7.1	100.0	548	5.30	4.75
45-49	0.0	0.8	3.2	7.7	12.5	11.6	16.2	11.0	14.3	7.8	14.9	100.0	466	6.65	5.94
Total	5.0	13.8	18.6	17.8	13.6	9.4	8.0	5.1	3.8	2.2	2.6	100.0	4,928	3.69	3.36

A similar pattern is replicated for currently married women, except that only slightly more than one-third (36 percent) of married women age 15-19 have not borne a child. This proportion diminishes rapidly, to 4 percent or less for married women age 25 and above. These differences in childbearing can be explained by the presence of many young and unmarried women in the 'all women' category who are less exposed to the risk of conception than married women and exhibit lower fertility. On average, currently married women age 45-49 have borne 6.7 children each.

As expected, women above 40 years have much higher parities, with substantial proportions having 10 or more births each by the end of their childbearing years. For example, more than one-third (34 percent) of all women age 45-49 have given birth to eight or more children.

The mean number of children ever born and mean number of living children rise monotonically with the rising age of women as expected in a normal population. This indicates minimal or no recall lapse, which heightens confidence in the birth history reports. A comparison of the mean number of living children with the mean number of children ever born shows that, by the end of their childbearing years, women have lost an average of 0.7 children (6.3 minus 5.6).

4.5 BIRTH INTERVALS

The length of intervals between births contributes greatly to the level of fertility and also affects the health of both the mother and the child. Examining birth intervals provides insights into birth patterns and maternal and child health. Studies have shown that children born fewer than 24 months after a previous sibling are at greater risk of having poor health and that such births threaten maternal health. Table 4.7 shows the percent distribution of non-first births in the five years before the survey by the number of months since the preceding birth, according to background characteristics.

Table 4.7 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since preceding birth, and median number of months since preceding birth, according to background characteristics, Kenya 2008-09

Background characteristic	Months since preceding birth						Total	Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48-59	60+			
Age									
15-19	29.1	31.6	30.0	8.1	1.2	0.0	100.0	43	22.7
20-29	10.9	15.3	36.8	19.5	8.1	9.4	100.0	2,276	31.2
30-39	7.4	11.6	32.3	16.5	11.4	20.8	100.0	1,816	35.3
40-49	4.7	9.7	28.6	16.7	13.0	27.4	100.0	395	41.2
Birth order									
2-3	8.5	13.9	31.8	18.3	9.6	17.9	100.0	2,213	34.3
4-6	9.6	13.1	36.4	17.4	9.2	14.3	100.0	1,664	32.3
7+	9.8	13.3	37.1	18.0	11.8	10.0	100.0	654	32.1
Sex of preceding birth									
Male	10.0	13.1	31.6	19.8	10.5	14.8	100.0	2,269	34.1
Female	8.2	13.9	36.9	16.0	9.0	16.1	100.0	2,262	32.5
Survival of preceding birth									
Living	7.3	13.2	35.1	18.4	10.2	15.8	100.0	4,185	33.7
Dead	31.3	16.6	24.4	11.7	4.9	11.1	100.0	345	24.5
Residence									
Urban	8.5	11.4	25.4	17.8	11.0	25.9	100.0	695	38.0
Rural	9.2	13.9	35.8	18.0	9.6	13.5	100.0	3,835	32.4
Province									
Nairobi	8.8	11.1	22.6	16.0	12.1	29.3	100.0	199	40.4
Central	6.1	8.7	23.1	17.0	13.4	31.6	100.0	337	43.1
Coast	9.3	15.7	30.4	19.7	13.1	11.7	100.0	377	33.2
Eastern	6.8	11.1	34.2	19.1	10.5	18.3	100.0	716	35.5
Nyanza	11.6	15.5	35.5	16.4	10.3	10.7	100.0	862	30.7
Rift Valley	7.2	12.7	38.2	19.9	7.5	14.5	100.0	1,322	32.5
Western	11.9	16.9	35.3	15.0	9.6	11.4	100.0	563	29.9
North Eastern	17.9	16.3	39.0	14.9	4.3	7.6	100.0	153	27.7
Education									
No education	10.5	16.6	39.1	16.6	9.1	8.1	100.0	666	30.7
Primary incomplete	10.1	14.1	33.9	20.2	9.7	12.1	100.0	1,609	32.6
Primary complete	8.8	13.6	34.1	17.4	9.3	16.9	100.0	1,353	33.4
Secondary+	6.8	10.0	31.5	15.8	11.2	24.7	100.0	903	36.8
Wealth quintile									
Lowest	10.7	15.0	42.2	18.0	7.0	7.1	100.0	1,222	30.4
Second	11.3	13.4	34.6	17.6	10.4	12.8	100.0	975	31.7
Middle	7.1	13.8	33.0	19.4	11.0	15.5	100.0	866	34.3
Fourth	8.3	12.3	30.0	16.1	10.9	22.3	100.0	762	35.7
Highest	6.6	11.9	26.0	18.4	10.9	26.1	100.0	705	37.9
Total	9.1	13.5	34.2	17.9	9.8	15.4	100.0	4,531	33.1

Note: First-order births are excluded. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth.

The median birth interval has remained more or less the same, changing marginally from 32.9 months in the 1998 KDHS to 32.6 months in the 2003 KDHS and 33.1 months in the 2008-09 KDHS. However, the median birth interval is relatively shorter for children born to young women age 15-29; children whose preceding sibling died; children in rural areas; children born to women in North Eastern, Western, Nyanza, and Rift Valley provinces; children born to women with no education; and

those born to women from poorer households. The most common birth interval category is 24-35 months, while the least common category is 7-17 months.

The shortest median birth intervals are observed for children born to women age 15-19 (23 months) and children whose preceding sibling died (25 months), while the longest intervals occur among children born to women in Central province (43 months) and women age 40-49 (41 months).

The data indicate that 23 percent of Kenyan children are born fewer than 24 months after a previous birth. A short birth interval may potentially predict substantial risk to the health of both the mother and the child. A larger proportion of such children are born to younger women age 15-19 (61 percent) relative to other age groups, to women whose preceding birth died (48 percent), to women in North Eastern (34 percent) and Western (29 percent) provinces compared with other provinces, and to women with no education (27 percent) relative to those with some education.

4.6 AGE AT FIRST BIRTH

Because the reproductive period is biologically limited (15-49 years), the onset of childbearing has a direct effect on fertility. Early initiation into childbearing lengthens the reproductive period and subsequently increases fertility, which is likely to pose a risk for socioeconomic disadvantages in later life—even for adolescent mothers from relatively comfortable backgrounds. Delayed initiation into childbearing has advantages, as it shortens the reproductive duration, hence reducing fertility.

Table 4.8 shows the percentage of women age 15-49 who gave birth by exact ages, the percentage who have never given birth, and the median age at first birth, according to current age. The youngest cohort of women for whom median age at first birth can be calculated is 25-29 years. The medians for age groups 15-19 and 20-24 cannot be determined, as less than half of the women had a birth before reaching the lowest age of the age group.

Table 4.8 Age at first birth

Percentage of women age 15-49 who gave birth by exact ages, percentage who have never given birth, and median age at first birth, according to current age, Kenya 2008-09

	Percentage who gave birth by exact age					Percentage who have never given birth	Number of women	Median age at first birth
Current age	15	18	20	22	25			
15-19	1.3	na	na	na	na	85.5	1,761	a
20-24	4.5	25.9	46.7	na	na	33.5	1,715	a
25-29	4.9	27.9	52.2	70.8	84.5	10.5	1,454	19.8
30-34	6.0	31.0	54.5	73.4	86.4	3.4	1,209	19.7
35-39	7.5	27.9	48.5	67.8	81.7	2.8	877	20.2
40-44	4.2	29.2	48.9	68.1	85.2	2.6	768	20.1
45-49	6.2	35.5	54.4	73.1	86.9	0.7	661	19.5
20-49	5.4	28.8	50.6	na	na	12.2	6,683	19.9
25-49	5.7	29.9	51.9	70.8	84.9	4.9	4,969	19.8

na = Not applicable
a = Omitted because less than 50 percent of women had a birth before reaching the beginning of the age group

A young median age at first birth usually has a positive effect on fertility levels because the exposure period is increased. The trends in median age at first birth over a period of about 10 years as estimated in KDHS surveys show a marginal increase from 19.6 years for women age 25-29 in 1998 to 20.1 years in 2003 and a decrease to 19.8 years in 2008-09. Caution should be exercised in interpreting these slight changes, as they are likely to be statistically insignificant.

Table 4.9 presents the median age at first birth among women age 25-49 years by background characteristics. As expected, women in urban areas have a higher median age at first birth than their rural counterparts for all age groups. Higher median age at first birth is recorded in Nairobi province

for women age 25-49 (23 years), followed by Central and Coast provinces (both 20 years), while the lowest was observed in Nyanza province (19 years). This implies that women in Nyanza province, on average, have their first birth nearly four years earlier than those in Nairobi.

Women's level of education is positively related to age at first birth; women with at least some secondary education begin childbearing more than three years after women with no education (22.1 and 18.7 years, respectively). Similarly, women in the highest wealth quintile delay the onset of childbearing by about three years relative to women in the lowest quintile.

Table 4.9 Median age at first birth

Median age at first birth among women age 25-49 years, according to background characteristics, Kenya 2008-09

Background characteristic	Age					Women age 25-49
	25-29	30-34	35-39	40-44	45-49	
Residence						
Urban	21.0	20.6	22.9	22.1	21.5	21.5
Rural	19.3	19.5	19.5	19.6	19.1	19.4
Province						
Nairobi	23.5	21.9	24.8	22.4	20.6	22.8
Central	20.1	20.2	20.1	20.3	20.3	20.2
Coast	19.1	20.6	20.1	21.3	20.2	20.1
Eastern	19.5	20.4	19.7	20.4	19.7	19.9
Nyanza	18.8	19.3	18.4	19.3	18.9	19.0
Rift Valley	19.6	18.7	20.8	20.0	18.6	19.4
Western	19.9	19.9	20.3	18.7	19.7	19.7
North Eastern	19.3	18.5	20.2	(20.2)	(20.3)	19.4
Education						
No education	18.6	18.1	19.0	19.5	18.5	18.7
Primary incomplete	18.2	18.2	18.7	18.0	18.4	18.3
Primary complete	19.5	19.6	19.4	20.3	18.7	19.6
Secondary+	22.4	21.5	23.0	21.7	21.8	22.1
Wealth quintile						
Lowest	18.7	18.5	19.3	19.3	19.3	18.9
Second	18.8	19.0	19.3	18.7	19.0	19.0
Middle	19.5	20.0	18.8	18.9	18.7	19.3
Fourth	19.7	19.7	20.5	21.2	19.5	20.0
Highest	21.5	20.8	23.2	22.0	21.9	21.7
Total	19.8	19.7	20.2	20.1	19.5	19.8

Note: Figures in parentheses are based on fewer than 25 unweighted women.

4.7 TEENAGE FERTILITY

Several studies have documented the sociodemographic and socioeconomic characteristics of adolescents in Kenya. Among these are the 1977/78 Kenya Fertility Survey (KFS), the 1979, 1989, and 1999 Population Census reports, and the 1984 Kenya Contraceptive Prevalence Survey (KCPS, 1984). According to Kiragu et al. (1998), adolescent reproductive health has now become an even greater priority at a policy level, as attested to by the recent sessional papers on AIDS as well as the national Information, Education, Communication, and Advocacy Strategy.

A better understanding of teenage fertility can result in improved sevices to this very vulnerable special group. In an attempt to address the reproductive health needs and to reduce fertility of this special group, the government, through the National Coordinating Agency for Population and Development, put in place an Adolescent Reproductive Health Policy.

There are various critical reasons why it is important to understand more about teenage fertility. Children born to very young mothers are normally predisposed to higher risks of illness and death due to the limited exposure of the mothers to reproductive health services. Adolescent mothers are also more likely to experience complications during pregnancy and are less likely to be prepared to deal with them, which often leads to maternal deaths. Because of their early entry into child

bearing, the mothers are denied the opportunity to pursue basic and advanced academic goals. This eventually affects their welfare and social status and hence limits access to many reproductive health programmes.

Evidence of the extent of teenage fertility is given in Table 4.10, which presents the percentage of women age 15-19 who have had a live birth or who are pregnant with their first child and the percentage of women who have begun childbearing by selected background characteristics. Generally, the percentage of teenagers who have begun childbearing declined from 23 percent in the 2003 KDHS to 18 percent in the 2008-09 KDHS. The proportion of teenage mothers declined from 19 percent in 2003 to 15 percent in 2008-09, while the proportion of those pregnant with their first child declined as well, from 5 percent in 2003 to 3 percent in 2008-09. These changes are likely to cause a significant reduction in the number of births in coming years.

The proportion of teenagers who have begun childbearing increases dramatically from 2 percent at age 15 to 36 percent at age 19 as shown in Table 4.10. As was also observed in the 2003 KDHS, there is not much of a differential in teenage fertility between urban and rural women. The levels of teenage childbearing are highest in Nyanza (27 percent) and Coast (26 percent) provinces and lowest in Central province (10 percent). This conforms to other social indicators of development such as education that influence a delay in onset of childbearing. One-third of uneducated teenagers (32 percent) have begun childbearing, compared with only one-tenth of those with some secondary education and above. Similarly, teenagers from poorer households are more likely to have begun childbearing (24 percent) than are teenagers from wealthier households (16 percent).

Table 4.10 Teenage pregnancy and motherhood

Percentage of women age 15-19 who have had a live birth or who are pregnant with their first child and percentage who have begun childbearing, by background characteristics, Kenya 2008-09

Background characteristic	Percentage who:		Percentage who have begun child-bearing	Number of women
	Have had a live birth	Are pregnant with first child		
Age				
15	1.0	1.1	2.1	317
16	8.2	1.3	9.4	437
17	13.0	3.4	16.5	332
18	21.6	4.6	26.2	353
19	30.0	6.2	36.2	321
Residence				
Urban	16.1	2.3	18.5	329
Rural	14.1	3.4	17.5	1,432
Province				
Nairobi	13.6	0.3	13.9	105
Central	7.7	2.5	10.1	160
Coast	23.9	1.8	25.7	140
Eastern	10.9	2.6	13.5	298
Nyanza	23.1	3.9	27.0	318
Rift Valley	12.7	3.8	16.5	460
Western	11.1	4.0	15.1	237
North Eastern	10.3	5.9	16.2	43
Education				
No education	26.4	5.7	32.1	71
Primary incomplete	15.9	3.2	19.1	725
Primary complete	17.3	5.9	23.3	403
Secondary+	9.0	0.9	10.0	561
Wealth quintile				
Lowest	18.9	4.8	23.7	322
Second	14.4	3.5	17.9	363
Middle	9.9	3.7	13.6	387
Fourth	16.5	1.1	17.6	369
Highest	13.2	3.2	16.4	319
Total	14.5	3.2	17.7	1,761

FAMILY PLANNING 5

Samuel Ogola and Michael Musyoka

To attain a balance between resources and population, Kenyan population policy promotes family planning as an entitlement that is based on informed and voluntary choice. Couples are motivated to adopt a family planning method when they are offered improved access to and quality of reproductive health services. Adequate information about methods of contraception enables couples to develop a rational approach to planning their families. Therefore, a primary objective of this survey was to assess knowledge and use of contraceptive methods. This chapter describes women's knowledge, ever use, and current use of contraceptive methods, sources and costs of modern methods, accessibility to family planning services, intent of contraceptive use, and informed choice. In addition, exposure to family planning messages and level of contact with family planning providers are assessed. Where appropriate, comparisons are also made with findings from previous similar surveys conducted in Kenya.

5.1 KNOWLEDGE OF CONTRACEPTIVE METHODS

Development of a profile regarding knowledge of family planning methods was one of the major objectives of the survey, because knowledge of methods is a prerequisite for making a decision to initiate contraceptive use. Information on knowledge of contraception was collected during the survey by asking women and men to name ways or methods by which a couple could delay or avoid pregnancy. If the respondent failed to mention a particular method spontaneously, the interviewer described the method and asked if the respondent recognized it. In this manner, information was collected about ten modern methods (female sterilisation, male sterilisation, the pill, intra-uterine device (IUD), injectables, implants, male condoms, female condoms, lactational amenorrhoea, and emergency contraception) and two traditional methods (rhythm or calendar method and withdrawal). Provision was also made within the questionnaire to record any other methods named spontaneously by the respondent. Most emphasis is placed on women because they have the greatest level of exposure to the risk of pregnancy and most methods of contraception are designed for them.

Table 5.1 shows the level of knowledge of contraceptive methods among all women and all men age 15-49. Also included are those who are currently married, and those who are unmarried but sexually active. Though knowledge of family planning methods is universal, men are only slightly more likely to have heard of a specific method than women; 95 percent of women and 97 percent of men age 15-49 know at least one method of family planning. Nevertheless, women have heard of more methods than men, on average (7.5 vs. 6.6).

Modern methods are more familiar to women than traditional methods; 95 percent of women know at least one modern method, and only 69 percent know a traditional method. Among women, the most widely known modern methods of contraception are male condoms, injectables, and pills, with about 89 percent of all women saying they know of these methods. The least known methods among women are the lactational amenorrhoea method (LAM), male sterilisation, and emergency contraception, which are known by 40 percent or less of all women. Around 6 in 10 women have heard of female sterilisation, the IUD, implants, and the female condom. With regard to traditional methods, about two-thirds of women have heard of the rhythm method, and just under half know about withdrawal, while folk methods are the least likely to be mentioned.

Table 5.1 Knowledge of contraceptive methods

Percentage of all respondents, currently married respondents, and sexually active unmarried respondents age 15-49 who know any contraceptive method, by specific method, Kenya 2008-09

	Women			Men		
Method	All women	Currently married women	Sexually active unmarried women[1]	All men	Currently married men	Sexually active unmarried men[1]
Any method	94.6	96.4	97.6	97.0	98.4	98.8
Any modern method	94.5	96.2	97.6	96.9	98.1	98.8
Female sterilisation	66.8	73.9	63.6	58.1	67.5	53.3
Male sterilisation	38.1	41.6	40.0	48.2	58.6	43.5
Pill	87.9	92.8	86.6	80.6	88.3	81.1
IUD	61.1	70.1	62.5	40.2	51.8	32.8
Injectables	88.5	93.9	89.6	74.0	86.0	68.1
Implants	67.2	76.9	67.7	37.6	50.5	33.9
Male condom	89.2	90.1	95.8	96.1	97.5	98.3
Female condom	57.6	60.4	57.4	61.6	68.8	60.2
Lactational amenorrhoea (LAM)	33.9	41.6	26.9	13.7	19.5	12.1
Emergency contraception	40.2	42.1	49.7	35.7	41.1	38.4
Any traditional method	68.5	74.3	69.2	69.5	79.5	62.9
Rhythm	61.5	67.1	60.4	63.4	74.3	56.7
Withdrawal	47.6	53.4	54.6	51.4	62.1	46.4
Folk method	6.8	8.3	5.3	3.0	3.8	2.0
Mean number of methods known by respondents age 15-49	7.5	8.1	7.6	6.6	7.7	6.3
Number of respondents	8,444	4,928	318	3,258	1,592	294
Mean number of methods known by respondents age 15-54	na	na	na	6.7	7.6	6.3
Number of respondents	na	na	na	3,465	1,780	296

na = Not applicable
[1] Had last sexual intercourse within 30 days preceding the survey

Currently married and sexually active unmarried women have higher levels of knowledge of contraceptives than all women. Overall, the mean number of methods known is higher for currently married women (8.1) and for sexually active unmarried women (7.6) than for all women (7.5). Men are more likely than women to know about male and female condoms, male sterilisation, the rhythm method, and withdrawal, while women are more likely to know about the pill, the IUD, injectables, implants, and LAM.

Data by background characteristics show that awareness of family planning methods is widespread (data not shown). The proportion of currently married women and men who have heard of at least one contraceptive method exceeds 90 percent in all categories by age, residence, education, and wealth. Exceptions are found among women with no education, women in the lowest wealth quintile, and women in North Eastern province, where less than half of married women have heard of any method (data not shown).

Table 5.2 presents a comparative picture of trends in contraceptive knowledge among all women over time. It shows that, while the increase in knowledge of any one method has been steady but modest over the past 20-25 years, awareness of many specific methods has increased considerably. For example, the proportion of women who know about condoms increased from 42 percent in 1984 to 89 percent in 2008-09. Similarly, awareness of male sterilisation, the pill, and injectables has increased sizeably.

Table 5.2 Trends in contraceptive knowledge

Percentage of all women 15-49 who know specific contraceptive methods, Kenya, 1984-2008-09

Method	1984 KCPS	1989 KDHS	1993 KHDS	1998 KDHS	2003 KDHS	2008-09 KDHS
Any method	81.0	90.0	95.6	96.8	94.6	94.6
Any modern method	79.7	88.4	95.2	96.3	94.4	94.5
Female sterilisation	55.0	68.2	81.1	81.8	73.9	66.8
Male sterilisation	18.1	19.8	41.3	47.7	47.2	38.1
Pill	72.7	84.4	91.9	92.6	89.5	87.9
IUD	55.2	62.0	73.3	72.0	67.0	61.1
Injectables	58.9	76.3	87.6	89.7	88.9	88.5
Implants	U	U	U	48.7	63.7	67.2
Male condom	41.5[a]	53.4[a]	83.4[a]	91.5[a]	90.6	89.2
Any traditional method	U	54.8	71.9	72.6	70.0	68.5
Rhythm	51.0	50.7	64.2	68.8	64.7	61.5
Withdrawal	24.0	16.8	29.5	36.9	41.3	47.6
Other/folk methods	U	5.1	9.3	8.1	9.3	6.8
Number of women	6,581	7,150	7,540	7,881	8,195	8,444

U = No information
[a] The question did not specify male condom.
Note: Data from the first four sources omit the North Eastern province and several other northern districts.
Sources: CBS, 1984; NCPD and IRD, 1989; NCPD,CBS, and MI 1994; NCPD,CBS, and MI, 1999; CBS, MOH, and ORC Macro, 2004.

5.2 EVER USE OF FAMILY PLANNING METHODS

All women who said that they had heard of a method of family planning were asked whether they had ever used that method to delay or avoid getting pregnant. Table 5.3 shows the percentage of all women, currently married women, and sexually active unmarried women who have ever used specific methods of family planning. Ever use of contraception is higher among sexually active unmarried women (76 percent) than either all women (58 percent) or currently married women (73 percent). The most commonly ever used methods among all women and currently married women are injectables and pills, whereas sexually active unmarried women are most likely to have ever used the condom.

Ever use of family planning has increased since 2003. Overall, the percentage of currently married women who have ever used any method of contraception has increased from 64 percent in 2003 to 73 percent in 2008-09. Similarly, the proportion of women who have ever used a modern method has increased from 55 to 68 percent.

Table 5.3 Ever use of contraception

Percentage of all women, currently married women, and sexually active unmarried women age 15-49 who have ever used any contraceptive method by method, according to age, Kenya 2008-09

			Modern method										Traditional method			
Age	Any method	Any modern method	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Female condom	LAM	Emergency contraception	Any traditional method	Rhythm	Withdrawal	Folk method	Number of women
ALL WOMEN																
15-19	14.1	13.2	0.0	1.2	0.0	3.5	0.0	9.2	0.1	0.2	0.5	2.9	2.4	0.9	0.2	1,761
20-24	57.3	52.2	0.0	14.1	0.8	30.0	1.0	23.8	0.4	1.4	3.0	17.7	13.9	5.7	0.9	1,715
25-29	72.6	68.5	0.6	29.7	3.9	51.2	4.1	17.5	0.5	3.3	3.3	20.5	16.7	7.1	0.9	1,454
30-34	78.4	73.7	4.0	40.0	3.8	54.1	4.6	16.6	0.5	5.1	1.3	22.9	17.8	9.8	1.1	1,209
35-39	72.8	67.4	5.6	36.4	7.1	49.8	3.9	14.5	2.7	3.7	1.0	23.4	18.8	8.8	3.8	877
40-44	75.1	71.1	11.1	43.7	9.4	45.8	4.7	8.9	0.3	5.4	0.6	17.5	12.4	4.5	3.5	768
45-49	64.2	56.5	11.6	27.7	12.7	29.8	2.7	9.1	0.1	3.4	0.8	16.8	14.1	3.0	1.9	661
Total	57.7	53.6	3.2	23.9	4.0	35.1	2.6	15.2	0.6	2.8	1.7	16.4	12.9	5.5	1.4	8,444
CURRENTLY MARRIED WOMEN																
15-19	38.6	35.2	0.0	6.6	0.2	19.9	0.0	13.3	0.4	1.4	0.4	9.0	6.6	3.5	0.9	212
20-24	68.0	62.3	0.1	19.7	1.3	44.9	0.9	19.8	0.5	2.3	1.1	20.0	14.5	6.9	1.0	958
25-29	75.3	71.7	0.5	33.2	4.5	55.5	4.8	14.6	0.5	3.4	3.2	19.2	15.3	7.4	1.0	1,088
30-34	79.8	74.5	4.8	39.6	4.3	56.4	5.2	15.7	0.4	5.9	0.9	23.9	18.5	10.4	1.2	962
35-39	74.8	68.6	6.3	37.4	7.8	48.7	4.2	13.3	2.9	3.6	1.0	26.1	20.9	9.9	4.8	694
40-44	79.1	75.8	13.7	48.7	11.4	48.7	5.8	7.1	0.1	6.4	0.4	19.0	13.0	4.2	4.4	548
45-49	69.1	60.0	14.0	28.5	12.7	33.4	3.5	7.7	0.1	3.3	0.4	17.6	14.7	3.2	2.0	466
Total	72.9	67.8	4.8	32.6	5.7	48.3	3.8	14.1	0.7	3.9	1.3	20.6	15.9	7.3	2.1	4,928
SEXUALLY ACTIVE UNMARRIED WOMEN[1]																
15-19	46.7	44.4	0.0	3.7	0.0	3.1	0.0	37.8	0.0	0.0	5.8	13.8	10.3	4.3	0.6	72
20-24	83.6	81.6	0.0	17.3	1.3	23.7	3.5	64.2	1.9	0.3	21.3	21.1	19.2	6.6	0.0	66
25+	84.3	80.0	3.3	41.2	8.1	55.3	2.7	35.9	1.6	0.6	9.2	22.4	16.6	7.9	1.1	180
Total	75.7	72.3	1.8	27.8	4.9	37.0	2.2	42.2	1.3	0.4	10.9	20.2	15.8	6.8	0.7	318

LAM = Lactational amenorrhoea method

[1] Women who had sexual intercourse within 30 days preceding the survey

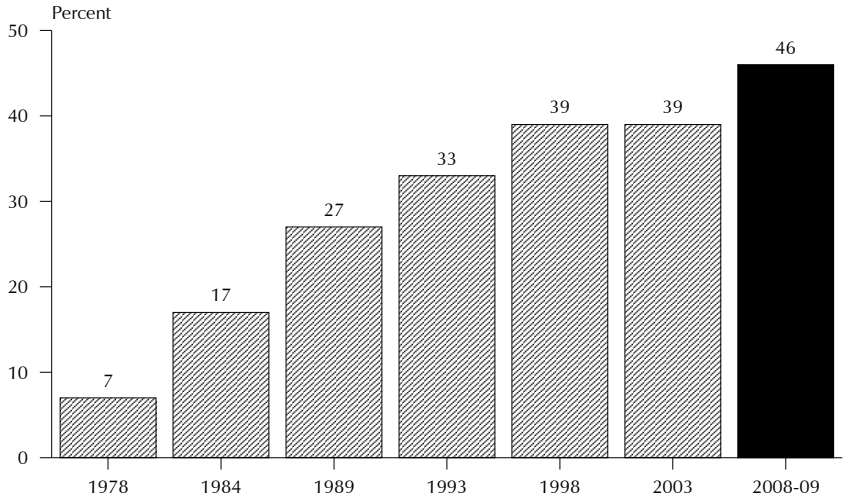
5.3 CURRENT USE OF CONTRACEPTIVE METHODS

The contraceptive prevalence rate (CPR) is the percentage of currently married women age 15-49 who are using any method of family planning. Table 5.4 shows that slightly less than half of currently married Kenyan women (46 percent) are currently using some method of contraception. Modern methods of contraception are more commonly used (39 percent) than traditional methods (6 percent). Of the modern methods, injectables are the most widely used, while the rhythm method is the most popular traditional method. Current use is higher among sexually active women and lowest among all women, a group that includes women who have not married, are not sexually active, or both.

Contraceptive prevalence peaks among married women in the 30-34 age-group and is lowest for women age 15-19. As expected, female sterilisation is used more commonly by women age 40-49, while married women at the peak of childbearing age (20-39) are most likely to use injectables and pills. Use of male condoms is particularly high among sexually active unmarried women.

As shown in Figure 5.1, there has been a substantial increase in contraceptive use since the late 1970s, from 7 percent of married women in 1978 to 46 percent in 2008-09. The contraceptive prevalence rate remained the same between 1998 and 2003, but increased again between 2003 and 2008-09 at the same momentum as between 1993 and 1998. The increase in the overall contraceptive prevalence rate is fuelled by increased use of modern methods. Between 2003 and 2008-09, use of modern methods increased from 32 to 39 percent of married women, while use of traditional methods over the same time period actually decreased from 8 to 6 percent of married women.

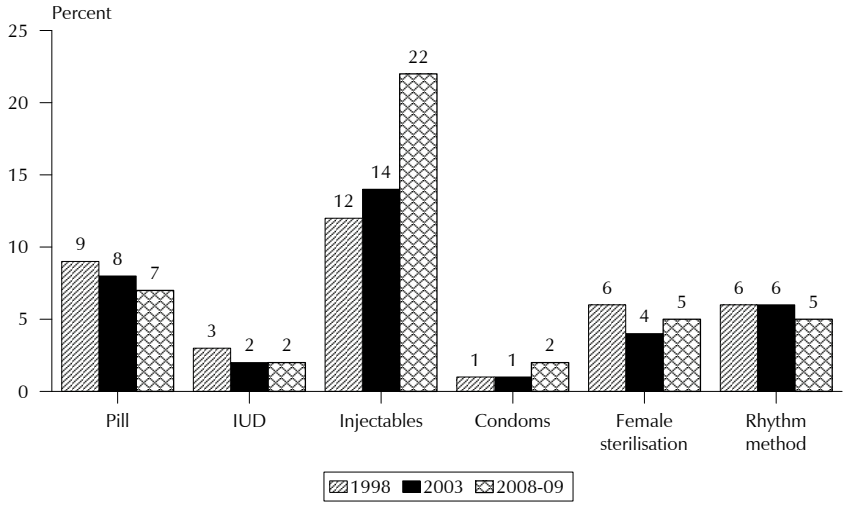
Figure 5.1 **Trends in Contraceptive Use, Kenya 1978-2008 (percentage of currently married women using any method)**



Note: Data from the first five sources omit several northern districts, while the 2003 and 2008-09 KDHS surveys represent the entire country.

As shown in Figure 5.2, changes in use of specific methods over the past decade have taken mixed directions. Use of pills, the IUD, and the rhythm method appears to be declining, while there has been a notable increase in use of injectables, especially since 2003.

Figure 5.2 **Trends in Current Use of Specific Contraceptive Methods among Currently Married Women Age 15-49, Kenya 1998-2008**



Note: The 1998 KDHS omitted several northern districts.

Kenya 2008-09

Table 5.4 Current use of contraception by age

Percent distribution of all women, currently married women, all sexually active women, and sexually active unmarried women age 15-49 by contraceptive method currently used, according to age, Kenya 2008-09

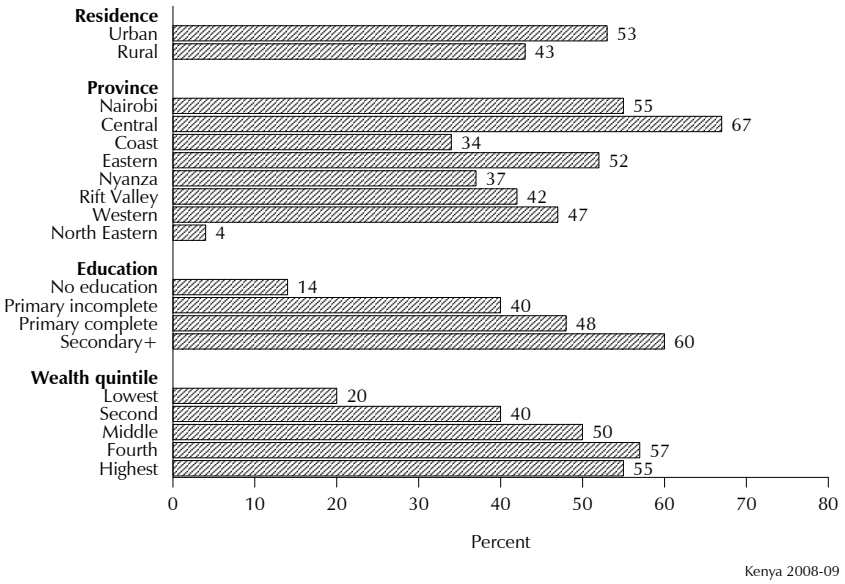
Age	Any method	Any modern method	Modern method								Any traditional method	Traditional method			Not currently using	Total	Number of women
			Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Female condom	LAM		Rhythm	Withdrawal	Folk method			
ALL WOMEN																	
15-19	5.9	4.9	0.0	0.6	0.0	2.3	0.0	2.0	0.0	0.0	1.0	0.7	0.2	0.1	94.1	100.0	1,761
20-24	27.4	23.6	0.0	4.0	0.1	13.9	0.5	4.7	0.0	0.3	3.9	2.7	0.5	0.6	72.6	100.0	1,715
25-29	40.2	36.7	0.6	7.0	0.9	22.3	2.7	2.3	0.0	0.9	3.6	2.5	0.6	0.5	59.8	100.0	1,454
30-34	50.0	45.0	4.0	7.6	1.2	26.8	2.6	2.2	0.1	0.6	5.0	4.1	0.7	0.1	50.0	100.0	1,209
35-39	44.9	36.6	5.6	5.8	2.9	18.2	1.6	2.3	0.0	0.2	8.3	7.0	0.2	1.1	55.1	100.0	877
40-44	43.2	38.4	11.1	6.5	2.4	15.3	1.3	1.3	0.0	0.5	4.8	4.0	0.3	0.5	56.8	100.0	768
45-49	32.6	26.7	11.6	3.8	1.8	6.4	0.7	2.3	0.0	0.0	5.9	5.2	0.3	0.4	67.4	100.0	661
Total	32.0	28.0	3.2	4.7	1.0	14.8	1.3	2.6	0.0	0.4	4.1	3.2	0.4	0.4	68.0	100.0	8,444
CURRENTLY MARRIED WOMEN																	
15-19	22.5	19.6	0.0	3.2	0.0	14.4	0.0	1.7	0.0	0.2	2.9	1.3	1.2	0.5	77.5	100.0	212
20-24	35.7	30.4	0.1	5.8	0.2	21.1	0.6	2.1	0.0	0.5	5.2	3.3	0.9	1.0	64.3	100.0	958
25-29	45.3	41.3	0.5	8.1	0.9	26.5	3.1	1.7	0.0	0.5	4.0	2.9	0.5	0.6	54.7	100.0	1,088
30-34	54.9	48.8	4.8	8.5	1.4	28.9	2.9	1.6	0.0	0.8	6.0	4.9	0.9	0.2	45.1	100.0	962
35-39	51.2	41.2	6.3	7.3	3.7	19.4	1.9	2.4	0.0	0.3	10.0	8.3	0.3	1.4	48.8	100.0	694
40-44	52.5	46.6	13.7	9.1	3.3	16.7	1.9	1.3	0.0	0.7	5.9	5.0	0.4	0.5	47.5	100.0	548
45-49	40.4	32.4	14.0	5.1	1.8	8.6	1.0	1.7	0.0	0.0	8.0	7.0	0.5	0.6	59.6	100.0	466
Total	45.5	39.4	4.8	7.2	1.6	21.6	1.9	1.8	0.0	0.5	6.0	4.7	0.7	0.7	54.5	100.0	4,928
ALL SEXUALLY ACTIVE WOMEN[1]																	
15-19	27.7	24.7	0.0	3.4	0.0	13.5	0.0	7.6	0.0	0.2	3.0	2.1	0.3	0.6	72.3	100.0	233
20-24	43.6	37.2	0.1	7.1	0.2	23.7	0.7	5.0	0.0	0.3	6.4	4.2	0.9	1.3	56.4	100.0	791
25-29	51.3	47.3	0.6	10.0	1.0	29.2	3.5	2.7	0.0	0.3	4.0	2.5	0.8	0.7	48.7	100.0	939
30-34	60.4	54.2	5.1	9.4	1.5	31.6	3.2	2.6	0.1	0.7	6.1	5.0	1.0	0.2	39.6	100.0	814
35-39	55.3	44.8	5.9	7.7	4.2	22.1	1.8	3.0	0.0	0.1	10.5	9.0	0.4	1.1	44.7	100.0	565
40-44	59.2	51.6	14.4	9.2	3.7	20.4	1.9	1.7	0.0	0.4	7.5	6.5	0.5	0.5	40.8	100.0	442
45-49	44.3	36.1	15.1	6.6	2.4	8.0	1.1	2.9	0.0	0.1	8.2	6.9	0.6	0.7	55.7	100.0	351
Total	51.1	44.6	4.8	8.3	1.7	24.0	2.1	3.4	0.0	0.3	6.5	5.0	0.7	0.8	48.9	100.0	4,135
SEXUALLY ACTIVE UNMARRIED WOMEN[1]																	
15-19	26.8	23.2	0.0	2.0	0.0	1.6	0.0	19.6	0.0	0.0	3.6	3.0	0.0	0.6	73.2	100.0	72
20-24	63.2	58.9	0.0	11.1	0.0	16.0	0.6	31.2	0.0	0.0	4.4	3.3	0.0	1.1	36.8	100.0	66
25+	54.8	48.7	3.3	5.3	2.3	23.1	1.8	12.5	0.4	0.0	6.1	5.0	1.0	0.1	45.2	100.0	180
Total	50.3	45.1	1.8	5.8	1.3	16.8	1.2	18.0	0.2	0.0	5.2	4.2	0.6	0.4	49.7	100.0	318

Note: If more than one method is used, only the most effective method is considered in this tabulation.
LAM = Lactational amenorrhoea method
[1] Women who have had sexual intercourse within 30 days preceding the survey

5.4 DIFFERENTIALS IN CONTRACEPTIVE USE BY BACKGROUND CHARACTERISTICS

As shown in Figure 5.3 and Table 5.5, some women are more likely to use contraceptives than others. Married women in urban areas are more likely to use a contraceptive (53 percent) than their rural counterparts (43 percent). Though use of modern methods is generally higher in urban (47 percent) than in rural areas (37 percent), female sterilisation is more common among rural women than among urban women.

Figure 5.3 **Current Use of Any Contraceptive Method among Currently Married Women Age 15-49, by Background Characteristics**



Married women in Central province continue to have the highest contraceptive prevalence rate (67 percent), followed by Nairobi (55 percent) and Eastern province (52 percent). The lowest level of family planning use is recorded in the North Eastern province at 4 percent.

Contraceptive use increases dramatically with increasing level of education. Sixty percent of married women with at least some secondary education use a contraceptive method compared with 40 percent of women with incomplete primary education and only 14 percent of those who never attended school.

The proportion of married women using modern methods increases with the number of living children, peaking at three to four children and then dropping for those with five or more children. Use of any contraceptive methods rises from 20 percent among married women in the lowest wealth quintile to 57 percent among those in the fourth wealth quintile, and then drops off slightly for those in the highest wealth quintile.

Table 5.5 Current use of contraception by background characteristics

Percent distribution of currently married women age 15-49 by contraceptive method currently used, according to background characteristics, Kenya 2008-09

Background characteristic	Any method	Any modern method	Modern method							Any traditional method	Traditional method			Not currently using	Total	Number of women
			Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	LAM		Rhythm	Withdrawal	Folk method			
Residence																
Urban	53.1	46.6	3.0	11.1	2.9	23.5	2.7	2.7	0.8	6.5	5.6	0.5	0.3	46.9	100.0	1,154
Rural	43.1	37.2	5.3	6.1	1.2	21.0	1.7	1.5	0.4	5.9	4.4	0.7	0.8	56.9	100.0	3,774
Province																
Nairobi	55.3	49.0	2.7	13.8	3.9	18.2	4.4	4.4	1.7	6.3	5.6	0.4	0.3	44.7	100.0	363
Central	66.7	62.5	8.1	19.4	5.1	25.7	3.2	0.7	0.3	4.2	2.4	1.2	0.6	33.3	100.0	535
Coast	34.3	29.7	2.1	5.4	0.7	17.8	1.4	1.5	0.8	4.6	4.0	0.6	0.0	65.7	100.0	427
Eastern	52.0	43.8	3.9	9.1	1.4	26.5	1.6	0.6	0.6	8.3	7.1	0.9	0.3	48.0	100.0	844
Nyanza	37.3	32.9	5.7	3.1	0.4	18.0	1.8	3.6	0.3	4.4	2.6	0.4	1.4	62.7	100.0	832
Rift Valley	42.4	34.7	4.1	3.7	0.9	23.0	1.7	1.0	0.2	7.7	6.1	0.9	0.7	57.6	100.0	1,279
Western	46.5	41.1	7.9	5.9	0.8	22.2	1.2	2.8	0.3	5.4	4.0	0.1	1.3	53.5	100.0	518
North Eastern	3.5	3.5	0.0	0.3	0.0	2.1	0.6	0.0	0.4	0.0	0.0	0.0	0.0	96.5	100.0	130
Education																
No education	14.1	12.0	2.6	0.7	0.0	7.2	0.4	0.6	0.5	2.1	1.5	0.2	0.3	85.9	100.0	565
Primary incomplete	40.3	34.8	5.4	4.1	0.8	21.4	1.1	1.7	0.5	5.4	3.6	0.8	1.0	59.7	100.0	1,440
Primary complete	48.2	41.8	4.8	7.3	1.0	25.8	1.3	1.3	0.3	6.4	5.1	0.4	0.9	51.8	100.0	1,436
Secondary+	59.8	52.1	5.0	12.8	3.4	23.3	4.0	2.9	0.7	7.7	6.5	0.9	0.4	40.2	100.0	1,488
Number of living children																
0	14.7	10.5	0.0	3.4	0.0	3.7	0.9	2.5	0.0	4.2	2.2	1.0	1.0	85.3	100.0	296
1-2	47.0	42.1	0.9	9.9	1.8	24.4	2.2	2.6	0.4	4.9	3.7	0.6	0.6	53.0	100.0	1,763
3-4	53.2	46.4	5.5	7.6	2.1	26.3	2.7	1.6	0.6	6.8	5.4	0.7	0.7	46.8	100.0	1,563
5+	41.2	34.2	10.3	4.1	0.8	16.4	1.0	0.8	0.7	7.0	5.7	0.5	0.8	58.8	100.0	1,307
Wealth quintile																
Lowest	20.1	16.9	2.3	1.3	0.0	11.9	0.2	0.9	0.3	3.2	1.7	1.0	0.5	79.9	100.0	870
Second	40.0	33.4	3.8	3.7	0.5	22.2	0.7	1.8	0.7	6.6	4.4	0.5	1.7	60.0	100.0	883
Middle	49.8	43.2	6.8	8.2	1.6	23.3	1.2	1.5	0.6	6.6	5.5	0.4	0.7	50.2	100.0	952
Fourth	56.9	50.4	7.6	11.3	1.5	25.7	2.7	1.6	0.2	6.5	5.1	0.9	0.5	43.1	100.0	1,012
Highest	54.7	47.9	3.4	10.0	3.4	23.4	4.0	2.9	0.6	6.8	6.0	0.5	0.2	45.3	100.0	1,211
Total	45.5	39.4	4.8	7.2	1.6	21.6	1.9	1.8	0.5	6.0	4.7	0.7	0.7	54.5	100.0	4,928

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

5.5 NUMBER OF CHILDREN AT FIRST USE OF CONTRACEPTION

Table 5.6 shows the distribution of women by age and number of living children at first use of contraception. The results imply that Kenyan women are adopting family planning at lower parities (i.e., when they have fewer children) than in the past. Among younger women (age 20-24), 22 percent used contraception before having any children and 25 percent started using contraception when they had one child. Among older women (age 45-49), only 5 percent used contraception before having any children, and 11 percent used contraception by parity 1.

Table 5.6 Number of children at first use of contraception

Percent distribution of women age 15-49 by number of living children at the time of first use of contraception, according to current age, Kenya 2008-09

Current age	Never used	Number of living children at time of first use of contraception						Total	Number of women
		0	1	2	3	4+	Missing		
15-19	85.9	9.6	3.3	0.2	0.0	0.0	0.9	100.0	1,761
20-24	42.7	21.6	24.6	8.3	1.6	0.6	0.6	100.0	1,715
25-29	27.4	12.3	33.7	15.5	6.3	4.3	0.5	100.0	1,454
30-34	21.6	8.9	32.5	17.8	9.4	9.8	0.0	100.0	1,209
35-39	27.2	4.8	23.8	11.5	11.6	21.1	0.0	100.0	877
40-44	24.9	4.6	25.7	11.4	10.7	22.3	0.5	100.0	768
45-49	35.8	4.9	11.2	10.9	9.0	28.2	0.1	100.0	661
Total	42.3	11.1	21.8	10.0	5.6	8.7	0.5	100.0	8,444

5.6 KNOWLEDGE OF FERTILE PERIOD

An elementary knowledge of reproductive physiology provides a useful background for successful practice of coitus-related methods such as the rhythm method. The successful use of such methods depends in part on an understanding of when, during the ovulatory cycle, a woman is most likely to conceive. Women were asked: 'From one menstrual period to the next, are there certain days when a woman is more likely to get pregnant if she has sexual relations?' If the answer was 'yes', they were further asked whether that time was just before her period begins, during her period, right after her period has ended or halfway between two periods. Table 5.7 provides the results for all women, as well as for women who report that they are currently using the rhythm method and those who are not.

Table 5.7 Knowledge of fertile period

Percent distribution of women age 15-49 by knowledge of the fertile period during the ovulatory cycle, according to current use of the rhythm method, Kenya 2008-09

Perceived fertile period	Users of rhythm method	Nonusers of rhythm method	All women
Just before her menstrual period begins	10.9	14.3	14.2
During her menstrual period	4.5	2.4	2.5
Right after her menstrual period has ended	41.7	29.5	29.9
Halfway between two menstrual periods	35.5	23.9	24.3
Other	0.0	0.1	0.1
No specific time	2.0	11.5	11.2
Don't know	5.4	18.1	17.7
Total	100.0	100.0	100.0
Number of women	272	8,172	8,444

The data show that only one in four women (24 percent) understands that a woman is most likely to conceive halfway between her menstrual periods. Almost one-third wrongly believe that the fertile period is right after a woman's period has ended, fewer than one in five women say they do not know when the fertile period falls, and 11 percent of women believe that there is no specific fertile time.

As expected, users of the rhythm method of family planning are more likely than non-users to know that the fertile period in a woman's menstrual cycle is halfway between the start of her periods.

5.7 TIMING OF STERILISATION

Sterilisation is a very effective, permanent method of family planning, which could be adopted by more couples who do not want any more children. Consequently, it is useful to know whether the age at which women get sterilised is increasing or declining. Table 5.8 shows the percent distribution of currently married, sterilised women by age at the time of sterilisation and median age at sterilisation, according to the number of years since the operation. The results indicate that the median age at sterilisation for women in Kenya is 33. A plurality of women are sterilised when they are 30-34 years, with most of the rest being sterilised in their late thirties or early forties. Very few women are sterilised when they are less than age 25.

Table 5.8 Timing of sterilisation

Percent distribution of sterilised women age 15-49 who were sterilised in the three years before the survey by age at the time of sterilisation and median age at sterilisation, Kenya 2008-09

Years since operation	Age at time of sterilisation						Total	Number of women	Median age
	<25	25-29	30-34	35-39	40-44	45-49			
Total	1.8	11.2	39.7	18.6	20.1	8.7	100.0	117	33.0

[a] = Not calculated due to censoring
[1] Median age at sterilisation is calculated only for women sterilised before age 40 to avoid problems of censoring

5.8 SOURCE OF CONTRACEPTION

Information on where women obtain their contraceptives is useful for family planning programme managers and implementers for logistic planning. In the 2008-09 KDHS, women who reported using a modern contraceptive method at the time of the survey were asked where they obtained the method the last time they acquired it. Because some women may not know in which exact category their source falls (e.g., government hospital, private health centre, etc.), interviewers were instructed to note the full name of the source or facility. Supervisors were instructed to verify that the name and source type were consistent, asking informants in the clusters for the names of local family planning outlets, if necessary. This practice was designed to improve the accuracy of source reporting.

Table 5.9 shows the percent distribution of users of modern contraceptive methods by the most recent source of method. It indicates that public (government) facilities provide contraceptives to 57 percent of users, while 36 percent of users are supplied through private medical sources, 6 percent through other private sources (e.g., shops), and less than one percent through the community-based distribution system. The most common single source of contraceptives in Kenya is government hospitals, which supply about one-quarter of all users of modern methods. Government dispensaries and private hospitals and clinics supply about one-fifth of users, followed by government health centres (15 percent). Government sources supply a larger proportion of users of long-term methods, such as female sterilisation, implants, and injectables, than users of pills, IUDs, and especially, male condoms. Almost a third of women who are sterilised obtained the procedure at a private source, especially mission facilities, private hospitals, and clinics. More than half of all condom users get their supplies from sources such as shops and friends.

Table 5.9 Source of modern contraception methods

Percent distribution of users of modern contraceptive methods age 15-49 by most recent source of method, according to method, Kenya 2008-09

Source	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Total[1]
Public	66.6	42.4	51.0	65.3	77.7	19.8	57.3
Government hospital	50.3	13.9	25.8	20.6	48.2	9.6	23.4
Government health centre	9.2	14.2	13.1	17.7	18.7	1.5	14.5
Government dispensary	7.0	14.4	12.1	26.9	10.9	8.0	19.4
Other public	0.0	0.0	0.0	0.0	0.0	0.7	0.1
Private medical	32.3	55.6	47.8	34.1	22.3	17.3	35.9
Mission church hospital/clinic	17.0	2.2	11.1	3.7	1.9	1.1	4.9
FHOK/FPAK/health centre/clinic	0.0	0.6	9.7	1.2	1.4	0.8	1.2
Private hospital/clinic	14.6	12.0	27.1	25.5	18.1	1.1	19.4
Pharmacy	0.0	40.5	0.0	3.5	0.0	14.3	10.2
Nursing maternity home	0.6	0.0	0.0	0.2	0.8	0.0	0.2
Other private medical	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Other	0.7	1.6	1.2	0.5	0.0	59.7	6.3
Mobile clinic	0.5	0.0	0.0	0.1	0.0	1.2	0.2
CBD	0.0	0.9	0.0	0.2	0.0	1.6	0.4
Shop	0.0	0.7	0.0	0.0	0.0	37.6	3.7
Friend/relative	0.0	0.0	0.0	0.0	0.0	16.5	1.6
Other	0.2	0.0	1.2	0.2	0.0	2.9	0.5
Missing	0.4	0.4	0.0	0.1	0.0	3.1	0.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	269	398	85	1,246	110	220	2,329

[1] Total includes other modern methods but excludes lactational amenorrhoea method (LAM).
FHOK = Family Health Organisation of Kenya
FPAK = Family Planning Association of Kenya
CBD = Community-based distributor

The contribution of public sources to the provision of family planning had been shrinking—from 68 percent in 1993, to 58 percent in 1998, and to 53 percent in 2003—but expanded slightly to 57 percent in 2008-09. The contribution of the private medical sector shrank to 36 percent in 2008-09 from 41 percent in 2003. The largest decline in the private medical sector is for private hospitals and clinics, which supplied 19 percent of contraceptive users in 2008-09, down from 24 percent in 2003.

5.9 Cost of Contraceptive Methods

Table 5.10 reflects the percentage of current users of modern contraceptive methods who received the method for free and the median cost for those who paid and could report a cost. Overall, about one in five women using a modern contraceptive method receives the method free of charge. The data indicate that a higher percentage of those who obtained their contraceptive methods from the public sector did not pay for the method (28 percent) compared with those who sourced their methods from the private medical sector (8 percent). This is true for every method included in the table; however, for those who pay for female sterilisation, the median cost is the same in the public sector as in the private medical sector, at K.shs 2,495. The median cost of pills, injectables, and implants is higher in the private medical sector than in the public sector.

Table 5.10 Cost of modern contraceptive methods

Percentage of current users of modern contraception age 15-49 who did not pay for the method and who do not know the cost of the method and the median cost of the method by current method, according to source of current method, Kenya 2008-09

Source of method/cost	Female sterilisation	Pill	IUD	Injectables	Implants	Male condom	Total
Public sector							
Percentage free	54.1	30.8	57.2	16.4	35.6	70.8	27.7
Do not know cost	10.4	0.0	1.6	0.4	0.0	22.2	2.4
Median cost [in K.shs.][1]	2,495	18	*	30	(196)	*	29
Number of women	179	169	43	813	85	44	1,334
Private medical sector/other							
Percentage free	28.0	3.5	8.0	5.0	6.4	11.7	8.1
Do not know cost	17.1	3.7	8.2	0.3	0.0	41.5	10.2
Median cost [in K.shs.][1]	(2,497)	23	(997)	90	(996)	10	60
Number of women	90	229	42	433	24	176	995
Total							
Percentage free	45.4	15.1	33.1	12.5	29.1	23.4	19.3
Do not know cost	12.6	2.1	4.9	0.4	0.0	37.7	5.7
Median cost [in K.shs.][1]	2,495	20	498	45	348	10	43
Number of women	269	398	85	1,246	110	220	2,329

Note: Table excludes lactational amenorrhoea method (LAM). Costs are based on the last time current users obtained method. Costs include consultation costs, if any. For condom, costs are per package; for pills, per cycle. For sterilisation, data are based on women who received the operation in the 5 years before the survey. Numbers in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

[1] Median cost is based only on those women who reported a cost

5.10 INFORMED CHOICE

Current users of modern methods who are informed of potential side effects and problems of each method are best able to make an informed choice about the method they would like to use. Current users of various modern contraceptive methods, who started the last episode of use within the five years preceding the survey, were asked whether, at the time they were adopting the particular method, they were informed of possible side effects or problems and what to do if they experienced them.

Table 5.11 shows that almost all women (92 percent) who were sterilised during the five-year period preceding the survey were informed that they would not be able to have any more children. Sixty-one percent of users of modern contraceptive methods were informed of other methods available that could be used, while 57 percent were informed of the side effects or health problems of the method they were provided, and 52 percent were informed of what to do if they experienced side effects. The results also indicate that users of implants are more likely than users of other methods to be informed of side effects or health problems (81 percent), other methods available (82 percent), and what to do if they experienced side effects (78 percent). Less than half of pill users were informed of side effects or what to do if they experienced side effects.

Table 5.11 Informed choice

Among current users of modern methods age 15-49 who started the last episode of use within the five years preceding the survey, the percentage who were informed about possible side effects or problems of that method, the percentage who were informed about what to do if they experienced side effects, and the percentage who were informed about other methods that could be used, by method and source; and among sterilised women, the percentage who were informed that the method is permanent, by initial source of method, Kenya 2008-09

	Among women who started last episode of modern contraceptive method within five years preceding the survey:				Among women who were sterilised:	
Method/source	Percentage who were informed about side effects or problems of method used	Percentage who were informed about what to do if experienced side effects	Percentage who were informed by a health or family planning worker of other methods that could be used	Number of women	Percentage who were informed that sterilisation is permanent[1]	Number of women
Method						
Female sterilisation	65.4	58.9	61.7	133	92.2	133
Pill	48.1	39.5	55.4	322	na	0
IUD	75.3	73.5	74.1	45	na	0
Injectables	56.0	51.5	62.0	1,037	na	0
Implants	81.4	78.2	81.8	96	na	0
Initial source of method[2]						
Public	63.1	56.0	67.4	1,072	91.1	102
Government hospital	69.7	65.2	74.1	417	90.4	68
Government health centre	59.9	50.5	59.2	296	*	17
Government dispensary	58.1	49.9	66.5	359	*	17
Private medical	48.7	46.4	53.6	523	(100.0)	29
Mission church hospital/ clinic	62.8	52.4	65.6	75	*	11
Private hospital/ clinic	52.7	51.8	59.2	283	*	18
Pharmacy	28.9	27.8	32.5	137	na	0
Other private	23.7	24.7	16.9	71	*	2
Total	57.2	51.9	60.9	1,665	92.2	133

Note: Totals include sources with too few users to show separately as well as 33 users of other methods. Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
na = Not applicable
[1] Among women who were sterilised in the five years preceding the survey
[2] Source at start of current episode of use

5.11 CONTRACEPTIVE DISCONTINUATION

Couples can realise their reproductive goals only when they use contraceptive methods continuously. A prominent concern for managers of family planning programmes is the discontinuation of methods. In the 2008-09 KDHS 'calendar' section, all segments of contraceptive use between January 2003 and the date of interview were recorded, along with reasons for any discontinuation. One-year contraceptive discontinuation rates based on the calendar data are presented in Table 5.12.[1]

The data show that 36 percent of family planning users in Kenya discontinue using the method within 12 months of starting its use. Discontinuation rates are highest for users of condoms (59 percent) and the pill (43 percent) and lowest for injectables (29 percent). The rates in Table 5.12 are very similar to those produced from the 2003 KDHS, indicating little change over the past five years.

Table 5.12 First-year contraceptive discontinuation rates

Percentage of contraceptive users who discontinued use of a method within 12 months after beginning its use, Kenya 2008-09

Method	Total
Pill	43.2
Injectables	29.0
Male condom	58.9
Rhythm method	33.3
All methods	35.8
Number of episodes of use	1,479

Note: Table is based on episodes of contraceptive use that began 3-62 months prior to the survey.

[1] The discontinuation rates presented here include only those segments of contraceptive use that *began* since January 2003. The rates apply to the 3-63 month period prior to the survey; exposure during the month of interview and the two months prior are excluded to avoid the biases that may be introduced by unrecognised pregnancies. These cumulative discontinuation rates represent the proportion of users discontinuing a method within 12 months after the start of use. The rates are calculated by dividing the number of women discontinuing a method by the number exposed at that duration. The single-month rates are then cumulated to produce a one-year rate.

5.12 FUTURE USE OF CONTRACEPTION

An important indicator of the changing demand for family planning is the extent to which non-users of contraception plan to use family planning in the future. In the KDHS, currently married women age 15-49 who were not using a contraceptive method were asked about their intention to use family planning in the future. The results are presented in Table 5.13.

Table 5.13 Future use of contraception

Percent distribution of currently married women age 15-49 who are not using a contraceptive method by intention to use in the future, according to number of living children, Kenya 2008-09

Intention	Number of living children[1]					Total
	0	1	2	3	4+	
Intends to use	54.7	64.0	55.5	61.4	49.0	55.0
Unsure	7.6	4.9	3.2	3.8	5.0	4.6
Does not intend to use	37.8	31.1	41.3	34.9	45.8	40.4
Missing	0.0	0.0	0.0	0.0	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	136	447	493	431	1,181	2,687

[1] Includes current pregnancy

Fifty-five percent of currently married female non-users say that they intend to use family planning in the future, 40 percent do not intend to use it, and 5 percent are unsure. The proportion of those intending to use contraception increases only slightly with number of living children, from 55 percent for those with no child to a peak of 64 percent for those with one child. Those who do not intend to use contraception in the future are concentrated among those with two children and those with four or more children.

5.13 REASONS FOR NOT INTENDING TO USE

As mentioned above, 55 percent of married women in Kenya are not using contraception. Consequently, the reasons why they are not using any family planning method are of great interest to programme managers. Table 5.14 presents the distribution of currently married non-users who do not intend to use a contraceptive method in the future by the main reason why they do not intend to use.

The data show that method-related reasons—especially fear of side effects and health concerns—were the most commonly cited reasons for not intending to use family planning in the future. Other reasons for not using, such as religious prohibitions, opposition to use, menopause, infecundity, desire for many children, and infrequent sex were each cited by 6-9 percent of women as the main reason for not intending to use a family planning method in the future.

Table 5.14 Reason for not intending to use contraception in the future

Percent distribution of currently married women age 15-49 who are not using contraception and who do not intend to use in the future by main reason for not intending to use, Kenya 2008-09

Reason	Total
Fertility-related reasons	
Infrequent sex/no sex	6.7
Menopausal/had hysterectomy	8.5
Subfecund/infecund	6.9
Wants as many children as possible	7.8
Opposition to use	
Respondent opposed	7.9
Husband/partner opposed	6.0
Others opposed	0.1
Religious prohibition	9.0
Lack of knowledge	
Knows no method	2.3
Knows no source	1.9
Method-related reasons	
Health concerns	14.9
Fear of side effects	15.8
Lack of access/too far	0.8
Cost too much	0.4
Inconvenient to use	0.6
Interfere with body's normal process	5.9
Other	3.6
Don't know	0.6
Missing	0.3
Total	100.0
Number of women	1,085

Table 5.15 presents data on the preferred method of contraception for future use for currently married women who are not using but say they intend to use in the future. The largest percentage of prospective users reported injectables as their preferred method (52 percent), with 12 percent citing pills, and 8 percent favouring female sterilisation and implants. Method preference among married women under 30 years and those over 30 years is similar, except that older women are more likely than younger women to prefer female sterilisation and less likely to prefer injectables.

Table 5.15 Preferred method of contraception for future use

Percent distribution of currently married women age 15-49 who are not using a contraceptive method but who intend to use in the future by preferred method, Kenya 2008-09

Method	Age		Total
	15-29	30-49	
Female sterilisation	4.7	14.7	8.4
Male sterilisation	0.0	0.2	0.1
Pill	11.8	12.6	12.1
IUD	1.0	3.4	1.9
Injectables	55.6	44.4	51.5
Implants	8.3	6.8	7.7
Condom	1.7	3.5	2.4
Female condom	0.3	0.3	0.3
Lactation amenorrhoea	0.1	0.0	0.0
Periodic abstinence	1.8	1.4	1.6
Withdrawal	0.4	0.5	0.4
Other	0.9	1.7	1.2
Unsure	13.6	10.6	12.5
Missing	0.0	0.1	0.0
Total	100.0	100.0	100.0
Number of women	937	540	1,477

5.14 EXPOSURE TO FAMILY PLANNING MESSAGES

For some time, the Division of Reproductive Health in the Ministry of Public Health and Sanitation together with various stakeholders has been using electronic media to inform the population about family planning issues. Information on the level of public exposure to a particular type of media allows policymakers to assess the most effective media for various target groups in the population. To gauge the effectiveness of such media on the dissemination of family planning information, respondents in the 2008-09 KDHS were asked whether they had heard or seen a family planning message on the radio or television in the month preceding the interview.

Table 5.16 shows that about 3 in 10 women and 1 in 4 men has not been exposed to family planning messages through the media. Most women (69 percent) and men (71 percent) hear family planning messages through the radio, while almost 40 percent of women and men hear messages on the television, and 34 percent of women and 40 percent of men see messages in the print media.

There is a sharp contrast between urban and rural areas in exposure to family planning messages through television and print media. For example, 64 percent of women and 60 percent of men in urban areas are exposed to family planning messages through television, compared with only 29 percent of women and 31 percent of men in rural areas. Variation by province in exposure of women and men to family planning messages through the media is moderate, except that in Nairobi exposure to television and to the newspaper and magazines is highest, while in North Eastern province, exposure is minimal, especially for women. Exposure to family planning messages through all media rises with level of education and with wealth quintile.

Table 5.16 Exposure to family planning messages

Percentage of women and men age 15-49 who heard or saw a family planning message on the radio or television or in a newspaper in the past few months, according to background characteristics, Kenya 2008-09

Background characteristic	Women					Men				
	Radio	Television	News-paper/ magazine	None of these three media sources	Number	Radio	Television	News-paper/ magazine	None of these three media sources	Number
Age										
15-19	52.9	27.3	27.9	44.1	1,761	57.3	28.6	28.4	36.3	776
20-24	75.0	43.3	37.6	23.6	1,715	75.9	42.0	44.9	18.9	630
25-29	74.5	42.5	39.2	24.0	1,454	70.9	39.5	45.9	23.1	483
30-34	75.2	40.6	36.9	23.9	1,209	76.2	43.5	42.6	16.1	461
35-39	73.1	42.5	37.6	25.6	877	76.6	44.3	43.6	18.7	344
40-44	70.2	37.6	30.0	27.4	768	79.6	41.0	41.3	16.3	306
45-49	67.9	30.2	25.2	31.3	661	77.3	44.6	42.8	17.0	257
Residence										
Urban	78.2	63.8	54.7	17.8	2,148	71.9	60.2	56.5	16.5	866
Rural	66.1	29.0	27.1	33.0	6,296	71.1	31.3	34.2	25.2	2,392
Province										
Nairobi	77.2	70.0	57.9	17.1	728	72.9	64.6	54.6	12.5	314
Central	88.2	50.4	42.5	10.5	905	77.7	42.0	44.7	15.7	347
Coast	60.9	40.5	30.8	36.5	674	54.9	29.7	25.3	36.9	252
Eastern	52.6	27.5	25.4	45.7	1,376	64.0	35.5	35.6	29.8	530
Nyanza	76.4	37.0	36.7	22.5	1,389	80.8	46.5	52.2	15.2	520
Rift Valley	70.9	35.7	35.3	28.2	2,262	74.8	32.7	37.4	21.2	885
Western	71.1	26.5	21.8	27.8	927	68.4	32.9	32.2	28.1	349
North Eastern	11.6	4.3	3.9	87.1	184	42.7	22.5	24.4	56.8	62
Education										
No education	29.6	10.6	5.0	69.1	752	35.7	8.3	2.1	64.3	112
Primary incomplete	62.5	20.6	17.5	36.2	2,526	61.5	21.1	16.8	35.8	883
Primary complete	72.8	38.3	31.4	25.8	2,272	73.8	33.9	31.9	22.5	804
Secondary+	82.3	59.6	58.3	15.3	2,894	78.6	55.0	61.8	12.1	1,459
Wealth quintile										
Lowest	39.9	10.0	9.5	59.6	1,393	61.3	17.8	19.7	37.6	457
Second	66.0	16.4	19.2	33.0	1,483	67.1	19.8	25.6	32.1	577
Middle	74.6	30.3	27.6	24.9	1,613	74.2	33.1	34.9	22.9	574
Fourth	76.4	46.6	41.1	22.7	1,736	74.5	43.5	43.5	19.2	725
Highest	80.0	68.1	58.8	15.7	2,220	74.6	61.6	60.0	12.7	926
Total 15-49	69.1	37.8	34.1	29.2	8,444	71.3	39.0	40.2	22.9	3,258
Men age 50-54	na	na	na	na	0	75.4	32.7	30.5	22.8	207
Total men 15-54	na	na	na	na	0	71.6	38.6	39.6	22.9	3,465

na = Not applicable

Table 5.17 shows that only one in four women has not been exposed to condom messages through the media. Most women (71 percent) hear about condoms through the radio, 40 percent hear messages on the television, 34 percent see messages in the print media, and 42 percent see them on billboards.

There is sharp contrast between urban and rural areas in exposure to condom messages through the television and print media. For example, 66 percent of urban women are exposed to condom messages through the television compared with only 30 percent of rural women. Variation by province in exposure of women to condom messages through the media is not great, except in Nairobi, where exposure to messages on television, newspapers, and billboards is highest and in North Eastern province, where exposure is minimal for all four types of media. Exposure of women to condom messages through the media rises with level of education and wealth quintile.

Table 5.17 Exposure to condom messages

Percentage of women age 15-49 who heard or saw a condom message on the radio or television or in a newspaper or on billboards in the past few months, according to background characteristics, Kenya 2008-09

Background characteristic	Radio	Television	News-paper/ magazine	Billboards	None of these four media sources	Number
Age						
15-19	62.7	33.3	32.5	34.2	31.9	1,761
20-24	75.9	45.2	39.2	47.2	19.8	1,715
25-29	75.1	43.1	37.0	48.4	20.8	1,454
30-34	73.8	42.1	37.0	44.5	22.1	1,209
35-39	71.2	40.0	34.6	41.3	25.6	877
40-44	71.2	37.5	27.4	39.5	25.8	768
45-49	68.8	30.8	22.5	33.2	28.9	661
Residence						
Urban	78.4	66.3	52.4	62.7	13.8	2,148
Rural	68.8	30.4	28.1	34.8	28.4	6,296
Province						
Nairobi	79.0	75.5	56.9	64.1	11.7	728
Central	89.9	53.5	43.6	54.7	7.0	905
Coast	58.1	36.2	27.2	43.4	32.5	674
Eastern	51.0	28.4	23.3	34.9	42.8	1,376
Nyanza	80.7	42.1	40.8	48.7	17.2	1,389
Rift Valley	75.5	37.1	36.1	38.2	22.9	2,262
Western	73.8	25.7	20.6	27.9	23.1	927
North Eastern	13.0	5.9	4.2	1.9	85.6	184
Education						
No education	30.1	11.8	4.2	11.2	66.0	752
Primary incomplete	66.3	23.3	18.2	27.5	30.9	2,526
Primary complete	75.6	38.2	31.4	41.9	20.5	2,272
Secondary+	82.9	62.0	58.3	62.5	11.8	2,894
Wealth quintile						
Lowest	43.3	11.3	11.3	16.3	54.4	1,393
Second	68.5	15.9	20.8	29.8	28.9	1,483
Middle	75.2	31.1	28.8	35.2	22.5	1,613
Fourth	79.8	49.4	40.2	49.8	15.7	1,736
Highest	81.0	71.6	57.0	64.8	11.9	2,220
Total 15-49	71.3	39.6	34.3	41.9	24.7	8,444

Overall, about 7 in 10 women believe that it is acceptable to use electronic and print media to air messages about condoms (Table 5.18). All the media are equally acceptable as vehicles for advertising condoms.

Urban women are more likely than rural women to view dissemination of condom messages in the media as acceptable. Other variations in the acceptability of dissemination of condom messages in the print and electronic media are not large, except that women in North Eastern province and those with no education are less likely to consider as acceptable the use of print and electronic media to disseminate condom messages.

Table 5.18 Acceptability of condom messages

Percentage of women age 15-49 who believe that media messages on the radio or television or in a newspaper or on billboards are acceptable, according to background characteristics, Kenya 2008-09

Background characteristic	Radio	Television	News-paper/ magazine	Billboards	None of these four media sources	Number
Age						
15-19	67.7	63.0	63.9	61.3	30.6	1,761
20-24	82.2	78.0	79.1	77.5	16.6	1,715
25-29	78.5	71.6	74.6	72.0	19.6	1,454
30-34	80.0	74.7	77.8	75.0	18.0	1,209
35-39	76.2	69.3	73.1	71.6	21.4	877
40-44	70.0	65.4	67.1	65.7	26.1	768
45-49	66.9	60.4	62.3	62.3	31.4	661
Residence						
Urban	81.4	77.0	79.4	77.4	16.5	2,148
Rural	73.2	67.4	69.4	67.4	24.9	6,296
Province						
Nairobi	80.9	77.3	78.9	76.8	17.7	728
Central	72.4	68.5	73.3	70.5	23.7	905
Coast	73.5	71.4	70.6	69.0	25.5	674
Eastern	66.8	61.9	63.5	60.3	31.7	1,376
Nyanza	83.8	80.3	81.6	79.9	15.5	1,389
Rift Valley	77.6	69.0	73.3	72.4	19.5	2,262
Western	81.9	75.1	72.9	70.8	16.7	927
North Eastern	11.8	7.1	10.6	6.2	86.0	184
Education						
No education	47.1	41.7	41.4	41.4	50.3	752
Primary incomplete	73.4	66.8	66.9	64.9	25.4	2,526
Primary complete	79.3	73.1	75.9	73.5	19.0	2,272
Secondary+	81.1	77.3	81.2	79.0	16.3	2,894
Wealth quintile						
Lowest	60.2	54.6	55.5	54.3	37.5	1,393
Second	76.2	69.6	69.2	67.7	23.0	1,483
Middle	75.5	70.1	71.9	70.3	23.1	1,613
Fourth	78.0	71.9	75.2	72.8	20.0	1,736
Highest	81.8	77.8	81.6	78.7	15.3	2,220
Total 15-49	75.3	69.9	71.9	69.9	22.8	8,444

5.15 CONTACT OF NON-USERS WITH FAMILY PLANNING PROVIDERS

In the 2008-09 KDHS, married women who were not using any family planning method were asked if they had been visited by a field-worker who talked to them about family planning in the 12 months preceding the survey. This information is especially useful for determining if non-users of family planning are being reached by family planning programmes.

The results in Table 5.19 show that only a small proportion (5 percent) of women who are not using any family planning method are being reached by field-workers to discuss family planning issues. Only 9 percent who visited health facilities in the 12 months before the survey discussed issues of family planning with the health facility staff. This implies that many opportunities are lost when potential users can be educated on the benefits of family planning.

Table 5.19 Contact of nonusers with family planning providers

Among women age 15-49 who are not using contraception, the percentage who during the last 12 months were visited by a field-worker who discussed family planning, the percentage who visited a health facility and discussed family planning, the percentage who visited a health facility but did not discuss family planning, and the percentage who neither discussed family planning with a field-worker nor at a health facility, by background characteristics, Kenya 2008-09

Background characteristic	Percentage of women who were visited by field-worker who discussed family planning	Percentage of women who visited a health facility in the past 12 months and who:		Percentage of women who neither discussed family planning with field-worker nor at a health facility	Number of women
		Discussed family planning	Did not discuss family planning		
Age					
15-19	3.1	2.7	31.0	94.8	1,657
20-24	6.2	11.6	42.2	84.3	1,244
25-29	6.2	14.4	43.3	81.7	869
30-34	5.7	14.5	43.1	82.7	604
35-39	3.8	9.5	38.4	87.9	483
40-44	5.2	8.5	33.6	87.7	436
45-49	5.3	4.8	32.4	91.4	446
Residence					
Urban	4.5	7.4	37.4	89.0	1,361
Rural	5.1	9.3	37.5	87.5	4,378
Province					
Nairobi	2.8	5.5	31.6	92.1	456
Central	3.8	8.2	37.9	88.9	486
Coast	4.2	14.3	35.3	83.0	494
Eastern	4.8	10.6	43.7	86.7	879
Nyanza	7.3	11.4	46.3	84.3	969
Rift Valley	4.6	6.6	36.2	90.3	1,624
Western	4.0	7.8	26.2	88.5	650
North Eastern	9.0	5.4	32.6	89.2	180
Education					
No education	4.4	8.3	35.4	89.2	660
Primary incomplete	4.1	9.2	38.3	88.0	1,821
Primary complete	5.7	9.9	38.9	86.4	1,455
Secondary+	5.3	7.8	36.3	88.5	1,803
Wealth quintile					
Lowest	6.0	9.1	35.3	87.5	1,177
Second	5.4	9.8	39.6	86.8	1,068
Middle	3.7	9.4	37.7	87.9	1,049
Fourth	4.4	9.8	36.1	87.6	1,066
Highest	4.9	6.7	38.6	89.2	1,379
Total	4.9	8.8	37.5	87.9	5,739

5.16 HUSBAND/PARTNER'S KNOWLEDGE OF WOMEN'S CONTRACEPTIVE USE

Use of family planning methods is facilitated when couples discuss and agree on the issue. To assess the extent to which women use contraception without telling their partners, married women interviewed in the 2008-09 KDHS were asked whether their husbands or partners knew that they were using a method of family planning.

Table 5.20 shows that 89 percent of currently married women reported that their husbands/ partners knew they were using a method of family planning. There is no notable variation in husbands/partners' knowledge of use of family planning method by age or residence; however, it does increase gradually with education and wealth quintile of the woman.

Men were asked whether they agreed or disagreed with two statements about family planning use: 1) contraception is women's business and a man should not have to worry about it; and 2) women who use contraception may become promiscuous. The results in Table 5.21 indicate that only 16 percent of men believe that contraception is women's business only, while 4 in 10 men believe that women who use family planning may become promiscuous. Differences by background characteristics are not large; however, men in Nairobi and men with more education are less likely to express sexist views about family planning use, being less likely to believe that women should bear the burden of dealing with contraception.

Table 5.20 Husband/partner's knowledge of women's use of contraception

Among currently married women age 15-49 who are using a method, percent distribution by whether they report that their husbands/partners know about their use, according to background characteristics, Kenya 2008-09

Background characteristic	Knows[1]	Does not know	Unsure whether knows/ missing	Total	Number of women
Age					
15-19	79.1	20.8	0.2	100.0	48
20-24	89.0	9.0	2.0	100.0	342
25-29	90.2	6.6	3.2	100.0	493
30-34	89.8	7.9	2.3	100.0	528
35-39	90.6	8.4	1.0	100.0	355
40-44	87.4	11.5	1.1	100.0	287
45-49	88.1	9.1	2.7	100.0	188
Residence					
Urban	92.1	5.6	2.3	100.0	613
Rural	88.1	9.9	2.0	100.0	1,628
Province					
Nairobi	92.6	4.6	2.8	100.0	201
Central	92.6	6.1	1.3	100.0	357
Coast	90.7	6.2	3.1	100.0	146
Eastern	93.8	5.4	0.8	100.0	439
Nyanza	81.0	16.2	2.8	100.0	310
Rift Valley	87.8	9.7	2.5	100.0	542
Western	86.0	11.6	2.4	100.0	241
North Eastern	*	*	*	100.0	4
Education					
No education	75.6	14.4	10.0	100.0	80
Primary incomplete	81.9	16.0	2.1	100.0	580
Primary complete	90.9	7.0	2.0	100.0	692
Secondary+	93.9	4.7	1.4	100.0	890
Wealth quintile					
Lowest	81.4	15.3	3.3	100.0	175
Second	83.9	12.9	3.2	100.0	354
Middle	87.7	10.6	1.7	100.0	474
Fourth	90.7	8.1	1.2	100.0	576
Highest	93.9	4.0	2.1	100.0	662
Total	89.2	8.7	2.1	100.0	2,241

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] Includes women who report use of male sterilisation, male condoms, or withdrawal

Table 5.21 Men's attitudes toward contraception

Percentage of men age 15-49 who agree with statements about contraceptive use, by background characteristics, Kenya 2008-09

Background characteristic	Woman's business	Woman may become promiscuous	Number of men
Age			
15-19	18.3	45.4	776
20-24	17.9	39.9	630
25-29	17.2	42.7	483
30-34	16.8	35.9	461
35-39	12.0	31.4	344
40-44	12.4	40.2	306
45-49	15.9	41.5	257
Marital status			
Never married	19.0	45.1	1,524
Married or living together	13.8	34.5	1,592
Divorced/separated/widowed	18.1	54.1	142
Residence			
Urban	13.3	36.0	866
Rural	17.5	41.9	2,392
Province			
Nairobi	5.1	27.4	314
Central	21.0	57.8	347
Coast	13.4	33.1	252
Eastern	23.4	40.7	530
Nyanza	11.8	34.0	520
Rift Valley	15.9	44.9	885
Western	20.8	41.5	349
North Eastern	21.8	13.3	62
Education			
No education	22.7	28.1	112
Primary incomplete	21.5	45.5	883
Primary complete	18.3	40.7	804
Secondary+	11.8	37.9	1,459
Wealth quintile			
Lowest	17.5	37.0	457
Second	18.3	35.8	577
Middle	18.5	45.3	574
Fourth	18.3	46.1	725
Highest	11.8	37.2	926
Total	16.4	40.3	3,258

OTHER PROXIMATE DETERMINANTS OF FERTILITY 6

Alfred Agwanda and Vane Lumumba

This chapter addresses the principal factors, other than contraception, that affect a woman's risk of becoming pregnant. These factors include marriage, polygyny, sexual activity, postpartum amenorrhoea, abstinence from sexual activity, and onset of menopause. Direct measures of the beginning of exposure to pregnancy and the level of exposure are also given in this chapter.

6.1 CURRENT MARITAL STATUS

Marriage is a primary indication of the regular exposure of women to the risk of pregnancy and therefore is important for the understanding of fertility. Populations in which age at first marriage is low tend to have early childbearing and high fertility.

Table 6.1 presents the percent distribution of women and men by marital status, according to age. The term *married* refers to legal or formal marriage, and the phrase *living together* designates an informal union in which a man and a woman live together, even if a formal civil or religious ceremony has not occurred. In later tables that do not list *living together* as a separate category, these women and men are included in the *currently married* group. Respondents who are currently married, divorced, separated, or widowed are referred to as *ever married*.

About 3 in 10 women age15-49 have never been married, 58 percent are either married or living together with a man, and the remaining 11 percent are divorced, separated, or widowed. A low proportion (5 percent) of women age 45-49 have never been married. The proportion of women who have never been married has increased slightly since 2003 in every age group.

Table 6.1 Current marital status

Percent distribution of women and men age 15-49 by current marital status, according to age, Kenya 2008-09

Age	Marital status						Total	Percentage of respondents currently in union	Number of respondents
	Never married	Married	Living together	Divorced	Separated	Widowed			
				WOMEN					
15-19	87.2	10.9	1.2	0.1	0.7	0.0	100.0	12.0	1,761
20-24	37.9	51.5	4.3	0.9	4.2	1.0	100.0	55.9	1,715
25-29	15.5	71.4	3.5	1.5	6.2	1.9	100.0	74.9	1,454
30-34	6.6	73.3	6.4	1.4	8.8	3.7	100.0	79.6	1,209
35-39	6.5	73.1	6.0	2.4	4.9	7.1	100.0	79.1	877
40-44	7.3	65.7	5.6	1.4	6.0	14.0	100.0	71.3	768
45-49	4.7	65.7	4.8	2.8	5.3	16.6	100.0	70.5	661
Total 15-49	31.2	54.2	4.1	1.3	4.8	4.4	100.0	58.4	8,444
				MEN					
15-19	99.5	0.2	0.2	0.0	0.1	0.0	100.0	0.4	776
20-24	82.6	15.6	0.3	0.1	1.3	0.0	100.0	15.9	630
25-29	33.0	57.7	3.7	1.3	4.0	0.3	100.0	61.4	483
30-34	9.5	80.2	3.1	1.1	5.9	0.4	100.0	83.2	461
35-39	5.2	82.4	3.1	0.1	6.2	3.0	100.0	85.5	344
40-44	2.9	86.5	4.5	1.5	4.1	0.4	100.0	91.0	306
45-49	0.3	89.6	2.0	2.9	3.7	1.5	100.0	91.6	257
Total 15-49	46.8	46.9	2.0	0.7	3.0	0.6	100.0	48.9	3,258
Men age 50-54	0.3	83.2	7.2	2.1	1.6	5.5	100.0	90.4	207
Total men 15-54	44.0	49.0	2.3	0.8	2.9	0.9	100.0	51.4	3,465

Forty-four percent of the men interviewed (age group 15-54) have never been married, half are currently married, and only 5 percent are divorced, separated, or widowed. By age group 30-34, a higher proportion of men are currently in any form of union compared with women. Women are also more likely than men to report having an informal marital union (living together). Compared with the 2003 KDHS, the proportion currently married or living together has declined for most age groups among both women and men. The proportion who are living together has also declined slightly for women but not at all for men.

6.2 POLYGYNY

Polygyny (having more than one wife) is common in Africa and has implications for frequency of sexual activity and fertility. Table 6.2.1 shows the percent distribution of currently married women by number of co-wives according to background characteristics. Polygyny was measured by asking all currently married female respondents whether their husbands or partners had other wives, and if so, how many.

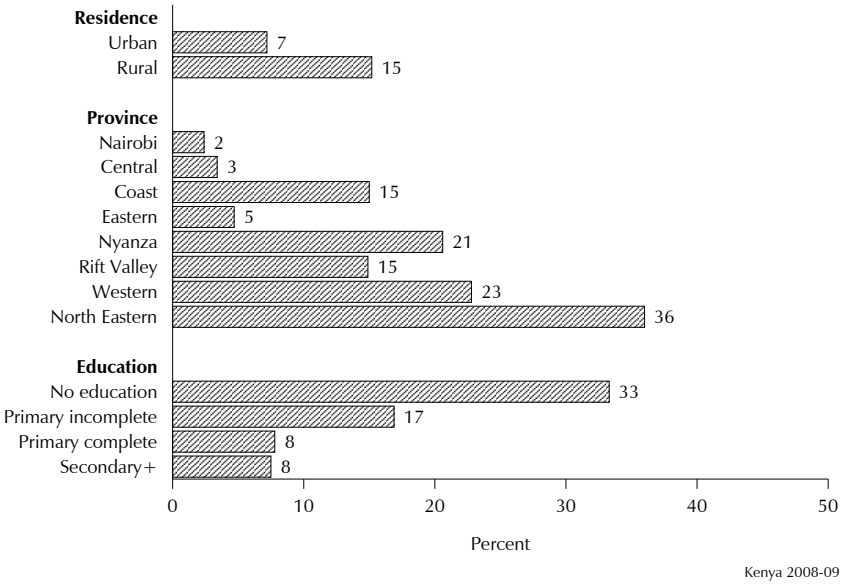
Table 6.2.1 Number of women's co-wives

Percent distribution of currently married women age 15-49 by number of co-wives, according to background characteristics, Kenya 2008-09

Background characteristic	Number of co-wives				Total	Number of women
	0	1	2+	Missing		
Age						
15-19	92.5	5.0	1.7	0.8	100.0	212
20-24	88.9	7.5	1.4	2.2	100.0	958
25-29	89.0	8.0	1.7	1.3	100.0	1,088
30-34	87.2	9.6	2.4	0.9	100.0	962
35-39	80.8	12.7	3.7	2.8	100.0	694
40-44	76.8	18.2	3.7	1.3	100.0	548
45-49	76.8	15.1	6.9	1.3	100.0	466
Residence						
Urban	90.6	6.1	1.1	2.3	100.0	1,154
Rural	83.4	11.9	3.3	1.4	100.0	3,774
Province						
Nairobi	94.2	2.4	0.0	3.5	100.0	363
Central	96.0	2.9	0.5	0.6	100.0	535
Coast	82.6	12.7	2.3	2.5	100.0	427
Eastern	93.4	4.1	0.6	1.9	100.0	844
Nyanza	78.4	16.4	4.2	1.0	100.0	832
Rift Valley	83.3	10.8	4.1	1.8	100.0	1,279
Western	76.5	17.9	4.9	0.7	100.0	518
North Eastern	63.9	30.7	5.3	0.0	100.0	130
Education						
No education	64.9	24.8	8.5	1.8	100.0	565
Primary incomplete	81.3	13.3	3.6	1.8	100.0	1,440
Primary complete	90.9	6.3	1.5	1.3	100.0	1,436
Secondary+	90.9	6.5	1.0	1.5	100.0	1,488
Wealth quintile						
Lowest	72.7	18.4	7.2	1.7	100.0	870
Second	84.0	12.8	2.2	1.0	100.0	883
Middle	83.7	12.5	2.6	1.3	100.0	952
Fourth	90.3	6.0	2.6	1.1	100.0	1,012
Highest	91.7	5.6	0.3	2.5	100.0	1,211
Total	85.1	10.5	2.8	1.6	100.0	4,928

Thirteen percent of currently married women live in polygynous unions (i.e., they have one or more co-wives). Older women are much more likely to be in polygynous unions than younger women. Polygyny is more prevalent in rural than in urban areas (Figure 6.1). The regional distribution shows substantial variation, with North Eastern province having the highest proportion of women in polygynous marriages (36 percent) and Nairobi province the lowest (2 percent). Western, Nyanza, Rift Valley, and Coast provinces all have proportions ranging between 15 and 23 percent. Women with no or low education and those who are poorest are most likely to live in polygynous marriages.

Figure 6.1 Percentage of Currently Married Women Whose Husbands Have At Least One Other Wife



Men who were interviewed were also asked if they had more than one wife. Data on polygynous unions among currently married men are given in Table 6.2.2. Seven percent of currently married men report having more than one wife. The pattern of polygyny reported by men reflects differences by region and socioeconomic status similar to those of women, except that, among men, polygyny is highest in Nyanza and lowest in Central province.

There has been only a slight decline in the level of polygyny from the prevalence observed in 2003. The proportion of married women reporting one or more co-wives has declined from 16 percent in 2003 to 13 percent in 2008, and the proportion of married men who report having more than one wife has declined from 10 percent to 7 percent.

Table 6.2.2 Number of men's co-wives

Percent distribution of currently married men age 15-49 by number of wives, according to background characteristics, Kenya 2008-09

Background characteristic	Number of wives			Total	Number of men
	1	2+	Missing		
Age					
15-19	*	*	*	100.0	3
20-24	100.0	0.0	0.0	100.0	100
25-29	95.3	4.2	0.5	100.0	296
30-34	92.6	7.4	0.0	100.0	384
35-39	92.4	7.6	0.0	100.0	294
40-44	90.5	9.5	0.0	100.0	279
45-49	91.9	7.8	0.3	100.0	236
Residence					
Urban	96.3	3.5	0.1	100.0	523
Rural	91.5	8.4	0.1	100.0	1,070
Province					
Nairobi	98.3	1.3	0.5	100.0	164
Central	99.5	0.5	0.0	100.0	151
Coast	92.6	7.4	0.0	100.0	155
Eastern	98.2	1.2	0.7	100.0	213
Nyanza	84.6	15.4	0.0	100.0	247
Rift Valley	92.3	7.7	0.0	100.0	486
Western	92.2	7.8	0.0	100.0	141
North Eastern	86.5	13.5	0.0	100.0	35

Continued...

Table 6.2.2—*Continued*

Background characteristic	Number of wives			Total	Number of men
	1	2+	Missing		
Education					
No education	74.6	25.4	0.0	100.0	77
Primary incomplete	92.5	7.5	0.0	100.0	335
Primary complete	92.4	7.6	0.0	100.0	440
Secondary+	95.6	4.1	0.3	100.0	742
Wealth quintile					
Lowest	84.6	15.4	0.0	100.0	229
Second	93.1	6.9	0.0	100.0	256
Middle	92.5	7.5	0.0	100.0	236
Fourth	92.3	7.2	0.5	100.0	288
Highest	96.9	2.9	0.1	100.0	584
Total 15-49	93.1	6.8	0.1	100.0	1,592
Men age 50-54	87.3	12.7	0.0	100.0	187
Total men 15-54	92.5	7.4	0.1	100.0	1,780

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

6.3 AGE AT FIRST MARRIAGE

Marriage is generally associated with fertility because it is correlated with exposure to risk of conception. The duration of exposure to the risk of pregnancy depends primarily on the age at which women first marry. Women who marry earlier, on average, have their first child earlier and give birth to more children, contributing to higher fertility rates.

Table 6.3 shows the percentage of women and of men who have married by specific ages, according to current age group. The proportion of women marrying by age 15 declines with age, from less than 2 percent among women age 15-19 to over 10 percent among women age 45-49. This is an indication that there has been a shift in early entry into marriage over time. Half of all women enter marriage before their 20th birthday. Among women age 25-49, the median age at first marriage is 20 years, indicating only a slight increase when compared with the median of 19.7 years in 2003. The median age at first marriage shows no consistent pattern across age groups of women.

The lower panel of Table 6.3 shows the distribution of men by age at first marriage. About 10 percent of men marry before their 20th birthday, and nearly half marry before age 25. The median age at marriage among men age 30 and above is 25.1 years and is unchanged since 2003. The median age at first marriage for men is almost constant across the age cohorts, reflecting stability over time.

Table 6.3 Age at first marriage

Percentage of women and men age 15-49 who were first married by specific exact ages and median age at first marriage, according to current age, Kenya 2008-09

Current age	Percentage first married by exact age: 15	18	20	22	25	Percentage never married	Number	Median age at first marriage
				WOMEN				
15-19	1.4	na	na	na	na	87.2	1,761	a
20-24	6.2	26.4	44.4	na	na	37.9	1,715	a
25-29	7.2	29.0	48.4	64.4	79.0	15.5	1,454	20.2
30-34	8.8	32.6	50.7	68.8	82.7	6.6	1,209	19.9
35-39	8.2	29.8	47.6	63.2	77.9	6.5	877	20.2
40-44	9.7	31.8	47.6	67.5	78.3	7.3	768	20.2
45-49	11.2	40.4	59.1	73.6	83.4	4.7	661	18.9
20-49	8.0	30.5	48.7	na	na	16.5	6,683	a
25-49	8.7	32.0	50.1	66.9	80.2	9.0	4,969	20.0
				MEN				
15-19	0.1	na	na	na	na	99.5	776	a
20-24	0.0	1.3	7.0	na	na	82.6	630	a
25-29	0.0	4.3	17.3	29.5	48.4	33.0	483	a
30-34	0.3	3.1	9.3	22.0	51.9	9.5	461	24.8
35-39	0.4	4.3	8.3	16.9	41.8	5.2	344	25.8
40-44	2.0	5.4	12.6	24.9	47.4	2.9	306	25.4
45-49	0.0	5.1	8.4	21.3	47.7	0.3	257	25.2
20-49	0.4	3.5	10.4	na	na	30.3	2,481	a
25-49	0.5	4.3	11.6	23.4	47.8	12.4	1,852	a
30-49	0.6	4.3	9.6	21.3	47.6	5.2	1,369	25.3
20-54	0.4	3.9	10.7	na	na	28.0	2,689	a
25-54	0.5	4.7	11.9	24.0	48.7	11.2	2,059	a
30-54	0.6	4.8	10.3	22.3	48.8	4.6	1,576	25.1

Note: The age at first marriage is defined as the age at which the respondent began living with her/his first spouse/partner
na = Not applicable due to censoring
a = Omitted because less than 50 percent of the women married for the first time before reaching the beginning of the age group

Table 6.4 shows the median age at first marriage for women age 25-49 by age group according to background characteristics. Because of the small numbers of married respondents interviewed, data for women age 15-24 have been omitted, and data for men are not shown by age group.

Urban women tend to marry almost three years later than their rural counterparts. The difference by province of residence is more pronounced. Women from North Eastern, Nyanza, Western, Coast and Rift Valley provinces generally enter into marriage earlier than women in Nairobi, Central, and Eastern provinces. The difference in median age at marriage between North Eastern and Nairobi provinces is more than six years (17.9 and 24.2). The pattern of provincial differences has remained similar to that of 2003, although the median age for women has increased slightly in most provinces. Median age at first marriage increases steadily as education level and wealth quintile increases.

Although variations exist in median age at first marriage for men, the differences are not as great as for women. There is little difference in the median age at first marriage between men in rural and urban areas. The provincial difference between the highest (Nairobi) and lowest (Nyanza) age at marriage is only three years. Men and women (especially) who are relatively poor or who have little education enter into marriage earlier than other men and women.

Table 6.4 Median age at first marriage

Median age at first marriage among women by five-year age groups age 25-49 and for men age 30-54, according to background characteristics, Kenya 2008-09

Background characteristic	Women age					Women age 25-49	Men age 30-54
	25-29	30-34	35-39	40-44	45-49		
Residence							
Urban	22.7	21.8	22.8	22.0	21.8	22.2	26.0
Rural	19.5	19.5	19.6	19.9	18.6	19.4	24.8
Province							
Nairobi	24.2	24.6	24.8	22.1	22.2	24.2	26.9
Central	20.8	20.5	21.0	20.7	20.5	20.7	25.9
Coast	19.4	20.0	19.1	21.1	18.1	19.5	24.7
Eastern	19.8	20.5	20.3	20.7	19.0	20.2	25.2
Nyanza	19.3	18.9	18.6	19.1	18.5	18.9	23.8
Rift Valley	20.3	18.6	20.6	20.3	17.9	19.7	25.2
Western	19.4	19.9	19.4	18.4	18.5	19.2	23.9
North Eastern	17.6	17.1	18.7	(18.7)	(17.7)	17.9	24.3
Education							
No education	17.6	16.7	18.0	19.0	16.9	17.5	22.6
Primary incomplete	18.3	18.1	18.5	17.7	17.4	18.1	23.9
Primary complete	20.3	19.6	19.5	20.2	18.8	19.8	24.3
Secondary+	23.0	22.3	23.2	21.4	22.1	22.4	26.3
Wealth quintile							
Lowest	19.1	18.6	18.5	18.9	17.8	18.6	23.9
Second	18.5	18.9	18.8	18.5	18.8	18.7	24.6
Middle	19.1	20.3	18.7	19.0	18.0	19.1	24.5
Fourth	20.3	19.6	21.1	21.0	19.2	20.3	25.4
Highest	23.0	22.2	23.9	21.8	21.9	22.6	25.9
Total	20.2	19.9	20.2	20.2	18.9	20.0	25.1

Note: The age at first marriage is defined as the age at which the respondent began living with her/his first spouse/partner. Numbers in parentheses are based on 25-49 unweighted cases.
a = Omitted because less than 50 percent of the women married for the first time before reaching the beginning of the age group

6.4 AGE AT FIRST SEXUAL INTERCOURSE

Although age at first marriage is often used as a proxy for first exposure to intercourse, the two events do not necessarily occur at the same time. Women and men sometimes engage in sexual relations before marriage. In the 2008-09 KDHS, women and men were asked how old they were when they first had sexual intercourse. The percentage of women and of men who had sexual intercourse is given by exact ages in Table 6.5.

Twelve percent of women age 20-49 had sex before age 15, and about half had their first sex by their 18th birthday. Older women are slightly more likely to have had their first sexual encounter at an earlier age, although the difference between the older and younger women is minimal.

Men have an earlier sexual debut than women, a pattern that holds true for most age groups. For example, 19 percent of men age 20-49 had sex before age 15. Younger men initiated sex much earlier than older men. Almost one in four men under age 24 had their first sex before age 15. However, the median age at first sex ranges from 17 years for the younger men to nearly 18 years among the older men.

There has been a slight increase in age at first sex when compared with data from 2003 KDHS. The median age at first sex among women age 20-49 slightly increased from 17.8 years to 18.2 years, while that of men age 20-54 increased from 17.1 to 17.6 years.

Table 6.5 Age at first sexual intercourse

Percentage of women and of men age 15-49 who had first sexual intercourse by exact ages, percentage who never had intercourse, and median age at first intercourse, according to current age, Kenya 2008-09

Current age	Percentage who had first sexual intercourse by exact age: 15	18	20	22	25	Percentage who never had intercourse	Number	Median age at first intercourse
				WOMEN				
15-19	11.5	na	na	na	na	63.3	1,761	a
20-24	10.4	47.8	67.7	na	na	14.0	1,715	18.2
25-29	12.6	44.9	67.3	78.6	86.3	2.6	1,454	18.3
30-34	14.0	51.5	70.3	81.0	85.7	0.5	1,209	17.9
35-39	12.1	44.7	64.5	76.6	82.2	0.9	877	18.4
40-44	10.5	46.5	67.4	79.8	85.0	0.2	768	18.2
45-49	15.5	52.9	68.7	81.3	85.8	0.4	661	17.7
20-49	12.3	47.8	67.7	na	na	4.4	6,683	18.2
25-49	12.9	47.8	67.7	79.4	85.2	1.1	4,969	18.2
15-24	11.0	na	na	na	na	39.0	3,475	a
				MEN				
15-19	22.3	na	na	na	na	56.1	776	a
20-24	22.0	58.2	80.5	na	na	12.4	630	17.1
25-29	16.8	52.5	75.4	86.9	91.8	2.3	483	17.8
30-34	18.1	56.5	75.8	87.3	92.4	0.7	461	17.4
35-39	21.3	54.9	73.6	83.4	91.9	0.0	344	17.7
40-44	16.3	55.9	75.0	88.6	94.0	0.4	306	17.7
45-49	14.1	52.4	70.6	82.6	90.2	0.0	257	17.8
20-49	18.6	55.4	76.0	na	na	3.8	2,481	17.6
25-49	17.5	54.5	74.4	86.0	92.1	0.8	1,852	17.7
15-24	22.2	na	na	na	na	36.5	1,406	a
20-54	18.6	54.9	75.5	na	na	3.5	2,689	17.6
25-54	17.5	53.8	73.9	85.5	91.7	0.7	2,059	17.7

na = Not applicable due to censoring
a = Omitted because less than 50 percent of the respondents had intercourse for the first time before reaching the beginning of the age group

Differentials in age at first sex are shown by background characteristics in Table 6.6. Women in rural areas start sexual activity about 2 years earlier than their urban counterparts. Among women age 25-49, sexual activity begins earliest in Nyanza province (16.5 years) and latest in Nairobi (20.3 years). With respect to education, women with at least some secondary education begin sexual activity almost three years later than those with no education. Similarly, the wealthiest women tend to initiate sexual activity almost three years later than those who are poor.

The data for men show a pattern that differs from that for women, despite there being almost no differences in the timing of first sexual activity between those in rural and urban areas. The lowest median age at first sex for men is in Western province (16.9 years), and the highest median age is in North Eastern province (24.3 years). Unlike the pattern for women, the median age at first sex among men has no consistent pattern by level of education, and the differences according to wealth status are small.

Table 6.6 Median age at first intercourse

Median age at first sexual intercourse among women by five-year age groups, age 20-49 and age 25-49, and for men, age 20-54 and 25-54, according to background characteristics, Kenya 2008-09

Background characteristic	Women age						Women age 20-49	Women age 25-49	Men age 20-54	Men age 25-54
	20-24	25-29	30-34	35-39	40-44	45-49				
Residence										
Urban	18.9	19.5	18.9	20.3	20.6	19.9	19.5	19.8	17.9	17.9
Rural	17.8	17.7	17.5	17.8	17.7	17.4	17.7	17.6	17.4	17.6
Province										
Nairobi	19.7	20.1	19.8	22.3	21.2	19.8	a	20.3	17.6	17.7
Central	19.5	18.2	18.6	18.2	18.3	18.7	18.6	18.4	18.5	18.8
Coast	17.6	18.2	17.7	18.5	19.5	17.5	17.9	18.2	17.8	17.7
Eastern	18.2	17.5	18.4	17.6	18.0	17.2	17.9	17.8	17.5	17.5
Nyanza	17.1	16.8	16.1	16.8	16.6	16.5	16.7	16.5	17.4	17.5
Rift Valley	18.4	18.7	17.8	18.8	18.8	18.0	18.5	18.5	17.3	17.6
Western	17.6	18.0	16.8	17.6	17.3	17.3	17.5	17.5	16.8	16.9
North Eastern	18.3	18.1	18.1	19.4	(18.7)	(18.0)	18.4	18.5	a	24.3
Education										
No education	16.3	17.5	16.3	18.0	17.2	16.8	17.1	17.3	18.0	17.7
Primary incomplete	16.5	16.5	16.4	16.5	16.5	16.7	16.5	16.5	17.3	17.4
Primary complete	18.2	18.2	17.6	18.2	18.1	17.2	18.0	18.0	17.2	17.3
Secondary+	a	20.1	19.9	20.4	19.9	20.1	a	20.1	17.9	18.0
Wealth quintile										
Lowest	16.4	17.7	16.7	17.5	16.8	17.5	17.0	17.2	17.0	17.4
Second	17.7	16.6	17.4	16.8	17.6	17.2	17.3	17.1	17.0	17.3
Middle	17.8	17.2	17.1	17.8	17.2	16.8	17.4	17.3	17.6	17.7
Fourth	18.6	18.4	17.9	18.9	18.5	17.6	18.3	18.3	18.0	18.1
Highest	19.3	20.0	19.3	20.3	20.3	20.1	19.8	20.0	17.7	17.7
Total	18.2	18.3	17.9	18.4	18.2	17.7	18.2	18.2	17.6	17.7

Note: Numbers in parentheses are based on 25-49 unweighted cases.
a = Omitted because less than 50 percent of the respondents had intercourse for the first time before reaching the beginning of the age group

6.5 RECENT SEXUAL ACTIVITY

In the absence of contraception, the probability of pregnancy is related to the frequency of intercourse. Thus, information on sexual activity can be used to refine measures of exposure to pregnancy. Survey results are shown in Table 6.7.1 and 6.7.2 for women and men respectively. Seventeen percent of women and 16 percent of men age 15-49 have never had sexual intercourse. About 12 percent of women and men report that their last sexual encounter occurred more than one year before the survey. About half of the female and half of the male respondents reported a recent sexual encounter (within the last four weeks). The proportion of respondents having sex in the four weeks preceding the survey is similar to that observed in 2003 for both men and women.

Recent sexual activity is less common among the youngest age group, 15-19. Almost two-thirds (63 percent) of women and more than half of men in this age group have never had sex. Recent sexual activity is more common among the currently married, with slightly more than three-quarters of both women and men having had sex in the four weeks before the survey. Male-female differences are greatest for those who have never married and those who were formerly married. Among those who have never married, the proportion of men who report a recent sexual encounter is about twice that of women (17 and 8 percent, respectively). This is also the case for those who were formerly married (26 and 13 percent, respectively). These patterns have remained the same since 2003.

Table 6.7.1 Recent sexual activity: Women

Percent distribution of women age 15-49 by timing of last sexual intercourse, according to background characteristics, Kenya 2008-09

Background characteristic	Timing of last sexual intercourse: Within the last 4 weeks	Within 1 year[1]	One or more years	Missing	Never had sexual intercourse	Total	Number of women
Age							
15-19	13.2	14.4	8.9	0.2	63.3	100.0	1,761
20-24	46.0	28.6	11.3	0.1	14.0	100.0	1,715
25-29	64.6	23.2	9.2	0.4	2.6	100.0	1,454
30-34	67.4	23.3	8.7	0.2	0.5	100.0	1,209
35-39	64.4	21.3	12.5	0.9	0.9	100.0	877
40-44	57.6	20.5	21.3	0.4	0.2	100.0	768
45-49	53.1	21.4	25.2	0.0	0.4	100.0	661
Marital status							
Never married	7.8	20.6	17.8	0.2	53.5	100.0	2,634
Married or living together	77.4	19.5	2.8	0.3	0.0	100.0	4,928
Divorced/separated/ widowed	12.8	38.7	48.0	0.4	0.0	100.0	881
Marital duration[2]							
0-4 years	78.1	20.9	0.9	0.2	0.0	100.0	1,081
5-9 years	78.5	19.5	1.6	0.4	0.0	100.0	1,136
10-14 years	77.9	20.2	1.8	0.1	0.0	100.0	802
15-19 years	78.6	18.2	2.3	0.8	0.0	100.0	666
20-24 years	77.3	17.8	4.6	0.3	0.0	100.0	494
25+ years	67.1	22.0	10.7	0.2	0.0	100.0	480
Married more than once	83.9	14.5	1.6	0.0	0.0	100.0	270
Residence							
Urban	50.1	21.9	12.1	0.2	15.7	100.0	2,148
Rural	48.6	21.9	12.2	0.3	17.0	100.0	6,296
Province							
Nairobi	47.2	24.1	12.4	0.3	16.0	100.0	728
Central	55.9	16.0	10.7	0.2	17.2	100.0	905
Coast	50.8	23.6	9.4	0.0	16.2	100.0	674
Eastern	48.9	21.9	9.6	0.9	18.7	100.0	1,376
Nyanza	47.2	26.5	13.9	0.4	12.0	100.0	1,389
Rift Valley	47.4	22.3	14.5	0.0	15.7	100.0	2,262
Western	47.7	17.9	12.1	0.0	22.3	100.0	927
North Eastern	53.9	15.7	7.2	0.7	22.6	100.0	184
Education							
No education	49.9	27.4	16.4	0.3	6.0	100.0	752
Primary incomplete	49.2	21.0	10.3	0.2	19.3	100.0	2,526
Primary complete	53.2	21.4	11.8	0.3	13.2	100.0	2,272
Secondary+	45.1	21.6	13.1	0.3	19.9	100.0	2,894
Wealth quintile							
Lowest	46.1	24.9	13.6	0.2	15.3	100.0	1,393
Second	46.5	23.4	12.3	0.4	17.3	100.0	1,483
Middle	47.7	22.5	11.0	0.2	18.5	100.0	1,613
Fourth	51.4	19.0	11.7	0.4	17.5	100.0	1,736
Highest	51.3	20.8	12.4	0.2	15.2	100.0	2,220
Total	49.0	21.9	12.2	0.3	16.7	100.0	8,444

[1] Excludes women who had sexual intercourse within the last 4 weeks
[2] Excludes women who are not currently married

Table 6.7.2 Recent sexual activity: Men

Percent distribution of men age 15-49 by timing of last sexual intercourse, according to background characteristics, Kenya 2008-09

Background characteristic	Timing of last sexual intercourse: Within the last 4 weeks	Within 1 year[1]	One or more years	Missing	Never had sexual intercourse	Total	Number of men
Age							
15-19	9.4	15.3	19.1	0.0	56.1	100.0	776
20-24	30.8	34.1	22.7	0.0	12.4	100.0	630
25-29	61.4	28.7	6.9	0.7	2.3	100.0	483
30-34	73.1	21.2	5.0	0.1	0.7	100.0	461
35-39	73.5	19.3	6.8	0.3	0.0	100.0	344
40-44	69.3	26.2	4.0	0.0	0.4	100.0	306
45-49	74.4	19.0	6.6	0.0	0.0	100.0	257
Marital status							
Never married	16.9	25.4	22.7	0.2	34.7	100.0	1,524
Married or living together	79.3	19.5	1.0	0.1	0.0	100.0	1,592
Divorced/separated/ widowed	25.6	47.8	26.6	0.0	0.0	100.0	142
Marital duration[2]							
0-4 years	79.6	19.1	1.3	0.0	0.0	100.0	339
5-9 years	80.3	18.4	0.9	0.4	0.0	100.0	361
10-14 years	79.0	20.5	0.5	0.0	0.0	100.0	235
15-19 years	76.5	20.5	3.0	0.0	0.0	100.0	177
20-24 years	78.2	21.7	0.1	0.0	0.0	100.0	114
25+ years	(65.3)	(32.1)	(2.6)	(0.0)	(0.0)	100.0	44
Married more than once	82.3	17.4	0.3	0.0	0.0	100.0	323
Residence							
Urban	60.7	21.0	7.5	0.1	10.7	100.0	866
Rural	43.1	24.4	14.0	0.2	18.2	100.0	2,392
Province							
Nairobi	60.0	24.6	9.7	0.0	5.7	100.0	314
Central	49.8	21.0	14.1	0.0	15.2	100.0	347
Coast	55.1	24.4	7.2	0.0	13.4	100.0	252
Eastern	38.1	20.4	16.7	0.2	24.6	100.0	530
Nyanza	46.7	24.4	13.0	0.5	15.4	100.0	520
Rift Valley	50.5	24.9	9.9	0.1	14.5	100.0	885
Western	38.9	26.7	16.4	0.0	17.9	100.0	349
North Eastern	49.4	9.7	3.3	0.0	37.7	100.0	62
Education							
No education	55.1	24.0	10.0	0.0	10.9	100.0	112
Primary incomplete	36.7	24.8	12.9	0.3	25.3	100.0	883
Primary complete	51.4	25.4	10.4	0.0	12.7	100.0	804
Secondary+	52.0	21.6	13.2	0.2	13.1	100.0	1,459
Wealth quintile							
Lowest	48.2	20.8	9.4	0.0	21.6	100.0	457
Second	40.1	24.3	17.5	0.0	18.1	100.0	577
Middle	42.9	24.6	15.2	0.4	17.0	100.0	574
Fourth	40.6	25.0	14.6	0.3	19.5	100.0	725
Highest	61.1	22.6	6.9	0.0	9.4	100.0	926
Total 15-49	47.8	23.5	12.3	0.1	16.2	100.0	3,258
Men age 50-54	62.9	19.6	16.7	0.8	0.0	100.0	207
Total men 15-54	48.7	23.3	12.6	0.2	15.3	100.0	3,465

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Excludes men who had sexual intercourse within the last 4 weeks
[2] Excludes men who are not currently married

The proportions of women reporting recent sexual activity do not differ much by rural-urban residence; however, urban men are considerably more likely than rural men to report being sexually active. Differences in recent sexual activity by education level and wealth do not show consistent patterns. Women in Central and North Eastern provinces are most likely to have been sexually active in the four weeks before the survey, as were men in Nairobi and Coast province.

6.6 POSTPARTUM AMENORRHOEA, ABSTINENCE, AND INSUSCEPTIBILITY

Postpartum amenorrhoea refers to the interval between childbirth and the return of menstruation. The length and intensity of breastfeeding influence the duration of amenorrhoea, which offers protection from conception. Postpartum abstinence refers to the period between childbirth and the time when a woman resumes sexual activity. Delaying the resumption of sexual relations can also prolong protection. Women are considered to be insusceptible to pregnancy if they are not exposed to the risk of conception either because their menstrual period has not resumed since a birth or because they are abstaining from intercourse after childbirth.

Women who gave birth in the three years preceding the survey were asked about the duration of their periods of amenorrhoea and sexual abstinence following each birth. The results are presented in Table 6.8. Almost all women (96 percent) are insusceptible to pregnancy within the first two months following childbirth. The contribution of abstinence is greatly reduced after the second month. At 10 to 11 months after birth, about 42 percent of mothers are still amenorrhoeic, but only 18 percent are abstaining. Two years after birth, the proportion amenorrhoeic drops sharply, such that at 24-25 months following childbirth, only 1 percent are amenorrhoeic and 5 percent are still insusceptible to the risk of pregnancy.

Table 6.8 Postpartum amenorrhoea, abstinence and insusceptibility

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrhoeic, abstaining, and insusceptible, by number of months since birth, and median and mean durations, Kenya 2008-09

Months since birth	Percentage of births for which the mother is:			Number of births
	Amenorrhoeic	Abstaining	insusceptible	
<2	92.4	89.5	95.9	167
2-3	80.0	52.3	88.2	177
4-5	67.2	31.0	75.0	201
6-7	57.5	30.6	66.9	207
8-9	55.8	19.7	60.0	227
10-11	41.5	17.6	53.0	190
12-13	28.0	8.0	32.8	204
14-15	25.3	8.0	30.8	161
16-17	24.5	9.2	32.0	200
18-19	15.5	8.2	19.0	210
20-21	7.1	4.7	11.8	198
22-23	8.5	5.2	11.3	188
24-25	1.4	3.9	5.3	178
26-27	4.2	3.9	7.5	205
28-29	4.0	4.4	6.2	209
30-31	1.6	3.3	4.9	226
32-33	2.9	5.9	8.2	218
34-35	4.5	9.5	13.3	180
Total	28.3	16.7	33.8	3,547
Median	8.9	3.1	10.3	na
Mean	10.7	6.6	12.7	na

Note: Estimates are based on status at the time of the survey.
na = Not applicable
[1] Includes births for which mothers are either still amenorrhoeic or still abstaining (or both) following birth

The principal determinant of the length of the period of insusceptibility is postpartum amenorrhoea. The median duration of amenorrhoea is 8.9 months; of abstinence, 3.1 months; and insusceptibility, 10.3 months. There are only slight variations in durations of postpartum amenorrhoea and abstinence compared to 2003 data.

Table 6.9 shows the median durations of postpartum amenorrhoea, abstinence, and insusceptibility by background characteristics. Older women (age 30 and over) have a slightly longer median period of insusceptibility because of the longer duration of postpartum amenorrhoea. Women living in urban areas have a shorter median duration of amenorrhoea and, hence, a shorter period of insusceptibility than rural women. There are considerable variations in the period of insusceptibility by province. The median duration is longest in Nyanza (12.2 months) but shortest in Nairobi (5.2 months) and Central (6.6 months) provinces. The median duration of insusceptibility has declined for most of the provinces since 2003. The median durations of both amenorrhoea and insusceptibility decline as the level of education of the mother increases. The poorest women have the longest durations of amenorrhoea, abstinence, and hence insusceptibility.

Table 6.9 Median duration of amenorrhoea, postpartum abstinence, and postpartum insusceptibility

Median number of months of postpartum amenorrhoea, postpartum abstinence, and postpartum insusceptibility following births in the three years preceding the survey, by background characteristics, Kenya 2008-09

Background characteristic	Postpartum amenorrhoea	Postpartum abstinence	Postpartum insusceptibility[1]
Mother's age			
15-29	8.1	3.4	10.0
30-49	10.2	2.6	10.9
Residence			
Urban	4.5	3.0	8.4
Rural	9.7	3.2	11.2
Province			
Nairobi	(4.3)	(2.5)	(5.2)
Central	5.4	(3.6)	6.6
Coast	9.9	2.4	11.0
Eastern	11.1	2.3	11.8
Nyanza	9.7	2.5	12.2
Rift Valley	9.4	5.2	10.2
Western	7.7	3.5	9.3
North Eastern	11.5	2.1	11.7
Education			
No education	12.1	4.3	12.9
Primary incomplete	10.3	3.2	11.5
Primary complete	9.3	2.4	10.2
Secondary+	6.3	3.4	8.8
Wealth quintile			
Lowest	11.8	3.9	12.6
Second	8.7	2.9	11.3
Middle	9.1	3.5	10.1
Fourth	7.8	3.0	9.2
Highest	4.9	2.7	6.3
Total	8.9	3.1	10.3

Note: Medians are based on the status at the time of the survey (current status). Figures in parentheses are based on 25-49 unweighted births in the smoothed denominator.
[1] Includes births for which mothers are either still amenorrhoeic or still abstaining (or both) following birth

6.7 MENOPAUSE

Another factor influencing the risk of pregnancy is menopause. In the context of the available survey data, women are considered menopausal if they are neither pregnant nor postpartum amenorrhoeic, and have not had a menstrual period in the six months preceding the survey (Table 6.10). The prevalence of menopause increases with age, ranging from 5 percent of women age 30-34 to 42 percent of women age 48-49. Overall, 11 percent of women age 30-49 were reported to be menopausal compared with 12 percent in 2003.

Table 6.10 Menopause

Percentage of women age 30-49 who are menopausal,[1] by age, Kenya 2008-09

Age	Percentage menopausal	Number of women
30-34	4.5	1,209
35-39	5.5	877
40-41	12.6	348
42-43	12.9	263
44-45	15.2	335
46-47	26.4	253
48-49	41.9	230
Total	11.2	3,515

[1] Percentage of all women who are not pregnant and not postpartum amenorrhoeic whose last menstrual period occurred six or more months preceding the survey

FERTILITY PREFERENCES 7

George Kichamu and Henry Osoro

Information on fertility preferences is of considerable importance to family planning programmes because it allows planners to assess the need for contraception, whether for spacing or limiting of births, and also to assess the extent of unwanted and mistimed pregnancies. Data on fertility preferences may also be useful as an indicator of the direction that future fertility efforts of a country's citizens may take.

The 2008-09 Kenya Demographic and Health Survey (KDHS) included questions to ascertain fertility preferences. Women who were either not pregnant or unsure about their pregnancy status were asked the question: *Would you like to have (a/another) child or would you prefer not to have any (more) children?* A different question was posed to women who were pregnant at the time of the survey. Pregnant women were asked: *After the child you are expecting, would you like to have another child or would you prefer not to have any more children?* The women who indicated that they wanted another child were asked how long they would like to wait before the birth of the next child. Finally, women were asked the total number of children they would like to have if they were to start childbearing afresh.

Given that ongoing family planning programmes seek to address both men and women and that men play a crucial role in the realisation of reproductive goals, the 2008-09 KDHS also included questions that elicited information on the fertility preferences of men. The responses to these questions provide a basis for the classification of women and men by their fertility preferences.

7.1 DESIRE FOR MORE CHILDREN

Data on desire for more children can indicate future reproductive behaviour provided that the required family planning services are available, affordable, and accessible to allow people to realise their fertility preferences. Table 7.1 presents the distribution of currently married women and men by the desire for more children and according to the number of living children.

The table shows that there is widespread desire among Kenyans to control the timing and number of births they have. Among all currently married women, almost half do not want to have another child (49 percent), and an additional 5 percent are already sterilised (Figure 7.1). Over one-quarter (27 percent) of married women would like to wait two years or more for their next birth, and 14 percent would like to have a child soon (within two years). The remainder are uncertain about their fertility desires or say they are unable to get pregnant (infecund). Proportions are similar among currently married men, though men tend to be slightly more pro-natalist than women.

The table shows that fertility preferences are closely related to the number of living children a person already has. About three in four married women without a child want to have a child soon. This proportion declines dramatically as women have more children, so that among women with five or more children, only 4 percent want to have another one soon. Similarly, only 3 percent of childless women say they don't want to have a child at all. However, women show greater interest in controlling the pace of child bearing once they have a child. The proportion wanting no more children rises from 8 percent among women with one living child to 75 percent of women with five or more living children. The pattern is similar for men.

Table 7.1 Fertility preferences by number of living children

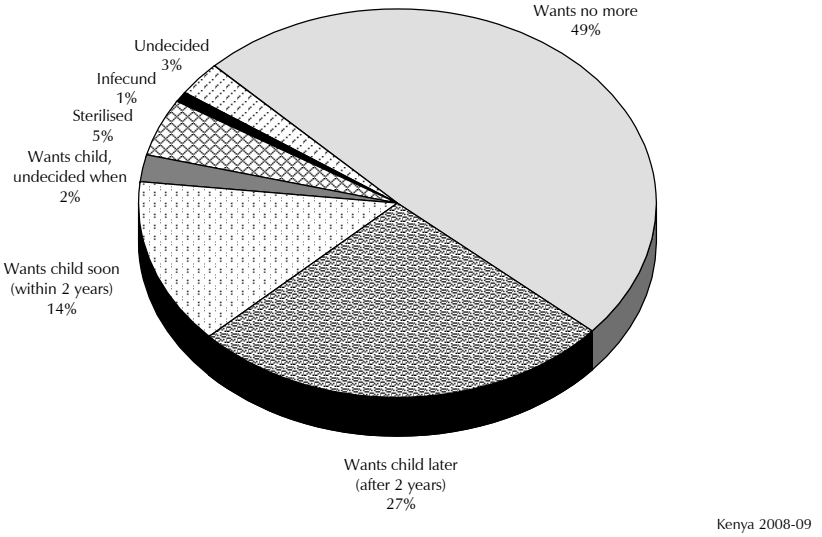
Percent distribution of currently married women and currently married men age 15-49 by desire for children, according to number of living children, Kenya 2008-09

Desire for children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	15-49
WOMEN								
Have another soon[2]	76.0	30.4	15.1	7.9	5.0	4.1	3.7	13.7
Have another later[3]	13.5	55.2	43.7	26.0	13.4	8.8	5.7	26.5
Have another, undecided when	2.7	2.3	1.6	3.6	2.4	1.6	1.5	2.2
Undecided	2.0	2.9	2.9	3.7	4.0	1.5	2.2	2.9
Want no more	2.5	8.1	35.1	54.2	66.3	74.7	74.8	48.8
Sterilised[4]	0.0	0.3	1.3	3.5	7.3	9.3	10.4	4.8
Declared infecund	3.2	0.7	0.2	0.5	1.6	0.0	1.7	0.9
Missing	0.0	0.0	0.0	0.5	0.0	0.0	0.0	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	179	747	1,021	905	733	460	884	4,928
MEN								
Have another soon[2]	73.7	27.7	15.7	10.2	9.4	9.6	9.4	16.4
Have another later[3]	12.3	58.1	42.6	27.7	20.0	14.4	14.7	30.6
Have another, undecided when	7.3	5.4	2.0	0.8	1.4	0.6	4.6	2.7
Undecided	1.5	1.3	6.5	10.5	3.3	2.9	5.1	5.1
Want no more	3.7	7.4	33.0	50.0	63.1	72.2	63.3	44.0
Sterilised[4]	0.3	0.0	0.0	0.3	2.1	0.3	2.9	0.9
Declared infecund	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0
Missing	1.1	0.1	0.2	0.5	0.6	0.0	0.0	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	62	261	322	296	258	145	249	1,592

[1] The number of living children includes current pregnancy for women; for men, it includes one additional child if the respondent's wife is pregnant (or if any wife is pregnant for men with more than one current wife).
[2] Wants next birth within 2 years
[3] Wants to delay next birth for 2 or more years
[4] Includes both female and male sterilisation

There have been some changes in fertility preferences among married women since 2003. The proportion of currently married women who want another child soon has declined slightly (from 16 to 14 percent), as has the proportion who want another child later in life (from 29 to 27 percent). The proportion of married women who either want no more children or who have been sterilised increased from 49 percent in 2003 to 54 percent in 2008-09. Also notable is an increase in the proportion of married men who want no more children or who are sterilised, from 39 percent in 2003 to 45 percent in 2008-09.

Figure 7.1 **Fertility Preferences among Currently Married Women Age 15-49**



Kenya 2008-09

7.2 DESIRE TO LIMIT CHILDBEARING BY BACKGROUND CHARACTERISTICS

The desire to stop childbearing by residence, province, education, and wealth index is shown in Table 7.2 for currently married women and men.

Table 7.2 Desire to limit childbearing

Percentage of currently married women age 15-49 who want no more children, by number of living children, according to background characteristics, Kenya 2008-09

Background characteristic	Number of living children[1]							Total women 15-49	Total men 15-49
	0	1	2	3	4	5	6+		
Residence									
Urban	1.6	11.0	44.8	66.2	79.2	86.7	81.8	43.9	37.0
Rural	3.1	6.6	31.9	55.6	72.5	83.5	85.5	56.6	48.8
Province									
Nairobi	3.3	18.4	64.4	76.7	68.7	87.8	96.4	48.2	28.5
Central	0.0	4.4	51.9	78.0	93.6	95.3	93.4	63.6	61.4
Coast	0.0	15.1	33.0	43.6	62.0	57.9	73.5	42.2	42.5
Eastern	0.0	5.5	46.5	75.8	84.6	94.1	90.9	64.5	62.1
Nyanza	2.8	8.2	27.5	46.4	64.4	87.8	92.9	49.0	41.3
Rift Valley	8.1	2.5	24.9	48.2	72.2	88.9	86.0	53.9	42.1
Western	0.0	8.4	23.6	50.9	77.7	78.0	95.1	57.5	49.8
North Eastern	0.0	0.0	5.2	3.1	0.6	2.9	9.9	4.6	0.0
Education									
No education	0.0	9.1	13.0	22.8	29.5	47.7	60.9	37.2	19.0
Primary incomplete	0.0	11.9	29.2	60.4	69.6	81.8	92.4	59.1	43.5
Primary complete	0.0	4.9	37.4	51.5	83.6	93.4	93.4	56.0	50.8
Secondary+	5.4	8.8	44.3	71.3	83.5	96.9	92.1	52.1	44.7
Wealth quintile									
Lowest	0.0	6.3	13.6	30.5	56.8	69.6	69.7	46.0	38.5
Second	0.0	5.9	31.2	58.4	69.4	79.7	92.7	59.9	51.5
Middle	0.0	8.7	36.8	53.9	79.5	92.2	92.7	60.4	49.2
Fourth	0.0	9.1	40.3	68.2	76.7	93.2	90.2	58.4	53.2
Highest	6.2	9.3	42.8	70.9	85.9	87.4	85.0	45.1	38.7
Total	2.5	8.4	36.4	57.7	73.6	84.0	85.3	53.6	44.9

Note: Women who have been sterilised are considered to want no more children. Men who have been sterilised or who state in response to the question about desire for children that their wife has been sterilised are considered to want no more children.
[1] The number of living children includes the current pregnancy.

Overall, rural women are more likely than urban women to want no more children; however, this is mainly because rural women already have more children than urban women do. When the number of living children is held constant, the pattern is reversed, that is, urban women are more likely than rural women to want no more children. For example, among women with three children, 66 percent of urban women want no more children, compared with 56 percent of rural women.

Overall, the proportion of married women who want no more children is highest in Eastern and Central provinces (64-65 percent) and lowest in North Eastern province (5 percent). Women in North Eastern province and, to a lesser extent, those in Coast province, are far more pro-natalist than women in other provinces. For example, 86-96 percent of married women want to stop childbearing after the sixth child in all provinces except North Eastern, where only 10 percent of women want to stop after six births, and Coast province, where 74 percent want to stop.

Substantial differences in fertility preferences among women by levels of education are apparent. For example, among married women with 3 children, 23 percent of those with no education want to stop childbearing compared with 71 percent of those with some secondary education. For each category of number of children, the desire to have no more children generally increases with the wealth index.

Fertility preferences among men show similar patterns to those for the women, although overall proportions of men who do not want to have more children are lower. It is notable that the proportion of married men in North Eastern rovince who want no more children is nil.

7.3 NEED FOR FAMILY PLANNING SERVICES

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

Table 7.3 presents data on unmet need, met need, and total demand for family planning services for currently married women, as well as totals for women who are not currently married and for all women. Kenyan women continue to experience a high unmet need for family planning, with roughly one-quarter of currently married women in the three consecutive KDHS surveys since 1998 indicating that they have unmet need for family planning. In 2008-09, 26 percent of married women had an unmet need, which was evenly split between unmet need for spacing births and unmet need for limiting births. With 46 percent of married women currently using a contraceptive method (met need), the total demand for family planning comprises 71 percent of married women. Only 64 percent of the total demand for family planning is met.

The level of unmet need for spacing and limiting of children varies by background characteristics and reveals the expected patterns: that is, unmet need for spacing declines with the age of the woman while need for limiting increases with age, resulting in a fairly constant level of total unmet need across age groups. Unmet need for family planning continues to be higher in rural areas (27 percent) than in urban areas (20 percent). Nyanza province has the highest percentage of married women with an unmet need for family planning (32 percent), followed by Rift Valley province (31 percent), while Nairobi, North Eastern, and Central provinces have the lowest unmet need at 15-16 percent. Western province recorded the greatest improvement in unmet need, declining from 32 percent of married women in 2003 to 26 percent in 2008-09. Unmet need increased considerably among women in Central and North Eastern provinces.

Married women with incomplete primary education have the highest unmet need for family planning (33 percent) compared with those with completed primary education (27 percent), no education (26 percent), and secondary and higher education (17 percent). Unmet need declines steadily as wealth increases, from 38 percent of married women in the lowest quintile to 19 percent of those in the highest quintile.

Total demand for family planning increases with age, from 15-19 years to 40-44 years, after which it declines. Demand for family planning is slightly higher among urban women than among rural women and is highest among women in Central province and lowest among women in North Eastern province. Total demand is lowest among women with no education and women in the lowest wealth quintile.

Table 7.3 also presents the unmet need for family planning for women who are not currently married and for all women. Unmet need for unmarried women and all women is much lower (3 and 16 percent), compared with need of currently married women (26 percent). The overall demand is also lower—48 percent of all women, compared with 71 percent of married women. Surprisingly, the overall percentage of demand that is satisfied is highest among unmarried women (81 percent), compared with married women (64 percent) and all women (66 percent).

Table 7.3 Need and demand for family planning among currently married women

Percentage of currently married women age 15-49 with unmet need for family planning, percentage with met need for family planning, the total demand for family planning, and the percentage for whom the demand for contraception is satisfied, by background characteristics, and totals for unmarried women and all women, Kenya 2008-09

Background characteristic	Unmet need for family planning[1]			Met need for family planning (currently using[2])			Total demand for family planning			Percentage of demand satisfied	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total		
Age											
15-19	25.6	4.0	29.7	20.7	1.8	22.5	46.3	5.8	52.2	43.1	212
20-24	24.0	6.1	30.1	28.2	7.5	35.7	52.2	13.6	65.8	54.2	958
25-29	16.6	10.0	26.7	27.1	18.2	45.3	43.7	28.2	72.0	62.9	1,088
30-34	11.5	11.0	22.4	18.1	36.8	54.9	29.6	47.8	77.3	71.0	962
35-39	5.9	18.7	24.6	9.0	42.1	51.2	14.9	60.9	75.8	67.5	694
40-44	2.1	22.4	24.5	2.6	49.9	52.5	4.7	72.3	77.0	68.2	548
45-49	1.2	20.2	21.4	0.6	39.8	40.4	1.8	59.9	61.7	65.4	466
Residence											
Urban	10.7	9.5	20.2	29.5	23.5	53.1	40.3	33.0	73.3	72.4	1,154
Rural	13.5	13.8	27.3	13.8	29.3	43.1	27.3	43.1	70.4	61.3	3,774
Province											
Nairobi	6.5	8.6	15.1	27.1	28.2	55.3	33.6	36.8	70.4	78.6	363
Central	6.1	9.5	15.6	22.5	44.2	66.7	28.6	53.6	82.3	81.1	535
Coast	16.2	9.2	25.4	19.3	15.0	34.3	35.5	24.2	59.7	57.4	427
Eastern	10.2	13.4	23.7	13.3	38.7	52.0	23.5	52.2	75.7	68.8	844
Nyanza	18.6	13.1	31.7	14.8	22.5	37.3	33.4	35.6	69.0	54.1	832
Rift Valley	13.7	17.4	31.1	18.4	24.0	42.4	32.1	41.3	73.4	57.7	1,279
Western	13.9	12.0	25.8	17.0	29.6	46.5	30.8	41.5	72.4	64.3	518
North Eastern	14.7	1.3	16.0	3.0	0.5	3.5	17.7	1.7	19.5	17.7	130
Education											
No education	16.9	8.8	25.7	4.2	10.0	14.1	21.1	18.8	39.8	35.4	565
Primary incomplete	15.8	17.3	33.2	12.8	27.5	40.3	28.6	44.8	73.4	54.8	1,440
Primary complete	13.2	13.8	27.0	19.5	28.7	48.2	32.7	42.5	75.2	64.1	1,436
Secondary+	8.1	8.8	16.9	25.3	34.6	59.8	33.4	43.3	76.7	78.0	1,488
Wealth quintile											
Lowest	20.1	17.8	38.0	7.6	12.5	20.1	27.8	30.3	58.1	34.6	870
Second	15.8	16.6	32.5	12.5	27.5	40.0	28.4	44.2	72.5	55.2	883
Middle	10.6	11.7	22.3	14.4	35.4	49.8	25.0	47.1	72.1	69.0	952
Fourth	11.0	9.1	20.1	19.1	37.9	56.9	30.1	47.0	77.1	73.9	1,012
Highest	8.7	10.2	18.9	29.4	25.3	54.7	38.2	35.4	73.6	74.3	1,211
Currently married women	12.9	12.8	25.6	17.5	28.0	45.5	30.4	40.7	71.1	64.0	4,928
Unmarried women	2.2	0.9	3.2	6.8	6.4	13.2	9.0	7.4	16.4	80.7	3,516
All women	8.4	7.8	16.3	13.0	19.0	32.0	21.5	26.8	48.3	66.3	8,444

[1] Unmet need for spacing: Includes women who are fecund and not using family planning and who say they want to wait two or more years for their next birth, or who say they are unsure whether they want another child, or who want another child but are unsure when to have the child. In addition, unmet need for spacing includes pregnant women whose current pregnancy was mistimed, or whose last pregnancy was unwanted but who now say they want more children. Unmet need for spacing also includes amenorrhoeic women whose last birth was mistimed, or whose last birth was unwanted but who now say they want more children.
Unmet need for limiting: Includes women who are fecund and not using family planning and who say they do not want another child. In addition, unmet need for limiting includes pregnant women whose current pregnancy was unwanted but who now say they do not want more children or who are undecided whether they want another child. Unmet need for limiting also includes amenorrhoeic women whose last birth was unwanted but who now say they do not want more children or who are undecided whether they want another child.
[2] Using for spacing is defined as women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Using for limiting is defined as women who are using and who want no more children. Note that the specific methods used are not taken into account here.

7.4 IDEAL NUMBER OF CHILDREN

This section focuses on the respondent's ideal number of children, implicitly taking into account the number of children that the respondent already has. Women and men, regardless of marital status, were asked about the number of children they would choose to have if they could start afresh. Respondents who had no children were asked, *'If you could choose exactly the number of children to have in your whole life, how many would that be?'* For respondents who had children, the question was rephrased as follows: *'If you could go back to the time when you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?'* Responses to these questions are summarised in Table 7.4 for both women and men age 15-49.

Table 7.4 Ideal number of children

Percent distribution of women and men age 15-49 by ideal number of children, and mean ideal number of children for all respondents and for currently married respondents, according to number of living children, Kenya 2008-09

Ideal number of children	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
WOMEN								
0	1.9	0.4	0.5	1.0	0.4	0.6	0.7	1.0
1	2.6	4.9	3.0	2.0	1.1	1.0	0.3	2.4
2	26.4	30.4	28.3	14.6	15.4	14.4	5.0	21.2
3	26.8	28.1	25.4	24.1	10.5	14.5	7.7	21.5
4	25.6	25.1	28.8	35.4	46.2	28.9	29.8	30.2
5	8.1	4.2	6.3	10.1	9.5	16.2	12.1	8.7
6+	5.5	5.1	5.8	9.2	13.3	20.0	35.8	11.5
Non-numeric responses	3.1	1.8	1.9	3.5	3.6	4.4	8.7	3.6
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	2,249	1,270	1,338	1,106	872	554	1,055	8,444
Mean ideal number of children for:[2]								
All women	3.3	3.2	3.3	3.8	4.1	4.3	5.4	3.8
Number	2,178	1,248	1,312	1,068	840	529	963	8,139
Currently married women	3.5	3.3	3.4	3.8	4.1	4.4	5.5	4.0
Number	172	730	1,002	876	705	440	806	4,731
MEN								
0	0.3	0.0	0.1	0.0	0.0	1.0	0.1	0.2
1	1.8	1.2	0.9	0.7	0.8	0.0	0.7	1.3
2	22.8	23.2	26.2	10.1	14.4	12.0	4.3	19.4
3	25.0	36.3	29.6	31.5	12.2	10.7	11.7	24.6
4	28.4	25.4	26.7	31.3	36.9	31.0	24.9	28.7
5	10.4	6.3	4.8	9.2	7.1	16.2	5.2	8.8
6+	9.0	4.3	6.5	13.6	22.7	26.1	39.0	12.9
Non-numeric responses	2.3	3.4	5.2	3.7	5.9	3.0	14.1	4.1
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number	1,566	361	352	306	270	149	253	3,258
Mean ideal number children for:[2]								
All men	3.7	3.3	3.4	4.3	4.8	4.8	6.6	4.0
Number	1,530	348	334	294	254	145	218	3,123
Currently married men	3.7	3.2	3.3	4.3	4.8	4.9	6.7	4.4
Number	62	255	304	285	245	140	213	1,503
Mean ideal number children for men 15-54:[2]								
All men	3.7	3.4	3.4	4.3	4.8	4.9	7.0	4.2
Number	1,532	352	349	316	270	170	318	3,308
Currently married men	3.7	3.3	3.4	4.3	4.8	4.9	7.0	4.6
Number	62	258	311	305	260	165	311	1,672

[1] The number of living children includes current pregnancy for women; for men, it includes one additional child if the respondent's wife is pregnant (or if any wife is pregnant for men with more than one current wife).
[2] Means are calculated excluding respondents who gave non-numeric responses.

The 2008-09 KDHS findings indicate that almost all women and all men provided a numeric response, with only 4 percent of both genders failing to do so. Among women who gave a numeric response, the mean ideal family size is 3.8, a slight decline from the level of 3.9 recorded in the 2003 KDHS. Women with more living children have higher ideal family sizes than those with smaller families. For example, women with six or more living children have an ideal family size of 5.4, compared with only 3.2 for those with one child. This pattern could be attributed to either those with smaller family sizes tending to achieve their desired small families or else to 'adjustments' of ideal number of children as the actual number increased (rationalisation).

The mean ideal family size among men age 15-49 is slightly higher than for women (4.0 versus 3.8, respectively), a pattern that has remained unchanged over time. Among men age 15-49, the ideal family size ranges from 3.7 for those without a child to 6.6 for men with six or more living children.

Four children is the most commonly reported ideal for both women and men, followed by three children; only about one in five women and men say that having two children is ideal. Finally, results show that considerable proportions of women and men report ideal family sizes smaller than their actual family sizes. For example, 56 percent of women and 47 percent of men with six or more living children report ideal family sizes of less than six children.

7.5 MEAN IDEAL NUMBER OF CHILDREN BY BACKGROUND CHARACTERISTICS

Table 7.5 shows the mean ideal number of children by age and background characteristics of all women and men. Data in the table show that both women and men in rural areas have higher ideal family sizes (4.0 and 4.3, respectively) than their urban counterparts (3.1 and 3.4). Among the provinces, North Eastern province continues to record the highest ideal family sizes for women and men (8.8 and 15.5), followed by Coast province for women (4.6) and Rift Valley for men (4.4).

Table 7.5 Mean ideal number of children by background characteristics

Mean ideal number of children among women by five-year age groups,, for all women age 15-49, and for all men age 15-54, by background characteristics, Kenya 2008-09

Background characteristic	Age							All women	All men 15-54
	15-19	20-24	25-29	30-34	35-39	40-44	45-49		
Residence									
Urban	2.9	2.9	3.0	3.2	3.4	3.5	4.0	3.1	3.4
Rural	3.7	3.6	3.8	3.9	4.4	4.5	4.9	4.0	4.3
Province									
Nairobi	2.8	2.6	2.8	2.9	3.2	3.5	3.2	2.8	3.3
Central	3.0	2.7	2.8	3.0	3.3	3.5	4.0	3.1	3.3
Coast	4.6	4.1	4.2	4.3	5.0	5.0	7.1	4.6	4.0
Eastern	3.1	2.9	3.2	3.2	3.4	4.2	4.7	3.4	3.4
Nyanza	3.3	3.5	3.8	3.9	4.1	4.3	4.2	3.7	4.1
Rift Valley	3.6	3.6	3.7	4.2	4.8	4.6	5.3	4.0	4.4
Western	3.7	3.5	3.8	3.9	4.4	4.2	4.9	3.9	4.1
North Eastern	7.7	7.9	9.1	9.0	10.4	(12.9)	(9.2)	8.8	15.5
Education									
No education	7.0	5.8	6.6	6.4	6.8	6.3	6.2	6.4	10.4
Primary incomplete	3.8	3.7	3.9	3.8	4.5	4.6	5.1	4.0	4.4
Primary complete	3.4	3.3	3.4	3.8	3.8	4.2	4.7	3.6	4.1
Secondary+	2.9	2.8	2.9	3.2	3.3	3.5	3.8	3.1	3.4
Wealth quintile									
Lowest	4.7	4.7	5.0	5.1	5.8	5.5	6.2	5.1	6.0
Second	3.6	3.6	3.6	4.0	4.5	4.5	4.8	3.9	4.4
Middle	3.5	3.4	3.6	3.7	4.1	4.5	4.7	3.8	3.9
Fourth	3.1	3.1	3.3	3.3	3.7	4.2	4.4	3.4	3.6
Highest	2.8	2.8	3.0	3.2	3.4	3.3	3.6	3.0	3.4
Total	3.5	3.4	3.6	3.7	4.1	4.3	4.8	3.8	4.2

Note: Numbers in parentheses are based on 25-49 unweighted cases.

Education strongly relates to desired family size, with women and men with no education having the highest mean ideal family size and those with secondary or higher education having the lowest. Similarly, perceived ideal family size decreases steadily as wealth of both women and men increases.

7.6 FERTILITY PLANNING STATUS

The issue of unplanned and unwanted fertility was investigated in the 2008-09 KDHS by asking women who had births during the five years before the survey whether the births were wanted at the time (planned), wanted but at a later time (mistimed), or not wanted at all (unwanted). For women who were pregnant at the time of the interview, this question was also asked with reference to the current pregnancy. The procedure required the respondents to recall accurately their wishes at one or more points in their last five years. Care has to be exercised in interpreting the results because an unwanted conception may have become a cherished child, leading to the rationalisation of responses to these questions.

According to Table 7.6 and Figure 7.2, 17 percent of births in Kenya are unwanted, and 26 percent are mistimed (wanted later). There has been little change since 2003 in the proportions of births that are unwanted and mistimed. The proportion of births considered to be unwanted registered a marginal reduction from 20 percent in 2003 to 17 percent in 2008-09, and the proportion of mistimed births increased from 25 to 26 percent in the same period.

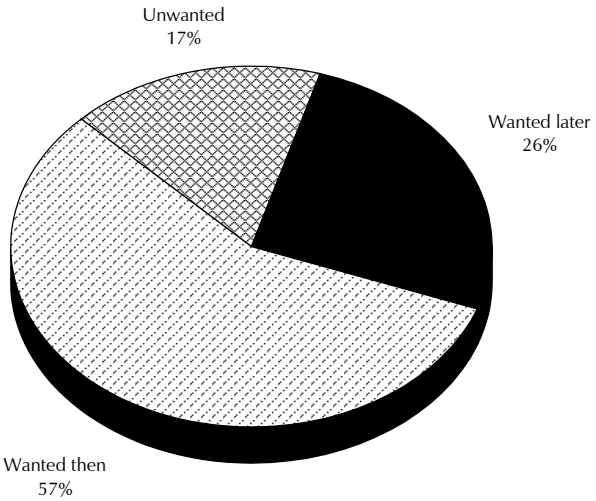
Table 7.6 Fertility planning status

Percent distribution of births to women age 15-49 in the five years preceding the survey (including current pregnancies), by planning status of the birth, according to birth order and mother's age at birth, Kenya 2008-09

Birth order and mother's age at birth	Planning status of birth				Total	Number of births
	Wanted then	Wanted later	Wanted no more	Missing		
Birth order						
1	62.2	24.6	13.1	0.1	100.0	1,446
2	65.9	26.6	7.4	0.1	100.0	1,354
3	59.4	28.8	11.7	0.0	100.0	1,077
4+	48.9	24.1	26.7	0.3	100.0	2,569
Mother's age at birth						
<20	53.2	31.9	14.9	0.1	100.0	1,021
20-24	60.4	29.9	9.6	0.1	100.0	2,068
25-29	61.7	23.2	14.9	0.2	100.0	1,589
30-34	57.1	21.1	21.2	0.5	100.0	1,004
35-39	48.8	16.0	35.0	0.1	100.0	539
40-44	33.7	16.1	50.2	0.0	100.0	207
45-49	*	*	*	*	100.0	19
Total	57.2	25.5	17.1	0.2	100.0	6,445

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

Figure 7.2 Planning Status of Births



Kenya 2008-09

Births of a fourth child and more are the least likely to be planned. Less than half of such births are wanted at the time, while roughly one-quarter are wanted later and a similar proportion are not wanted at all. The proportion of births that are unwanted generally increases with age of the mother at time of the child's birth; fully half of all births to women age 40-44 are not wanted.

7.7 WANTED FERTILITY RATES

Using information on whether births occurring in the five years before the survey were wanted or not, a total 'wanted' fertility rate can be calculated. The wanted fertility rate measures the potential demographic impact of avoiding unwanted births. It is calculated in the same manner as the conventional total fertility rate, except that unwanted births are excluded. A birth is considered wanted if the number of living children at the time of conception is less than the ideal number of children reported by the respondent. The gap between wanted and actual fertility shows how successful women are in achieving their reproductive intentions. A comparison of the total wanted fertility rates and total fertility rates for the three years preceding the survey by background characteristics is presented in Table 7.7.

The total wanted fertility rate for Kenya is 3.4, more than one child less than the actual total fertility rate of 4.6. Except for North Eastern province, where the total wanted fertility rate is the same as the actual total fertility rate (5.9), the level of wanted fertility is lower than actual fertility for all other provinces and background characteristics. The gap between wanted and observed fertility is greatest among poor women, those living in Western province and in rural areas, and those with less than secondary education.

Table 7.7 Wanted fertility rates

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by background characteristics, Kenya 2008-09

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	2.5	2.9
Rural	3.7	5.2
Province		
Nairobi	2.4	2.8
Central	2.6	3.4
Coast	4.2	4.8
Eastern	2.9	4.4
Nyanza	3.9	5.4
Rift Valley	3.5	4.7
Western	3.6	5.6
North Eastern	(5.9)	(5.9)
Education		
No education	5.8	6.7
Primary incomplete	3.7	5.5
Primary complete	3.6	4.9
Secondary+	2.5	3.1
Wealth quintile		
Lowest	5.3	7.0
Second	3.6	5.6
Middle	3.6	5.0
Fourth	2.8	3.7
Highest	2.5	2.9
Total	3.4	4.6

Note: Rates are calculated based on births to women age 15-49 in the period 1-36 months preceding the survey. Rates in parentheses are based on 500-750 unweighted women. The total fertility rates are the same as those presented in Table 4.2.

INFANT AND CHILD MORTALITY 8

Collins Opiyo, Christopher Omolo, and Andrew Imbwaga

This chapter presents levels, trends, and differentials in neonatal, postneonatal, infant, child, and perinatal mortality. The information is relevant for the planning and evaluation of health policies and programmes and serves the needs of the health sector by identifying population groups that are at high risk. Infant and child mortality rates are also regarded as indices that reflect the degree of poverty and deprivation of a population. Under-five mortality and infant mortality rates are two of the indicators used to monitor child health under Millennium Development Goal (MDG) #4. Because the government of Kenya, through the Ministry of Public Health and Sanitation and the Ministry of Medical Services, is undertaking a number of interventions aimed at reducing childhood mortality in the country, the analysis in this report provides an opportunity to evaluate the performance of such programs.

In the 2008-09 Kenya Demographic and Health Survey (KDHS), the data for mortality estimation were collected in the birth history section of the Women's Questionnaire. The birth history section began with questions about the respondent's experience with childbearing (i.e., the number of sons and daughters living with the mother, the number who live elsewhere, and the number who have died). These questions were followed by a retrospective birth history in which the respondent was asked to list each of her births, starting with the first birth. For each birth, data were obtained on sex, month, and year of birth, survivorship status, and current age, or, if the child had died, the age at death. This information was used to directly estimate mortality. Age-specific mortality rates are categorized and defined as follows:

- Neonatal mortality (NN): the probability of dying within the first month of life
- Postneonatal mortality (PNN): the difference between infant and neonatal mortality
- Infant mortality ($_1q_0$): the probability of dying before the first birthday
- Child mortality ($_4q_1$): the probability of dying between the first and fifth birthday
- Under-five mortality ($_5q_0$): the probability of dying between birth and the fifth birthday

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

8.1 LEVELS AND TRENDS IN INFANT AND CHILD MORTALITY

Table 8.1 shows neonatal, postneonatal, infant, child, and under-five mortality rates for three successive five-year periods before the survey. For the five years immediately preceding the survey (approximate calendar years 2004-2008), the infant mortality rate is 52 per 1,000 live births and the under-five mortality is 74 deaths per 1,000 live births. This implies that one in every 19 children born in Kenya dies before its first birthday, while one in every 14 does not survive to age five. Neonatal mortality is 31 deaths per 1,000 live births, while postneonatal mortality is 21 per 1,000 live births during the same period. Thus, 60 percent of infant deaths in Kenya occur during the first month of life.

Table 8.1 Early childhood mortality rates

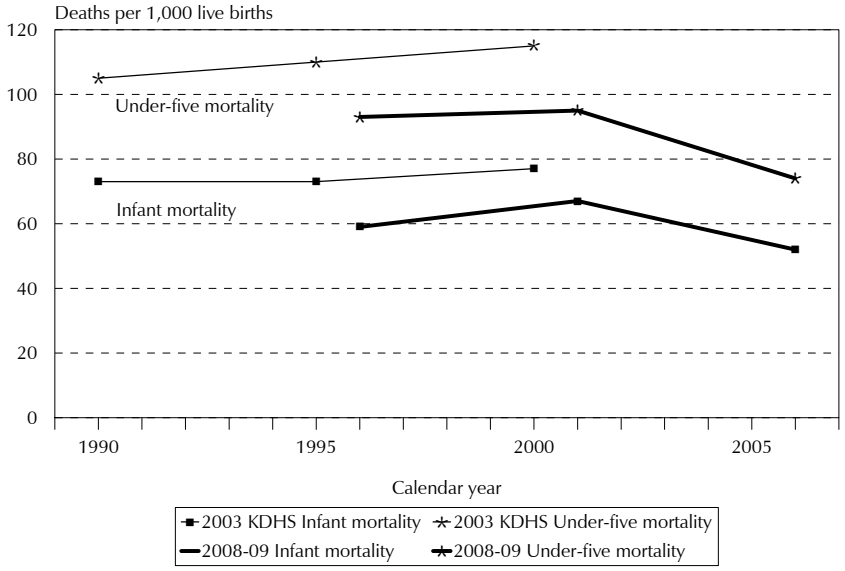
Neonatal, postneonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Kenya 2008-09

Years preceding the survey	Approximate calendar years	Neonatal mortality (NN)	Postneonatal mortality (PNN[1])	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
0-4	2004-2008	31	21	52	23	74
5-9	1999-2003	35	32	67	29	95
10-14	1994-1998	25	34	59	37	93

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

The results show remarkable declines in all levels of childhood mortality from rates observed in the 2003 KDHS. Figure 8.1 shows infant and under-five mortality rates for the 15-year period preceding the 2008-09 KDHS and the 2003 KDHS. Comparing data for the five-year period preceding each survey, under-five mortality has declined by 36 percent from 115 deaths per 1,000 in the 2003 KDHS to 74 deaths per 1,000 in the 2008-09 KDHS, while infant mortality has dropped by 32 percent from 77 deaths per 1,000 in the 2003 survey to 52 deaths per 1,000 in the 2008-09 survey. Postneonatal mortality declined more than 50 percent from 44 deaths per 1,000 in the 2003 KDHS to 21 deaths per 1,000 in the 2008-09 KDHS. Results from the 2005/06 Kenya Integrated Household Budget Survey also showed a decline following the 2003 KDHS, with rates of 92 deaths per 1,000 for under-five mortality and 60 deaths per 1,000 live births for infant mortality (KNBS, 2008).

Figure 8.1 **Trends in Infant and Under-Five Mortality 2003 KDHS and 2008-09 KDHS**



The recorded decline indicates the first signs that the country is making progress towards achieving MDG #4. The improvement in child survival could be attributed at least in part to various government programmes. For example, the substantial increases in childhood immunization coverage levels at the national level and in all eight provinces most probably contributed to the overall drop in childhood mortality in Kenya (see Chapter 10). Another important initiative is the improvement in key malaria indicators such as ownership and use of treated mosquito nets, preventive treatment of malaria during pregnancy, and treatment of childhood fever, given that malaria is one of the leading causes of death among young children in Kenya and most of sub-Saharan Africa (Division of Malaria Control, 2009).

8.2 DATA QUALITY

The quality of mortality estimates calculated from retrospective birth histories depends upon the completeness with which births and deaths are reported and recorded. One factor that affects childhood mortality estimates is the quality of the reporting of age at death, which may distort the age pattern of mortality. If age at death is misreported, it will bias the estimates, especially if the net effect of the age misreporting results in transference from one age bracket to another. For example, a net transfer of deaths from under one month to a higher age range will affect the estimates of neonatal and postneonatal mortality. To minimize errors in reporting of age at death, interviewers were instructed to record age at death in days if the death took place in the month following the birth, in months if the child died before age two, and in years if the child was at least two years of age. They also were asked to probe for deaths reported at one year to determine a more precise age at death in terms of months.

Displacement of birth dates, which may cause a distortion of mortality trends, is a potential data quality problem. This can occur if an interviewer knowingly records a death as occurring in a different year; this could happen if an interviewer were trying to cut down on his or her overall workload because live births occurring during the five years preceding the interview are the subject of a lengthy set of additional questions. In the 2008-09 KDHS questionnaire, the cut-off year for asking these questions was 2003, that is, for births since January 2003. For misreporting of children's birth dates, the results are shown in Appendix Table C.4. The calendar year ratios for living and deceased children are 86 and 62, respectively, for 2003, compared with 132 and 157, respectively, in 2002. This suggests misreporting of dates of births for both living and deceased children. This pattern has been observed in previous KDHS surveys and could be due to some research assistants transferring births dates out of the five-year reference period to reduce their workloads as discussed.

Another potential data quality problem is the selective omission from the birth histories of the record of births of infants who did not survive, which can lead to underestimation of mortality rates. When selective omission of childhood deaths occurs, it is usually most pronounced for deaths occurring early in infancy. One way such omissions can be detected is by examining the proportion of neonatal deaths to infant deaths. Generally, if there is substantial underreporting of deaths, the result is an abnormally low ratio of neonatal deaths to infant deaths.

Evidence from the 2008-09 KDHS data does not show any sign of severe underreporting of early neonatal deaths. For the five-year period before the survey, the proportion of neonatal deaths occurring in the first week of life is quite high—82 percent (Appendix Table C.5)[1], the same as recorded in 2003. Moreover, except for the period 10-14 years preceding the survey, this ratio is approximately stable over the 20 years preceding the survey, a further indication that early infant deaths have not been grossly underreported.

Appendix C.6 shows similar data regarding the proportion of infant deaths that occur in the first month of life. For the five years before the survey, the ratio of neonatal deaths is within acceptable levels (61 percent). This rate is much higher than the rates recorded in either the 2003 KDHS (47 percent) or the 1998 KDHS (41 percent), an indication that underreporting of deaths was minimal. This high percentage of neonatal deaths implies that there was little if any selective omission of childhood deaths that could compromise the quality of the 2008-09 KDHS early childhood mortality rates.

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

8.3 SOCIOECONOMIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY

Mortality differentials by place of residence, region, educational level of the mother, and household wealth are presented in Table 8.2. To capture a sufficient number of births to study mortality differentials across subgroups of the population rates are presented for the 10-year period preceding the survey (approximately 1999-2008). A number of socioeconomic, environmental, and biological factors influence infant and child mortality (Mosley and Chen, 1984). These factors operate through proximate determinants and are discussed in this section. The factors include place or region of residence, mother's level of education, and relative socioeconomic status.

Contrary to results observed in previous demographic surveys, urban-rural differentials for postneonatal and infant mortality show a reversed pattern, with mortality in urban areas exceeding that in rural areas. Infant mortality is 9 percent higher in urban areas (63 per 1,000) than in rural areas (58 per 1,000). Infant mortality in urban areas remained at the same level as that recorded in the 2003 KDHS; however, infant mortality in rural areas dropped by 27 percent from 79 deaths per 1,000 live births in the 2003 KDHS to 58 deaths per 1,000 live births in the 2008-09 KDHS.

Variations in early childhood mortality exist across the provinces, with Nyanza province having the highest levels of both under-five and infant mortality rates (Figure 8.2). Almost one in seven children in Nyanza dies before attaining his or her fifth birthday (149 deaths per 1,000), compared with one in 20 children in Central province (51 deaths per 1,000), which has the lowest rate. Thus, the risk of dying before age five is almost three times higher in Nyanza than in Central province. Infant mortality is also highest in Nyanza province (95 deaths per 1,000) and lowest in Eastern province (39 deaths per 1,000). However, it is important to note the considerable declines in child mortality rates in Nyanza province over the past five years. For example, under-five mortality has declined from 206 to 149 deaths per 1,000 births since the 2003 KDHS. There also appears to have been a dramatic drop in child mortality rates for North Eastern province, though the rates are subject to rather large confidence intervals (see Table B.12).

Childhood mortality rates from the 2008-09 KDHS for Eastern province are comparable with those from the 2007 Multiple Indicator Cluster Survey (MICS). The under-five mortality rate based on MICS was estimated at 54 deaths per 1,000 live births, which is comparable to the rate of 52 from the 2008-09 KDHS. Similarly, the infant mortality rate of 40 deaths per 1,000 live births based on the 2007 MICS in Eastern province is almost identical to the 2008-09 KDHS estimate of 39 deaths per 1,000 live births.

A mother's education can exert a positive influence on children's health and survival. Under-five mortality is noticeably lower for children whose mothers either completed primary school (68 deaths per 1,000 live births) or attended secondary school (59 deaths per 1,000 live births) than among those whose mothers have no education (86 deaths per 1,000 live births). However, under-five mortality is highest among children whose mothers have incomplete primary education. Similar patterns are observed for infant mortality levels. Child mortality rates generally decline as the wealth quintile increases, though the pattern is not uniform.

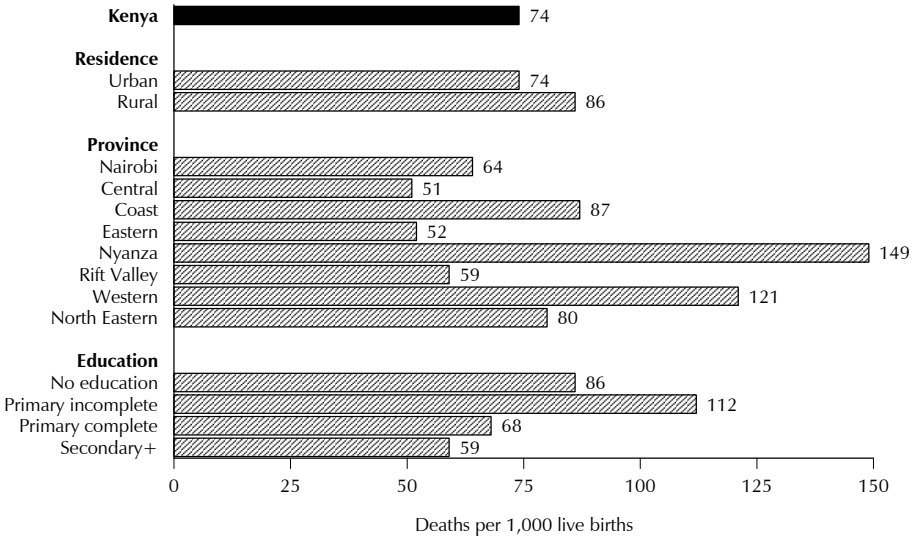
Table 8.2 Early childhood mortality rates by socioeconomic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by background characteristics, Kenya 2008-09

Background characteristics	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Residence					
Urban	32	31	63	12	74
Rural	33	25	58	29	86
Province					
Nairobi	48	12	60	4	64
Central	31	11	42	10	51
Coast	44	27	71	18	87
Eastern	31	8	39	14	52
Nyanza	39	56	95	60	149
Rift Valley	30	18	48	12	59
Western	24	41	65	60	121
North Eastern	33	24	57	24	80
Mother's education					
No education	39	25	64	23	86
Primary incomplete	39	34	73	42	112
Primary complete	25	26	51	18	68
Secondary+	31	14	45	14	59
Wealth quintile					
Lowest	39	26	66	34	98
Second	33	31	64	40	102
Middle	41	27	67	26	92
Fourth	21	18	39	12	51
Highest	29	28	57	13	68

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

Figure 8.2 Under-Five Mortality by Background Characteristics



Kenya 2008-09

8.4 DEMOGRAPHIC DIFFERENTIALS IN INFANT AND CHILD MORTALITY

The demographic characteristics of both mother and child have been found to play an important role in the survival of children. Table 8.3 presents early childhood mortality rates by demographic characteristics (i.e., sex of child, mother's age at birth, birth order, previous birth interval, and birth size). As was the case with the socioeconomic differentials, these are some of the proximate determinants that directly affect infant and childhood mortality. Rates are presented for the 10-year period preceding the survey.

Table 8.3 Early childhood mortality rates by demographic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by demographic characteristics, Kenya 2008-09

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Child's sex					
Male	38	27	65	27	90
Female	28	26	53	25	77
Mother's age at birth					
<20	40	28	68	35	100
20-29	28	25	54	25	77
30-39	35	24	58	22	79
40-49	(68)	(53)	(120)	*	*
Birth order					
1	37	25	62	17	78
2-3	29	22	51	30	80
4-6	28	31	59	29	86
7+	50	30	79	24	102
Previous birth interval[2]					
<2 years	54	36	91	44	130
2 years	21	27	48	27	73
3 years	16	14	31	23	53
4+ years	35	24	60	20	78
Birth size[3]					
Small/very small	41	29	70	na	na
Average or larger	27	20	47	na	na

Note: Figures in parentheses are based on 250-499 unweighted months of exposure; an asterisk denotes a figure based on fewer than 250 unweighted months of exposure that has been suppressed.
na = Not applicable
[1] Computed as the difference between the infant and neonatal mortality rates
[2] Excludes first-order births
[3] Rates for the five-year period before the survey

As expected, mortality rates are generally higher for male than for female children across all childhood mortality indicators. The largest absolute difference occurs in the under-five category (90 for males and 77 for females); however, the largest relative difference occurs in the neonatal period. Boy babies are about 36 percent more likely to die in the first month of life than girl babies.

Studies have shown that mother's age at birth affects the child's chances of survival. The neonatal, postneonatal, and infant mortality rates exhibit the expected U-shaped association with mother's age, (i.e., high for younger and older mothers and low for women in middle age groups). Similarly, research shows that there is generally an increased risk of death for first births and for higher-order births. Data from the 2008-09 KDHS generally confirm this pattern for higher-order births. With the exception of postneonatal and child mortality, births of order seven and higher experience the highest levels of childhood mortality. First births are subject to relatively high neonatal mortality rates; however, during the postneonatal and child periods, first births do not appear to be disadvantaged.

The length of birth interval has a significant impact on a child's chances of survival, with short birth intervals considerably reducing the chances of survival. Children born fewer than two years after a prior sibling suffer substantially higher risks of death than children with intervals of two or more years. For example, the under-five mortality rate is 130 deaths per 1,000 live births for children born after an interval of less than 2 years compared with a rate of 78 deaths per 1,000 live births for birth intervals of 4 or more years.

Size of the child at birth also has a bearing on the childhood mortality rates. Children whose birth size is small or very small have a 50 percent greater risk of dying before their first birthday than those whose birth size is average or larger.

8.5 PERINATAL MORTALITY

Perinatal mortality is a good indicator of the state of health in general and the health status of the mother at the time of delivery. Pregnancy losses occurring after seven completed months of gestation (stillbirths) plus deaths to live births within the first seven days of life (early neonatal deaths) constitute perinatal deaths. The distinction between a stillbirth and an early neonatal death may be a fine one, often depending on observing and then remembering sometimes faint signs of life after delivery. The causes of stillbirths and early neonatal deaths are closely linked, and examining just one or the other can understate the true level of mortality at or near the time of delivery. For this reason, deaths around delivery are combined into the perinatal mortality rate, defined as the number of perinatal deaths per 1,000 pregnancies reaching seven months of gestation.

Table 8.4 presents the number of stillbirths and early neonatal deaths and the perinatal mortality rates for the five-year period preceding the 2008-09 KDHS. Results show that of the 5,920 reported pregnancies of 7+ months' duration, 68 ended in stillbirths and 149 were neonatal deaths, thus giving a perinatal mortality rate of 37 deaths per 1,000 pregnancies, a marginal decline from the 40 deaths per 1,000 pregnancies recorded in the 2003 KDHS.

Table 8.4 Perinatal mortality

Number of stillbirths and early neonatal deaths, and the perinatal mortality rate for the five-year period preceding the survey, by background characteristics, Kenya 2008-09

Background characteristic	Number of stillbirths[1]	Number of early neonatal deaths[2]	Perinatal mortality rate[3]	Number of pregnancies of 7+ months duration
Mother's age at birth				
<20	6	23	31	959
20-29	32	75	32	3,343
30-39	25	35	43	1,410
40-49	5	15	*	207
Previous pregnancy interval in months[4]				
First pregnancy	15	33	37	1,290
<15	9	21	(83)	357
15-26	14	35	36	1,360
27-38	5	19	18	1,348
39+	26	40	42	1,564
Residence				
Urban	11	28	37	1,086
Rural	57	120	37	4,834
Province				
Nairobi	10	12	(65)	344
Central	5	16	44	471
Coast	7	16	46	502
Eastern	13	31	49	903
Nyanza	12	30	37	1,157
Rift Valley	19	25	26	1,660
Western	2	14	22	704
North Eastern	1	4	27	179
Mother's education				
No education	9	28	49	773
Primary incomplete	31	46	39	1,983
Primary complete	13	32	25	1,774
Secondary+	15	41	41	1,390
Wealth quintile				
Lowest	11	51	43	1,456
Second	17	24	34	1,207
Middle	11	29	36	1,095
Fourth	15	13	27	1,053
Highest	14	32	41	1,109
Total	68	149	37	5,920

Note: Figures in parentheses are based on 250-499 unweighted pregnancies; an asterisk denotes a figure based on fewer than 250 unweighted pregnancies that has been suppressed.
[1] Stillbirths are foetal deaths in pregnancies lasting seven or more months.
[2] Early neonatal deaths are deaths at age 0-6 days among live-born children.
[3] The sum of the number of stillbirths and early neonatal deaths divided by the number of pregnancies of seven or more months' duration, expressed per 1000.
[4] Categories correspond to birth intervals of <24 mos., 24-35 mos., 36-47 mos., and 48+ mos.

The highest perinatal mortality risk is experienced among mothers age 30-39 years (43 deaths per 1,000 pregnancies) when compared with mothers under age 30. There is no difference in the level of perinatal mortality by urban-rural residence (both 37 deaths per 1,000 pregnancies); a similar pattern was observed in the 2003 KDHS. There are no clear patterns in perinatal mortality by other characteristics of the mother, perhaps partly because small numbers make the rates more volatile.

8.6 HIGH-RISK FERTILITY BEHAVIOUR

Numerous studies have found a strong relationship between children's chances of dying and certain fertility behaviours. Typically, the probability of dying in early childhood is much greater if children are born to mothers who are too young or too old, if they are born after a short birth interval, or if they are born to mothers with high parity. Very young mothers may experience difficult pregnancies and deliveries because of their physical immaturity. Older women may also experience age-related problems during pregnancy and delivery. For purposes of this analysis a mother is classified as 'too young' if she is less than 18 years of age and 'too old' if she is over 34 years of age at the time of delivery; a 'short birth interval' is defined as a birth occurring within 24 months of a previous birth; and a 'high-order' birth is one occurring after three or more previous births (i.e. birth order 4 or higher). For the short birth interval category, only children with a preceding interval of less than 24 months are included. Short succeeding birth intervals are not included, even though they can influence the survivorship of a child, because of the problem of reverse causal effect (i.e., a short succeeding birth interval can be the result of the death of a child rather than being the cause of the death of a child).

Table 8.5 High-risk fertility behaviour

Percent distribution of children born in the five years preceding the survey by category of elevated risk of mortality and the risk ratio, and percent distribution of currently married women by category of risk if they were to conceive a child at the time of the survey, Kenya 2008-09

Risk category	Births in the 5 years preceding the survey: Percentage of births	Births in the 5 years preceding the survey: Risk ratio	Percentage of currently married women[1]
Not in any high-risk category	28.3	1.00	24.6[a]
Unavoidable risk category			
First order births between ages 18 and 34 years	16.9	1.02	4.3
Single high-risk category			
Mother's age <18	5.9	1.68	0.3
Mother's age >34	0.8	2.07	4.2
Birth interval <24 months	8.0	1.86	8.3
Birth order >3	21.7	1.20	17.2
Subtotal	36.3	1.44	30.0
Multiple high-risk category			
Age <18 & birth interval <24 months[2]	0.5	(0.94)	0.3
Age >34 & birth interval <24 months	0.1	*	0.0
Age >34 & birth order >3	8.9	1.22	25.3
Age >34 & birth interval <24 months & birth order >3	1.6	4.45	3.7
Birth interval <24 months & birth order >3	7.4	1.22	11.8
Subtotal	18.5	1.52	41.1
In any avoidable high-risk category	54.8	1.47	71.0
Total	100.0	na	100.0
Number of births/women	5,852	na	4,928

Note: Risk ratio is the ratio of the proportion dead among births in a specific high-risk category to the proportion dead among births *not in any high-risk category*. Numbers in parentheses are based on 25-49 unweighted births in the denominator of the ratio; an asterisk denotes a figure based on fewer than 25 unweighted births that has been suppressed.
na = Not applicable
[1] Women are assigned to risk categories according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age less than 17 years and 3 months or older than 34 years and 2 months, latest birth less than 15 months ago, or latest birth being of order 3 or higher.
[2] Includes the category age <18 and birth order >3
[a] Includes sterilized women

Table 8.5 shows the distribution of children born in the five years preceding the survey by risk category. Although first births to women age 18-34 are considered an unavoidable risk, they are included in the analysis and are shown as a separate risk category. Column one shows that only 28 percent or slightly more than one-quarter of children born in Kenya were not in any high-risk category. A further 17 percent of births are first births to mothers age 18-34 years—considered an unavoidable risk category. The remaining 55 percent of births are in at least one of the specified avoidable high-risk categories; 36 percent of births fall in the single high-risk category (with births of order 3 and above being the most common single high-risk category—21 percent), and 19 percent of births are in multiple high-risk categories. In the latter category, births to mothers older than 34 years and of birth order 3 and higher comprise the most common multiple high-risk category with 9 percent of births. Thus, only one in four births in Kenya falls in a low-risk mortality category, and the majority of births (55 percent) fall in an avoidable high-risk mortality category.

The last column in Table 8.5 looks to the future and addresses the question of how many currently married women have the potential for having a high-risk birth. The results were obtained by simulating the risk category into which a birth to a currently married woman would fall if she were to become pregnant at the time of the survey. This column therefore provides an insight into the magnitude of high-risk births in Kenya at the time of the survey. Overall, 71 percent of currently married women have the potential for having a high-risk birth, with 30 percent falling into a single high-risk category and 41 percent falling into a multiple high-risk category.

MATERNAL HEALTH 9

Ben Obonyo, Andolo Miheso, and Annah Wamae

The health care that a mother receives during pregnancy, at the time of delivery, and soon after delivery is important for the survival and well-being of both the mother and her child. This chapter presents new findings in these areas of importance to maternal health and also addresses problems in access to health care. These findings are important to those who formulate policies and programmes and also to those who design appropriate strategies and interventions to improve maternal and child health care services.

9.1 ANTENATAL CARE

Information on antenatal care is of great value in identifying subgroups of women who do not utilise such services and in planning improvements to these services. The data on antenatal care from the 2008-09 Kenya Demographic and Health Survey (KDHS) provide details on the type of service provider, the number of antenatal visits made, the stage of pregnancy at the time of the first and last visits, and the services and information provided during antenatal care, including whether tetanus toxoid was received.

9.1.1 Antenatal Care Coverage

The major objective of antenatal care during pregnancy is to identify and treat problems such as anaemia and infection. It is during an antenatal care visit that screening for complications occurs and advice is given on a range of issues, including place of delivery and referral of mothers. In the 2008-09 KDHS, interviewers asked each woman to give the source of antenatal care she may have received for her most recent birth and the name of the person who provided that care. If a woman received antenatal care from more than one provider, the provider with the highest level of qualifications was recorded. Table 9.1 shows the percent distribution of women who had a live birth in the five years preceding the survey, categorized by the type of antenatal care provider and by background characteristics.

The results in Table 9.1 indicate that 92 percent of women in Kenya receive antenatal care from a medical professional, either from doctors (29 percent), or nurses and midwives (63 percent). A very small fraction (less than one percent) receive antenatal care from traditional birth attendants, and 7 percent do not receive any antenatal care at all.

The 2008-09 data indicate a rise since 2003 in medical antenatal care coverage (Figure 9.1). Trends in use of antenatal care show that the proportion of women who had antenatal care from a trained medical provider for their most recent birth in the five years before the survey rose slightly, from 88 percent in 2003 to 92 percent in the current survey. Moreover, there has been a shift away from use of nurses and midwives (70 percent in 2003 down to 63 percent in 2008-09) towards doctors (18 percent in 2003 and up to 29 percent in 2008-09).

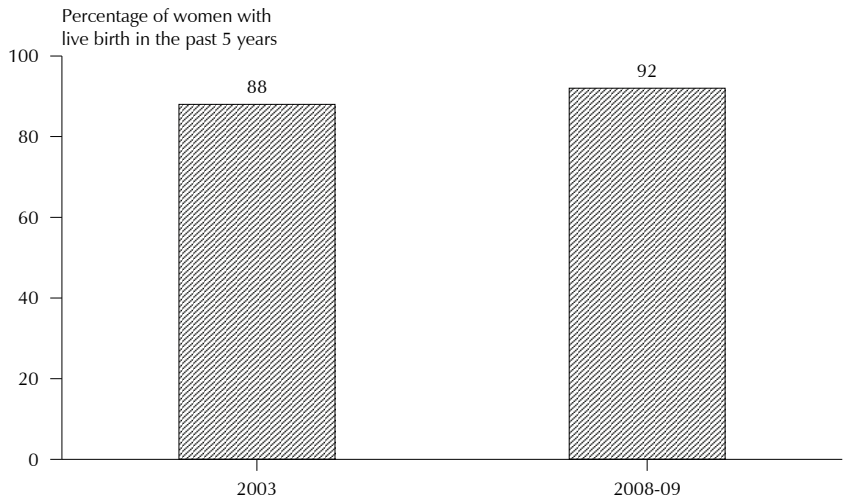
Table 9.1 Antenatal care

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey, by antenatal care provider during pregnancy, for the most recent birth and by percentage receiving antenatal care from a skilled provider[1] for the most recent birth, according to background characteristics, Kenya 2008-09

Background characteristic	Doctor	Nurse/ midwife	Community health worker	Traditional birth attendant	Other	No one	Missing	Total	Percentage receiving antenatal care from a skilled provider	Number of women
Mother's age at birth										
<20	29.9	58.7	0.6	1.0	0.0	9.9	0.0	100.0	88.5	564
20-34	29.0	64.3	0.1	0.7	0.0	5.7	0.1	100.0	93.3	2,883
35-49	27.2	57.5	0.2	1.1	0.7	13.3	0.0	100.0	84.7	526
Birth order										
1	33.8	58.7	0.4	0.5	0.0	6.7	0.0	100.0	92.4	847
2-3	32.5	61.3	0.2	1.1	0.0	4.8	0.1	100.0	93.7	1,531
4-5	26.8	66.9	0.0	0.3	0.1	5.9	0.0	100.0	93.7	829
6+	18.6	64.9	0.2	1.2	0.5	14.4	0.2	100.0	83.5	766
Residence										
Urban	40.5	55.3	0.6	0.6	0.0	3.0	0.0	100.0	95.8	823
Rural	25.9	64.5	0.1	0.9	0.1	8.4	0.1	100.0	90.3	3,150
Province										
Nairobi	38.3	58.1	0.2	0.1	0.0	3.3	0.0	100.0	96.4	269
Central	58.0	34.7	1.1	0.0	0.0	6.0	0.2	100.0	92.7	371
Coast	49.4	45.1	0.0	0.2	0.0	5.3	0.1	100.0	94.5	330
Eastern	25.4	68.1	0.0	0.0	0.5	6.1	0.0	100.0	93.4	630
Nyanza	20.5	73.2	0.0	1.2	0.0	5.2	0.0	100.0	93.6	733
Rift Valley	25.9	62.5	0.3	0.9	0.1	10.2	0.1	100.0	88.4	1,103
Western	15.6	75.9	0.0	2.8	0.0	5.6	0.2	100.0	91.5	442
North Eastern	3.5	66.0	0.3	0.2	0.0	28.9	1.0	100.0	69.5	97
Mother's education										
No education	21.0	51.4	0.2	1.5	0.9	24.7	0.4	100.0	72.4	441
Primary incomplete	24.7	66.0	0.1	1.3	0.0	7.8	0.1	100.0	90.7	1,262
Primary complete	29.9	65.2	0.4	0.2	0.0	4.2	0.1	100.0	95.0	1,225
Secondary+	36.1	60.2	0.1	0.7	0.0	3.0	0.0	100.0	96.3	1,045
Wealth quintile										
Lowest	19.9	63.7	0.0	1.0	0.5	14.6	0.3	100.0	83.6	843
Second	23.3	69.5	0.4	1.5	0.0	5.2	0.1	100.0	92.7	764
Middle	28.6	64.6	0.0	0.9	0.0	5.9	0.0	100.0	93.2	742
Fourth	33.2	59.5	0.5	0.4	0.0	6.4	0.0	100.0	92.7	765
Highest	39.2	56.4	0.1	0.3	0.0	4.0	0.0	100.0	95.6	859
Total	28.9	62.6	0.2	0.8	0.1	7.3	0.1	100.0	91.5	3,973

Note: If more than one source of antenatal care was mentioned, only the provider with the highest qualifications is considered in this tabulation.
[1] Skilled provider includes doctor, nurse, or midwife.

Figure 9.1 Trends in Receipt of Antenatal Care from a Skilled Medical Provider, Kenya 2003-2008



Examination of differentials in antenatal care in Table 9.1 shows that the mother's age at birth and the child's birth order are not strongly related to use of antenatal care, except that high-parity women are more likely than low-parity women not to see anyone for antenatal care. Rural women are less likely than their urban counterparts to get antenatal care from a doctor, and they are more likely to get no care at all. There are marked regional variations in anteneatal care coverage, with over one-quarter of women in North Eastern province not getting any antenatal care at all. Women in Western and Nyanza provinces have low use of doctors for antenatal care compared with their use of nurses, while for Coast and Central provinces the reverse is true.

Women's level of education is associated with antenatal care coverage. Women with higher education are much more likely to receive antenatal care from a medical doctor than are those with no education (36 percent versus 21 percent). The proportion of women who get no antenatal care declines steadily as education increases. One-quarter of women with no education get no antenatal care at all. Similarly, the higher the wealth quintile, the more likely a woman is to get antenatal care from a doctor. One in seven women in the lowest wealth quintile does not get any antenatal care.

9.1.2 Source of Antenatal Care

Table 9.2 shows the types of places where women say they obtain antenatal care. Because women can obtain care from several sources, multiple answers were allowed. The vast majority of women who obtain antenatal care go to government sources (83 percent). Use of private medical sources was reported by only 16 percent of women. The most common sources of antenatal care are government hospitals and government dispensaries.

Table 9.2 Source of antenatal care

Among women age 15-49 who had a live birth in the five years preceding the survey and who received antenatal care for the most recent birth, percentage who received antenatal care at specific types of facilities, according to residence and province, Kenya 2008-09

Source(s) of antenatal care	Residence		Region								Total
	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	
Home	0.5	1.6	0.0	0.0	0.4	0.3	0.4	2.3	4.6	2.6	1.4
Government sector	**76.0**	**85.0**	**61.9**	**81.8**	**90.8**	**85.6**	**86.3**	**83.4**	**78.8**	**97.0**	**83.0**
Government hospital	45.5	24.8	28.2	34.5	36.5	23.2	39.7	24.0	23.1	34.0	29.3
Government health centre	20.4	28.0	26.4	21.6	28.5	32.3	28.4	19.5	36.7	6.4	26.4
Government dispensary	10.5	32.8	7.5	26.2	28.1	31.0	19.4	40.0	19.2	53.4	28.0
Other public	0.2	0.4	0.0	0.4	0.4	0.3	0.0	0.7	0.1	3.7	0.4
Private medical sector	**25.0**	**14.0**	**40.2**	**19.0**	**9.6**	**15.0**	**13.7**	**14.2**	**18.7**	**0.5**	**16.4**
Mission hospital/clinic	7.0	7.4	10.8	11.2	1.6	6.7	3.7	9.0	10.0	0.0	7.3
Private hospital/clinic	16.9	6.1	27.1	7.2	7.9	8.2	9.5	4.6	7.5	0.5	8.5
Nursing/ maternity home	1.0	0.4	2.3	0.5	0.1	0.6	0.3	0.2	0.8	0.0	0.5
Other	0.6	0.7	1.5	0.0	0.2	0.5	0.6	1.0	0.6	0.0	0.7
Number of women	798	2,882	260	348	312	591	695	990	416	68	3,680

The public-private distribution of sources for antenatal care differs for urban and rural women; urban women are more likely to go to government hospitals and private hospitals and clinics than are rural women, who are more likely to visit government dispensaries and health centres. Women in Nairobi use private sources more than women in other provinces, and women in North Eastern and Coast provinces are most likely to visit public (government) sources for antenatal care. Five percent of women in Western province reported having received antenatal care at home. The proportion of women in North Eastern province receiving antenatal care at home declined from 22 percent in 2003 to 3 percent in 2008-09.

9.1.3 Number and Timing of Antenatal Care Visits

Antenatal care is more beneficial in preventing adverse pregnancy outcomes when it is sought early in the pregnancy and is continued through delivery. Early detection of problems in pregnancy leads to more timely referrals in the case of women in high-risk categories or with complications; this is particularly true in Kenya, where three-quarters of the population lives in rural areas and where physical barriers pose a challenge to health care delivery. Health professionals recommend that the first antenatal visit occur within the first three months of pregnancy, that subsequent visits continue on a monthly basis through the 28th week of pregnancy, and that visits thereafter take place every two weeks up to the 36th week (or until birth). Under normal circumstances, WHO recommends that a woman without complications should have at least four antenatal care visits, the first of which should take place during the first trimester. Table 9.3 presents information on the number of visits and the timing of the first visit.

In Kenya, less than half (47 percent) of pregnant women make four or more antenatal visits. Sixty percent of urban women make four or more antenatal care visits, compared with less than half of rural women (44 percent).

Moreover, most women do not receive antenatal care early in the pregnancy. Only 15 percent of women obtain antenatal care in the first trimester of pregnancy, and only about half (52 percent) receive care before the sixth month of pregnancy. Overall, the median number of months of pregnancy at first visit is 5.7.

Comparing trends since the 2003 KDHS, the analysis shows a continuing decline in the proportion of women who make four or more antenatal visits, from 52 percent in 2003 to 47 percent in 2008-09. This decline should translate to a call for programme interventions that will encourage more women to have regular antenatal visits throughout the pregnancy. Overall, there has been only a slight improvement in the pattern of antenatal attendance by gestational age. The median gestational age at first visit has decreased slightly, from 5.9 months in the 2003 KDHS to 5.7 months in the 2008-09 survey.

Table 9.3 Number of antenatal care visits and timing of first visit

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey by number of antenatal care visits for the most recent live birth, byby the timing of the first visit, and among women with antenatal care, median months pregnant at first visit, according to residence, Kenya 2008-09

Number and timing of antenatal visits	Residence		Total
	Urban	Rural	
Number of antenatal visits			
None	3.0	8.4	7.3
1	3.6	4.5	4.3
2-3	29.8	41.7	39.2
4+	59.9	43.8	47.1
Don't know/missing	3.7	1.6	2.0
Total	100.0	100.0	100.0
Number of months pregnant at time of first antenatal visit			
No antenatal care	3.0	8.4	7.3
<4	21.1	12.9	14.6
4-5	37.1	37.8	37.7
6-7	34.6	37.3	36.8
8+	3.8	3.2	3.3
Don't know/missing	0.3	0.3	0.3
Total	100.0	100.0	100.0
Number of women	823	3,150	3,973
Median months pregnant at first visit (for those with antenatal care)	5.6	5.8	5.7
Number of women with antenatal care	798	2,882	3,680

9.1.4 Components of Antenatal Care

Measuring the content of antenatal care is essential for assessing the quality of antenatal care services. Pregnancy complications are a primary source of maternal and child morbidity and mortality. Therefore, pregnant women should routinely receive information on the signs of complications and be tested for them at all antenatal care visits. To help assess the quality of antenatal services, respondents were asked whether they had been advised of complications or received certain screening tests during at least one of their antenatal care visits. Table 9.4 presents information on the percentage of women who took iron tablets or syrup, who took medicine for intestinal parasites, who were informed of the signs of pregnancy complications, and who received selected services during antenatal care visits for their most recent birth in the last five years.

Table 9.4 shows that two-thirds of women with a live birth in the last five years took iron tablets or syrup during the pregnancy of their most recent birth. In comparison, only 17 percent took drugs for intestinal parasites. Women residing in urban areas and those with a higher level of education are more likely to take iron supplements than rural and less educated women. Women in Coast province are the most likely and those in North Eastern province are the least likely to take iron tablets or syrup. Generally, the higher the wealth quintile, the more likely a woman is to take iron supplements during pregnancy. These patterns are similar for women who take drugs to eliminate intestinal parasites.

Table 9.4 Components of antenatal care

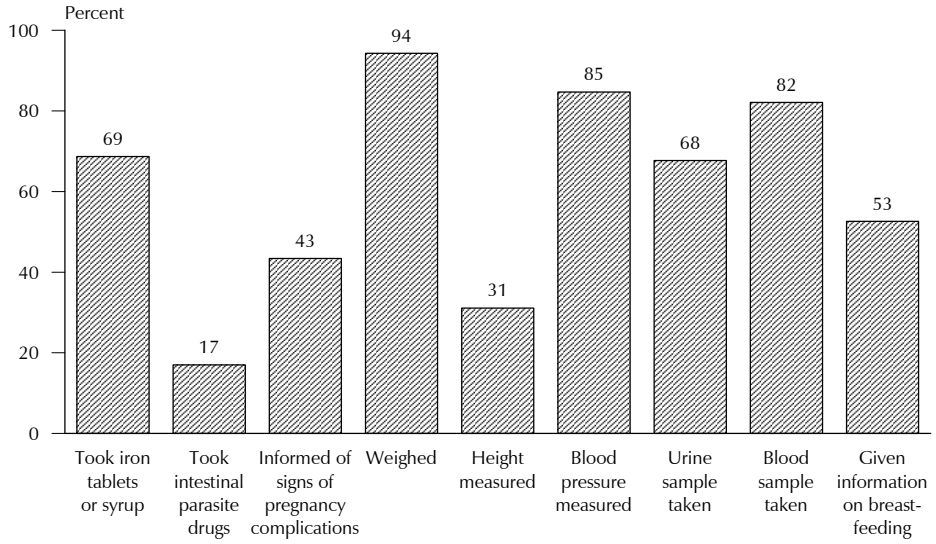
Among women age 15-49 with a live birth in the five years preceding the survey, the percentage who took iron tablets or syrup and drugs for intestinal parasites during the pregnancy of the most recent birth, and among women receiving antenatal care for the most recent live birth in the five years preceding the survey, the percentage receiving specific antenatal services, according to background characteristics, Kenya 2008-09

	Among women with a live birth in the last five years, the percentage who during the pregnancy of their last birth:			Among women who received antenatal care for their most recent birth in the last five years, the percentage who received selected services:							
Background characteristic	Took iron tablets or syrup	Took intestinal parasite drugs	Number of women with a live birth in the last five years	Informed of signs of pregnancy complications	Weighed	Height measured	Blood pressure measured	Urine sample taken	Blood sample taken	Given information on breast-feeding	Number of women with antenatal care for their most recent birth
Mother's age at birth											
<20	64.9	15.4	564	40.4	92.3	33.4	77.7	62.5	82.5	46.6	508
20-34	70.7	17.9	2,883	44.2	95.1	31.3	85.7	69.4	82.9	54.0	2,715
35-49	62.2	13.9	526	41.7	92.1	27.6	86.7	62.9	76.8	50.9	456
Birth order											
1	68.5	20.2	847	48.6	94.2	37.3	86.6	75.0	87.3	53.6	790
2-3	71.6	16.2	1,531	46.0	95.3	32.1	85.2	72.2	85.1	55.9	1,455
4-5	69.9	19.3	829	41.2	94.4	28.5	85.2	64.3	79.3	50.8	781
6+	62.1	12.7	766	34.1	92.0	24.5	80.9	52.5	72.0	46.4	654
Residence											
Urban	73.8	19.6	823	59.4	97.3	44.2	96.3	88.1	95.2	65.8	798
Rural	67.4	16.4	3,150	39.0	93.5	27.5	81.5	62.0	78.4	49.0	2,882
Province											
Nairobi	63.7	8.8	269	67.2	98.0	63.8	98.4	96.0	97.5	69.5	260
Central	70.8	24.8	371	55.7	95.2	30.8	95.5	88.7	91.3	71.1	348
Coast	76.6	28.7	330	44.7	97.4	27.6	95.0	87.5	93.9	44.0	312
Eastern	71.2	20.2	630	46.2	94.4	20.0	84.0	63.2	82.7	53.9	591
Nyanza	76.1	13.2	733	33.3	95.2	37.5	72.3	53.6	76.9	41.9	695
Rift Valley	66.4	16.6	1,103	38.8	94.1	28.8	85.1	65.8	80.5	52.2	990
Western	63.5	12.4	442	44.2	93.8	25.6	83.1	55.2	72.5	53.9	416
North Eastern	27.0	5.8	97	24.3	57.7	21.9	68.0	45.7	49.7	28.9	68
Mother's education											
No education	49.1	12.7	441	32.6	82.5	22.7	80.5	58.8	68.6	37.6	331
Primary incomplete	67.5	13.6	1,262	34.3	95.0	26.0	80.0	56.2	76.9	46.4	1,163
Primary complete	72.1	17.8	1,225	43.8	94.7	32.8	85.4	68.4	83.2	53.4	1,172
Secondary+	74.6	22.2	1,045	56.8	96.9	37.7	90.7	82.8	91.1	63.7	1,015
Wealth quintile											
Lowest	60.8	11.4	843	32.6	88.6	25.1	76.4	50.5	71.7	43.2	717
Second	70.9	15.3	764	34.1	94.4	27.1	79.4	56.8	73.5	45.5	723
Middle	68.9	18.4	742	39.4	93.0	29.1	83.5	64.3	81.5	47.6	698
Fourth	70.4	21.7	765	49.6	97.0	27.9	87.8	75.1	87.0	58.2	716
Highest	73.0	18.8	859	58.9	97.9	44.3	95.0	88.3	94.8	66.3	825
Total	68.7	17.0	3,973	43.4	94.3	31.1	84.7	67.7	82.1	52.6	3,680

Among women who received antenatal care for their most recent birth in the five years before the survey, 43 percent reported that they had been informed of the signs of pregnancy complications. Urban women and those with more education are more likely to be informed of signs of pregnancy complications than are rural and less educated women. Similarly, the likelihood of a woman being informed of signs of pregnancy complications declines as the birth order increases. Except in Nairobi and Central provinces, less than half of women in other provinces have been informed of signs of pregnancy complications. Women in the highest wealth quintile are almost twice as likely to receive information on pregnancy complications as are those in the lowest quintile.

Among women receiving antenatal care, 94 percent said they were weighed, 31 percent had their height measured, and 85 percent had their blood pressure measured (Figure 9.2). Two-thirds of women had a urine sample taken, and 82 percent had a blood sample taken. Fifty-three percent of pregnant women said they were given information on breastfeeding.

Figure 9.2 **Components of Antenatal Care**



Kenya 2008-09

Socioeconomic characteristics that are related to obtaining quality antenatal care include residence, level of education, and wealth. Women receiving antenatal care in urban areas are more likely than rural women to receive all the specified components of antenatal care. Similarly, women with more education and those higher on the wealth index are more likely to receive most of the components of antenatal care than are less educated and poorer women. In general, women in Nairobi who receive antenatal care are the most likely and those in North Eastern province are the least likely to receive the stated services. The only exception is height measurement, which pregnant women in Eastern province who receive antenatal care are the least likely to receive.

9.2 TETANUS TOXOID INJECTIONS

Neonatal tetanus is a leading cause of neonatal deaths in developing countries where a high proportion of deliveries are conducted at home or in places where hygienic conditions do not exist. Tetanus toxoid (TT) immunisation is given to pregnant women to prevent neonatal tetanus. If a woman has received no previous TT injections, she needs two doses of TT during pregnancy for full protection. However, if a woman was immunised before she became pregnant, she may require one injection or not require any TT injections during pregnancy, depending on the number of injections she has already received and the timing of the last injection. For a woman to have lifetime protection, a total of five doses are required.

The 2008-09 Kenya DHS collected data on whether or not women received at least two TT injections during pregnancy and whether or not births are protected against neonatal tetanus. These results are presented in Table 9.5 for women's most recent live birth in the five years preceding the survey.

Table 9.5 shows that 55 percent of mothers receive two or more doses of tetanus toxoid during pregnancy. Mothers with lower parity and those residing in urban areas are more likely to receive two TT injections than those with higher parity and those residing in rural areas. Similarly, wealthy and highly educated women are more likely than poor and less educated women to receive two injections during pregnancy. Coverage with at least two doses ranges from 48 percent of women in both Rift Valley and Western provinces to 70 percent of those in Central province.

Table 9.5 also indicates that 73 percent of recent births are protected against neonatal tetanus. Births to less educated women—especially those to women with no education—are less likely to be protected against neonatal tetanus than those to more educated women. Coverage against neonatal tetanus ranges from 63 percent of women in North Eastern province to 82 percent of those in Central province.

There has been little change in the proportion of women receiving tetanus toxoid injections during pregnancy. The proportion of women who received two or more tetanus injections during the pregnancy that resulted in their most recent birth in the five years before the survey increased from 52 percent in 2003 to 55 percent in 2008-09.

Table 9.5 Tetanus toxoid injections

Among mothers age 15-49 with a live birth in the five years preceding the survey, the percentage receiving two or more tetanus toxoid (TT) injections during the pregnancy for the last live birth and the percentage whose last live birth was protected against neonatal tetanus, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage receiving two or more injections during last pregnancy	Percentage whose last birth was protected against neonatal tetanus[1]	Number of mothers
Mother's age at birth			
<20	56.0	65.3	564
20-34	56.3	74.9	2,883
35-49	46.9	66.8	526
Birth order			
1	61.8	66.6	847
2-3	57.6	77.8	1,531
4-5	54.9	75.5	829
6+	42.6	65.0	766
Residence			
Urban	58.4	74.1	823
Rural	54.2	72.0	3,150
Province			
Nairobi	60.8	73.5	269
Central	69.8	81.8	371
Coast	63.7	77.7	330
Eastern	60.7	76.6	630
Nyanza	51.9	73.9	733
Rift Valley	47.7	65.1	1,103
Western	48.2	72.2	442
North Eastern	55.6	63.1	97
Mother's education			
No education	49.5	59.0	441
Primary incomplete	53.7	71.4	1,262
Primary complete	55.9	75.3	1,225
Secondary+	57.9	76.2	1,045
Wealth quintile			
Lowest	49.3	65.8	843
Second	54.4	74.4	764
Middle	56.7	73.2	742
Fourth	58.3	75.3	765
Highest	56.9	74.1	859
Total	55.0	72.5	3,973

[1] Includes mothers with two injections during the pregnancy of her last birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last birth), or four or more injections (the last within ten years of the last live birth), or five or more injections prior to the last birth.

9.3 PLACE OF DELIVERY

Increasing the proportion of babies 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 9.6 presents the percent distribution of live births in the five years preceding the survey, by place of delivery and according to background characteristics.

Results in Table 9.6 indicate that 43 percent of births in Kenya are delivered in a health facility, while 56 percent of births take place at home. Births to older women and births of higher order are more likely to occur at home. Similarly, mothers in rural areas are more than twice as likely to deliver at home compared with those in urban areas. The proportion of children born at home decreases as level of education and wealth quintile of the mother increase. For example, 84 percent of children whose mothers have no education are born at home, compared with 27 percent of those whose mothers have some secondary education. Similarly, children whose mothers had more antenatal care visits during the pregnancy are less likely to deliver at home. The proportion of births that take place at home is also substantially lower (10 percent) in Nairobi province than in North Eastern province (81 percent).

There has been some change since 2003 in the proportion of births occurring at home. Births at home declined from 59 percent in 2003 to 56 percent in the 2008-09 survey. It is also interesting to note that while the proportion of births in a public facility increased from 26 percent in 2003 to 32 percent in 2008-09, the proportion of births taking place in private facilities declined from 14 percent to 10 percent.

Table 9.6 Place of delivery

Percent distribution of live births in the five years preceding the survey by place of delivery and percentage delivered in a health facility, according to background characteristics, Kenya 2008-09

Background characteristic	Health facility		Home	En route	Other/ missing	Total	Percentage delivered in a health facility	Number of births
	Public sector	Private sector						
Mother's age at birth								
<20	37.3	9.3	52.6	0.6	0.3	100.0	46.6	953
20-34	32.0	10.7	56.2	0.8	0.3	100.0	42.7	4,234
35-49	27.2	9.0	61.4	1.8	0.5	100.0	36.2	665
Birth order								
1	47.2	13.9	37.7	0.9	0.3	100.0	61.1	1,310
2-3	33.8	11.9	53.5	0.7	0.2	100.0	45.7	2,225
4-5	23.6	9.3	65.8	1.1	0.2	100.0	32.9	1,252
6+	21.2	3.6	73.3	1.3	0.6	100.0	24.8	1,066
Antenatal care visits[1]								
None	5.1	5.6	87.5	1.2	0.6	100.0	10.7	290
1-3	29.7	8.5	60.7	1.1	0.1	100.0	38.2	1,730
4+	44.6	15.7	38.4	1.3	0.1	100.0	60.3	1,872
Residence								
Urban	51.6	23.1	24.5	0.3	0.6	100.0	74.7	1,074
Rural	28.0	7.4	63.3	1.1	0.3	100.0	35.4	4,777
Province								
Nairobi	45.7	43.7	9.9	0.0	0.7	100.0	89.4	334
Central	56.7	16.2	25.9	1.0	0.1	100.0	73.0	466
Coast	38.0	6.4	54.6	0.7	0.3	100.0	44.4	495
Eastern	33.5	9.3	54.8	2.0	0.4	100.0	42.8	890
Nyanza	34.7	9.4	54.9	0.9	0.0	100.0	44.2	1,145
Rift Valley	26.0	6.8	66.3	0.7	0.3	100.0	32.9	1,642
Western	19.1	6.3	73.3	0.9	0.5	100.0	25.3	703
North Eastern	16.6	0.7	81.3	0.0	1.4	100.0	17.3	178
Mother's education								
No education	12.3	2.8	83.5	0.7	0.6	100.0	15.0	763
Primary incomplete	23.6	4.4	70.8	0.9	0.3	100.0	28.0	1,952
Primary complete	37.1	10.9	51.0	0.9	0.1	100.0	48.1	1,761
Secondary+	49.6	22.0	27.0	1.0	0.3	100.0	71.6	1,375
Wealth quintile								
Lowest	16.0	2.1	80.9	0.8	0.3	100.0	18.0	1,445
Second	23.1	7.3	68.3	1.1	0.2	100.0	30.4	1,190
Middle	36.2	5.4	56.7	1.4	0.3	100.0	41.6	1,085
Fourth	39.9	11.6	47.2	1.2	0.2	100.0	51.4	1,038
Highest	52.9	28.0	18.4	0.1	0.6	100.0	80.9	1,095
Total	32.3	10.3	56.2	0.9	0.3	100.0	42.6	5,852

Note: Total includes 81 women with information missing on number of antenatal visits.
[1] Includes only the most recent birth in the five years preceding the survey

Women whose most recent birth in the five years before the survey did not occur in a health facility were asked why they did not deliver in a facility. As shown in Table 9.7, the main reasons given for not delivering in a health facility were that it was too far away or that there was no transport to get to the facility, or both (42 percent) and that it was not necessary (21 percent). Also cited frequently are that the delivery occurred too fast to get to a facility (18 percent) and that it cost too much to deliver in a facility (17 percent). Very few women said they did not deliver in a facility because there were no female providers at the facility, it was not customary, their husband or family did not allow it, quality of service was poor, or the facility was not open.

Table 9.7 Reason for not delivering in a health facility

Percentage of last live births in the five years preceding the survey not delivered in a health facility by reason for not delivering in a health facility, according to background characteristics, Kenya 2008-09

Background characteristic	Cost too much	Facility not open	Too far/ no transport	Poor quality service	No female provider	Husband/ family did not allow	Not necessary	Not customary	Abrupt delivery	Number of births not delivered in a health facility
Mother's age at birth										
<20	19.5	4.7	44.8	3.2	1.0	2.0	25.2	0.9	11.2	265
20-34	17.0	4.7	42.1	2.3	0.4	1.0	19.1	1.5	19.5	1,517
35-49	14.3	1.6	39.5	0.8	0.4	1.3	28.1	1.2	17.0	331
Birth order										
1	17.4	4.5	39.7	0.7	0.6	2.1	21.2	0.6	23.6	285
2-3	17.1	5.3	41.5	2.9	0.5	1.2	19.0	1.3	17.8	744
4-5	16.5	4.3	43.1	2.5	0.2	0.2	18.3	2.2	19.1	522
6+	16.6	2.7	42.9	1.7	0.7	1.5	27.1	1.1	14.6	562
Antenatal care visits										
None	16.8	5.1	38.6	1.7	2.1	2.4	33.2	2.6	9.4	259
1-3	17.7	2.5	44.6	1.9	0.2	1.0	21.5	0.5	17.0	1,069
4+	16.5	6.5	41.3	2.8	0.5	1.1	17.3	2.2	20.4	743
Residence										
Urban	15.8	8.8	30.2	2.0	0.2	0.4	21.5	1.1	21.8	199
Rural	17.0	3.8	43.2	2.2	0.5	1.2	21.2	1.4	17.7	1,914
Province										
Nairobi	34.2	4.5	38.6	0.4	0.0	0.0	14.8	0.0	21.3	26
Central	13.3	0.7	37.0	0.0	0.0	0.0	22.0	2.1	25.2	95
Coast	14.3	1.3	32.5	2.1	0.0	0.8	36.1	1.4	18.5	168
Eastern	21.6	0.1	42.3	1.2	0.5	0.0	9.6	1.2	21.4	317
Nyanza	17.2	7.1	45.7	0.7	0.3	1.3	8.2	0.8	24.2	386
Rift Valley	14.1	2.8	42.2	1.1	0.0	1.1	31.3	1.9	15.7	731
Western	22.2	6.2	42.7	4.7	0.2	2.6	18.9	0.9	14.3	312
North Eastern	4.9	22.4	46.4	17.3	9.0	2.8	18.6	1.7	0.5	78
Mother's education										
No education	17.1	5.4	50.8	4.2	2.2	1.6	24.0	3.5	8.0	364
Primary incomplete	21.3	3.9	40.9	2.9	0.1	1.1	20.9	0.4	17.4	868
Primary complete	14.8	2.7	39.1	0.6	0.2	0.9	22.7	1.8	20.5	604
Secondary+	7.1	6.9	40.2	0.9	0.0	1.3	15.5	0.7	28.0	277
Wealth quintile										
Lowest	17.4	4.4	49.4	2.3	1.0	2.0	18.4	2.7	14.8	683
Second	17.7	3.5	37.0	2.8	0.2	0.3	21.0	0.5	19.3	516
Middle	18.4	3.5	41.9	2.0	0.3	1.5	25.0	0.3	17.1	406
Fourth	14.5	6.6	42.6	1.0	0.2	0.5	21.7	1.8	16.1	344
Highest	13.6	2.7	26.3	2.5	0.2	1.1	23.7	0.2	34.0	164
Total	16.9	4.2	42.0	2.2	0.5	1.2	21.3	1.4	18.1	2,113

Note: Total includes 43 women missing information as to number of ANC visits.

Differences by age at birth, birth order, and number of antenatal care visits are not major, although women with more antenatal visits are more likely than those with no antenatal care to say they did not deliver in a facility because of an abrupt delivery. As expected, women in rural areas are more likely than those in urban areas to say they did not deliver in a health facility because it was too far or they lacked transport.

Women in Nairobi who did not deliver in a facility are more likely to cite high cost as a factor than are women in other provinces. Women in North Eastern province are far less likely to cite cost as a factor, but they are far more likely than women in other provinces to say they did not deliver in a facility because of poor quality of service and distance from a facility. Abrupt deliveries are a more important factor in not having facility-based deliveries for more educated and wealthier women than they are for those with less education and wealth.

9.4 ASSISTANCE DURING DELIVERY

In addition to place of birth, assistance during childbirth is an important variable that influences the birth outcome and the health of the mother and the infant. The skills and performance of the birth attendant determine whether or not he or she can manage complications and observe hygienic practices. Table 9.8 shows the percent distribution of live births in the five years preceding the survey by the person providing assistance, according to background characteristics. This table also presents data on prevalence of births by caesarean section.

Table 9.8 Assistance during delivery

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery, percentage of births assisted by a skilled provider, and percentage delivered by caesarean-section, according to background characteristics, Kenya 2008-09

Background characteristic	Person providing assistance during delivery								Percentage delivered by a skilled provider[1]	Percentage delivered by C-section	Number of births
	Doctor	Nurse/ midwife	Other health worker	Tradi-tional birth attendant	Relative/ other	No one	Don't know/ missing	Total			
Mother's age at birth											
<20	18.3	29.4	0.8	28.5	20.3	2.6	0.1	100.0	47.7	5.8	953
20-34	16.0	27.9	0.4	28.0	20.9	6.4	0.2	100.0	43.9	6.6	4,234
35-49	13.0	24.3	0.3	23.2	23.9	15.1	0.1	100.0	37.4	4.5	665
Birth order											
1	25.4	36.9	0.5	21.6	14.7	0.9	0.1	100.0	62.2	11.2	1,310
2-3	17.4	29.2	0.7	28.3	20.6	3.8	0.2	100.0	46.5	6.4	2,225
4-5	11.4	22.8	0.2	28.2	25.9	11.2	0.2	100.0	34.2	4.3	1,252
6+	7.1	19.4	0.4	32.6	25.0	15.1	0.4	100.0	26.5	2.1	1,066
Place of delivery											
Health facility	37.3	62.4	0.0	0.1	0.2	0.1	0.0	100.0	99.7	14.7	2,493
Elsewhere	0.2	2.1	0.8	48.2	36.9	11.8	0.0	100.0	2.2	0.0	3,346
Residence											
Urban	28.3	46.5	0.1	15.2	7.8	1.6	0.5	100.0	74.8	11.3	1,074
Rural	13.3	23.5	0.6	30.4	24.2	8.0	0.1	100.0	36.8	5.1	4,777
Province											
Nairobi	33.7	55.2	0.1	5.6	3.7	1.2	0.5	100.0	88.9	11.5	334
Central	45.0	28.8	0.1	1.7	17.8	6.6	0.0	100.0	73.8	14.5	466
Coast	21.3	24.3	0.2	21.0	27.5	5.4	0.3	100.0	45.6	5.9	495
Eastern	16.9	26.2	0.0	27.8	26.0	2.9	0.2	100.0	43.1	7.9	890
Nyanza	13.5	32.0	1.5	26.2	20.5	6.3	0.0	100.0	45.5	4.4	1,145
Rift Valley	10.0	23.7	0.4	30.7	26.7	8.3	0.1	100.0	33.7	5.1	1,642
Western	5.5	20.3	0.1	45.0	14.2	14.6	0.3	100.0	25.8	3.5	703
North Eastern	1.0	30.6	0.7	64.2	1.9	0.0	1.6	100.0	31.6	0.6	178
Mother's education											
No education	6.6	12.7	0.3	42.1	29.0	8.8	0.6	100.0	19.2	1.2	763
Primary incomplete	9.7	18.8	0.6	35.8	26.1	8.8	0.3	100.0	28.5	3.4	1,952
Primary complete	18.8	30.1	0.5	24.3	19.8	6.5	0.0	100.0	48.9	6.7	1,761
Secondary+	26.6	45.9	0.5	12.1	11.6	3.2	0.1	100.0	72.5	12.4	1,375
Wealth quintile											
Lowest	5.6	14.7	0.7	43.9	26.7	8.1	0.2	100.0	20.3	2.0	1,445
Second	11.8	19.6	0.3	33.5	25.9	8.9	0.1	100.0	31.3	3.1	1,190
Middle	14.5	27.4	0.5	25.0	24.6	7.7	0.3	100.0	41.9	6.4	1,085
Fourth	19.1	33.7	0.6	22.1	18.6	5.8	0.0	100.0	52.9	7.1	1,038
Highest	32.9	48.5	0.2	7.3	7.8	2.8	0.4	100.0	81.4	14.3	1,095
Total	16.0	27.8	0.5	27.6	21.2	6.8	0.2	100.0	43.8	6.2	5,852

Note: If the respondent mentioned more than one person attending during delivery, only the most qualified person is considered in this tabulation. Total includes 13 births with information missing about place of delivery.
[1] Skilled provider includes doctor, nurse, or midwife.

Overall, 44 percent of births in Kenya are delivered under the supervision of a skilled birth attendant, usually a nurse or midwife. Traditional birth attendants continue to play a vital role in delivery, assisting with 28 percent of births (the same percentage as are assisted by nurses and midwives). Relatives and friends assist with 21 percent of births, and for 7 percent of births, mothers do not receive any form of assistance.

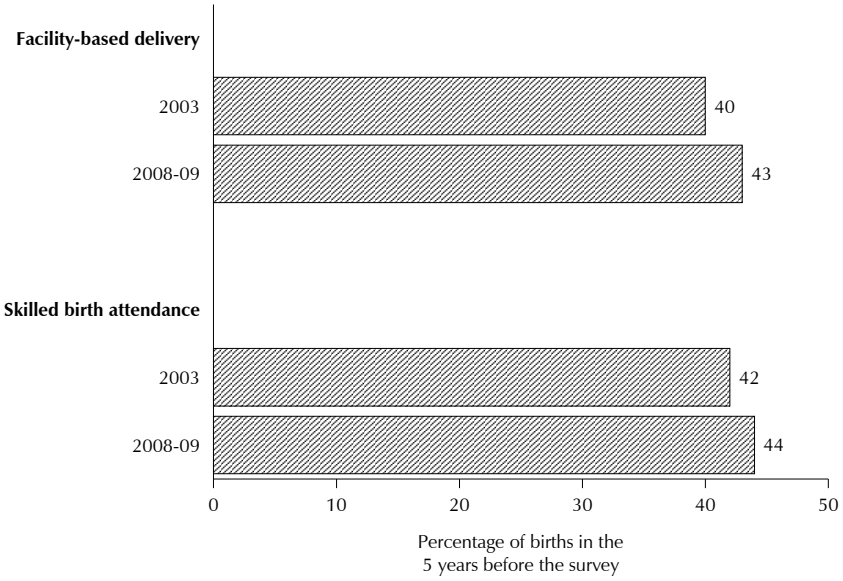
Maternal age and the child's birth order are associated with the type of assistance at delivery. Births to older women and those of higher birth order are more likely to occur with no assistance, compared with births to younger women and those of lower birth order.

As expected, births in urban areas and births to mothers who have more education or wealth are more likely to be assisted by medical personnel than are those births to mothers who reside in rural areas or who have less education or wealth. Regional differentials in type of assistance at delivery are also pronounced, with Western province recording the lowest proportion (26 percent) of births assisted by medical professionals, followed by North Eastern province (32 percent). Nairobi has the highest proportion of births assisted by medical personnel (89 percent).

Although 32 percent of births in North Eastern province are attended by a skilled provider, only 17 percent occur in a health facility. North Eastern province is the only province in Kenya where a sizeable proportion of births are attended by skilled providers at home.

The proportion of births assisted by medically trained personnel has increased marginally—from 42 percent in 2003 to 44 percent in the 2008-09 survey (Figure 9.3).

Figure 9.3 Trends in Delivery Care



The 2008-09 KDHS indicates that 6 percent of births in Kenya are delivered by caesarean section, slightly higher than the 4 percent recorded in the 2003 KDHS. Births of lower order and those in urban areas are more likely to be delivered by caesarean section compared with those of higher order and those in rural areas. As expected, births to mothers who have more education or who are in wealthier quintiles are more likely to be delivered by caesarean section than those whose mothers have less education or are in poorer wealth quintiles. There are regional differentials in the proportion of births delivered by caesarean section, with North Eastern province recording the lowest proportion (less than one percent) followed by Western province (4 percent). Central province has the highest proportion of births delivered by caesarean section (15 percent).

9.5 POSTNATAL CARE

A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery. Thus, postnatal care is important for both the mother and the child to treat complications arising from the delivery, as well as to provide the mother with important information on how to care for herself and her child. It is recommended that all women receive a check on their health within two days of delivery. To assess the extent of postnatal care utilisation, respondents were asked whether, for their most recent birth in the five years preceding the survey, they had received a health check after the delivery, and if so, the timing of the first check-up and the type of health provider performing it. This information is presented according to background characteristics in Tables 9.9 and 9.10.

Table 9.9 Timing of first postnatal checkup

Among women age 15-49 giving birth in the five years preceding the survey, the percent distribution of the mother's first postnatal check-up for the last live birth by time after delivery, according to background characteristics, Kenya 2008-09

Background characteristic	Time after delivery of mother's first postnatal checkup							
	Less than 4 hours	4-23 hours	2 days	3-41 days	Don't know/ missing	No postnatal checkup[1]	Total	Number of women
Mother's age at birth								
<20	27.8	7.9	7.7	1.9	1.0	53.8	100.0	564
20-34	28.3	7.4	7.1	4.3	1.1	51.7	100.0	2,883
35-49	25.0	7.0	4.9	5.1	1.7	56.3	100.0	526
Birth order								
1	35.9	8.5	8.1	1.7	1.4	44.3	100.0	847
2-3	28.8	7.8	8.4	4.0	1.1	50.0	100.0	1,531
4-5	23.3	6.4	5.7	4.7	1.0	58.9	100.0	829
6+	21.7	6.6	4.0	6.1	1.4	60.2	100.0	766
Residence								
Urban	41.8	10.1	10.5	3.5	1.9	32.2	100.0	823
Rural	24.1	6.7	6.0	4.2	1.0	58.0	100.0	3,150
Province								
Nairobi	57.5	7.7	11.5	2.1	2.8	18.4	100.0	269
Central	27.8	13.0	8.0	4.2	2.8	44.2	100.0	371
Coast	26.0	8.6	8.3	6.3	0.9	50.0	100.0	330
Eastern	28.7	7.5	7.4	4.2	0.6	51.5	100.0	630
Nyanza	20.2	3.9	4.5	4.2	1.3	65.8	100.0	733
Rift Valley	28.3	9.4	6.8	3.5	1.0	51.1	100.0	1,103
Western	25.2	3.0	6.8	4.5	0.4	60.0	100.0	442
North Eastern	8.8	4.7	2.5	4.1	0.6	79.3	100.0	97
Education								
No education	18.5	6.2	2.2	5.4	0.4	67.3	100.0	441
Primary incomplete	22.8	5.2	6.0	4.6	0.7	60.6	100.0	1,262
Primary complete	28.0	7.8	7.6	3.2	1.3	52.1	100.0	1,225
Secondary+	37.5	10.1	9.2	3.9	2.0	37.3	100.0	1,045
Wealth quintile								
Lowest	20.9	6.0	3.9	4.5	0.1	64.6	100.0	843
Second	20.2	5.8	4.7	4.4	1.3	63.7	100.0	764
Middle	25.5	7.0	6.5	4.3	0.9	55.8	100.0	742
Fourth	31.3	6.7	7.0	4.3	1.7	49.1	100.0	765
Highest	40.2	11.2	12.1	3.0	2.0	31.4	100.0	859
Total	27.8	7.4	6.9	4.1	1.2	52.6	100.0	3,973

[1] Includes women who received a checkup after 41 days

Table 9.9 shows that 53 percent of women do not receive postnatal care. Slightly more than one quarter (28 percent) of women receive postnatal care within four hours of delivery, while 7 percent receive care between 4 and 23 hours after delivery. Another 7 percent receive a check-up within two days of delivery, and four percent receive care between three and 41 days after delivery.

Births of higher order and those in rural areas are more likely not to receive postnatal care than those of lower order and those in urban areas. Similarly, mothers in the lowest wealth quintile are twice as likely not to utilise postnatal care services as are women in the highest wealth quintile. The proportion of women who do not receive postnatal care decreases with increasing level of education. Women with at least some secondary education, those in urban areas, and those in the highest wealth quintile are more likely than other women to utilise postnatal services.

There are wide provincial differentials in the proportion of mothers who do not receive postnatal care. For example, 79 percent of those in North Eastern province do not receive postnatal care, compared with 18 percent of those in Nairobi province. Nairobi province shows the highest proportion of women receiving postnatal care within four hours of birth (58 percent) compared with the lowest proportion in North Eastern (9 percent).

Table 9.10 Type of provider of first postnatal checkup

Among women age 15-49 giving birth in the five years preceding the survey, the percent distribution by type of provider of the mother's first postnatal health check for the last live birth, according to background characteristics, Kenya 2008-09

Background characteristic	Type of health provider of mother's first postnatal checkup						
	Doctor/ nurse/ midwife	Com-munity health worker	Traditional birth attendant	Other/ don't know/ missing	No postnatal checkup[1]	Total	Number of women
Mother's age at birth							
<20	36.4	0.0	9.6	0.2	53.8	100.0	564
20-34	37.7	0.3	10.0	0.3	51.7	100.0	2,883
35-49	32.5	0.7	10.5	0.0	56.3	100.0	526
Birth order							
1	47.3	0.0	7.9	0.5	44.3	100.0	847
2-3	41.4	0.2	8.1	0.3	50.0	100.0	1,531
4-5	28.4	0.5	11.9	0.3	58.9	100.0	829
6+	25.1	0.5	14.1	0.0	60.2	100.0	766
Residence							
Urban	62.1	0.2	5.2	0.3	32.2	100.0	823
Rural	30.2	0.3	11.3	0.2	58.0	100.0	3,150
Province							
Nairobi	78.3	0.0	3.2	0.0	18.4	100.0	269
Central	54.1	0.5	1.2	0.0	44.2	100.0	371
Coast	39.4	0.2	10.3	0.2	50.0	100.0	330
Eastern	38.5	0.0	9.1	0.8	51.5	100.0	630
Nyanza	28.0	0.9	5.1	0.1	65.8	100.0	733
Rift Valley	32.3	0.1	16.2	0.4	51.1	100.0	1,103
Western	22.3	0.1	17.5	0.1	60.0	100.0	442
North Eastern	19.6	0.4	0.7	0.0	79.3	100.0	97
Education							
No education	17.0	0.3	15.4	0.0	67.3	100.0	441
Primary incomplete	23.3	0.5	15.5	0.1	60.6	100.0	1,262
Primary complete	39.4	0.3	7.7	0.4	52.1	100.0	1,225
Secondary+	58.4	0.0	3.8	0.5	37.3	100.0	1,045
Wealth quintile							
Lowest	17.6	0.3	17.5	0.0	64.6	100.0	843
Second	25.2	0.5	10.5	0.2	63.7	100.0	764
Middle	33.2	0.2	10.6	0.2	55.8	100.0	742
Fourth	42.7	0.2	7.4	0.7	49.1	100.0	765
Highest	63.8	0.2	4.2	0.3	31.4	100.0	859
Total	36.8	0.3	10.0	0.3	52.6	100.0	3,973

[1] Includes women who received a checkup after 41 days

Results in Table 9.10 indicate that 37 percent of women in Kenya receive postnatal care from a medical professional, i.e., a doctor, nurse or midwife. A substantial proportion (10 percent) receives postnatal care from traditional birth attendants, and a negligible fraction receives postnatal care from community health workers.

Examination of differentials in the type of provider of postnatal care in Table 9.10 shows that the mother's place of residence and the child's birth order are strongly related to type of health provider. Urban women and lower parity women are more likely than their rural counterparts and those with higher parity to receive postnatal care from a medical professional. Similarly, women with higher education and those in wealthier quintiles have greater use of a medical professional than those with lower education and in poorer quintiles.

There are marked regional variations in use of a medical professional for postnatal care services. Only one-fifth of women in North Eastern province receive postnatal care from a medical professional. The proportion that is highest in receiving care is in Nairobi Province at 78 percent.

CHILD HEALTH 10

Ben Obonyo, Andolo Miheso, and Annah Wamae

Of special importance to child health and survival are birth weight and size, childhood vaccination status, and treatment practices for respiratory infection, fever, and diarrhoea. Information on birth weight and size influences the design and implementation of programs aimed at reducing neonatal and infant mortality.

Many deaths in early childhood are preventable if children are immunized against preventable diseases and receive prompt and appropriate treatment when they become ill. Overall coverage levels at the time of the survey are shown for children age 12-23 months. Additionally, the source of the vaccination information, whether based on a written vaccination card or on the mother's recall, is documented. Differences in vaccination coverage among subgroups of the population will assist in program planning.

Information on treatment practices and contact with health services by children with the three most important childhood illnesses (acute respiratory infection, fever, and diarrhoea) help in the assessment of national programs aimed at reducing the mortality from these illnesses. Information from the 2008-09 Kenya Demographic and Health Survey (KDHS) is provided on the prevalence of acute respiratory infection (ARI) and its treatment with antibiotics and the prevalence of fever and its treatment with antimalarial drugs and antibiotics. Measuring the extent of treatment of diarrhoeal disease with oral rehydration therapy (including increased fluids) aids in the assessment of programs that recommend such treatment. Because appropriate sanitary practices can help prevent and reduce the severity of diarrhoeal disease, information is also provided on the manner of disposing of children's faecal matter.

10.1 WEIGHT AND SIZE AT BIRTH

A child's birth weight and size are important indicators of the child's vulnerability to childhood illness and chance of survival. Children whose birth weight is less than 2.5 kilograms and children reported to be 'very small' or 'smaller than average' are considered to have a higher than average risk of early childhood death. For births in the five years preceding the survey, birth weight was recorded in the questionnaire if available from either a written record or the mother's recall. Because birth weight may not be known for many babies, the mother's estimate of the baby's size at birth was also obtained. Even though it is subjective, the mother's estimate of the baby's size can be a useful proxy for the weight of the child. Table 10.1 presents information on weight and size at birth according to background characteristics.

The data in Table 10.1, summarized in the 'Total' row at the bottom of the table, show that a birth weight was reported for just under half (47 percent) of births. Of those with a birth weight, 94 percent weighed 2.5 kg. or more, and only 6 percent were of low birth weight—less than 2.5 kg. Among all births in the five years before the survey, a large majority (83 percent) were considered by their mothers to be of average or larger size at birth; 13 percent were considered smaller than average, and 3 percent were thought to be very small.

Table 10.1 Child's weight and size at birth

Percent distribution of live births in the five years preceding the survey with a reported birth weight, by birth weight; percentage of all births with a reported birth weight; and percent distribution of live births in the five years preceding the survey by mother's estimate of baby's size at birth, all according to background characteristics, Kenya 2008-09

Background characteristic	Percent distribution of births by reported birth weight[1]				Percentage of all births with a reported birth weight	Percent distribution of births by mother's estimate of size at birth					
	Less than 2.5 kg	2.5 kg or more	Total	Number of births		Very small	Smaller than average	Average or larger	Don't know/ missing	Total	Number of births
Mother's age at birth											
<20	5.7	94.3	100.0	471	49.4	3.0	15.4	80.8	0.7	100.0	953
20-34	5.4	94.6	100.0	1,988	47.0	3.1	12.4	83.6	1.0	100.0	4,234
35-49	6.7	93.3	100.0	270	40.6	4.5	11.5	83.3	0.7	100.0	665
Birth order											
1	5.5	94.5	100.0	813	62.1	3.1	12.7	83.6	0.7	100.0	1,310
2-3	5.8	94.2	100.0	1,139	51.2	3.6	13.0	82.7	0.8	100.0	2,225
4-5	4.5	95.5	100.0	464	37.1	1.8	14.2	83.2	0.8	100.0	1,252
6+	6.2	93.8	100.0	313	29.3	4.4	10.8	83.2	1.6	100.0	1,066
Mother's smoking status											
Smokes cigarettes/tobacco	(5.1)	(94.9)	100.0	34	26.0	5.4	27.5	66.5	0.5	100.0	131
Does not smoke	5.6	94.4	100.0	2,690	47.1	3.2	12.4	83.5	0.9	100.0	5,716
Residence											
Urban	5.9	94.1	100.0	841	78.3	3.5	11.4	84.5	0.7	100.0	1,074
Rural	5.4	94.6	100.0	1,887	39.5	3.2	13.1	82.8	1.0	100.0	4,777
Province											
Nairobi	7.8	92.2	100.0	306	91.6	3.8	11.4	84.1	0.7	100.0	334
Central	5.5	94.5	100.0	354	76.0	2.3	11.9	84.1	1.7	100.0	466
Coast	6.9	93.1	100.0	268	54.1	2.6	14.8	81.7	1.0	100.0	495
Eastern	8.3	91.7	100.0	405	45.5	2.6	14.6	81.1	1.7	100.0	890
Nyanza	3.3	96.7	100.0	573	50.0	2.7	7.1	90.0	0.2	100.0	1,145
Rift Valley	4.1	95.9	100.0	586	35.7	3.6	14.1	81.6	0.6	100.0	1,642
Western	5.4	94.6	100.0	191	27.2	3.8	15.0	80.6	0.6	100.0	703
North Eastern	5.9	94.1	100.0	46	25.7	7.0	19.0	70.9	3.1	100.0	178
Mother's education											
No education	4.8	95.2	100.0	164	21.4	3.8	20.9	72.6	2.7	100.0	763
Primary incomplete	5.4	94.6	100.0	638	32.7	3.6	13.4	82.1	0.9	100.0	1,952
Primary complete	5.8	94.2	100.0	905	51.4	3.2	10.7	85.7	0.4	100.0	1,761
Secondary+	5.5	94.5	100.0	1,022	74.3	2.3	10.0	87.1	0.6	100.0	1,375
Wealth quintile											
Lowest	3.6	96.4	100.0	337	23.3	3.0	14.9	81.0	1.2	100.0	1,445
Second	9.2	90.8	100.0	386	32.4	4.3	13.1	82.1	0.5	100.0	1,190
Middle	6.4	93.6	100.0	496	45.8	3.4	13.0	82.1	1.6	100.0	1,085
Fourth	4.3	95.7	100.0	603	58.1	2.1	10.3	86.8	0.7	100.0	1,038
Highest	5.1	94.9	100.0	906	82.7	3.3	11.8	84.3	0.6	100.0	1,095
Total	5.6	94.4	100.0	2,728	46.6	3.2	12.8	83.1	0.9	100.0	5,852

Note: Numbers in parentheses are based on 25-49 unweighted cases. Total includes 5 births for which mother's smoking status is missing.
[1] Based on either a written record or the mother's recall

Socioeconomic differentials in child's birth weight are not large. However, children whose mothers have no education are more likely to be smaller than average or very small than children whose mothers have at least some education. Similarly, there is a decrease in the proportion of babies considered to be smaller than average or very small as the wealth quintile of the mother increases.

Children in North Eastern province are much more likely than children in other provinces to be smaller than average. With regard to the mother's smoking status, the table shows that women who smoke are much more likely to have a baby who is smaller than average or very small than women who do not smoke.

10.2 VACCINATION COVERAGE

Universal immunisation of children against the six vaccine-preventable diseases (namely, tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles) is crucial to reducing infant and child mortality. Other childhood vaccines given in Kenya protect against hepatitis

B and haemophilus influenzae type b (Hib). Differences in vaccination coverage among subgroups of the population are useful for program planning and targeting resources toward areas most in need.

The 2008-09 KDHS collected information on vaccination coverage for all living children born in the five years preceding the survey. According to the guidelines developed by the World Health Organisation and adopted by Kenya, children are considered fully vaccinated when they have received a vaccination against tuberculosis (also known as BCG), three doses each of the DPT-HepB-Hib (also called Pentavalent) and polio vaccines, and a vaccination against measles. The BCG vaccine is usually given at birth or at first clinical contact, while DPT-HepB-Hib and polio vaccines require three vaccinations at approximately 6, 10, and 14 weeks of age, and measles should be given at or soon after reaching 9 months of age.

Information on vaccination coverage was collected in two ways in the KDHS: from vaccination cards shown to the interviewer and from mothers' verbal reports. If the cards were available, the interviewer copied the vaccination dates directly onto the questionnaire. When there was no vaccination card for the child or if a vaccine had not been recorded on the card as being given, the respondent was asked to recall the vaccines given to her child. Table 10.2 and Figure 10.1 show the percentage of children age 12-23 months who received the various vaccinations by source of information, that is, from vaccination card or mother's report. The reason the table is based on children age 12-23 months is because this is the youngest cohort of children who have reached the age by which they should be fully vaccinated.

Table 10.2 Vaccinations by source of information

Percentage of children age 12-23 months who received specific vaccines at any time before the survey, by source of information (vaccination card or mother's report) and by percentage vaccinated by 12 months of age, Kenya 2008-09

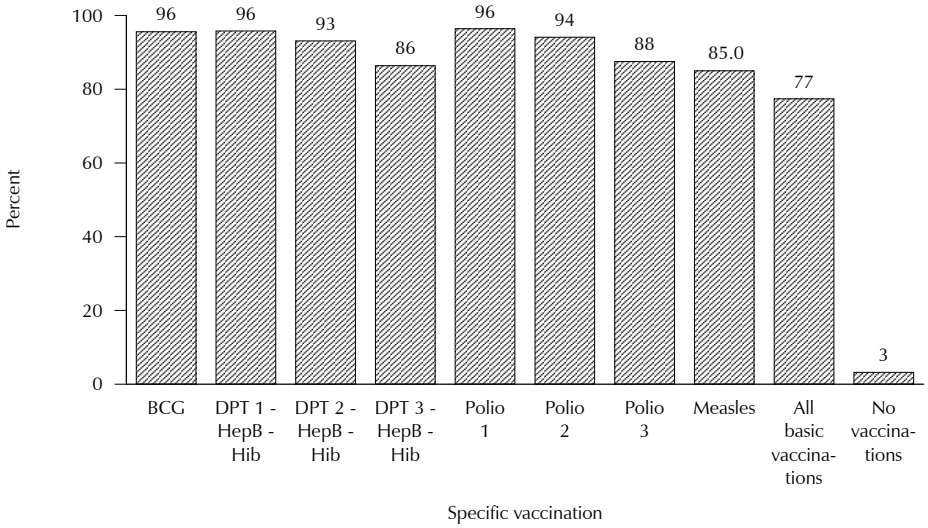
Source of information	BCG	DPT 1 - HepB - Hib	DPT 2 - HepB - Hib	DPT 3 - HepB - Hib	Polio 0[1]	Polio 1	Polio 2	Polio 3	Measles	All basic vaccinations[2]	Yellow fever	No vaccinations	Number of children
Vaccinated at any time before survey													
Vaccination card	69.9	69.9	68.9	66.4	51.3	70.1	69.3	66.7	60.8	59.4	3.4	0.0	772
Mother's report	25.8	25.9	24.3	20.0	8.0	26.2	24.8	20.8	24.2	18.0	0.0	3.2	325
Either source	95.6	95.8	93.1	86.4	59.3	96.4	94.1	87.5	85.0	77.4	3.4	3.2	1,096
Vaccinated by 12 months of age[3]	95.4	93.8	90.8	84.1	59.3	94.3	91.6	84.1	73.5	65.3	2.4	3.6	1,096
Valid dates	96.1	96.8	94.4	89.6	65.2	97.3	95.5	90.3	79.1	74.1	3.9	1.5	772

[1] Polio 0 is the polio vaccination given at birth. The data on polio vaccination were adjusted for a likely misinterpretation of polio 0 and polio 1; for children whose mothers reported that they received three doses of DPT-Hep B-Hib and polio 0, polio 1, and polio 2, it was assumed that polio 0 was in fact polio 1, polio 1 was polio 2 and polio 2 was polio 3.
[2] BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)
[3] For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.

The table shows that 77 percent of children age 12-23 months are fully vaccinated at any time before the survey. Only 3 percent of children have not received any vaccines. Looking at coverage for specific vaccines, 96 percent of children have received the BCG vaccination, 96 percent the first DPT-HepB-Hib dose, and 96 percent the first polio dose (Polio 1).[1] Coverage declines for subsequent doses, with 86 percent of children receiving the recommended three doses of DPT-HepB-Hib and 88 percent receiving all three doses of polio. The decline in coverage levels reflects dropout rates of 10 percent for DPT-HepB-Hib (Pentavalent) and 9 percent for polio.[2] The proportion of children 12- 23 months vaccinated against measles is 85 percent compared with 73 percent in 2003.

[1] Data for polio vaccinations were adjusted for a likely underreporting. It appeared that for some children who did not receive polio at birth, interviewers may have mistakenly written the date polio 1 was given in the space for recording the date of polio 0. To correct for any such errors, the total number of doses of DPT and polio was checked, since the two vaccines are usually given at the same time. For children reported as having received all three doses of DPT and polio 0, polio 1, and polio 2 only, it was assumed that polio 0 was in fact polio 1, polio 1 was in fact polio 2, and polio 2 was in fact polio 3.
[2] The dropout rate represents the proportion of children who receive the first dose of a vaccine but do not go on to get the third dose, or Dropout rate = [(Dose1 - Dose3) * 100/Dose1].

Figure 10.1 **Percentage of Children Age 12-23 Months with Specific Vaccinations**



Refers to vaccinations received at any time before the su vey.

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The proportion of children fully immunised has increased from 57 percent in 2003 to 77 percent in 2008-09. The proportion of children who have not received any of the recommended immunisations has also declined from 7 percent in the 2003 KDHS to 3 percent in the 2008-09 KDHS. Although 77 percent of children are fully immunised at any time before the survey, only 65 percent are fully immunised by their first birthday.

Table 10.3 presents vaccination coverage (according to card information and mothers' reports) among children age 12-23 months by selected background characteristics. The table shows that 70 percent of mothers of children age 12-23 months presented a vaccination card, an improvement from 60 percent in 2003. There is no marked difference in vaccination status by sex of the child. Birth order, however is related to immunisation coverage, with first born children more likely to be fully vaccinated than those of sixth or higher birth order (84 percent compared with 62 percent, respectively). Full vaccination coverage among urban children (81 percent) is somewhat higher than among rural children (76 percent).

Provincial variation in vaccination coverage needs to be interpreted with caution because the numbers of observation on which the estimates are based are, in some cases, small. However, some important differences are apparent. The highest proportion of children fully vaccinated is in Central province (86 percent), followed by Rift Valley province with 85 percent. North Eastern and Nyanza provinces have the lowest proportion of children fully vaccinated, 48 percent and 65 percent, respectively. There has been an increase in the proportion of children in North Eastern province who are fully immunised, from 9 percent in the 2003 KDHS to 48 percent in the 2008-09 KDHS.

Education of the mother is associated with higher chances of their children having been fully vaccinated; 87 percent of children whose mothers had at least some secondary education are fully vaccinated compared with 67 percent of children whose mothers had no schooling. Table 10.3 also shows a steady increase in the proportion of children fully immunised by wealth quintile, from 66 percent in the lowest quintile to 85 in the highest quintile.

Table 10.3 Vaccinations by background characteristics

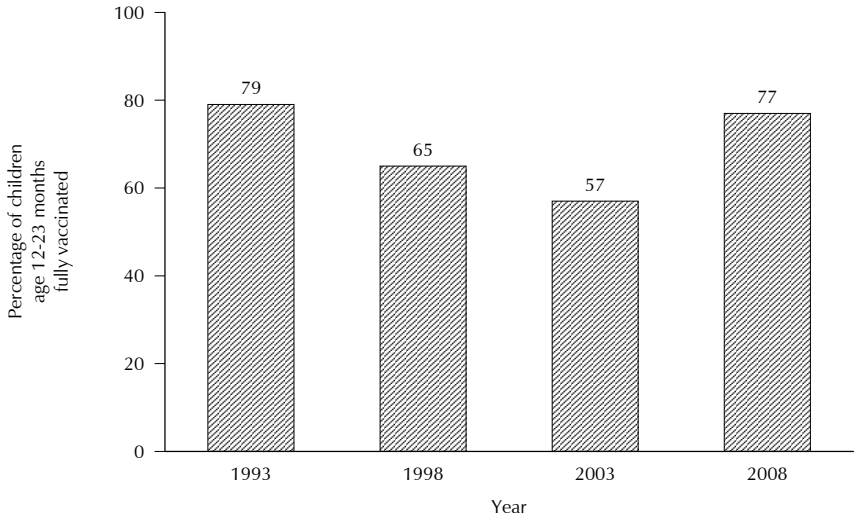
Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics, Kenya 2008-09

Background characteristic	BCG	DPT 1 - HepB - Hib	DPT 2 - HepB - Hib	DPT 3 - HepB - Hib	Polio 0[1]	Polio 1	Polio 2	Polio 3	Measles	All basic vaccinations[2]	Yellow fever	No vaccinations	Percentage with a vaccination card seen	Number of children
Sex														
Male	94.6	94.7	91.1	82.9	58.4	95.5	92.7	84.8	84.1	75.3	2.8	4.1	68.8	547
Female	96.6	97.0	95.2	89.8	60.2	97.2	95.4	90.2	85.9	79.5	4.0	2.3	72.0	550
Birth order														
1	95.6	97.0	95.0	89.6	68.1	97.0	95.3	90.5	91.8	83.7	4.3	2.8	63.1	271
2-3	96.9	97.1	95.4	89.7	61.9	97.9	96.2	90.3	91.2	83.4	3.2	1.7	74.0	395
4-5	95.9	95.1	92.0	84.0	53.8	96.1	94.7	86.4	78.1	72.8	3.6	3.4	76.4	227
6+	92.8	92.6	87.7	78.3	48.7	92.9	87.6	79.1	71.6	62.4	2.4	6.5	66.5	204
Residence														
Urban	96.2	96.9	94.7	87.7	61.7	97.1	95.6	88.5	90.4	80.9	2.3	2.4	55.3	252
Rural	95.4	95.5	92.7	86.0	58.6	96.1	93.6	87.2	83.4	76.3	3.7	3.5	74.9	844
Province														
Nairobi	93.8	95.0	88.5	82.2	65.2	94.6	90.2	82.9	87.6	73.1	1.3	3.9	41.8	56
Central	90.7	92.7	92.7	92.2	73.5	92.7	92.7	92.3	88.3	85.8	1.4	7.3	75.6	74
Coast	96.5	96.5	95.1	86.7	50.8	96.6	94.8	87.1	85.4	75.8	0.3	3.0	78.0	104
Eastern	97.5	97.1	96.4	91.7	76.2	97.3	97.1	91.5	88.7	84.2	3.8	2.5	87.3	157
Nyanza	93.0	93.6	88.3	77.0	55.2	95.1	90.7	80.5	78.0	64.6	4.6	4.4	62.2	203
Rift Valley	99.2	98.6	97.4	92.9	62.6	98.7	97.1	92.7	89.3	85.0	3.8	0.8	68.7	347
Western	93.1	93.9	90.0	81.5	38.3	95.5	93.5	83.5	77.7	73.1	4.3	4.2	75.4	129
North Eastern	85.0	85.9	74.4	57.1	31.1	87.2	74.5	65.5	78.9	48.3	4.6	12.8	47.8	27
Mother's education														
No education	93.8	93.8	90.2	81.2	43.3	94.6	89.2	80.6	78.8	67.4	0.8	5.0	76.8	120
Primary incomplete	95.4	95.7	90.7	82.7	55.3	95.9	92.5	83.9	80.1	71.2	2.8	3.6	74.7	375
Primary complete	95.4	95.5	94.6	87.8	60.8	96.5	95.1	90.6	87.0	80.3	3.7	2.8	71.0	335
Secondary+	97.0	97.4	96.0	92.1	70.2	97.6	97.2	91.6	92.1	87.0	5.0	2.2	60.7	266
Wealth quintile														
Lowest	92.8	92.8	88.5	77.3	46.5	93.5	87.7	78.4	75.6	65.9	4.6	6.1	71.6	247
Second	97.4	96.7	92.6	86.7	54.0	97.7	95.5	87.5	80.8	74.6	0.8	2.2	74.8	212
Middle	95.5	96.0	94.9	91.2	66.4	96.2	96.2	90.3	85.5	80.2	2.6	3.6	79.7	195
Fourth	96.1	97.3	96.3	88.8	59.6	98.1	96.4	91.6	89.8	82.5	2.5	1.9	72.0	202
Highest	96.5	96.7	94.3	89.6	71.1	96.8	95.6	91.0	93.9	85.1	5.9	2.0	56.4	240
Total	95.6	95.8	93.1	86.4	59.3	96.4	94.1	87.5	85.0	77.4	3.4	3.2	70.4	1,096

[1] Polio 0 is the polio vaccination given at birth. The data on polio vaccination were adjusted for a likely misinterpretation of polio 0 and polio 1; for children whose mothers reported that they received three doses of DPT-Hep B-Hib and polio 0, polio 1, and polio 2, it was assumed that polio 0 was in fact polio 1, polio 1 was polio 2 and polio 2 was polio 3.
[2] BCG, measles and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

Figure 10.2 shows the percentage of children age 12-23 months who are fully vaccinated according to past KDHS surveys in Kenya. The graph shows that there was a decline in the proportion of children fully vaccinated from 79 percent in 1993 to 65 percent in 1998 and to a low of 57 percent in 2003, followed by a dramatic increase over the past five years to 77 percent in 2008-09. It should be noted that changes in the geographic coverage of the various surveys as well as the adjustment made in the 2003 and 2008-09 surveys make comparisons more difficult to interpret.

Figure 10.2 Trends in Childhood Vaccination Coverage



Refers to vaccinations received at any time before the su vey. Data from 1993 and 1998 omit North Eastern province and several other northern districts.

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10.3 ACUTE RESPIRATORY INFECTION

Acute respiratory infection (ARI) is one of the leading causes of childhood morbidity and mortality throughout the world. Early diagnosis and treatment with antibiotics can prevent a large number of deaths caused by ARI. In the 2008-09 KDHS, the prevalence of ARI was estimated by asking mothers whether their children under age five had been ill in the two weeks preceding the survey with a cough accompanied by short, rapid breathing, which the mother considered to be chest-related. These symptoms are compatible with pneumonia. It should be noted that the morbidity data collected are subjective in the sense that they are based on the mother's perception of illness without validation by medical personnel.

Table 10.4 shows that 8 percent of children under five years had a cough accompanied by short, rapid breathing in the two weeks before the survey. Of those children with these symptoms of ARI, 56 percent sought advice or treatment from a health facility or a health care provider, an improvement over the 46 percent who sought treatment in 2003. Fifty percent of children with symptoms of ARI received antibiotics.

Differentials in the prevalence of ARI symptoms are not large. However, children whose mothers smoke cigarettes or other tobacco are far more likely to have had a cough with short, rapid breathing (20 percent) than children whose mothers do not smoke (7 percent). ARI prevalence is also lower among children whose mothers use electricity or gas as cooking fuel compared with those children whose mothers use kerosene or wood. Prevalence of ARI symptoms among children is almost the same in urban and rural areas; however, children in urban areas who have a cough accompanied with short, rapid breathing are more likely to be taken for medical advice or treatment than children in rural areas (66 and 54 percent, respectively). Provincial differentials are minimal except for a relatively high prevalence of ARI among children in Coast province (13 percent).

ARI prevalence is generally negatively related to education and wealth quintile of the mother, that is, the higher the education or wealth, the lower the prevalence of ARI symptoms. Analysis of differentials in treatment of children with ARI symptoms is hampered by the small number of cases in some categories.

Table 10.4 Prevalence and treatment of symptoms of ARI

Among children under age five, the percentage who had symptoms of acute respiratory infection (ARI) in the two weeks preceding the survey, and among children with symptoms of ARI, the percentage for whom advice or treatment was sought from a health facility or provider, and the percentage who received antibiotics as treatment, according to background characteristics, Kenya 2008-09

	Children under age five		Children under age five with symptoms of ARI		
Background characteristic	Percentage with symptoms of ARI[1]	Number of children	Percentage for whom advice or treatment was sought from a health facility or provider[2]	Percentage who received antibiotics	Number of children
Age in months					
<6	4.7	535	(58.8)	(53.2)	25
6-11	9.5	606	60.3	57.5	58
12-23	9.3	1,096	55.4	55.5	102
24-35	7.0	1,132	57.0	47.0	79
36-47	8.1	1,071	54.1	44.8	87
48-59	6.3	1,041	52.8	41.2	65
Sex					
Male	7.7	2,814	57.4	48.0	216
Female	7.5	2,667	54.3	51.2	200
Mother's smoking status					
Smokes cigarettes/tobacco	19.8	115	(72.9)	(58.2)	23
Does not smoke	7.3	5,361	55.3	49.0	390
Cooking fuel					
Electricity or gas	3.3	199	*	*	7
Kerosene	8.7	238	*	*	21
Coal/lignite	(0.0)	36	*	*	0
Charcoal	7.0	944	59.8	37.2	66
Wood/straw/dung/other fuel[3]	8.0	4,065	53.7	52.3	323
Residence					
Urban	7.0	1,010	65.5	46.5	71
Rural	7.7	4,471	53.9	50.2	346
Province					
Nairobi	6.5	312	*	*	20
Central	7.5	437	(45.2)	(34.8)	33
Coast	12.5	466	56.4	54.5	58
Eastern	6.0	843	(52.6)	(28.2)	50
Nyanza	7.9	1,024	54.6	54.8	81
Rift Valley	7.8	1,581	58.0	54.8	123
Western	6.0	653	(45.4)	(58.3)	39
North Eastern	6.7	166	(60.9)	(49.4)	11
Mother's education					
No education	14.8	708	57.2	46.3	105
Primary incomplete	9.2	1,808	52.5	54.0	166
Primary complete	5.6	1,668	57.4	44.9	94
Secondary+	3.9	1,298	61.5	50.3	51
Wealth quintile					
Lowest	11.3	1,340	56.5	47.7	151
Second	7.0	1,115	48.0	57.0	78
Middle	6.4	1,007	62.5	62.4	64
Fourth	6.9	997	52.0	42.1	69
Highest	5.3	1,022	62.6	38.2	54
Total	7.6	5,481	55.9	49.6	416

Note: Total includes 5 children for whom mother's smoking status is missing. Numbers in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

[1] Symptoms of ARI (cough accompanied by short, rapid breathing, which was chest-related) is considered a proxy for pneumonia.

[2] Excludes pharmacy, shop, and traditional practitioner

[3] Includes grass, shrubs, crop residues

10.4 FEVER

Fever is a symptom of malaria and other acute infections in children. Malaria and other illnesses that cause fever contribute to high levels of malnutrition and mortality. Although fever can occur year-round, malaria is more prevalent after the end of the rainy season. For this reason, temporal factors must be taken into account when interpreting fever as an indicator of malaria prevalence. Because malaria is a major contributory cause of death in infancy and childhood in many developing countries, the so-called presumptive treatment of fever with antimalarial medication is advocated in many countries where malaria is endemic. It is important that effective malaria treatment be given promptly to prevent the disease from becoming severe and complicated.

In the 2008-09 KDHS, mothers were asked whether their children under five years had a fever in the two weeks preceding the survey and if so, whether any treatment was sought. Table 10.5 shows that 24 percent of children under five were reported to have had fever in the two weeks preceding the survey, compared with 41 percent in 2003. Advice or treatment was sought from a health facility or provider for 49 percent of the children who had fever in the two weeks preceding the survey. Table 10.5 further shows that among children with fever, 23 percent took antimalarial drugs, and 36 percent took antibiotic drugs.

Table 10.5 Prevalence and treatment of fever

Among children under age five, the percentage who had a fever in the two weeks preceding the survey; and among children with fever, the percentage of children for whom treatment was sought from a health facility or provider, the percentage who took antimalarial drugs, and the percentage who took antibiotic drugs, by background characteristics, Kenya 2008-09

	Among children under age five:		Among children under age five with fever:			
Background characteristic	Percentage with fever	Number of children	Percentage for whom advice or treatment was sought from a health facility or provider	Percentage who took antimalarial drugs	Percentage who took antibiotic drugs	Number of children
Age in months						
<6	19.9	535	52.0	12.7	37.4	107
6-11	33.4	606	54.5	21.9	38.8	202
12-23	28.5	1,096	47.5	22.3	40.3	312
24-35	20.6	1,132	52.9	30.3	35.1	233
36-47	21.9	1,071	46.3	21.7	37.3	235
48-59	20.4	1,041	40.7	24.7	26.5	212
Sex						
Male	24.3	2,814	49.9	24.2	36.7	684
Female	23.1	2,667	47.1	22.0	35.5	617
Residence						
Urban	22.0	1,010	51.9	25.7	33.1	223
Rural	24.1	4,471	47.9	22.6	36.7	1,079
Province						
Nairobi	18.2	312	50.0	16.9	32.5	57
Central	26.5	437	45.2	11.7	24.1	116
Coast	35.0	466	56.5	20.3	43.5	163
Eastern	17.9	843	53.1	22.7	32.2	151
Nyanza	24.3	1,024	55.0	32.6	44.5	249
Rift Valley	20.9	1,581	47.3	17.8	36.6	331
Western	30.1	653	33.3	32.1	30.2	197
North Eastern	23.4	166	53.1	20.4	33.0	39
Mother's education						
No education	33.4	708	50.5	19.8	35.7	237
Primary incomplete	26.0	1,808	44.3	21.9	35.7	470
Primary complete	18.9	1,668	47.6	26.6	38.0	315
Secondary+	21.7	1,298	55.2	24.2	35.1	281
Wealth quintile						
Lowest	26.3	1,340	52.1	21.1	36.7	353
Second	20.4	1,115	41.2	24.4	40.1	228
Middle	25.0	1,007	50.8	30.3	37.6	252
Fourth	26.0	997	45.7	18.2	34.9	259
Highest	20.5	1,022	51.6	23.0	30.6	210
Total	23.7	5,481	48.6	23.2	36.1	1,302

[1] Excludes pharmacy, shop, and traditional practitioner

Fever is least common among children under 6 months and most common among children age 6-11 months (33 percent), after which it decreases with age. Prevalence of fever is similar by sex and residence. Regional differentials show that the proportion of children with fever was highest in Coast province (35 percent) and Western province (30 percent) and lowest in Nairobi and Eastern province (18 percent). However, among those with fever, children in Nyanza province are more likely to receive antimalarial drugs (33 percent) and antibiotics (45 percent) than children in other provinces. Increasing levels of education of the mother are associated with decreasing prevalence of fever among children under five years.

Malaria is discussed in greater detail in Chapter 12.

10.5 DIARRHOEAL DISEASE

Dehydration caused by severe diarrhoea is a major cause of morbidity and mortality among young children, although the condition can be easily treated with oral rehydration therapy (ORT). Exposure to diarrhoea-causing agents is frequently related to the use of contaminated water and to unhygienic practices in food preparation and disposal of excreta. In interpreting the findings of the 2008-09 KDHS, it should be borne in mind that prevalence of diarrhoea varies seasonally.

Table 10.6 shows the percentage of children under five with diarrhoea in the two weeks preceding the survey according to selected background characteristics. Seventeen percent of children experienced diarrhoea in the two weeks preceding the survey, and 3 percent had diarrhoea with blood. Diarrhoea prevalence increases with age, peaking at 6-11 months (30 percent), and then falls off.

There are only small variations in the prevalence of diarrhoea by sex, residence, and wealth quintile. Nairobi has the lowest prevalence of diarrhoea (12 percent) and Coast province the highest (27 percent). Diarrhoea is less common among children whose mothers have some secondary education than among those whose mothers have less education. It is also slightly less common among children who have an improved source of drinking water than among those with an unimproved water source. Diarrhoea is also slightly less common among children who used improved, private toilet facilities compared with those who used nonimproved or shared toilet facilities.

A simple and effective response to a child's dehydration is to promptly increase intake of appropriate fluids, possibly in the form of solution prepared from oral rehydration salts

Table 10.6 Prevalence of diarrhoea

Percentage of children under age five who had diarrhoea in the two weeks preceding the survey, by background characteristics, Kenya 2008-09

Background characteristic	Diarrhoea in the two weeks preceding the survey: All diarrhoea	Diarrhoea with blood	Number of children
Age in months			
<6	13.0	1.4	535
6-11	29.9	3.0	606
12-23	27.8	4.3	1,096
24-35	16.1	3.4	1,132
36-47	10.1	1.6	1,071
48-59	6.1	1.6	1,041
Sex			
Male	17.4	3.0	2,814
Female	15.7	2.2	2,667
Source of drinking water[1]			
Improved	15.4	1.7	3,185
Not improved	18.2	3.9	2,296
Toilet facility[2]			
Improved, not shared	14.1	1.7	1,009
Non-improved or shared	17.1	2.8	4,471
Residence			
Urban	16.8	1.3	1,010
Rural	16.5	2.9	4,471
Province			
Nairobi	11.9	0.4	312
Central	14.4	1.5	437
Coast	27.2	6.2	466
Eastern	14.9	1.1	843
Nyanza	16.2	4.2	1,024
Rift Valley	15.9	2.2	1,581
Western	17.2	2.0	653
North Eastern	16.0	3.6	166
Mother's education			
No education	22.7	6.2	708
Primary incomplete	19.2	3.1	1,808
Primary complete	14.3	1.9	1,668
Secondary+	12.6	1.0	1,298
Wealth quintile			
Lowest	19.8	5.1	1,340
Second	15.7	2.2	1,115
Middle	15.2	1.9	1,007
Fourth	18.8	2.7	997
Highest	12.5	0.4	1,022
Total	16.6	2.6	5,481

[1] See Table 2.7 for definition of categories.
[2] See Table 2.8 for definition of categories.

(ORS). In Kenya, families are encouraged to rehydrate children with either the commercially packaged ORS (also called Oralite) or other fluids prepared at home with locally obtained ingredients, for example, water, juices, and soups. ORS solution is usually distributed by health facilities and pharmacies and is also available in local shops and kiosks; preparation of recommended homemade fluids also is taught to mothers in health facilities.

In the 2008-09 KDHS, mothers of children who had diarrhoea in the two weeks before the survey were asked what was done to treat the illness. Table 10.7 shows the percentage of children with diarrhoea who received specific treatments by background characteristics. Results indicate that 49 percent of children with diarrhoea in the two weeks preceding the survey were taken to a health facility for treatment. Comparison with data from the 2003 KDHS shows an increase in the percentage of children with diarrhoea who were taken to a health facility or provider, from 30 percent in 2003 to 49 percent in 2008.

Table 10.7 Diarrhoea treatment

Among children under age five who had diarrhoea in the two weeks preceding the survey, the percentage for whom advice or treatment was sought from a health facility or provider, the percentage given oral rehydration therapy (ORT), the percentage given increased fluids, the percentage given ORT or increased fluids, and the percentage given other treatments, by background characteristics, Kenya 2008-09

Background characteristic	Percentage of children with diarrhoea for whom advice or treatment was sought from a health facility or provider[1]	Oral rehydration therapy (ORT)					Other treatments						
		ORS packets	Home-made fluids	Either ORS or home-made fluids	Increased fluids	ORT or increased fluids	Anti-biotic drugs	Anti-motility drugs	Zinc supple-ments	Intra-venous solution	Home remedy/ other	No treatment	Number of children
Age in months													
<6	35.8	21 3	48.3	64.9	17.1	69.0	3.6	5.1	0.0	0.4	25.3	23.1	70
6-11	55.4	38.2	47.9	72.3	16.9	75.2	19.2	10.8	0.1	0.7	23.3	12.0	181
12-23	49.8	45.0	53.9	74.9	30 3	81.1	12.5	5.1	0.0	0.1	27.0	13.0	305
24-35	52.1	38.7	53.4	72.4	25.8	79.3	13.9	8.3	0.7	0.0	30.4	10 3	183
36-47	40.5	31.2	41.0	59.8	39.8	76.3	21.6	16.9	0.4	0.0	14.8	10.9	108
48-59	41.5	43 5	51.3	77.2	20.4	80.8	7.8	11.3	0.0	0.0	14.9	15.7	63
Sex													
Male	50.4	37.8	47.3	69.1	26.6	77.1	14.3	9.9	0.4	0.4	25.5	12.4	490
Female	46.5	40.0	54.2	74.2	25.6	79.2	14.1	7.2	0.0	0.0	23.4	13.6	419
Type of diarrhoea													
Non bloody	46.0	35.7	50.0	70.1	25.7	76.5	14.2	8.6	0.2	0.2	24.5	14.0	749
Bloody	63.9	56.8	55.6	82.8	25 3	86.8	15.7	10.3	0.3	0.3	24.6	7.0	143
Residence													
Urban	48.3	40 3	51.9	71.5	38.1	75.5	15.3	5.6	0.0	1.1	27.1	11.8	169
Rural	48.7	38 5	50.1	71.5	23.4	78.7	13.9	9.4	0.2	0.0	23.9	13.2	740
Province													
Nairobi	45.3	28.8	55.7	72.2	48 5	79.6	16.1	4.4	0.0	0.0	24.5	9.1	37
Central	41.7	28.0	31.6	52.0	34 5	61.5	16.0	0.0	0.0	0.0	23.6	23 5	63
Coast	48.5	41.8	49.0	71.2	25.4	72.7	13.5	8.1	0.0	1.0	26.2	14.5	127
Eastern	40.4	29.4	68.6	76.3	49.9	92.0	15.7	6.2	0.9	0.0	23.6	7.8	126
Nyanza	56.6	47.6	54.9	78.3	10.7	81.3	16.8	2.7	0.0	0.2	24.3	11 5	166
Rift Valley	55.5	39 5	51.8	74.2	22.4	81.3	10.1	13.3	0.0	0.0	28.7	10.9	251
Western	31.4	35.6	36.9	62.1	21.8	67.3	17.3	18.0	0.0	0.3	13.7	18.1	113
North Eastern	67.6	62.1	25.4	67.2	15.1	69.9	11.6	3.8	2.7	0.0	30.6	17.1	27
Mother's education													
No education	51.2	39.8	49.2	74.0	20.7	76.8	9.9	12.6	0.5	0.8	24.3	15.4	161
Primary incomplete	46.2	38.8	49.4	70.9	25.8	76.8	12.4	8.3	0.3	0.2	25.9	13.4	347
Primary complete	46.7	34.2	53.3	71.0	30.6	81.9	17.1	8.9	0.0	0.0	22.5	10.0	238
Secondary+	53.9	44.8	49.8	70.9	25.8	76.4	18.1	5.4	0.0	0.0	24.8	13.8	163
Wealth quintile													
Lowest	48.7	39.8	52.5	74.8	21 5	79.6	10.3	8.4	0.2	0.0	26.1	14.2	265
Second	36.5	34.8	51.7	70.6	27.6	77.6	11.0	9.0	0.0	0.0	22.8	12.5	175
Middle	57.8	43.8	55.6	78.8	16 5	83.0	12.3	14.7	0.1	1.1	26.6	9.8	153
Fourth	54.0	38.7	39.9	63.5	31.8	71.5	24.5	6.9	0.6	0.2	18.4	14.8	188
Highest	46.3	36.7	53.9	68.9	37.0	79.3	13.7	4.1	0.0	0.0	29.9	12.1	128
Total	48.6	38.8	50.5	71.5	26.1	78.1	14.2	8.7	0.2	0.2	24.5	13.0	909

Note: ORT includes solution prepared from oral rehydration salt (ORS), home-made sugar-salt solution, and other home-made fluids. Total includes 9 cases missing information about the type of diarrhoea.
[1] Excludes pharmacy, shop, and traditional practitioner

Overall, 39 percent of children with diarrhoea are treated with a solution made from ORS packets, and 51 percent get homemade fluids, while 72 percent are given either ORS or homemade fluids (oral rehydration therapy or ORT). Seventy-eight percent of children with diarrhoea are given ORT or increased fluids.

Fourteen percent of children with diarrhoea are treated with antibiotic drugs, while 13 percent are given no treatment at all. It is particularly disconcerting to note that, although use of zinc for treatment of diarrhoea was introduced in Kenya in 2006, less than one percent of children with diarrhoea are given zinc supplements.

Differentials in care-seeking behaviour by background characteristics are not large. However, there is considerable difference in care seeking for children with bloody diarrhoea (64 percent) compared with those with non-bloody diarrhoea (46 percent). Among provinces, children in North Eastern province who have diarrhoea are more likely to be taken for treatment (68 percent) than children in other provinces, especially in Western province (31 percent). Differences in care seeking for children with diarrhoea are minimal by level of education and wealth quintile of the mother.

Mothers are encouraged to continue feeding children with diarrhoea normally and to increase the amount of fluids. These practices help to reduce dehydration and minimise the adverse consequences of diarrhoea on the child's nutritional status. Mothers were asked whether they gave the child less, the same amount, or more fluids and food than usual when their child had diarrhoea. Table 10.8 shows the percent distribution of children under age five who had diarrhoea in the two weeks before the survey, by feeding practices, according to background characteristics.

Table 10.8 shows that 26 percent of children with diarrhoea were given more to drink than usual, while 32 percent were given the same as usual, 17 percent were given somewhat less to drink than usual, and 23 percent were given much less to drink than usual. Food intake is often more likely than fluid intake to be curtailed during an episode of diarrhoea. In Kenya, about three in ten children with diarrhoea are offered the same amount of food as usual, but only 5 percent are given more to eat than usual. About one-quarter are given somewhat less food to eat than usual, 31 percent are given much less food than usual, and 6 percent are not given any food.

The optimum practice for childhood diarrhoea is to continue feeding and to provide ORT or increased fluids, or both. Overall, 43 percent of children with diarrhoea in Kenya are given continued feeding as well as ORT or increased fluids, or both. Children with diarrhoea age 48-59 months are more likely to be given continued feeding and ORT, or more fluids than usual, or both, than are children in other age groups. There is no difference by sex or residence; however children with diarrhoea in Coast province are more likely to be given continued feeding, and ORT, or more fluids than usual, or both, compared with children in other provinces. Patterns by education and wealth quintile of the mother are not uniform, though it is interesting that children whose mothers have some secondary education or higher are the least likely to be given continued feeding and ORT, or increased fluids, or both, when they have diarrhoea.

The fact that these feeding patterns for children with diarrhoea have not changed considerably since the 2003 KDHS reflects a gap in knowledge among some mothers regarding the nutritional requirements of children during episodes of diarrhoea illness. There is a need for further health education efforts and counselling on feeding to reduce the number of children becoming dehydrated or malnourished from diarrhoea.

Table 10.8 Feeding practices during diarrhoea

Percent distribution of children under age five who had diarrhoea in the two weeks preceding the survey by amount of liquids and food offered compared with normal practice, the percentage of children given increased fluids and continued feeding during the diarrhoea episode, and the percentage of children who continued feeding and were given ORT or increased fluids, or both, during the episode of diarrhoea, by background characteristics, Kenya 2008-09

Background characteristic	Amount of liquids offered							Amount of food offered									
	More	Same as usual	Some-what less	Much less	None	Don't know/ missing	Total	More	Same as usual	Some-what less	Much less	None	Never gave food	Don't know/ missing	Total	Percentage given increased fluids and continued feeding[1]	Percentage who continued feeding and were given ORT, or increased fluids, or both	Number of children with diarrhoea
Age in months																		
<6	17.1	47.0	16.7	12.6	6.6	0.0	100.0	2.6	20.7	13.5	10 3	2.8	50.1	0.0	100.0	7.5	29.0	70
6-11	16.9	40.1	18.1	22.4	2.6	0.0	100.0	6.5	32.1	21.2	26.2	3 3	10.8	0.0	100.0	7.8	43.1	181
12-23	30.3	26.1	17.8	23.4	2.3	0.2	100.0	4.5	22.8	23.5	38.0	8.4	2.8	0.1	100.0	17.4	39.8	305
24-35	25.8	28.1	17.2	28.9	0.0	0.0	100.0	6.5	31.8	21.7	32.7	7.2	0.0	0.0	100.0	16.8	45.2	183
36-47	39.8	23.0	13.0	23.6	0.0	0.6	100.0	3.9	29.9	25.5	33.0	6.1	1.1	0.5	100.0	24.8	44.7	108
48-59	20.4	43 5	19.0	17.2	0.0	0.0	100.0	3.4	44.9	28.7	19.1	0.8	2.7	0.5	100.0	16.7	58.7	63
Sex																		
Male	26.6	30.4	18.3	22.0	2.5	0.2	100.0	5.8	29.0	21.7	30 5	6.1	6.7	0.2	100.0	16.1	43.3	490
Female	25.6	33 3	15.8	24.3	0.9	0.1	100.0	4.1	28.3	23.4	30.6	5.6	7.9	0.0	100.0	14.6	41.8	419
Type of diarrhoea																		
Non bloody	25.7	32.9	16.2	23.2	1.9	0.1	100.0	4.9	28.8	20.7	31.1	6 5	8.0	0.1	100.0	14.8	40.6	749
Bloody	25.3	27.4	21.0	24.4	1.6	0.3	100.0	5.0	29.6	29.0	28.7	3.6	4.1	0.0	100.0	16.2	52.0	143
Residence																		
Urban	38.1	23.9	8.2	27.9	1.2	0.6	100.0	7.5	24.5	24.5	33.2	3.4	6.6	0.3	100.0	24.6	44.4	169
Rural	23.4	33 5	19.2	22.0	1.9	0.0	100.0	4.4	29.6	22.1	30.0	6 5	7.4	0.1	100.0	13.3	42.2	740
Province																		
Nairobi	48.5	18.9	12.1	18.6	1.9	0.0	100.0	0.0	15.8	25.7	49.6	2.9	6.0	0.0	100.0	11.3	33.1	37
Central	34.5	34.8	5.5	22.6	2.6	0.0	100.0	3.5	34.1	29.3	20 5	3.2	9.3	0.0	100.0	21.5	43.9	63
Coast	25.4	37.4	14.0	21.6	1.5	0.0	100.0	8.4	34.8	30.3	17.4	7.4	1.7	0.0	100.0	22.1	54.9	127
Eastern	49.9	20 3	20.3	8.8	0.6	0.2	100.0	6.0	18.0	25.2	36.9	9.3	4.6	0.0	100.0	28.4	48.1	126
Nyanza	10.7	31 5	28.0	28.4	0.6	0.6	100.0	6.0	25.8	24.8	23.8	6.1	13.2	0.4	100.0	8.3	43.6	166
Rift Valley	22.4	29.4	14.3	30.9	2.9	0.0	100.0	5.8	31.5	15.0	37.1	3.7	6.7	0.2	100.0	14.5	40.3	251
Western	21.8	44.7	15.0	16.2	2.4	0.0	100.0	0.2	31.1	21.3	32.2	6.8	8.4	0.0	100.0	7 3	32.5	113
North Eastern	15.1	38.1	20.1	26.7	0.0	0.0	100.0	1.4	36.0	14.0	33.7	8.4	6.6	0.0	100.0	1.9	27.1	27
Mother's education																		
No education	20.7	46.6	13.3	18.6	0.8	0.0	100.0	6.5	37.2	16.5	23.0	8.9	8.0	0.0	100.0	13.8	43.0	161
Primary incomplete	25.8	30 3	20.2	20.4	3.1	0.2	100.0	2.5	31.2	25.8	28 3	4.6	7.4	0.3	100.0	16.6	44.6	347
Primary complete	30.6	27 5	17.1	24.2	0.5	0.1	100.0	7.6	21.6	24.6	31 3	6.4	8.4	0.0	100.0	17.4	46.0	238
Secondary+	25.8	26.2	14.4	31.5	1.9	0.3	100.0	5.1	25.2	18.3	41.7	4.9	4.6	0.2	100.0	11.7	33.2	163
Wealth quintile																		
Lowest	21.5	40 5	14.6	20.9	2.5	0.0	100.0	3.8	38.0	21.2	24 5	5.8	6.8	0.0	100.0	13.0	49.4	265
Second	27.6	29.9	16.1	24.7	1.7	0.0	100.0	7.9	20.0	19.3	34.1	7.8	10.8	0.0	100.0	13.9	34.9	175
Middle	16.5	34.4	27.3	20.3	1.3	0.2	100.0	2.3	27.5	24.6	31 5	8.2	5.3	0.6	100.0	7.3	40.6	153
Fourth	31.8	25.2	19.4	21.5	1.8	0.4	100.0	5.5	26.3	27.6	28 5	4.2	8.0	0.0	100.0	23.2	42.8	188
Highest	37.0	22.4	8.5	30.8	1.0	0.2	100.0	6.0	26.2	19.7	40.2	3.1	4.5	0.2	100.0	20.9	41.3	128
Total	26.1	31.7	17.1	23.1	1.8	0.1	100.0	5.0	28.7	22.5	30.6	5.9	7.2	0.1	100.0	15.4	42.6	909

Note: Total includes 9 children for whom type of diarrhoea is missing.
[1] Continued feeding includes children who were given more, same as usual, or somewhat less food during the diarrhoea episode.

10.6 KNOWLEDGE OF ORS PACKETS

A simple and effective response to dehydration caused by diarrhoea is a prompt increase in the child's fluid intake through some form of oral rehydration therapy, which may include the use of a solution prepared from packets of oral rehydration salts (ORS). To ascertain how widespread knowledge of ORS is in Kenya, women were asked whether they knew about ORS packets. Data are tabulated in Table 10.9 for women who gave birth in the five years before the survey.

Table 10.9 Knowledge of ORS

Percentage of mothers age 15-49 who gave birth in the five years preceding the survey who know about ORS for treatment of diarrhoea, by background characteristics, Kenya 2008-09

Background characteristic	Percentage of women who know about ORS packets	Number of women
Age		
15-19	66.2	255
20-24	73.0	1,092
25-34	82.1	1,865
35-49	81.0	761
Residence		
Urban	81.7	823
Rural	77.5	3,150
Province		
Nairobi	83.4	269
Central	77.4	371
Coast	83.2	330
Eastern	74.1	630
Nyanza	78.0	733
Rift Valley	78.4	1,103
Western	78.0	442
North Eastern	84.3	97
Education		
No education	72.9	441
Primary incomplete	74.1	1,262
Primary complete	77.7	1,225
Secondary+	86.7	1,045
Wealth quintile		
Lowest	77.1	843
Second	74.3	764
Middle	81.3	742
Fourth	77.8	765
Highest	81.3	859
Total	78.4	3,973

ORS = Oral rehydration salts

The table shows that almost eight in ten mothers have heard of ORS packets. Knowledge of ORS increases with age and level of education of the mother. There is a slight difference in knowledge between urban (82 percent) and rural women (78 percent). Among provinces, mothers in North Eastern province are more likely to know about ORS (84 percent) than are women in other provinces, though mothers in the highest wealth quintile are only slightly more likely to know about ORS (81 percent) than those in the lowest quintile (77 percent).

10.7 STOOL DISPOSAL

If human faeces are left uncontained, disease may spread by direct contact or by animal contact with the faeces. Hence, the proper disposal of children's stools is extremely important in preventing the spread of disease. Table 10.10 presents information on the disposal of the stools of children under age five, by background characteristics.

The table shows that the most commonly used method of disposal of young children's stools is putting them into a toilet or latrine (59 percent). Other methods of disposal include rinsing stools away (10 percent), throwing them into garbage (6 percent), rinsing them into a drain or ditch (5 percent), and burying them (5 percent). Fifteen percent of children under age five use the toilet or latrine themselves. Overall, 78 percent of children's stools are disposed of safely, an improvement from the 58 percent reported in the 2003 KDHS.

A closer look at the table shows marked differentials in the disposal of stools. In North Eastern province, the stools of less than half of the children under age five are disposed of safely, compared with almost all of children in Nairobi Province (45 percent and 97 percent). The percentage of children whose stools are disposed of safely increases with the age of the child and is higher in urban areas than in rural areas. Increasing levels of education and wealth quintile of the mother are associated with increased safety in disposal of children's stools.

Table 10.10 Disposal of children's stools

Percent distribution of youngest children under age five living with the mother by the manner of disposal of the child's last faecal matter, and percentage of children whose stools are disposed of safely, according to background characteristics, Kenya 2008-09

Background characteristic	Manner of disposal of children's stools								Total	Percentage of children whose stools are disposed of safely	Number of mothers
	Child used toilet or latrine	Put/ rinsed into toilet or latrine	Buried	Put/ rinsed into drain or ditch	Thrown into garbage	Rinsed away	Other	Missing			
Age in months											
<6	2.1	61.8	2.3	12.7	8.6	9.5	2.8	0.1	100.0	66.2	527
6-11	2.4	65.9	5.5	7.5	6.9	11.0	0.6	0.2	100.0	73.8	596
12-23	3.5	68.5	5.5	4.7	7.3	9.9	0.4	0.2	100.0	77.5	1,015
24-35	15.0	58.3	6.0	2.2	5.8	12.7	0.0	0.0	100.0	79.3	765
36-47	38.1	45.6	5.5	1.2	3.3	5.4	0.5	0.5	100.0	89.2	475
48-59	55.3	31.2	3.3	0.1	1.8	7.8	0.0	0.7	100.0	89.7	346
Toilet facility											
Improved, not shared[1]	19.0	70.9	2.1	2.6	1.7	3.0	0.2	0.4	100.0	92.1	710
Non-improved or shared	13.7	55.8	5.6	5.4	7.1	11.4	0.8	0.2	100.0	75.1	3,015
Residence											
Urban	15.4	76.3	1.3	2.6	3.4	0.9	0.1	0.2	100.0	92.9	727
Rural	14.5	54.4	5.8	5.4	6.8	12.0	0.8	0.2	100.0	74.8	2,998
Province											
Nairobi	20.7	76.2	0.0	1.3	1.6	0.0	0.2	0.0	100.0	96.9	234
Central	25.0	68.6	0.8	2.3	1.4	1.4	0.0	0.5	100.0	94.4	351
Coast	10.7	51.7	16.0	1.8	14.4	5.0	0.4	0.0	100.0	78.4	318
Eastern	20.6	55.4	3.1	4.9	7.3	7.4	0.8	0.5	100.0	79.1	604
Nyanza	10.2	56.6	12.1	9.0	1.7	9.0	1.0	0.3	100.0	79.0	660
Rift Valley	11.4	53.2	0.7	5.3	6.4	21.9	1.1	0.0	100.0	65.4	1,042
Western	15.1	74.8	1.8	4.0	2.7	1.4	0.1	0.2	100.0	91.7	423
North Eastern	2.6	24.1	18.2	5.0	41.8	7.5	0.3	0.6	100.0	44.9	93
Education											
No education	8.6	23.6	12.3	4.2	16.6	32.6	1.7	0.4	100.0	44.5	424
Primary incomplete	14.0	54.8	6.2	6.7	6.3	11.4	0.6	0.1	100.0	75.0	1,194
Primary complete	15.4	64.6	4.2	5.3	3.8	5.7	0.9	0.1	100.0	84.2	1,152
Secondary+	17.4	71.9	1.1	2.4	4.0	2.7	0.1	0.4	100.0	90.3	955
Wealth quintile											
Lowest	6.3	34.3	12.5	4.2	15.4	25.4	2.0	0.1	100.0	53.0	818
Second	13.9	56.8	7.1	6.8	5.5	9.3	0.4	0.2	100.0	77.8	732
Middle	18.0	61.5	2.5	6.4	3.2	7.2	0.6	0.5	100.0	82.0	706
Fourth	19.5	65.8	1.3	5.4	3.2	4.3	0.2	0.3	100.0	86.6	708
Highest	17.0	77.3	0.5	1.9	2.0	1.2	0.1	0.1	100.0	94.9	762
Total	14.7	58.7	5.0	4.9	6.1	9.8	0.7	0.2	100.0	78.3	3,725

[1] Non-shared facilities that are of the types: flush or pour flush into a piped sewer system/septic tank/pit latrine; ventilated, improved pit (VIP) latrine; pit latrine with a slab; and a composting toilet.

NUTRITION OF WOMEN AND CHILDREN 11

John Owuor and John Mburu

This chapter covers nutritional concerns for children and women. Information about infant and young child feeding practices, including breastfeeding and feeding with solid/semisolid foods are presented for children. Anthropometric assessment of nutritional status, diversity of foods consumed, micronutrient intake, and vitamin A deficiency are presented for women and children under age five.

Adequate nutrition is critical to child development. The period from birth to two years of age is important for optimal growth, health, and development. Unfortunately, this period is often marked by growth faltering, micronutrient deficiencies, and common childhood illnesses such as diarrhoea and acute respiratory infections (ARI). Feeding practices reported in this chapter include early initiation of breastfeeding, exclusive breastfeeding during the first six months of life, continued breastfeeding for up to two years of age and beyond, timely introduction of complementary feeding at six months of age, frequency of feeding solid/semisolid foods, and the diversity of food groups fed to children between 6 and 23 months of age. A summary indicator that describes the quality of infant and young child (age 6-23 months) feeding practices (IYCF) is included.

A woman's nutritional status has important implications for her health as well as the health of her children. Malnutrition in women results in reduced productivity, an increased susceptibility to infections, slow recovery from illness, and heightened risks of adverse pregnancy outcomes. For example, a woman who has poor nutritional status as indicated by a low body mass index (BMI), short stature, anaemia, or other micronutrient deficiencies has a greater risk of obstructed labour, of having a baby with low birth weight, of producing lower quality breast milk, of mortality due to postpartum haemorrhage, and of morbidity of both herself and her baby.

11.1 NUTRITIONAL STATUS OF CHILDREN

Anthropometric data on height and weight collected in the 2008-09 Kenya Demographic and Health Survey (KDHS) permit the measurement and evaluation of the nutritional status of young children in Kenya. This evaluation allows identification of subgroups of the child population that are at increased risk of faltered growth, disease, impaired mental development, and death.

11.1.1 Measurement of Nutritional Status among Young Children

The 2008-09 KDHS collected data on the nutritional status of children by measuring the height and weight of all children under six years of age. Data were collected with the aim of calculating three indices—namely, weight-for-age, height-for-age, and weight-for-height—all of which take age and sex into consideration. Weight measurements were obtained using lightweight, bathroom-type scales with a digital screen designed and manufactured under the guidance of UNICEF. Height measurements were carried out using a measuring board. Children younger than 24 months were measured lying down (recumbent length) on the board, while standing height was measured for older children.

For this report, indicators of the nutritional status of children are calculated using new growth standards published by WHO in 2006. These new growth standards were generated using data collected in the WHO Multicentre Growth Reference Study (WHO, 2006). The study, whose sample included 8,440 children in six countries, was designed to provide a description of how children should grow under optimal conditions. The WHO Child Growth Standards can therefore be used to assess children all over the world, regardless of ethnicity, social and economic influences, and feeding practices. Each of the three nutritional status indicators described below is expressed in standard deviation units from the median of the Multicentre Growth Reference Study sample.

Each of these indices—height-for-age, weight-for-height, and weight-for-age—provides different information about growth and body composition, which is used to assess nutritional status. The height-for-age index is an indicator of linear growth retardation and cumulative growth deficits. Children whose height-for-age Z-score is below minus two standard deviations (-2 SD) are considered short for their age (stunted) and are chronically malnourished. Children who are below minus three standard deviations (-3 SD) are considered severely stunted. Stunting reflects failure to receive adequate nutrition over a long period of time and is also affected by recurrent and chronic illness. Height-for-age, therefore, represents the long-term effects of malnutrition in a population and is not sensitive to recent, short-term changes in dietary intake.

The weight-for-height index measures body mass in relation to body height or length and describes current nutritional status. Children whose Z-scores are below minus two standard deviations (-2 SD) are considered thin (wasted) and are acutely malnourished. Wasting represents the failure to receive adequate nutrition in the period immediately preceding the survey and may be the result of inadequate food intake or a recent episode of illness causing loss of weight and the onset of malnutrition. Children whose weight-for-height is below minus three standard deviations (-3 SD) are considered severely wasted.

Weight-for-age is a composite index of height-for-age and weight-for-height. It takes into account both acute and chronic malnutrition. Children whose weight-for-age is below minus two standard deviations are classified as underweight. Children whose weight-for-age is below minus three standard deviations (-3 SD) are considered severely underweight.

11.1.2 Results of Data Collection

Measurements of height and weight were obtained for all children born since January 2003 living in the households selected for the KDHS sample. The results include children who were not biological offspring of the women interviewed in the survey.

Although data were collected for all children under age six, for purposes of comparability, the analysis is limited to children under age five. Height and weight measurements were obtained for almost 97 percent of the 6,092 (unweighted) children under age five who were present in sampled households at the time of the survey. An additional 5 percent of children were considered to have implausibly high or low values for the height or weight measures or lacked data on the child's age in months. The following analysis focuses on the children for whom complete and plausible anthropometric and age data were collected.

11.1.3 Levels of Malnutrition

Table 11.1 and Figure 11.1 indicate the nutritional status of children under five as measured by stunting (height-for-age) and various background characteristics. Nationally, 35 percent of children under five are stunted, while the proportion severely stunted is 14 percent. Analysis of the indicator by age group shows that stunting is highest (46 percent) in children age 18-23 months and lowest (11 percent) in children age less than 6 months. Severe stunting shows a similar trend, where children age 18-23 months have the highest proportion of severely stunted children (22 percent) and those less than 6 months have the lowest proportion (4 percent).

A higher proportion (37 percent) of male children under five years are stunted, compared with 33 percent of female children. There is an inverse relationship between the length of the preceding birth interval and the proportion of children who are stunted. The longer the interval, the less likely the child is to be stunted. The mother's Body Mass Index (BMI) also has an inverse relationship with severe stunting levels. For example, mothers who are thin (BMI$<$ 18.5) have children with the highest stunting levels (45 percent), while children whose mothers are overweight/obese (BMI $\geq$ 25) have the lowest stunting levels (27 percent).

Table 11.1 Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Kenya 2008-09

Background characteristic	Height-for-age			Weight-for-height				Weight-for-age				Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	
Age in months												
<6	4.4	11.2	-0.2	5.1	9.7	11.0	0.0	2.9	7.9	4.2	-0.2	470
6-8	9.1	22.8	-0.7	1.3	11.4	10.9	-0.1	1.5	12.6	3.2	-0.6	319
9-11	14.6	30.5	-1.1	1.0	10.6	7.3	0.0	3.4	14.5	1.0	-0.6	271
12-17	15.0	41.8	-1.6	2.5	6.3	6.0	-0.0	3.0	17.1	1.2	-0.8	542
18-23	21.9	45.7	-1.7	0.6	4.9	5.6	0.1	1.9	12.2	1.4	-0.7	545
24-35	20.3	45.4	-1.8	1.6	6.6	3.3	-0.1	5.5	19.4	1.1	-1.0	1,143
36-47	12.6	35.0	-1.5	1.1	3.8	2.0	-0.1	3.4	15.8	0.3	-1.0	1,085
48-59	10.5	31.8	-1.5	2.2	7.3	2.4	-0.3	4.0	19.4	0.2	-1.1	1,094
Sex												
Male	16.0	37.4	-1.5	2.1	7.8	4.3	-0.1	4.2	16.8	1.4	-0.9	2,787
Female	12.3	33.1	-1.4	1.6	5.6	5.0	-0.1	3.0	15.4	0.9	-0.8	2,682
Birth interval in months[2]												
First birth[3]	9.8	32.4	-1.3	1.7	5.7	6.6	0.0	2.8	13.4	0.9	-0.7	1,083
<24	20.3	42.0	-1.7	1.2	6.9	4.1	-0.1	4.5	19.0	1.0	-1.0	875
24-47	14.2	35.6	-1.4	2.5	7.7	3.8	-0.2	3.7	17.5	1.0	-0.9	2,077
48+	12.0	31.8	-1.3	1.2	4.7	4.9	0.1	2.4	12.9	1.5	-0.7	981
Size at birth[2]												
Very small	21.4	44.6	-1.8	1.7	14.6	1.9	-0.5	9.4	31.9	0.9	-1.4	157
Small	17.2	44.9	-1.8	2.2	10.1	4.0	-0.5	8.1	29.3	0.3	-1.3	634
Average or larger	13.0	33.4	-1.3	1.7	5.7	4.9	-0.0	2.4	13.3	1.2	-0.8	4,192
Mother's interview status												
Interviewed	13.9	35.3	-1.4	1.8	6.6	4.7	-0.1	3.4	16.0	1.1	-0.9	5,016
Not interviewed	17.1	35.4	-1.4	2.0	8.5	4.7	-0.1	6.0	17.6	2.2	-0.9	453
Mother's nutritional status[5]												
Thin (BMI <18.5)	17.1	44.9	-1.7	3.8	12.4	1.0	-0.6	8.5	28.6	0.2	-1.4	594
Normal (BMI 18.5-24.9)	14.6	35.8	-1.4	1.5	6.2	4.8	-0.1	3.2	16.1	0.9	-0.9	3,423
Overweight/obese (BMI ≥25)	9.7	27.0	-1.1	1.8	4.1	6.5	0.2	0.9	8.0	2.3	-0.4	972
Residence												
Urban	8.7	26.4	-1.0	1.3	5.3	5.4	0.1	1.2	10.3	2.3	-0.5	912
Rural	15.3	37.1	-1.5	2.0	7.0	4.5	-0.1	4.1	17.3	1.0	-0.9	4,557
Province												
Nairobi	8.7	28.5	-1.1	1.5	3.8	6.8	0.3	1.6	7.9	2.9	-0.4	264
Central	9.4	32.4	-1.3	1.1	4.9	5.0	0.1	1.8	12.1	0.5	-0.7	442
Coast	14.3	39.0	-1.4	3.0	10.7	3.3	-0.3	5.4	23.5	0.8	-1.0	485
Eastern	17.1	41.9	-1.7	1.4	7.3	4.7	-0.1	4.2	19.8	0.7	-1.0	881
Nyanza	13.0	30.9	-1.2	1.5	3.9	5.9	0.1	2.2	10.6	1.7	-0.6	991
Rift Valley	14.9	35.7	-1.5	2.1	8.9	3.5	-0.3	3.9	19.1	0.9	-1.0	1,541
Western	14.8	34.2	-1.5	1.0	2.3	5.0	0.1	3.9	11.8	1.4	-0.7	733
North Eastern	17.7	35.2	-1.1	8.3	19.5	6.2	-0.6	8.1	24.5	2.6	-1.1	133
Mother's education[6]												
No education	17.3	38.6	-1.5	5.2	14.9	3.2	-0.6	7.5	28.0	0.9	-1.3	639
Primary incomplete	15.9	40.2	-1.6	1.8	6.3	3.9	-0.2	3.9	17.9	0.8	-1.0	1,698
Primary complete	14.0	35.8	-1.5	1.3	5.5	4.4	-0.0	2.5	15.2	0.9	-0.8	1,520
Secondary+	9.0	25.5	-1.1	0.9	3.8	6.8	0.3	1.6	7.6	1.9	-0.4	1,159
Wealth quintile												
Lowest	18.8	44.4	-1.6	3.8	11.3	4.2	-0.4	7.0	24.9	0.4	-1.2	1,359
Second	18.6	39.2	-1.6	1.1	6.0	4.3	-0.1	4.4	17.3	0.7	-1.0	1,146
Middle	12.4	34.4	-1.4	1.4	5.7	4.0	-0.1	2.3	15.5	1.4	-0.9	1,056
Fourth	10.0	29.1	-1.2	1.4	5.0	5.7	0.0	2.1	10.1	1.7	-0.7	985
Highest	8.3	24.5	-1.0	1.0	3.8	5.5	0.2	0.7	8.8	2.2	-0.4	924
Total	14.2	35.3	-1.4	1.9	6.7	4.7	-0.1	3.6	16.1	1.2	-0.9	5,470

Note: Table is based on children who slept in the household the night before the interview and who had valid dates of birth (month and year) and valid measurements of both height and weight. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are not comparable to those based on the previously used NCHS/CDC/WHO standards (see Table C.7). Total includes 34 children missing information on size at birth.

[1] Includes children who are below -3 standard deviations (SD) from the International Reference Population median

[2] Excludes children whose mothers were not interviewed

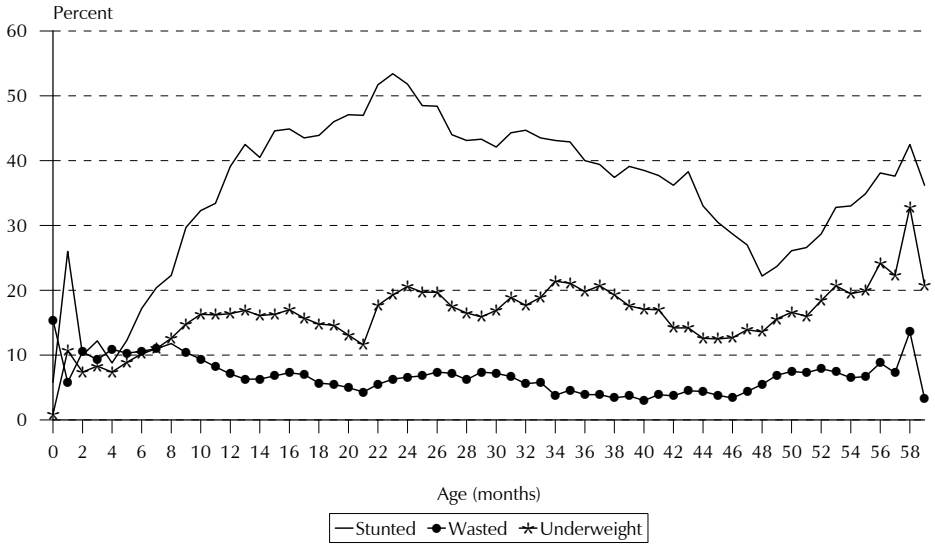
[3] First born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

[4] Includes children whose mothers are deceased

[5] Excludes children whose mothers were not weighed and measured; mother's nutritional status in terms of body mass index (BMI) is shown in Table 11.10

[6] For women who were not interviewed, information is taken from the household questionnaire. Excludes children whose mothers are not listed in the household questionnaire

Figure 11.1 Nutritional Status of Children by Age



Kenya 2008-09

Children living in rural areas are moderately and severely stunted to a greater extent (37 percent), when compared with rural children (26 percent). At the provincial level, Eastern province (42 percent) has the highest proportion of stunted children, while Nairobi province has the lowest (29 percent).

The mother's level of education generally has an inverse relationship with stunting levels. For example, children of mothers with at least some secondary education have the lowest stunting levels (26 percent), while children whose mothers have no education or only incomplete primary education have the highest levels of stunting (39-40 percent). A similar inverse relationship is observed between the household wealth index and the stunting levels for children, that is, children in the lowest household wealth quintile record the highest stunting levels (44 percent). The proportion of stunted children declines with increase in the wealth quintile.

Table 11.1 also shows the nutritional status of children under five years as measured by wasting or low weight-for-age. Overall, 7 percent of children are wasted and 2 percent are severely wasted. Analysis of the indicator by age group shows that wasting is highest (11 percent) in children age 6-8 months and lowest (4 percent) in children age 36-47 months. The survey data show that North Eastern province has extraordinarily high levels of wasting: 20 percent of children under five in North Eastern province are wasted and 8 percent are severely wasted. These levels may reflect food stress in the province, which is traditionally a region with food deficits. Children whose mothers have no education also have very high levels of wasting and severe wasting (15 and 5 percent, respectively).Wealth and nutrition status of mother are also negatively correlated with the proportion of children who are wasted.

As shown in Table 11.1, 16 percent of children under five are underweight (low weight-for-age) and 4 percent are severely underweight. The proportion of underweight children is highest (19 percent) in the age groups 24-35 and 48-59 months and lowest (8 percent) for those less than six months of age. Female children (15 percent) are slightly less likely to be underweight than male children (17 percent).

Rural children are more likely to be underweight (17 percent) than urban children (10 percent). At the provincial level, North Eastern province has the highest proportion of moderate and severely underweight children (25 percent), while Nairobi province has the lowest proportion (8 percent).

The proportion of underweight children is negatively correlated with the level of education of the mother. Children whose mothers have no education have the highest levels of underweight (28 percent), while children of mothers with some secondary education have the lowest (8 percent). Wealth and nutrition status of mother are also negatively correlated with the proportion of children who are underweight.

Trends in nutritional status of children for the period 2000 to 2008-09 are shown in Table 11.2. For this table, data for 2008-09 were recalculated using the previous international nutritional reference population and thus will not be comparable to data in Table 11.1.

Table 11.2 Trends in nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for age, Kenya, 2000 to 2008-09

Background characteristic	Height for age Stunting			Weight for height Wasting			Weight for age Underweight		
	2000	2003	2008-09	2000	2003	2008-09	2000	2003	2008-09
Age in months									
< 6	12.4	7.4	5.4	2.4	3.9	3.9	3.0	2.4	2.5
6-11	24.5	15.3	21.6	3.9	6.0	5.8	14.6	15.1	15.2
12-23	47.5	43.1	41.7	9.9	9.5	7.5	28.4	26.8	23.8
24-35	34.8	35.5	32.5	6.6	5.5	7.0	22.5	25.3	25.0
36-47	34.5	34.1	28.3	4.1	4.3	3.2	19.4	20.8	20.2
48-59	34.7	27.9	30.4	4.9	3.4	6.3	21.9	17.8	22.2
Sex									
Male	37.9	32.9	30.8	6.6	6.4	6.7	22.6	22.0	20.7
Female	32.6	27.7	28.3	5.3	4.8	4.9	19.6	17.7	19.8
Residence									
Urban	26.6	23.6	21.6	3.3	4.2	4.6	12.4	12.6	12.6
Rural	38.0	31.7	31.2	6.8	5.8	6.1	23.9	21.3	21.8
Province									
Nairobi	29.6	18.7	22.7	3.1	4.5	2.6	12.4	6.3	10.0
Central	27.4	27.0	25.7	4.6	4.4	4.5	15.4	14.6	16.7
Coast	33.7	34.9	34.0	6.4	5.7	11.2	21.1	25.4	28.5
Eastern	42.8	32.5	32.8	7.8	4.2	6.7	29.6	21.4	25.2
Nyanza	35.9	31.1	26.9	5.2	2.3	3.2	19.9	15.6	13.7
Rift Valley	36.8	31.6	30.9	7.6	7.7	6.7	24.9	24.0	23.7
Western	38.1	30.2	28.4	5.5	4.5	2.6	21.5	19.0	14.8
North Eastern	na	24.3	31.1	na	26.5	18.4	na	33.7	31.1
Mother's education									
No education	37.2	36.4	34.2	7.1	14.8	12.8	24.1	33.1	34.5
Primary incomplete	na	34.8	34.4	na	5.1	5.9	na	21.9	23.5
Primary complete	na	30.5	29.8	na	2.8	4.6	na	17.3	18.9
Secondary+	25.6	19.2	19.3	3.4	3.6	3.0	13.7	10.6	10.0
Total	35.3	30.3	29.6	6.0	5.6	5.8	21.2	19.9	20.3

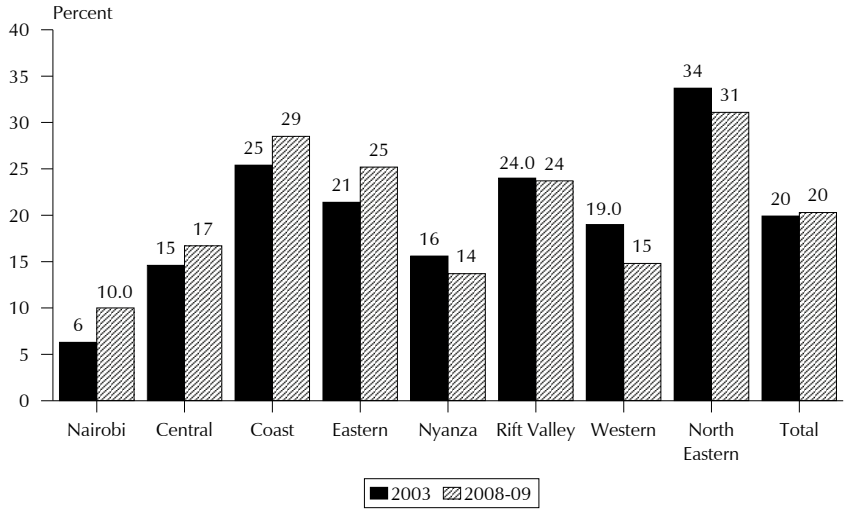
Note: Numbers refer to the percentage of children who are more than two standard deviation units from the median of the NCHS/CDC/WHO international reference population and thus the data for 2008-09 will not match the figures in Table 11.1. Figures for 2000 are from the Multiple Indicator Cluster Survey (CBS, 2001) and exclude areas in rural North Eastern province.
na = Not applicable

The proportion of stunted children declined from 35 percent in 2000 to 30 percent in 2008-09. Since 2003, the proportion of stunted children has remained unchanged. Analysis of the indicator by age group shows that since 2003, stunting levels have increased in the 6-11 month and 48-59 month age categories. Among male children under five, the proportion stunted has declined from 33 percent in 2003 to 31 percent in 2008-09 while among female children, it has remained unchanged. The proportion stunted among children in urban areas declined by two percentage points from 24 percent in 2003 to 22 percent in 2008-09; however in rural areas, the change was insignificant. Most provinces show a drop in the proportion of stunted children since 2003, except for North Eastern province, where the proportion stunted increased by almost 7 percentage points; Nairobi province where it increased by 4 percentage points, and Eastern province where it was virtually unchanged. There are only minor changes in stunting over time according to mother's education.

Overall, the proportion of children who are wasted has changed little since 2000. Trends in wasting by background characteristics are mostly small, except in Coast province where the proportion increased and North Eastern province, where there was a decline (from 27 percent in 2003 to 18 percent in 2008-09). There has also been a sizeable increase in wasting among children of women with no education.

With regard to the proportion of children underweight, Table 11.2 shows a slight decline between 2000 and 2003, but almost no change between 2003 and 2008-09. There are slight fluctuations in the proportion underweight by background characteristics, but most are minor. All provinces show an increase in the proportion of underweight children since 2003 except Nyanza and Western provinces (Figure 11.2). In Nairobi, although the proportion of underweight children is the lowest, it has almost doubled since 2003, while Eastern and Coast provinces have experienced substantial increases in the proportion of underweight children. Since 2000, the proportion of underweight children increased substantially for mothers with no education, from 24 to 35 percent in 2008-09.

Figure 11.2 **Proportion of Underweight Children by Province, 2003 and 2008-09**



11.2 INITIATION OF BREASTFEEDING

Early initiation of breastfeeding is encouraged for a number of reasons. Mothers benefit from early suckling because it stimulates breast milk production and facilitates the release of oxytocin, which helps the contraction of the uterus and reduces postpartum blood loss. The first breast milk contains colostrum, which is highly nutritious and has antibodies that protect the newborn from diseases. Early initiation of breastfeeding also fosters bonding between mother and child.

Table 11.3 shows the percentage of children born in the five years before the survey by breastfeeding status and the timing of initial breastfeeding, according to background characteristics. Results indicate that 97 percent of children are breastfed at some point. Overall, 58 percent of children are breastfed within one hour of birth and 86 percent within one day after delivery. The proportion of women initiating breastfeeding within one hour of birth is highest in North Eastern province (75 percent) and lowest in Western province (34 percent).

Forty-two percent of children are given something before breastfeeding (prelacteal feed). Male children are more likely to receive a prelacteal feed (45 percent) than female children (39 percent). Mothers in rural areas (44 percent) are more likely to practise prelacteal feeding than those in urban areas (35 percent). The proportion of children who receive a prelacteal feed is negatively correlated with the level of education of the mother; children whose mothers have no education are

the most likely to receive a prelacteal feed (54 percent), while those whose mothers have attended secondary school are the least likely to be fed before starting breastfeeding (36 percent). Prelacteal feeding is most common in Western and North Eastern provinces and least common in Central province. Children born at home are more likely to receive a prelacteal feed (51 percent) than those born in a health facility (31 percent). The proportion of children who receive a prelacteal feed is negatively correlated with the household wealth.

Table 11.3 Initial breastfeeding

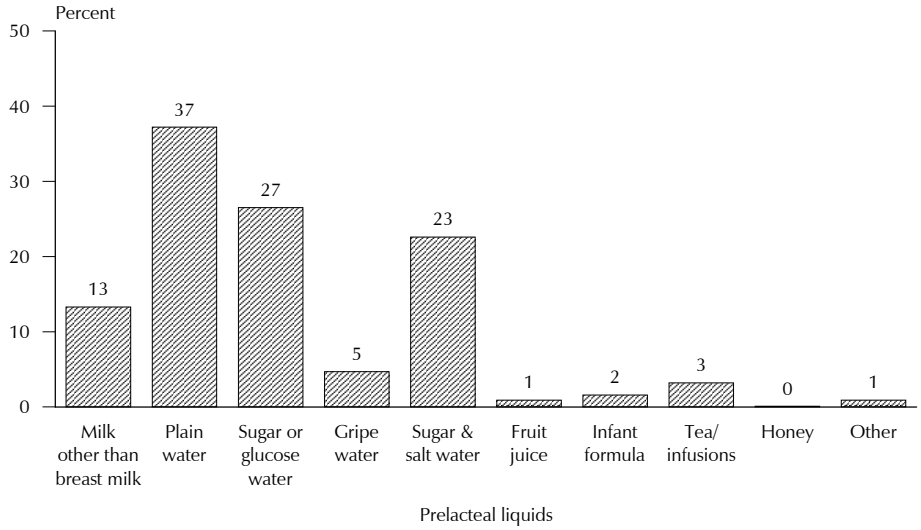
Percentage of children born in the five years preceding the survey who were ever breastfed, and for the last children born in the five years preceding the survey ever breastfed, the percentage who started breastfeeding within one hour and within one day of birth and the percentage who received a prelacteal feed, by background characteristics, Kenya 2008-09

Background characteristic	Breastfeeding among children born in last five years		Among last-born children ever breastfed:			
	Percentage ever breastfed	Number of children born in last five years	Percentage who started breastfeeding within 1 hour of birth	Percentage who started breastfeeding within 1 day of birth[1]	Percentage who received a prelacteal feed[2]	Number of last-born children ever breastfed
Sex						
Male	96.6	3,027	57.0	85.7	44.5	2,036
Female	97.5	2,825	59.3	87.2	38.8	1,845
Residence						
Urban	97.1	1,074	54.3	86.0	35.2	805
Rural	97.1	4,777	59.1	86.5	43.5	3,076
Province						
Nairobi	96.4	334	56.3	88.1	24.7	260
Central	96.0	466	55.3	88.7	16.4	361
Coast	97.0	495	42.6	71.5	56.5	325
Eastern	95.7	890	69.4	96.0	19.2	616
Nyanza	97.6	1,145	61.3	86.7	46.1	721
Rift Valley	97.5	1,642	63.7	86.1	48.0	1,072
Western	97.7	703	33.7	81.5	67.9	431
North Eastern	97.7	178	75.4	83.6	59.5	96
Mother's education						
No education	96.5	763	59.0	78.8	54.4	429
Primary incomplete	97.4	1,952	54.8	85.7	47.0	1,241
Primary complete	97.3	1,761	60.0	88.3	36.4	1,198
Secondary+	96.6	1,375	59.3	88.1	36.4	1,014
Assistance at delivery						
Health professional[3]	96.6	2,590	59.6	89.5	31.7	1,877
Traditional birth attendant	97.8	1,613	53.9	84.9	57.5	954
Other	97.2	1,239	61.9	82.8	44.0	801
No one	96.7	397	50.7	80.5	50.5	248
Place of delivery						
Health facility	96.5	2,493	59.4	89.3	31.1	1,804
At home	97.5	3,341	56.9	83.9	51.2	2,072
Wealth quintile						
Lowest	96.1	1,445	57.9	82.7	50.7	819
Second	97.7	1,190	59.4	86.0	48.1	752
Middle	97.3	1,085	56.2	88.4	43.7	725
Fourth	97.5	1,038	59.5	86.9	37.4	748
Highest	97.0	1,095	57.3	88.1	29.7	837
Total	97.1	5,852	58.1	86.4	41.8	3,881

Note: Table is based on births in the last five years whether the children are living or dead at the time of interview. Total includes 12 births for whom assistance at delivery is missing and 17 births for whom place of delivery is 'other' or missing.
[1] Includes children who started breastfeeding within one hour of birth
[2] Children given something other than breast milk during the first three days of life
[3] Doctor, nurse, or midwife

As shown in Figure 11.3, the most common prelacteal item is plain water (37 percent), though roughly one-quarter of newborns who are given prelacteal feeds receive sugar water or sugar and salt water.

Figure 11.3 Prelacteal Liquids



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11.3 BREASTFEEDING STATUS BY AGE

UNICEF and WHO recommend that children be exclusively breastfed during the first 6 months of life and that children be given solid or semisolid complementary food in addition to continued breastfeeding from 6 months until 24 months or more when the child is fully weaned. Exclusive breastfeeding is recommended because breast milk is uncontaminated and contains all the nutrients necessary for children in the first few months of life. In addition, the mother's antibodies in breast milk provide immunity to disease. Early supplementation is discouraged for several reasons. First, it exposes infants to pathogens and increases their risk of infection, especially disease. Second, it decreases infants' intake of breast milk and therefore suckling, which reduces breast milk production. Third, in low-resource settings, supplementary food is often nutritionally inferior.

Information on complementary feeding was obtained by asking mothers about the current breastfeeding status of all children under five years of age and, for the youngest child born in the three-year period before the survey and living with the mother, foods and liquids given to the child the day and night before the survey.

Table 11.4 shows the percent distribution of youngest children under three years living with the mother by breastfeeding status and percentage of children under three years using a bottle with a nipple, according to age in months. The data presented in Table 11.4 and Figure 11.4 show that the duration of breastfeeding in Kenya is long. The proportion of children who are currently breastfeeding is highest (99 percent) for children up to 6-8 months of age before it begins to slowly decline as the child's age progresses. However, 84 percent of children age 12-17 months are still being breastfed, as are 59 percent of those age 18-23 months old.

Table 11.4 Breastfeeding status by age

Percent distribution of youngest children under three years who are living with their mother by breastfeeding status and the percentage currently breastfeeding; and the percentage of all children under three years using a bottle with a nipple, according to age in months, Kenya 2008-09

Age in months	Not breast-feeding	Breastfeeding and consuming:					Total	Percentage currently breast-feeding	Number of youngest child under three years	Percentage using a bottle with a nipple[1]	Number of children
		Exclusively breastfed	Plain water only	Non-milk liquids/ juice	Other milk	Comple-mentary foods					
0-1	1.1	51.8	22.7	3.7	10.5	10.2	100.0	98.9	159	17.1	161
2-3	0.9	34.8	12.3	0.1	20.4	31.5	100.0	99.1	173	21.5	174
4-5	0.7	13.2	10.4	0.3	15.6	59.9	100.0	99.3	195	33.1	200
6-8	1.2	3.6	3.5	0.0	7.9	83.9	100.0	98.8	324	28.9	327
9-11	6.6	0.1	0.6	1.0	6.2	85.5	100.0	93.4	272	26.1	279
12-17	16.0	0.0	0.8	0.5	1.3	81.4	100.0	84.0	514	14.7	530
18-23	40.7	0.4	0.4	0.1	0.5	57.9	100.0	59.3	501	8.8	566
24-35	77.9	0.0	0.2	0.0	1.0	20.9	100.0	22.1	765	5.9	1,132
0-3	1.0	42.9	17.3	1.8	15.7	21.3	100.0	99.0	332	19.4	335
0-5	0.9	31.9	14.7	1.2	15.6	35.6	100.0	99.1	527	24.5	535
6-9	2.0	2.8	2.9	0.4	9.0	82.8	100.0	98.0	416	29.9	419
12-15	14.0	0.0	1.0	0.6	1.6	82.7	100.0	86.0	333	16.9	341
12-23	28.2	0.2	0.6	0.3	0.9	69.8	100.0	71.8	1,015	11.6	1,096
20-23	46.4	0.6	0.4	0.1	0.3	52.3	100.0	53.6	320	6.7	366

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

[1] Based on all children under three years

Figure 11.4 Infant Feeding Practices by Age

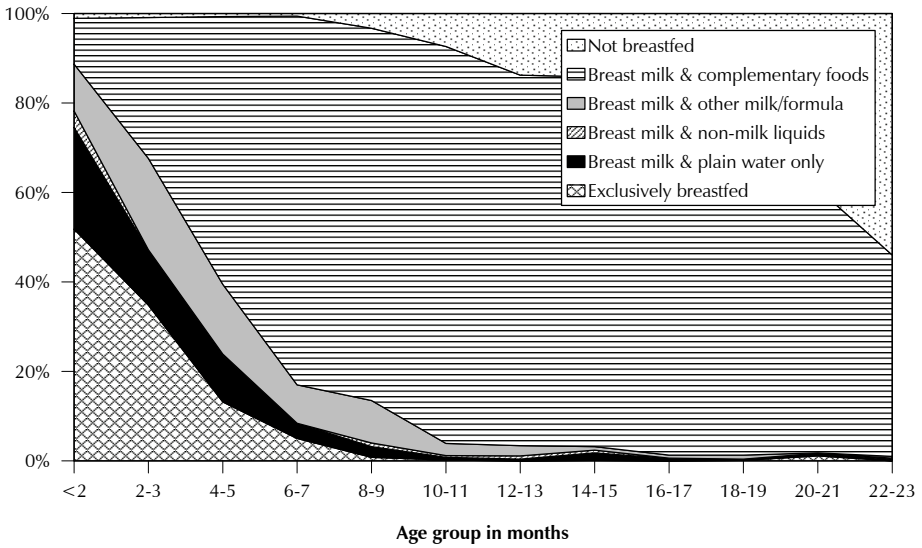

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Table 11.4 further indicates that supplementation of breast milk starts early in Kenya, with 60 percent of children aged 4-5 months being given complementary food. Exclusive breastfeeding (breast milk only) is not common, as only 32 percent of children under six months of age are exclusively breastfed. This proportion is highest (52 percent) for children aged 0-1 month; after 8 months, the proportion of children being exclusively breastfed declines to less than 1 percent. Most of the supplements given are plain water or other milk. One in 10 babies under two months and 36 percent of those below six months of age are given complementary food, presumably mushy or semi-solid food. By age 6-9 months, 83 percent of children are given complementary foods.

Table 11.4 shows that bottle-feeding is still prevalent in Kenya. One-quarter of children under 6 months are fed using a bottle with a nipple. The proportion of children feeding using a bottle with a nipple is highest (33 percent) in the 4-5 months age group. The continued practice of bottle-feeding is a concern because of the possible contamination due to unsafe water and lack of hygiene in preparation.

11.4 DURATION AND FREQUENCY OF BREASTFEEDING

Table 11.5 shows the median duration of breastfeeding by selected background characteristics. The estimates of median and mean durations of breastfeeding are based on current status data, that is, the proportion of children in the three years preceding the survey who were being breastfed at the time of the survey.

Table 11.5 Median duration and frequency of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children born in the three years preceding the survey, percentage of breastfeeding children under six months living with the mother who were breastfed six or more times in the 24 hours preceding the survey, and mean number of feeds (day/night), by background characteristics, Kenya 2008-09

	Median duration (months) of breastfeeding among children born in the last three years[1]			Frequency of breastfeeding among children under six months[2]			
Background characteristic	Any breast-feeding	Exclusive breast-feeding	Predomi-nant breast-feeding[3]	Percentage breastfed 6+ times in last 24 hours	Mean number of day feeds	Mean number of night feeds	Number of children
Sex							
Male	19.9	0.6	1.9	91.1	7.2	4.5	277
Female	21.2	1.3	2.5	95.4	7.0	4.8	237
Residence							
Urban	19.3	0.6	2.2	94.3	7.2	5.1	80
Rural	21.3	1.0	2.2	92.8	7.0	4.5	435
Province							
Nairobi	14.6	0.5	1.9	(95.3)	(7.4)	(5.8)	33
Central	19.2	0.6	3.7	(92.6)	(7.6)	(4.5)	38
Coast	19.8	0.5	2.4	95.4	7.8	4.8	39
Eastern	25.5	2.6	3.3	95.2	7.7	5.0	87
Nyanza	18.6	0.6	1.4	84.9	5.0	4.2	108
Rift Valley	21.0	1.7	2.3	97.0	8.0	4.4	143
Western	19.9	1.1	1.8	90.5	6.0	4.2	47
North Eastern	17.4	0.4	0.5	98.9	8.3	5.6	18
Mother's education							
No education	21.1	0.6	1.6	98.7	9.4	5.3	67
Primary incomplete	21.4	0.7	2.3	92.9	6.9	4.5	157
Primary complete	20.3	1.8	2.3	91.3	6.5	4.5	157
Secondary+	19.3	0.5	2.1	92.5	6.7	4.6	133
Wealth quintile							
Lowest	21.4	1.8	2.4	95.2	7.4	4.8	146
Second	19.3	0.7	2.1	91.5	6.4	4.6	97
Middle	20.1	0.6	0.9	94.0	7.2	4.3	93
Fourth	21.4	0.7	3.0	93.8	7.2	4.2	97
Highest	19.7	0.6	2.1	89.2	7.0	5.1	81
Total	20.5	0.7	2.2	93.1	7.1	4.6	514
Mean for all children	20.7	2.6	3.7	na	na	na	na

Note: Median and mean durations are based on current status. Includes children living and deceased at the time of the survey. Figures in parentheses are based on 25-49 unweighted children.
na = Not applicable
[1] It is assumed that non-last-born children and last-born children not currently living with the mother are not currently breastfeeding
[2] Excludes children without a valid answer on the number of times breastfed
[3] Either exclusively breastfed or received breast milk and plain water, and/or non-milk liquids only

The median duration for any breastfeeding among Kenyan children is 21 months, which is similar to the duration documented in previous KDHS surveys, implying that there has been little change in breastfeeding patterns over time. The median duration of exclusive breastfeeding is less than one month, though the mean duration is 3 months.

The median duration of any breastfeeding is slightly longer in rural areas (21 months) than in urban areas (19 months). Girls are breastfed slightly longer than boys. At the provincial level, duration of breastfeeding is longest in Eastern province (26 months) and shortest in Nairobi province (15 months). The data show that women with no education tend to breastfeed slightly longer (21 months) than those who have at least some secondary education (19 months).

Frequent breastfeeding of children is a common occurrence in Kenya. More than nine in ten (93 percent) infants under six months of age were breastfed six or more times in the 24 hours prior to the survey. Children are breastfed an average of 7 times during the day and 5 times during the night. North Eastern province has the highest mean number of times children are breastfed, while Nyanza province has the lowest.

11.5 Types of Complementary Foods

UNICEF and WHO recommend the introduction of solid food to infants around the age of 6 months because by that age breast milk alone is no longer sufficient to maintain a child's optimal growth. In the transition to eating the family diet, children from the age of 6 months should be fed small quantities of solid and semisolid foods throughout the day. During this transition period (ages 6-23 months), the prevalence of malnutrition increases substantially in many countries because of increased infections and poor feeding practices.

Table 11.6 provides information on the types of food given to youngest children under three years of age living with their mother on the day and night preceding the survey, according to their breastfeeding status. The data indicate that in Kenya, the practice of feeding children with any solid or semi-solid foods starts early in life. By the age of 4-5 months, three in ten (60 percent) breastfed children are also being fed solid or semi-solid foods. Use of infant formula milk and fortified baby foods is minimal. Only 3 percent of children under three years receive commercially produced infant formula.

The most commonly used foods given to breastfeeding children under age three include food made from grains (72 percent), vitamin-A rich fruits and vegetables (53 percent) and other milk (51 percent). Foods made from grains are introduced to children by two to three months (31 percent); by six to eight months, 81 percent are already receiving these foods. Protein-rich foods (meat, fish, poultry, and eggs) are introduced gradually from six to eight months. Generally, for all children under three years of age, the percentage consuming protein-rich foods in the previous 24 hours does not rise above 37 percent. Foods made from roots and tubers or from legumes are introduced gradually from 15 percent of breastfeeding children age 6-8 months up to one-third or more of children 24-35 months old. Fruits and vegetables are consumed much earlier and consumption increases rapidly with the age of the child, especially for fruits and vegetables rich in vitamin A.

Generally, the proportions of non-breastfeeding children who consume food from a food group are higher than for breastfeeding children, which is plausible, since non-breastfeeding children tend to be older than breastfeeding children.

Table 11.6 Foods and liquids consumed by children in the day or night preceding the interview

Percentage of youngest children under three years of age who are living with the mother by type of foods consumed in the day or night preceding the interview, according to breastfeeding status and age, Kenya 2008-09

	Liquids			Solid or semi-solid foods									
Age in months	Infant formula	Other milk[1]	Other liquids[2]	Fortified baby foods	Food made from grains[3]	Fruits and vegetables rich in vitamin A[4]	Other fruits and vegetables	Food made from roots and tubers	Food made from legumes and nuts	Meat, fish, poultry, and eggs	Cheese, yogurt, other milk product	Any solid or semi-solid food	Number of children
BREASTFEEDING CHILDREN													
0-1	2.1	13.8	4.4	0.1	9.7	1.4	0.8	0.1	1.9	2.9	0.3	10.3	157
2-3	3.3	35.6	7.1	3.8	31.1	6.2	6.8	1.3	1.3	0.6	1.5	31.8	172
4-5	1.8	46.5	10.7	1.6	53.6	18.5	14.4	7.8	3.3	7.6	1.3	60.3	194
6-8	2.9	57.8	32.9	4.6	81.0	44.5	30.2	14.9	14.9	13.1	2.5	84.9	320
9-11	4.3	64.2	51.7	7.4	87.5	67.5	30.1	28.2	29.3	17.7	9.8	91.5	254
12-17	2.7	54.6	64.2	5.0	89.6	72.9	41.0	23.7	30.8	28.7	5.5	96.9	432
18-23	1.6	54.5	78.0	2.3	84.2	82.9	41.9	34.4	37.2	33.8	5.1	97.7	297
24-35	1.3	58.3	81.2	1.6	89.7	73.2	30.1	32.6	39.1	36.2	6.4	94.6	169
6-23	2.8	57.2	57.2	4.8	85.9	67.1	36.4	24.9	28.0	23.9	5.5	93.1	1,304
Total	2.6	51.0	46.3	3.7	72.3	52.5	28.4	19.9	22.2	19.7	4.4	78.2	1,996
NON-BREASTFEEDING CHILDREN													
12-17	6.2	67.4	77.1	5.0	94.9	79.7	43.6	27.8	22.9	36.5	3.2	98.8	82
18-23	2.5	55.2	86.5	4.1	91.6	82.3	48.8	38.8	33.9	37.7	8.0	97.3	204
24-35	2.3	54.7	87.0	4.7	89.2	83.3	40.6	34.7	42.2	37.6	9.5	97.7	596
6-23	3.7	60.9	81.5	4.5	92.6	80.4	46.2	34.7	29.8	36.4	6.3	97.8	308
Total	2.8	56.8	84.7	4.6	90.2	81.9	42.4	34.5	37.8	37.0	8.4	97.5	908

Note: Breastfeeding status and food consumed refer to a '24-hour' period (yesterday and last night).
[1] Other milk includes fresh, tinned and powdered cow or other animal milk
[2] Doesn't include plain water
[3] Includes fortified baby food
[4] Includes pumpkin, yellow yams, butternut squash, carrots, yellow sweet potatoes, green leafy vegetables, mangoes, papayas, and guavas

11.6 INFANT AND YOUNG CHILD FEEDING PRACTICES

Infant and young child feeding (IYCF) practices include timely initiation of feeding solid/semisolid foods from age 6 months and increasing the amount and variety of foods and frequency of feeding as the child gets older, while maintaining frequent breastfeeding. Guidelines have been established with respect to IYCF practices for children age 6-23 months (PAHO/WHO, 2003 and WHO, 2005).

Table 11.7 presents summary indicators of IYCF practices. The indicators take into account the percentages of children for whom feeding practices meet minimum standards with respect to food diversity (i.e., the number of food groups consumed) and feeding frequency (i.e., the number of times the child was fed), as well the consumption of breast milk or other milks or milk products. Breastfed children are considered as being fed with the minimum standards if they consume at least three food groups[1] and receive foods other than breast milk at least twice per day in the case of infants 6-8 months and at least three times per day in the case of children 9-23 months. Non-breastfed children are considered to be fed in accordance with the minimum standards if they consumed milk or milk products and food from four or more food groups (including milk products), and are fed at least four times per day.

[1] Food groups used in the assessment of minimum standard of feeding practices include: infant formula, milk other than breast milk, cheese, yogurt or other milk products; foods made from grains, roots, and tubers including porridge and fortified baby food from grains; fruits and vegetables rich in vitamin A; other fruits and vegetables; eggs; meat, poultry, fish, and shellfish (and organ meats); beans, peas, and nuts; and foods made with oil, fat, or butter.

Table 11.7 Infant and young child feeding (IYCF) practices

Percentage of youngest children age 6-23 months living with their mother who are fed according to three IYCF feeding practices based upon number of food groups and times they are fed during the day or night preceding the survey by breastfeeding status and background characteristics, Kenya 2008-09

	Among breastfed children 6-23 months, percentage fed:				Among non-breastfed children 6-23 months, percentage fed:					Among all children 6-23 months, percentage fed:				
Background characteristic	3+ food groups[1]	Minimum times or more[2]	Both 3+ food groups and minimum times or more	Number of breastfed children 6-23 months	Milk or milk products[3]	4+ food groups	4+ times or more	With 3 IYCF practices[4]	Number of non-breastfed children 6-23 months	Breastmilk or milk products[3]	3+ or 4+ food groups[5]	Minimum times or more[6]	With all 3 IYCF practices	Number of all children 6-23 months
Age in months														
6-8	42.7	73.2	37.1	320	*	*	*	*	4	100.0	42.9	72.5	36.7	324
9-11	60.5	65.9	46.2	254	*	*	*	*	18	99.4	58.1	65.0	44.3	272
12-17	60.9	65.0	43.8	432	68.7	38.6	37.9	21.2	82	95.0	57.4	60.7	40.2	514
18-23	69.8	65.9	49.7	297	55.8	37.1	45.6	13.4	204	82.0	56.4	57.7	34.9	501
Sex														
Male	56.7	68.4	42.4	660	54.8	31.6	37.8	7.4	165	91.0	51.7	62.3	35.4	825
Female	60.0	66.4	45.6	643	69.8	43.4	50.3	24.9	143	94.5	57.0	63.4	41.8	787
Residence														
Urban	75.3	68.3	54.5	241	57.3	47.7	54.2	17.5	99	87.6	67.3	64.2	43.8	340
Rural	54.5	67.2	41.6	1,062	63.9	32.1	38.6	14.6	209	94.1	50.8	62.5	37.1	1,272
Province														
Nairobi	78.1	70.0	58.2	57	(85.5)	(58.7)	(61.5)	(37.1)	30	95.0	71.4	67.0	50.9	88
Central	81.9	66.2	54.1	93	(78.0)	(71.8)	(30.3)	(13.4)	21	95.9	80.1	59.5	46.5	114
Coast	47.9	60.5	28.0	132	(57.1)	(23.9)	(24.3)	(8.5)	32	91.6	43.2	53.4	24.2	164
Eastern	62.3	71.9	47.5	205	*	*	*	*	23	98.3	61.4	70.3	45.5	228
Nyanza	49.5	69.2	36.9	237	42.5	26.8	38.2	10.7	65	87.5	44.6	62.5	31.2	302
Rift Valley	61.2	66.4	48.9	392	66.8	34.0	50.7	13.9	94	93.6	55.9	63.4	42.1	485
Western	55.1	77.0	46.9	156	36.1	28.3	41.6	10.2	33	88.8	50.3	70.8	40.4	190
North Eastern	18.9	17.3	10.2	32	(90.5)	(29.3)	(26.5)	(13.4)	9	97.9	21.2	19.3	10.9	40
Mother's education														
No education	28.7	47.4	20.4	162	65.1	6.0	14.8	2.9	29	94.8	25.3	42.5	17.8	191
Primary incomplete	48.9	65.3	35.8	438	53.5	34.1	41.4	14.2	93	91.9	46.3	61.1	32.0	530
Primary complete	67.1	74.7	51.1	412	65.4	33.2	34.2	14.5	87	94.0	61.2	67.6	44.7	499
Secondary+	76.7	71.5	59.3	291	65.4	52.3	62.1	21.2	100	91.2	70.5	69.1	49.6	391
Wealth quintile														
Lowest	40.7	60.9	30.3	313	62.3	17.4	20.7	7.6	56	94.3	37.2	54.8	26.9	369
Second	57.8	73.4	43.3	265	60.3	22.7	39.9	7.8	65	92.2	50.9	66.8	36.3	330
Middle	53.8	68.1	41.0	244	62.8	42.4	45.7	21.6	42	94.6	52.2	64.8	38.1	286
Fourth	69.9	68.8	54.3	245	58.5	29.8	40.2	15.5	50	93.0	63.1	63.9	47.8	295
Highest	75.0	67.2	55.1	236	63.8	60.1	60.5	22.9	95	89.6	70.7	65.3	45.8	331
Total	58.4	67.4	44.0	1,304	61.8	37.1	43.6	15.5	308	92.7	54.3	62.9	38.5	1,612

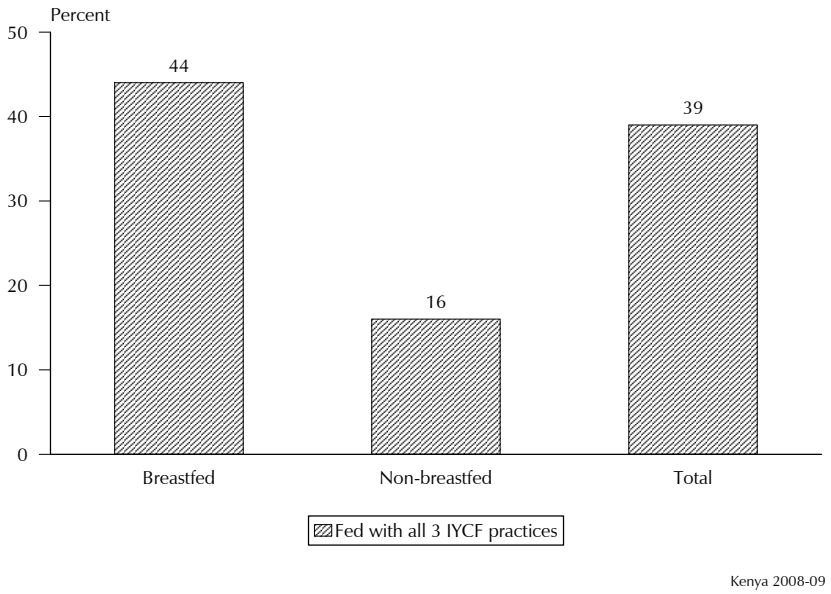
Note: Figures in parentheses are based on 25-49 unweighted children; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] Food groups: a. infant formula, milk other than breast milk, cheese or yogurt or other milk products; b. foods made from grains, roots, and tubers, including porridge, fortified baby food from grains; c. vitamin A-rich fruits and vegetables (and red palm oil); d. other fruits and vegetables; e. eggs; f. meat, poultry, fish, and shellfish (and organ meats); g. legumes and nuts; h. foods made with oil, fat, butter.
[2] At least twice a day for breastfed infants 6-8 months and at least three times a day for breastfed children 9-23 months
[3] Includes commercial infant formula, fresh, tinned and powdered animal milk, and cheese, yogurt and other milk products
[4] Non-breastfed children ages 6-23 months are considered to be fed with a minimum standard of three Infant and Young Child Feeding practices if they receive other milk or milk products and are fed at least the minimum number of times per day with at least the minimum number of food groups.
[5] 3+ food groups for breastfed children and 4+ food groups for non-breastfed children
[6] Fed solid or semi-solid food at least twice a day for infants 6-8 months, 3+ times for other breastfed children, and 4+ times for non-breastfed children

According to the results presented in Table 11.7 and Figure 11.5, only 39 percent of all children age 6-23 months are fed in accordance with all IYCF practices. Although 93 percent of children receive either breast milk or other milk products and almost two-thirds are fed the minimum number of times, only slightly over half (54 percent) are fed from the requisite number of food groups.

Breastfed children are much more likely to be fed in accordance with IYCF practices than non-breastfed children (Figure 11.5). Forty-four percent of breastfed children age 6-23 months are fed from the appropriate number of food groups and fed the minimum number of times per day, compared with only 16 percent of non-breastfed children. Among both groups of children, providing a variety of foods from different food groups seems to be more of a problem than providing food frequently during the day. Increasing the diversity of foods given to children would help to meet the IYCF targets.

Analysis of data by background characteristics indicates that there are large differences by mother's education and by wealth quintile in the proportion of children who are fed according to the IYCF recommendations. For example, only 18 percent of children whose mothers have no education are fed according to the recommended practices, compared with 50 percent of those whose mothers have been to secondary school. These findings suggest that there is need to accelerate awareness among women with no education about optimum feeding practices for infants and young children. At provincial level, the proportion of children age 6-23 months who are fed according to the IYCF practices is lowest in North Eastern (11 percent) and Coast provinces (24 percent) and highest in Nairobi (51 percent) and Central province (47 percent).

Figure 11.5 Infant and Young Child Feeding (IYCF) Practices



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11.7 MICRONUTRIENT INTAKE AMONG CHILDREN

A serious contributor to childhood morbidity and mortality is micronutrient deficiency. Children can receive micronutrients from foods, food fortification, and direct supplementation. Table 11.8 looks at measures relating to intake of several key micronutrients among children.

Vitamin A is an essential micronutrient for the immune system and plays an important role in maintaining the epithelial tissue in the body. Severe vitamin A deficiency (VAD) can cause eye damage. VAD can also increase severity of infections such as measles and diarrhoeal diseases in children and slow recovery from illness. Vitamin A is found in breast milk, other milks, liver, eggs, fish, butter, red palm oil, mangoes, papayas, carrots, pumpkins, and dark green leafy vegetables. The liver can store an adequate amount of the vitamin for four to six months. Periodic dosing (usually every six months) of vitamin A supplements is one method of ensuring that children at risk do not develop VAD. The 2008-09 KDHS collected information on the consumption of foods rich in vitamin A.

Table 11.8 shows that 77 percent of youngest children aged 6-35 months consumed foods rich in vitamin A the day or night preceding the survey. The proportion of children consuming vitamin A-rich foods increases with age, from 49 percent at 6-8 months to 86 percent at 24-35 months. At provincial level, children in Central (88 percent) and Western (87 percent) provinces are the most likely to consume vitamin A-rich foods and those in North Eastern province the least likely (27 percent). Educational level of the mother is correlated with consumption of vitamin A-rich foods. Data show that only 44 percent of children whose mothers have no education are fed with vitamin A-rich foods, compared with 87 percent of children whose mothers have some secondary education.

Table 11.8 Micronutrient intake among children

Among youngest children age 6-35 months who are living with their mother, the percentages who consumed vitamin A-rich and iron-rich foods in the day or night preceding the survey, and among all children 6-59 months, the percentages who were given vitamin A supplements in the six months preceding the survey, who were given iron supplements in the last seven days, and who were given deworming medication in the six months preceding the survey, and among all children age 6-59 months who live in households that were tested for iodized salt, the percentage who live in households with adequately iodized salt, by background characteristics, Kenya 2008-09

	Among youngest children age 6-35 months living with the mother:			Among all children age 6-59 months:				Among children age 6-59 months living in households tested for iodized salt:	
Background characteristic	Percentage who consumed foods rich in vitamin A in last 24 hours[1]	Percentage who consumed foods rich in iron in last 24 hours[2]	Number of children	Percentage given vitamin A supplements in last 6 months	Percentage given iron supplements in last 7 days	Percentage given deworming medication in last 6 months[3]	Number of children	Percentage living in households with adequately iodized salt[4]	Number of children
Age in months									
6-8	48.8	13.1	324	42.7	6.8	3.5	327	97.0	315
9-11	70.5	18.2	272	60.8	4.5	6.9	279	98.0	267
12-17	77.6	29.9	514	48.5	4.6	25.4	530	98.3	511
18-23	86.0	35.4	501	33.8	5.0	43.9	566	98.0	553
24-35	85.9	37.3	765	25.9	4.2	42.0	1,132	97.3	1,086
36-47	na	na	0	21.8	5.6	46.1	1,071	98.0	1,020
48-59	na	na	0	20.4	3.8	45.2	1,041	97.7	991
Sex									
Male	75.3	29.6	1,238	30.6	5.2	38.3	2,528	98.0	2,433
Female	79.5	30.0	1,139	29.9	4.3	36.7	2,418	97.4	2,311
Breastfeeding status									
Breastfeeding	71.2	25.3	1,473	43.8	4.9	22.4	1,508	97.7	1,449
Not breastfeeding	87.5	37.1	900	24.7	4.8	44.4	3,365	97.8	3,223
Residence									
Urban	85.0	40.2	472	34.8	4.3	43.7	926	98.3	911
Rural	75.4	27.2	1,904	29.2	4.9	36.1	4,020	97.6	3,833
Province									
Nairobi	84.2	37.8	132	38.7	5.5	48.6	277	99.2	272
Central	88.8	28.2	196	27.7	4.8	58.9	397	100.0	394
Coast	74.4	28.5	219	38.3	3.0	29.2	425	96.7	408
Eastern	80.3	25.4	371	25.5	1.7	33.2	752	92.3	699
Nyanza	79.6	34.7	419	35.8	7.7	30.6	912	99.1	891
Rift Valley	70.9	23.8	683	30.9	4.5	44.5	1,432	98.7	1,358
Western	86.6	42.6	297	19.8	4.1	27.0	605	98.9	587
North Eastern	26.9	20.5	60	25.6	10.6	22.4	147	94.8	135
Mother's education									
No education	43.8	15.1	271	27.4	4.6	23.0	636	94.6	550
Primary incomplete	77.4	27.0	810	26.4	4.3	29.2	1,643	97.6	1,570
Primary complete	82.4	30.8	714	32.4	4.7	43.3	1,505	98.3	1,476
Secondary+	86.7	39.5	581	34.5	5.5	49.7	1,163	98.7	1,148
Mother's age at birth									
15-19	69.9	27.9	183	34.1	4.7	26.2	224	98.1	217
20-29	76.7	31.7	1,312	30.2	5.2	37.1	2,769	97.9	2,657
30-39	80.1	28.1	739	31.2	4.6	38.9	1,612	97.1	1,541
40-49	78.3	23.4	142	23.7	2.1	41.4	342	99.3	327
Wealth quintile									
Lowest	60.8	20.0	538	28.0	3.9	29.2	1,187	96.7	1,093
Second	79.1	29.7	501	30.2	4.6	35.2	1,015	97.3	962
Middle	80.6	29.4	455	28.8	4.7	39.4	913	97.8	887
Fourth	83.8	33.3	415	30.6	4.5	39.0	893	98.3	875
Highest	85.6	38.5	467	34.4	6.3	47.3	937	98.8	926
Total	77.3	29.8	2,376	30.3	4.8	37.5	4,946	97.7	4,743

Note: Information on vitamin A and iron supplements and deworming medication is based on the mother's recall. Total includes children missing information as to breastfeeding status.
na = Not applicable
[1] Includes meat (and organ meat), fish, poultry, eggs, pumpkin, yellow yams, butternut squash, carrots, yellow sweet potatoes, green leafy vegetables, mango, papaya, and guava.
[2] Includes meat (including organ meat)
[3] Deworming for intestinal parasites is commonly done for helminthes and for schistosomiasis.
[4] Salt containing 15 parts per million of iodine or more. Excludes children in households in which salt was not tested.

Iron is essential for cognitive development. Low iron intake can also contribute to anaemia. Iron requirements are greatest between the ages of 6-11 months, when growth is extremely rapid. Survey data indicate that the consumption of iron-rich foods has a similar pattern to that for vitamin A-rich foods although the proportion of children fed iron-rich foods is lower (30 percent). The consumption of iron-rich foods is higher in urban areas (40 percent) than rural areas (27 percent).

Children in Western province (43 percent) are most likely to consume iron-rich foods while those in North Eastern province are the least likely (21 percent). The data also show that children whose mothers have no education (15 percent) are far less likely to consume iron-rich foods than those whose mothers have at least some secondary education (40 percent).

The 2008-09 KDHS also collected data on vitamin A supplementation and iron supplementation for children under five. According to Table 11.8, 30 percent of children age 6-59 months were given vitamin A supplements in the six months before the survey. Generally, the proportion of children receiving vitamin A supplementation is higher among children age 6-17 months, with those age 9-11 months being most likely to have received the supplements (60 percent). Children who are still breastfeeding (44 percent) are more likely to be given vitamin A supplements than those who are not breastfeeding (25 percent). At provincial level, the proportion of children receiving vitamin A supplements is lowest in Western province (20 percent).

Survey data on iron supplementation indicate it is generally low (5 percent) and does not vary substantially with background characteristics. It is however worth noting that the proportion of children receiving iron supplementation in the seven days before the survey is highest at 6-8 months (7 percent), a critical period for infants' growth. At provincial level, children in North Eastern province (11 percent) are more likely to be given iron supplements. This is critical given that a lower proportion of children in North Eastern province consume this iron-rich food, as indicated above.

Certain types of intestinal parasites can cause anaemia. Periodic deworming for organisms like helminthes and schistosomiasis (bilharzia) can improve children's micronutrient status. As shown in Table 11.8, almost four in ten children age 6-59 months received deworming medication in the six months before the survey. Older children, urban children, and those in Central province and Nairobi were more likely than other children to have been given deworming medication. The likelihood of receiving deworming treatment also increases with the education of the mother, the age of the mother at birth, and the wealth quintile.

Inadequate amounts of iodine in the diet are related to serious health risks for young children. The survey results show that nearly all children (98 percent) live in households with adequately iodized salt. There is no significant difference by background characteristics.

As shown in Table 11.9, survey teams managed to test salt in 95 percent of households. Results show that nearly all households in Kenya (98 percent) are consuming salt with an adequate level of iodine. Analysis of the data shows that there are no significant differences in possession of iodized salt by background characteristics, except that a lower proportion of households in Eastern province (93 percent) have adequately iodized salt.

Table 11.9 Presence of iodized salt in household

Among all households, percentage of households tested for iodine content and percentage of households with no salt; and among households with salt tested, the percent distribution by level of iodine in salt (parts per million or ppm), according to background characteristics, Kenya 2008-09

Background characteristic	Among all households			Among households with tested salt, the percent distribution by iodine content of salt				
	Percentage with salt tested	Percentage with no salt	Number of households	None (0 ppm)	Inadequate (<15 ppm)	Adequate (15+ ppm)	Total	Number of households
Residence								
Urban	95.2	4.8	2,350	0.2	1.9	97.8	100.0	2,237
Rural	94.3	5.7	6,707	0.2	2.2	97.5	100.0	6,325
Province								
Nairobi	97.0	3.0	801	0.3	1.2	98.6	100.0	777
Central	96.9	3.1	1,079	0.0	0.1	99.9	100.0	1,046
Coast	95.3	4.7	755	1.5	0.8	97.7	100.0	719
Eastern	92.3	7.7	1,512	0.0	7.3	92.7	100.0	1,395
Nyanza	95.1	4.9	1,411	0.2	1.3	98.5	100.0	1,342
Rift Valley	94.5	5.5	2,363	0.0	1.1	98.8	100.0	2,232
Western	93.3	6.7	937	0.0	2.3	97.7	100.0	874
North Eastern	88.3	11.7	199	1.7	2.1	96.1	100.0	175
Wealth quintile								
Lowest	90.6	9.4	1,489	0.7	2.4	96.9	100.0	1,349
Second	93.9	6.1	1,569	0.2	2.8	97.0	100.0	1,472
Middle	95.4	4.6	1,646	0.1	1.7	98.2	100.0	1,570
Fourth	95.6	4.4	1,845	0.0	2.7	97.2	100.0	1,764
Highest	95.9	4.1	2,509	0.2	1.5	98.3	100.0	2,406
Total	94.5	5.5	9,057	0.2	2.2	97.6	100.0	8,562

11.8 NUTRITIONAL STATUS OF WOMEN

Anthropometric data on height and weight were collected for women age 15-49 interviewed in the survey. In this report, two indicators of nutritional status based on these data are presented: the percentage of women and men with very short stature (less than 145 cm) and the body mass index (BMI).

The body mass index (BMI), or the Quetelet index, is used to measure thinness or obesity. BMI is defined as weight in kilograms divided by height squared in meters (kg/m2). A cutoff point of 18.5 is used to define thinness or acute undernutrition and a BMI of 25.0 or above usually indicates overweight or obesity. The height of a woman is associated with past socioeconomic status and nutrition during childhood and adolescence. Low pre-pregnancy BMI and short stature are risk factors for poor birth outcomes and obstetric complications. In developing countries, maternal underweight is a leading risk factor for preventable death and diseases.

Table 11.10 presents the mean BMI and the proportions of women falling into various categories of BMI, according to background characteristics. Respondents for whom there was no information on height and/or weight and for whom a BMI could not be estimated are excluded from this analysis.

Overall, only one percent of women fall below the 145 cm cut-off point. The mean BMI for women aged 15-49 years is 23. A comparison of these outcomes with similar data from the 2003 KDHS indicates no meaningful change during the five year period. Analysis of the BMI shows that at national level, 12 percent of women are considered to be thin (BMI<18.5), also unchanged since 2003. At provincial level, the proportion of thin women is highest in North Eastern province (26 percent) and lowest in Nairobi (3 percent).

Table 11.10 Nutritional status of women

Among women age 15-49, the percentage with height under 145 cm, mean body mass index (BMI), and the percentage with specific BMI levels, by background characteristics, Kenya 2008-09

Background characteristic	Height		Body mass index[1]								
	Percentage below 145 cm	Number of women	Mean body mass index (BMI)	18.5-24.9 (Total normal)	<18.5 (Total thin)	17.0-18.4 (Mildly thin)	<17 (Moderately and severely thin)	≥25.0 (Total over-weight or obese)	25.0-29.9 (Over-weight)	≥30.0 (Obese)	Number of women
Age											
15-19	2.5	1,723	21.2	72.3	19.0	12.4	6.6	8.7	7.2	1.5	1,631
20-29	0.9	3,121	22.6	67.0	10.5	8.1	2.4	22.5	17.8	4.7	2,697
30-39	0.7	2,053	23.7	58.2	9.6	6.9	2.8	32.1	22.6	9.6	1,861
40-49	1.3	1,372	24.4	48.3	11.5	6.8	4.7	40.2	24.3	15.9	1,358
Residence											
Urban	0.6	2,092	24.6	53.2	7.0	5.4	1.6	39.8	27.8	12.1	1,920
Rural	1.5	6,176	22.3	65.8	14.1	9.6	4.5	20.1	14.5	5.6	5,628
Province											
Nairobi	0.5	715	24.8	55.4	3.2	2.9	0.3	41.4	30.2	11.2	663
Central	1.4	889	23.9	54.9	10.2	6.6	3.6	34.9	22.9	12.0	830
Coast	3.0	665	23.4	54.8	15.9	10.8	5.1	29.3	19.1	10.2	602
Eastern	2.5	1,352	22.2	62.8	17.0	10.9	6.0	20.2	14.4	5.8	1,241
Nyanza	0.6	1,362	22.9	68.8	8.8	7.0	1.8	22.5	15.4	7.1	1,228
Rift Valley	0.9	2,204	22.5	62.8	14.4	9.7	4.7	22.8	17.2	5.6	2,018
Western	0.2	911	22.4	72.3	9.7	7.8	1.9	18.0	13.8	4.2	819
North Eastern	0.8	171	20.8	62.2	26.4	14.9	11.5	11.4	8.3	3.2	147
Education											
No education	3.1	728	21.2	58.2	26.4	16.4	9.9	15.5	13.0	2.5	640
Primary incomplete	1.9	2,476	21.9	68.4	16.8	11.6	5.2	14.8	9.7	5.2	2,239
Primary complete	1.0	2,244	23.2	63.1	9.2	6.7	2.5	27.7	20.1	7.5	2,026
Secondary+	0.4	2,821	24.0	58.4	7.5	5.3	2.1	34.1	24.2	9.9	2,644
Wealth quintile											
Lowest	2.6	1,362	20.8	69.4	21.2	13.9	7.3	9.4	7.9	1.5	1,185
Second	1.0	1,442	21.6	69.8	17.5	12.8	4.6	12.8	10.1	2.7	1,312
Middle	1.8	1,593	22.4	67.2	12.6	7.6	5.0	20.2	14.0	6.2	1,468
Fourth	0.5	1,704	23.6	59.7	9.2	6.3	2.9	31.1	22.5	8.6	1,590
Highest	0.7	2,167	24.8	52.8	5.9	4.8	1.0	41.3	28.0	13.3	1,993
Total	1.2	8,269	22.9	62.6	12.3	8.5	3.8	25.1	17.9	7.2	7,548

Note: The body mass index (BMI) is expressed as the ratio of weight in kilograms to the square of height in meters (kg/m^2).
[1] Excludes pregnant women and women with a birth in the preceding 2 months

One-quarter of women age 15-49 are overweight or obese. The propensity of being overweight or obese is correlated with increases in age, education level, and wealth quintile. For example, the proportion overweight rises from a low of 9 percent at 15-19 years to a high of 40 percent of women age 40-44 years. At provincial level, the proportion of overweight women ranges from a low of 11 percent in North Eastern province to a high of 41 percent in Nairobi.

11.9 MICRONUTRIENT INTAKE AMONG MOTHERS

Adequate micronutrient intake by women has important benefits for both women and their children. Breastfeeding children benefit from micronutrient supplementation that mothers receive, especially vitamin A. Iron supplementation of women during pregnancy protects the mother and infant against anaemia, which is estimated to cause one-fifth of perinatal mortality and one-tenth of maternal mortality. Anaemia also results in an increased risk of premature delivery and low birth weight. Finally, iodine deficiency is also related to a number of adverse pregnancy outcomes.

Table 11.11 includes a number of measures that are useful in assessing the extent to which women are receiving crucial micronutrients during pregnancy and the two months after birth (postpartum). The results indicate that almost half of women (46 percent) receive a vitamin A dose postpartum, a significant increase from the 14 percent reported in the 2003 KDHS.

Table 11.11 Micronutrient intake among mothers

Among women age 15-49 with a child born in the last five years, the percentage who received a vitamin A dose in the first two months after the birth of the last child; among mothers age 15-49 who during the pregnancy of the last child born in the five years prior to the survey, the percentage who suffered from night blindness, the percentage who took iron tablets or syrup for specific numbers of days, and the percentage who took deworming medication; and among women age 15-49 with a child born in the last five years who live in households that were tested for iodized salt, the percentage who live in households with adequately iodized salt, by background characteristics, Kenya 2008-09

Background characteristic	Percentage who received vitamin A dose post-partum[1]	Night blindness reported	Night blindness adjusted[2]	Number of days women took iron tablets or syrup during pregnancy of last birth					Percentage of women who took deworming medication during pregnancy of last birth[3]	Number of women	Among women with a child born in the last five years, who live in households that were tested for iodized salt	
				None	<60	60-89	90+	Don't know/ missing			Percentage living in households with adequately iodized salt[4]	Number of women
Age												
15-19	43.6	6.1	2.1	30.9	50.9	2.5	3.0	12.8	15.8	255	98.6	247
20-29	47.3	6.7	1.8	29.5	55.9	3.2	2.5	9.0	17.3	2,164	97.9	2,090
30-39	45.7	5.3	0.8	31.6	52.6	3.0	2.6	10.2	17.8	1,253	96.8	1,203
40-49	37.6	7.6	1.3	37.6	51.5	3.6	1.7	5.6	13.0	302	99.3	290
Residence												
Urban	53.6	4.3	0.7	25.7	55.3	3.5	2.8	12.7	19.6	823	98.2	808
Rural	43.8	6.8	1.7	32.2	53.9	3.0	2.4	8.5	16.4	3,150	97.6	3,023
Province												
Nairobi	48.9	4.6	2.1	35.9	49.6	2.7	3.6	8.2	8.8	269	98.8	264
Central	46.0	3.0	0.0	28.5	56.3	2.6	0.7	12.0	24.8	371	100.0	367
Coast	58.8	8.2	0.0	22.1	57.9	5.6	3.4	11.0	28.7	330	97.4	317
Eastern	33.7	5.7	1.4	28.8	57.8	4.0	1.9	7.4	20.2	630	92.5	597
Nyanza	45.4	7.5	1.3	23.5	54.9	3.1	5.1	13.4	13.2	733	98.7	717
Rift Valley	48.8	6.3	2.2	33.4	53.8	1.5	1.8	9.4	16.6	1,103	98.8	1,050
Western	47.6	5.1	1.7	36.1	54.0	5.0	1.1	3.8	12.4	442	98.9	430
North Eastern	33.0	17.5	3.1	71.7	22.4	0.9	0.7	4.3	5.8	97	94.9	89
Education												
No education	39.7	14.6	2.8	50.1	42.9	1.4	0.8	4.7	12.7	441	94.4	383
Primary incomplete	42.8	6.3	1.7	32.2	55.5	2.5	2.2	7.5	13.6	1,262	97.6	1,213
Primary complete	48.6	5.5	1.1	27.3	55.5	4.0	2.3	11.0	17.8	1,225	98.1	1,201
Secondary+	48.8	3.7	1.0	25.2	55.7	3.5	3.8	11.7	22.2	1,045	98.7	1,033
Wealth quintile												
Lowest	37.2	11.8	3.2	38.8	51.9	1.6	1.8	5.9	11.4	843	97.0	778
Second	44.6	6.5	1.6	28.9	57.1	4.3	2.8	6.9	15.3	764	97.1	728
Middle	46.1	4.2	1.1	30.1	56.0	4.1	2.6	7.2	18.4	742	97.7	724
Fourth	47.0	5.0	0.4	29.5	54.6	2.3	1.6	11.9	21.7	765	98.1	751
Highest	54.1	3.7	0.9	26.5	51.9	3.5	3.5	14.6	18.8	859	98.6	849
Total	45.8	6.3	1.5	30.9	54.2	3.1	2.5	9.4	17.0	3,973	97.7	3,830

[1] In the first two months after delivery
[2] Women who reported night blindness but did not report difficulty with vision during the day
[3] Deworming for intestinal parasites is commonly done for helminthes and for schistosomiasis
[4] Salt containing 15 ppm of iodine or more. Excludes women in households where salt was not tested.

The proportion varies from a low of 33 percent in North Eastern province and 34 percent in Eastern province to a high of 59 percent of women in Coast province. Vitamin A supplementation increases with education and wealth quintile of the mother.

Night blindness is an indicator of severe vitamin A deficiency, to which pregnant women are especially prone. Information about night blindness was collected in the KDHS by asking women who had a birth in the five years before the survey whether they had difficulty seeing at night during the pregnancy of their most recent birth. In order to better isolate true night blindness, women were also asked if they had difficulty seeing during the day. Those who reported having trouble seeing only at night are considered to have suffered from night blindness. Results in Table 11.11 show that the adjusted indicator of night blindness comprised less than two percent of mothers. Variations by background characteristics are small.

With regard to iron supplementation during pregnancy, over half of women (54 percent) reported taking iron tablets or syrup for less than 60 days during the pregnancy of their most recent birth. Almost one-third (31 percent) did not take any iron supplements during pregnancy. At the national level, there has been a notable increase since 2003 in the proportion of women who reported taking iron supplements during pregnancy. A comparison with 2003 KDHS data indicates that the proportion of women who took iron supplements increased from 41 percent in 2003 to 60 percent in 2008-09. Although this is a sizeable increase, almost all of the women who took iron supplements

took them for less than 60 days during the pregnancy. Women in North Eastern province and those with less education are least likely to take iron tablets during pregnancy.

Fewer than one in five women reported having taken deworming medication during the pregnancy of their most recent birth. Women in North Eastern province and in Nairobi are the least likely to take deworming medicine.

With regard to iodine, the survey results show that 98 percent of women who had a birth in the five years before the survey live in households with adequately iodized salt. This proportion varies little by background characteristics, implying that intake of iodine is nearly universal.

In summary, it is evident that the proportion of women receiving micronutrient supplementation has increased considerably over the last five years. There is need to sustain this trend in order to further reduce deficiencies of these crucial micronutrients among women and children.

MALARIA 12

Robert C.B. Buluma, Ayub Manya, and Diana Kamar

12.1 INTRODUCTION

Malaria is the leading cause of morbidity and mortality in Kenya, with close to 70 percent (24 million) of the population at risk of infection (Ministry of Health, n.d.). Although malaria affects people of all age groups, children under five years of age and pregnant women living in malaria endemic regions are most vulnerable. The human toll that malaria exacts and the economic and social impacts are devastating: sick children miss school, working days are lost, and tourism suffers. Malaria becomes a self-perpetuating problem, where the disease prevents growth of the human and economic capital necessary to bring the disease under control. Moreover, malaria disproportionately affects the rural poor who can neither afford insecticide-treated bed nets for prevention nor access appropriate treatment when they fall sick.

The Kenya Vision 2030 goal for the health sector is to provide equitable, affordable, quality health services to all Kenyans. The goal also aims to restructure the health care delivery system to shift the emphasis from curative to preventive health care. The goal of the second National Health Sector Strategic Plan (NHSSP II 2005–2010) is to 'reduce health inequalities and to reverse the downward trend in health-related outcome and impact indicators' (Ministry of Health, 2004).

Malaria prevention and control activities in Kenya are guided by the National Malaria Strategy (NMS) and the National Health Sector Strategic Plan 2005-2010. The NMS outlines malaria control activities based on the epidemiology of malaria in Kenya. The strategy aims to achieve national and international malaria control targets. The core interventions adopted in Kenya are the following:

- Vector control—using insecticide-treated nets (ITNs) and indoor residual spraying (IRS)
- Case management (using Artemisinin-based combination therapies (ACTs) and improved laboratory diagnosis)
- Management of malaria in pregnancy
- Epidemic preparedness and response
- Cross-cutting strategies including information, education, and communication (IEC) for behaviour change, as well as effective monitoring and evaluation

The implementation of these strategies was expected to reduce the level of malaria infection and consequent death in Kenya by 30 percent by the year 2006 and sustain that improved level of control until 2010. The strategic plan is in line with the Ministry of Health's vision to transform Kenya into 'a nation free from preventable diseases and ill health'. It is also in line with the overall plans for realizing the targets set out in Vision 2030 for the health sector as well as the global malaria targets on universal coverage and access. Malaria control is not just a health issue; it is an overall development issue as malaria is a driver of poverty.

12.2 HOUSEHOLD OWNERSHIP OF MOSQUITO NETS

Untreated nets and window screening have long been considered useful protection methods against mosquitoes and other insects (Lindsay and Gibson, 1988). Nets reduce the human-vector contact by acting as a physical barrier and thus reducing the number of bites from infective vectors (Bradley et al., 1986). However, nets and screens are often not well fitted or are torn, thus allowing mosquitoes to enter or feed on the part of the body adjacent to the netting fabric during the night (Lines et al., 1987). The problem of ill-used nets and screens provides one of the motives for impregnating them with a fast-acting insecticide that will repel or kill mosquitoes before or shortly after feeding (Lines et al., 1987; Hossan and Curtis, 1989).

Over the past three decades, significant advances have been made in the prevention of malaria using ITNs and curtains. The treatment of nets has been made possible by the availability of synthetic pyrethroids which mimic the insecticidal compounds of the natural pyrethrum. They have low mammalian toxicity, are repellent, highly toxic to mosquitoes, and odourless, and have low volatility with consequent long persistence. Their development has led to treatment of nets as a method of vector control. The use of insecticide-treated nets (ITNs) has been shown to be an effective method of reducing severe malaria and when used by all or most members of the community may reduce malaria transmission.

Scaling up the use of ITNs and protecting 80 percent of children under five and pregnant women against malaria in Africa by the year 2010 is one of the targets set at the Abuja summit by African Heads of State in 2000. In an effort to scale up the use of ITNs, different mechanisms of delivering ITNs to vulnerable groups have been used in Kenya. Delivery mechanisms used include routine clinic delivery, mass campaigns, retail social marketing, and the commercial sector.

The 2008-09 Kenya Demographic and Health Survey (KDHS) household questionnaire included questions on net ownership and re-treatment practices. Table 12.1 provides information on the percentage of households that have a net and the percentage that have an ITN, according to residence, province, and the wealth index.

The survey shows that 61 percent of Kenyan households own at least one net of any kind, and 36 percent own more than one net. This compares well with data from the 2007 Kenya Malaria Indicator Survey (KMIS) showing that 63 and 34 percent of households own at least one net and more than one net respectively (Division of Malaria Control, Ministry of Public Health and Sanitation, 2009)[1].

The country has witnessed an impressive rise in household ownership of ITNs. The 2008-09 KDHS shows that 56 percent of households have at least one ITN, up from 48 percent recorded in the 2007 KMIS and 6 percent recorded in the 2003 KDHS (Figure 12.1). Similarly, 32 percent of households own more than one ITN compared with 23 percent in 2007 and only 3 percent in 2003.

The 2008-09 KDHS indicates that households in urban areas are slightly more likely to own an ITN (58 percent) than those in rural areas (55 percent). There are greater variations in ownership of ITNs regionally. Whereas 77 percent of households in Nyanza province own at least one ITN, only 33 percent of households in Central province do so. Like the 2007 KMIS, the 2008-09 KDHS shows that ownership of at least one ITN is relatively constant across the top four wealth quintiles (ranging from 55 to 60 percent), but considerably lower for the lowest wealth quintile (49 percent).

[1] The KMIS sample was focused on malaria endemic and epidemic-prone areas. Since the KDHS covered the entire country—including areas at low or no risk for malaria where net ownership is likely to be very low—comparison of the two surveys underestimates the increase in net ownership in the malaria-prone areas. A separate analysis is planned to investigate trends over time for the malaria-prone areas only.

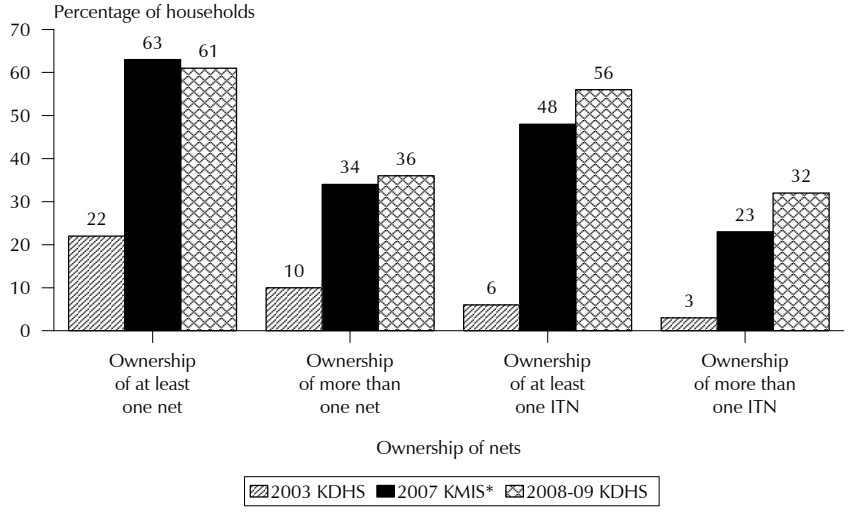
Table 12.1 Ownership of mosquito nets

Percentage of households with at least one and more than one mosquito net (treated or untreated), ever-treated mosquito net and insecticide-treated net (ITN), and the average number of nets per household, by background characteristics, Kenya 2008-09

Background characteristic	Any type of mosquito net			Ever-treated mosquito net[1]			Insecticide-treated mosquito nets (ITNs)[2]			Number of households
	Percentage with at least one	Percentage with more than one	Average number of nets per household	Percentage with at least one	Percentage with more than one	Average number of ever-treated nets per household	Percentage with at least one	Percentage with more than one	Average number of ITNs per household	
Residence										
Urban	64.4	36.2	1.2	64.0	35.8	1.2	57.8	31.1	1.1	2,350
Rural	59.5	35.8	1.2	59.3	35.5	1.2	55.0	32.6	1.1	6,707
Province										
Nairobi	60.1	30.1	1.1	59.4	29.7	1.1	50.8	25.5	0.9	801
Central	38.1	23.4	0.8	38.0	23.3	0.8	32.7	19.7	0.6	1,079
Coast	70.9	43.4	1.4	70.5	43.0	1.4	66.3	38.2	1.3	755
Eastern	66.3	39.3	1.3	66.0	38.4	1.2	60.4	34.4	1.1	1,512
Nyanza	81.8	52.9	1.7	81.5	52.6	1.7	76.5	48.9	1.6	1,411
Rift Valley	45.4	22.9	0.8	45.3	22.9	0.8	41.4	20.8	0.7	2,363
Western	74.3	47.2	1.5	74.2	47.0	1.5	71.4	44.3	1.4	937
North Eastern	76.8	53.1	1.5	76.4	52.9	1.5	73.3	49.1	1.4	199
Wealth quintile										
Lowest	52.6	25.4	0.9	52.4	25.2	0.9	49.4	23.2	0.8	1,489
Second	63.0	37.8	1.2	62.9	37.7	1.2	58.1	34.7	1.1	1,569
Middle	64.4	40.4	1.3	63.7	39.5	1.2	60.2	36.2	1.1	1,646
Fourth	59.0	38.9	1.3	58.9	38.8	1.3	54.7	36.2	1.2	1,845
Highest	63.3	35.8	1.2	62.9	35.6	1.2	55.9	30.5	1.1	2,509
Total	60.8	35.9	1.2	60.5	35.6	1.2	55.7	32.2	1.1	9,057

[1] An ever-treated net is a long-lasting net or a conventional net, which was either pretreated or was soaked with insecticide at any time.
[2] An insecticide-treated net (ITN) is (1) a factory treated net that does not require any further treatment (long-lasting net), (2) a pretreated net obtained within the past 12 months, or (3) a conventional net that has been soaked with insecticide within the past 12 months.

Figure 12.1 Ownership of Mosquito Nets, 2003-2009



* The data from the 2007 KMIS refer to malaria-prone areas only and exclude Nairobi province; Kiambu, Nyandarua, and Nyeri districts in Central province; Meru district in Central province; and Laikipia district in Rift Valley province.

12.3 USE OF MOSQUITO NETS

Considerable effort has been invested in the procurement and distribution of ITNs for malaria control in Kenya. By the end of 2008, an estimated 16 million nets had been documented as distributed in Kenya through multiple channels since 2002, targeting children under five and pregnant women. Although the distribution of these nets was accompanied by advocacy messages that advised people to sleep under these nets, a discrepancy still exists between ownership and use of the mosquito nets. The 2008-09 KDHS collected information on usage of ITNs by children under five and pregnant women.

Age is an important factor in determination of levels of acquired immunity against malaria. For the first six months of life, antibodies acquired from the mother during pregnancy protect children born in areas endemic for malaria. This protection is gradually lost as children start to develop their own immunity over a period of time. The level of immunity developed depends on the level of exposure to malaria infection, but it is believed that in highly malaria-endemic areas, children are immune by the fifth birthday. Such children no longer suffer from severe life-threatening malaria. Immunity in areas of low malaria transmission is acquired more slowly, and malarial illness affects all members of the community regardless of age. The government recognises children under five years of age as a risk group and recommends that this group be protected by sleeping under insecticide-treated nets. In 2008, the national target for the proportion of children under five sleeping under an ITN was 80 percent.

Table 12.2 and Figure 12.2 show information on use of any nets and ITNs by children under five years of age. The data in the figure show that over half of children under age five slept under a net the night prior to the survey in 2008-09 compared with only 15 percent in 2003[2]. Similarly, just under half of children (47 percent) slept under an ITN in 2008-09 compared with only 5 percent in 2003 and 39 percent in 2007.

The results in Table 12.2 show that use of nets by children under five decreases with increase in age. Fifty-six percent of children below one year slept under an ITN the night before the survey compared with only 39 percent of those age four years. The survey further shows that children in urban areas are more likely to use nets than their counterparts in rural areas. Regionally, children in Rift Valley province are less likely to use mosquito nets than their counterparts in other provinces. The data indicate that the use of mosquito nets by children relates to the level of wealth. Children from poor households are less likely to use mosquito nets compared with those from financially endowed households.

[2] Timing of the survey can affect bednet use. Data collection for the 2003 KDHS took place from mid-April to mid-September, encompassing the long rainy season and also the colder months of July and August. Data collection for the 2008-09 KDHS took place from mid-November 2008 to late February 2009.

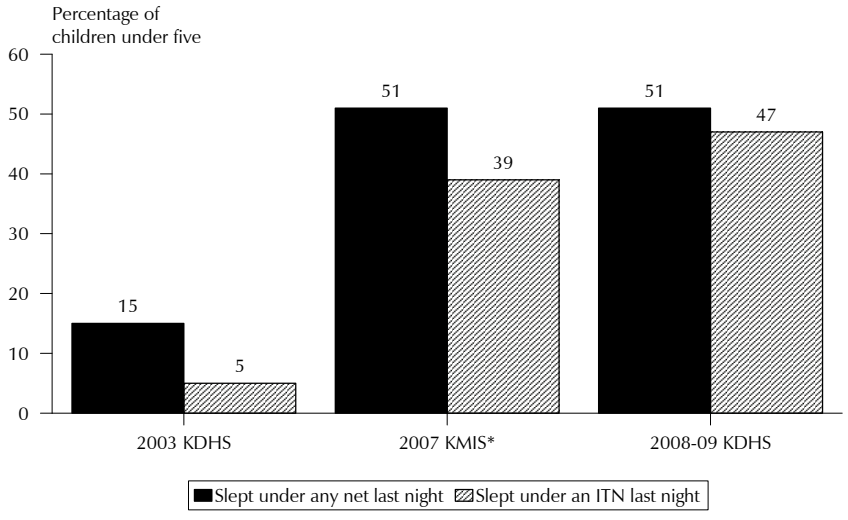
Table 12.2 Use of mosquito nets by children

Percentage of children under five years of age who slept under a mosquito net (treated or untreated), an ever-treated mosquito net, and an insecticide-treated net (ITN) the night before the survey, by background characteristics, Kenya 2008-09

Background characteristic	Percentage who slept under any net last night	Percentage who slept under an ever-treated net last night[1]	Percentage who slept under an ITN last night[2]	Number of children
Age in years				
<1	59.4	59.1	55.8	1,198
1	57.1	56.5	52.6	1,150
2	50.5	50.4	46.4	1,240
3	43.6	43.6	40.0	1,172
4	42.0	41.7	38.8	1,193
Sex				
Male	49.7	49.6	46.2	3,056
Female	51.3	50.9	47.3	2,897
Residence				
Urban	67.3	66.9	61.8	1,007
Rural	47.1	46.8	43.6	4,946
Province				
Nairobi	58.8	57.8	51.9	306
Central	39.8	39.8	35.0	483
Coast	60.8	60.8	56.9	503
Eastern	54.8	54.4	50.6	928
Nyanza	65.2	64.8	60.9	1,078
Rift Valley	32.2	32.1	29.5	1,707
Western	58.6	58.3	55.4	768
North Eastern	65.1	64.8	62.7	181
Wealth quintile				
Lowest	40.9	40.8	38.3	1,492
Second	45.6	45.1	42.3	1,251
Middle	53.0	52.6	48.7	1,129
Fourth	53.5	53.5	50.5	1,057
Highest	64.7	64.3	58.3	1,025
Total	50.5	50.2	46.7	5,953

[1] An ever-treated net is a long-lasting net or a conventional net that was either pretreated or was soaked with insecticide at any time.
[2] An insecticide-treated net (ITN) is (1) a factory treated net that does not require any further treatment (long-lasting net), (2) a pretreated net obtained within the past 12 months, or (3) a conventional net that has been soaked with insecticide within the past 12 months.

Figure 12.2 Use of Mosquito Nets by Children under Five



* The data from the 2007 KMIS refer to malaria-prone areas only and exclude Nairobi province; Kiambu, Nyandarua, and Nyeri districts in Central province; Meru district in Central province; and Laikipia district in Rift Valley province.

Pregnancy leads to immuno-depression. In malaria endemic areas, adults acquire some immunity, which protects them from malaria infection. However, pregnant women, especially those in their first pregnancies, have a higher risk of malaria infection. Sometimes these malaria infections remain asymptomatic but lead to development of malaria-induced anaemia. Asymptomatic malaria infection also interferes with the maternal-foetal exchange, leading to low birth weight infants. To reduce the risk of malaria infection during pregnancy, the National Malaria Strategy target is for 60 percent of pregnant women to sleep under ITNs.

The 2008-09 KDHS collected information on use of nets by women. Table 12.3 and Figure 12.3 show the proportion of women and of pregnant women who slept under mosquito nets the night before the survey. There has been consistent improvement in use of mosquito nets by women as noted from the 2003 KDHS to 2008-09 KDHS. For example, the proportion of all women age 15-49 that slept under any net the night before the survey increased from 16 percent in 2003 to 45 percent in 2008-09. Similarly, the proportion of all women who slept under an ITN increased from 5 percent in 2003 to 41 percent in 2008-09.

The results also show a great increase in use of mosquito nets by pregnant women age 15-49. In 2003, only 13 percent of pregnant women slept under any mosquito net compared with 53 percent in 2008-09. Similarly in 2003, only 4 percent of pregnant women slept under an ITN compared with 49 percent in 2008-09.

Table 12.3 Use of mosquito nets by women

Percentage of all women age 15-49 and pregnant women age 15-49 who slept under a mosquito net (treated or untreated), an ever-treated mosquito net, and an insecticide-treated net (ITN) the night before the survey, by background characteristics, Kenya 2008-09

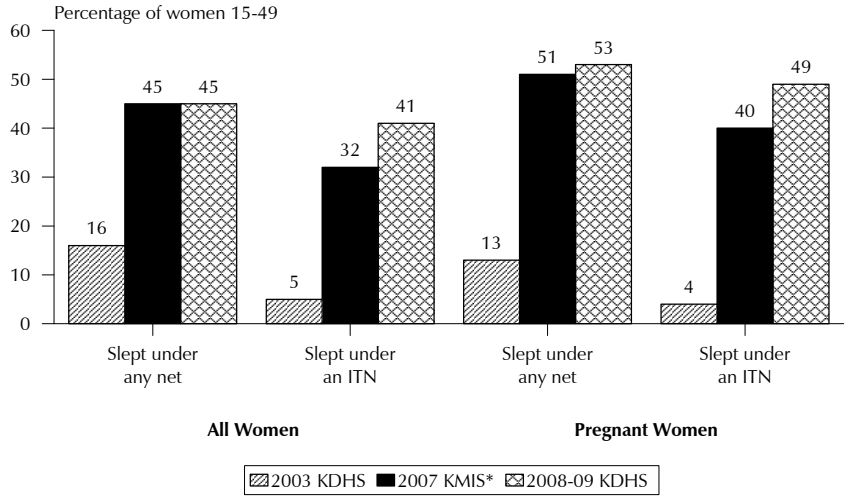
Background characteristic	Percentage of all women age 15-49 who				Percentage of pregnant women age 15-49 who			
	Slept under any net last night	Slept under an ever-treated net last night[1]	Slept under an ITN last night[2]	Number of women	Slept under any net last night	Slept under an ever-treated net last night[1]	Slept under an ITN last night[2]	Number of women
Residence								
Urban	52.0	51.6	46.9	2,244	54.8	54.8	50.9	146
Rural	42.6	42.4	39.1	6,605	51.7	51.7	48.4	455
Province								
Nairobi	53.1	52.7	47.7	758	(57.8)	(57.8)	(45.8)	40
Central	27.0	26.7	23.2	953	31.2	31.2	26.1	45
Coast	53.4	53.2	49.3	709	68.2	68.2	64.0	54
Eastern	46.9	46.4	42.8	1,444	53.6	53.6	53.6	90
Nyanza	62.9	62.5	58.4	1,456	62.6	62.6	57.6	114
Rift Valley	28.5	28.5	25.6	2,361	31.8	31.8	29.5	154
Western	58.0	57.7	54.2	974	71.7	71.7	69.3	84
North Eastern	56.3	56.3	52.7	195	62.2	62.2	60.6	21
Education								
No education	38.6	38.4	36.1	809	47.6	47.6	44.7	76
Primary incomplete	41.1	40.8	37.2	2,642	53.9	53.9	51.1	202
Primary complete	44.5	44.3	40.8	2,377	52.3	52.3	46.8	177
Secondary+	50.4	50.1	46.0	3,014	53.2	53.2	51.0	147
Wealth quintile								
Lowest	35.2	35.1	32.4	1,465	51.6	51.6	46.3	141
Second	42.3	41.9	39.2	1,559	53.9	53.9	51.3	111
Middle	46.1	45.7	43.0	1,682	48.8	48.8	47.9	113
Fourth	45.0	44.9	41.4	1,820	62.4	62.4	61.1	90
Highest	52.1	51.8	46.2	2,323	48.8	48.8	43.3	146
Total	45.0	44.7	41.1	8,849	52.5	52.5	49.0	601

Note: Total includes 6 women for whom education is missing. Numbers in parentheses are based on 25-49 unweighted cases.

[1] An ever-treated net is a long-lasting net or a conventional net that was either pretreated or was soaked with insecticide at any time.

[2] An insecticide-treated net (ITN) is (1) a factory treated net that does not require any further treatment (long-lasting net) or (2) a pretreated net obtained within the past 12 months, or (3) a conventional net that has been soaked with insecticide within the past 12 months.

Figure 12.3 **Use of Mosquito Nets by Women Age 15-49**



* The data from the 2007 KMIS are not for Kenya as a whole but for malaria-prone areas only and exclude Nairobi province; Kiambu, Nyandarua, and Nyeri districts in Central province; Meru district in Central province; and Laikipia district in Rift Valley province.

Regarding differentials, the results show that women of reproductive age in urban areas are somewhat more likely to use mosquito nets than their rural counterparts. Regionally, women in Central and Rift Valley provinces are less likely to use mosquito nets than their counterparts in other provinces. The level of education plays a major role in use of mosquito nets by women of reproductive age. For instance, only 39 percent of all women with no education slept under any net the night before the survey compared with 50 percent of those with secondary education. Similarly, 48 percent of pregnant women with no education used mosquito nets the previous night compared to 53 percent of those with secondary education. The same pattern is noted for use of ITNs.

12.4 INTERMITTENT PREVENTIVE TREATMENT OF MALARIA IN PREGNANCY

The government of Kenya's policy on intermittent preventive treatment (IPT) states that all pregnant women living in malaria endemic areas should receive sulfadoxine-pyrimethamine (SP) for prevention of malaria in pregnancy. The first dose should be given at 16 weeks of gestation and subsequent doses administered with each scheduled visit as long as they are one month apart. In the 2008-09 KDHS, women who had a live birth in the five years preceding the survey were asked if they had taken any drugs to prevent them from getting malaria during the pregnancy for their most recent birth, and if yes, which drugs. If they had taken SP, they were further asked how many times they took it and whether they had received it during an antenatal care visit. In this context, IPT is defined as the proportion of women who had a live birth in the two years before the survey who received two or more doses of SP/Fansidar during pregnancy, at least one of which was received during an antenatal care visit.

Table 12.4 shows the percentage of women who took antimalarial drugs for prevention during pregnancy and those who received IPT. Almost twice the proportion (42 percent) of women took any antimalarial drugs during pregnancy in 2008-09 compared with 2003 (23 percent)[3]. The proportion of women who received IPT increased from 5 percent in 2003 to 14 percent in 2008-09; 36 percent of women received at least one dose of SP/Fansidar, which at least provides some protection.

Despite the fact that the burden of malaria is greater in rural areas than in urban areas, the 2008-09 KDHS found that pregnant women in rural areas are slightly more likely to take any type of antimalarial drugs (42 percent) than their urban counterparts (39 percent), but are slightly less likely

[3] These figures differ slightly from those in the 2003 KDHS report, which were based on women who had a birth in the five years before the survey.

to receive IPT. Nairobi province has the lowest proportion of pregnant women who took any antimalarial drugs (25 percent) and who received any SP during an antenatal care visit (19 percent) compared with the other provinces. This could be attributed to the fact that Nairobi is a malaria-free zone.

The results indicate that pregnant women with no education are less likely to take any antimalarial drugs for prevention or to receive IPT than those with some level of education. Only 6 percent of women with no education received IPT, compared with 18 percent of those with at least some secondary schooling. The data further indicate that poverty is a major hindrance to taking antimalarial drugs during pregnancy.

Table 12.4 Prophylactic use of antimalarial drugs and use of intermittent preventive treatment (IPT) by women during pregnancy

Percentages of women who took any antimalarial drugs for prevention, who took SP/Fansidar, and who received intermittent preventive treatment (IPT) during the pregnancy for their last live birth in the two years preceding the survey, by background characteristics, Kenya 2008-09

Background characteristic	Percentage who took any antimalarial drug	Percentage who took any SP/Fansidar	Percentage who took 2+ doses of SP/Fansidar	Percentage who received any SP/Fansidar during an ANC visit	Percentage who received IPT[1]	Number of women
Residence						
Urban	39.2	34.7	16.7	32.9	15.5	457
Rural	42.0	35.7	14.7	33.7	13.6	1,806
Province						
Nairobi	24.6	20.6	11.3	19.0	10.2	136
Central	43.6	38.6	16.2	37.8	16.2	168
Coast	39.6	32.5	13.6	31.4	12.9	211
Eastern	42.2	39.2	15.3	37.6	15.3	334
Nyanza	44.1	35.1	19.1	32.7	17.2	452
Rift Valley	37.2	33.0	13.1	31.5	12.5	647
Western	54.2	44.8	16.2	41.4	12.9	254
North Eastern	48.6	42.6	11.6	34.7	10.0	62
Education						
No education	33.1	27.1	7.0	24.8	6.1	272
Primary incomplete	37.2	30.8	13.3	28.2	12.1	739
Primary complete	42.9	37.9	16.4	36.8	15.7	693
Secondary+	49.4	43.0	19.8	40.8	18.2	560
Wealth quintile						
Lowest	32.7	27.7	12.0	25.3	11.3	543
Second	42.6	36.6	15.4	34.7	14.3	445
Middle	48.6	42.1	16.7	39.6	15.2	404
Fourth	44.9	37.4	16.1	35.0	14.3	412
Highest	41.3	36.2	16.0	35.6	15.7	459
Total	41.5	35.5	15.1	33.6	14.0	2,264

[1] IPT: Intermittent preventive treatment , that is, treatment with two or more doses of SP/Fansidar, at least one during an antenatal care (ANC) visit.

12.5 MALARIA CASE MANAGEMENT AMONG CHILDREN

Most malarial fevers and convulsions occur at home. Prompt and effective management of malaria cases is, therefore, important for malaria control across all the epidemiological zones of the country. Following reported drug resistance to sulfadoxine-pyrimethamine (SP), the government of Kenya in 2006 rolled out the use of artemisinin-based combined therapies (ACTs) for treatment of uncomplicated malaria. The ACT adopted for Kenya was artemether-lumefantrine (AL). The target for case management of malaria is for 60 percent of fever cases to receive appropriate malaria treatment within 24 hours of onset of fever.

The 2008-09 KDHS asked mothers whether their children under five years had had a fever in the two weeks preceding the survey and if so, whether any treatment was sought. Questions were also asked about the types of drugs given to the child and how soon and for how long the drugs were

taken. Table 12.5 shows the percentage of children under five who had fever in the two weeks preceding the survey, the percentage of such children who took antimalarial drugs, and the percentage who took drugs on the same or next day following the onset of the fever.

The proportion of children under five with fever in the two weeks preceding the survey decreased from 42 percent in 2003 to 24 percent in 2008-09. The survey further shows that among children under five with fever, only 23 percent took antimalarial drugs compared with 27 percent in 2003. The proportion of those who took antimalarial drugs on the same day or next day remained steady at around 11 percent.

Table 12.5 Prevalence and prompt treatment of fever

Percentage of children under age five with fever in the two weeks preceding the survey, and among children with fever, the percentage who took antimalarial drugs and the percentage who took the drugs the same or next day following the onset of fever, by background characteristics, Kenya 2008-09

	Among children under age five:		Among children under age five with fever:		
Background characteristic	Percentage with fever in the two weeks preceding the survey	Number of children	Percentage who took antimalarial drugs	Percentage who took antimalarial drugs same or next day	Number of children
Age (in months)					
<12	27.1	1,141	18.8	8.2	309
12-23	28.5	1,096	22.3	9.3	312
24-35	20.6	1,132	30.3	17.1	233
36-47	21.9	1,071	21.7	12.9	235
48-59	20.4	1,041	24.7	13.2	212
Residence					
Urban	22.0	1,010	25.7	16.8	223
Rural	24.1	4,471	22.6	10.7	1,079
Province					
Nairobi	18.2	312	16.9	7.8	57
Central	26.5	437	11.7	10.0	116
Coast	35.0	466	20.3	8.7	163
Eastern	17.9	843	22.7	18.4	151
Nyanza	24.3	1,024	32.6	15.2	249
Rift Valley	20.9	1,581	17.8	4.5	331
Western	30.1	653	32.1	20.0	197
North Eastern	23.4	166	20.4	6.9	39
Mother's education					
No education	33.4	708	19.8	6.4	237
Primary incomplete	26.0	1,808	21.9	11.2	470
Primary complete	18.9	1,668	26.6	12.5	315
Secondary+	21.7	1,298	24.2	16.1	281
Wealth quintile					
Lowest	26.3	1,340	21.1	6.9	353
Second	20.4	1,115	24.4	13.2	228
Middle	25.0	1,007	30.3	14.7	252
Fourth	26.0	997	18.2	11.9	259
Highest	20.5	1,022	23.0	14.4	210
Total	23.7	5,481	23.2	11.7	1,302

Children less than 24 months old are more likely to have fever than children 24-59 months old. Children in urban areas are about as likely to have fever as rural children; however, they are somewhat more likely to take antimalarial drugs, especially within two days of getting the fever. The prevalence of childhood fever is highest in Coast province (35 percent) and lowest in Eastern province and Nairobi (18 percent). Children whose mothers' level of education is low are more likely to have suffered fever in the two weeks before the survey than those whose mothers have more education. Surprisingly, neither the prevalence of childhood fever nor the pattern of treatment appears to be related to the wealth quintile.

Table 12.6 presents information on types of antimalarial drugs given to children with fever and the proportion who took the first-line drug (ACT) and the second-line drug (SP) on the same or the next day after the onset of the illness. In interpreting the data, it is important to remember that the information is based on reports from the mothers of the ill children. Many mothers may not have known the specific drug given to the child.

Overall, 8 percent of children with fever took ACT, and 3 percent took SP/Fansidar. Only 4 percent of the children took ACT, and 2 percent took SP/Fansidar on the same day or the next day after the onset of the fever. A sizable proportion of children still are being given amodiaquine (8 percent) for treatment of fever, though it is neither a first- nor a second-line drug.

Table 12.6 Type and timing of antimalarial drugs

Among children under age five with fever in the two weeks preceding the survey, percentage who took specific antimalarial drugs and percentage who took each type of drug the same or next day after developing the fever, by background characteristics, Kenya 2008-09

	Percentage of children who took drug:						Percentage of children who took drug the same or next day:						
Background characteristic	SP/ Fansidar	Chloro-quine	Amodia-quine	Quinine	ACT	Other anti-malarial	SP/ Fansidar	Chloro-quine	Amodia-quine	Quinine	ACT	Other anti-malarial	Number of children with fever
Age (in months)													
<12	3.4	1.4	7.3	0.6	4.6	2.6	2.0	0.6	2.8	0.1	2.1	0.9	309
12-23	2.6	1.2	4.5	1.5	10.2	2.5	0.6	0.5	1.9	0.7	5.3	0.6	312
24-35	2.7	1.3	11.6	1.9	10.7	3.0	1.0	0.5	8.0	0.4	6.1	1.3	233
36-47	5.3	0.8	6.9	1.4	5.1	2.2	3.3	0.0	4.1	0.8	3.7	0.9	235
48-59	1.7	1.2	10.0	0.8	8.4	3.1	0.8	1.2	6.1	0.5	4.2	0.8	212
Residence													
Urban	2.6	0.5	6.6	1.3	13.6	3.1	1.9	0.3	5.1	0.1	8.1	1.7	223
Rural	3.3	1.3	8.0	1.2	6.5	2.5	1.4	0.6	4.1	0.6	3.4	0.7	1,079
Province													
Nairobi	7.2	0.0	3.2	0.1	6.4	2.1	5.8	0.0	2.1	0.0	0.0	2.1	57
Central	0.8	0.6	0.0	0.0	6.8	3.5	0.0	0.6	0.0	0.0	5.9	3.5	116
Coast	4.6	1.8	0.7	0.8	10.9	3.5	1.4	1.2	0.3	0.0	4.8	1.4	163
Eastern	1.9	0.0	9.6	2.0	9.2	0.0	1.9	0.0	7.4	1.0	8.1	0.0	151
Nyanza	6.4	4.3	6.3	1.5	10.1	4.2	3.2	1.8	4.0	0.2	4.8	1.1	249
Rift Valley	1.9	0.2	5.6	0.6	6.7	3.0	0.8	0.0	0.7	0.6	2.3	0.0	331
Western	0.4	0.2	24.2	3.0	3.6	1.6	0.0	0.0	15.5	1.1	3.4	0.6	197
North Eastern	6.5	0.0	4.9	0.0	9.0	0.0	1.6	0.0	1.3	0.0	4.1	0.0	39
Mother's education													
No education	5.2	0.6	7.1	1.3	3.7	2.4	1.7	0.6	1.7	0.7	1.2	0.4	237
Primary incomplete	0.9	2.1	6.5	0.7	8.9	3.1	0.5	0.8	4.1	0.5	4.8	0.7	470
Primary complete	4.2	1.1	8.3	2.1	9.5	2.2	2.3	0.4	4.5	0.5	4.4	0.6	315
Secondary+	4.0	0.3	9.9	1.1	7.2	2.5	2.2	0.3	6.6	0.2	5.6	1.9	281
Wealth quintile													
Lowest	3.9	1.6	5.8	0.7	5.9	3.2	1.2	0.8	2.2	0.0	2.4	0.4	353
Second	3.1	0.8	9.1	1.3	7.2	3.0	1.3	0.0	5.4	1.3	4.8	0.5	228
Middle	1.3	2.5	12.6	2.3	11.1	1.2	0.5	1.5	6.5	1.0	5.0	0.4	252
Fourth	3.0	0.7	6.4	1.6	4.7	2.7	1.6	0.3	4.4	0.3	3.7	1.9	259
Highest	4.3	0.0	5.4	0.3	11.4	3.0	3.5	0.0	3.8	0.0	6.4	1.3	210
Total	3.1	1.2	7.8	1.2	7.8	2.6	1.5	0.5	4.3	0.5	4.2	0.9	1,302

Table 12.7 presents data on the availability of antimalarial drugs at home when the child became ill with fever. Among children who received antimalarial drugs in the two weeks before the survey, 18 percent had the drugs at home when they became ill with fever.

Table 12.7 Availability at home of antimalarial drugs taken by children with fever

Among children under age five who had fever in the two weeks preceding the survey and who took specific antimalarial drugs, the percentage for whom the drug was at home when the child became ill with fever, Kenya 2008-09

Drug	Percentage for whom the drug was at home when child became ill with fever	Number of children who took the specific antimalarial drug
SP/ Fansidar	3.9	41
Amodiaquine	24.0	101
ACT	13.7	101
Any antimalarial drugs	17.9	302

Note: Total includes 15 children given chloroquine, 16 given quinine, and 34 given other antimalarials.

HIV/AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOUR

13

Robert C. B. Buluma, Patrick Muriithi, and Joshua Gitonga

13.1 INTRODUCTION

Acquired Immune Deficiency Syndrome (AIDS) is caused by a human immunodeficiency virus (HIV) that weakens the immune system, making the body susceptible to and unable to recover from other opportunistic diseases that lead to death. The predominant mode of HIV transmission is through heterosexual contact, followed in magnitude by perinatal transmission, in which the mother passes the virus to the child during pregnancy, delivery, or breastfeeding. Other modes of transmission are through infected blood and unsafe injections.

The future course of Kenya's AIDS epidemic depends on a number of variables including levels of HIV/AIDS-related knowledge among the general population; social stigmatization; risk behaviour modification; access to quality health care services for sexually transmitted infections (STI); provision and uptake of HIV counselling and testing; and access to care and antiretroviral therapy (ART), including prevention and treatment of opportunistic infections. The principal objective of this chapter is to establish the prevalence of relevant knowledge, perceptions, and behaviours at the national level and also within geographic and socioeconomic subpopulations. In this way, prevention programmes can target those groups of individuals most in need of information and most at risk of HIV infection.

In collaboration with various stakeholders, the Kenya National AIDS Control Council (NACC) developed the 2009/10 to 2012/13 Kenya National AIDS Strategic Plan III (KNASP III) which was launched in January 2010 (NACC, 2009). Although HIV prevalence seems to have stabilized, new HIV infections have been estimated at 166,000 annually. This plan will therefore focus attention on the prevention of new infections, reduction of HIV-related illnesses and deaths, and mitigation of the effects of the epidemic on households and communities (NACC, 2009).

In this chapter, indicators of HIV/AIDS knowledge, attitudes, and related behaviours are presented for the general adult population age 15-49. The chapter then focuses on HIV/AIDS knowledge and patterns of sexual activity among young people age 15-24, as young adults are the main target of many HIV prevention efforts.

13.2 HIV/AIDS KNOWLEDGE OF TRANSMISSION AND PREVENTION METHODS

13.2.1 Awareness of HIV/AIDS

Respondents interviewed in the 2008-09 Kenya Demographic and Health Survey (KDHS) were asked whether they had heard of an illness called AIDS. Those who reported having heard of AIDS were asked a number of questions about whether and how AIDS could be avoided. Table 13.1 shows that awareness of HIV/AIDS is universal with 99 percent of women and 100 percent of men age 15-49 having heard of AIDS. The only groups for which the level of awareness of AIDS falls below 98 percent are women and men with no education and women in the lowest wealth quintile. The prevalence of knowledge was already high in 2003 (99 percent of women and men having heard of AIDS), so there has been little change in the current survey.

Table 13.1 Knowledge of AIDS

Percentage of women and men age 15-49 who have heard of AIDS, by background characteristics, Kenya 2008-09

Background characteristic	Women		Men	
	Has heard of AIDS	Number of respondents	Has heard of AIDS	Number of respondents
Age				
15-24	98.8	3,475	99.6	1,406
15-19	98.7	1,761	99.5	776
20-24	98.9	1,715	99.7	630
25-29	99.0	1,454	99.6	483
30-39	99.6	2,086	100.0	806
40-49	99.2	1,429	100.0	563
Marital status				
Never married	98.8	2,634	99.5	1,524
Ever had sex	99.3	1,224	100.0	995
Never had sex	98.4	1,410	98.6	529
Married/living together	99.2	4,928	100.0	1,592
Divorced/separated/ widowed	99.4	881	100.0	142
Residence				
Urban	99.5	2,148	100.0	866
Rural	99.0	6,296	99.7	2,392
Province				
Nairobi	99.0	728	100.0	314
Central	99.8	905	100.0	347
Coast	99.6	674	100.0	252
Eastern	99.7	1,376	100.0	530
Nyanza	99.5	1,389	100.0	520
Rift Valley	98.1	2,262	99.3	885
Western	99.4	927	99.6	349
North Eastern	98.1	184	99.3	62
Education				
No education	93.8	752	95.5	112
Primary incomplete	99.2	2,526	99.7	883
Primary complete	99.8	2,272	100.0	804
Secondary+	99.9	2,894	100.0	1,459
Wealth quintile				
Lowest	96.5	1,393	98.6	457
Second	99.5	1,483	100.0	577
Middle	99.9	1,613	100.0	574
Fourth	99.5	1,736	99.8	725
Highest	99.6	2,220	100.0	926
Total 15-49	99.1	8,444	99.8	3,258
Men age 50-54	na	0	100.0	207
Total men 15-54	na	0	99.8	3,465

na = Not applicable

13.2.2 Knowledge of HIV Prevention

Among adults, HIV is mainly transmitted through heterosexual contact between an infected partner and a non-infected partner. Consequently, HIV prevention programmes focus their messages and efforts on three important aspects of behaviour: using condoms, limiting the number of sexual partners or staying faithful to one partner, and delaying sexual debut for young persons (abstinence). Table 13.2 shows that knowledge of methods to avoid HIV transmission is generally widespread in Kenya. For example, 75 percent of women and 81 percent of men know that the chance of getting HIV can be reduced by using condoms. Similarly, 92 percent of women and 93 percent of men know that limiting sex to one faithful partner reduces chances of getting HIV. Almost 90 percent of women and men know that abstaining from sex reduces the chances of getting HIV.

Table 13.2 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting the AIDS virus by using condoms every time they have sexual intercourse, by having one sex partner who is not infected and has no other partners, and by abstaining from sexual intercourse, by background characteristics, Kenya 2008-09

	Women					Men				
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Abstaining from sexual intercourse	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Abstaining from sexual intercourse	Number of men
Age										
15-24	72.9	89.4	67.9	87 5	3,475	79.1	90.5	74.2	87.6	1,406
15-19	67.0	87.9	61.4	87.4	1,761	75.7	89.2	70.6	87.8	776
20-24	79.0	91.0	74.6	87.7	1,715	83.4	92.0	78.6	87.3	630
25-29	78.5	92.2	75.7	86.6	1,454	76.5	92.1	73.8	91.1	483
30-39	77.7	93.0	74.2	89 5	2,086	85.7	95.9	84.2	92.7	806
40-49	70.9	93.3	68.3	90.0	1,429	83.3	95.4	80.6	90.3	563
Marital status										
Never married	73.7	89.9	69.1	88.2	2,634	79.6	90.7	75.1	87.6	1,524
Ever had sex	84.0	93.1	80.2	88 5	1,224	84.2	90.9	79.2	87.9	995
Never had sex	64.8	87.2	59.4	87.8	1,410	71.0	90.4	67.4	87.2	529
Married/living together	74.7	92.1	71.4	87.6	4,928	82.4	95.1	80.0	92.2	1,592
Divorced/separated/ widowed	77.7	92.7	73.4	92.4	881	81.8	91.4	79.7	87.3	142
Residence										
Urban	81.4	95.2	79.4	90.0	2,148	86.1	93.7	82.1	92.5	866
Rural	72.4	90.2	68.0	87.7	6,296	79.3	92.6	76.1	88.9	2,392
Province										
Nairobi	85.9	94.5	83.4	87 5	728	94.6	94.6	90.5	95.9	314
Central	82.8	95.2	81.0	93 3	905	87.2	98.4	86.2	91.6	347
Coast	72.7	93.6	70.9	89 3	674	76.5	90.6	71.9	93.3	252
Eastern	70.9	96.2	69.0	92.4	1,376	79.8	91.2	74.4	86.7	530
Nyanza	81.3	94.4	78.3	91.9	1,389	89.4	96.0	86.1	96.6	520
Rift Valley	71.5	86.8	65.6	82.4	2,262	80.5	95.2	78.8	90.5	885
Western	74.7	86.3	66.7	88.4	927	67.5	81.6	62.0	75.7	349
North Eastern	16.7	79.5	14.2	77.3	184	23.4	82.6	20.8	75.9	62
Education										
No education	45.4	78.0	40.9	76.9	752	45.1	81.6	42.3	78.1	112
Primary incomplete	70.9	89.2	66.2	87.7	2,526	75.7	89.3	71.2	87.6	883
Primary complete	79.4	93.1	75.2	89.4	2,272	81.1	94.7	79.0	89.5	804
Secondary+	81.9	95.7	79.4	90.9	2,894	87.1	95.0	83.7	92.3	1,459
Wealth quintile										
Lowest	58.3	82.8	53.5	80.0	1,393	70.5	89.0	67.3	81.9	457
Second	72.6	90.0	67.4	89.0	1,483	74.9	90.5	70.3	89.4	577
Middle	75.9	93.0	71.2	91.4	1,613	81.4	92.9	78.4	88.7	574
Fourth	77.5	93.1	74.1	89 3	1,736	82.7	94.1	79.6	91.5	725
Highest	83.4	95.4	81.3	89.9	2,220	88.7	95.4	85.5	93.4	926
Total 15-49	74.7	91.5	70.9	88 3	8,444	81.1	92.9	77.7	89.8	3,258
Men age 50-54	na	na	na	na	0	67.4	97.2	66.1	89.7	207
Total men 15-54	na	na	na	na	0	80.3	93.2	77.0	89.8	3,465

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

Results show that knowledge of all the key HIV prevention methods is lower among women and men age 15-19 than among people age 20 years and older. Likewise, knowledge of how people can reduce the risk of getting HIV is lower among those who have never had sex than among those who are married or living together with a partner, those who are divorced/separated/widowed, or those who never married but have had sex.

The survey further indicates that urban dwellers are more knowledgeable about all methods of reducing the risk of HIV infection than their rural counterparts. The level of awareness shows marked differences across provinces. North Eastern province has the lowest levels of knowledge for all methods of reducing the risk of contracting HIV/AIDS, whereas Nairobi and Central province tend to have the highest levels of knowledge.

The level of education attained by women and men age 15-49 strongly relates to their knowledge of ways to avoid contracting HIV/AIDS. Women and men who have no education show much lower levels of knowledge of HIV/AIDS prevention methods than those with some education. The data further show that the poorest women and men are the most disadvantaged in terms of knowledge of methods to reduce the risk of getting HIV/AIDS.

Figures 13.1 and 13.2 show that there have been marked improvements since 2003 in knowledge of HIV prevention methods among both women and men age 15-49. Particularly notable is the increase in the proportion who know that using condoms can reduce the risk of HIV transmission.

Figure 13.1 **Trends in Knowledge of HIV Prevention Methods: Women**

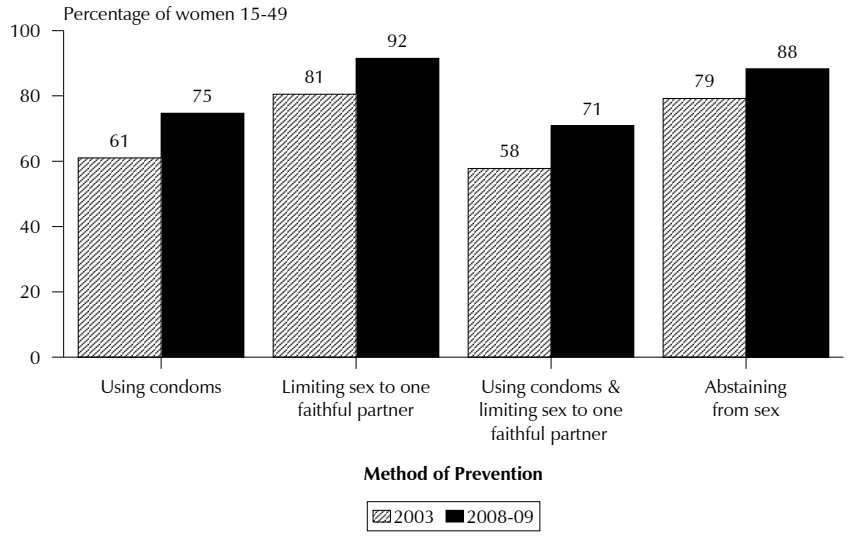
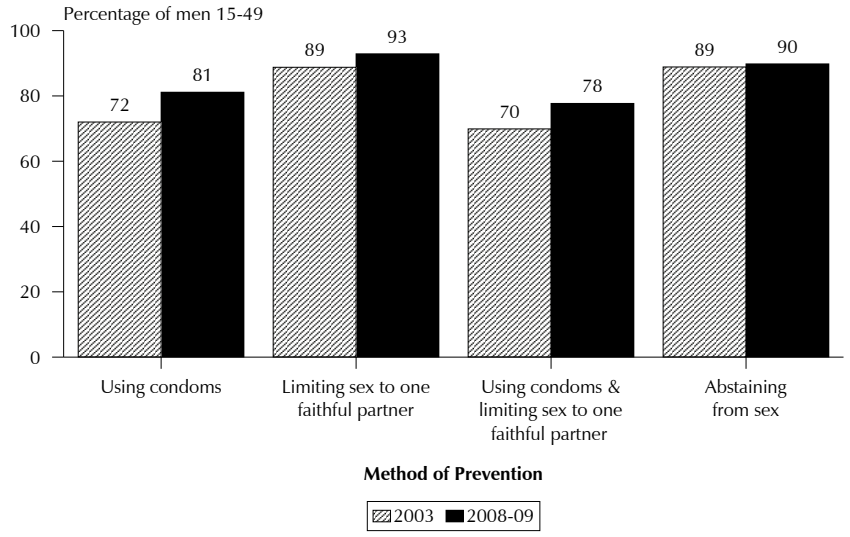


Figure 13.2 **Trends in Knowledge of HIV Prevention Methods: Men**



13.2.3 Rejection of Misconceptions about HIV/AIDS

In addition to knowing about effective ways to avoid contracting HIV, it is also useful to be able to identify incorrect beliefs about AIDS to eliminate misconceptions. Common misconceptions about AIDS include the idea that all HIV-infected people always appear ill and the belief that the virus can be transmitted through mosquito or other insect bites, by sharing food with someone who is infected, or by witchcraft or other supernatural means. Respondents were asked about these misconceptions and the findings are presented in Tables 13.3.1 and 13.3.2 and Figure 13.3.

Table 13.3.1 Comprehensive knowledge about AIDS: Women

Percentage of women age 15-49 who say that a healthy-looking person can have the AIDS virus and who, in response to prompted questions, correctly reject local misconceptions about AIDS transmission or prevention, and the percentage with a comprehensive knowledge about AIDS by background characteristics, Kenya 2008-09

Background characteristic	Percentage of respondents who say that: A healthy-looking person can have the AIDS virus	AIDS cannot be transmitted by mosquito bites	AIDS cannot be transmitted by supernatural means	A person cannot become infected by sharing food with a person who has AIDS	Percentage who say that a healthy-looking person can have the AIDS virus and who reject the two most common local misconceptions[1]	Percentage with a comprehensive knowledge about AIDS[2]	Number of women
Age							
15-24	87.4	75.4	90.5	87.1	64.7	47.5	3,475
15-19	84.0	77.1	90.9	88.2	62.2	41.9	1,761
20-24	90.9	73.7	90.2	85.9	67.3	53.3	1,715
25-29	90.0	72.7	89.4	86.3	62.8	52.3	1,454
30-39	92.3	71.5	91.0	87.6	64.5	53.2	2,086
40-49	92.8	60.9	86.2	83.7	53.9	41.5	1,429
Marital status							
Never married	87.6	79.6	91.8	89.1	67.6	50.8	2,634
Ever had sex	91.4	76.3	91.4	90.2	67.1	57.8	1,224
Never had sex	84.3	82.5	92.1	88.2	68.0	44.7	1,410
Married/living together	91.0	68.0	88.8	85.2	60.1	47.6	4,928
Divorced/separated/ widowed	91.5	67.4	89.0	85.6	60.9	48.7	881
Residence							
Urban	94.7	79.5	92.1	90.9	72.4	62.0	2,148
Rural	88.4	68.8	88.9	85.0	59.1	44.2	6,296
Province							
Nairobi	93.7	82.8	92.6	91.6	75.1	66.7	728
Central	97.6	71.5	93.4	89.4	67.6	57.8	905
Coast	90.1	64.9	80.8	82.0	55.2	43.3	674
Eastern	94.4	70.1	89.7	85.2	62.0	46.3	1,376
Nyanza	94.3	73.3	88.5	86.5	66.3	54.8	1,389
Rift Valley	83.3	70.1	89.6	85.7	58.5	43.5	2,262
Western	89.7	74.1	93.8	91.3	64.6	45.8	927
North Eastern	54.8	54.1	83.2	63.3	28.9	5.1	184
Education							
No education	65.6	39.2	69.7	58.3	25.5	14.2	752
Primary incomplete	86.7	63.6	87.3	83.9	51.6	37.5	2,526
Primary complete	92.5	73.0	92.8	90.3	64.6	51.3	2,272
Secondary+	97.2	85.7	94.7	93.1	80.1	65.5	2,894
Wealth quintile							
Lowest	73.8	55.7	78.8	72.3	39.8	26.5	1,393
Second	90.1	70.8	91.3	86.5	62.2	44.7	1,483
Middle	91.7	72.6	91.6	87.7	63.2	48.3	1,613
Fourth	94.0	70.6	91.6	89.2	64.4	50.3	1,736
Highest	95.7	81.9	92.7	92.4	75.0	64.5	2,220
Total 15-49	90.0	71.5	89.7	86.5	62.5	48.7	8,444

[1] Two most common local misconceptions of source of disease: mosquito bites and sharing food with a person who has AIDS.
[2] Comprehensive knowledge means knowing that consistent use of a condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about AIDS transmission or prevention (mosquito bites and sharing food).

The data indicate that some misconceptions on how AIDS is transmitted still exist among the Kenyan population age 15-49. It is encouraging that about 9 in 10 women and men know that a healthy-looking person can have the AIDS virus and know that AIDS cannot be transmitted by supernatural means or by sharing food with a person who has AIDS. However, misunderstandings about transmission through insects are more widespread; only about three-quarters of respondents know that AIDS cannot be transmitted by mosquito bites.

Table 13.3.2 Comprehensive knowledge about AIDS: Men

Percentage of men age 15-49 who say that a healthy-looking person can have the AIDS virus and who, in response to prompted questions, correctly reject local misconceptions about AIDS transmission or prevention, and the percentage with a comprehensive knowledge about AIDS by background characteristics, Kenya 2008-09

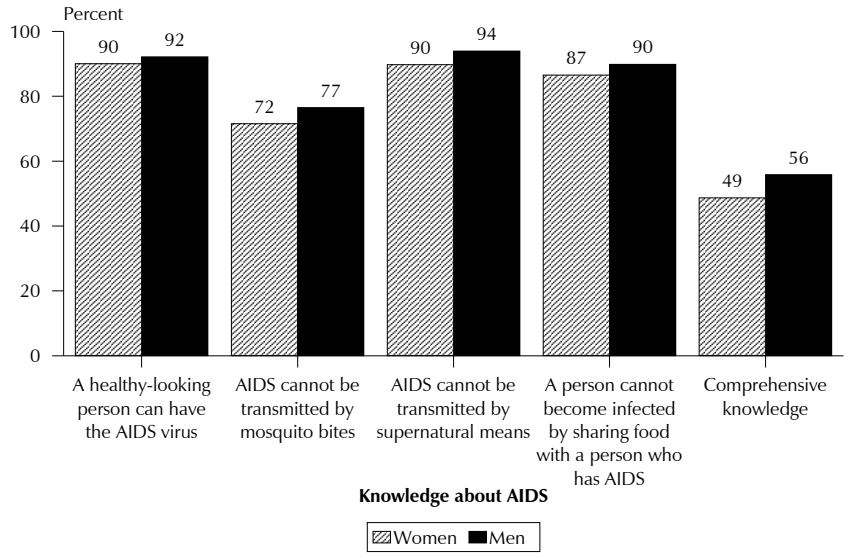
Background characteristic	Percentage of respondents who say that:				Percentage who say that a healthy-looking person can have the AIDS virus and who reject the two most common local misconceptions[1]	Percentage with a comprehensive knowledge about AIDS[2]	Number of men
	A healthy-looking person can have the AIDS virus	AIDS cannot be transmitted by mosquito bites	AIDS cannot be transmitted by supernatural means	A person cannot become infected by sharing food with a person who has AIDS			
Age							
15-24	89.3	81.0	94.6	92.3	71.0	54.9	1,406
15-19	85.4	82.1	94.5	90.8	69.6	51.7	776
20-24	94.1	79.6	94.8	94.2	72.7	58.9	630
25-29	94.4	75.4	93.2	89.4	68.2	53.6	483
30-39	94.0	75.1	93.9	88.0	68.8	60.5	806
40-49	94.5	68.1	92.7	86.2	63.3	53.5	563
Marital status							
Never married	90.3	80.5	94.3	91.9	71.5	56.0	1,524
Ever had sex	93.5	80.4	94.5	93.4	72.9	59.6	995
Never had sex	84.2	80.8	93.8	88.9	68.8	49.4	529
Married/living together	94.6	72.6	93.5	88.3	66.2	55.7	1,592
Divorced/separated/ widowed	83.4	76.5	94.1	84.6	66.3	54.9	142
Residence							
Urban	97.7	85.8	96.5	93.3	81.5	69.5	866
Rural	90.1	73.1	92.9	88.5	64.1	50.9	2,392
Province							
Nairobi	98.7	86.7	96.3	92.9	83.2	76.6	314
Central	95.6	75.8	94.0	93.4	71.2	63.9	347
Coast	91.8	82.1	91.4	90.7	71.0	52.9	252
Eastern	93.5	70.9	93.0	85.2	63.4	48.3	530
Nyanza	95.3	79.3	93.3	92.4	72.1	62.9	520
Rift Valley	88.2	75.7	95.0	88.5	66.7	53.7	885
Western	90.2	72.6	94.2	90.0	64.4	45.3	349
North Eastern	68.6	62.6	86.0	84.3	42.0	12.5	62
Education							
No education	68.8	39.6	77.5	63.1	26.2	14.8	112
Primary incomplete	84.1	63.8	92.3	84.5	51.8	37.8	883
Primary complete	93.9	74.5	94.1	89.2	67.0	54.8	804
Secondary+	97.8	88.1	96.0	95.3	83.1	70.5	1,459
Wealth quintile							
Lowest	77.4	64.9	89.7	80.0	49.1	37.3	457
Second	91.5	74.1	90.6	86.7	64.0	46.7	577
Middle	94.4	77.6	95.2	90.2	71.6	56.9	574
Fourth	93.1	74.4	93.7	92.1	67.2	54.5	725
Highest	97.6	84.6	97.3	94.4	80.7	71.1	926
Total 15-49	92.1	76.5	93.9	89.8	68.7	55.8	3,258
Men age 50-54	91.9	64.9	91.5	82.8	58.3	43.5	207
Total men 15-54	92.1	75.8	93.7	89.4	68.1	55.1	3,465

[1] Two most common local misconceptions: mosquito bites and sharing food with a person who has AIDS.
[2] Comprehensive knowledge means knowing that consistent use of condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about AIDS transmission or prevention (mosquito bites and sharing food).

Comprehensive knowledge about HIV/AIDS is a useful composite measure and is defined as knowing that both consistent use of condoms during sexual intercourse and also having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and knowing that AIDS cannot be transmitted by mosquito bites or by sharing food with a person who has AIDS. Survey data show that about half of women and men age 15-49 have comprehensive knowledge about HIV/AIDS, with slightly lower levels among women than men (49 percent for women and 56 percent for men).

The results show that comprehensive knowledge about HIV/AIDS is lower among the youngest and oldest age groups (i.e., 15-19 and 40-49). The data further indicate that knowledge is lowest among women and men who have never had sex and highest among those who have never married but who have had sexual intercourse.

Figure 13.3 Comprehensive Knowledge about AIDS



Comprehensive knowledge means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and knowing that a AIDS cannot be transmitted by mosquito bites or by sharing food with a person who has AIDS. Kenya 2008-09

Knowledge about AIDS transmission among women and men age 15-49 residing in rural areas is lower compared with knowledge among their urban counterparts. For example, the survey shows that 62 percent of women in urban areas have comprehensive knowledge about HIV/AIDS compared with 44 percent of their counterparts in rural areas. Similarly, 70 percent of men in urban areas have comprehensive knowledge about HIV/AIDS compared with 51 percent of those in rural areas. Among both women and men, the level of comprehensive knowledge is highest in Nairobi, Central, and Nyanza provinces and by far the lowest in North Eastern province. Only 5 percent of women in North Eastern province have comprehensive knowledge about AIDS.

Among both women and men age 15-49, the level of education is highly associated with knowledge about methods of transmission of the AIDS virus. Comprehensive knowledge increases with rising level of education, from 14 percent of women with no education to 66 percent of those with some secondary schooling. Similarly, 15 percent of men with no education have comprehensive knowledge about AIDS, compared with 71 percent of those with at least some secondary school.

The results further show that the poor are worse off in terms of knowledge of HIV transmission than those who are wealthier. Among women, only 27 percent of those in the lowest wealth quintile have comprehensive knowledge about AIDS compared with 65 percent of those in the highest quintile. Similarly, only 37 percent of the poorest men have comprehensive knowledge about AIDS compared with 71 percent of the richest men.

13.2.4 Knowledge of Mother-to-Child Transmission of HIV

Increasing the level of general knowledge of how HIV is transmitted from mother to child and reducing the risk of transmission using antiretroviral drugs is critical to reducing mother-to-child transmission of HIV (MTCT). To assess MTCT knowledge, respondents in the 2008-09 KDHS were asked if the virus that causes AIDS can be transmitted from a mother to a child through breastfeeding and whether a mother with HIV can reduce the risk of transmission to the baby by taking certain drugs during pregnancy.

Table 13.4 shows that 87 percent of women and men know that HIV can be transmitted by breastfeeding. This knowledge has increased considerably since 2003 when only three-quarters of women (72 percent) and two-thirds of men (68 percent) knew that HIV can be transmitted by breastfeeding. Awareness of treatment for maternal transmission has increased even more dramatically. The proportion of women and men who know that the risk of mother-to-child transmission can be reduced by the mother taking certain drugs during pregnancy has doubled from that of 2003, from 33 percent of women in 2003 to 69 percent in 2008-09 and from 38 percent of men in 2003 to 70 percent in 2008-09. Similarly, combined knowledge of both these indicators—i.e., knowing that HIV can be transmitted by breastfeeding and that the risk of MTCT can be reduced by the mother taking special drugs during pregnancy—also increased from 28 to 65 percent of women age 15-49 and from 30 to 64 percent of men age 15-49.

Knowledge of transmission through breastfeeding and of MTCT-reducing drugs is lower for the youngest women and men, as well as for those who have never had sex and for women who are not pregnant. It is also lower for rural women and substantially lower among women and men in North Eastern province than among those in other provinces. Kenyan women and men age 15-49 with no education and those who have not completed primary education are less likely to know about the transmission of HIV through breastfeeding than are those who have completed primary or some secondary or higher education. The data also show that wealth is positively associated with knowledge of HIV transmission.

Table 13.4 Knowledge of prevention of mother to child transmission of HIV

Percentage of women and men age 15-49 who know that HIV can be transmitted from mother to child by breastfeeding and that the risk of mother-to-child transmission (MTCT) of HIV can be reduced by mother taking special drugs during pregnancy, by background characteristics, Kenya 2008-09

	Women				Men			
Background characteristic	HIV can be transmitted by breastfeeding	Risk of MTCT can be reduced by mother taking special drugs during pregnancy	HIV can be transmitted by breastfeeding and risk of MTCT can be reduced by mother taking special drugs during pregnancy	Number of women	HIV can be transmitted by breastfeeding	Risk of MTCT can be reduced by mother taking special drugs during pregnancy	HIV can be transmitted by breastfeeding and risk of MTCT can be reduced by mother taking special drugs during pregnancy	Number of men
Age								
15-24	85.1	63.2	59.8	3,475	86.4	65.6	60.4	1,406
15-19	81.4	53.2	50.5	1,761	86.3	62.7	57.9	776
20-24	88.8	73.4	69.4	1,715	86.4	69.3	63.5	630
25-29	89.0	75.0	71.0	1,454	86.9	69.7	67.1	483
30-39	90.0	73.4	71.0	2,086	86.5	75.8	69.0	806
40-49	87.2	68.4	65.4	1,429	86.2	70.1	65.6	563
Marital status								
Never married	85.0	61.8	58.7	2,634	85.3	65.0	60.0	1,524
Ever had sex	88.1	70.4	66.1	1,224	86.8	68.1	63.3	995
Never had sex	82.2	54.2	52.3	1,410	82.5	59.3	53.9	529
Married/living together	88.4	71.9	68.6	4,928	87.8	73.5	68.8	1,592
Divorced/separated/ widowed	88.2	71.0	68.1	881	83.5	73.0	62.8	142
Currently pregnant								
Pregnant	87.9	72.0	69.5	593	na	na	na	0
Not pregnant or not sure	87.3	68.4	65.1	7,851	na	na	na	0
Residence								
Urban	89.6	76.6	73.6	2,148	85.3	71.3	64.5	866
Rural	86.6	65.9	62.7	6,296	86.9	68.9	64.4	2,392
Province								
Nairobi	89.9	83.6	80.5	728	83.5	65.0	60.2	314
Central	92.7	77.6	74.1	905	89.3	76.9	70.6	347
Coast	88.2	61.1	59.4	674	91.3	58.1	53.7	252
Eastern	88.6	63.6	61.5	1,376	87.2	69.1	62.7	530
Nyanza	89.0	85.3	79.8	1,389	93.7	83.4	79.9	520
Rift Valley	87.0	58.3	56.1	2,262	84.5	68.3	62.8	885
Western	85.0	72.1	67.0	927	84.3	66.1	61.7	349
North Eastern	40.5	13.9	13.4	184	38.5	20.2	18.5	62
Education								
No education	64.4	33.9	32.1	752	62.5	37.4	34.4	112
Primary incomplete	85.7	63.2	59.5	2,526	83.8	61.8	56.7	883
Primary complete	90.2	72.1	69.3	2,272	88.4	69.3	65.6	804
Secondary+	92.5	79.6	76.3	2,894	88.9	76.8	70.8	1,459
Wealth quintile								
Lowest	76.1	48.0	45.3	1,393	81.7	54.6	51.6	457
Second	88.0	68.0	64.2	1,483	85.2	68.4	63.0	577
Middle	89.8	70.1	67.1	1,613	89.1	73.6	68.7	574
Fourth	90.3	71.1	67.6	1,736	89.4	71.3	66.6	725
Highest	89.8	79.0	76.1	2,220	85.6	73.7	67.2	926
Total 15-49	87.3	68.6	65.4	8,444	86.5	69.5	64.4	3,258
Men age 50-54	na	na	na	0	81.2	58.7	53.5	207
Total men 15-54	na	na	na	0	86.1	68.9	63.8	3,465

na = Not applicable

13.3 ATTITUDES TOWARDS PEOPLE LIVING WITH AIDS

Widespread stigma and discrimination in a population can adversely affect both people's willingness to be tested and their adherence to antiretroviral therapy. Reduction of stigma and discrimination in a population is, thus, an important indicator of the success of programmes targeting HIV and AIDS prevention and control.

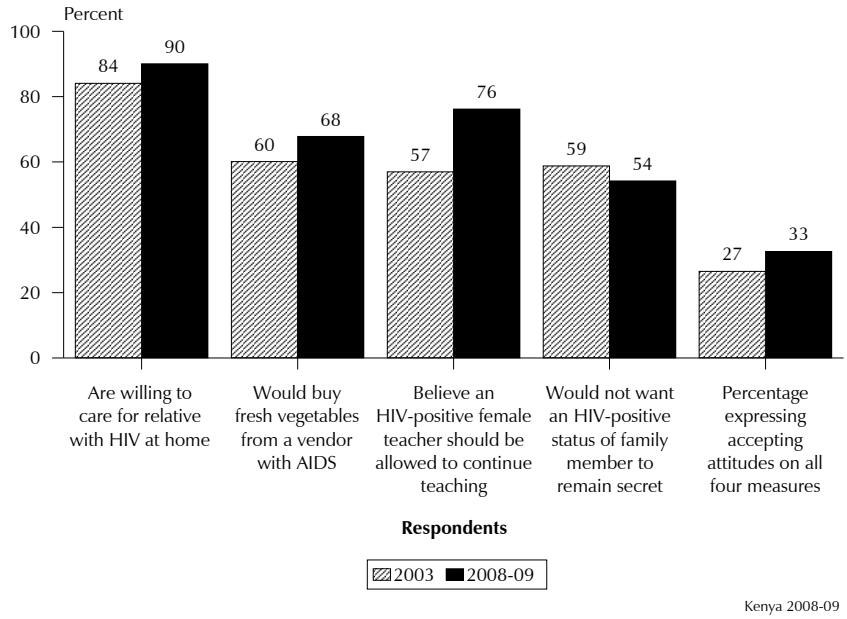
To assess the level of stigma, survey respondents who had heard of AIDS were asked if they would be willing to care for a family member sick with AIDS in their own households, if they would be willing to buy fresh vegetables from a market vendor who had the AIDS virus, if they thought a female teacher who has the AIDS virus but is not sick should be allowed to continue teaching, and if they would want to keep a family member's HIV status secret. Table 13.5.1 and Figure 13.4 show results for women, while Table 13.5.2 and Figure 13.5 show results for men.

Table 13.5.1 Accepting attitudes toward those living with HIV/AIDS: Women

Among women age 15-49 who have heard of AIDS, percentage expressing specific accepting attitudes toward people with AIDS, by background characteristics, Kenya 2008-09

Background characteristic	Percentage of respondents who: Are willing to care for a family member with the AIDS virus in the respondent's home	Would buy fresh vegetables from shopkeeper who has the AIDS virus	Say 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	Percentage expressing accepting attitudes on all four indicators	Number of respondents who have heard of AIDS
Age						
15-24	89.8	66.9	75.2	49.3	28.8	3,434
15-19	87.6	64.1	72.9	48.3	27.1	1,738
20-24	92.2	69.7	77.5	50.3	30.5	1,697
25-29	89.2	68.4	76.6	54.8	32.4	1,439
30-39	90.6	71.6	78.5	58.6	38.5	2,077
40-49	90.9	64.1	74.8	59.4	33.5	1,418
Marital status						
Never married	90.7	72.0	79.3	50.2	32.8	2,603
Ever had sex	93.1	75.6	82.4	51.5	35.6	1,216
Never had sex	88.6	68.9	76.5	49.1	30.5	1,387
Married/living together	89.6	65.2	74.1	56.7	32.4	4,889
Divorced/separated/ widowed	91.3	70.0	78.4	52.6	32.9	876
Residence						
Urban	91.8	78.9	87.9	51.6	38.3	2,137
Rural	89.5	64.1	72.2	55.1	30.7	6,232
Province						
Nairobi	94.5	81.0	92.7	50.9	41.0	720
Central	92.0	73.5	86.4	59.5	42.5	903
Coast	87.4	59.5	73.6	55.1	28.7	671
Eastern	90.1	63.1	67.6	49.7	25.9	1,372
Nyanza	95.3	77.9	83.4	47.2	32.6	1,382
Rift Valley	88.2	61.0	70.2	59.0	30.2	2,219
Western	89.2	75.0	79.9	58.2	39.3	921
North Eastern	61.5	24.4	33.9	47.1	10.5	181
Education						
No education	72.8	33.7	44.5	52.8	12.2	705
Primary incomplete	87.4	58.4	65.7	51.0	23.7	2,506
Primary complete	93.0	70.7	80.5	54.4	34.4	2,267
Secondary+	94.4	82.1	89.6	57.2	43.9	2,891
Wealth quintile						
Lowest	80.7	45.6	54.6	56.4	20.5	1,344
Second	89.8	65.0	73.0	52.8	28.8	1,475
Middle	92.9	65.9	74.1	55.6	33.7	1,611
Fourth	91.1	72.3	80.2	54.6	34.5	1,728
Highest	93.2	81.2	89.8	52.5	40.3	2,211
Total 15-49	90.1	67.8	76.2	54.2	32.6	8,369

Figure 13.4 Accepting Attitudes towards Those with HIV: Women



The data show a generally upward trend since 2003 in accepting attitudes towards those with HIV. Over 90 percent of women and men express their willingness to care in their own households for a relative who is sick with AIDS, which represents an increase of about 6 percentage points from the levels reported in 2003. Similarly, 68 percent of women and 80 percent of men would be willing to buy fresh vegetables from a vendor who has the AIDS virus, also an increase since 2003. The largest increase since 2003 is in the proportion of respondents who believe that a female teacher who has the AIDS virus should be allowed to continue teaching. This proportion increased from 57 percent of women in 2003 to 76 percent in 2008-09 and from 60 percent of men in 2003 to 80 percent in 2008-09. The only decline in accepting attitudes relates to disclosure of a family member's positive status. In 2008-09, 54 percent of women and 69 percent of men say that if a member of their family got infected with the virus that causes AIDS, they would not want it to remain a secret, a decrease from 59 percent of women and 72 percent of men in 2003.

The percentage expressing acceptance on all four measures is still low. Only one in three women (33 percent) and one in two men (48 percent) show acceptance on all four measures. It is interesting to note that women express less accepting attitudes towards people with HIV/AIDS than men.

A slightly lower proportion of women and men age 15-19 express accepting attitudes towards people infected with HIV/AIDS on all four measures, compared with those age 20 years and above. Urban women are more likely than rural women to have accepting attitudes on all four measures towards people infected with HIV/AIDS; the difference among men is minimal. Accepting attitudes towards HIV-infected people are least common in North Eastern province, where only 11 percent of women and 14 percent of men express accepting attitudes on all four measures.

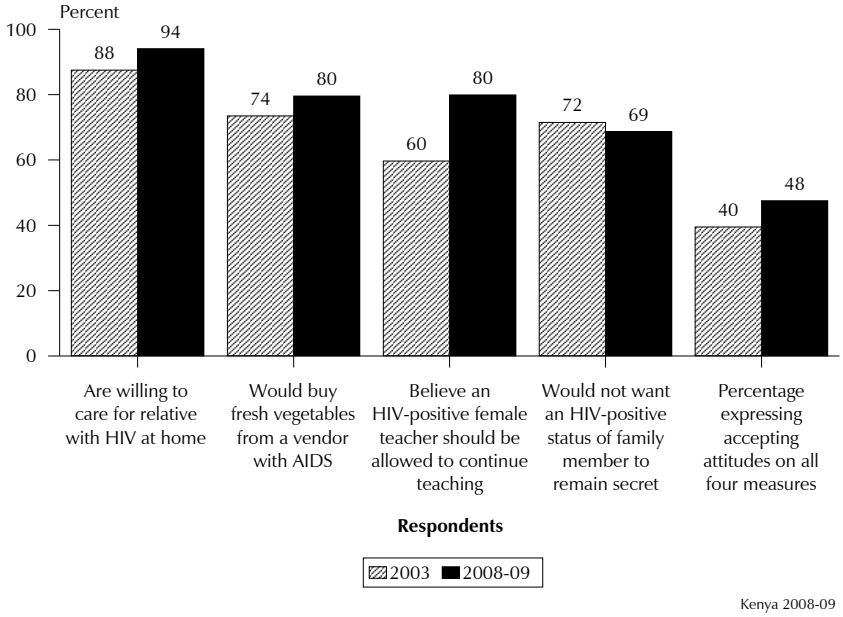
Education and socioeconomic status are strongly related to positive attitudes towards those who are HIV-positive. The proportion of women and men who accept all four measures increases steadily with education as well as with the wealth quintile. Only 12 percent of women and 18 percent of men with no education express accepting attitudes on all four measures towards people infected with HIV/AIDS, compared with 44 and 56 percent of women and men respectively with at least some secondary schooling. Women in the highest wealth quintile are twice as likely to express accepting attitudes on all four measures towards people infected with HIV/AIDS compared with women in the poorest quintile (40 percent and 21 percent). Similarly, 51 percent of men in the highest wealth quintile express accepting attitudes on all four measures towards people infected with HIV/AIDS compared with 39 percent of those in the lowest quintile.

Table 13.5.2 Accepting attitudes toward those living with HIV/AIDS: Men

Among men age 15-49 who have heard of HIV/AIDS, percentage expressing specific accepting attitudes toward people with HIV/AIDS, by background characteristics, Kenya 2008-09

Background characteristic	Percentage of respondents who: Are willing to care for a family member with the AIDS virus in the respondent's home	Would buy fresh vegetables from shopkeeper who has the AIDS virus	Say 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	Percentage expressing accepting attitudes on all four indicators	Number of respondents who have heard of AIDS
Age						
15-24	93.3	77.1	76.9	62.8	40.9	1,400
15-19	92.4	74.2	75.0	58.6	35.7	772
20-24	94.3	80.7	79.3	67.9	47.3	628
25-29	92.7	82.4	83.1	71.0	51.6	481
30-39	96.1	82.2	82.1	73.1	53.8	806
40-49	94.2	79.9	81.4	75.2	51.5	563
Marital status						
Never married	92.9	77.7	77.3	63.4	41.3	1,516
Ever had sex	93.8	80.4	78.2	66.5	44.5	995
Never had sex	91.0	72.7	75.5	57.5	35.3	521
Married/living together	94.9	81.1	82.3	72.9	52.4	1,592
Divorced/separated/ widowed	97.0	83.1	80.7	78.6	59.0	142
Residence						
Urban	91.9	82.7	87.1	63.5	48.7	866
Rural	94.8	78.5	77.3	70.6	47.1	2,384
Province						
Nairobi	84.1	80.3	87.7	52.3	38.3	314
Central	96.6	86.7	80.8	77.7	57.6	347
Coast	94.7	80.6	84.0	70.0	49.2	252
Eastern	95.7	66.2	73.1	68.7	36.6	530
Nyanza	95.6	84.5	84.4	48.9	37.5	520
Rift Valley	95.6	85.5	79.9	81.6	59.5	880
Western	96.6	79.1	78.5	71.3	51.6	347
North Eastern	64.1	27.0	46.7	63.7	13.8	61
Education						
No education	81.7	51.1	39.4	75.9	18.4	107
Primary incomplete	91.6	69.4	66.6	67.1	36.4	880
Primary complete	94.5	80.6	79.2	71.3	48.0	804
Secondary+	96.2	87.4	91.2	67.7	56.1	1,459
Wealth quintile						
Lowest	89.8	71.3	65.2	70.8	38.5	450
Second	95.1	76.6	75.7	69.7	45.8	577
Middle	93.8	80.3	81.4	72.6	50.6	574
Fourth	97.3	81.5	82.3	68.9	48.2	724
Highest	93.1	83.8	86.9	64.5	50.5	926
Total 15-49	94.1	79.6	79.9	68.7	47.5	3,250
Men age 50-54	90.3	69.3	70.7	72.3	37.3	207
Total men 15-54	93.8	79.0	79.3	68.9	46.9	3,457

Figure 13.5 **Accepting Attitudes towards Those with HIV: Men**



13.4 ATTITUDES TOWARDS CONDOM EDUCATION FOR YOUTH

Condom use is one of the main strategies for combating the spread of HIV. However, educating youth about condoms is sometimes controversial, with some saying it promotes early sexual experimentation. To gauge attitudes towards condom education, KDHS respondents were asked if they thought that children age 12-14 should be taught about using condoms to avoid getting AIDS. The results are shown in Table 13.6. Because the table focuses on adult opinion, results are tabulated for respondents age 18-49.

The table shows that 61 percent of women and 72 percent of men age 18-49 agree that children age 12-14 should be taught about using condoms to avoid AIDS. Women age 18-19 are less likely than women age 20 and above to agree that children age 12-14 should be taught about using condoms to avoid AIDS. On the other hand, men age 40-49 are less likely than younger men to agree that children age 12-14 should be taught about using condoms to avoid AIDS. Urban residents are slightly more likely than rural residents to agree about condom education for youth. Residents of North Eastern province are by far the least likely to agree that children age 12-14 should be taught about using condoms to avoid AIDS; only 20 percent of women and 12 percent of men support this. Support for teaching children about using condoms to avoid AIDS is lowest among women and men with no education and among those in the lowest wealth quintile.

Table 13.6 Adult support of education about condom use to prevent AIDS

Percentage of women and men age 18-49 who agree that children age 12-14 years should be taught about using a condom to avoid AIDS, by background characteristics, Kenya 2008-09

Background characteristic	Women		Men	
	Percentage who agree	Number	Percentage who agree	Number
Age				
18-24	63.5	2,389	73.6	975
18-19	55.8	674	72.5	345
20-24	66.6	1,715	74.1	630
25-29	61.9	1,454	72.8	483
30-39	59.1	2,086	74.2	806
40-49	60.6	1,429	65.2	563
Marital status				
Never married	61.1	1,607	73.0	1,093
Married or living together	60.3	4,872	71.6	1,592
Divorced/separated/ widowed	67.8	878	68.1	142
Residence				
Urban	64.7	1,972	73.0	810
Rural	60.1	5,386	71.5	2,017
Province				
Nairobi	66.7	681	74.6	303
Central	65.6	809	68.3	312
Coast	61.1	591	67.0	223
Eastern	59.9	1,200	69.6	426
Nyanza	70.2	1,181	69.5	422
Rift Valley	56.1	1,953	80.1	801
Western	63.0	782	72.2	289
North Eastern	20.0	160	12.4	51
Education				
No education	45.7	714	45.9	109
Primary incomplete	64.0	1,979	70.0	620
Primary complete	62.2	2,044	71.7	727
Secondary+	63.0	2,621	75.1	1,371
Wealth quintile				
Lowest	51.2	1,194	64.6	371
Second	61.0	1,243	74.2	477
Middle	65.0	1,365	70.5	477
Fourth	61.6	1,502	75.4	616
Highest	64.9	2,054	72.2	886
Total 18-49	61.4	7,358	72.0	2,827
Men age 50-54	na	na	53.5	207
Total men 18-54	na	na	70.7	3,034

na = Not applicable

13.5 HIGHER RISK SEX

Information on sexual behaviour is important in designing and monitoring intervention programmes to control the spread of HIV. The 2008-09 Kenya DHS included questions on respondents' sexual partners during their lifetimes and over the 12 months preceding the survey. For male respondents, an additional question was asked about whether they paid for sex during the 12 months preceding the interview. Information on the use of condoms at the last sexual encounter with each type of partner was collected for women and men. These questions are sensitive, and it is recognized that some respondents may have been reluctant to provide information on recent sexual behaviour.

13.5.1 Multiple Partners and Condom Use

Tables 13.7.1 and 13.7.2 show that men age 15-49 are nine times more likely than women to have had two or more sexual partners in the 12 months before the survey (9 percent and 1 percent). There was a slight drop in multiple partnering, from 12 percent of men and 2 percent of women in the

2003 KDHS. The 2008-09 data further show that men are twice as likely as women to have had intercourse in the past 12 months with a person who was neither their spouse nor who lived with them (25 percent and 13 percent). Among respondents who ever had sexual intercourse, the mean number of lifetime sexual partners is considerably higher among men (6.3) than among women (2.1).

The 2008-09 KDHS also assessed condom use among women and men with multiple partners or higher-risk sex in the 12 months preceding the survey. Although truly effective protection would require condom use at every sexual encounter, the sexual encounters covered here are those considered to pose the greatest risk of HIV transmission. Among respondents who had two or more sexual partners in the 12 months before the survey, 32 percent of women and 37 percent of men reported using a condom during last sexual intercourse (data for women not shown in table)[1]. The survey further reveals that among respondents who had sexual intercourse in the 12 months before the survey with a person who was neither their husband/wife nor who lived with them, 35 percent of women and 62 percent of men reported using a condom at the last sexual intercourse with that person.

The data show that place of residence is related to higher risk sexual behaviour. Women and men in urban areas are more likely than those in rural areas to have had sex in the previous 12 months with two or more sexual partners; to have had sex with a non-marital or non-co-habiting partner, and to have had more lifetime sexual partners.

Women in Coast province and men in Coast and Nyanza provinces are more likely to have had sexual intercourse with at least two sexual partners in the 12 months before the survey than women and men in other provinces. The level of education is correlated with use of condoms among women and men who had sexual intercourse in the last 12 months with a person who was neither their husband/wife nor who lived with them; use of condoms generally increases with the level of education. Men with no education and those who are in the lowest wealth quintile are more likely than other men to report having multiple sexual partners in the 12 months before the survey and less likely to report using a condom with such partners. The greater proportion of men in these groups who have multiple partners may reflect their higher prevalence of polygyny.

[1] The number of women reporting having two or more sexual partners in the 12 months before the survey is too small to show by background characteristics in the table.

Table 13.7.1 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Women

Among all women age 15-49, the percentage who had sexual intercourse with more than one sexual partner and the, percentage who had intercourse in the past 12 months with a person who was neither their husband nor who lived with them; among women age 15-49 who had sexual intercourse in the past 12 months, the percentage who had sexual intercourse with more than one sexual partner and the percentage who had intercourse in the past 12 months with a person who was neither their husband nor who lived with them; and among those having sexual intercourse in the past 12 months with a person who was neither their husband nor who lived with them, the percentage reporting that a condom was used at last intercourse with that person; and the mean number of sexual partners during her lifetime for women who ever had sexual intercourse, by background characteristics, Kenya 2008-09

	All respondents			Among respondents who had sexual intercourse in the past 12 months:			Among respondents who had intercourse in the past 12 months with a person who was neither their husband nor who lived with them:		Among respondents who ever had sexual intercourse	
Background characteristic	Percentage who had 2+ partners in the past 12 months	Percentage who had intercourse in the past 12 months with a person who was neither their husband nor who lived with them	Number	Percentage who had 2+ partners in the past 12 months	Percentage who had intercourse in the past 12 months with a person who was neither their husband nor who lived with them	Number	Percentage who reported using a condom at last sexual intercourse with that person	Number	Mean number of sexual partners in lifetime	Number
Age										
15-24	1.6	16.7	3,475	3.1	33.0	1,765	39.5	582	1.8	2,109
15-19	1.3	15.4	1,761	4.6	56.0	486	41.0	272	1.6	639
20-24	1.9	18.1	1,715	2.5	24.2	1,279	38.2	310	1.9	1,470
25-29	0.9	12.5	1,454	1.1	14.2	1,277	31.8	181	2.1	1,400
30-39	1.4	9.2	2,086	1.5	10.4	1,848	31.2	192	2.3	2,037
40-49	0.3	8.7	1,429	0.4	11.4	1,091	26.4	124	2.3	1,391
Marital status										
Never married	1.4	28.0	2,634	4.9	98.4	749	37.0	737	1.9	1,211
Married or living together	0.9	0.8	4,928	0.9	0.8	4,778	15.8	41	2.0	4,872
Divorced/separated/widowed	2.2	34.2	881	4.3	66.4	454	33.7	302	3.2	854
Residence										
Urban	2.2	18.1	2,148	3.0	25.1	1,545	38.1	388	2.4	1,784
Rural	0.8	11.0	6,296	1.2	15.6	4,436	33.7	691	2.0	5,153
Province										
Nairobi	1.8	21.7	728	2.6	30.4	519	44.8	158	2.2	603
Central	1.8	10.7	905	2.5	14.8	650	36.7	96	2.7	742
Coast	2.5	13.1	674	3.4	17.6	501	21.1	88	1.8	560
Eastern	0.5	8.8	1,376	0.7	12.5	975	27.5	121	2.3	1,088
Nyanza	1.3	14.8	1,389	1.8	20.0	1,023	38.6	205	2.3	1,195
Rift Valley	0.6	14.3	2,262	0.9	20.4	1,577	34.3	322	1.7	1,890
Western	1.5	9.6	927	2.3	14.6	608	37.2	89	2.3	717
North Eastern	0.0	0.0	184	0.0	0.0	128	*	0	1.1	141
Education										
No education	0.9	6.0	752	1.1	7.7	582	4.1	45	1.7	693
Primary incomplete	1.2	12.9	2,526	1.7	18.4	1,775	34.1	326	2.4	2,011
Primary complete	1.2	11.2	2,272	1.7	15.0	1,695	30.7	255	2.1	1,949
Secondary+	1.2	15.7	2,894	1.8	23.5	1,930	41.7	454	2.0	2,284
Wealth quintile										
Lowest	0.6	9.6	1,393	0.8	13.6	988	16.2	134	1.9	1,169
Second	1.0	11.1	1,483	1.4	15.8	1,037	36.4	164	2.0	1,200
Middle	0.7	10.8	1,613	1.0	15.4	1,133	30.7	175	2.1	1,298
Fourth	1.0	12.6	1,736	1.4	18.0	1,222	39.8	220	2.1	1,409
Highest	2.2	17.4	2,220	3.0	24.2	1,601	40.9	387	2.3	1,860
Total 15-49	1.2	12.8	8,444	1.7	18.0	5,981	35.3	1,079	2.1	6,937

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed. The number of women reporting two or more sexual partners in the 12 months before the survey is too small to allow showing by background characteristics.

Table 13.7.2 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Men

Among all men age 15-49, the percentage who had sexual intercourse with more than one sexual partner and the percentage who had intercourse in the past 12 months with a person who was neither their wife nor who lived with them; among men age 15-49 who had sexual intercourse in the past 12 months, the percentage who had sexual intercourse with more than one sexual partner and the percentage who had intercourse in the past 12 months with a person who was neither their wife nor who lived with them; among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse; and among those having sexual intercourse in the past 12 months with a person who was neither their wife nor who lived with them, the percentage reporting that a condom was used at last intercourse with that person; and the mean number of sexual partners during her lifetime for men who ever had sexual intercourse, by background characteristics, Kenya 2008-09

	All respondents			Among respondents who had sexual intercourse in the past 12 months:			Among respondents who had 2+ partners in the past 12 months:		Among respondents who had intercourse in the past 12 months with a person who was neither their wife nor who lived with them:		Among respondents who ever had sexual intercourse:	
Background characteristic	Percentage who had 2+ partners in the past 12 months	Percentage who had intercourse in the past 12 months with a person who was neither their wife nor who lived with them	Number	Percentage who had 2+ partners in the past 12 months	Percentage who had intercourse in the past 12 months with a person who was neither their wife nor who lived with them	Number	Percentage who reported using a condom during last sexual intercourse	Number	Percentage who reported using a condom at last sexual intercourse with that person	Number	Mean number of sexual partners in lifetime	Number
Age												
15-24	7.7	35.5	1,406	17.9	83.0	601	67.3	108	64.3	498	3.9	857
15-19	4.3	24.3	776	17.4	98.0	192	(69.1)	33	54.7	188	3.0	333
20-24	11.8	49.3	630	18.2	75.9	409	66.5	74	70.1	310	4.5	524
25-29	9.7	31.0	483	10.8	34.4	435	39.9	47	65.4	150	5.8	428
30-39	12.3	16.7	806	13.2	17.8	755	16.5	99	54.8	134	7.2	725
40-49	8.8	7.2	563	9.3	7.6	533	9.5	49	(47.4)	41	9.8	466
Marital status												
Never married	7.2	41.4	1,524	17.0	97.8	645	71.3	109	63.9	631	4.3	955
Married or living together	11.0	7.7	1,592	11.2	7.8	1,574	13.9	176	61.4	123	7.3	1,394
Divorced/separated/ widowed	13.0	49.0	142	17.7	66.8	104	*	18	47.1	69	10.4	126
Residence												
Urban	10.5	26.3	866	12.9	32.2	708	38.7	91	69.9	228	6.6	698
Rural	8.9	24.9	2,392	13.1	36.8	1,615	36.3	212	59.1	595	6.2	1,778
Province												
Nairobi	7.5	34.4	314	8.9	40.7	265	(59.1)	24	70.7	108	5.6	262
Central	5.1	29.1	347	7.2	41.2	246	*	18	54.9	101	8.3	290
Coast	12.6	25.0	252	15.8	31.5	200	34.1	32	68.3	63	7.8	194
Eastern	4.9	19.7	530	8.3	33.6	310	(46.5)	26	41.7	104	4.9	348
Nyanza	15.9	28.7	520	22.4	40.3	370	34.9	83	70.4	149	5.6	399
Rift Valley	9.8	22.6	885	13.0	29.9	668	36.0	87	65.9	200	6.0	671
Western	8.8	27.7	349	13.5	42.1	229	(35.5)	31	57.2	96	8.1	274
North Eastern	7.2	2.8	62	12.2	4.7	36	*	4	*	2	1.8	38
Education												
No education	16.2	16.7	112	20.5	21.1	88	(11.9)	18	*	19	6.0	89
Primary incomplete	8.1	25.1	883	13.2	40.8	543	30.6	71	45.9	221	6.4	590
Primary complete	9.9	24.6	804	12.9	32.0	618	34.6	80	63.0	198	6.9	622
Secondary+	9.2	26.4	1,459	12.5	35.9	1,074	45.3	134	72.2	385	6.0	1,175
Wealth quintile												
Lowest	12.7	21.4	457	18.4	31.0	315	21.1	58	50.1	98	6.2	318
Second	6.9	19.9	577	10.7	30.9	371	(43.9)	40	63.7	115	6.1	414
Middle	9.3	28.9	574	13.8	42.8	387	42.4	53	55.3	166	5.8	440
Fourth	8.8	28.8	725	13.4	43.9	475	46.4	64	62.4	209	6.3	545
Highest	9.6	25.5	926	11.5	30.5	775	34.4	89	70.8	236	6.8	759
Total 15-49	9.3	25.3	3,258	13.1	35.4	2,323	37.0	304	62.1	823	6.3	2,476
Men age 50-54	10.0	5.9	207	12.1	7.2	171	(3.6)	21	*	12	12.9	158
Total men 15-54	9.4	24.1	3,465	13.0	33.5	2,494	34.9	324	61.5	835	6.7	2,633

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

13.5.2 Transactional Sex

Transactional sex involves exchange of sex for money, favours, or gifts. Transactional sex is associated with high risk of contracting HIV and other sexually transmitted infections due to compromised power relations and the tendency to have multiple partnerships as a result. Male respondents in the 2008-09 KDHS who had had sex in the previous 12 months were asked what their relationship was with their partners, with the option of reporting a prostitute as a partner. In addition, they were asked a direct question as to whether they had paid anyone in exchange for having sex in the previous 12 months. Men who engaged in transactional sex were asked about condom use during the last paid sexual encounter.

Table 13.8 shows that only 2 percent of men age 15-49 reported having paid for sexual intercourse, a slight decrease from the 3 percent reported in the 2003 KDHS. Differences in the reports of transactional sex by background characteristics are minor, except that men who are divorced, separated, or widowed are more likely to have paid for sex (8 percent) than men who have never been married (3 percent) or those who are married or living together (1 percent). Men in Western (5 percent) and Central (3 percent) provinces are more likely to have engaged in paid sexual intercourse in the previous 12 months than men in other provinces.

More than two-thirds of men who reported having paid for sex in the 12 months before the survey said that they used a condom the last time they paid for sex (not shown). The numbers are too small to show by background characteristics.

Table 13.8 Payment for sexual intercourse: Men

Percentage of men age 15-49 reporting payment for sexual intercourse in the past 12 months, by background characteristics, Kenya 2008-09

Background characteristic	Percentage who paid for sexual intercourse in the past 12 months	Number of men
Age		
15-24	1.9	1,406
15-19	1.5	776
20-24	2.4	630
25-29	2.9	483
30-39	2.4	806
40-49	1.4	563
Marital status		
Never married	2.6	1,524
Married or living together	1.2	1,592
Divorced/separated/ widowed	7.7	142
Residence		
Urban	2.1	866
Rural	2.1	2,392
Province		
Nairobi	2.0	314
Central	3.0	347
Coast	0.8	252
Eastern	1.1	530
Nyanza	1.9	520
Rift Valley	1.9	885
Western	4.7	349
North Eastern	1.3	62
Education		
No education	0.9	112
Primary incomplete	2.7	883
Primary complete	1.9	804
Secondary+	2.0	1,459
Wealth quintile		
Lowest	1.2	457
Second	1.8	577
Middle	2.2	574
Fourth	3.4	725
Highest	1.7	926
Total 15-49	2.1	3,258
Men age 50-54	0.3	207
Total men 15-54	2.0	3,465

13.6 Coverage of HIV Counselling and Testing

13.6.1 General HIV Testing

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

To assess the awareness and coverage of HIV testing services, respondents in the 2008-09 KDHS were asked whether they had ever been tested for HIV. If they said that they had, respondents were asked whether they had received the results of their last test and where they had been tested. If they had never been tested, they were asked if they knew a place where they could go to be tested. Tables 13.9.1 and 13.9.2 present the results regarding prior HIV testing for women and men, respectively.

Table 13.9.1 Coverage of prior HIV testing: Women

Percentage of women age 15-49 who know where to get an HIV test, percent distribution of women age 15-49 by testing status and by whether they received the results of the last test, the percentage of women ever tested, and the percentage of women age 15-49 who received their test results the last time they were tested for HIV in the past 12 months, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women by testing status and by whether they received the results of the last test				Percentage ever tested	Percentage who received results from last HIV test taken in the past 12 months	Number of women
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]	Total			
Age								
15-24	90.2	47.7	1.9	50.4	100.0	49.6	28.1	3,475
15-19	85.2	27.8	1.4	70.8	100.0	29.2	17.8	1,761
20-24	95.3	68.2	2.3	29.5	100.0	70.5	38.6	1,715
25-29	94.2	73.2	2.1	24.8	100.0	75.2	40.2	1,454
30-39	94.6	66.6	2.2	31.2	100.0	68.8	30.4	2,086
40-49	92.8	46.4	1.5	52.1	100.0	47.9	19.4	1,429
Marital status								
Never married	89.1	35.8	1.5	62.7	100.0	37.3	21.9	2,634
Ever had sex	95.6	55.6	1.6	42.8	100.0	57.2	33.2	1,224
Never had sex	83.4	18.6	1.3	80.0	100.0	20.0	12.0	1,410
Married/living together	93.7	66.9	2.2	30.8	100.0	69.2	33.0	4,928
Divorced/separated/ widowed	94.8	60.4	1.4	38.1	100.0	61.9	30.5	881
Residence								
Urban	96.5	69.9	1.1	29.0	100.0	71.0	37.6	2,148
Rural	91.0	52.0	2.2	45.8	100.0	54.2	26.4	6,296
Province								
Nairobi	96.2	73.8	1.9	24.4	100.0	75.6	40.7	728
Central	95.3	56.7	1.8	41.6	100.0	58.4	27.3	905
Coast	93.9	65.5	1.6	33.0	100.0	67.0	37.3	674
Eastern	91.9	51.2	1.8	47.0	100.0	53.0	21.6	1,376
Nyanza	95.6	61.3	2.2	36.5	100.0	63.5	34.3	1,389
Rift Valley	90.4	52.4	1.8	45.8	100.0	54.2	26.2	2,262
Western	94.1	53.7	2.3	44.0	100.0	56.0	31.5	927
North Eastern	53.1	23.5	2.4	74.1	100.0	25.9	10.9	184
Education								
No education	68.1	38.3	2.4	59.4	100.0	40.6	19.5	752
Primary incomplete	89.7	49.2	2.8	48.1	100.0	51.9	25.1	2,526
Primary complete	96.2	61.5	1.6	36.9	100.0	63.1	29.9	2,272
Secondary+	98.1	63.8	1.3	34.9	100.0	65.1	35.1	2,894
Wealth quintile								
Lowest	79.0	44.5	2.7	52.7	100.0	47.3	23.5	1,393
Second	92.4	51.1	2.4	46.6	100.0	53.4	27.3	1,483
Middle	94.1	53.3	2.1	44.6	100.0	55.4	27.7	1,613
Fourth	95.7	55.8	1.8	42.4	100.0	57.6	26.6	1,736
Highest	97.0	70.6	1.0	28.3	100.0	71.7	37.5	2,220
Total 15-49	92.4	56.5	1.9	41.6	100.0	58.4	29.3	8,444

[1] Includes 'don't know/missing'

Table 13.9.2 Coverage of prior HIV testing: Men

Percentage of men age 15-49 who know where to get an HIV test, percent distribution of men age 15-49 by testing status and by whether they received the results of the last test, the percentage of men ever tested, and the percentage of men age 15-49 who received their test results the last time they were tested for HIV in the past 12 months, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of men by testing status and by whether they received the results of the last test				Percentage ever tested	Percentage who received results from last HIV test taken in the past 12 months	Number of men
		Ever tested and received results	Ever tested did not receive results	Never tested[1]	Total			
Age								
15-24	88.5	31.2	2.4	66.4	100.0	33.6	18.6	1,406
15-19	84.2	21.9	2.3	75.8	100.0	24.2	13.1	776
20-24	93.8	42.7	2.5	54.8	100.0	45.2	25.4	630
25-29	95.0	55.7	0.1	44.1	100.0	55.9	31.1	483
30-39	95.1	48.0	1.5	50.5	100.0	49.5	26.3	806
40-49	92.5	39.3	2.5	58.1	100.0	41.9	21.2	563
Marital status								
Never married	88.8	32.7	2.1	65.1	100.0	34.9	20.5	1,524
Ever had sex	92.7	41.0	2.0	57.1	100.0	42.9	26.1	995
Never had sex	81.5	17.3	2.5	80.2	100.0	19.8	9.8	529
Married/living together	95.1	47.9	1.5	50.6	100.0	49.4	25.7	1,592
Divorced/separated/ widowed	86.0	38.2	3.0	58.8	100.0	41.2	15.0	142
Residence								
Urban	97.0	54.6	1.7	43.7	100.0	56.3	26.2	866
Rural	89.9	35.3	1.9	62.8	100.0	37.2	21.5	2,392
Province								
Nairobi	98.5	57.3	2.6	40.1	100.0	59.9	29.7	314
Central	91.5	35.7	2.4	61.9	100.0	38.1	20.1	347
Coast	98.2	43.6	3.1	53.2	100.0	46.8	20.8	252
Eastern	89.4	29.4	1.8	68.9	100.0	31.1	10.8	530
Nyanza	96.0	52.4	1.8	45.8	100.0	54.2	34.3	520
Rift Valley	89.7	38.8	1.0	60.2	100.0	39.8	23.9	885
Western	88.5	34.7	2.1	63.2	100.0	36.8	21.2	349
North Eastern	66.9	17.1	2.1	80.8	100.0	19.2	9.0	62
Education								
No education	56.4	19.3	2.5	78.2	100.0	21.8	13.1	112
Primary incomplete	84.0	24.8	3.2	72.0	100.0	28.0	15.2	883
Primary complete	94.8	38.6	1.7	59.7	100.0	40.3	22.9	804
Secondary+	97.6	52.4	1.1	46.5	100.0	53.5	28.1	1,459
Wealth quintile								
Lowest	81.0	22.0	1.0	76.9	100.0	23.1	12.2	457
Second	90.4	34.1	2.7	63.2	100.0	36.8	20.3	577
Middle	90.8	35.3	2.2	62.5	100.0	37.5	21.5	574
Fourth	92.9	41.1	2.4	56.5	100.0	43.5	22.4	725
Highest	97.7	56.0	1.2	42.8	100.0	57.2	30.7	926
Total 15-49	91.8	40.4	1.9	57.7	100.0	42.3	22.8	3,258
Men age 50-54	89.6	31.2	2.8	66.0	100.0	34.0	15.1	207
Total men 15-54	91.7	39.9	1.9	58.2	100.0	41.8	22.3	3,465

[1] Includes 'don't know/missing'

Knowledge of a place to get tested for HIV is almost universal in Kenya; 92 percent of women and men know a place where people can go to get tested for HIV. Young women and men age 15-19 are less likely than older respondents to know of a place to get an HIV test.. Knowledge of where one can get an HIV test is higher among women and men in urban areas than in rural areas. Women and men from North Eastern province are least likely to know a place for HIV testing. Knowledge of a place to obtain an HIV test increases steadily with level of education and wealth quintile.

Despite the high level of knowledge of sources for HIV testing, only 58 percent of women and 42 percent of men have ever been tested. Almost all of those who had been tested said they had received their results. Young women and men age 15-19 and those age 40-49 are less likely to have ever been tested than those age 20-39. Nairobi province has the highest proportion of women (76

percent) and men (60 percent) who have ever been tested, while North Eastern province has the lowest levels for both women and men (26 percent of women and 19 percent of men). Urban respondents are more likely than rural respondents to have ever been tested. Coverage of HIV testing increases with level of education and wealth quintile.

Tables 13.9.1 and 13.9.2 show that 29 percent of women and 23 percent of men age 15-49 were tested for HIV and received their results in the 12 months before the survey. Recent testing is higher among urban residents, those living in Nairobi and Nyanza province, those with more education, and those in the highest wealth quintile.

13.6.2 HIV Counselling and Testing during Pregnancy

Table 13.10 presents information on HIV screening of pregnant women age 15-49 who gave birth in the two years prior to the survey. This process is a key tool in reducing mother-to-child transmission (MTCT). Survey results show that 61 percent of women who gave birth in the two years before the survey received HIV counselling during antenatal care. Almost three in four (73 percent) women were offered an HIV test during antenatal care, accepted an offer to have the test, and received the results of the test. Pulling all three elements together, only 56 percent of women were counselled about HIV during antenatal care, were offered and accepted an offer to have an HIV test, and received the results.

Table 13.10 Pregnant women counselled and tested for HIV

Among all women age 15-49 who gave birth in the two years preceding the survey, the percentage who received HIV counselling during antenatal care for their most recent birth; the percentage who accepted an offer of HIV testing by whether they received their test results; and the percentage who were counselled, were offered and who accepted an HIV test, and who received results, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage who received HIV counselling during antenatal care[1]	Percentage who were offered and accepted an HIV test during antenatal care and who:		Percentage who were counselled, were offered and accepted an HIV test, and who received results[2]	Number of women who gave birth in the last two years[3]
		Received results	Did not receive results		
Age					
15-24	58.5	72.5	2.4	53.9	932
15-19	48.4	65.4	4.5	43.7	218
20-24	61.6	74.7	1.8	57.0	715
25-29	65.9	73.8	1.1	59.1	589
30-39	61.3	72.3	1.5	56.4	638
40-49	58.9	71.4	1.8	55.8	105
Residence					
Urban	77.6	87.1	1.1	72.9	457
Rural	57.1	69.1	2.0	51.8	1,806
Province					
Nairobi	88.9	90.2	1.6	85.8	136
Central	66.9	86.1	0.7	65.2	168
Coast	56.9	81.3	1.3	54.2	211
Eastern	57.1	78.1	1.4	52.2	334
Nyanza	65.0	73.1	1.7	57.9	452
Rift Valley	57.7	66.1	2.7	53.3	647
Western	65.6	68.8	1.5	55.3	254
North Eastern	14.0	22.7	2.3	10.7	62
Education					
No education	25.0	38.8	2.2	22.2	272
Primary incomplete	57.0	68.6	2.6	50.3	739
Primary complete	65.1	79.3	1.4	60.7	693
Secondary+	79.7	86.4	1.0	74.4	560
Total 15-49	61.2	72.7	1.8	56.0	2,264

[1] In this context, 'counselled' means that someone talked with the respondent about all three of the following topics: 1) babies getting the AIDS virus from their mother, 2) preventing the virus, and 3) getting tested for the virus

[2] Only women who were offered the test are included here; women who were either required or asked for the test are excluded from the numerator of this measure

[3] Denominator for percentages includes women who did not receive antenatal care for their last birth in the past two years

Young women age 15-19 and rural women are least likely to be counselled, tested, and to receive their HIV results. Nairobi has by far the highest percentage of women who were counselled about HIV during antenatal care, offered a test, accepted it, and received the results (86 percent), while North Eastern province has the least (11 percent). The survey results show that HIV counselling and testing during antenatal care increases with the level of education. The proportion of women who were counselled about HIV during antenatal care, offered a test, accepted the test, and received results ranges from 22 percent of women with no education to 74 percent of those with at least some secondary school.

13.7 MALE CIRCUMCISION

Circumcision is widely practiced in Kenya and often serves as a rite of passage to adulthood. Recently, male circumcision has been shown to be associated with lower transmission of sexually transmitted infections, including HIV ('Kenya: male circumcision', 2010; Bailey, et al, 2007). In order to investigate this relationship, men interviewed in the 2008-09 KDHS were asked if they were circumcised.

Table 13.11 shows that 86 percent of Kenyan men age 15-49 are circumcised, a moderate increase from the level of 84 percent in 2003. Young men age 15-19 are the least likely to be circumcised (76 percent). Men in urban areas (91 percent) are more likely to have been circumcised than their rural counterparts (84 percent). At least 90 percent of men are circumcised in all provinces except Nyanza province, where less than half of the men are circumcised (45 percent). Of the various ethnic groups, Luo men are least likely to be circumcised (22 percent), though the level is slightly higher than in 2003 (17 percent).

Table 13.11 Male circumcision

Percentage of men age 15-49 who report having been circumcised, by background characteristics, Kenya 2008-09

Background characteristic	Percentage circumcised	Number of men
Age		
15-24	81.7	1,406
15-19	75.5	776
20-24	89.4	630
25-29	85.0	483
30-39	89.2	806
40-49	91.6	563
Residence		
Urban	91.2	866
Rural	83.8	2,392
Province		
Nairobi	90.2	314
Central	96.9	347
Coast	96.6	252
Eastern	96.2	530
Nyanza	44.8	520
Rift Valley	90.7	885
Western	93.3	349
North Eastern	98.5	62
Ethnicity		
Embu	97.8	70
Kalenjin	93.8	432
Kamba	99.2	378
Kikuyu	98.0	569
Kisii	97.0	228
Luhya	95.9	578
Luo	21.5	425
Masai	(90.1)	39
Meru	91.6	168
Mijikenda/Swahili	98.9	131
Somali	99.2	69
Taita/Taveta	(100.0)	37
Other	72.8	136
Education		
No education	86.3	112
Primary incomplete	79.4	883
Primary complete	85.4	804
Secondary+	89.8	1,459
Total 15-49	85.8	3,258
Men age 50-54	88.2	207
Total men 15-54	85.9	3,465

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

13.8 SELF-REPORTING OF SEXUALLY TRANSMITTED INFECTIONS

In the 2008-09 KDHS, respondents who had ever had sex were asked if they had had a disease they had gotten through sexual contact in the previous 12 months or if they had had either of two symptoms associated with sexually transmitted infections (STIs), that is a bad-smelling, abnormal discharge from the vagina or penis or a genital sore or ulcer. Table 13.12 shows the self-reported prevalence of STIs and STI symptoms in the population for both women and men.

The data show that 5 percent of women and 2 percent of men reported having had an STI or having experienced STI symptoms during the 12 months preceding the survey. The survey results indicate that 4 percent of women and 1 percent of men had a bad-smelling or abnormal genital discharge, while 3 percent of women and 1 percent of men reported having had a genital sore or ulcer in the 12 months before the survey. Only 2 percent of women and 1 percent of men reported having an STI at the time of the survey.

Table 13.12 Self-reported prevalence of sexually-transmitted infections (STIs) and STIs symptoms

Among women and men age 15-49 who ever had sexual intercourse, the percentage reporting having an STI and/or symptoms of an STI in the past 12 months, by background characteristics, Kenya 2008-09

	Women					Men				
Background characteristic	STI	Bad smelling/ abnormal genital discharge	Genital sore/ulcer	STI/ genital discharge/ sore or ulcer	Number of respondents who ever had sexual intercourse	STI	Bad smelling/ abnormal genital discharge	Genital sore/ulcer	STI/ genital discharge/ sore or ulcer	Number of respondents who ever had sexual intercourse
Age										
15-24	1.6	3.7	2.6	4.9	2,121	1.3	1.1	1.3	1.9	893
15-19	1.0	3.2	2.4	3.8	646	0.3	0.3	1.1	1.2	341
20-24	1.9	3.9	2.7	5.4	1,475	1.9	1.6	1.4	2.2	552
25-29	2.3	4.3	2.7	5.5	1,416	1.5	1.9	1.5	2.3	472
30-39	1.8	4.6	2.8	6.0	2,072	1.8	1.5	1.5	2.4	803
40-49	1.9	3.3	2.1	4.2	1,425	0.8	1.2	1.4	1.8	562
Marital status										
Never married	1.0	1.6	1.1	2.2	1,224	1.1	1.0	1.1	1.6	995
Married or living together	1.8	4.2	2.5	5.3	4,928	1.5	1.7	1.7	2.3	1,592
Divorced/separated/ widowed	3.4	6.1	4.9	8.8	881	1.4	1.3	1.4	2.8	142
Male circumcision										
Circumcised	na	na	na	na	na	1.0	0.9	0.9	1.5	2,374
Not circumcised	na	na	na	na	na	4.0	4.5	4.7	6.1	354
Residence										
Urban	1.9	3.1	1.7	4.3	1,810	1.8	1.7	1.7	2.4	773
Rural	1.8	4.3	2.9	5.5	5,224	1.2	1.2	1.3	1.9	1,955
Province										
Nairobi	1.5	1.6	1.5	3.8	612	0.4	1.0	1.4	1.8	296
Central	0.9	3.1	1.9	3.9	750	1.1	1.1	0.9	1.4	294
Coast	2.8	14.9	6.9	16.9	564	1.0	0.2	0.6	1.2	218
Eastern	1.1	1.9	1.1	2.6	1,118	0.3	0.4	0.8	0.9	399
Nyanza	3.2	4.8	3.6	7.3	1,222	4.0	4.3	4.4	5.8	440
Rift Valley	1.2	2.4	1.3	2.7	1,906	0.8	0.7	0.6	1.1	757
Western	2.7	4.8	4.3	5.9	720	1.9	2.0	1.2	2.2	286
North Eastern	2.7	3.2	2.9	3.4	143	1.8	0.0	1.6	2.0	38
Education										
No education	1.3	7.3	4.3	8.0	707	0.5	0.0	0.6	0.6	100
Primary incomplete	2.8	5.8	4.0	7.5	2,039	2.4	2.3	2.5	3.5	659
Primary complete	1.4	3.2	2.1	4.2	1,972	2.0	2.3	1.8	2.6	702
Secondary+	1.6	2.1	1.1	3.1	2,317	0.6	0.5	0.7	1.2	1,268
Total 15-49	1.9	4.0	2.6	5.2	7,034	1.4	1.4	1.4	2.1	2,729
Men age 50-54	na	na	na	na	na	0.8	0.0	0.4	0.8	207
Total men 15-54	na	na	na	na	na	1.3	1.3	1.3	2.0	2,936

na = Not applicable

The self-reported prevalence of STIs and STI symptoms is higher among women than among men. The data show that women who are divorced, separated, or widowed have a higher prevalence of STIs and STI symptoms than women who have never married or who are married or living together. The prevalence of STIs or STI symptoms is higher among uncircumcised men than among those who have been circumcised. A relatively high prevalence of STIs and STI symptoms is reported among women in Coast province (17 percent) compared with women in other provinces. Among men, the highest prevalence of STIs and STI symptoms occurs in Nyanza province (6 percent). Among women, the prevalence of STIs and STI symptoms decreases as the level of education increases; however, among men, the pattern is not clear.

13.9 HIV/AIDS Knowledge and Sexual Behaviour among Youth

This section addresses HIV/AIDS-related knowledge and sexual behaviour among youth age 15-24. In addition to knowledge of HIV transmission, data are presented on age at first sex, condom use, age differences between sexual partners, sex related to alcohol use and voluntary counselling and testing for HIV.

Younger people are often at a higher risk of contracting STIs, as they are more likely to be experimenting with sex before marriage. Therefore condom use among young adults plays an important role in the prevention of transmission of HIV and other sexually transmitted infections, as well as unwanted pregnancies. Likewise, knowledge of where to get condoms is an important prerequisite to their use.

13.9.1 HIV/AIDS-Related Knowledge among Young Adults

Young respondents were asked the same set of questions on beliefs about HIV transmission as older respondents. Information on the level of knowledge of major methods of avoiding HIV and rejection of major misconceptions is shown in Table 13.13 and Figure 13.6.

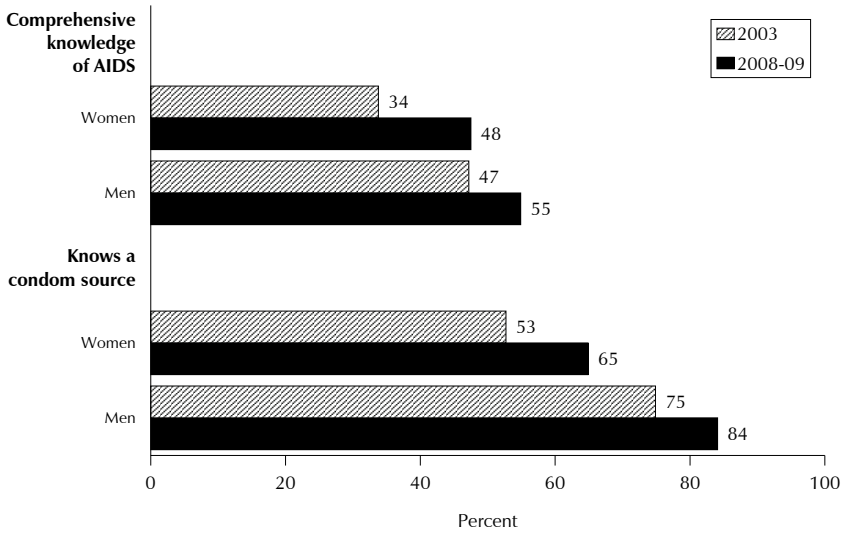
Table 13.13 Comprehensive knowledge about AIDS and of a source of condoms among youth

Percentage of young women and young men age 15-24 with comprehensive knowledge about AIDS and percentage with knowledge of a source of condoms, by background characteristics, Kenya 2008-09

	Women			Men		
Background characteristic	Percentage with comprehensive knowledge of AIDS[1]	Percentage who know a condom source[2]	Number of respondents	Percentage with comprehensive knowledge of AIDS[1]	Percentage who know a condom source[2]	Number of respondents
Age						
15-19	41.9	53.4	1,761	51.7	75.9	776
15-17	38.8	46.2	1,086	44.5	68.7	431
18-19	47.0	64.8	674	60.7	84.8	345
20-24	53.3	76.9	1,715	58.9	94.3	630
20-22	56.4	76.2	1,084	57.6	94.4	404
23-24	48.0	78.0	631	61.2	94.2	225
Marital status						
Never married	50.0	59.9	2,185	55.3	83.2	1,293
Ever had sex	58.2	74.4	831	58.6	92.2	780
Never had sex	44.9	51.1	1,354	50.3	69.5	513
Ever married	43.4	73.4	1,290	50.9	94.7	113
Residence						
Urban	56.5	74.6	868	66.0	91.9	278
Rural	44.5	61.7	2,607	52.2	82.2	1,128
Province						
Nairobi	63.2	77.2	285	73.3	84.5	106
Central	55.9	65.7	321	65.6	90.5	143
Coast	38.8	62.9	290	55.2	94.2	84
Eastern	46.3	57.3	519	42.4	70.1	268
Nyanza	52.8	74.6	635	66.0	90.3	262
Rift Valley	44.9	63.9	938	54.8	85.8	342
Western	43.2	63.3	412	43.9	85.6	176
North Eastern	6.0	17.9	75	13.3	64.9	25
Education						
No education	10.1	27.0	195	(13.8)	(54.1)	27
Primary incomplete	33.6	54.6	1,151	38.3	75.9	489
Primary complete	51.6	66.3	907	56.9	85.5	306
Secondary+	63.6	79.8	1,222	69.8	91.8	583
Wealth quintile						
Lowest	29.0	47.1	575	42.2	72.2	210
Second	45.2	60.3	630	48.5	85.7	287
Middle	46.7	65.6	683	53.4	81.9	284
Fourth	48.6	69.6	723	58.7	85.3	347
Highest	61.3	75.8	864	68.0	92.3	277
Total	47.5	64.9	3,475	54.9	84.1	1,406

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Comprehensive knowledge means knowing that consistent use of condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about AIDS transmission or prevention. The components of comprehensive knowledge are presented in Tables 13.2, 13.3.1, and 13.3.2.
[2] For this table, the following responses are not considered sources for condoms: friends, family members, and home.

Figure 13.6 Comprehensive Knowledge about AIDS and Source of Condoms among Youth



The data show that only about half of those age 15-24 in Kenya (48 percent of young women and 55 percent of young men) have comprehensive knowledge about AIDS. The data further show that 65 percent of young women and 84 percent of young men know a place where people can get condoms.

Comprehensive knowledge about AIDS and knowledge of a source for condoms are both considerably higher among women and men age 20 to 24 than among those age 15 to 19. Both indicators are also higher for young people who have never married but who have had sex than among those who have never married and have never had sex. Urban women and men are more likely to have comprehensive knowledge about AIDS and also to know a source of condoms than rural women and men. Young women and men from North Eastern province are least knowledgeable about AIDS and about a source for condoms compared with those from other provinces. Knowledge of a source of condoms and comprehensive knowledge about AIDS increases with increasing educational level and wealth quintile of both women and men. For example, the proportion of young women with comprehensive knowledge about AIDS increases from 10 percent of those with no education to 64 percent of those who have attended secondary school.

13.9.2 Trends in Age at First Sex

Because HIV transmission in Kenya occurs predominantly through heterosexual intercourse between an infected and a non-infected person, age at first intercourse marks the time at which most individuals first risk exposure to the virus. Table 13.14 and Figure 13.7 show the percentage of young women and men age 15-24 who had their sexual debut before age 15 or before age 18. The data show that young men (22 percent) are twice as likely to engage in sexual intercourse before age 15 than young women (11 percent). By age 18, about half of women (47 percent) and slightly more than half of men (58 percent) have had sexual intercourse.

Young men and women in rural areas tend to initiate sexual activity earlier than their urban counterparts. Only 39 percent of urban women had sex before age 18, compared with 50 percent of rural women. Similarly, 51 percent of the young men in urban areas had their first sexual intercourse before age 18 compared with 60 percent of those in rural areas.

Young women in Nyanza province (64 percent) and Coast province (53 percent) are more likely than those in other provinces to have initiated sexual intercourse before age 18. For young men, Western province leads with 69 percent having had their sexual debut before age 18, followed by Nyanza province in which 63 percent initiated sex before age 18.

Table 13.14 Age at first sexual intercourse among youth

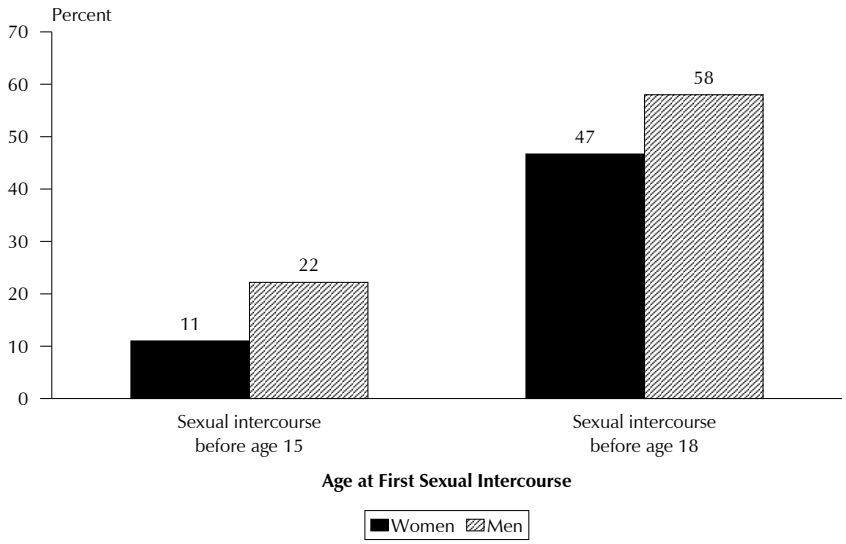
Percentage of young women and of young men age 15-24 who had sexual intercourse before age 15 and percentage of young women and of young men age 18-24 who had sexual intercourse before age 18, by background characteristics, Kenya 2008-09

	Women				Men			
Background characteristic	Percentage who had sexual intercourse before age 15	Number of respondents 15-24	Percentage who had sexual intercourse before age 18	Number of respondents 18-24	Percentage who had sexual intercourse before age 15	Number of respondents 15-24	Percentage who had sexual intercourse before age 18	Number of respondents 18-24
Age								
15-19	11.5	1,761	na	na	22.3	776	na	na
15-17	12.9	1,086	na	na	20.3	431	na	na
18-19	9.4	674	43.9	674	24.8	345	57.8	345
20-24	10.4	1,715	47.8	1,715	22.0	630	58.2	630
20-22	8.7	1,084	47.1	1,084	20.5	404	58.6	404
23-24	13.3	631	49.0	631	24.6	225	57.5	225
Marital status								
Never married	7.6	2,185	25.7	1,158	22.5	1,293	56.7	863
Ever married	16.7	1,290	66.4	1,231	18.7	113	68.2	112
Knows condom source[1]								
Yes	11.0	2,257	48.3	1,755	23.7	1,183	60.1	887
No	11.0	1,218	42.2	634	14.0	223	37.6	88
Residence								
Urban	8.5	868	39.1	692	15.4	278	51.1	222
Rural	11.8	2,607	49.8	1,697	23.8	1,128	60.1	753
Province								
Nairobi	3.0	285	27.0	239	17.3	106	60.8	95
Central	4.2	321	32.6	225	15.1	143	50.1	108
Coast	11.6	290	53.4	207	13.2	84	46.3	55
Eastern	7.1	519	42.1	343	23.3	268	54.5	165
Nyanza	18.3	635	63.6	427	27.2	262	63.3	164
Rift Valley	13.7	938	47.9	630	22.5	342	58.9	257
Western	8.7	412	48.4	267	27.3	176	69.2	116
North Eastern	11.1	75	38.5	51	8.0	25	20.4	14
Education								
No education	23.0	195	66.5	156	(12.1)	27	(39.6)	25
Primary incomplete	17.2	1,151	68.5	604	24.7	489	65.1	226
Primary complete	8.8	907	46.3	679	24.6	306	62.8	229
Secondary+	4.8	1,222	29.8	950	19.2	583	53.5	495
Wealth quintile								
Lowest	17.8	575	61.5	376	26.9	210	61.2	124
Second	10.6	630	53.5	390	27.1	287	67.6	187
Middle	10.5	683	47.5	435	23.0	284	60.9	188
Fourth	10.5	723	43.9	489	20.9	347	56.6	238
Highest	7.5	864	36.3	699	14.0	277	48.1	238
Total	11.0	3,475	46.7	2,389	22.2	1,406	58.0	975

Note: Figures in parentheses are based on 25-49 unweighted cases.
na = Not applicable
[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Level of education is strongly related to age at first sex, especially for women. Although 67 percent of women age 18 to 24 with no education had sex by age 18, the proportion declines to only 30 percent among those with at least some secondary education. Similarly, early sexual debut seems to be associated with poverty levels. Sixty-two percent of young women in the lowest wealth quintile had their first sexual intercourse by age 18 compared with 36 percent of those in the highest wealth quintile.

Figure 13.7 Age at First Sexual Intercourse among Youth



Kenya 2008-09

13.9.3 Condom Use at First Sex

Consistent condom use is advocated by HIV control programmes to reduce the risk of sexual transmission of HIV among sexually active young adults. Young adults who use condoms at first sex are more likely to sustain condom use later in life. Condom use at first sex serves as an indicator of reduced risk of exposure at the beginning of sexual activity. Table 13.15 presents a cross-tabulation of condom use at first sex by selected socio-demographic characteristics of the youth and gender.

One in four young Kenyans (24 percent of women and 26 percent of men) reported that they used a condom the first time they had sex. A number of sociodemographic factors influence condom use at first sex among youth. As expected, condom use is higher among the never-married and those who know a source for condoms. Young urban women report higher use of condoms at first sex (33 percent) compared with their rural counterparts (21 percent). This pattern is reversed for young men with 26 percent of rural men reporting condom use at their first sexual encounter, compared with 24 percent of urban men. Young women in Nairobi have the highest level of condom use at first sex (43 percent), while those in North Eastern province reported the lowest use (2 percent). Provincial differences in condom use at first sex among young men are not so strong, with Central province havs the highest level of use (36 percent).

The survey shows that condom use at first sex increases with level of education and wealth quintile for young women, but less so for young men. For example, the proportion of young women who used a condom the first time they had sex ranges from 3 percent of those with no education to 39 percent of those with some secondary school. A similar but less steep increase occurs with wealth quintile. However, among young men, although condom use increases with education level, the pattern by wealth quintile fluctuates.

Comparison of the 2008-09 KDHS results with those of the 2003 KDHS shows that condom use at first sexual intercourse among youth has doubled since 2003. The proportion using condoms at first sexual intercourse increased among young women from 11 percent in 2003 to 24 percent in 2008-09 and among young men from 14 percent in 2003 to 26 percent in 2008-09. There are indications that programmes targeting women are yielding positive results.

Table 13.15 Condom use at first sexual intercourse among youth

Among young women and young men age 15-24 who have ever had sexual intercourse, percentage who used a condom the first time they had sexual intercourse, by background characteristics, Kenya 2008-09

Background characteristic	Women		Men	
	Percentage who used a condom at first sexual intercourse	Number of respondents who have ever had sexual intercourse	Percentage who used a condom at first sexual intercourse	Number of respondents who have ever had sexual intercourse
Age				
15-19	26.6	646	24.5	341
15-17	27.9	294	18.9	133
18-19	25.5	352	28.0	207
20-24	23.1	1,475	26.5	552
20-22	25.4	889	30.0	340
23-24	19.5	586	20.9	212
Marital status				
Never married	34.6	831	26.6	780
Ever married	17.4	1,290	19.7	113
Knows condom source[1]				
Yes	29.0	1,566	26.9	826
No	10.4	555	10.9	67
Residence				
Urban	32.8	557	23.8	189
Rural	21.1	1,564	26.2	704
Province				
Nairobi	42.9	182	21.8	88
Central	27.5	170	36.2	91
Coast	12.4	186	29.8	53
Eastern	18.8	267	23.3	140
Nyanza	26.8	473	22.1	184
Rift Valley	24.4	586	28.5	218
Western	19.5	222	22.3	114
North Eastern	1.7	36	*	4
Education				
No education	3.3	152	*	20
Primary incomplete	17.9	676	18.7	269
Primary complete	19.4	618	23.4	206
Secondary+	39.4	675	32.2	399
Wealth quintile				
Lowest	10.0	372	22.0	114
Second	21.6	377	24.1	189
Middle	23.7	388	29.3	188
Fourth	25.6	427	26.6	209
Highest	34.4	557	25.0	194
Total	24.1	2,121	25.7	893

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed

[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home

13.9.4 Abstinence and Premarital Sex

Premarital sex and the interval between sexual initiation and marriage are among the factors that predispose people to HIV infection. Table 13.16 shows among never-married young adults, the percentage who have never had sex, the percentage who had sex in the 12 months preceding the survey, and among those, the percentage who used a condom at last sex.

Twenty-four percent of never-married women and 38 percent of never-married men age 15-24 years indicated that they had sex in the 12 months before the survey. Young women in Nyanza province and Nairobi are more likely to report sexual intercourse in the past 12 months than women in other provinces. Among never-married young men, Nairobi has the highest rate of those reporting sexual intercourse in the 12 months preceding the survey. North Eastern province has the lowest

percentage of never-married young women and men reporting having sex in the past 12 months (0 and 7 percent, respectively).

Young never-married men are more likely to have used condoms at their most recent sexual intercourse (64 percent) than their female counterparts (40 percent). Young, never-married urban residents and those who know a source for condoms are more likely to have used condoms at their last sexual intercourse than were rural residents and those who do not know a source for condoms. Among never-married young women and men, Nairobi has the highest proportion using condoms at last sex. Young women and men with at least some secondary education are more likely to use condoms than those with less education.

Comparison of the 2008-09 KDHS results with those from the 2003 KDHS shows a positive trend in condom use at last premarital sexual intercourse. The proportion of young women using a condom at last premarital sexual intercourse increased from 27 percent in 2003 to 40 percent in 2008-09, while use among young men increased from 48 percent in 2003 to 64 percent in 2008-09.

Table 13.16 Premarital sexual intercourse and condom use during premarital sexual intercourse among youth

Among never-married women and men age 15-24, the percentage who have never had sexual intercourse, the percentage who had sexual intercourse in the past 12 months, and, among those who had premarital sexual intercourse in the past 12 months, the percentage who used a condom at the last sexual intercourse, by background characteristics, Kenya 2008-09

	Women					Men				
Background characteristic	Percentage who have never had sexual intercourse	Percentage who had sexual intercourse in the past 12 months	Number of never married respondents	Percentage who used condom at last sexual intercourse	Number of respondents	Percentage who have never had sexual intercourse	Percentage who had sexual intercourse in the past 12 months	Number of never married respondents	Percentage who used condom at last sexual intercourse	Number of respondents
Age										
15-19	72.6	17.2	1,535	41.8	264	56.4	24.4	773	54.9	188
15-17	77.1	14.6	1,027	41.1	150	69.1	16.0	430	52.1	69
18-19	63.5	22.4	507	42.8	114	40.4	34.9	342	56.5	120
20-24	36.9	41.4	651	38.9	270	14.9	57.8	520	69.4	301
20-22	40.8	39.6	479	33.9	190	17.8	53.1	365	65.6	194
23-24	25.8	46.5	172	50.7	80	8.4	68.7	156	76.4	107
Knows condom source[1]										
Yes	52.8	32.5	1,310	47.0	425	33.2	43.1	1,076	66.0	464
No	75.7	12.4	875	14.2	108	72.0	11.6	217	(23.5)	25
Residence										
Urban	56.9	31.5	546	44.6	172	37.0	44.1	242	74.9	107
Rural	63.7	22.1	1,639	38.3	362	40.3	36.4	1,052	60.8	383
Province										
Nairobi	53.0	32.8	196	63.0	64	19.0	59.0	94	78.9	55
Central	68.7	17.4	220	(32.2)	38	39.0	37.6	134	58.4	50
Coast	71.3	20.5	146	31.1	30	41.9	44.2	74	77.7	33
Eastern	70.5	19.1	358	(33.0)	68	50.5	24.0	254	(44.2)	61
Nyanza	46.8	35.2	346	42.5	122	32.9	43.7	238	72.3	104
Rift Valley	58.8	27.0	599	35.2	162	39.5	41.6	312	60.9	130
Western	67.6	17.6	281	44.2	50	37.5	33.3	164	57.6	55
North Eastern	100.0	0.0	39	*	0	88.3	6.6	24	*	2
Education										
No education	78.6	13.5	55	*	7	34.5	*	22	*	12
Primary incomplete	68.0	21.2	699	34.4	148	48.0	33.1	460	47.4	152
Primary complete	58.8	25.9	492	29.3	127	37.7	40.9	268	67.8	109
Secondary+	58.2	26.7	940	50.1	251	33.9	39.6	544	75.5	215
Wealth quintile										
Lowest	67.6	22.2	300	16.2	67	50.2	35.3	191	54.7	68
Second	62.8	23.6	403	42.1	95	38.2	31.8	258	69.2	82
Middle	64.7	21.7	456	39.3	99	35.5	38.7	272	54.0	105
Fourth	64.8	19.8	456	48.2	90	41.7	36.3	332	65.2	120
Highest	54.1	32.1	569	44.9	183	34.9	47.5	240	73.0	114
Total	62.0	24.4	2,185	40.3	534	39.7	37.8	1,293	63.8	489

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] For this table, the following responses are not considered a source for condoms: friends, family members and home.

13.9.5 Higher-Risk Sex and Condom Use among Young Adults

The 2008-09 KDHS investigated the extent of safe sex practices among young people. Information was sought from young women and men aged 15 to 24 years, on whether they engaged in higher-risk sex in the 12 months preceding the survey and to what extent they used condoms in higher-risk sexual encounters. In this context, higher-risk sex is defined as sex with a non-marital or non-cohabiting partner. Tables 13.17.1 and 13.17.2 show for young women and men who had sexual intercourse in the 12 months before the survey, the proportion who engaged in higher-risk sex in the 12 months before the survey, and among those, the proportion who used a condom at last higher-risk sex.

Among those who engaged in sexual intercourse in the 12 months before the survey, 33 percent of young women and 83 percent of young men engaged in higher-risk sex in the past 12 months. Men were more likely to use condoms in higher risk sex (64 percent) than women (40 percent).

Sexually active women and men age 15-17 are more likely to engage in higher-risk sex (73 percent of women and 100 percent of men) than those agd 23-24 (19 percent of women and 64 percent of men). By definition, sexually active never-married youth are more likely to engage in higher-risk sex compared with those who have ever married. Never-married young women and men are also more likely to use condoms during higher-risk sexual activity than ever-married youth.

Nairobi province has the highest proportion of sexually active young women who engage in higher-risk sex (45 percent), while North Eastern province has the lowest percentage (0 percent). Among men, geographic differences are not pronounced. Among women, reported condom use at the last higher-risk sexual encounter is also highest in Nairobi (65 percent) and lowest in Coast province (25 percent).

Among sexually active young women, the level of higher-risk sex increases dramatically with education, from 13 percent among young women with no education to 50 percent among young women with some secondary or higher education. However, this association is not apparent among young men. Condom use is highest among young women and men with secondary or higher education.

A comparison of results with those from the 2003 KDHS shows that there has been little change in the percentage of young women and men who engage in higher-risk sex in the 12 months before the surveys. However, among those who engaged in higher-risk sex, the percentage who used a condom at the last higher-risk sex increased from 25 percent in 2003 to 40 percent in 2008-09 among young women and from 47 percent in 2003 to 64 percent in 2008-09 among young men.

Table 13.17.1 Higher-risk sexual intercourse among youth and condom use at last higher-risk intercourse in the past 12 months: Women

Among young women age 15-24 who had sexual intercourse in the past 12 months, the percentage who had higher-risk sexual intercourse in the past 12 months, and among those having higher-risk intercourse in the past 12 months, the percentage reporting that a condom was used at last higher-risk intercourse, by background characteristics, Kenya 2008-09

	Respondents 15-24 who had sexual intercourse in the past 12 months:		Respondents 15-24 who had higher-risk intercourse in the past 12 months:	
Background characteristic	Percentage who had higher-risk intercourse in the past 12 months[1]	Number of respondents	Percentage who reported using a condom at last higher-risk intercourse[1]	Number of respondents
Age				
15-19	56.0	486	41.0	272
15-17	72.5	209	41.0	151
18-19	43.6	277	41.1	121
20-24	24.2	1,279	38.2	310
20-22	27.8	765	33.8	212
23-24	19.0	514	47.8	97
Marital status				
Never married	99.3	534	40.6	530
Ever married	4.2	1,231	28.8	52
Knows condom source[2]				
Yes	35.2	1,335	45.7	470
No	26.1	430	13.7	112
Residence				
Urban	38.6	485	44.0	187
Rural	30.8	1,280	37.4	395
Province				
Nairobi	44.6	151	64.8	67
Central	31.0	137	(35.0)	42
Coast	25.2	166	24.7	42
Eastern	30.2	223	(33.4)	67
Nyanza	35.8	394	40.0	141
Rift Valley	35.1	483	34.9	169
Western	29.4	178	44.3	52
North Eastern	0.0	33	*	0
Education				
No education	13.1	138	*	18
Primary incomplete	27.9	580	35.6	162
Primary complete	26.9	530	29.1	142
Secondary+	50.2	517	49.9	260
Wealth quintile				
Lowest	23.0	324	18.2	75
Second	32.5	320	42.7	104
Middle	33.7	306	37.8	103
Fourth	31.6	345	41.7	109
Highest	40.6	470	45.8	191
Total 15-24	33.0	1,765	39.5	582

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] Sexual intercourse with a partner who neither was a spouse nor who lived with the respondent
[2] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Table 13.17.2 Higher-risk sexual intercourse among youth and condom use at last higher-risk intercourse in the past 12 months: Men

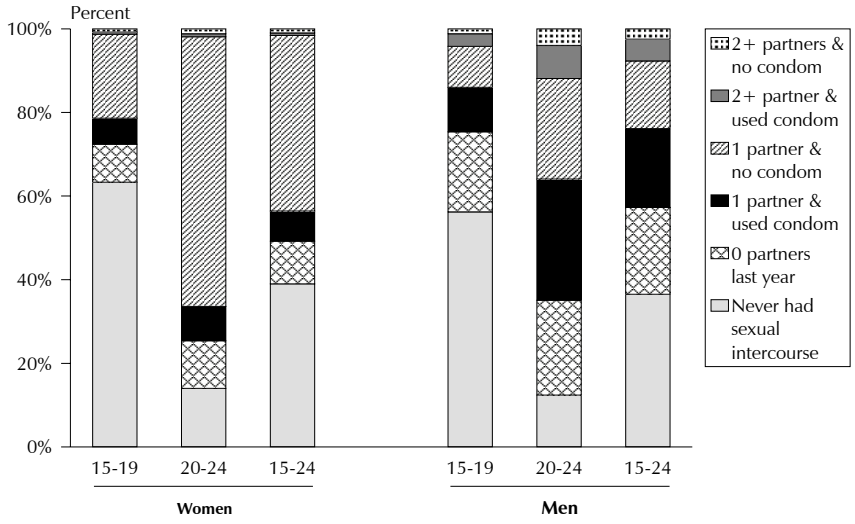
Among young men age 15-24 who had sexual intercourse in the past 12 months, the percentage who had higher-risk sexual intercourse in the past 12 months, and among those having higher-risk intercourse in the past 12 months, the percentage reporting that a condom was used at last higher-risk intercourse, by background characteristics, Kenya 2008-09

	Respondents 15-24 who had sexual intercourse in the past 12 months:		Respondents 15-24 who had higher risk intercourse in the past 12 months:	
Background characteristic	Percentage who had higher-risk intercourse in the past 12 months[1]	Number of respondents	Percentage who reported using a condom at last higher-risk intercourse[1]	Number of respondents
Age				
15-19	98.0	192	54.7	188
15-17	100.0	69	51.3	69
18-19	96.9	123	56.7	119
20-24	75.9	409	70.1	310
20-22	85.3	232	65.1	198
23-24	63.6	177	78.7	112
Marital status				
Never married	98.4	489	64.5	481
Ever married	15.3	112	58.4	17
Knows condom source[2]				
Yes	83.1	570	66.4	473
No	(80.9)	31	(23.5)	25
Residence				
Urban	76.8	141	74.9	109
Rural	84.9	459	61.3	390
Province				
Nairobi	83.8	68	77.3	57
Central	86.8	60	59.1	52
Coast	84.2	41	77.4	35
Eastern	79.1	75	44.3	59
Nyanza	87.8	128	71.1	113
Rift Valley	77.9	160	63.6	124
Western	86.4	66	56.8	57
Northeastern	*	3	*	2
Education				
No education	*	17	*	12
Primary incomplete	85.3	181	48.1	155
Primary complete	77.8	148	68.2	115
Secondary+	85.2	254	75.7	216
Wealth quintile				
Lowest	81.5	87	55.1	71
Second	78.3	111	68.8	87
Middle	89.4	117	54.2	105
Fourth	88.9	136	66.2	121
Highest	77.0	150	73.5	116
Total 15-24	83.0	601	64.3	498

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] Sexual intercourse with a partner who neither was a spouse nor who lived with the respondent
[2] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Figure 13.8 shows information about young women and men's behaviour regarding abstinence, being faithful to one partner, and using condoms. It is obvious from the figure that both women and men age 20-24 are far more likely to be sexually active than those age 15-19. The figure also shows that women are far less likely than men to report having had two or more partners in the previous 12 months. Nevertheless, men age 20-24 are more likely than women of the same age to be practicing safe sex; they are more likely to have had no partners in the previous year or to have had only one partner with whom they used condoms.

Figure 13.8 Abstinence, Being Faithful and Condom Use (ABC) among Young Women and Men



Kenya 2008-09

13.9.6 Cross-generational Sexual Partners

To examine age differences between sexual partners, women age 15-19 who had higher-risk sex in the 12 months preceding the survey were asked the age of their partners. If they did not know a partner's age, they were asked if the partner was older or younger than they were, and if older, whether the partner was 10 or more years older.

As shown in Table 13.18, only 4 percent of women age 15-19 had higher-risk sexual intercourse with a man 10 or more years older than they were. Those aged 15-17, those living in rural areas and those with incomplete primary education were slightly more likely to report having higher-risk sex with a man 10 or more years older than they were. A comparison of the results with those from the 2003 KDHS shows that the proportion of women having higher-risk sex with older men has not changed.

Table 13.18 Age-mixing in sexual relationships among women age 15-19

Percentage of women age 15-19 who had higher-risk sexual intercourse in the last 12 months with a man who was 10 or more years older than themselves, by age, residence, and education, Kenya 2008-09

Age, residence, education	Percentage of women who had higher-risk intercourse with a man 10+ years older[1]	Number of women who had higher-risk intercourse in the last 12 months[1]
Age		
15-17	4.6	151
18-19	2.6	121
Residence		
Urban	2.8	53
Rural	3.9	219
Education		
No education	*	4
Primary incomplete	4.6	121
Primary complete	2.9	69
Secondary+	1.3	78
Total 15-19	3.7	272

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] Sexual intercourse with a partner who neither was a spouse nor who lived with the respondent

13.9.7 Drunkenness during Sex among Young Adults

Engaging in sex under the influence of alcohol can impair judgment, compromise power relations, and increase risky sexual behaviour. Respondents who had sex in the 12 months before the survey were asked for each partner if they or their partner drank alcohol the last time they had sex with that partner, and whether they or their partner was drunk.

As shown in Table 13.19, only 1 percent of young women and men reported having sexual intercourse in the past 12 months when drunk. The percentage that had sexual intercourse when drunk or with a drunken partner was higher for women than for men (5 percent and 1 percent, respectively). There is little variation in drunkenness during sexual intercourse by background characteristics of respondents, except that Coast province has the highest percentage of young women who had sexual intercourse when drunk or with a drunken partner.

Table 13.19 Drunkenness during sexual intercourse among youth

Among all young women and young men age 15-24, the percentage who had sexual intercourse in the past 12 months while being drunk and percentage who had sexual intercourse in the past 12 months when drunk or with a partner who was drunk, by background characteristics, Kenya 2008-09

	Women			Men		
Background characteristic	Percentage who had sexual intercourse in the past 12 months when drunk	Percentage who had sexual intercourse in the past 12 months when drunk or with a partner who was drunk	Number of respondents	Percentage who had sexual intercourse in the past 12 months when drunk	Percentage who had sexual intercourse in the past 12 months when drunk or with a partner who was drunk	Number of respondents
Age						
15-19	0.4	2.1	1,761	0.0	0.0	776
15-17	0.0	1.6	1,086	0.0	0.0	431
18-19	1.0	2.9	674	0.0	0.0	345
20-24	1.3	7.0	1,715	2.6	2.6	630
20-22	1.2	5.9	1,084	1.8	1.8	404
23-24	1.4	9.0	631	4.0	4.0	225
Marital status						
Never married	0.9	1.5	2,185	1.2	1.2	1,293
Ever married	0.7	9.6	1,290	1.4	1.4	113
Knows condom source[1]						
Yes	1.2	5.3	2,257	1.4	1.4	1,183
No	0.1	3.0	1,218	0.0	0.0	223
Residence						
Urban	1.6	5.7	868	1.1	1.1	278
Rural	0.5	4.1	2,607	1.2	1.2	1,128
Province						
Nairobi	1.6	3.6	285	0.4	0.4	106
Central	0.4	2.5	321	1.5	1.5	143
Coast	1.0	8.3	290	0.8	0.8	84
Eastern	0.2	2.8	519	0.1	0.1	268
Nyanza	0.6	4.0	635	1.0	1.0	262
Rift Valley	1.4	6.4	938	2.9	2.9	342
Western	0.3	3.9	412	0.1	0.1	176
North Eastern	0.0	0.0	75	0.0	0.0	25
Education						
No education	0.0	6.3	195	(0.0)	(0.0)	27
Primary incomplete	0.5	4.5	1,151	1.2	1.2	489
Primary complete	0.8	5.9	907	0.7	0.7	306
Secondary+	1.2	3.3	1,222	1.5	1.5	583
Wealth quintile						
Lowest	1.1	7.5	575	2.1	2.1	210
Second	0.4	4.4	630	2.3	2.3	287
Middle	0.3	2.3	683	0.0	0.0	284
Fourth	0.3	5.4	723	0.9	0.9	347
Highest	1.8	3.7	864	0.9	0.9	277
Total 15-24	0.8	4.5	3,475	1.2	1.2	1,406

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

13.9.8 Voluntary HIV Counselling and Testing among Young Adults

Knowledge of an individual's own HIV status can motivate him or her to practice safer sexual behaviour thereafter to avoid transmitting the virus to others. Table 13.20 shows the coverage of HIV counselling and testing by background characteristics for youth aged 15-24 years. Young women age 15-24 are more likely than young men the same age to have been tested for HIV and received results in the 12 months preceding the survey and (41 and 26 percent, respectively).

The data show that urban young women and men are more likely to have been tested for HIV and received results in the 12 months prior to the survey than their rural counterparts. Similarly, recent HIV testing among young people increases with increased level of education. For example, only 22 percent of women with no education were tested and received results in the 12 months before the survey, compared with 53 percent of those with secondary and higher education.

Table 13.20 Recent HIV tests among youth

Among young women and young men age 15-24 who have had sexual intercourse in the past 12 months, the percentage who have had an HIV test in the past 12 months and received the results of the test, by background characteristics, Kenya 2008-09

	Women		Men	
Background characteristic	Percentage who have been tested for HIV and received results in the past 12 months	Number of respondents	Percentage who have been tested for HIV and received results in the past 12 months	Number of respondents
Age				
15-19	35.3	486	23.1	192
15-17	27.3	209	24.9	69
18-19	41.4	277	22.0	123
20-24	43.1	1,279	26.6	409
20-22	45.0	765	22.8	232
23-24	40.2	514	31.7	177
Marital status				
Never married	38.7	534	25.4	489
Ever married	41.9	1,231	25.9	112
Knows condom source[1]				
Yes	45.3	1,335	25.9	570
No	27.5	430	(17.8)	31
Residence				
Urban	48.3	485	29.4	141
Rural	38.1	1,280	24.3	459
Province				
Nairobi	56.5	151	33.1	68
Central	48.4	137	26.4	60
Coast	46.4	166	20.9	41
Eastern	36.0	223	12.0	75
Nyanza	42.6	394	40.5	128
Rift Valley	32.9	483	20.9	160
Western	46.1	178	17.7	66
North Eastern	14.3	33	*	3
Education				
No education	21.6	138	*	17
Primary incomplete	35.8	580	16.2	181
Primary complete	40.0	530	29.5	148
Secondary+	52.9	517	31.6	254
Wealth quintile				
Lowest	31.6	324	19.1	87
Second	39.7	320	25.9	111
Middle	40.4	306	20.4	117
Fourth	40.3	345	25.5	136
Highest	49.1	470	32.9	150
Total 15-24	40.9	1,765	25.5	601

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

HIV PREVALENCE AND ASSOCIATED FACTORS 14

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This chapter presents information on how widespread HIV testing is among the eligible population, the prevalence of HIV among those tested, and factors that contribute to HIV infection in the population. The HIV prevalence rates provide important information that enables planning of a national response, evaluation of programme impact, and measurement of progress on the National HIV/AIDS Strategic Plan. The understanding of the distribution of HIV within the population and the analysis of social, biological, and behavioural factors associated with HIV infection provide new insights about the HIV epidemic in Kenya that may lead to more precisely targeted messages and interventions.

Since an antibody test was developed in 1984 to detect HIV, most countries have put in place surveillance systems to monitor HIV prevalence levels and trends based on data collected at antenatal care (ANC) clinics. The quality of these HIV surveillance systems has varied over the years (Garcia-Calleja et al., 2004), making it difficult to obtain consistent and accurate estimates of HIV prevalence. Although HIV surveillance systems were set up primarily to monitor trends among population groups, the data collected by these systems have been used to estimate the burden of HIV in countries (Walker et al., 2003). Improved estimates have recently been made possible through the use of national population surveys to validate and calibrate these surveillance estimates.

In Africa, several community HIV prevalence studies have shown that HIV prevalence in the general adult population age 15-49 years old is similar to that of women attending ANC in the same communities (Garcia-Calleja et al., 2005). Some scientists have, however, highlighted the limitations of using ANC sentinel surveillance for deriving national estimates. First, the populations tested do not represent the entire population at risk (e.g., ANC data exclude men and non-pregnant women). Second, pregnancy rates are affected by HIV infection, resulting in a bias in the population of pregnant women. Third, pregnant women may not receive ANC, and rates of ANC attendance may change over time. Fourth, the sites selected for surveillance may not be representative. They are often in convenient urban or semi-urban locations, whereas in Africa the majority of the population is rural, and the misclassification of ANC clients as rural or urban residents is frequent (UNAIDS Reference Group, 2002; Fylkesnes et al., 1998; Zaba et al., 2005; and Glynn et al., 2001).

Some of these limitations in deriving national HIV estimates from ANC surveillance data can be overcome by adjusting for various factors (Gregson et al., 2002), but recent papers comparing ANC surveillance results and population-based surveys have questioned the limitations of extrapolating HIV national estimates from HIV sentinel surveillance (Assefa et al., 2003; Fabiani et al., 2003; Neequaye et al., 1997; and Kwesigabo et al., 1996). National AIDS programmes have thus been under increased pressure by decision-makers to implement nationally representative HIV surveys as they are thought to provide better HIV estimates for the general population.

With the availability of more resources and new laboratory methods for HIV testing (using dried blood spots or saliva), more than 30 countries have conducted national population-based HIV prevalence surveys. In some cases there have been special surveys to estimate HIV prevalence, whereas in other cases HIV testing has been added to DHS surveys. The results of these surveys allow a better understanding of HIV epidemiology by providing greater information on the behavioural risk factors and the demographic and geographic patterns of HIV infection within a country. In this way the surveys serve to calibrate ANC surveillance results (Boerma, 2003). They are, however, more costly than sentinel surveillance and are therefore impractical for tracking intermediate trends as they are conducted approximately every 5 years.

In Kenya, as in most of sub-Saharan Africa, national HIV prevalence estimates have been derived primarily from sentinel surveillance in pregnant women. Since 2005, the national sentinel surveillance system has consisted of 46 sites in government and mission health facilities selected to represent the different groups, regions, and rural and urban populations in the country. In these sites, pregnant women attending ANC are used as a proxy for the general population and their results are used to report on indicators for the national strategic plan as well as international indicators, such as those developed by the UN General Assembly Special Session (UNGASS).

In Kenya, adjusted ANC sentinel surveillance data indicated that the national HIV prevalence rate declined in adults age 15-49 years from 10 percent at the end of the 1990s to 7 percent in 2003. Analysis and adjustment of the 2005 and 2006 sentinel surveillance data produced estimated HIV prevalence rates of 5.9 percent in 2005 and of 5.1 percent in 2006 (NACC, unpublished data).

Results from the 2003 KDHS showed that the sentinel system had been overestimating the HIV prevalence among adults, mainly because prevalence among men is substantially lower than among women. The 2003 KDHS estimated that 6.7 percent of adults age 15-49 were HIV-infected, with a higher proportion of women (8.7 percent) than men (4.6 percent) infected. Regional variations in HIV infection, high prevalence among girls age 15-19 years (3.0 percent), low levels of voluntary HIV testing, and discordance among cohabiting couples (7.5 percent) pose major challenges in the control of HIV infection.

The 2007 Kenya AIDS Indicator Survey (KAIS) showed a reversal of the declining trend, with an estimated HIV prevalence of 7.4 percent among adults age 15-49 years. These results indicate proportionately more women (8.8 percent) than men (5.5 percent) age 15-49 are infected. An estimated 1.4 million adults age 15-64 are infected with HIV/AIDS, with about 1 million rural and 400,000 urban residents infected (NASCOP, 2009). Moreover, the 2007 KAIS results show that 35 percent of Kenyans aged 15-64 years are infected with herpes simplex virus-2 (HSV-2). Among those with HSV-2, 16 percent are also HIV-positive, while among those who do not have HSV-2, HIV prevalence is only 2 percent.

14.1 Coverage of HIV Testing

Table 14.1 presents response rates for HIV testing and gives the reasons people were not tested by gender, urban-rural residence, and province (region). Overall, HIV tests were conducted for 83 percent of eligible respondents, including 86 percent of the 4,418 eligible women and 79 percent of the 3,910 eligible men. Rural residents (85 percent) were more likely to be tested than their urban counterparts (78 percent). People who were not tested fell into the following four categories:

- Those who refused testing (11 percent overall)
- Those who were interviewed but who were not home for testing either when the health worker first arrived or when later callbacks were made (less than one percent)
- Those who were not at home either for the interview or for the testing (4 percent)
- Those who were missing test results for some other reason, such as (1) respondents incapable of giving consent for testing, (2) mismatches between the questionnaire and the blood sample, or (3) those for whom there were technical problems in taking blood (2 percent)

Refusal is the most important reason for non-response to HIV testing among both women and men. Among men, absence accounts for a sizeable amount of non-response to HIV testing, but among women it is less important. In urban areas, refusal rates are higher (13 percent) than in rural areas (10 percent).

This table also shows that, contrary to instructions given to field staff, a very small number of respondents were tested for HIV even though they were never interviewed (less than one-half of one percent). This result could also be due to loss of a few questionnaires. There are strong differences in HIV testing rates by province. Among both sexes, Coast province had the highest rate of testing (89 percent), followed by Nyanza and Western provinces (86 percent each). North Eastern province (71 percent) and Central province (77 percent) had the lowest coverage rates for HIV testing. In every province, women were more likely to be tested than men (Figure 14.1). North Eastern Province had the highest rate of refusal among women (16 percent) and Central had the highest rate among men (21 percent).

Figure 14.1 Coverage of HIV Testing by Gender

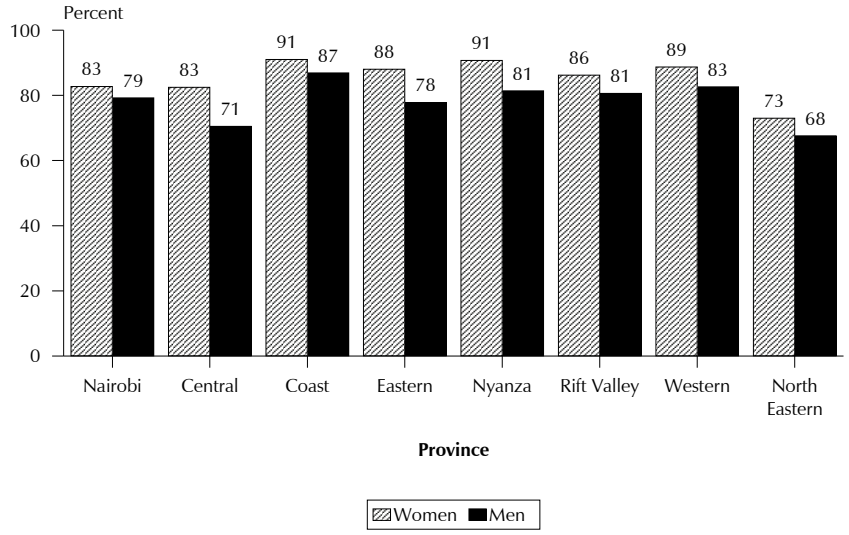


Table 14.1 Coverage of HIV testing by residence and region

Percent distribution of women age 15-49 and men age 15-54 eligible for HIV testing by testing status, according to residence and region (unweighted), Kenya 2008-09

Background characteristic	Testing status								Total	Number
	DBS tested[1]		Refused to provide blood		Absent at the time of blood collection		Other/missing[2]			
	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed		
					WOMEN					
Residence										
Urban	81.3	0.1	10.2	2.1	0.3	2.5	3.2	0.4	100.0	1,345
Rural	88.4	0.1	7.3	1.4	0.2	1.3	0.7	0.6	100.0	3,073
Province										
Nairobi	82.7	0.2	8.8	2.1	0.6	3.9	1.2	0.4	100.0	486
Central	82.5	0.0	11.0	2.8	0.4	2.0	0.0	1.3	100.0	538
Coast	91.0	0.2	5.0	1.6	0.0	0.2	1.6	0.4	100.0	557
Eastern	88.0	0.2	7.6	2.0	0.0	1.6	0.5	0.2	100.0	608
Nyanza	90.7	0.0	5.7	0.9	0.1	2.1	0.0	0.4	100.0	680
Rift Valley	86.2	0.0	8.2	1.6	0.3	1.3	2.2	0.1	100.0	679
Western	88.7	0.2	7.7	1.3	0.2	1.1	0.4	0.5	100.0	548
North Eastern	73.0	0.0	15.2	0.6	0.0	1.2	8.7	1.2	100.0	322
Total	86.3	0.1	8.2	1.6	0.2	1.7	1.4	0.5	100.0	4,418
					MEN					
Residence										
Urban	74.3	0.2	7.8	6.3	0.3	6.8	3.0	1.3	100.0	1,269
Rural	81.5	0.1	7.8	3.2	0.2	5.3	0.7	1.2	100.0	2,641
Province										
Nairobi	79.2	0.2	7.8	4.6	0.0	6.1	1.7	0.4	100.0	477
Central	70.5	0.4	12.0	8.6	0.0	5.8	0.9	1.7	100.0	465
Coast	86.9	0.4	4.6	2.5	0.0	2.9	1.5	1.2	100.0	482
Eastern	77.8	0.2	8.3	5.2	0.2	6.6	0.8	1.0	100.0	519
Nyanza	81.4	0.0	6.6	2.1	1.0	7.8	0.3	0.8	100.0	606
Rift Valley	80.6	0.0	8.0	3.8	0.2	5.6	1.5	0.3	100.0	602
Western	82.6	0.0	7.2	4.4	0.0	4.0	0.4	1.4	100.0	500
North Eastern	67.6	0.0	8.9	1.9	0.0	8.5	8.1	5.0	100.0	259
Total	79.2	0.2	7.8	4.2	0.2	5.8	1.5	1.2	100.0	3,910
					TOTAL					
Residence										
Urban	77.9	0.2	9.0	4.1	0.3	4.6	3.1	0.8	100.0	2,614
Rural	85.2	0.1	7.5	2.2	0.2	3.2	0.7	0.9	100.0	5,714
Province										
Nairobi	81.0	0.2	8.3	3.3	0.3	5.0	1.5	0.4	100.0	963
Central	77.0	0.2	11.5	5.5	0.2	3.8	0.4	1.5	100.0	1,003
Coast	89.1	0.3	4.8	2.0	0.0	1.4	1.5	0.8	100.0	1,039
Eastern	83.3	0.2	7.9	3.5	0.1	3.9	0.6	0.5	100.0	1,127
Nyanza	86.3	0.0	6.1	1.5	0.5	4.7	0.2	0.6	100.0	1,286
Rift Valley	83.5	0.0	8.1	2.7	0.2	3.4	1.9	0.2	100.0	1,281
Western	85.8	0.1	7.4	2.8	0.1	2.5	0.4	1.0	100.0	1,048
North Eastern	70.6	0.0	12.4	1.2	0.0	4.5	8.4	2.9	100.0	581
Total	82.9	0.1	8.0	2.8	0.2	3.6	1.4	0.9	100.0	8,328

[1] Includes all dried blood spot (DBS) samples tested at the lab and for which there is a result (i.e., positive, negative, or indeterminate. (Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.)
[2] Includes: (1) other results of blood collection (e.g., technical problem in the field), (2) lost specimens, (3) noncorresponding bar codes, and (4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.

Table 14.2 shows coverage rates for HIV testing by age group and socioeconomic status and the reasons for non-response. The coverage rate for testing among women is consistent across all age groups (range 84 percent to 89 percent). Among women, the highest refusal rates were among those age 15-19 and age 25-29, and the lowest rate was among those age 20-24. Among men, the highest rates of testing were among those age 15-19 (84 percent) and 40-44 (83 percent), and the lowest rates were among those age 25-29 and age 35-39 (76 percent).

Women and men with no education were far less likely to be tested than those with some education. Among the latter group, coverage rates did not vary substantially by the level of education attained. Those in the highest quintile of the wealth index were the least likely to be tested.

Table 14.2 Coverage of HIV testing by selected background characteristics

Percent distribution of women age 15-49 and men age 15-54 eligible for HIV testing by testing status, according to selected background characteristics (unweighted), Kenya 2008-09

Background characteristic	Testing status: DBS tested[1] Interviewed	DBS tested[1] Not interviewed	Refused to provide blood Interviewed	Refused to provide blood Not interviewed	Absent at the time of blood collection Interviewed	Absent at the time of blood collection Not interviewed	Other/missing[2] Interviewed	Other/missing[2] Not interviewed	Total	Number
WOMEN										
Age										
15-19	84.4	0.0	9.7	1.9	0.1	2.0	1.4	0.5	100.0	946
20-24	88.7	0.1	6.0	2.0	0.2	0.9	2.0	0.1	100.0	914
25-29	85.6	0.1	9.8	1.2	0.4	1.2	0.8	0.8	100.0	735
30-34	86.0	0.2	8.3	1.5	0.0	1.8	1.7	0.5	100.0	600
35-39	86.9	0.0	8.0	1.5	0.0	1.5	1.7	0.4	100.0	474
40-44	85.3	0.3	6.6	1.8	0.5	3.4	0.8	1.3	100.0	381
45-49	87.0	0.0	8.2	1.1	0.3	1.9	1.4	0.3	100.0	368
Education										
No education	81.7	0.0	12.0	1.1	0.0	1.6	2.7	0.9	100.0	635
Primary incomplete	87.2	0.1	8.5	1.5	0.2	1.1	0.8	0.7	100.0	1,298
Primary complete	88.0	0.2	6.5	1.6	0.1	1.6	1.8	0.2	100.0	998
Secondary+	86.4	0.1	7.5	2.0	0.4	2.2	1.2	0.3	100.0	1,484
Wealth quintile										
Lowest	87.3	0.1	8.6	1.0	0.1	1.2	1.0	0.6	100.0	892
Second	89.1	0.0	7.5	0.7	0.0	1.6	0.6	0.6	100.0	695
Middle	86.5	0.0	7.7	1.6	0.1	1.5	1.6	0.8	100.0	728
Fourth	87.9	0.1	6.8	2.1	0.4	0.9	1.3	0.5	100.0	851
Highest	82.7	0.2	9.5	2.2	0.3	2.6	2.2	0.3	100.0	1,252
Total	86.3	0.1	8.2	1.6	0.2	1.7	1.4	0.5	100.0	4,418
MEN										
Age										
15-19	83.5	0.4	5.1	3.2	0.2	4.0	1.7	1.9	100.0	843
20-24	78.8	0.0	8.7	3.2	0.1	6.2	2.2	0.7	100.0	690
25-29	76.1	0.0	8.3	4.6	0.2	7.4	1.6	1.8	100.0	566
30-34	77.0	0.2	7.7	6.5	0.7	5.8	1.3	0.9	100.0	556
35-39	75.8	0.2	9.2	4.3	0.0	7.0	1.7	1.7	100.0	414
40-44	82.7	0.0	8.2	2.5	0.0	5.3	0.6	0.6	100.0	318
45-49	76.9	0.0	10.0	4.8	0.0	7.2	0.3	0.7	100.0	290
50-54	80.7	0.4	8.2	5.6	0.0	3.9	0.9	0.4	100.0	233
Education										
No education	68.1	0.0	11.2	2.3	0.0	13.5	1.2	3.8	100.0	260
Primary incomplete	81.3	0.1	6.9	4.3	0.4	3.8	1.4	1.9	100.0	1,024
Primary complete	79.3	0.2	7.9	4.6	0.2	5.9	1.3	0.5	100.0	919
Secondary+	79.5	0.2	7.7	4.2	0.1	5.8	1.6	0.8	100.0	1,706
Wealth quintile										
Lowest	79.8	0.0	7.6	2.0	0.3	7.4	1.5	1.5	100.0	662
Second	83.8	0.3	6.7	2.9	0.2	3.4	1.0	1.8	100.0	623
Middle	80.8	0.0	9.2	3.3	0.2	4.4	1.2	0.9	100.0	641
Fourth	79.9	0.0	7.8	4.3	0.4	5.2	1.1	1.2	100.0	807
Highest	74.9	0.3	7.7	6.5	0.1	7.4	2.0	0.9	100.0	1,177
Total	79.2	0.2	7.8	4.2	0.2	5.8	1.5	1.2	100.0	3,910

Note: Total includes 3 women and 1 man missing information on education.
[1] Includes all dried blood spot (DBS) samples tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.

To further explore whether nonresponse might have an impact on the HIV seroprevalence results, tabulations were produced to show participation in the HIV testing by a number of other characteristics related to HIV risk (see Appendix Tables A.3-A.6). Tables A.3 and A.4 show the coverage of HIV testing by sociodemographic characteristics among women and men who were

interviewed. In general, the proportion of respondents who were tested is quite uniform across groups. Despite expectations that non-response to the HIV testing component might be higher among those likely to be HIV positive, it is reassuring that coverage rates are actually slightly higher among women who have ever had sex than among those who have not and are the same for men who ever had sex and those who have not. Response rates are also uniform by marital status and type of union (polygynous or not).

Coverage rates vary considerably by ethnic group, being highest among the Kisii, Embu, and Meru for women and Mijikenda/Swahili, Kisii, and Taita/Taveta for men. The Maasai have the lowest coverage, followed by the Somali. Coverage rates are notably lower among Muslim respondents—especially for women. Among men, the coverage rate for HIV testing is almost the same for circumcised and uncircumcised men.

Tables A.5 and A.6 show that HIV testing rates do not differ substantially by risk-related variables among women and men who have ever had sex. The mostly minor variations are generally in the direction of having higher coverage of groups that are usually associated with higher levels of HIV. For example, HIV testing coverage is higher for women and men with younger age at first sex than for those whose age at first sex is 20 or higher. Similarly, among women and men, coverage generally increases with the number of sexual partners in the previous 12 months.

14.2 HIV Prevalence by Age

Results from the 2008-09 KDHS indicate that 6.3 percent of Kenyan adults age 15-49 are infected with HIV (Table 14.3). HIV prevalence in women age 15-49 is 8.0 percent, while for men age 15-49, it is 4.3 percent. This female-to-male ratio of 1.9 to 1 is higher than that found in most population-based studies in Africa. Young women are particularly vulnerable to HIV infection compared with young men. For example, 3 percent of women age 15-19 are HIV infected, compared with less than one percent of men age 15-19, while HIV prevalence among women 20-24 is over four times that of men in the same age group (6.4 percent vs. 1.5 percent—Figure 14.2). Rates among women and men begin to converge as age increases, except for the unusually high level among women age 40-44; prevalence among men rises gradually with age to peak at age 35-39. HIV prevalence is higher for women than men at all ages except for the 35-39 age group.

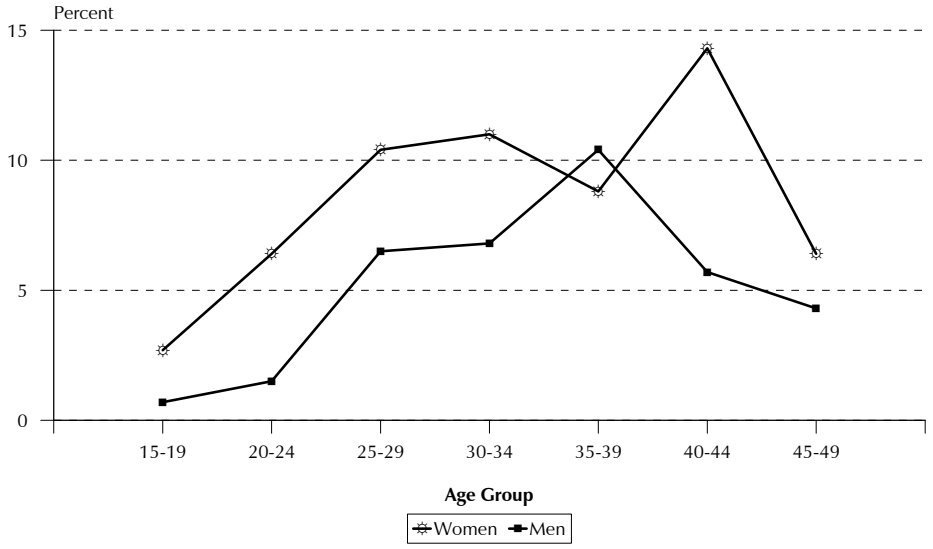
Table 14.3 HIV prevalence by age

Among de facto women age 15-49 and men age 15-54 who were interviewed and tested, the percentage who are HIV-1 positive, by age, Kenya 2008-09

	Women		Men		Total	
Age	Percentage HIV-1 positive	Number	Percentage HIV-1 positive	Number	Percentage HIV-1 positive	Number
15-19	2.7	750	0.7	769	1.7	1,519
20-24	6.4	729	1.5	585	4.2	1,314
25-29	10.4	643	6.5	450	8.8	1,093
30-34	11.0	506	6.8	443	9.1	949
35-39	8.8	364	10.4	287	9.5	651
40-44	14.3	344	5.7	292	10.3	636
45-49	6.4	306	4.3	240	5.5	546
Total 15-49	8.0	3,641	4.3	3,066	6.3	6,707
Age 50-54	na	0	9.1	199	na	na
Total men 15-54	na	0	4.6	3,265	na	na

na = Not applicable

Figure 14.2 **HIV Prevalence by Age Group and Sex**



14.3 TRENDS IN HIV PREVALENCE

The 2008-09 KDHS is the third nationally-representative, population-based survey to include HIV testing. The first was the 2003 KDHS, and the second was the 2007 Kenya AIDS Indicator Survey (NASCOP, 2009). The two KDHS surveys utilized similar methodologies, with HIV testing based on dried blood spot samples taken from women age 15-49 and men age 15-54, whereas the KAIS involved taking venous blood samples from women and men age 15-64.

Table 14.4 and Figures 14.3 and 14.4 compare HIV prevalence from all three surveys by age group and sex. Aside from some occasional outliers, the data show a remarkable level of consistency. Overall, HIV infection levels declined slightly among those age 15-49, from 7 percent in 2003 and 2007 to 6 percent in 2008-09. Among women age 15-49, HIV prevalence has declined from 9 percent in 2003 and 2007 to 8 percent in 2008-09, while among men age 15-49, HIV prevalence increased from 5 percent in 2003 to 6 percent in 2007 and then declined to 4 percent in 2008-09.

Table 14.4 Trends in HIV prevalence by age

Percentage HIV positive among women and men age 15-54 by age group, Kenya 2003 to 2008-09

	2003 KDHS			2007 KAIS			2008-09 KDHS		
Age	Women	Men	Both sexes	Women	Men	Both sexes	Women	Men	Both sexes
15-19	3.0	0.4	1.6	3.5	1.0	2.3	2.7	0.7	1.7
20-24	9.0	2.4	6.0	7.4	1.9	5.2	6.4	1.5	4.2
25-29	12.9	7.3	10.4	10.2	7.3	9.1	10.4	6.5	8.8
30-34	11.7	6.6	9.4	13.3	8.9	11.6	11.0	6.8	9.1
35-39	11.8	8.4	10.1	11.2	9.3	10.5	8.8	10.4	9.5
40-44	9.5	8.8	9.1	9.4	10.2	9.7	14.3	5.7	10.3
45-49	3.9	5.2	4.4	8.8	5.6	7.5	6.4	4.3	5.5
Total 15-49	8.7	4.6	6.7	8.8	5.5	7.4	8.0	4.3	6.3
Age 50-54	na	5.7	na	7.5	8.3	7.8	na	9.1	na
Total 15-54	na	4.6	na	na	na	na	na	4.6	na

na = Not applicable
Source: CBS, MOH, and ORC Macro, 2004, Table 13.3; NASCOP, 2009, Table 2.3.

Figure 14.3 **Trends in HIV Prevalence among Women 15-49**

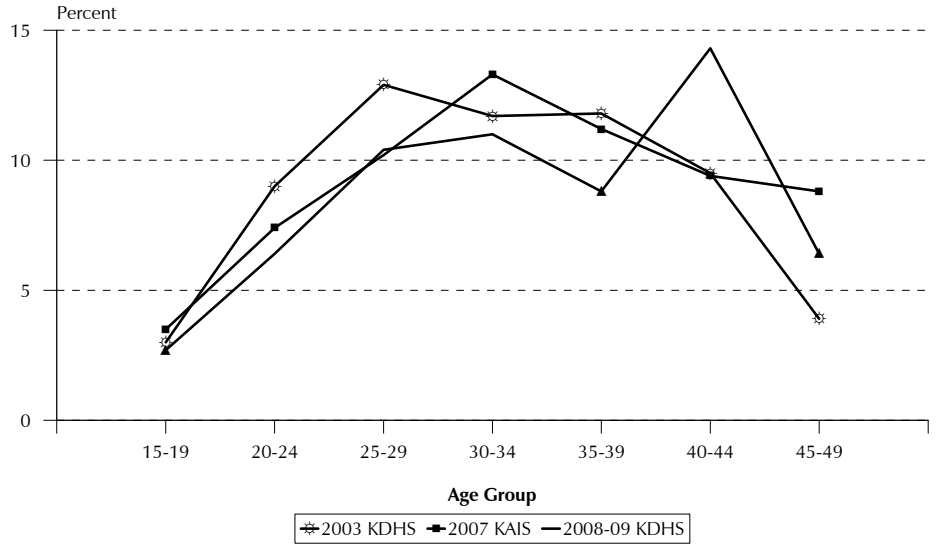
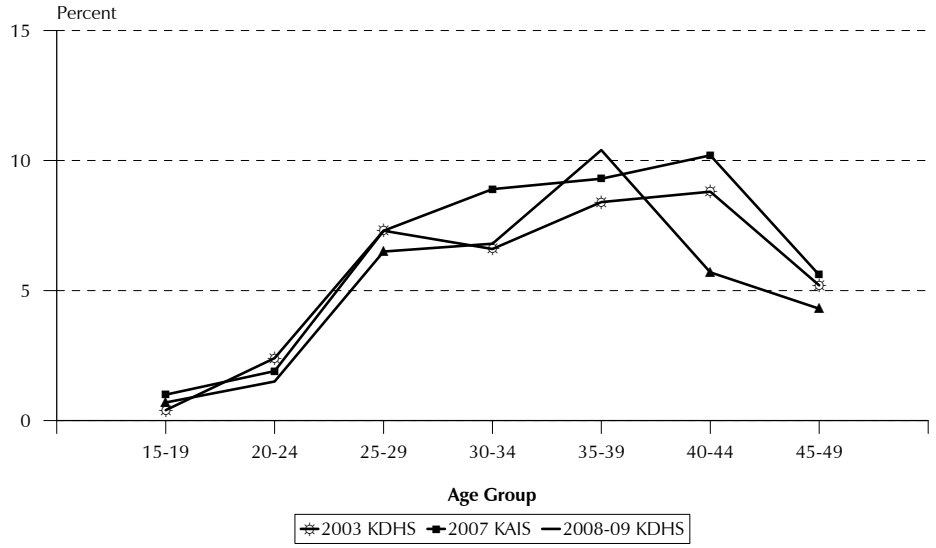


Figure 14.4 **Trends in HIV Prevalence among Men 15-49**



In 2003, HIV prevalence peaked among women age 25-29 years and in 2007, the prevalence peaked in women age 30-34 years. In 2008-09, prevalence was highest among women age 40-44 followed by those age 30-34. There was a significant increase in prevalence among women age 40-44 from 2003 (10 percent) and 2007 (9 percent) to 2008-09 (14 percent), which may reflect new infection among this cohort. Among women age 20-24 years, there is a decrease from 9 percent in 2003 to 7 percent in 2007 and to 6 percent in 2008-09. Among men, HIV prevalence peaked at age 40-44 years in 2003 (9 percent) and 2007 (10 percent), but was highest at age 35-39 in 2008-09 (10 percent).

14.4 HIV Prevalence by Socioeconomic Characteristics

Table 14.5 shows HIV prevalence by socioeconomic characteristics of the respondents. In general, urban respondents are slightly more likely to have HIV than are rural respondents (7 percent and 6 percent). However, the pattern differs by sex. Urban women have a considerably higher risk of HIV infection (10 percent) than rural women (7 percent), while rural men have a higher level of HIV infection than their urban counterparts (5 percent vs. 4 percent). The latter finding differs from results

in the 2003 and 2007 surveys, both of which found higher levels of HIV infection among urban men than among rural men.

Table 14.5 HIV prevalence by socioeconomic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, by socioeconomic characteristics, Kenya 2008-09

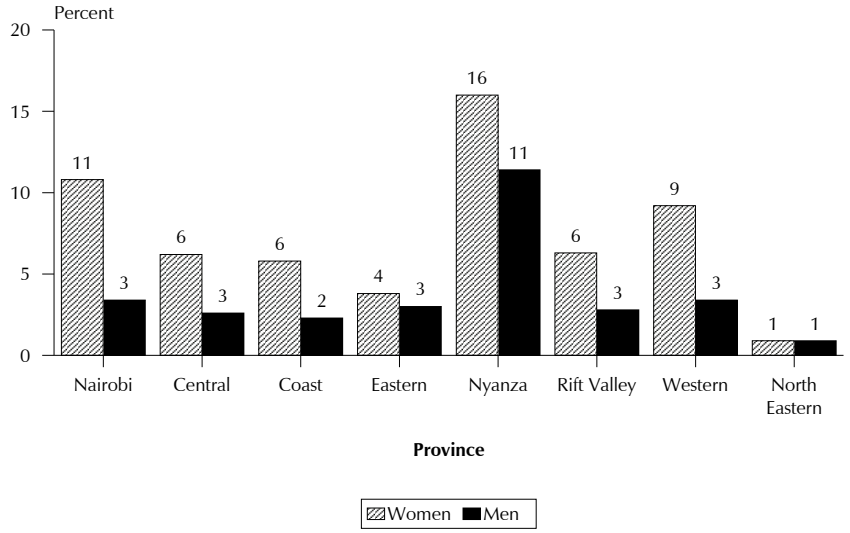
Background characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Residence						
Urban	10.4	862	3.7	798	7.2	1,660
Rural	7.2	2,779	4.5	2,268	6.0	5,047
Province						
Nairobi	10.8	287	3.4	297	7.0	584
Central	6.2	405	2.6	329	4.6	733
Coast	5.8	284	2.3	231	4.2	515
Eastern	3.8	610	3.0	502	3.5	1,111
Nyanza	16.0	599	11.4	494	13.9	1,092
Rift Valley	6.3	976	2.8	818	4.7	1,794
Western	9.2	394	3.4	334	6.6	728
North Eastern	0.9	86	0.9	63	0.9	149
Education						
No education	5.8	319	5.4	98	5.7	417
Primary incomplete	9.0	1,069	3.3	849	6.5	1,918
Primary complete	8.9	1,004	6.6	753	8.0	1,756
Secondary and higher	6.9	1,249	3.4	1,366	5.1	2,615
Employment (last 12 months)						
Not employed	4.4	1,531	1.3	367	3.8	1,898
Employed	10.6	2,110	4.7	2,699	7.3	4,809
Wealth quintile						
Lowest	6.0	658	2.3	420	4.6	1,078
Second	8.8	619	4.5	549	6.8	1,168
Middle	6.6	626	4.5	535	5.6	1,161
Fourth	7.4	815	5.6	710	6.6	1,525
Highest	10.2	922	3.9	852	7.2	1,774
Ethnicity						
Embu	2.7	58	3.2	67	3.0	126
Kalenjin	2.1	520	1.4	409	1.8	929
Kamba	5.5	404	2.4	346	4.1	750
Kikuyu	5.9	702	1.7	545	4.1	1,246
Kisii	5.1	250	4.3	221	4.7	471
Luhya	12.0	558	1.9	538	7.0	1,096
Luo	22.8	470	17.1	398	20.2	868
Maasai	(8.2)	29	(7.8)	33	7.9	62
Meru	5.3	185	5.4	154	5.3	339
Mijikenda/Swahili	3.5	189	2.7	127	3.2	316
Somali	0.8	101	0.8	69	0.8	171
Taita/Taveta	3.7	41	(1.4)	31	2.7	72
Other	5.0	134	1.1	127	3.1	261
Religion						
Roman Catholic	8.0	845	3.8	805	5.9	1,650
Protestant/other Christian	8.4	2,442	4.3	1,928	6.6	4,370
Muslim	2.8	265	4.2	191	3.3	456
No religion	13.4	76	3.0	123	7.0	199
Total 15-49	8.0	3,641	4.3	3,066	6.3	6,707
Age 50-54	na	0	9.1	199	9.1	199
Total men 15-54	na	0	4.6	3,265	4.6	3,265

Note: Total includes 1 woman and 7 men missing information on religion. Figures in parentheses are based on 25-49 unweighted cases.
na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1.

The HIV epidemic shows regional heterogeneity. Nyanza province has an overall prevalence of 14 percent, double the level of the next highest provinces—Nairobi and Western, at 7 percent each. All other provinces have levels between 3 percent and 5 percent overall, except North Eastern province where the prevalence is about 1 percent. Gender differences in prevalence persist in all provinces, with women bearing a higher burden of HIV prevalence than men (Figure 14.5). Compared

with data from the 2003 KDHS, data from most provinces show a slight decline in prevalence, with the exceptions of Western and North Eastern provinces, both of which show increases.

Figure 14.5 **HIV Prevalence by Gender and Province**



The results show no consistent pattern of HIV prevalence by education level. Among women, the highest level is among those with incomplete primary education (9 percent), while among men, this group has the lowest level. Women and men who are working have a higher prevalence of HIV than do those who are not currently working; 11 percent of employed women and 5 percent of employed men are HIV positive compared with 4 percent of women and 1 percent of men who are not employed. HIV infection shows a tendency to rise with wealth; women in the highest and men in the fourth quintile of the wealth index have the highest rates of HIV infection.

There are very large differences in HIV prevalence by ethnicity. Among both women and men, HIV prevalence is lowest among Somalis (less than one percent) and highest among the Luos (23 percent of women and 17 percent of men age 15-49). The Maasai also have relatively high levels of HIV infection; however, the number of respondents tested is not large. The only other group with higher than average prevalence levels is the Luhya (7 percent), with especially high levels for women (12 percent). With regard to religion, Muslims have the lowest level of HIV infection (3 percent), and those who have no religion have the highest level (7 percent).

14.5 HIV Prevalence by Demographic Characteristics and Sexual Behaviour

Table 14.6 gives the prevalence of HIV by demographic characteristics of respondents. HIV prevalence is by far the highest among women who are widowed (43 percent). Both women and men who are divorced or separated also have a relatively high HIV prevalence (17 and 10 percent, respectively). The data further show that those in polygynous unions have a higher prevalence level (13 percent) than those in non-polygynous unions or not in any union (6 percent each). Men in polygynous unions are three times more likely to have HIV than are men who are married but not in polygynous unions (16 and 5 percent).

HIV prevalence among pregnant women is a useful benchmark to compare with rates among women tested as part of the antenatal care sentinel surveillance system. HIV prevalence among pregnant women is 8 percent, up from 7 percent reported in the 2003 KDHS. The level is almost identical for women who are pregnant and those who are not. HIV prevalence does not vary much by whether women receive antenatal care or not. HIV prevalence is 8 percent among women who obtained antenatal care for their last birth at a public sector facility, 7 percent among women who

obtained care from a private sector facility, and 8 percent for those who did not obtain antenatal care or who had experienced no birth in the last 3 years.

The results show that uncircumcised men are more than four times as likely to have HIV as circumcised men (13 percent and 3 percent). These findings are similar to the levels found in the 2003 KDHS and the 2007 KAIS.

Table 14.6 HIV prevalence by demographic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, by demographic characteristics, Kenya 2008-09

Demographic characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Marital status						
Never married	3.7	1,133	1.5	1,468	2.4	2,601
Ever had sex	6.6	530	2.0	947	3.6	1,476
Never had sex	1.2	603	0.5	522	0.9	1,125
Married/Living together	6.7	2,134	6.0	1,463	6.4	3,597
Divorced or separated	16.8	213	9.7	116	14.3	329
Widowed	43.1	162	*	18	44.4	181
Type of union						
In polygynous union	11.8	265	15.7	97	12.9	362
Not in polygynous union	6.0	1,839	5.3	1,363	5.7	3,202
Not currently in union	9.8	1,507	2.7	1,603	6.1	3,110
Currently pregnant						
Pregnant	8.3	241	na	na	na	na
Not pregnant or not sure	8.0	3,400	na	na	na	na
Antenatal care (ANC) for last birth in the last 3 years						
ANC provided by public sector	8.0	1,063	na	na	na	na
ANC provided by other than public sector	6.9	211	na	na	na	na
No ANC/No birth in last 3 years	8.1	2,365	na	na	na	na
Male circumcision						
Circumcised	na	na	2.8	2,627	na	na
Not circumcised	na	na	12.9	438	na	na
Total 15-49	8.0	3,641	4.3	3,066	6.3	6,707
Age 50-54	na	0	9.1	199	na	na
Total men 15-54	na	0	4.6	3,265	na	na

Note: Total includes 30 women and 2 men with type of union missing and 1 man with circumcision information missing. An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1.

Table 14.7 examines the prevalence of HIV infection by sexual behaviour indicators among respondents who have ever had sexual intercourse. For women, there is a clear pattern of higher HIV prevalence with earlier sexual debut. For men, however, those who initiated sexual intercourse after age 20 have the highest HIV prevalence (9 percent compared with less than 5 percent).

Among women, having higher risk sex (sex with a non-marital, non-cohabiting partner) is associated with higher prevalence of HIV infection. Among women having higher risk sex in the last 12 months, 13 percent are HIV-infected, compared with 7 percent of those who are sexually active but have not had a higher risk partner in the last 12 months. Men reporting higher-risk sex have an HIV prevalence of 4 percent compared with 6 percent for those not reporting higher-risk sex in the last year. Among women reporting no sex in the last year, 16 percent are HIV-positive, compared with 4 percent of men reporting no sex in the last 12 months.

Among women, there is a negative association between the number of sexual partners in the last 12 months and the likelihood of being HIV-positive. Men show the expected pattern of increased HIV prevalence as the number of recent sexual partners increases. Among women, having a higher-risk partner in the preceding 12 months is associated with higher HIV prevalence (13 percent) than

having no higher-risk partners (9 percent). Surprisingly, among men, HIV prevalence declines as the number of higher-risk partners increases.

Table 14.7 HIV prevalence by sexual behaviour

Percentage HIV-positive among women and men age 15-49 who ever had sex and were tested for HIV, by sexual behaviour characteristics, Kenya 2008-09

Sexual behaviour characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Age at first sexual intercourse						
<16	14.4	824	4.0	1,022	8.6	1,846
16-17	7.0	815	4.5	590	6.0	1,404
18-19	7.2	596	4.0	484	5.8	1,080
20+	7.0	554	9.1	439	7.9	994
Higher-risk intercourse in last 12 months[2]						
Had higher risk intercourse	13.4	464	4.1	782	7.6	1,246
Had sexual intercourse, not higher risk	7.1	2,120	6.0	1,380	6.6	3,500
No sexual intercourse in last 12 months	15.8	454	3.5	382	10.2	836
Number of sexual partners in last 12 months						
0	16.1	445	3.5	379	10.3	824
1	8.2	2,543	4.8	1,878	6.7	4,422
2	(4.9)	36	8.2	228	7.8	264
3+	*	3	8.7	54	10.7	56
Number of higher-risk partners in last 12 months[3]						
0	8.6	2,573	5.4	1,762	7.3	4,336
1	13.2	447	4.4	630	8.1	1,077
2	*	15	3.1	116	4.1	131
3+	*	1	(2.3)	37	(5.7)	38
Condom use						
Ever used a condom	16.0	575	5.7	1,453	8.6	2,028
Never used a condom	7.8	2,456	4.1	1,086	6.6	3,542
Condom use at last sexual intercourse in last 12 months						
Used condom	26.5	228	7.6	535	13.3	762
Did not use condom	6.4	2,356	4.5	1,627	5.6	3,983
No sexual intercourse in last 12 months	15.8	454	3.5	382	10.2	836
Condom use at last higher-risk intercourse in last 12 months						
Used condom	24.4	168	5.1	473	10.1	641
Did not use condom	7.2	296	2.7	309	4.9	605
No higher-risk intercourse/no intercourse last 12 months	8.6	2,573	5.4	1,762	7.3	4,336
Number of lifetime partners						
1	5.6	1,315	0.8	391	4.5	1,706
2	7.8	890	2.7	411	6.2	1,301
3-4	17.5	655	5.8	550	12.1	1,205
5-9	13.6	121	7.4	578	8.5	699
10+	*	15	5.2	406	5.8	421
Paid for sex in last 12 months[4]						
Yes	*	2	4.1	66	6.0	67
No (No paid sex/no sex in last 12 months)	9.3	3,036	5.1	2,478	7.4	5,514
Total 15-49	9.3	3,037	5.0	2,544	7.4	5,581
Age 50-54	-	0	9.2	198	9.2	198
Total men 15-54	-	0	5.3	2,742	5.3	2,742

Note: Total includes 249 women and 8 men for whom information on age at first sex was inconsistent or missing; 10 women and 6 men missing information on number of sexual partners in the last 12 months; 7 women and 5 men missing information on ever use of condoms; 1 man missing information on condom use at last sexual intercourse; and 42 women and 209 men missing information on number of lifetime sexual partners. Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1.
[2] Sexual intercourse with a partner who neither was a spouse nor who lived with the respondent
[3] A partner who neither was a spouse nor who lived with the respondent, among the last three partners in the last 12 months
[4] Includes men who report having a prostitute for at least one of their last three sexual partners in the last 12 months

The relationship between condom use and HIV infection is not the expected pattern. Among women, any condom use, condom use at the most recent sexual encounter, and condom use at the most recent higher-risk sexual encounter are all associated with a much higher level of HIV infection than among those who did not use condoms, while for men, condom use is associated with only a somewhat higher level of infection. Without asking for a complete sexual history, it is not possible to control for the timing of condom use relative to HIV infection. It is likely that those who suspect they or their partner might be infected would also be more likely to use condoms, thus reversing the expected direction of the relationship of lower HIV prevalence among those who use condoms. The higher the number of lifetime sexual partners, the higher the likelihood of having HIV, especially among women; among men, the relationship is not so strong. The number of respondents who paid for sex in the 12 months before the survey is too small to make meaningful conclusions.

14.6 HIV Prevalence among Youth

Table 14.8 shows HIV prevalence among young people by background characteristics. The data show that 3 percent of youth age 15-24 are HIV-positive. Young women age 15-24 are more vulnerable to HIV infection than men of the same age. The results indicate that women of this age group are four times more likely to be HIV positive than men (almost 5 percent and 1 percent, respectively).

HIV prevalence increases with age, from less than 2 percent among youth age 15-17 to almost 6 percent among those age 23-24. The absolute increase by age is more apparent for young women than men; 8 percent of women age 23-24 have HIV. The small number of young people who are either divorced, separated, or widowed have a much higher HIV prevalence (22 percent) than those who are married or living together with their partner (6 percent). Youth who have never married have the lowest prevalence (2 percent). Among the never-married youth, those who report that they have ever had sex have a higher prevalence than those who report that they have never had sex (2 and 1 percent, respectively). There is HIV infection reported even among those who have never had sex. This implies some level of infection by a nonsexual means of transmission, such as unsafe injections or other blood-borne means. It is also possible that some young, unmarried women deliberately underreported their sexual experience.

HIV prevalence is higher among young pregnant women than among non-pregnant young women (6 percent versus 4 percent). There is no significant difference in HIV prevalence among youth in urban and rural areas. Nyanza province has the highest HIV prevalence among youth (8 percent), followed by Nairobi (3 percent), and Central, North Eastern, and Coast provinces have the lowest prevalence at 1 percent each. As in the general population, Nyanza has the highest prevalence for both young women and men (11 and 3 percent, respectively). HIV prevalence is higher among youth with no education and among youth in the middle wealth quintile.

Table 14.8 HIV prevalence among young people by background characteristics

Percentage HIV-positive among women and men age 15-24 who were tested for HIV, by background characteristics, Kenya 2008-09

Background characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Age						
15-19	2.7	750	0.7	769	1.7	1,519
15-17	2.8	433	0.5	425	1.7	858
18-19	2.7	317	1.0	344	1.8	661
20-24	6.4	729	1.5	585	4.2	1,314
20-22	5.3	466	1.0	383	3.4	849
23-24	8.3	262	2.4	202	5.7	465
Marital status						
Never married	2.3	927	1.0	1,250	1.5	2,177
Ever had sex	3.9	345	1.3	742	2.1	1,087
Never had sex	1.3	582	0.5	508	0.9	1,090
Married/living together	6.8	499	1.5	96	5.9	595
Divorced/separated/ widowed	23.8	53	*	7	22.1	60
Currently pregnant						
Pregnant	5.9	113	na	na	na	na
Not pregnant or not sure	4.4	1,365	na	na	na	na
Residence						
Urban	4.8	333	0.8	265	3.0	598
Rural	4.5	1,146	1.1	1,089	2.8	2,235
Province						
Nairobi	5.0	106	0.2	102	2.6	209
Central	0.7	151	0.8	140	0.8	291
Coast	2.1	124	0.0	75	1.3	199
Eastern	2.9	225	1.6	263	2.2	488
Nyanza	11.4	287	3.1	255	7.5	542
Rift Valley	2.9	380	0.0	322	1.6	702
Western	4.5	170	0.3	172	2.4	342
North Eastern	0.8	35	1.2	24	1.0	59
Education						
No education	5.3	83	(0.0)	21	4.2	104
Primary incomplete	5.0	502	1.1	474	3.1	976
Primary complete	5.3	366	1.6	294	3.7	660
Secondary and higher	3.5	527	0.8	565	2.1	1,092
Wealth quintile						
Lowest	5.0	261	0.4	193	3.1	454
Second	3.9	261	0.6	275	2.2	536
Middle	5.9	260	2.4	272	4.1	532
Fourth	3.9	353	1.2	342	2.6	695
Highest	4.3	343	0.3	272	2.6	615
Total	4.5	1,478	1.1	1,354	2.9	2,833

Note: Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1.

Table 14.9 shows the HIV prevalence among youth by sexual behaviour. In the survey, women age 15-24 were asked the age of their first sexual partner. Results show that there is no difference in HIV prevalence between women age 15-24 whose first sexual partner was 10 or more years older and those whose partners were either less than 10 years older, younger, or the same age (7 percent for both categories).

Surprisingly, HIV prevalence is higher among youth who had sexual intercourse in the 12 months before the survey but not higher-risk sex (7 percent) than among those who had higher-risk sexual intercourse (2 percent). Even more surprising, young people who reported no sexual intercourse in the 12 months before the survey have a prevalence of 4 percent, which is higher than for those who had higher-risk intercourse. This pattern varies by sex. Women who reported not having sex at all in the 12 months before the survey are more likely to be HIV-positive (9 percent) than women who had sex, but not higher-risk sex (8 percent), who in turn, are more likely to be HIV-

positive than women who had higher-risk sex (3 percent). Among men, there is very little variation in the level of HIV prevalence among respective categories. Data by the number of sexual partners and number of higher-risk partners in the 12 months before the survey also imply that HIV infection levels are higher among young women with no such partners than among those with 1 or more partners.

Table 14.9 HIV prevalence among young people by sexual behaviour

Percentage HIV-positive among women and men age 15-24 who ever had sex and were tested for HIV, by sexual behaviour, Kenya 2008-09

Sexual behaviour characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Relative age of first sexual partner						
10+ years older	6.6	86	na	na	na	na
<10 years older/same age/younger/don't know	6.6	733	na	na	na	na
Higher-risk intercourse in last 12 months[2]						
Had higher-risk intercourse	3.4	244	1.4	475	2.1	719
Had sexual intercourse, not higher risk	7.5	505	1.2	92	6.5	598
No sexual intercourse in last 12 months	9.3	147	1.5	278	4.2	426
Number of sexual partners in last 12 months						
0	9.3	147	1.5	278	4.2	426
1	6.2	727	1.2	464	4.3	1,191
2	*	22	1.9	82	2.5	104
3+	*	0	*	22	*	22
Number of higher-risk partners in last 12 months[3]						
0	7.9	653	1.4	371	5.6	1,023
1	3.6	233	1.0	369	2.0	602
2	*	11	2.3	82	2.0	92
3+	*	0	*	24	*	24
Condom use						
Ever used a condom	6.9	259	1.7	560	3.3	819
Never used a condom	6.5	636	0.8	285	4.8	921
Condom use at first sex						
Used condom	7.5	236	1.0	210	4.4	447
Did not use condom	6.5	636	1.5	622	4.0	1,258
Condom use at last sexual intercourse in last 12 months						
Used condom	6.1	121	1.9	314	3.1	436
Did not use condom	6.2	628	0.6	253	4.6	881
No sexual intercourse in last 12 months	9.3	147	1.5	278	4.2	426
Total	6.7	897	1.4	846	4.1	1,742

Note: Total includes 77 women missing as to age of first sexual partner, 2 women and 1 man missing information on ever use of condoms, and 21 women and 13 men missing information on condom use at first sex. Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
na=Not applicable
[1] HIV positive refers only to individuals infected with HIV-1.
[2] Sexual intercourse with a partner who neither was a spouse nor who lived with the respondent
[3] A partner who neither was a spouse nor who lived with the respondent, among the last three partners in the last 12 months

Survey results regarding condom use and HIV prevalence among young people are mixed. Prevalence among young women and men who ever used a condom is slightly higher than among those who never used condoms. It is also higher among young women who say they used a condom the first time they had sex than among those who did not and among men who say they used a condom the last time they had sex than those who did not. These small differences are not surprising, since the survey did not measure the timing of condom use relative to HIV infection. Whereas condom use protects against getting the HIV virus, it also protects against transmitting it to others, so

it is possible that some respondents know that they have HIV and use condoms to protect their partners, thus leading to higher prevalence among condom users.

14.7 HIV PREVALENCE BY OTHER CHARACTERISTICS

Table 14.10 shows the percentage of women and men age 15-49 who are HIV-positive by whether they had a sexually transmitted infection (STI) in the 12 months before the survey and by whether they had ever been tested for HIV. Women and men age 15-49 who had an STI or STI symptoms in the 12 months before the survey are more than twice as likely to be HIV-positive (18 percent) than respondents who did not have an STI or STI symptoms (7 percent). This pattern is similar for both sexes. Overall, respondents who ever had sex and who have been tested for HIV at some time before the survey are more likely to be HIV-positive than sexually active adults who have never been tested (9 and 5 percent, respectively). Among those who have ever been tested for HIV, prevalence is higher among those who never received the result of their last test (13 percent) than among those who received the results of their last test (9 percent).

Table 14.10 HIV prevalence by other characteristics

Percentage HIV positive among women and men age 15-49 who ever had sex and were tested for HIV, by whether had an STI in the past 12 months and by prior testing for HIV, Kenya 2008-09

	Women		Men		Total	
Characteristic	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Sexually transmitted infection in past 12 months						
Had STI or STI symptoms	19.7	176	11.2	56	17.6	231
No STI, no symptoms	8.7	2,846	4.9	2,478	6.9	5,324
Prior HIV testing						
Ever tested	10.8	2,065	6.7	1,200	9.3	3,265
Received results	10.6	2,003	6.6	1,154	9.1	3,157
Did not receive results	17.1	62	(7.8)	45	13.2	108
Never tested	6.3	961	3.6	1,343	4.7	2,304
Total 15-49	9.3	3,037	5.0	2,544	7.4	5,581

Note: Total includes 16 women and 10 men missing information on STIs and 11 women and 1 man missing information on prior HIV testing. Figures in parentheses are based on 25-49 unweighted cases.
na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1.

Table 14.11 shows details about prior HIV testing history and current HIV status. Results show that HIV-positive adults are more likely to know their status than HIV-negative adults. Almost seven in ten HIV-positive adults report that they had previously been tested for HIV and had received the results of their most recent test. This compares to only about half of HIV-negative adults. The percentage of HIV-positive respondents who had previously been tested and received results is higher among women than men (74 and 59 percent, respectively). Similarly, the percentage of HIV-negative respondents who had previously been tested and received results is also higher among women (57 percent) than men (40 percent).

Looking at trends, it is encouraging that an increasing proportion of HIV-positive adults are likely to know their status. The percentage of HIV-positive women and men who were previously tested and received the results of their last test has increased from just below 20 percent in 2003 to 69 percent in 2008-09 (CBS et al., 2004).

Table 14.11 Prior HIV testing by current HIV status

Percent distribution of women and men age 15-49 by HIV testing status prior to the survey, according to whether HIV positive or negative, Kenya 2008-2009

	Women		Men		Total	
HIV testing prior to the survey	HIV positive[1]	HIV negative	HIV positive[1]	HIV negative	HIV positive[1]	HIV negative
Previously tested, received result of last test	73.5	56.5	58.6	39.9	68.9	48.7
Previously tested, did not receive result of last test	3.7	2.2	2.7	1.9	3.4	2.1
Not previously tested	22.8	40.0	38.6	57.9	27.7	48.4
Missing	0.0	1.3	0.0	0.3	0.0	0.9
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	291	3,350	130	2,936	421	6,286

[1] HIV positive refers only to individuals infected with HIV-1.

14.8 HIV PREVALENCE BY MALE CIRCUMCISION

Male circumcision has been shown to have a protective effect against HIV infection (Agot et al., 2004). Table 14.12 presents survey data on HIV prevalence by male circumcision status. The results show that there is a strong relationship between HIV prevalence and circumcision status, with HIV prevalence more than four times higher among uncircumcised men than among circumcised men age 15-49 (13 and 3 percent).

The data show that although HIV prevalence tends to increase with age among both circumcised and uncircumcised men, the increase is far steeper among uncircumcised men. There are large differences in HIV infection levels between circumcised and uncircumcised men in both urban and rural areas. For example, in rural areas, 15 percent of uncircumcised men age 15-49 are HIV-positive compared with only 3 percent of circumcised men.

There are also much higher levels of HIV infection among uncircumcised men than circumcised men by education level and for all five wealth quintiles. Comparison of HIV prevalence by province, ethnicity, and religion are hampered by the small number of men who are not circumcised.

According to these bivariate data, male circumcision appears to have a very strong relationship with HIV in Kenya. However, circumcision is intertwined with ethnicity, place of residence, and other factors that are indirectly associated with HIV prevalence. For example, in Chapter 13 it was observed that male circumcision is much less common among the Luos (Table 13.11). The Luo ethnic group also has the highest prevalence of HIV. As shown in Table 14.5, 17 percent of Luo men are infected with HIV as compared with 4 percent of all Kenyan men. Although it may seem that low rates of circumcision may account for much of this difference, surprisingly, Luo men who are circumcised have roughly the same HIV prevalence as Luo men who are uncircumcised (16 percent compared with 17 percent). These findings indicate that multivariate analysis including circumcision status and risk factors for HIV transmission is needed to better understand the relationship between circumcision and HIV transmission in Kenya.

Table 14.12 HIV prevalence by male circumcision

Among men age 15-49 who were tested for HIV, the percentage HIV positive by whether circumcised, according to background characteristics, Kenya 2008-09

Background characteristic	Circumcised		Not circumcised	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Age				
15-19	0.2	583	2.4	186
20-24	0.9	519	6.3	67
25-29	3.5	383	23.9	67
30-34	5.5	391	17.3	51
35-39	7.7	262	(39.5)	25
40-44	3.4	271	(34.6)	21
45-49	1.8	218	(28.7)	22
Residence				
Urban	3.4	747	8.7	81
Rural	2.9	2,057	14.6	379
Province				
Nairobi	3.6	274	7.7	34
Central	2.3	338	*	12
Coast	2.5	236	*	7
Eastern	2.6	530	*	20
Nyanza	5.8	240	16.6	282
Rift Valley	3.1	783	9.1	82
Western	3.2	333	5.4	23
North Eastern	0.8	71	*	0
Education				
No education	0.3	84	*	14
Primary incomplete	2.2	675	7.9	174
Primary complete	3.6	640	24.2	111
Secondary and higher	2.9	1,227	8.0	139
Wealth quintile				
Lowest	1.3	345	6.9	75
Second	2.9	442	10.7	107
Middle	2.5	454	15.2	82
Fourth	3.2	623	23.0	85
Highest	3.3	763	9.0	89
Ethnicity				
Embu	3.3	66	*	2
Kalenjin	1.5	382	*	27
Kamba	2.5	343	*	4
Kikuyu	1.6	533	*	12
Kisii	4.4	214	*	7
Luhya	2.0	516	(1.0)	22
Luo	16.4	86	17.3	313
Maasai	(8.8)	29	*	4
Meru	5.1	138	*	14
Mijikenda/Swahili	2.7	126	*	1
Somali	0.8	69	*	0
Taita/Taveta	(1.4)	31	*	0
Other	1.1	94	(1.1)	33
Religion				
Roman Catholic	2.5	673	10.7	132
Protestant/other Christian	2.5	1,644	15.0	283
Muslim	4.3	183	*	7
No religion	3.3	112	*	11
Total 15-49	2.8	2,627	12.9	438
Age 50-54	7.0	177	*	22
Total men 15-54	3.1	2,804	13.6	460

Note: Total includes 7 circumcised men missing information on religion. Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.
[1] HIV positive refers only to individuals infected with HIV-1.

14.9 HIV PREVALENCE AMONG COUPLES

In the 2008-09 KDHS, more than 1,250 cohabiting couples were interviewed and tested for HIV. Table 14.13 shows the percent distribution of couples living in the same household, both of whom were tested for HIV, by their HIV status, according to background characteristics. The couples were linked to each other before personal identifiers (such as household and cluster numbers) were 'scrambled', the relevant pages of the household questionnaire were destroyed, and the results of the HIV test were merged with the data from the questionnaires. Therefore, no individual or couple's HIV status can be traced back to them.

Table 14.13 HIV prevalence among couples

Percent distribution of couples living in the same household, both of whom were tested for HIV, by the HIV status, according to background characteristics, Kenya 2008-09

Background characteristic	Both HIV positive[1]	Man HIV positive, woman HIV negative[1]	Woman HIV positive, man HIV negative[1]	Both HIV negative	Total	Number
Woman's age						
15-19	7.8	2.9	5.4	83.9	100.0	45
20-29	2.8	2.7	3.6	90.9	100.0	600
30-39	3.1	2.2	2.7	92.0	100.0	395
40-49	1.5	2.1	2.2	94.2	100.0	212
Man's age						
15-19	*	*	*	*	100.0	0
20-29	3.7	2.3	3.6	90.4	100.0	287
30-39	2.8	2.2	3.2	91.7	100.0	474
40-49	2.5	2.2	2.3	93.1	100.0	367
50-54	2.1	4.3	4.6	89.1	100.0	124
Age difference between partners						
Woman older	1.3	2.9	0.6	95.2	100.0	48
Same age/man older by 0-4 years	3.2	1.5	3.4	91.9	100.0	469
Man older by 5-9 years	2.7	2.3	1.8	93.2	100.0	505
Man older by 10-14 years	3.6	2.6	6.9	86.8	100.0	156
Man older by 15+ years	1.3	8.7	4.5	85.5	100.0	74
Type of union						
Monogamous	2.8	2.3	2.8	92.0	100.0	1,148
Polygynous	3.4	4.3	6.9	85.3	100.0	82
Residence						
Urban	3.3	1.0	5.6	90.1	100.0	346
Rural	2.6	3.0	2.2	92.1	100.0	906
Province						
Nairobi	3.5	1.1	9.5	86.0	100.0	111
Central	1.1	1.2	1.4	96.4	100.0	121
Coast	0.5	1.7	4.5	93.2	100.0	89
Eastern	3.1	1.3	1.6	94.0	100.0	201
Nyanza	7.1	9.1	4.3	79.5	100.0	202
Rift Valley	1.5	1.1	2.1	95.3	100.0	375
Western	2.9	1.1	2.5	93.5	100.0	122
North Eastern	1.0	0.0	1.8	97.2	100.0	31
Woman's education						
No education	1.5	1.9	0.6	95.9	100.0	90
Primary incomplete	3.1	2.7	3.5	90.6	100.0	753
Primary complete	2.8	2.2	3.0	92.0	100.0	327
Secondary+	2.1	1.5	3.2	93.3	100.0	82
Man's education						
No education	6.1	0.0	1.7	92.3	100.0	61
Primary incomplete	2.8	3.4	3.1	90.6	100.0	643
Primary complete	2.5	1.6	3.1	92.8	100.0	396
Secondary+	2.3	1.6	4.1	92.0	100.0	152
Wealth quintile						
Lowest	0.7	2.1	3.0	94.1	100.0	213
Second	3.9	2.8	2.4	91.0	100.0	210
Middle	3.0	2.7	0.3	94.0	100.0	209
Fourth	3.4	3.0	2.4	91.3	100.0	246
Highest	3.0	2.0	5.8	89.2	100.0	374
Total	2.8	2.5	3.2	91.5	100.0	1,252

Note: Table based on couples for which a valid test result (positive or negative) is available for both partners. Total includes 22 couples with type of union missing or inconsistent.
[1] HIV positive refers only to individuals infected with HIV-1.

For the vast majority of couples (92 percent), both the woman and the man are HIV-negative. For 3 percent of cohabitating couples, both partners are HIV-positive, and 6 percent of couples are 'discordant', with one partner infected and the other uninfected. These discordant couples are at high risk for HIV transmission, especially if they do not mutually know their HIV status or do not use condoms consistently.

Data show that the couples who are most likely to be affected by HIV include those in which the woman is very young (15-19), those in which the man is ten or more years older than the woman, polygynous couples, and those in Nyanza province and Nairobi province.

Discordant couples are almost equally divided by which partner is infected, with just under 3 percent being cases in which the man is HIV-positive and the woman is negative and just over 3 percent being cases in which the woman is HIV-positive and the man is negative. Discordance is more common in partnerships in which the man is more than 15 years older than the woman (13 percent) and in polygynous partnerships (11 percent). Discordance also varies by province, with Nyanza province having the highest level of discordant couples (13 percent) followed by Nairobi province (11 percent). Notably, one in five couples in Nyanza province is directly affected by HIV infection. Overall, there is about twice the number of couples that are discordant for HIV as there is the number of couples that are both infected. This represents an unmet HIV prevention need for the country because the vast majority of these couples do not mutually know their HIV status.

14.10 Distribution of the HIV Burden in Kenya

The HIV testing in a general population sample though the KDHS allows a more precise estimate of the burden of HIV in Kenya and permits the calibration of estimates of HIV prevalence based on sentinel surveillance in pregnant women. Kenya has a heterogeneous HIV epidemic, with large differences by region. Three provinces, containing half of Kenya's population, have 65 percent of the HIV infections: Nyanza province has over one-third, Rift Valley province has one-fifth, and Nairobi province has one-tenth of HIV infections in Kenya. Higher educational level does not protect one from HIV infection in Kenya; HIV has spread through all regions and strata of society.

The linkage of biological and behavioural data in this survey has strengthened the validity of this survey by making in-depth analysis possible. The measurement of HIV prevalence in the KDHS has proven useful in calibrating HIV prevalence estimates of the general population from sentinel surveillance in pregnant women and has resulted in downward projections of the severity of the epidemic in Kenya. These adjustments arise from a better understanding of rural-urban population distribution, from recognition that rural pregnant women who do not seek ANC care have lower rates than women who do, and, most important, from acknowledgement of the high ratio of 1.9 women infected for every man.

This linkage between HIV test results and demographic and behavioural data also enhances the understanding of the distribution, patterns, and risk factors, of HIV in Kenya, with the potential for improved planning and implementation of programs as a result of this information. The high rate of HIV in uncircumcised men supports the need to evaluate possible causal links between lack of male circumcision and HIV. Finally, the prevalence of couples that are discordant for HIV underscores the need for knowledge of both one's own HIV status and that of one's partner to prevent the continued spread of the HIV epidemic.

WOMEN'S EMPOWERMENT AND DEMOGRAPHIC AND HEALTH OUTCOMES

15

Vane Lumumba, Rosemary Kong'ani, and Robert Buluma

The Women's Questionnaire of the 2008-09 Kenya Demographic and Health Survey (KDHS) collected data on the general background characteristics of women (e.g., age, education, wealth quintile, and employment status) and also collected data on characteristics specific to women's empowerment status (e.g., receipt of cash earnings, magnitude of cash earnings, relative to those of a husband or partner[1], and control over cash earnings). Participation in household decision-making and attitudes towards wife beating were also assessed.

In addition to answering questions about their employment, men who participated in the survey gave information about their attitudes toward specific household decisions and also commented on actions, such as wife beating and whether a man is justified in taking certain actions if his wife refuses to have sex with him. Additionally, married men who received earnings in cash were asked about control over their cash income.

In this report, two separate indices of empowerment were developed based on the number of household decisions in which the woman participates and her attitudes towards wife beating. The ranking of women on these two indices is then related to selected demographic and health outcomes, including contraceptive use, ideal family size, unmet need for contraception, and maternal and child health care.

15.1 EMPLOYMENT AND FORM OF EARNINGS

Employment can be a source of empowerment for both women and men, especially if it puts them in control of income. In the KDHS, currently married respondents were asked whether they were employed at the time of the survey and if not, whether they were employed in the 12 months preceding the survey[2]. Table 15.1 shows details of employment and cash earnings of currently married women and men who were employed in the 12 months preceding the survey. Two in three currently married women age 15-49 are employed compared with 99 percent of married men. Younger women, especially those age 15-19 and age 20-24, are less likely to be employed than are women in other age groups, possibly due to their being in school or in training rather than in the job market. As women get older, their likelihood of being employed increases from 40 percent among women age 15-19 to 78 percent among women age 40-44.

Of those employed, 61 percent of women and 75 percent of men age 15-49 are paid only in cash for their work. More than one-quarter (26 percent) of women are not paid for their work compared with 14 percent of men.

[1] For the rest of this chapter the term 'husband' refers to both the current/most recent husband (for currently/formerly legally married women) and to the current/most recent partner (for women currently living or who formerly lived together with their partners in informal union).

[2] 'Currently employed' is defined as having done work in the past seven days. It includes persons who did not work in the past seven days but who are regularly employed and were absent from work for leave, illness, vacation, or any other such reason.

Table 15.1 Employment and cash earnings of currently married women and men

Percentage of currently married women and men, age 15-49, who were employed at any time in the last 12 months and the percent distribution of currently married women and men employed in the last 12 months by type of earnings, according to age, Kenya 2008-09

Age	Percentage employed	Number of women/ men	Percent distribution of currently married respondents employed in the last 12 months, by type of earnings					Total	Number of women/ men
			Cash only	Cash and in-kind	In-kind only	Not paid	Missing		
					WOMEN				
15-19	40.3	212	50.7	10.7	7.2	31.3	0.0	100.0	85
20-24	54.4	958	56.8	7.8	3.1	32.2	0.0	100.0	521
25-29	66.3	1,088	61.5	12.1	1.6	24.5	0.3	100.0	722
30-34	71.4	962	63.6	12.7	1.3	22.4	0.0	100.0	688
35-39	71.3	694	62.7	10.6	0.9	25.3	0.4	100.0	494
40-44	78.1	548	65.4	12.5	0.6	21.6	0.0	100.0	427
45-49	73.3	466	54.5	14.9	0.4	30.3	0.0	100.0	342
Total 15-49	66.6	4,928	60.9	11.6	1.6	25.8	0.1	100.0	3,280
					MEN				
15-19	*	3	*	*	*	*	*	100.0	3
20-24	100.0	100	71.1	7.8	0.6	20.5	0.0	100.0	100
25-29	99.6	296	77.2	7.1	2.8	12.9	0.0	100.0	295
30-34	98.0	384	76.7	8.7	1.7	12.8	0.0	100.0	376
35-39	99.0	294	80.2	5.6	1.9	12.3	0.0	100.0	291
40-44	99.6	279	68.8	9.3	4.5	17.4	0.0	100.0	277
45-49	99.1	236	74.6	8.5	3.4	13.5	0.0	100.0	234
Total 15-49	99.1	1,592	75.4	7.8	2.6	14.1	0.0	100.0	1,578
Men age 50-54	98.9	187	59.6	13.3	8.3	18.8	0.0	100.0	185
Total men 15-54	99.1	1,780	73.7	8.4	3.2	14.6	0.0	100.0	1,763

Note: An asterisk denotes a figure based on fewer than 25 unweighted cases that have been suppressed.

15.2 CONTROLS OVER EARNINGS

15.2.1 Control over Wife's Earnings

Currently married and employed women who earn cash for their work were asked the relative magnitude of their earnings compared with their husband's earnings. In addition, they were asked who the main decisionmaker is with regard to the use of their earnings. This information may provide some insight into women's empowerment within the family and the extent of their control over decision-making in the household. It is expected that employment and earnings are more likely to empower women if women themselves control their own earnings and perceive their earnings as significant relative to those of their husbands or partners.

Table 15.2.1 shows the percent distribution of currently married women who received cash earnings in the past 12 months, by the person who controls their earnings and by their perception of the magnitude of their earnings relative to those of their husband's. Overall, 42 percent of women say that they mainly decide how their cash earnings are used, 49 percent indicate that the decision is made jointly with their husband, and 9 percent say that the allocation of their earnings is decided mainly by their husbands. Table 15.2.1 also shows that 13 percent of women earn more than their husbands, 65 percent earn less than their husbands, and 17 percent earn about the same amount as their husbands. Four percent of women say that their husbands have no cash earnings.

There is no clear pattern on the use of cash earnings according to the woman's age. However, women with more children, those with no education, and those in the lowest wealth quintile are more likely than other women to mainly decide themselves how their earnings are used. Women in Nyanza province are more likely than women in other provinces to decide on their own how to use their cash earnings (55 percent compared with 49 percent or lower). On the other hand, women with fewer children, those who live in urban areas, those with some secondary or higher education, and those in the wealthiest quintile, are more likely than other women to make decisions jointly with their spouses.

Table 15.2.1 Control over women's cash earnings and relative magnitude of women's earnings: Women

Percent distribution of currently married women, age 15-49, who received cash earnings for employment in the 12 months preceding the survey, by person who decides how wife's cash earnings are used and by whether she earned more or less than her husband, according to background characteristics, Kenya 2008-09

Background characteristic	Person who decides how the wife's cash earnings are used:					Women's cash earnings compared with husband's cash earnings:						
	Mainly wife	Wife and husband jointly	Mainly husband	Other	Total	More	Less	About the same	Husband/ partner has no earnings	Don't know/ missing	Total	Number of women
Age												
15-19	36.9	55.5	7.6	0.0	100.0	1.6	86.1	11.3	0.0	1.0	100.0	52
20-24	46.9	45.5	7.4	0.1	100.0	7.4	73.8	12.7	3.5	2.6	100.0	337
25-29	37.2	51.0	11.8	0.0	100.0	12.5	63.4	20.0	2.1	2.1	100.0	531
30-34	40.1	53.5	6.2	0.2	100.0	11.4	67.8	16.9	2.0	2.0	100.0	524
35-39	47.8	43.3	8.5	0.4	100.0	20.0	64.2	12.0	2.4	1.4	100.0	363
40-44	44.0	47.6	8.4	0.0	100.0	11.8	58.7	19.3	8.5	1.7	100.0	333
45-49	42.6	46.4	10.9	0.0	100.0	17.9	55.9	18.9	5.1	2.2	100.0	237
Number of living children												
0	39.9	56.6	3.5	0.0	100.0	11.9	69.4	12.5	2.9	3.3	100.0	150
1-2	41.2	50.8	7.7	0.2	100.0	9.4	71.0	15.5	1.7	2.5	100.0	845
3-4	42.3	50.1	7.6	0.0	100.0	15.9	59.8	18.2	4.6	1.4	100.0	784
5+	44.5	42.2	13.2	0.2	100.0	14.0	62.5	17.3	4.5	1.7	100.0	599
Residence												
Urban	41.0	52.0	6.9	0.1	100.0	11.8	67.8	14.4	3.4	2.6	100.0	702
Rural	42.9	47.4	9.6	0.2	100.0	13.3	63.9	17.6	3.5	1.7	100.0	1,676
Province												
Nairobi	39.3	55.9	4.8	0.0	100.0	15.5	67.0	10.4	3.3	3.8	100.0	221
Central	36.6	60.0	3.4	0.0	100.0	12.9	57.2	27.5	1.5	1.0	100.0	365
Coast	47.7	39.3	12.9	0.1	100.0	9.8	70.5	10.7	4.6	4.4	100.0	199
Eastern	46.3	46.0	7.7	0.0	100.0	13.2	63.4	21.3	0.9	1.3	100.0	318
Nyanza	54.8	35.5	9.1	0.5	100.0	12.8	68.5	14.1	0.1	4.5	100.0	304
Rift Valley	34.7	53.5	11.6	0.2	100.0	12.2	66.8	14.0	6.7	0.2	100.0	665
Western	48.6	41.5	9.9	0.0	100.0	14.1	65.4	15.7	2.4	2.3	100.0	291
North Eastern	36.2	49.8	14.0	0.0	100.0	13.2	38.2	13.4	33.1	2.1	100.0	16
Education												
No education	51.8	33.8	14.4	0.0	100.0	15.3	61.1	8.5	12.8	2.4	100.0	197
Primary incomplete	47.3	38.9	13.4	0.4	100.0	12.2	65.0	19.0	1.6	2.3	100.0	599
Primary complete	41.9	51.1	6.8	0.1	100.0	9.7	67.1	19.5	2.3	1.5	100.0	699
Secondary+	37.2	56.9	5.9	0.0	100.0	15.4	64.4	14.7	3.6	2.0	100.0	883
Wealth quintile												
Lowest	52.2	31.8	16.0	0.0	100.0	14.9	60.6	14.7	8.0	1.7	100.0	292
Second	48.8	40.1	10.7	0.4	100.0	11.3	65.8	17.6	2.8	2.6	100.0	361
Middle	36.2	53.7	10.1	0.0	100.0	11.7	60.5	22.2	3.4	2.2	100.0	436
Fourth	43.2	49.9	6.5	0.4	100.0	14.3	65.2	17.0	2.3	1.3	100.0	499
Highest	38.6	55.5	5.9	0.0	100.0	12.6	68.8	13.7	2.8	2.1	100.0	789
Total	42.3	48.8	8.8	0.2	100.0	12.9	65.0	16.7	3.5	2.0	100.0	2,378

15.2.2 Control over Husband's Earnings

Table 15.2.2 shows data about control over the husband's cash earnings from both the wife's and the husband's perspectives, by background characteristics. Among currently married men age 15-49 who receive cash earnings, more than half (53 percent) decide jointly with their wife how their earnings will be used, while 44 percent say they mainly make decisions themselves. Only a small proportion of men (3 percent) say that decisions on how their earnings are used are mainly made by their wives.

There are few distinct patterns on how a husband's earnings are used. However, younger men, men with no children, and those who live in urban areas are more likely than other men to have the main say in the use of their cash income. Married men in Central province (73 percent) are most likely to make joint decisions on how to use their money, whereas in Nairobi province, 77 percent of men make such decisions independently.

It is interesting to note that wives have a different view with regard to the control over their husband's cash earnings. While the overall proportions do not vary much between men and women; there are sizeable discrepancies in views among some sub-groups. For example, the vast majority of married men in Nairobi who earn cash say they mainly make decisions as to how to use their earnings, while married women in Nairobi whose husbands earn cash are likely to say that decisions on use of his earnings are made jointly.

Table 15.2.2 Control over men's cash earnings

Percent distributions of currently married men age 15-49 who receive cash earnings and of currently married women age 15-49 whose husbands receive cash earnings, by person who decides how men's cash earnings are used, according to background characteristics, Kenya 2008-09

	Men						Women					
Background characteristic	Mainly wife	Husband and wife jointly	Mainly husband	Other	Total	Number	Mainly wife	Husband and wife jointly	Mainly husband	Other	Total	Number
Age												
15-19	*	*	*	*	100.0	3	10.6	41.0	48.4	0.0	100.0	205
20-24	5.9	34.3	58.2	1.6	100.0	79	6.2	54.1	39.4	0.3	100.0	927
25-29	3.5	57.3	39.0	0.2	100.0	249	7.5	53.5	38.9	0.1	100.0	1,063
30-34	3.3	51.0	44.3	1.5	100.0	322	4.8	58.3	36.2	0.8	100.0	937
35-39	2.1	51.7	46.2	0.0	100.0	250	8.2	50.9	40.8	0.1	100.0	671
40-44	0.4	50.0	49.6	0.0	100.0	217	4.5	55.7	39.7	0.0	100.0	510
45-49	1.7	60.7	37.6	0.0	100.0	194	10.2	48.6	40.6	0.7	100.0	436
Number of living children												
0	5.2	44.0	50.9	0.0	100.0	108	5.5	60.8	33.1	0.6	100.0	287
1-2	3.1	53.1	42.7	1.1	100.0	478	7.1	56.1	36.7	0.1	100.0	1,719
3-4	2.2	52.1	45.3	0.4	100.0	450	6.5	54.2	39.0	0.3	100.0	1,503
5+	1.1	55.6	43.2	0.0	100.0	278	7.4	47.1	45.0	0.4	100.0	1,241
Residence												
Urban	2.5	45.1	52.2	0.1	100.0	508	8.0	55.8	36.1	0.1	100.0	1,118
Rural	2.6	57.3	39.4	0.8	100.0	805	6.5	52.7	40.4	0.4	100.0	3,633
Province												
Nairobi	2.1	21.3	76.6	0.0	100.0	164	4.5	50.9	44.5	0.1	100.0	352
Central	7.8	72.9	19.3	0.0	100.0	137	6.6	70.1	23.3	0.0	100.0	528
Coast	2.5	53.3	44.2	0.0	100.0	145	10.4	51.5	37.5	0.6	100.0	403
Eastern	2.3	63.8	32.8	1.0	100.0	162	5.3	54.7	40.0	0.0	100.0	813
Nyanza	2.2	48.5	48.6	0.7	100.0	169	7.1	47.0	45.4	0.5	100.0	822
Rift Valley	1.4	53.6	44.2	0.9	100.0	415	7.9	56.6	35.0	0.5	100.0	1,217
Western	1.8	58.8	39.4	0.0	100.0	100	4.7	48.7	46.4	0.1	100.0	505
North Eastern	3.0	56.5	40.5	0.0	100.0	21	11.1	13.8	74.9	0.2	100.0	109
Education												
No education	0.8	43.7	55.5	0.0	100.0	60	10.9	30.2	58.1	0.8	100.0	503
Primary incomplete	3.6	58.2	37.5	0.7	100.0	262	7.0	47.7	45.0	0.3	100.0	1,399
Primary complete	3.6	51.5	45.0	0.0	100.0	346	7.3	55.1	37.2	0.4	100.0	1,407
Secondary+	1.7	51.7	45.8	0.7	100.0	645	4.9	65.5	29.5	0.1	100.0	1,441
Wealth quintile												
Lowest	1.2	51.0	46.9	0.8	100.0	155	8.6	38.6	52.4	0.5	100.0	796
Second	2.0	56.3	40.8	0.9	100.0	172	6.8	52.0	40.9	0.3	100.0	859
Middle	4.5	63.7	31.8	0.0	100.0	161	6.3	53.3	40.0	0.4	100.0	922
Fourth	3.5	59.0	36.3	1.2	100.0	260	5.3	61.0	33.3	0.4	100.0	990
Highest	2.1	45.8	52.0	0.1	100.0	565	7.5	58.3	34.2	0.0	100.0	1,184
Total 15-49	2.5	52.6	44.4	0.5	100.0	1,313	6.9	53.4	39.4	0.3	100.0	4,750
Men age 50-54	0.8	69.8	29.4	0.0	100.0	135	na	na	na	na	na	0
Total men 15-54	2.4	54.2	43.0	0.5	100.0	1,449	na	na	na	na	na	0

Note: an asterisk denotes a figure based on fewer than 25 unweighted cases that have been suppressed.
na = Not applicable

Table 15.3 shows, for currently married women who earned cash in the past 12 months, the person who decides how their cash earnings are used, and for all currently married women whose husbands earned cash in the past 12 months, the person who decides how their husband's cash earnings are used, according to the relative magnitude of the earnings of women and their husband or partner. As expected, women whose earnings exceed their husband's, or whose husband has no cash earnings, are more likely to have control over their own earnings. On the other hand, women who receive the same amount of pay as their husbands are much more likely to say that decisions on the

use of their earnings are mainly made jointly with their husbands. Joint decisions are also made on the husband's income.

With regard to the husband's cash earnings, more than half of the women say that they make joint decisions on how to use the husband's cash earnings, regardless of the relative income of the wife or whether the wife receives any cash earnings.

Table 15.3 Women's control over her own earnings and over those of her husband

Percent distribution of currently married women age 15-49 with cash earnings in the last 12 months by person who decides how the woman's cash earnings are used and percent distribution of currently married women age 15-49 whose husbands have cash earnings by person who decides how the husband's cash earnings are used, according to the relation between woman's and husband's cash earnings, Kenya 2008-09

	Person who decides how the wife's cash earnings are used:						Person who decides how the husband's cash earnings are used:					
Women's earnings relative to husband's earnings	Mainly wife	Wife and husband jointly	Mainly husband	Other	Total	Number of women	Mainly wife	Wife and husband jointly	Mainly husband	Other	Total	Number of women
More than husband/partner	51.0	40.3	8.7	0.0	100.0	306	14.9	51.4	33.5	0.2	100.0	301
Less than husband/partner	45.9	45.7	8.3	0.1	100.0	1,547	6.3	55.0	38.7	0.1	100.0	1,546
Same as husband partner	16.2	71.9	11.8	0.0	100.0	396	3.9	73.6	22.5	0.0	100.0	396
Husband/ partner has no cash earnings/did not work	61.2	33.9	4.9	0.0	100.0	82	na	na	na	na	na	0
Woman has no cash earnings	na	na	na	na	na	0	8.0	57.6	33.6	0.8	100.0	881
Woman did not work in last 12 months	na	na	na	na	na	0	5.8	45.3	48.7	0.2	100.0	1,580
Total[1]	42.3	48.8	8.8	0.2	100.0	2,378	6.9	53.4	39.4	0.3	100.0	4,750

na = Not applicable
[1] Excludes cases where a woman or her husband/partner has no earnings and includes cases where a woman does not know whether she earned more or less than her husband/partner

15.3 WOMEN'S PARTICIPATION IN DECISION-MAKING

In addition to educational attainment, employment status, and control over earnings, the KDHS collected information on some direct measures of women's autonomy and status. Specifically, questions were asked about women's participation in household decision-making. To assess women's decision-making autonomy, currently married women were asked who usually makes decisions about five specific issues: her own health care; major household purchases; purchases for daily household needs; visits to her family or relatives; and what food to cook each day. Table 15.4 shows the percent distribution of currently married women age 15-49 by who usually make these five decisions.

Table 15.4.1 Women's participation in decision-making

Percent distribution of currently married women by person who usually makes decisions about five kinds of issues, Kenya 2008-09

Decision	Mainly wife	Wife and husband jointly	Mainly husband	Someone else	Other/ missing	Total	Number of women
Own health care	27.9	45.4	26.4	0.2	0.1	100.0	4,928
Major household purchases	13.9	52.9	32.8	0.2	0.2	100.0	4,928
Purchases of daily household needs	50.4	31.7	17.5	0.2	0.1	100.0	4,928
Visits to her family or relatives	21.7	51.4	26.3	0.4	0.2	100.0	4,928
What food to cook each day	83.1	10.6	4.9	1.0	0.5	100.0	4,928

In general, women are more likely to be the main decision maker for purchases of daily household needs and what food to cook each day, while decisions about her health care, major household purchases, and visits to her family or relatives are more often decided jointly.

Figure 15.1 shows the distribution of currently married women according to the number of decisions in which they participate. Half of married women say that they participate in all of the specified household decisions. On the other extreme, only 3 percent of women say that they have no say in household decision-making.

Figure 15.1 Number of Decisions in Which Women Participate

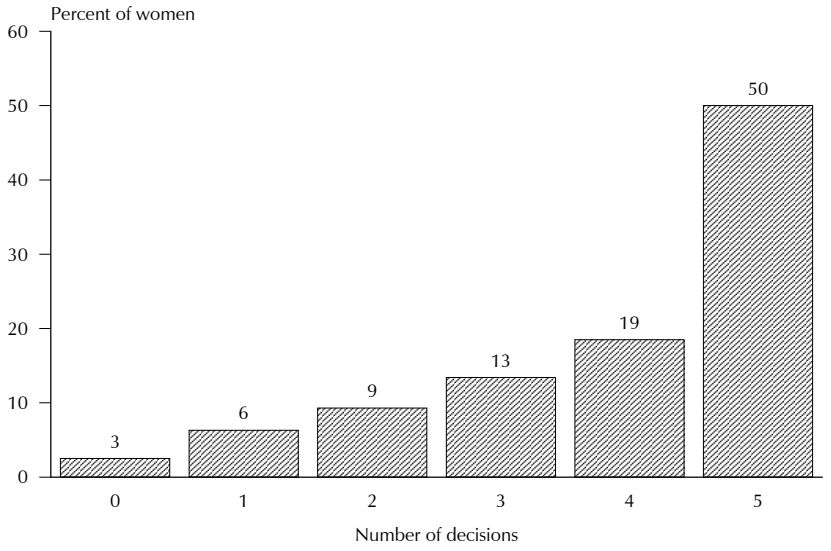


Table 15.4.2 gives the percent distribution of currently married men age 15-49 by the person who they think should have a greater say in making decisions about five kinds of issues: purchasing major household items, purchasing daily household needs, visiting the wife's family or relatives, what to do with the wife's income, and how many children the couple will have. More than half of men (53 percent) think that decisions pertaining to purchases of daily household needs should be made by wives, while more than half of men feel that decisions regarding major household purchases, visits to the wife's family or relatives, and how to use the wife's income should be made jointly with their wives. Men feel strongly that decisions on how many children to have should be made together with their wives (77 percent).

Table 15.4.2 Women's participation in decision-making according to men

Percent distribution of currently married men 15-49 by person who they think should have a greater say in making decisions about five kinds of issues, Kenya 2008-09

Decision	Wife	Wife and husband equally	Husband	Don't know/ depends	Total	Number of men
Major household purchases	8.9	52.9	37.9	0.3	100.0	1,592
Purchases of daily household needs	52.8	32.4	13.7	1.0	100.0	1,592
Visits to wife's family or relatives	7.3	58.5	33.5	0.7	100.0	1,592
What to do with the money wife earns	26.7	53.3	17.7	2.3	100.0	1,592
How many children to have	2.3	76.7	19.3	1.7	100.0	1,592

Table 15.5.1 shows the percentage of currently married women age 15-49 that usually make specific decisions, either by themselves or jointly with their husbands, by background characteristics. In general, women's participation in decision-making increases with age, education, and wealth quintile. Those residing in urban areas are more likely to be involved in decision-making than their rural counterparts. Also, women who are employed for cash are more likely to be involved in decision-making than are those who work but who do not earn cash or those who are not employed.

Women in Central province and Nairobi province are generally more involved in decision-making than women in other provinces. On the other hand, women in North Eastern province are least likely to have a say in household decisions.

Table 15.5.1 Women's participation in decision-making by background characteristics

Percentage of currently married women age 15-49 who usually make specific decisions either by themselves or jointly with their husband, by background characteristics, Kenya 2008-09

Background characteristic	Own health care	Making major household purchases	Making purchases for daily household needs	Visits to her family or relatives	Deciding what food to cook each day	Percentage who participate in all five decisions	Percentage who participate in none of the five decisions	Number of women
Age								
15-19	56.7	50.5	68.2	60.7	84.0	35.1	7.2	212
20-24	69.5	61.5	78.0	66.9	88.8	44.3	4.6	958
25-29	70.6	64.8	81.6	70.2	94.9	46.6	2.5	1,088
30-34	77.5	68.9	83.9	75.7	95.1	52.5	0.9	962
35-39	74.7	70.0	85.6	78.9	96.6	55.1	1.6	694
40-44	80.0	72.8	86.7	78.4	95.9	56.3	1.8	548
45-49	76.3	72.9	83.8	78.0	95.3	56.1	1.7	466
Employment in last 12 months								
Not employed	61.2	54.7	70.4	66.5	92.0	39.6	4.1	1,647
Employed for cash	82.2	74.9	89.1	78.5	94.9	59.6	1.6	2,378
Employed not for cash	72.0	67.1	85.3	70.9	94.0	43.7	2.0	899
Number of living children								
0	72.2	69.8	79.3	72.1	90.8	52.3	3.2	296
1-2	71.7	65.7	82.8	72.1	92.8	50.1	3.3	1,763
3-4	75.8	69.4	82.3	74.5	93.9	52.5	2.2	1,563
5+	72.7	64.3	81.7	73.0	95.3	46.2	1.7	1,307
Residence								
Urban	76.3	70.7	86.2	76.8	94.2	57.0	2.5	1,154
Rural	72.4	65.5	80.8	72.0	93.5	47.8	2.5	3,774
Province								
Nairobi	77.7	74.1	86.7	82.2	95.0	60.6	2.5	363
Central	87.6	83.1	91.7	87.1	97.3	69.1	0.6	535
Coast	66.9	60.5	74.4	55.3	86.5	37.6	6.2	427
Eastern	67.5	69.7	89.3	74.8	94.8	47.7	0.8	844
Nyanza	74.7	67.7	84.7	79.6	89.8	54.2	4.2	832
Rift Valley	75.1	65.7	77.1	66.7	96.8	47.8	0.9	1,279
Western	72.8	55.1	81.0	70.6	91.2	41.8	5.7	518
North Eastern	36.4	30.9	46.1	69.1	95.6	23.5	1.7	130
Education								
No education	56.7	49.2	65.1	56.6	91.2	30.9	4.1	565
Primary incomplete	70.1	61.0	79.8	68.8	91.9	42.3	3.0	1,440
Primary complete	76.0	68.9	83.3	75.7	94.0	53.6	2.5	1,436
Secondary+	80.1	76.8	89.6	81.0	96.1	61.1	1.5	1,488
Wealth quintile								
Lowest	63.3	51.7	69.7	60.9	92.4	35.5	3.1	870
Second	70.2	64.2	82.4	72.6	92.0	46.8	3.7	883
Middle	75.1	69.3	82.8	73.6	93.3	50.3	2.1	952
Fourth	75.5	71.9	86.6	76.6	94.7	53.4	1.7	1,012
Highest	79.5	73.2	86.5	78.9	95.2	59.5	2.1	1,211
Total	73.3	66.8	82.1	73.1	93.7	50.0	2.5	4,928

Note: Total includes 5 women missing information as to employment.

Details of men's attitudes towards wives' participation in decision-making are shown in Table 15.5.2. The table shows that four in ten men believe that women should have the greatest say, either alone or jointly with her husband, in all five decisions. Men feel strongly about a wife's role in decisions involving making purchases for daily household needs, what to do with the money the wife earns, and how many children to have, and they feel less strongly about involving her in making major household purchases and visits to her family or relatives. Very few men (4 percent) think that women should not participate in any of the decisions.

Older men, urban men, and those men with more education and with greater wealth are more likely than other married men to think a wife should participate in all five decisions. Married men in Central province are the most likely to approve of women's decision-making participation, while men in North Eastern province are the least likely to approve.

Table 15.5.2 Men's attitude toward wives' participation in decision-making

Percentage of currently married men age 15-49 who think a wife should have the greater say alone or equal say with her husband on five specific kinds of decisions, by background characteristics, Kenya 2008-09

Background characteristic	Making major household purchases	Making purchases for daily household needs	Visits to her family or relatives	What to do with the money the wife earns	How many children to have	All five decisions	None of the five decisions	Number of men
Age								
15-19	*	*	*	*	*	*	*	3
20-24	54.9	75.8	53.4	62.2	62.3	29.3	6.3	100
25-29	59.9	87.8	63.4	78.0	79.1	39.7	3.4	296
30-34	53.5	84.1	64.3	79.7	77.1	36.9	5.8	384
35-39	70.6	87.3	68.2	78.1	80.7	40.0	1.7	294
40-44	65.1	84.1	68.4	86.0	79.9	47.1	4.0	279
45-49	65.8	87.3	71.0	86.1	85.6	43.8	2.0	236
Employment in last 12 months								
Not employed	*	*	*	*	*	*	*	15
Employed for cash	59.8	85.4	65.5	80.4	78.8	39.8	4.3	1,313
Employed but not for cash	70.6	84.6	66.1	77.4	78.9	41.0	1.5	264
Number of living children								
0	71.4	80.6	63.3	80.9	73.0	41.9	3.4	122
1-2	64.7	87.7	65.9	81.2	83.3	43.5	4.0	561
3-4	61.1	86.1	70.9	79.5	80.5	41.4	3.1	537
5+	55.1	82.0	59.2	78.5	72.1	33.2	4.3	372
Residence								
Urban	65.0	90.8	69.8	84.6	80.1	43.5	3.3	523
Rural	60.2	82.5	63.9	77.8	78.4	38.7	4.0	1,070
Province								
Nairobi	66.2	92.4	83.2	93.6	82.5	47.6	0.1	164
Central	83.0	92.1	75.0	90.4	88.3	61.4	0.9	151
Coast	56.6	85.7	52.9	82.1	81.7	29.7	1.1	155
Eastern	68.0	88.8	57.7	78.0	78.1	42.0	1.3	213
Nyanza	54.3	90.6	63.9	77.1	81.8	35.4	0.7	247
Rift Valley	61.0	76.9	63.6	72.8	75.1	39.3	9.9	486
Western	58.5	81.0	67.4	84.3	75.0	38.7	2.6	141
North Eastern	9.8	93.9	89.0	77.3	63.8	4.5	0.0	35
Education								
No education	36.0	74.0	53.5	72.9	48.6	20.5	14.8	77
Primary incomplete	55.8	80.1	55.4	75.4	70.2	34.1	5.1	335
Primary complete	60.5	84.8	64.0	75.8	79.6	37.6	3.0	440
Secondary+	67.9	89.0	72.9	85.3	85.6	46.7	2.4	742
Wealth quintile								
Lowest	45.0	70.2	55.1	66.1	64.0	21.1	9.1	229
Second	58.4	83.3	63.4	79.0	79.7	41.3	4.2	256
Middle	64.4	83.6	61.6	82.3	80.0	37.6	3.2	236
Fourth	66.7	88.5	73.0	87.5	85.6	52.0	1.3	288
Highest	66.4	91.1	69.2	81.3	80.9	42.6	2.8	584
Total 15-49	61.8	85.3	65.8	80.0	79.0	40.3	3.7	1,592
Men age 50-54	57.0	81.3	65.2	82.9	73.0	39.1	3.3	187
Total men 15-54	61.3	84.9	65.7	80.3	78.3	40.1	3.7	1,780

Note: an asterisk denotes a figure based on fewer than 25 unweighted cases that have been suppressed.

15.4 ATTITUDES TOWARDS WIFE BEATING

Violence against women has serious consequences for their mental and physical well-being, including their reproductive and sexual health (WHO, 1999). One of the most common forms of violence against women worldwide is abuse by a husband or partner (Heise et al., 1999).

The 2008-09 KDHS gathered information on women's and men's attitudes toward wife beating. Women and men were asked whether a husband is justified in beating his wife under a series of circumstances: if the wife burns the food, argues with him, goes out without telling him, neglects the children, or refuses sexual relations. Women who believe that a husband is justified in hitting or beating his wife for any of the specified reasons may believe themselves to be low in status, both absolutely and relative to men. Such a perception could act as a barrier to accessing health care for them and their children, affect their attitudes toward contraceptive use, and influence their general well-being. Table 15.6.1 summarizes women's attitudes toward wife beating in these five specific circumstances. The table also shows the percentage of women who agree that wife beating is justified in at least one of the circumstances.

Table 15.6.1 Attitude toward wife beating: Women

Percentage of all women age 15-49 who agree that a husband is justified in hitting or beating his wife for specific reasons, by background characteristics, Kenya 2008-09

Background characteristic	Husband is justified in hitting or beating his wife if she:					Percentage who agree with at least one specified reason	Number
	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sexual intercourse with him		
Age							
15-19	15.1	31.2	30.6	44.7	17.8	56.6	1,761
20-24	13.3	32.2	31.9	39.3	21.1	52.1	1,715
25-29	11.9	27.5	27.7	39.6	22.3	49.2	1,454
30-34	12.6	29.3	30.8	41.0	24.2	51.4	1,209
35-39	13.9	29.4	29.9	40.5	25.4	50.7	877
40-44	11.0	31.1	28.4	42.8	25.7	51.2	768
45-49	15.7	38.5	37.8	46.4	30.6	57.0	661
Employment in last 12 months							
Not employed	13.6	31.2	32.6	42.2	21.5	53.5	3,462
Employed for cash	11.5	27.9	26.8	37.3	21.4	47.4	3,744
Employed but not for cash	18.4	38.8	37.4	54.0	30.0	66.3	1,232
Marital status							
Never married	12.4	26.2	26.6	38.6	16.5	49.4	2,634
Married or living together	13.6	32.9	32.5	42.4	24.8	53.9	4,928
Divorced/separated/ widowed	15.0	33.1	32.5	46.9	28.9	55.3	881
Number of living children							
0	12.6	25.1	26.3	37.8	15.4	48.5	2,397
1-2	11.2	29.4	27.9	37.6	20.6	48.9	2,579
3-4	13.8	31.5	31.4	44.3	26.4	53.2	1,899
5+	17.7	41.3	41.2	51.3	32.5	64.3	1,569
Residence							
Urban	6.4	17.2	18.0	27.6	11.9	34.1	2,148
Rural	15.8	35.5	35.0	46.5	26.3	58.9	6,296
Province							
Nairobi	2.7	8.8	11.7	20.2	7.7	24.6	728
Central	6.1	18.4	16.0	29.8	19.2	36.8	905
Coast	13.6	29.6	30.0	36.1	20.6	49.0	674
Eastern	6.2	16.7	24.6	40.8	15.5	46.6	1,376
Nyanza	13.7	42.2	31.6	43.6	22.9	56.3	1,389
Rift Valley	20.4	38.3	41.2	50.5	28.9	64.9	2,262
Western	22.9	48.2	41.6	52.4	32.9	67.8	927
North Eastern	7.7	25.0	34.7	35.5	30.4	44.3	184
Education							
No education	23.2	43.1	47.6	52.7	35.5	68.3	752
Primary incomplete	18.3	40.5	39.4	50.5	31.0	63.6	2,526
Primary complete	12.1	29.5	30.2	41.4	21.3	53.6	2,272
Secondary+	7.5	20.3	19.0	31.4	13.1	38.2	2,894
Wealth quintile							
Lowest	22.2	41.9	44.0	52.5	33.6	67.2	1,393
Second	19.6	44.6	43.6	54.4	31.1	67.1	1,483
Middle	14.4	35.0	31.2	47.9	25.8	58.6	1,613
Fourth	10.3	25.8	26.7	37.1	19.1	48.9	1,736
Highest	5.4	15.7	16.4	25.6	10.7	32.3	2,220
Total	13.4	30.9	30.7	41.7	22.7	52.6	8,444

Note: Total includes 6 women for whom employment status is missing.

Overall, acceptance of wife beating ranges from 13 percent of women (if the wife burns the food) to 42 percent (if she neglects the children). More than half of women (53 percent) agree with at least one of the specified reasons for a husband's beating his wife.

Younger women and older women are more likely than women age 25-44 to accept wife-beating. Women who are employed for cash and those who have never married are the least likely to accept wife beating as justified for any reason. The proportion of women who find wife beating to be justified increases with the number of living children. Rural women are almost twice as likely as urban women to go along with wife beating for some reason (59 percent and 34 percent, respectively). The proportion of women who agree with at least one of the given reasons for beating a wife varies by province, from 25 percent of women in Nairobi to 68 percent of women in Western province. The likelihood that a woman perceives wife beating to be justified decreases markedly as the woman's level of education and wealth quintile increase. For example, 67 percent of women in the poorest quintile agree with wife beating for at least one reason compared with 32 percent of women in the richest quintile.

Men were also asked whether wife beating is justified under certain circumstances. Table 15.6.2 shows men's attitudes towards wife beatings. Compared with women of the same age, men age 15-49 are less likely to support wife beating for each of the five specified reasons. For instance, only 8 percent of men agree that a husband is justified in hitting or beating his wife if she burns the food, compared with 13 percent of women. Similarly, only 24 percent of men compared with 31 percent of women say that a husband is justified in hitting or beating his wife if she argues with him. Overall, less than half of men (44 percent) agree with at least one specified reason for a husband to beat his wife compared with 53 percent of women.

The likelihood that men agree that wife beating is justified in at least one of the specified situations generally decreases with age. Men who are divorced, separated, or widowed are more likely to agree with wife beating, while men who are currently married or living together are the least likely to agree that wife beating is justified. Men in rural areas are more likely than those in urban areas to agree with at least one of the reasons given for justifying wife beating (47 percent compared with 36 percent). The percentage of men in each province who agree with at least one of these reasons is inconsistent with that of women and does not vary as widely from province to province. It ranges from 31 percent in Nairobi to 47 percent in Eastern, Nyanza, and Western provinces. Men's education and wealth quintile are negatively associated with their agreement with any reason for a husband to hit his wife.

Table 15.6.2 Attitude toward wife beating: Men

Percentage of all men age 15-49 who agree that a husband is justified in hitting or beating his wife for specific reasons, by background characteristics, Kenya 2008-09

Background characteristic	Husband is justified in hitting or beating his wife if she:					Percentage who agree with at least one specified reason	Number
	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sexual intercourse with him		
Age							
15-19	10.2	31.5	29.8	36.8	15.6	54.1	776
20-24	7.6	22.5	20.8	31.5	15.4	42.7	630
25-29	6.2	20.8	22.0	26.4	10.1	39.8	483
30-34	8.8	22.7	24.3	30.2	12.9	43.0	461
35-39	5.5	19.7	22.1	25.4	12.5	37.2	344
40-44	5.9	18.3	24.3	30.6	15.0	42.2	306
45-49	5.4	20.7	22.9	30.3	13.0	37.4	257
Employment in last 12 months							
Not employed	9.9	25.2	27.4	34.1	15.9	47.5	373
Employed for cash	7.2	22.2	22.8	31.0	13.4	42.5	2,016
Employed not for cash	7.6	26.2	26.3	29.8	13.7	46.2	867
Marital status							
Never married	9.1	26.6	25.2	32.3	14.9	47.3	1,524
Married or living together	6.3	20.3	22.8	28.6	11.8	39.7	1,592
Divorced/separated/ widowed	6.8	28.4	31.0	44.1	23.2	56.5	142

Continued…

Table 15.6.2—*Continued*

Background characteristic	Husband is justified in hitting or beating his wife if she: Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sexual intercourse with him	Percentage who agree with at least one specified reason	Number
Number of living children							
0	9.3	25.6	25.3	32.0	15.0	46.5	1,626
1-2	4.5	20.2	17.3	27.3	10.9	38.2	691
3-4	6.0	20.3	24.0	28.8	11.3	41.7	559
5+	8.5	25.9	33.0	36.4	17.4	47.3	381
Residence							
Urban	6.0	15.8	16.5	27.6	8.4	36.1	866
Rural	8.2	26.4	27.1	32.2	15.7	46.9	2,392
Province							
Nairobi	5.5	10.4	11.2	25.0	7.2	30.9	314
Central	8.3	23.2	17.8	30.7	25.9	44.7	347
Coast	5.4	22.5	24.6	28.1	9.7	45.8	252
Eastern	5.4	25.7	28.1	33.2	15.0	47.3	530
Nyanza	7.9	28.7	23.8	28.0	10.4	46.7	520
Rift Valley	9.1	23.5	29.5	34.8	14.3	43.5	885
Western	11.0	28.6	23.2	30.6	9.9	46.9	349
North Eastern	0.6	7.4	27.9	29.7	29.6	39.9	62
Education							
No education	20.0	41.7	53.2	60.4	44.3	70.9	112
Primary incomplete	10.4	34.6	33.7	39.6	20.2	58.3	883
Primary complete	6.2	24.6	24.0	33.7	12.5	46.1	804
Secondary+	5.8	14.9	16.4	22.0	8.3	32.1	1,459
Wealth quintile							
Lowest	10.0	27.2	35.7	37.5	18.4	53.5	457
Second	8.6	31.6	29.9	35.1	15.2	52.0	577
Middle	6.1	25.3	24.5	30.4	17.8	44.8	574
Fourth	8.5	22.7	24.0	29.3	11.8	41.0	725
Highest	6.1	16.4	15.2	26.9	9.7	36.2	926
Total 15-49	7.6	23.6	24.3	31.0	13.8	44.0	3,258
Men age 50-54	2.6	21.1	27.7	29.6	9.5	38.8	207
Total men 15-54	7.3	23.4	24.5	30.9	13.5	43.7	3,465

Note: Total includes 3 men whose employment status is missing.

15.5 MEN'S ATTITUDES TOWARDS WIFE'S REFUSING SEX

To assess attitudes towards marital sexual expectations, men who were interviewed in the 2008-09 KDHS were asked the following question:

Do you think that if a woman refuses to have sex with her husband when he wants her to, he has the right to

- *Get angry and reprimand her?*
- *Refuse to give her money or other means of support?*
- *Use force and have sex with her even if she doesn't want to?*
- *Have sex with another woman?*

Table 15.7 shows the percentage of men age who answered affirmatively to each of these behaviours by background characteristics. Two in three men age 15-49 (66 percent) do not agree that a husband has the right to take any of the four specified behaviours, while 1 percent think a husband is justified in taking all of the specified actions. As for specific behaviours, 27 percent of men feel that a husband has a right to get angry and reprimand his wife if she refuses to have sex with him. However, only nine percent of men think that a husband has a right to either refuse financial support or have sex with another woman if his wife refuses to have sex with him. Five percent of men say that a husband is justified in forcing his wife to have sex.

Table 15.7 Men's attitudes toward a husband's rights when his wife refuses to have sexual intercourse

Percentage of men age 15-49 who consider that a husband has the right to certain behaviours when a woman refuses to have sex with him when he wants her to, by background characteristics, Kenya 2008-09

Background characteristic	When a woman refuses to have sex with her husband, he has the right to:				Percentage who agree with all of the specified reasons	Percentage who agree with none of the specified reasons	Number
	Get angry and reprimand her	Refuse her financial support	Use force to have sex	Have sex with another woman			
Age							
15-19	31.6	12.1	5.1	8.9	0.9	60.2	776
20-24	30.0	7.8	5.9	10.1	1.1	63.9	630
25-29	20.4	6.6	1.7	9.9	0.4	72.0	483
30-34	23.7	9.4	6.0	8.9	2.0	69.9	461
35-39	25.4	7.3	4.3	9.2	0.6	68.6	344
40-44	24.0	7.2	4.2	7.5	1.4	71.9	306
45-49	29.6	13.1	4.8	9.7	0.9	65.4	257
Employment in last 12 months							
Not employed	28.7	6.1	4.6	9.4	0.7	62.6	373
Employed for cash	26.6	8.6	5.3	9.8	1.2	67.4	2,016
Employed not for cash	27.1	11.8	3.2	7.9	0.7	65.8	867
Marital status							
Never married	28.7	9.2	5.1	9.7	0.9	63.6	1,524
Married or living together	24.9	8.2	3.9	8.4	1.0	70.0	1,592
Divorced/separated/ widowed	32.1	19.6	8.1	14.6	2.7	57.1	142
Number of living children							
0	28.4	9.7	5.2	9.4	0.9	63.9	1,626
1-2	18.1	6.0	3.3	6.3	0.9	77.2	691
3-4	31.1	9.5	3.9	10.6	0.7	63.2	559
5+	30.9	12.3	6.2	11.9	2.1	62.4	381
Residence							
Urban	20.0	5.0	3.3	7.4	0.6	73.6	866
Rural	29.5	10.7	5.2	9.9	1.2	63.9	2,392
Province							
Nairobi	13.7	3.1	3.5	12.3	0.6	75.7	314
Central	24.8	11.4	7.4	8.6	1.3	65.2	347
Coast	21.2	5.5	3.1	5.8	0.5	74.0	252
Eastern	25.4	13.7	2.8	8.5	0.6	67.4	530
Nyanza	42.1	12.8	3.9	10.3	0.8	51.7	520
Rift Valley	27.4	7.0	6.8	9.6	1.5	68.3	885
Western	25.1	8.6	2.9	10.0	1.3	68.7	349
North Eastern	21.3	7.4	3.8	0.0	0.0	72.9	62
Education							
No education	48.1	24.5	20.8	27.1	9.6	39.8	112
Primary incomplete	30.4	12.5	7.3	11.4	2.1	61.4	883
Primary complete	29.8	10.0	3.9	10.3	0.3	63.5	804
Secondary+	21.8	5.5	2.2	6.0	0.1	73.2	1,459
Wealth quintile							
Lowest	37.2	11.1	8.6	13.6	2.6	56.4	457
Second	29.9	13.0	5.0	9.6	1.3	64.2	577
Middle	30.7	10.7	4.2	10.4	0.9	61.9	574
Fourth	23.2	8.1	4.7	6.4	0.5	70.6	725
Highest	20.8	5.7	2.8	8.5	0.6	72.3	926
Total 15-49	27.0	9.2	4.7	9.3	1.0	66.4	3,258
Men age 50-54	18.3	5.2	3.8	9.2	0.4	74.6	207
Total men 15-54	26.5	8.9	4.6	9.3	1.0	66.9	3,465

Note: Total includes 3 men missing information as to employment status.

The likelihood that a man agrees that a husband has the right to certain behaviours when his wife refuses to have sex with him does not vary widely across the man's background characteristics. However, data in Table 15.7 show that the proportion of men who do not agree that any of the specified behaviours is justified increases with increasing level of education and wealth quintile.

15.6 WOMEN'S EMPOWERMENT INDICATORS

The two sets of empowerment indicators, namely women's participation in making household decisions and women's attitude toward wife beating can be summarized by two separate indices. The first index shows the number of decisions (see Table 15.5.1 for the list of decisions) in which women participate alone or jointly with their husband or partner. This index ranges in value from 0 to 5 and relates positively to women's empowerment. It reflects the degree of control that women are able to exercise in areas that affect their own lives and environments. The second index, which also ranges in value from 0 to 5, is the total number of reasons (see Table 15.6.1 for the list of reasons) for which the respondent feels that a husband is justified in beating his wife. A lower score on this indicator is interpreted as reflecting a greater sense of entitlement and self-esteem and a higher status of women.

Table 15.8 shows how these two indicators relate to each other. In general, it is expected that women who participate in making household decisions are also more likely to have gender-egalitarian beliefs. The data confirm this pattern. The percentage of women who disagree with all reasons for wife beating is highest among women who participate in all five of the specified household decisions. Similarly, the proportion of married women who participate in making all of the household decisions declines as the number of reasons for which they feel wife beating is justified increases.

Table 15.8 Indicators of women's empowerment

Percentage of currently married women age 15-49 who participate in all decision-making and percentage who disagree with all reasons for justifying wife-beating, by value on each of the indicators of women's empowerment, Kenya 2008-09

Empowerment indicator	Percentage who participate in making all decisions	Percentage who disagree with all the reasons justifying wife-beating	Number of currently married women
Number of decisions in which women participate[1]			
0	na	42.7	124
1-2	na	39.0	771
3-4	na	36.7	1,571
5	na	54.5	2,463
Number of reasons for which wife-beating is justified[2]			
0	59.1	na	2,274
1-2	45.7	na	1,273
3-4	38.7	na	1,023
5	39.5	na	358

na=not applicable
[1] See Table 15.5.1 for the list of decisions
[2] See Table 15.6.1 for the list of reasons

15.7 CURRENT USE OF CONTRACEPTION BY WOMEN'S STATUS

A woman's ability to control her fertility and the contraceptive method she chooses are likely to be affected by her status, self-image, and sense of empowerment. A woman who feels that she is unable to control other aspects of her life may be less likely to feel she can make decisions regarding fertility. She may also feel the need to choose methods that are easier to conceal from her husband or partner or that do not depend on his cooperation.

Table 15.9 shows the relationship of each of the two indicators of women's empowerment—number of decisions in which the woman participates and number of reasons that wife-beating is justified—with current use of contraceptive methods by currently married women age 15-49. The data indicate that there is a positive association between women's status and contraceptive use. For example, the proportion of married women who are using any method of contraception rises steadily, from only 28 percent of women who do not participate in any household decision-making to 50 percent of women who participate in all five decisions. The data further show that use of a

contraceptive method decreases with the increase in the number of reasons a woman thinks wife beating is justified. More than half (52 percent) of women who do not feel that wife beating is justified for any reason are using a contraceptive method compared with 41 percent of women who believe that wife beating is justified for all five reasons.

Table 15.9 Current use of contraception by women's status

Percent distribution of currently married women age 15-49 by current contraceptive method, according to selected indicators of women's status, Kenya 2008-09

Empowerment indicator	Any method	Modern methods				Any traditional method	Not currently using	Total	Number of women
		Any modern method	Female sterilization	Temporary modern female methods[1]	Male condom				
Number of decisions in which women participate[2]									
0	28.2	26.6	1.6	22.6	2.4	1.6	71.8	100.0	124
1-2	32.9	24.9	2.8	21.4	0.8	8.0	67.1	100.0	771
3-4	45.4	39.2	4.9	32.3	2.0	6.1	54.6	100.0	1,571
5	50.3	44.8	5.5	37.3	2.0	5.6	49.7	100.0	2,463
Number of reasons for which wife-beating is justified[3]									
0	51.6	45.8	4.2	39.7	1.8	5.8	48.4	100.0	2,274
1-2	41.8	35.2	4.6	28.2	2.4	6.6	58.2	100.0	1,273
3-4	37.9	31.5	5.3	25.5	0.8	6.3	62.1	100.0	1,023
5	41.3	36.8	7.6	26.8	2.5	4.5	58.7	100.0	358
Total	45.5	39.4	4.8	32.8	1.8	6.0	54.5	100.0	4,928

Note: If more than one method is used, only the most effective method is considered in this tabulation.
[1] Pill, IUD, injectables, implants, female condom, diaphragm, foam/jelly, and lactational amenorrhea method
[2] See Table 15.5.1 for the list of decisions
[3] See Table 15.6.1 for the list of reasons

15.8 IDEAL FAMILY SIZE AND UNMET NEED BY WOMEN'S STATUS

As a woman becomes more empowered, she is more likely to want fewer children and to have the ability to create her ideal family size through the use of contraception. Table 15.10 shows how women's ideal family size and women's unmet need for family planning vary by the two indicators of women's empowerment. The data show that there is some positive association between a woman's status and her mean ideal number of children. For instance, women who participate in all of the five types of decision-making want to have 3.8 children on average, compared with 4.2 children reported by women who do not participate in any decision. The scenario is reversed with respect to the number of reasons for which wife-beating is justified. Women who agree with all five reasons for wife beating have the highest mean ideal number of children (4.4), while women who do not justify wife beating for any reason have the lowest mean ideal family size (3.4).

The data further show that women's status is negatively associated with unmet need for family planning services. In general, the percentage of currently married women with an unmet need for family planning decreases with each increase in the number of decisions in which women participate and increases with the increase in the number of reasons for which wife beating is justified.

Table 15.10 Women's empowerment and ideal number of children and unmet need for family planning

Mean ideal number of children for women 15-49 and the percentage of currently married women age 15-49 with an unmet need for family planning, by indicators of women's empowerment, Kenya 2008-09

Empowerment indicator	Mean ideal number of children[1]	Number of women	Percentage of currently married women with an unmet need for family planning[2]			Number of women
			For spacing	For limiting	Total	
Number of decisions in which women participate[3]						
0	4.2	114	15.6	7.5	23.1	124
1-2	4.7	701	15.1	13.0	28.1	771
3-4	4.1	1,525	14.8	13.3	28.1	1,571
5	3.8	2,392	10.8	12.6	23.4	2,463
Number of reasons for which wife-beating is justified[4]						
0	3.4	3,843	11.0	10.0	21.0	2,274
1-2	3.9	2,213	12.9	14.7	27.7	1,273
3-4	4.3	1,536	15.6	15.9	31.5	1,023
5	4.4	547	16.3	14.5	30.9	358
Total	3.8	8,139	12.9	12.8	25.6	4,928

[1] Mean excludes respondents who gave non-numeric responses.
[2] See table 7.3.1 for the definition of unmet need for family planning
[3] Restricted to currently married women. See Table 15.5.1 for the list of decisions.
[4] See Table 15.6.1 for the list of reasons

15.9 WOMEN'S STATUS AND REPRODUCTIVE HEALTH CARE

Table 15.11 examines whether women's use of antenatal, delivery, and postnatal care services from health workers varies by their status as measured by the two indicators of empowerment. In societies where health care is widespread, women's status may not affect their access to health services. In other societies, however, increased empowerment of women is likely to increase their ability to seek out and use health services to better meet their own reproductive health goals, including the goal of safe motherhood.

Table 15.11 shows indicators of reproductive health care by women's empowerment. The data show that the proportion of women who received antenatal care of a live birth in the five years before the survey increases very slightly with the number of decisions in which the woman participates, from 91 percent of women who do not participate in any decisions to 93 percent of those who have a say in all five decisions. Similar patterns are shown for delivery assistance and postnatal care from health personnel. Table 15.11 also shows that the number of reasons that justify wife beating is negatively associated with women's access to antenatal and delivery care by a health professional.

Table 15.11 Reproductive health care by women's empowerment

Percentage of women age 15-49 with a live birth in the five years preceding the survey who received antenatal care, delivery assistance, and postnatal care from health personnel for the most recent birth, by indicators of women's empowerment, Kenya 2008-09

Empowerment indicator	Received antenatal care from health personnel	Received delivery assistance from health personnel	Received postnatal care from health personnel within the first two days after delivery[1]	Number of women with a child born in the last five years
Number of decisions in which women participate[2]				
0	90.5	38.6	31.1	95
1-2	91.1	44.3	23.6	555
3-4	92.6	43.8	30.2	1,044
5	93.3	54.1	38.0	1,550
Number of reasons for which wife-beating is justified[3]				
0	92.8	59.9	40.1	1,726
1-2	91.1	43.3	27.8	1,102
3-4	91.1	36.9	26.6	845
5	89.0	34.8	21.6	300
Total	91.7	48.5	32.4	3,973

Note: 'Health personnel' includes doctor, nurse, or midwife
[1] Includes deliveries in a health facility and not in a health facility
[2] Restricted to currently married women. See Table 15.5.1 for the list of decisions.
[3] See Table 15.6.1 for the list of reasons

GENDER-BASED VIOLENCE 16

Vane Lumumba and Mary Wanyonyi

16.1 INTRODUCTION

In recent years, there has been increasing concern about violence against women in general, and about domestic violence in particular, in both developed and developing countries. Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but an increasing amount of research highlights the health burdens, generational effects, and demographic consequences of such violence (United Nations General Assembly, 1991; Heise et al., 1994; Heise et al., 1999; Jejeebhoy, 1998). Gender-based violence occurs across all socioeconomic and cultural backgrounds. In many societies, including Kenya, women are socialised to accept, tolerate, and even rationalise domestic violence and to remain silent about such experiences (Zimmerman, 1994). Violence of any kind has a serious impact on the economy of a country; because women bear the brunt of domestic violence, they also bear the health and psychological burdens. Victims of domestic violence are abused inside what should be a secure environment–their own homes. To stop some of this violence, which may cause great physical harm, death, psychological abuse, separation, divorce, and a host of other social ills, the Kenya government has enacted the Sexual Offences Act No. 3 of 2006 (Rev. 2007).

16.2 DATA COLLECTION

Gender-based violence is usually defined as any physical, sexual, or psychological violence that occurs within the family or general community. Examples include sexual harassment at the workplace and trafficking in women for prostitution. This survey only covers domestic violence that occurs within the household. This is only the second time in the history of the Demographic and Health Surveys (DHS) in Kenya that questions on domestic violence have been included.

As mentioned earlier, there is a culture of silence surrounding gender-based violence that makes collection of data on this sensitive topic particularly challenging. Even women who want to speak about their experiences of domestic violence may find doing so difficult because of feelings of shame or fear. The need to establish rapport with the respondent and to ensure confidentiality and privacy during the interview are important throughout the survey process, but they are especially critical to ensure the validity of the data collected on domestic violence. Complete privacy is also essential for ensuring the security of the respondent and the interviewer. Asking about or reporting violence, especially in households where the perpetrator may be present at the time of interview, carries the risk of further violence.

Given these concerns related to the collection of data on violence, organisers of the 2008-09 Kenya Demographic and Health Survey (KDHS) took the following steps to ensure the validity of the data and the security of respondents and interviewers:

- The module was designed to allow the interviewer to continue the interview only if privacy was ensured. If privacy could not be guaranteed, the interviewer was instructed to skip the module, thank the respondent, and end the interview. Notably, in Kenya, less than one percent of the women selected for interviews could not be interviewed because of security concerns.

- Only one eligible woman in each selected household was administered the questions on domestic violence. In households with more than one eligible woman, the woman administered the module was randomly selected using a specially designed simple

selection procedure. By interviewing only one woman in each household with the module, any security breach created by other persons in the household knowing that information on domestic violence was being disclosed was minimised.

- Informed consent of the respondent was obtained for the survey at the start of the individual interview. In addition, at the start of the domestic violence section, each respondent was read a statement informing her that she was now going to be asked questions that could be personal in nature because they explored different aspects of the relationship between couples. The statement assured her that her answers were completely confidential and would not be shared with anyone else and that no one else in the household would be asked these questions.

Research on violence suggests that the most common form of domestic violence for adults is spousal violence. Thus, spousal violence was measured using a modified and greatly shortened conflict tactics scale (CTS) used by Strauss (1990). This scale has been found to be effective in measuring domestic violence and can be easily adapted for use in differing cultural situations. In the 2008-09 KDHS, spousal violence was measured using answers to the following questions:

Does/Did your (last) husband/partner ever:

(a) Push you, shake you, or throw something at you?
(b) Slap you?
(c) Twist your arm or pull your hair?
(d) Punch you with his fist or with something that could hurt you?
(e) Kick you or drag you or beat you up?
(f) Try to choke you or burn you on purpose?
(g) Threaten or attack you with a knife, gun, or any other weapon?
(h) Physically force you to have sexual intercourse even when you did not want to?
(i) Force you to perform any sexual acts you did not want to?

The questions were asked with reference to the current husband for women currently married and the last husband for women not currently married. Women could answer with a 'yes' or a 'no' to each item, and in cases when the answer was a 'yes', women were asked about the frequency of the act in the 12 months preceding the survey. A 'yes' to one or more items from (a) to (g) constitutes evidence of physical violence, and a 'yes' to items (h) or (i) constitutes evidence of sexual violence.

A similar approach was used to measure the prevalence of emotional violence. Respondents were asked the question:

Does/Did your last husband ever:

(a) Say or do something to humiliate you in front of others?
(b) Threaten to hurt or harm you or someone close to you?
(c) Insult you or make you feel bad about yourself?

Women could answer 'yes' or 'no' to each item, and for items they answered yes to, they were asked about frequency of occurrence in the 12 months preceding the survey.

This approach of asking separately about specific acts has the advantage of not being affected by different understandings of what constitutes violence. A woman has to say whether she has, for example, ever been 'slapped', not whether she has ever experienced any 'violence'. All women would probably agree on what constitutes a slap, but what constitutes a violent act or is understood as violence may vary across women as it does across cultures. In fact, summary terms such as 'abuse' or 'violence' were avoided in training and not used anywhere in the title, design, or implementation of the module. This approach has the advantage of giving the respondent multiple opportunities to disclose any experience of violence, and, if the different violent acts included in the list are chosen carefully, also allows the assessment of the severity of violence.

In addition to spousal violence, women were asked if they had experienced violence at the hands of anyone other than their current or last husband using the question: 'From the time you were 15 years old has anyone (other than your (current/last) husband) hit, slapped, kicked, or done anything else to hurt you physically?' Women who responded 'yes' to this question were asked who had done this and the frequency of such violence during the 12 months preceding the survey.

Although this approach to questioning is widely considered to be optimal, the possibility of some underreporting of violence cannot be entirely ruled out in any survey. Caution should always be exercised in interpreting not only the overall prevalence of violence data, but also differentials in prevalence between subgroups of the population. Although a large part of any substantial difference in prevalence of violence between subgroups undoubtedly reflects actual differences in prevalence, differential underreporting by women in the different subgroups can also contribute to exaggerating or narrowing differences in prevalence to an unknown extent.

In the 2008-09 KDHS, men were not asked about their experience of violence because of security concerns. However, women were asked if they had ever hit, slapped, kicked, or done anything else to physically hurt their husbands or partners at any time when he was not already beating or physically hurting them. They were further asked if their husbands/partners drink alcohol or take illegal drugs, as these acts are often associated with violence.

16.3 Experience of Physical Violence

Table 16.1 shows the distribution of women who have experienced violence since age 15—ever and in the previous 12 months—by background characteristics. The data show that 39 percent of women have experienced physical violence, with almost one in four women (24 percent) experiencing such violence in the 12 months before the survey.

The social and economic background of a woman has a bearing on her chances of experiencing physical violence. The prevalence of physical violence generally increases with the age of a woman as well as with the number of living children she has. Analysis by marital status reveals that women who are divorced, separated, or widowed are more likely to be exposed to violence (60 percent) than their married (42 percent) and never-married (25 percent) counterparts. The results depict a slight negative relationship between the prevalence of physical violence and the education and wealth status of women. There are notable variations in the prevalence of physical violence across the provinces. More than half (57 percent) of women in Nyanza province have experienced physical violence, followed by those in Western province (45 percent). Women in Nairobi are the least likely to report having experienced physical violence (29 percent).

There has been a sizeable reduction in the proportion of women who say they have experienced physical violence since age 15—from 49 percent reported in the 2003 KDHS to 39 percent in the 2008-09 KDHS. The magnitude of the difference makes it difficult to interpret the change as a real decline in the level of physical violence over such a short period of time. However, since the questions and interviewer training instructions were almost identical in the two surveys, it is also difficult to attribute the decline to changes in survey methods. Moreover, patterns in the prevalence of physical violence by background characteristics are generally similar between the two surveys.

Table 16.1 Experience of physical violence

Percentage of women age 15-49 who have ever experienced physical violence since age 15 and percentage who have experienced physical violence during the 12 months preceding the survey, by background characteristics Kenya 2008-09

Background characteristic	Percentage who have ever experienced physical violence since age 15[1]	Percentage who have experienced physical violence in the past 12 months			Number of women
		Often	Sometimes	Any (often or sometimes)	
Current age					
15-19	26.9	1.2	15.5	16.7	1,365
20-24	37.5	4.9	17.1	21.9	1,246
25-29	42.2	5.7	21.0	26.7	1,097
30-39	43.7	8.8	19.2	28.0	1,554
40-49	43.5	6.7	20.5	27.2	1,056
Employed last 12 months					
Employed for cash	43.7	7.6	19.9	27.5	2,785
Employed not for cash	45.2	6.1	22.1	28.1	916
Not employed	30.8	3.0	15.8	18.9	2,615
Marital status					
Never married	24.7	0.8	10.5	11.3	1,982
Married or living together	42.1	5.9	22.2	28.1	3,688
Divorced/separated/ widowed	60.3	17.6	22.1	39.7	649
Number of living children					
0	28.2	1.3	12.8	14.1	1,840
1-2	37.8	5.6	18.0	23.6	1,921
3-4	44.7	8.9	21.5	30.4	1,412
5+	48.7	8.0	24.8	32.9	1,145
Residence					
Urban	34.8	6.7	14.2	21.0	1,584
Rural	39.8	5.1	19.9	25.0	4,734
Province					
Nairobi	28.5	5.3	10.0	15.4	546
Central	34.1	4.9	14.6	19.5	666
Coast	31.8	3.7	14.4	18.1	503
Eastern	33.3	4.0	15.1	19.1	1,010
Nyanza	56.6	6.8	28.9	35.8	1,046
Rift Valley	35.6	5.2	19.2	24.4	1,716
Western	44.5	8.3	19.9	28.2	691
North Eastern	31.9	6.6	16.2	22.9	140
Education					
No education	45.9	7.8	28.2	36.0	559
Primary incomplete	45.5	8.9	22.9	31.8	1,957
Primary complete	35.5	3.6	17.5	21.1	1,691
Secondary+	32.5	3.3	12.7	16.0	2,111
Wealth quintile					
Lowest	40.5	6.6	22.7	29.3	1,046
Second	44.1	5.6	20.2	25.8	1,131
Middle	41.4	5.3	21.3	26.5	1,204
Fourth	36.1	3.7	18.6	22.2	1,281
Highest	33.4	6.3	12.7	19.0	1,655
Total	38.5	5.5	18.5	24.0	6,318

Note: Total includes 3 women missing information as to employment status.
[1] Includes in the past 12 months

Table 16.2 shows that for women who have ever been married, the main perpetrators of physical violence are either current or former husbands or partners and to a lesser extent, mothers or stepmothers. Among the never-married women who have experienced physical violence, the main perpetrators are teachers, mothers and step-mothers, and fathers and step-fathers.

Table 16.2 Persons committing physical violence

Among women age 15-49 who have experienced physical violence since age 15, percentage who report specific persons who committed the violence, according to the respondent's marital status, Kenya 2008-09

Person	Marital status: Ever married	Marital status: Never married	Total
Current husband/partner	64.8	na	51.8
Former husband/partner	19.1	na	15.2
Current boyfriend	0.1	1.1	0.3
Former boyfriend	1.4	1.3	1.4
Father/step-father	10.3	24.8	13.2
Mother/step-mother	15.4	35.9	19.5
Sister/brother	6.8	12.1	7.8
Daughter/son	0.1	0.0	0.1
Other relative	2.7	15.0	5.2
Mother-in-law	0.2	na	0.2
Father-in-law	0.2	na	0.2
Other in-law	0.8	na	0.6
Teacher	10.2	40.6	16.4
Employer/someone at work	0.1	0.0	0.1
Police/soldier	0.4	0.3	0.4
Other	2.6	19.6	6.0
Number of women	1,945	490	2,435

na = Not applicable

16.4 EXPERIENCE OF SEXUAL VIOLENCE

The 2008-09 KDHS investigated women's experience of sexual violence, including whether the respondent's first sexual intercourse was forced against her will. Force at first sexual intercourse is not uncommon among Kenyan women; 12 percent of women age 15-49 report that their first sexual intercourse was forced against their will (Table 16.3). Women whose age at first sex was before age 15 are more likely to report that their first intercourse was forced than those who initiated sex at an older age.

Table 16.3 Force at sexual initiation

Among women age 15-49 who have ever had sexual intercourse, percentage who say that their first experience of sexual intercourse was forced against their will, by age at first sexual intercourse and whether the first sexual intercourse was at the time of first marriage or before, Kenya 2008-09

Age/timing of first intercourse	Percentage whose first sexual intercourse was forced against their will	Number of women who have ever had sex
Age at first sexual intercourse		
<15	22.2	750
15-19	12.5	3,086
20-24	6.4	774
25-49	1.3	134
Inconsistent/missing	7.9	462
First sexual intercourse was:		
At the time of first marriage/ first cohabitation	11.7	1,692
Before first marriage/first cohabitation[1]	13.2	3,053
Inconsistent/missing	7.9	462
Total	12.3	5,207

[1] Includes never-married women

In addition to the question on whether first sexual intercourse was forced, the 2008-09 KDHS included two sets of questions on sexual violence. The first set of questions asked women about sexual violence committed by their current husband or partner, if they were currently married, and by their most recent husband or partner, if they were currently divorced, separated, or widowed. The second set asked all respondents whether they had ever, as a child or as an adult, experienced sexual violence. Sexual violence here includes being forced to have sexual intercourse or perform any other sexual acts against one's will. Tables 16.4-16.5 present the results on experiencing any sexual violence. The subset of results on sexual violence by a spouse or intimate partner is explored later in the chapter.

Table 16.4 shows that one in five Kenyan women (21 percent) has experienced sexual violence.

The likelihood of experiencing physical violence increases with the age of women, from only 11 percent of those age 15-19 to 29 percent of those age 40-49. Particularly striking is the fact that more than one-third of women who are divorced, separated, or widowed have experienced physical violence, compared with only 24 percent of women who are currently married and 10 percent of never-married women. Analysis across provinces indicates that the two provinces with the highest proportions of women experiencing physical violence—Nyanza and Western provinces—also have the highest proportions of women experiencing sexual violence. The relationship between prevalence of sexual violence and both education level and wealth status of women is not very strong; however, it is clear from the results that women with secondary or higher education and those in the top two wealth quintiles are less likely to experience sexual violence than their counterparts.

Table 16.5 shows information on the types of persons who are reported to have committed sexual violence against women. In the vast majority of cases, sexual violence is perpetrated by persons known to the victims; strangers account for only 6 percent of sexual violence. As seen from the results in the table, 37 percent of women who have experienced sexual violence report current husbands or partners as the perpetrators, followed by current or former boyfriends (16 percent) and former husbands or partners (13 percent). It is worth noting that among ever-married women, sexual violence is perpetrated mainly by current and former husbands and partners. Among those who have never married, the violence is committed mainly by boyfriends, although almost one in five never-married women (19 percent) has been violated by a friend or acquaintance and almost as many by a stranger (17 percent).

Table 16.4 Experience of sexual violence

Percentage of women age 15-49 who have ever experienced sexual violence, by background characteristics, Kenya 2008-09

Background characteristic	Percentage who have ever experienced sexual violence[1]	Number of women
Current age		
15-19	11.3	1,365
20-24	19.5	1,246
25-29	20.7	1,097
30-39	24.1	1,554
40-49	28.6	1,056
Employed last 12 months		
Employed for cash	25.4	2,785
Employed not for cash	25.0	916
Not employed	14.0	2,615
Marital status		
Never married	9.9	1,982
Married or living together	23.6	3,688
Divorced/separated/ widowed	36.1	649
Residence		
Urban	18.7	1,584
Rural	21.2	4,734
Province		
Nairobi	14.5	546
Central	19.5	666
Coast	16.4	503
Eastern	17.4	1,010
Nyanza	31.6	1,046
Rift Valley	19.0	1,716
Western	24.7	691
North Eastern	5.8	140
Education		
No education	24.2	559
Primary incomplete	24.3	1,957
Primary complete	22.3	1,691
Secondary+	14.8	2,111
Wealth quintile		
Lowest	22.8	1,046
Second	22.9	1,131
Middle	21.5	1,204
Fourth	19.2	1,281
Highest	18.1	1,655
Total	20.6	6,318

Note: Total includes 3 women missing information as to employment status.
[1] Includes those whose sexual initiation was forced against their will

Table 16.6 shows, by age, the percentages of women who have experienced different combinations of physical and sexual violence. Overall, almost half (45 percent) of women age 15-49 have experienced either physical or sexual violence. Specifically, 25 percent of women have experienced only physical violence, 7 percent have experienced only sexual violence, and 14 percent have experienced both physical and sexual violence. The likelihood of experiencing either physical or sexual violence increases with the age of the women.

Table 16.5 Persons committing sexual violence

Among women age 15-49 who have experienced sexual violence, percentage who report specific persons committing sexual violence according to current marital status, Kenya 2008-09

Person	Marital status: Ever married	Marital status: Never married	Total
Current husband/partner	43.7	na	37.2
Former husband/partner	15.6	na	13.3
Current/former boyfriend	12.5	37.0	16.2
Father	0.1	0.0	0.1
Other relative	3.0	4.6	3.2
In-law	0.8	0.0	0.7
Own friend/acquaintance	6.4	18.7	8.2
Family friend	1.3	2.7	1.5
Teacher	1.3	0.0	1.1
Employer/someone at work	0.3	0.3	0.3
Police/soldier	0.1	0.0	0.1
Stranger	4.3	17.1	6.2
Other	4.1	11.2	5.1
Missing	6.5	8.5	6.8
Number of women	1,106	196	1,302

na = Not applicable

Table 16.6 Experience of different forms of violence

Percentage of women age 15-49 who have experienced different forms of violence by current age, Kenya 2008-09

Age	Physical violence only	Sexual violence only[1]	Physical and sexual violence[1]	Physical or sexual violence[1]	Number of women
15-19	21.8	6.3	5.1	33.2	1,365
15-17	19.9	6.0	5.3	31.2	808
18-19	24.6	6.7	4.7	36.0	557
20-24	23.7	5.7	13.8	43.2	1,246
25-29	28.6	7.2	13.5	49.4	1,097
30-39	25.6	6.0	18.1	49.7	1,554
40-49	23.0	8.1	20.5	51.6	1,056
Total	24.5	6.6	14.0	45.1	6,318

[1] Includes forced sexual initiation

16.5 MARITAL CONTROL

Gender-based violence is not restricted to physical violence. Verbal abuse, restrictions in freedom of movement, and withholding of funds can also constitute violent behaviour. Accordingly, women interviewed in the 2008-09 KDHS were also asked about various ways in which their husbands/marital partners try to control their actions. Specifically, ever-married women were asked if their husband:

- Is jealous or angry if she communicates with other men
- Frequently accuses her of being unfaithful
- Does not permit her to see her female friends
- Tries to limit her contact with her family
- Insists on knowing where she is at all times
- Does not trust her with any money

Table 16.7 Degree of marital control exercised by husbands

Percentage of ever-married women age 15-49 whose husband/partner ever demonstrates specific types of controlling behaviors, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage of women whose husband: Is jealous or angry if she talks to other men	Frequently accuses her of being unfaithful	Does not permit her to meet her female friends	Tries to limit her contact with her family	Insists on knowing where she is at all times	Does not trust her with any money	Displays 3 or more of the specific behaviors	Displays none of the specific behaviors	Number of women
Current age									
15-19	51.3	15.2	15.8	7.1	35.9	15.5	19.1	30.9	170
20-24	50.6	18.2	21.3	15.7	37.9	20.4	26.8	36.1	811
25-29	52.6	19.0	22.5	15.5	37.6	20.4	28.9	33.7	917
30-39	49.6	21.1	20.1	14.4	37.3	23.1	27.6	35.9	1,450
40-49	44.3	18.9	17.1	13.6	33.6	21.3	23.8	39.8	988
Employed last 12 months									
Employed for cash	50.2	20.3	20.5	15.2	38.0	24.8	28.1	35.1	2,194
Employed not for cash	48.9	16.2	21.9	14.3	33.8	20.1	25.0	34.3	767
Not employed	48.0	19.6	18.1	13.1	35.9	16.5	24.9	39.0	1,373
Number of living children									
0	47.3	15.6	12.2	7.6	37.6	13.5	18.5	36.7	252
1-2	50.6	17.7	19.4	13.2	36.4	20.3	26.1	36.7	1,594
3-4	48.8	20.7	21.8	16.5	37.2	23.3	28.0	35.1	1,373
5+	48.4	21.0	20.3	15.0	35.8	22.1	27.1	36.5	1,117
Marital status and duration									
Currently married woman	47.0	16.5	17.6	12.2	33.8	19.4	23.3	38.0	3,688
Married only once	46.5	15.9	17.3	12.0	33.3	19.2	22.8	38.5	3,489
0-4 years	47.3	13.7	16.4	10.8	32.3	16.1	20.2	40.7	830
5-9 years	48.0	15.4	18.8	13.1	33.1	19.1	23.7	36.3	853
10+ years	45.4	17.2	17.0	12.1	33.8	20.7	23.5	38.6	1,807
Married more than once	55.8	27.3	21.9	15.6	43.0	22.0	31.7	28.7	199
Divorced/separated/ widowed	62.4	35.5	33.7	26.6	52.2	32.5	45.1	25.6	649
Residence									
Urban	50.3	18.0	19.7	13.1	36.2	22.1	27.6	37.7	1,022
Rural	49.0	19.8	20.1	14.8	36.7	21.1	26.2	35.7	3,314
Province									
Nairobi	48.4	21.5	13.0	11.7	37.3	21.7	28.4	41.1	320
Central	42.6	11.4	12.7	9.8	35.6	33.4	23.0	37.0	495
Coast	49.2	22.0	16.0	11.5	41.9	18.3	26.3	34.5	365
Eastern	57.0	19.7	21.0	13.8	33.5	20.1	25.9	32.0	702
Nyanza	46.8	23.4	24.9	16.2	34.3	24.6	29.9	35.1	774
Rift Valley	48.8	17.6	22.2	17.2	36.4	17.8	25.8	37.7	1,112
Western	55.5	24.3	23.3	17.0	45.6	18.7	29.7	30.0	458
North Eastern	30.3	6.9	8.5	4.0	21.7	7.4	12.7	67.1	110
Education									
No education	47.3	23.4	17.6	15.5	40.1	19.9	28.5	36.3	513
Primary incomplete	52.7	25.3	24.7	18.8	40.6	24.6	30.2	32.8	1,364
Primary complete	47.8	17.1	16.7	12.9	34.6	19.4	25.3	36.7	1,228
Secondary+	47.8	13.4	19.1	10.4	32.7	20.2	22.9	39.3	1,230
Wealth quintile									
Lowest	49.4	24.0	21.2	19.7	37.8	21.9	30.3	35.5	784
Second	49.1	21.9	19.8	15.5	38.2	20.8	25.3	33.8	793
Middle	50.4	21.2	23.0	14.3	40.1	21.0	29.2	34.2	845
Fourth	47.8	15.1	17.7	11.1	34.4	21.3	23.5	37.4	849
Highest	49.7	16.0	18.7	12.3	33.4	21.6	24.9	39.0	1,064
Total	49.3	19.4	20.0	14.4	36.6	21.3	26.5	36.2	4,336

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced, separated or widowed women. Total includes 3 women missing information as to employment status.

Table 16.7 shows the percentage of ever-married women whose husbands have demonstrated various types of controlling behaviours. The data show that the most commonly reported controlling behaviour exhibited by husbands is to be jealous or angry when the woman talks to other men (reported by 49 percent of ever-married women). More than one-third of women report that their husbands insist on knowing where they are at all times (37 percent), and about one in five women

says her husband does not trust her with money (21 percent), does not permit her to meet female friends (20 percent), or frequently accuses her of being unfaithful (19 percent). A less common behaviour is trying to limit her contact with her family (14 percent). Twenty-seven percent of ever-married women say their husbands display at least three of the six types of controlling behaviours, while 36 percent say their husbands do not display any of the behaviours.

Women who are divorced, separated, or widowed are more likely to report that their current or last husband displayed controlling behaviours than are women who are currently married. Similarly, those who have been married more than once are more likely than those in their first marriage to say that their husbands try to control their actions. There is no clear correlation between the proportion of women who report that their husbands show controlling behaviours and either the woman's educational level or wealth status. There are remarkably small differences in marital control behaviours by age, employment status, and urban-rural residence. Similarly, the proportions of women who say their husbands display at least three of the controlling behaviours differ very little by province, except that they are lowest in North Eastern province for all types of behaviours.

16.6 MARITAL VIOLENCE

Marital violence refers to violence perpetrated by partners in a marital union. In the 2008-09 KDHS, currently married women were asked about violence perpetrated by their current husband, and formerly married women were asked about violence perpetrated by their most recent husband. Respondents were asked about seven specific acts of physical violence, two of sexual violence, and three of emotional abuse. Table 16.8 shows the proportion of ever-married women who have experienced each of these specific forms of violence at the hands of their current or former husbands. The different types of violence are not mutually exclusive; therefore, women may report experiencing multiple forms of violence.

The data show that 37 percent of ever-married women have experienced physical violence by a husband, 17 percent have experienced sexual violence, and 30 percent have experienced emotional violence. Overall, almost one-half of ever-married women (47 percent) have experienced some kind of violence (physical, sexual, or emotional) by a husband or live-in partner. Much of the violence is current; within the last 12 months, 31 percent of women experienced physical violence, 14 percent experienced sexual violence, and 28 percent experienced emotional violence.

Among the spousal acts of physical violence, slapping was the most commonly reported act, experienced by 32 percent of ever-married women, followed by being pushed, shaken, or having had something thrown at them—reported by 20 percent of women (Figure 16.1). Fifteen percent of women say their husbands kicked, dragged, or otherwise beat them. Fourteen percent of women report that they were forced to have sex with their husbands when they did not want to, and 23 percent of women were insulted or made to feel bad about themselves.

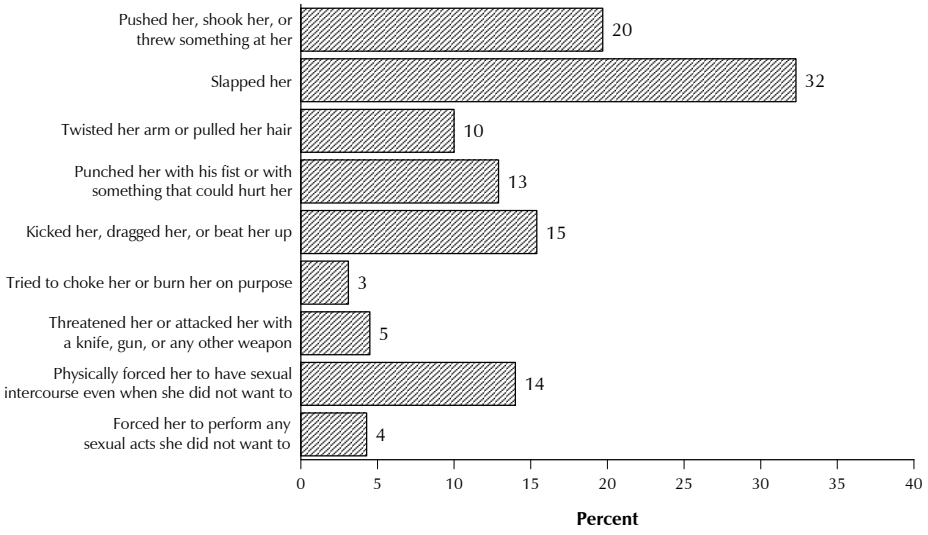
Table 16.8 Forms of spousal violence

Percentage of ever-married women age 15-49 who have experienced various forms of violence ever or in the 12 months preceding the survey, committed by their husband/partner, Kenya 2008-09

		In the past 12 months[1]		
Form of violence	Ever	Often	Sometimes	Often or sometimes
Any physical violence	**37.0**	**7.9**	**23.4**	**31.3**
Pushed her, shook her, or threw something at her	19.7	4.5	12.3	16.8
Slapped her	32.3	5.9	20.9	26.8
Twisted her arm or pulled her hair	10.0	2.9	6.1	9.0
Punched her with his fist or with something that could hurt her	12.9	3.4	7.7	11.1
Kicked her, dragged her, or beat her up	15.4	3.7	9.1	12.8
Tried to choke her or burn her on purpose	3.1	0.7	2.0	2.7
Threatened her or attacked her with a knife, gun, or any other weapon	4.5	1.0	3.2	4.2
Any sexual violence	**17.2**	**3.7**	**9.9**	**13.6**
Physically forced her to have sexual intercourse with him even when she did not want to	14.0	3.5	9.7	13.2
Forced her to perform any sexual acts she did not want to	4.3	1.0	3.0	4.0
Sexual initiation was with current or most recent husband and was forced[2]	3.9	na	na	na
Any emotional violence	**29.5**	**9.6**	**18.2**	**27.8**
Said or did something to humiliate her in front of others	17.2	5.5	11.1	16.6
Threatened to hurt or harm her or someone close to her	15.2	3.6	10.0	13.5
Insulted her or made her feel bad about herself	22.8	7.8	13.7	21.5
Any form of physical and/or sexual violence	41.2	9.2	24.7	34.0
Any form of physical and sexual violence	13.0	2.4	7.6	10.1
Any form of emotional, physical, and/or sexual violence	46.8	13.1	27.6	40.7
Any form of emotional, physical, and sexual violence	10.1	1.8	4.8	6.6
Number of ever-married women	4,336	4,047	4,047	4,047

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced, separated, or widowed women.
[1] Excludes widows
[2] Excludes women who have been married more than once since their sexual initiation could not have been with the current/most recent partner.
na = Not applicable

Figure 16.1 Domestic Violence



Note: Refers to the percentage of ever-married women who have ever experienced violence by their husband or co-habiting partner.

There have been only minor changes in the level of marital violence since 2003. Except for physical violence, which declined slightly (from 40 percent in 2003 to 37 percent in 2008-09), the results indicate a slight increase in the magnitude of sexual and emotional violence (from 16 to 17 percent and from 26 to 30 percent, respectively).[1]

Table 16.9 shows the percentage of ever-married women who have suffered emotional, physical, or sexual violence at the hands of their current or last husbands or partners, according to selected background characteristics. In general, the percentage of women who have experienced the different forms of violence tends to increase with women's age and number of children. Women who are not employed are less likely to experience spousal violence than women who are employed. Experience of spousal violence shows a strong relationship with marital status. Women who are divorced, separated, or widowed are much more likely to have experienced each type of violence than are currently married women, which suggests that experience of violence may increase the likelihood of marital dissolution. Currently married women who have been married more than once are more likely than currently married women in their first marriages to have experienced emotional violence by their current husbands.

Women in Nyanza province are most likely to have experienced emotional, physical, or sexual violence by their husbands (60 percent), followed by women in Western province (56 percent). Least likely to have experienced any type of violence are women in Nairobi (30 percent) and North Eastern province (37 percent). Women who have attended secondary school are least likely to have suffered each type of violence at the hands of their husband. Spousal violence decreases gradually as wealth quintile increases; 53 percent of women in the lowest wealth quintile have experienced emotional, physical, or sexual violence compared with 40 percent of women in the highest wealth quintile. Table 16.9 also shows that women whose fathers beat their mothers are more likely themselves to experience physical or sexual violence than women whose fathers did not beat their mothers.

[1] Data are not entirely comparable, since the figures for 2003 exclude widows who were included in the 2008-09 data. Because the number of widows was small, this difference is not likely to affect the overall trends.

Table 16.9 Spousal violence by background characteristics

Percentage of ever-married women age 15-49 by whether they have ever experienced emotional, physical, or sexual violence committed by their husband/partner, according to background characteristics, Kenya 2008-09

Background characteristic	Emotional violence	Physical violence	Sexual violence	Physical or sexual violence	Physical and sexual violence	Emotional, physical, or sexual violence	Emotional, physical, and sexual violence	Number of women
Current age								
15-19	20.3	25.4	9.8	29.6	5.6	34.2	4.8	170
20-24	25.5	34.0	16.8	38.6	12.2	42.8	9.6	811
25-29	30.2	36.7	15.8	40.7	11.8	46.0	9.7	917
30-39	31.3	37.4	17.6	41.3	13.8	47.9	11.3	1,450
40-49	31.0	40.9	19.6	45.5	15.0	51.4	9.9	988
Employed last 12 months								
Employed for cash	33.5	40.5	20.6	45.5	15.6	51.8	12.2	2,194
Employed not for cash	33.8	40.5	19.8	44.4	15.9	51.3	12.2	767
Not employed	20.7	29.3	10.4	32.4	7.3	36.5	5.7	1,373
Number of living children								
0	16.7	18.1	13.0	24.9	6.2	28.9	5.0	252
1-2	27.1	32.5	12.6	34.9	10.1	40.7	8.2	1,594
3-4	31.6	38.4	17.8	42.4	13.8	47.6	11.4	1,373
5+	33.2	45.8	24.0	52.2	17.6	58.7	12.4	1,117
Marital status and duration								
Currently married	27.3	34.2	15.8	38.4	11.6	44.5	8.7	3,688
Married only once	26.9	34.1	15.8	38.3	11.6	44.3	8.6	3,489
0-4 years	16.8	22.7	10.8	26.3	7.1	30.6	5.4	830
5-9 years	28.4	33.2	13.7	36.9	10.0	43.3	8.6	853
10+ years	30.8	39.8	19.0	44.5	14.4	50.9	10.1	1,807
Married more than once	34.6	35.4	17.1	40.9	11.7	49.5	10.3	199
Divorced/separated/widowed	41.9	52.8	25.0	56.6	21.2	59.9	18.0	649
Residence								
Urban	29.7	30.6	15.2	35.1	10.7	41.6	9.2	1,022
Rural	29.4	38.9	17.8	43.0	13.7	48.5	10.4	3,314
Province								
Nairobi	22.2	23.4	8.3	24.2	7.5	30.4	6.4	320
Central	29.4	33.7	13.3	37.6	9.4	42.9	7.4	495
Coast	33.1	24.2	17.5	32.9	8.8	42.1	7.9	365
Eastern	29.7	28.9	14.5	33.4	10.0	43.2	8.0	702
Nyanza	38.7	51.3	22.3	54.6	19.0	59.5	14.8	774
Rift Valley	26.0	37.5	19.3	41.9	14.9	45.6	10.4	1,112
Western	27.6	48.1	20.7	52.4	16.4	55.9	13.8	458
North Eastern	16.1	32.7	4.5	33.8	3.4	36.6	2.2	110
Education								
No education	29.2	44.0	19.7	49.4	14.2	53.1	10.0	513
Primary incomplete	37.3	46.0	20.6	48.9	17.6	54.5	14.4	1,364
Primary complete	26.6	34.6	17.9	40.5	12.0	45.8	8.6	1,228
Secondary+	23.9	26.4	11.8	29.8	8.4	36.8	6.9	1,230
Wealth quintile								
Lowest	32.2	43.5	19.3	48.0	14.9	53.4	10.8	784
Second	29.3	41.2	19.2	46.0	14.4	50.0	10.7	793
Middle	29.5	38.6	18.1	41.8	14.9	47.0	11.7	845
Fourth	28.9	35.8	15.8	40.0	11.6	46.3	9.1	849
Highest	28.2	28.6	14.6	33.0	10.2	39.9	8.7	1,064
Respondent's father beat her mother								
Yes	37.4	49.4	22.6	54.6	17.4	59.6	14.1	1,613
No	24.2	28.7	13.7	32.4	10.1	38.6	7.5	2,398
Don't know	29.4	35.8	16.4	39.6	12.6	43.9	9.2	321
Total	29.5	37.0	17.2	41.2	13.0	46.8	10.1	4,336

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced, separated, or widowed women. Total includes 3 women missing information as to employment status and 5 missing information about mother's abuse by father.

Table 16.10 shows similar information about spousal violence according to characteristics of the husband and indicators of women's empowerment. The information shows that women whose spouses have completed primary school are less likely to have experienced some kind of violence than are those whose husbands have either no education or only some primary school. The results further reveal a strong positive relationship between alcohol consumption and the tendency to be violent. Women whose husbands are often drunk are twice as likely to experience emotional, physical, or sexual violence as those whose spouses do not drink alcohol (79 and 39 percent).

Table 16.10 Spousal violence by husband's characteristics and empowerment indicators

Percentage of ever-married women age 15-49 who have ever suffered emotional, physical, or sexual violence committed by their husband/partner, according to his characteristics, marital characteristics, and empowerment indicators, Kenya 2008-09

Husband's characteristic/ empowerment indicator	Emotional violence	Physical violence	Sexual violence	Physical or sexual violence	Physical and sexual violence	Emotional, physical or sexual violence	Emotional, physical and sexual violence	Number of women
Husband's/partner's education								
No education	32.6	42.2	23.0	46.7	18.5	51.2	13.0	414
Primary incomplete	37.2	45.5	22.0	49.6	18.0	56.3	14.5	849
Primary complete	27.0	33.9	15.0	38.1	10.8	43.6	8.5	3,069
Husband's/partner's alcohol consumption								
Does not drink alcohol	22.1	29.2	11.9	33.8	7.3	39.2	5.3	2,648
Drinks alcohol but is never drunk	*	*	*	*	*	*	*	9
Is sometimes drunk	29.0	36.0	17.5	40.3	13.3	47.3	9.3	1,061
Is often drunk	61.4	72.2	38.2	74.7	35.7	79.2	30.4	584
Spousal age difference[1]								
Wife older	28.1	35.0	21.3	39.9	16.4	45.0	16.1	83
Wife is same age	15.4	23.7	12.2	26.9	9.0	33.1	5.5	88
Wife is 1-4 years younger	23.5	29.7	15.4	34.2	10.9	40.5	7.7	1,118
Wife is 5-9 years younger	28.8	36.4	16.9	40.9	12.4	46.7	9.2	1,443
Wife is 10+ years younger	30.8	37.7	15.0	41.5	11.2	47.5	9.1	932
Spousal education difference								
Husband has more education	31.4	40.1	17.6	44.7	13.0	50.1	10.1	2,083
Wife has more education	33.5	38.3	21.4	42.1	17.5	49.5	14.0	984
Both have equal education	22.1	28.7	11.7	32.2	8.3	37.1	6.9	942
Neither has any education	26.2	39.8	17.8	44.6	13.1	48.2	7.6	260
Number of marital control behaviors displayed by husband/partner								
0	13.8	19.5	6.9	22.5	3.8	26.3	2.0	1,568
1-2	24.4	34.3	15.0	39.9	9.5	47.0	6.3	1,618
3-4	49.7	58.3	28.6	62.6	24.3	69.0	20.0	799
5-6	77.0	78.7	47.3	81.4	44.6	87.4	41.3	351
Number of decisions in which women participate[1]								
0	24.9	38.2	12.7	41.5	9.4	51.0	7.0	99
1-2	25.4	36.0	15.7	41.9	9.9	47.2	7.2	563
3-4	33.1	38.9	17.9	42.4	14.4	49.6	11.1	1,181
5	24.3	30.4	14.7	34.7	10.4	40.1	7.7	1,844
Number of reasons for which wife-beating is justified								
0	25.1	28.8	12.1	32.4	8.5	39.0	7.1	1,990
1-2	30.0	41.9	20.5	46.7	15.7	51.2	10.2	1,082
3-4	37.0	44.4	22.9	49.3	18.0	54.8	15.1	966
5	32.9	49.1	21.1	53.1	17.1	57.4	13.7	298
Total	29.5	37.0	17.2	41.2	13.0	46.8	10.1	4,336

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced, separated, or widowed women. Total includes 4 women missing information about husband's/partner's education, 34 missing information on husband's/partner's alcohol consumption, 24 missing spousal age difference, and 68 missing spousal education difference. An asterisk denotes a figure based on fewer than 25 unweighted women that has been suppressed.

[1] Includes only currently married women

Analysis by spousal age differences reveals that women who are the same age as their husbands are less likely to experience violence than are those who are either older or younger than their husbands. There is a similar pattern for differences in spousal education attainment in that spouses with equal education tend to experience less violence. However, women with more education than their spouses tend to be more exposed to emotional and sexual violence.

The number of marital control behaviours displayed by the husband is highly associated with the prevalence of violence. The more controlling behaviours that the husband displays, the greater is the likelihood that the wife will report experience of spousal violence. The proportion of women who have experienced emotional, physical, or sexual violence increases from 26 percent among those whose husbands display none of the controlling behaviours to 87 percent among those whose husbands display 5 or 6 of the behaviours.

Marital violence generally tends to decline slightly as the number of decisions in which women participate increases, though the pattern is not uniform. Experience with violence increases with the number of reasons for which women feel that wife-beating is justified.

16.7 Frequency of Spousal Violence

Frequency of spousal violence is an indication of the extent to which domestic violence is a current or recurring problem for Kenyan women. Table 16.11 shows the percent distribution of ever-married women who report emotional, physical, or sexual violence by their current or last husband. Violence is shown by its frequency in the 12 months prior to the survey and by selected background characteristics.

This table shows that 90 percent of women who have ever experienced emotional violence by their husbands experienced such violence in the 12 months preceding the survey; 31 percent experienced emotional abuse often. Similarly, 82 percent of women who have experienced physical or sexual violence by their husbands experienced such violence in the 12 months preceding the survey, and 22 percent experienced such violence often.

Among women who have ever experienced spousal emotional, physical, or sexual violence, the likelihood of experiencing such violence in the past 12 months decreases with increasing age. Among women who have ever experienced marital abuse, the proportion that experienced abuse often in the 12 months before the survey is considerably higher among those who are divorced or separated than among those who are currently married. Rural women who have ever experienced violence are less likely than urban women to have experienced violence at all in the 12 months before the survey. By province, women in North Eastern and Central provinces who have ever experienced spousal emotional violence are least likely to have experienced such violence in the 12 months before the survey. Women in Western and Central provinces who have ever experienced spousal physical or sexual violence are least likely to have experienced such violence in the 12 months before the survey.

Table 16.11 Frequency of spousal violence among those who report violence

Percent distribution of ever-married women age 15-49 (excluding widows) who have ever suffered emotional violence committed by their current or most recent husband/partner by frequency of violence in the 12 months preceding the survey and percent distribution of those who have ever suffered physical or sexual violence committed by their current or most recent husband/partner by frequency of violence in the 12 months preceding the survey, according to background characteristics, Kenya 2008-09

Background characteristic	Frequency of emotional violence in the past 12 months					Frequency of physical or sexual violence in the past 12 months				
	Often	Some-times	Not at all	Total	Number of women	Often	Some-times	Not at all	Total	Number of women
Current age										
15-19	4.4	90.2	5.5	100.0	33	10.9	83.0	6.1	100.0	49
20-24	33.1	59.5	7.4	100.0	196	21.7	65.7	12.7	100.0	288
25-29	25.7	70.4	3.9	100.0	264	18.2	65.0	16.8	100.0	345
30-39	38.0	50.4	11.6	100.0	440	26.8	54.7	18.4	100.0	543
40-49	27.5	57.4	15.0	100.0	263	21.5	55.9	22.6	100.0	354
Employed last 12 months										
Employed for cash	35.9	56.7	7.4	100.0	684	25.1	57.3	17.6	100.0	863
Employed not for cash	29.4	59.5	11.1	100.0	242	19.6	62.0	18.3	100.0	311
Not employed	21.3	64.0	14.7	100.0	270	18.6	64.7	16.8	100.0	406
Number of living children										
0	25.4	55.7	18.9	100.0	41	20.8	67.1	12.1	100.0	50
1-2	30.7	63.3	6.0	100.0	410	21.3	64.6	14.2	100.0	525
3-4	33.8	55.2	10.9	100.0	398	25.8	56.8	17.4	100.0	511
5+	29.7	58.4	11.9	100.0	348	20.0	58.2	21.8	100.0	494
Marital status and duration										
Currently married	26.7	64.2	9.1	100.0	999	18.8	64.0	17.2	100.0	1,343
Married only once	26.4	64.0	9.5	100.0	930	18.6	64.0	17.5	100.0	1,262
0-4 years	24.1	71.7	4.2	100.0	135	14.5	76.1	9.4	100.0	205
5-9 years	22.4	71.0	6.6	100.0	241	19.1	66.9	14.0	100.0	301
10+ years	28.8	59.1	12.1	100.0	554	19.4	59.5	21.0	100.0	757
Married more than once	29.9	66.3	3.7	100.0	69	22.4	63.9	13.7	100.0	81
Divorced/separated	54.6	32.3	13.1	100.0	198	42.4	38.2	19.4	100.0	237
Residence										
Urban	39.6	55.7	4.7	100.0	291	29.9	57.5	12.7	100.0	328
Rural	28.6	60.0	11.4	100.0	905	20.3	60.8	18.8	100.0	1,252
Province										
Nairobi	47.7	51.6	0.7	100.0	70	31.5	59.9	8.6	100.0	76
Central	28.8	52.3	18.9	100.0	134	18.9	55.6	25.5	100.0	164
Coast	25.0	63.8	11.2	100.0	113	21.0	57.8	21.1	100.0	101
Eastern	24.7	61.8	13.5	100.0	198	23.1	58.9	18.0	100.0	213
Nyanza	26.2	65.6	8.2	100.0	264	19.0	64.5	16.5	100.0	359
Rift Valley	33.7	61.5	4.8	100.0	282	20.9	67.8	11.3	100.0	418
Western	47.8	41.2	10.9	100.0	118	29.4	43.8	26.8	100.0	213
North Eastern	26.6	50.6	22.8	100.0	17	25.1	58.8	16.1	100.0	35
Education										
No education	32.1	58.8	9.2	100.0	137	21.2	67.6	11.2	100.0	216
Primary incomplete	34.4	55.4	10.3	100.0	475	28.2	55.3	16.4	100.0	598
Primary complete	28.1	62.6	9.3	100.0	304	16.7	65.1	18.2	100.0	437
Secondary+	29.1	61.0	9.8	100.0	281	19.7	57.4	22.9	100.0	330
Wealth quintile										
Lowest	29.3	59.4	11.3	100.0	235	23.3	61.1	15.6	100.0	331
Second	28.2	62.5	9.3	100.0	206	19.9	57.3	22.8	100.0	307
Middle	28.5	58.8	12.7	100.0	230	22.8	61.8	15.4	100.0	307
Fourth	24.9	61.8	13.4	100.0	233	16.4	62.7	20.9	100.0	308
Highest	42.3	53.8	3.9	100.0	292	28.7	57.8	13.5	100.0	326
Total	31.3	58.9	9.8	100.0	1,196	22.3	60.1	17.6	100.0	1,580

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced or separated women.

16.8 PHYSICAL CONSEQUENCES OF SPOUSAL VIOLENCE

In the 2008-09 KDHS, women who ever experienced spousal physical or sexual violence were asked about the consequences of the violence. Specifically, they were asked if, as a consequence of what their husbands did to them, they ever had any of three different sets of physical injuries: (1) cuts, bruises, or aches; (2) eye injuries, sprains, dislocations, or burns; and (3) deep wounds, broken bones, broken teeth, or any other serious injury. Table 16.12 shows the percentage of ever-married

women who reported any spousal physical or sexual violence by the different types of physical consequences according to the type of violence experienced.

Almost one-third (32 percent) of ever-married women who have ever experienced physical or sexual violence by their current or most recent husband report one or more types of injuries resulting from the violence. Women were most likely to report having experienced cuts, bruises, or aches; 28 percent of women report such symptoms related to the violence they experienced. Fourteen percent of women who experienced spousal violence say that they suffered eye injuries, sprains, dislocations, or burns as a result of the violence. Women are least likely to report having suffered the most severe injuries; nevertheless, almost one in ten women who has experienced physical or sexual violence by a husband reported suffering deep wounds, broken bones, broken teeth, or other serious injuries.

Table 16.12 Injuries to women due to spousal violence

Percentage of ever-married women age 15-49 who have experienced specific types of spousal violence by types of injuries resulting from what their husband/partner did to them, according to the type of violence and whether they have experienced the violence ever and in the 12 months preceding the survey, Kenya 2008-09

	Cuts, bruises, or aches	Eye injuries, sprains, dislocations, or burns	Deep wounds, broken bones, broken teeth, or any other serious injury	Any of these injuries	Number of ever-married women
Experienced physical violence[1]					
Ever[2]	28.9	14.7	9.9	33.3	1,603
In the past 12 months[3]	32.9	16.6	10.1	36.6	1,267
Experienced sexual violence[4]					
Ever[2]	39.0	22.2	14.8	42.6	626
In the past 12 months[3]	39.1	22.7	15.0	43.1	551
Experienced physical or sexual violence [4]					
Ever[2]	27.5	13.9	9.3	31.6	1,701
In the past 12 months[3]	30.8	15.3	9.3	34.3	1,374

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced, separated, or widowed women.
[1] Excludes women who experienced physical violence only during pregnancy
[2] Includes in the past 12 months
[3] Excludes widows
[4] Excludes women whose sexual initiation was forced but who have not experienced any other form of physical or sexual violence

16.9 VIOLENCE INITIATED BY WOMEN AGAINST HUSBANDS

Violence by husbands against wives is not the only form of spousal violence; women may sometimes be the perpetrators of violence. In most cultures, however, the level of spousal violence initiated by wives is only a fraction of the level of spousal violence initiated by husbands. To measure spousal violence by women in the 2008-09 Kenya DHS, ever-married women were asked, *'Have you ever hit, slapped, kicked, or done anything else to physically hurt your (last) husband/partner at times when he was not already beating or physically hurting you?'* This line of questioning may result in some underreporting if women find it difficult to admit that they themselves initiated violence. Table 16.13 shows the percentage of ever-married women who have ever initiated violence against their current or most recent husband, and the percentage of all ever-married women (excluding widows) who say that they have initiated spousal violence in the 12 months preceding the survey.

Overall, 3 percent of ever-married women report that they have initiated physical violence against their current or most recent husband, and 2 percent say they have committed such violence in the 12 months preceding the survey. Differentials in women's initiating physical violence against their current or most recent husbands are generally small; however, there are a few exceptions. Women's initiation of violence against their spouse is more common among women who have also experienced spousal physical violence than among women who have not experienced physical violence (7 percent compared with 1 percent). Regional disparities are apparent, with Western and North Eastern

provinces registering the highest proportions of men experiencing violence at the hands of their partners. As mentioned earlier, alcohol drinking correlates highly with violence by men against their wives. As shown in Table 16.13, men who are often drunk are also at increased risk of experiencing violence from their spouses.

Table 16.13 Violence by women against their spouse

Percentage of ever-married women age 15-49 who have committed physical violence against their husband/partner when he was not already beating or physically hurting them ever and in the past 12 months, according to women's own experience of spousal violence and their own and husband's/partner's characteristics, Kenya 2008-09

Women's experience of spousal violence, women's and their husband's/partner's characteristic	Percentage who have committed physical violence against their current or most recent husband/partner			
	Ever	Number of women	In the past 12 months[1]	Number of women[1]
Woman's experience of spousal physical violence				
Ever	6.9	1,603	4.6	1,489
In the last 12 months	7.5	1,267	5.8	1,196
Not last 12 months/widow/ missing	4.8	336	0.0	293
Never	0.7	2,733	0.4	2,558
Current age				
15-19	2.8	170	2.7	170
20-24	2.2	811	2.1	798
25-29	3.1	917	1.6	893
30-39	3.0	1,450	2.3	1,356
40-49	3.5	988	1.4	830
Employed last 12 months				
Employed for cash	3.4	2,194	2.4	2,016
Employed not for cash	2.3	767	2.0	709
Not employed	2.7	1,373	1.1	1,319
Number of living children				
0	2.0	252	1.5	248
1-2	3.0	1,594	2.1	1,520
3-4	2.3	1,373	1.1	1,267
5+	4.0	1,117	2.8	1,012
Residence				
Urban	3.4	1,022	1.7	975
Rural	2.8	3,314	2.0	3,072
Province				
Nairobi	4.1	320	1.7	311
Central	1.3	495	0.6	467
Coast	1.9	365	1.5	348
Eastern	3.3	702	1.4	675
Nyanza	2.3	774	2.0	663
Rift Valley	2.9	1,112	2.3	1,052
Western	5.2	458	3.7	423
North Eastern	5.2	110	2.1	108
Wealth quintile				
Lowest	4.6	784	3.3	723
Second	1.6	793	0.3	720
Middle	3.3	845	2.6	779
Fourth	1.4	849	1.3	803
Highest	3.8	1,064	2.1	1,022

Continued…

Table 16.13—*continued*

Women's experience of spousal violence, women's and their husband's/partner's characteristic	Percentage who have committed physical violence against their current or most recent husband/partner			
	Ever	Number of women	In the past 12 months[1]	Number of women[1]
Marital status and duration				
Currently married woman	2.7	3,688	1.8	3,688
Married only once	2.6	3,489	1.8	3,489
0-4 years	1.9	830	1.3	830
5-9 years	2.8	853	2.2	853
10+ years	2.8	1,807	1.7	1,807
Married more than once	4.0	199	2.6	199
Divorced/separated/widowed	4.8	649	3.3	359
Education				
No education	5.2	513	2.6	480
Primary incomplete	3.3	1,364	2.7	1,252
Primary complete	1.7	1,228	0.8	1,146
Secondary+	3.0	1,230	1.9	1,169
Husband's/partner's education				
No education	5.5	414	3.2	371
Primary incomplete	3.2	849	2.9	802
Primary complete	2.6	3,069	1.5	2,870
Husband's/partner's alcohol consumption				
Does not drink alcohol	1.9	2,648	1.1	2,525
Drinks alcohol but is never drunk	*	9	*	7
Is sometimes drunk	2.4	1,061	1.3	981
Is often drunk	9.0	584	7.1	503
Spousal age difference[2]				
Wife is older	1.5	83	1.3	83
Wife is same age	3.9	88	1.8	88
Wife is 1-4 years younger	3.2	1,118	1.7	1,118
Wife is 5-9 years younger	2.7	1,443	2.1	1,443
Wife is10+ years younger	2.2	932	1.5	932
Spousal education difference				
Husband has more education	2.3	2,083	1.5	1,942
Wife has more education	3.8	984	2.8	910
Both have equal education	2.9	942	1.6	904
Neither has any education	6.2	260	3.8	241
Total	3.0	4,336	1.9	4,047

Note: Husband/partner refers to the current husband/partner for currently married women and the most recent husband/partner for divorced, separated, or widowed women. Total includes 3 women missing information as to employment status, 4 with don't know/missing as to husband's/partner's education status, 30 missing information on husband's/partner's alcohol consumption, 24 missing information on spousal age difference, and 50 missing information as to spousal education difference. An asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

[1] Excludes widows

[2] Currently married women

16.10 RESPONSE TO VIOLENCE

All respondents who experienced physical or sexual violence by any person were asked a series of questions about whether and from whom they sought help to try to end the violence. Table 16.14 shows that 37 percent sought help to stop the violence, 6 percent never sought help but told someone about the violence, and 45 percent never sought help and never told anyone about the violence. Women who have experienced both physical and sexual violence are more likely to seek help than those who experienced only one or the other.

Differences by background characteristics in help-seeking behaviour are not large. Older women are more likely than younger women to have sought help to stop the violence. Women who are divorced, separated, or widowed and have ever experienced physical or sexual violence are more likely than currently married women to seek help. Women in Nyanza and Rift Valley provinces who have ever experienced violence are most likely to seek help to stop the violence.

Table 16.14 Help seeking to stop violence

Percent distribution of women age 15-49 who have ever experienced physical or sexual violence by whether they have sought help to stop the violence and if not, whether they told anyone about the violence, according to type of violence and background characteristics, Kenya 2008-09

Type of violence and background characteristic	Sought help to stop violence	Never sought help, but told someone	Never sought help, never told anyone	Missing/ don't know	Total	Number of women
Type of violence						
Physical only	35.2	5.4	52.4	7.0	100.0	1,548
Sexual only	13.6	6.2	26.4	53.8	100.0	415
Both physical and sexual	51.7	6.5	40.9	0.9	100.0	887
Current age						
15-19	26.1	9.1	49.0	15.8	100.0	453
20-24	30.3	6.0	52.1	11.5	100.0	539
25-29	39.0	3.9	42.4	14.7	100.0	541
30-39	43.5	5.1	42.3	9.1	100.0	772
40-49	42.3	6.3	41.4	10.1	100.0	545
Employed last 12 months						
Employed for cash	40.3	6.4	41.1	12.2	100.0	1,429
Employed not for cash	38.9	2.9	49.1	9.0	100.0	471
Not employed	31.5	6.7	49.1	12.8	100.0	950
Number of living children						
0	26.6	8.2	48.0	17.2	100.0	618
1-2	37.2	5.7	46.6	10.5	100.0	851
3-4	45.4	5.3	41.3	8.0	100.0	721
5+	38.0	4.5	44.5	12.9	100.0	659
Marital status and duration						
Never married	25.8	8.8	44.6	20.8	100.0	610
Currently married woman	36.5	5.0	48.1	10.3	100.0	1,795
Married only once	36.6	5.0	48.3	10.1	100.0	1,684
0-4 years	25.9	5.1	52.7	16.3	100.0	343
5-9 years	35.1	4.5	54.2	6.1	100.0	406
10+ years	41.2	5.1	44.2	9.5	100.0	936
Married more than once	34.8	5.7	45.4	14.1	100.0	110
Divorced/separated/ widowed	55.2	5.4	33.4	6.0	100.0	445
Residence						
Urban	35.3	7.5	39.5	17.8	100.0	667
Rural	37.7	5.4	46.8	10.1	100.0	2,183
Province						
Nairobi	29.1	15.2	41.6	14.1	100.0	195
Central	36.4	5.9	47.0	10.7	100.0	280
Coast	32.7	7.4	36.4	23.6	100.0	197
Eastern	34.0	7.2	46.4	12.4	100.0	410
Nyanza	41.4	4.6	45.5	8.6	100.0	663
Rift Valley	40.3	3.4	44.7	11.6	100.0	706
Western	35.2	5.5	48.2	11.1	100.0	352
North Eastern	29.8	8.2	49.4	12.6	100.0	46
Education						
No education	31.2	3.3	52.7	12.8	100.0	288
Primary incomplete	39.5	5.4	45.2	9.9	100.0	1,002
Primary complete	36.6	3.6	46.3	13.6	100.0	749
Secondary+	36.9	9.5	41.1	12.4	100.0	812
Wealth quintile						
Lowest	38.2	2.9	46.6	12.3	100.0	495
Second	36.7	5.2	48.0	10.2	100.0	573
Middle	42.8	5.5	42.1	9.6	100.0	557
Fourth	33.8	5.2	48.6	12.4	100.0	550
Highest	34.9	9.5	41.0	14.5	100.0	674
Total	37.2	5.9	45.1	11.9	100.0	2,850

Note: Excludes women whose sexual initiation was forced but who have not experienced any other form of physical or sexual violence

Table 16.15 shows the sources of help among women who have ever experienced violence and have sought help. Among all those who sought help, women are most likely to have sought help from their own family (63 percent). In-laws are also an important source of help, sought out by 34 percent of women. Fourteen percent of women sought help from friends or neighbours.

Table 16.15 Sources from where help was sought

Among women age 15-49 who have ever experienced physical or sexual violence and who sought help, the percentage who sought help from specific sources, according to type of violence experienced, Kenya 2008-09

	Type of violence			
Percentage who sought help from:	Physical only	Sexual only	Both physical and sexual	Total
Own family	63.3	53.5	63.5	62.9
In-laws	32.1	6.1	40.4	34.3
Husband/partner boyfriend	0.2	6.9	0.8	0.8
Friend/neighbor	11.8	14.4	16.9	14.2
Religious leader	1.5	1.9	4.3	2.7
Doctor/medical personnel	2.1	1.1	2.0	2.0
Police	5.6	0.0	8.3	6.4
Lawyer	0.1	0.0	0.3	0.2
Social service organization	0.1	0.0	0.1	0.1
Community leader/local administration	5.1	27.0	14.3	10.2
Other	6.2	0.7	2.1	4.1
Number of women	544	56	458	1,059

16.11 FEMALE GENITAL CUTTING

Female genital cutting or circumcision is widely practised in many Kenyan communities. It involves partial or total removal of the external female genitalia or other injury to the female organs for cultural or other non-therapeutic reasons. The practice is widely condemned as harmful, because it poses a potentially great risk to the health and well-being of the women and girls who are subjected to it. It is also generally recognised as a violation of children's rights. In the 2008-09 KDHS, women were asked whether they were circumcised and if so, how severe the circumcision was, how old they were at the time, and whether they feel the practice should continue or not.

Table 16.16 shows that 96 percent of women have heard of female circumcision and 27 percent are circumcised. The latter represents a decline from the level of 38 percent reported in the 1998 KDHS and 32 percent reported in the 2003 KDHS. The vast majority of circumcised women say that they had some flesh removed—which includes removal of the clitoris—while 2 percent say they were nicked with no flesh removed. Thirteen percent of circumcised women say they had the most invasive form of the operation in which the labia are removed and sewn closed.

The proportion of women circumcised increases with age, from 15 percent of women age 15-19 to 49 percent of those age 45-49. A higher proportion of rural women (31 percent) than urban women (17 percent) have been circumcised. The practice varies tremendously by province. The proportion of women circumcised ranges from 1 percent in Western province to 98 percent in North Eastern province. Roughly one-third of women in Eastern, Nyanza, and Rift Valley provinces have been circumcised compared with over one-quarter of those in Central province, 14 percent of those in Nairobi, and 10 percent of those in Coast province. The most severe form of circumcision predominates in North Eastern province.

There is a strong relationship between education level and circumcision status. Fifty-four percent of women with no education report that they are circumcised compared with only 19 percent of those with at least some secondary education. The proportion of Muslim women who are circumcised is about double that of Christian women. With regard to ethnicity, female genital cutting is far more prevalent among the Somali (98 percent), the Kisii (96 percent), and the Maasai (73 percent) than among other groups. It is least common among Luo and Luhya women. The percentage of women circumcised declines steadily as wealth quintile increases.

Table 16.16 Knowledge and prevalence of female circumcision

Percentage of women who have heard of female circumcision, percentage of women circumcised, and the percent distribution of circumcised women by type of circumcision, according to background characteristics, Kenya 2008-09

Background characteristic	Percentage of women who have heard of female circumcision	Percentage of women circumcised	Number of women	Type of circumcision				Total	Number of circumcised women
				Flesh removed	Nicked, no flesh removed	Sewn closed	Not determined		
Age									
15-19	93.3	14.6	1,761	76.5	4.5	17.6	1.3	100.0	257
20-24	96.2	21.1	1,715	82.0	3.3	13.1	1.6	100.0	361
25-29	97.1	25.3	1,454	80.9	2.1	16.2	0.8	100.0	368
30-34	96.9	30.0	1,209	83.5	2.2	12.2	2.2	100.0	363
35-39	96.8	35.1	877	86.7	0.9	11.4	1.0	100.0	308
40-44	97.4	39.8	768	83.3	2.1	11.7	2.9	100.0	305
45-49	96.9	48.8	661	85.3	1.1	12.0	1.6	100.0	322
Residence									
Urban	97.5	16.5	2,148	69.4	7.3	19.6	3.6	100.0	355
Rural	95.6	30.6	6,296	85.1	1.3	12.2	1.3	100.0	1,929
Province									
Nairobi	98.3	13.8	728	70.8	17.1	12.0	0.1	100.0	101
Central	98.7	26.5	905	75.6	2.0	17.2	5.2	100.0	240
Coast	85.2	10.0	674	49.4	2.4	34.9	13.3	100.0	67
Eastern	98.5	35.8	1,376	88.6	0.9	8.5	2.0	100.0	493
Nyanza	93.2	33.8	1,389	98.0	0.1	1.9	0.0	100.0	470
Rift Valley	97.8	32.1	2,262	93.1	2.3	3.9	0.6	100.0	727
Western	95.3	0.8	927	*	*	*	*	100.0	7
North Eastern	99.9	97.5	184	14.2	2.8	82.5	0.5	100.0	180
Education									
No education	87.5	53.7	752	58.4	1.0	40.1	0.6	100.0	404
Primary incomplete	94.4	28.8	2,526	87.1	3.0	7.7	2.2	100.0	727
Primary complete	97.3	26.4	2,272	87.8	2.6	8.5	1.1	100.0	601
Secondary+	98.8	19.1	2,894	89.2	1.9	6.6	2.2	100.0	553
Work status									
Working for cash	96.8	24.3	3,618	85.5	2.7	9.8	2.0	100.0	880
Not working for cash	95.5	29.1	4,826	81.0	2.0	15.6	1.4	100.0	1,404
Religion									
Roman Catholic	95.8	29.1	1,852	89.5	2.0	7.4	1.1	100.0	540
Protestant/other Christian	96.9	23.5	5,748	91.1	2.3	4.8	1.9	100.0	1,349
Muslim	93.9	51.4	626	33.8	3.1	61.1	2.0	100.0	322
No religion	80.9	38.3	185	93.3	0.8	5.8	0.0	100.0	71
Ethnicity									
Embu	99.6	51.4	120	86.5	2.8	8.4	2.3	100.0	61
Kalenjin	99.9	40.4	1,115	92.6	2.5	4.4	0.5	100.0	450
Kamba	97.8	22.9	923	91.1	1.0	5.7	2.1	100.0	211
Kikuyu	99.4	21.4	1,642	80.7	5.0	11.3	3.0	100.0	352
Kisii	100.0	96.1	579	97.0	1.1	1.4	0.5	100.0	556
Luhya	95.6	0.2	1,373	*	*	*	*	100.0	3
Luo	90.9	0.1	1,098	*	*	*	*	100.0	1
Maasai	100.0	73.2	113	95.5	2.0	2.4	0.0	100.0	83
Meru	99.4	39.7	415	97.7	0.0	2.2	0.1	100.0	165
Mijikenda/Swahili	77.9	4.4	430	*	*	*	*	100.0	19
Somali	99.6	97.6	240	21.1	3.4	75.1	0.4	100.0	234
Taita/Taveta	99.5	32.2	79	44.2	0.0	19.4	36.4	100.0	25
Other	86.7	38.9	315	76.0	2.7	17.4	3.9	100.0	123
Wealth quintile									
Lowest	90.2	40.2	1,393	72.6	2.1	25.0	0.2	100.0	560
Second	96.4	31.0	1,483	91.6	1.1	6.2	1.1	100.0	460
Middle	97.3	29.4	1,613	88.0	1.3	8.4	2.4	100.0	474
Fourth	96.9	25.9	1,736	88.2	1.9	7.4	2.6	100.0	449
Highest	97.9	15.4	2,220	72.8	6.1	18.7	2.5	100.0	341
Total	96.1	27.1	8,444	82.7	2.3	13.4	1.6	100.0	2,284

Note: an asterisk denotes a figure based on fewer than 25 cases that has been suppressed.

Table 16.17 shows data on the age at which women were circumcised. It is important to realise that many women were circumcised at a very young age and cannot recall how old they were at the time. Thus the data should be viewed as providing a rough idea of age at circumcision. Results show a broad range of age at circumcision. One-third of circumcised women say they were 14-18 years old at the time of the operation, 19 percent were 12-13 years old, and 15 percent were 10-11 years old. Twelve percent of women were circumcised at 8-9 years of age, and an equal proportion was circumcised at 3-7 years of age. Only 2 percent of women were circumcised before 3 years of age.

Table 16.17 Age at circumcision

Percent distribution of circumcised women by age at circumcision, according to background characteristics, Kenya 2008-09

Background characteristic	Age at circumcision								Total	Number of circumcised women
	< 3 years	3-7 years	8-9 years	10-11 years	12-13 years	14-18 years	19-26 years	Missing/ don't know		
Age										
15-19	0.7	25.9	18.0	22.8	11.8	16.8	na	3.9	100.0	257
20-24	0.4	15.4	16.6	15.5	17.1	27.5	3.9	3.5	100.0	361
25-29	1.1	15.6	17.1	16.9	14.4	29.4	3.8	1.7	100.0	368
30-34	3.9	10.2	10.2	12.6	20.8	35.1	4.3	2.9	100.0	363
35-39	2.1	9.6	7.3	15.5	20.9	37.3	4.8	2.6	100.0	308
40-44	2.3	4.9	5.6	10.7	27.2	43.7	2.1	3.4	100.0	305
45-49	1.1	5.5	7.8	14.4	18.0	41.1	4.8	7.3	100.0	322
Residence										
Urban	3.8	21.9	19.6	14.2	19.7	17.3	0.5	3.0	100.0	355
Rural	1.3	10.5	10.4	15.5	18.4	36.1	4.1	3.7	100.0	1,929
Province										
Nairobi	2.3	18.5	15.0	23.5	12.7	23.7	1.1	3.1	100.0	101
Central	0.7	0.4	0.6	8.3	28.1	57.3	2.0	2.7	100.0	240
Coast	29.2	17.9	23.9	6.2	5.6	9.3	0.6	7.4	100.0	67
Eastern	2.4	7.1	11.5	16.4	25.0	29.6	2.0	6.1	100.0	493
Nyanza	0.4	12.0	22.6	38.3	19.4	3.1	0.1	4.1	100.0	470
Rift Valley	0.2	5.5	5.1	4.3	16.5	58.9	8.8	0.7	100.0	727
Western	*	*	*	*	*	*	*	*	100.0	7
North Eastern	0.0	64.4	20.8	5.3	2.5	0.0	0.0	7.0	100.0	180
Education										
No education	1.1	26.9	15.3	10.7	14.5	24.2	1.2	6.3	100.0	404
Primary incomplete	1.4	7.2	8.1	14.9	22.2	39.1	2.9	4.0	100.0	727
Primary complete	2.1	6.9	9.9	12.9	15.4	45.5	4.8	2.4	100.0	601
Secondary+	2.1	13.9	16.4	21.7	20.4	18.7	4.6	2.2	100.0	553
Work status										
Working for cash	1.2	5.8	8.0	11.9	23.5	44.0	3.3	2.3	100.0	880
Not working for cash	2.0	16.3	14.3	17.4	15.6	26.4	3.7	4.3	100.0	1,404
Wealth quintile										
Lowest	0.8	20.0	11.8	11.9	13.7	34.3	2.7	4.9	100.0	560
Second	1.1	7.3	13.1	18.2	18.3	34.1	5.3	2.5	100.0	460
Middle	1.4	7.6	7.9	19.0	19.4	35.2	5.1	4.4	100.0	474
Fourth	2.2	8.2	9.6	13.2	21.5	39.3	3.3	2.7	100.0	449
Highest	3.8	17.9	18.7	14.5	22.4	19.5	0.5	2.8	100.0	341
Total	1.7	12.2	11.9	15.3	18.6	33.2	3.5	3.6	100.0	2,284

Note: an asterisk denotes a figure based on fewer than 25 cases that have been suppressed.
na = Not applicable

There appears to be a trend to circumcise girls at younger ages. For example, 45 percent of circumcised women age 15-19 were circumcised before they were ten years old compared with only 14 percent of circumcised women age 45-49. Circumcision of urban women generally occurs at younger ages than for rural women. Coast province has by far the highest proportion of female circumcision performed during infancy. Almost two-thirds of circumcised women in North Eastern province underwent the procedure when they were 3-7 years old. Almost 6 in 10 circumcised women in Rift Valley and Central provinces were circumcised when they were 14-18 years old.

Circumcised women with no education and those with at least some secondary schooling tend to have received the operation at younger ages than women with either primary incomplete or primary complete education. Similarly, circumcised women in the lower and upper wealth quintiles were circumcised at younger ages than those in the middle quintiles.

Table 16.18 Person performing circumcisions among women by residence

Percent distribution of circumcised women by person performing the circumcision, according to residence, Kenya 2008-09

Person performing circumcision	Residence		Total
	Urban	Rural	
Traditional	70.7	79.9	78.4
Traditional circumciser	66.3	76.2	74.7
Traditional birth attendant	3.3	3.4	3.4
Other traditional	1.1	0.2	0.3
Health professional	27.8	18.2	19.7
Doctor	11.2	4.8	5.8
Trained nurse/midwife	16.1	13.2	13.6
Other health professional	0.6	0.3	0.3
Don't know/missing	1.5	1.9	1.9
Total percent	100.0	100.0	100.0
Number of women	355	1,929	2,284

Table 16.18 shows information about the type of person who performed women's circumcisions. In interpreting the data, it is important to remember that women who were circumcised at a young age are likely not to know who performed their procedure. However, since most women in Kenya were circumcised at age 10 and older, reporting of the type of person is likely to be fairly accurate. The results indicate that the vast majority of circumcised women had the operation performed by a traditional practitioner (78 percent), and only 20 percent were circumcised by health professionals. Urban women are more likely than rural women to have the procedure performed by a health professional.

Information about the perceived benefits of female circumcision is given in Table 16.19. Four in five women do not see any benefit to female circumcision. This figure is surprisingly high among women who have been circumcised (59 percent). One-quarter of circumcised women cite social acceptance as a benefit of the practice, while one in six say that it is beneficial in preserving virginity or preventing premarital sex.

Table 16.19 Benefits of circumcision

Percentage of women who cite specific benefits that girls get if they are circumcised according to circumcision status, Kenya 2008-09

Benefit of circumcision	Circumcision status		Total
	Circumcised women	Uncircumcised women	
No benefits	58.6	89.1	80.9
Cleanliness/hygiene	6.9	0.8	2.5
Social acceptance	23.7	1.9	7.8
Better marriage prospects	8.7	0.8	2.9
Preserve virginity/prevent premarital sex	15.6	1.5	5.3
More sexual pleasure for the man	2.4	0.4	1.0
Religious approval	5.3	0.3	1.7
Reduce promiscuity/reduce sex drive	3.7	0.3	1.2
Reduce STD and HIV/AIDS infections	0.1	0.6	0.5
Other	31.8	18.9	50.7
Total	2,284	6,160	8,444

Table 16.20 shows information about women's attitudes towards the practice of female genital cutting. Only 7 percent of all women say that they feel that female circumcision is required by their religion, though the proportion rises to 87 percent of women in North Eastern province. More than 4 in 5 women believe that female circumcision should be stopped (82 percent); only 9 percent feel it should continue, and 4 percent are unsure. Women in North Eastern province are by far the most supportive of female circumcision, with 90 percent saying that it should continue. Circumcised women are also far more likely than uncircumcised women to say that the practice is required by their religion and that it should continue.

Table 16.20 Attitudes about female circumcision

Percentage of women age 15-49 who believe female circumcision is required by their religion and percent distribution of women age 15-49 by whether they believe the practice should continue or be stopped, according to selected background characteristics, Kenya 2008-09

Background characteristic	Percentage who believe circumcision is required by their religion	Percent distribution by whether practice should be continued or stopped				Total	Number
		Continue	Be stopped	Not sure	Missing		
Age							
15-19	7.4	8.8	80.0	4.3	7.0	100.0	1,761
20-24	7.9	9.9	82.7	3.4	4.1	100.0	1,715
25-29	7.2	9.9	82.7	4.1	3.3	100.0	1,454
30-34	6.4	8.4	85.0	3.4	3.2	100.0	1,209
35-39	7.5	9.8	82.0	4.7	3.5	100.0	877
40-44	7.3	9.6	82.7	4.8	2.8	100.0	768
45-49	7.9	10.0	81.3	5.7	3.1	100.0	661
Residence							
Urban	6.8	7.6	85.9	3.6	2.8	100.0	2,148
Rural	7.5	10.0	81.0	4.3	4.6	100.0	6,296
Province							
Nairobi	4.3	5.7	88.5	4.1	1.7	100.0	728
Central	3.6	5.2	91.8	1.6	1.4	100.0	905
Coast	5.8	4.0	75.1	5.8	15.2	100.0	674
Eastern	5.0	9.0	87.8	1.7	1.5	100.0	1,376
Nyanza	13.5	16.7	66.4	9.5	7.4	100.0	1,389
Rift Valley	4.1	6.4	87.7	3.5	2.3	100.0	2,262
Western	0.8	1.6	90.5	2.9	5.0	100.0	927
North Eastern	86.5	89.8	7.3	2.3	0.6	100.0	184
Education							
No education	26.6	33.9	47.6	6.0	12.5	100.0	752
Primary incomplete	6.3	8.1	79.8	6.2	5.8	100.0	2,526
Primary complete	4.5	6.7	86.8	3.4	3.2	100.0	2,272
Secondary+	5.5	6.3	89.9	2.4	1.3	100.0	2,894
Work status							
Working for cash	4.7	6.4	86.4	3.8	3.4	100.0	3,618
Not working for cash	9.3	11.7	79.2	4.3	4.8	100.0	4,826
Circumcision status							
Circumcised women	23.3	28.9	67.5	3.5	0.1	100.0	2,284
Uncircumcised women	1.4	2.2	87.8	4.4	5.7	100.0	6,160
Wealth quintile							
Lowest	14.1	17.6	67.0	5.5	9.9	100.0	1,393
Second	7.3	9.4	82.0	4.4	4.1	100.0	1,483
Middle	5.9	9.3	83.5	4.5	2.8	100.0	1,613
Fourth	6.7	6.6	86.3	3.9	3.3	100.0	1,736
Highest	4.7	6.6	88.0	3.0	2.3	100.0	2,220
Total	7.3	9.4	82.3	4.1	4.2	100.0	8,444

ADULT AND MATERNAL MORTALITY 17

Christopher Omolo and Paul Kizito

Mortality levels and trends provide good measures of the health status of a population, They also serve as indicators of national development. Studies have shown that mortality declines as economic performance improves. Compared with measures of infant and child mortality, measures of adult mortality in Kenya are scarce. There are several reasons. First, while childhood mortality can be estimated through the birth history approach, the equivalent approach for measurement of adult mortality is compromised by recall problems. Second, death rates are much lower in adulthood than in childhood, and hence estimates for particular age groups can be distorted by sampling errors. Third, there is usually very limited information available about the characteristics of those who have died in adulthood. Although the same can be said about data on the characteristics of those who have died in childhood, it is reasonable to expect the characteristics of the parents to influence directly the children's chances of survival.

17.1 DATA

Collecting information on the survival of siblings (i.e., biological brothers and sisters) is a useful method for collecting information on adult mortality. To estimate adult mortality, the 2008 KDHS included a sibling history in the women's questionnaire. A series of questions were asked about all the respondent's brothers and sisters and their survival status.

Specifically, each female respondent was asked to report all children born to her biological mother, including herself. She was asked to include in her list all siblings who were still alive as well as those who had died. For brothers and sisters who were still alive, only the age of the sibling was asked. For those who had died before reaching age 12, only the number of years since death and age at death were asked. For those who had died at age 12 years or older, three questions were asked, specifically to determine if the death was maternity-related: (1) 'Was [NAME OF SISTER] pregnant when she died?' (2) (If the answer was positive), 'Did she die during childbirth?' and (3) (if the response was negative) 'Did she die within two months of the end of a pregnancy or childbirth?' These data allow direct estimation of overall adult mortality (by age and sex) as well as maternal mortality.

Adult and maternal mortality estimation by either direct or indirect methods requires accurate reporting of the number of siblings the respondent had, both the number who died and the number who died during pregnancy, child birth, or in the two months after pregnancy ended (for maternal mortality). Although there is no definitive procedure for establishing the completeness of retrospective data on sibling survivorship, Table 17.1 presents several indicators that can be used to assess the quality of sibling survivorship data.

The data do not show any obvious defects that would indicate poor data quality or significant underreporting. A total of 49,595 siblings were recorded in the maternal mortality section of the 2008 KDHS questionnaires. The sex ratio of the enumerated siblings (the ratio of brothers to sisters) is 99.8, which is lower than the expected value. The survival status for only 42 (one-tenth of one percent) of the siblings was not reported. For only 79 (less than one percent) of the surviving siblings, their current age was not reported. Among deceased siblings, both the age at death (AD) and years since death (YSD) were missing for less than 2 percent. Indicators of data quality for the 2008-09 KDHS show some improvement compared with the 2003 KDHS, except for the sex ratio that appears unusually low. Rather than exclude the siblings with missing data from further analysis, information on the birth order of siblings in conjunction with other information was used to impute the missing

data[1]. The sibling survivorship data, including cases with imputed values, have been used in the direct estimation of adult and maternal mortality.

Table 17.1 Data on siblings

Number of siblings reported by women respondents and completeness of the reported data on age, age at death (AD), and years since death (YSD), according to survival status and sex of the sibling, Kenya 2008-09

	Females		Males		All	
	Number	Percentage	Number	Percentage	Number	Percentage
All siblings reported	24,825	100.0	24,770	100.0	49,595	100.0
Surviving	21,946	88.4	21,740	87.8	43,686	88.1
Deceased	2,849	11.5	3,018	12.2	5,866	11.8
Missing information	30	0.1	12	0.0	42	0.1
Surviving siblings	21,946	100.0	21,740	100.0	43,686	100.0
Age reported	21,908	99.8	21,700	99.8	43,608	99.8
Age missing	38	0.2	40	0.2	79	0.2
Deceased siblings	2,849	100.0	3,018	100.0	5,866	100.0
AD and YSD reported	2,753	96.6	2,920	96.8	5,673	96.7
Missing only AD	32	1.1	40	1.3	72	1.2
Missing only YSD	17	0.6	14	0.5	31	0.5
Missing both	47	1.7	43	1.4	91	1.5

17.2 ESTIMATES OF ADULT MORTALITY

One way to assess the quality of data used to estimate maternal mortality is to evaluate the plausibility and stability of overall adult mortality. It is reasoned that if rates of overall adult mortality are implausible, rates based on a subset on deaths—i.e., maternal mortality in particular—are unlikely to be free of serious problems. Also, levels and trends in overall adult mortality have important implications in their own right for health and social programs in Kenya, especially with regard to the potential impact of the AIDS epidemic.

The direct estimation of adult mortality uses the reported ages at death and years since death of respondents' brothers and sisters. Because of the differentials in exposure to the risk of dying, age- and sex-specific death rates are presented in this report. The results are also compared with rates obtained from the 2003 KDHS rates. Because the number of deaths on which the KDHS rates are based is not very large (677 female deaths and 675 male deaths from the 2008-09 KDHS), the estimated age-specific rates are subject to considerable sampling variation.

Table 17.2 presents age-specific mortality rates for women and men age 15-49 for the six-year period preceding the survey. The rates are stable, showing expected increases for both sexes as their age increases. The rise is steeper for women at younger ages and steeper for men at older ages. The overall mortality rates are lower among women than men (5.8 and 6.0 deaths per 1,000 years of exposure, respectively). There is considerable overlap of male and female age-specific mortality rates. At ages 20-29 and 35-39, female mortality exceeds male mortality, with a wider difference at age group 25-29, while the rates are nearly the same at age group 30-34. Above age 40, male mortality exceeds female mortality by wider margins as age advances.

[1] The imputation procedure is based on the assumption that the reported birth order of siblings in the history is correct. The first step is to calculate birth dates. For each living sibling with a reported age and each dead sibling with complete information on both age at death and years since death, the birth date was calculated. For a sibling missing these data, a birth date was imputed within the range defined by the birth dates of the bracketing siblings. In the case of living siblings, an age at the time of the survey was then calculated from the imputed birth date. In the case of dead siblings, if either the age at death or years since death was reported, that information was combined with the birth date to produce the missing information. If both pieces of information were missing, the distribution of the ages at death for siblings for whom the years since death was unreported, but age at death was reported, was used as a basis for imputing the age at death.

Table 17.2 Adult mortality rates

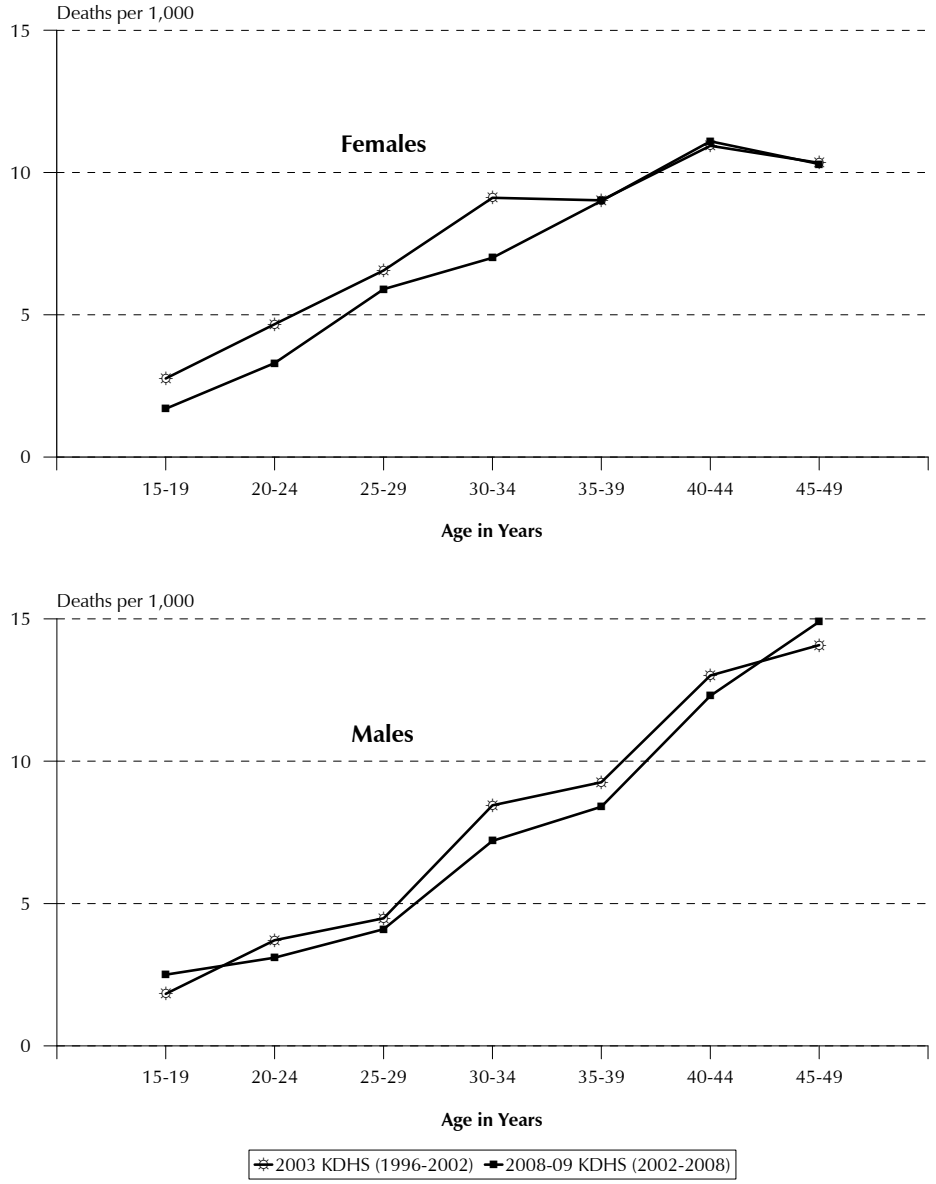
Age-specific mortality rates for women and men age 15-49 based on the survivorship of sisters and brothers of women respondents for the period 0-6 years prior to the survey, Kenya 2008-09

Age	Deaths	Exposure	Mortality rates
WOMEN			
15-19	35	21,051	1.7
20-24	82	24,580	3.3
25-29	134	22,762	5.9
30-34	134	19,218	7.0
35-39	131	14,593	9.0
40-44	105	9,444	11.1
45-49	56	5,478	10.3
15-49	677	117,126	5.8[a]
MEN			
15-19	52	20,943	2.5
20-24	76	24,702	3.1
25-29	95	22,915	4.1
30-34	136	19,030	7.2
35-39	118	14,090	8.4
40-44	114	9,298	12.3
45-49	84	5,627	14.9
15-49	675	116,604	6.0[a]

[a] Age standardised

A comparison of the rates from the 2008-09 KDHS and the 2003 KDHS indicates a decline in adult mortality for both women and men, but the patterns differ slightly (Figure 17.1). Female adult mortality rates from the 2008-09 data are lower for all ages, except from age 35 upward, where the rates are nearly the same as those from the 2003 survey. Male adult mortality is lower for most of the age groups, except age groups 15-19 and 45-49. The summary measure of mortality for age group 15-49 shows a decrease of about 12 percent in female mortality but only a 3 percent decrease in male mortality rates from the 2003 KDHS rates.

Figure 17.1 **Trends in Adult Mortality, Kenya 1996-2002 and 2002-2008**



Note: Data refer to the seven-year period preceding the survey.

17.3 ESTIMATES OF MATERNAL MORTALITY

Two procedures using sisterhood data (sibling history data) are generally used to estimate maternal mortality in developing countries; these employ an indirect variant (Graham et al, 1989) and a direct estimation method (Rutenberg et al., 1991). In this report, the direct estimation procedure is applied. Age-specific mortality rates are calculated by dividing the number of maternal deaths by woman-years of exposure. To remove the effect of truncation bias (the upper boundary for eligibility for women interviewed in the KDHS is 50 years), the overall rate for women age 15-49 is standardized by the age distribution of the survey respondents. Maternal deaths are defined as any deaths that occurred during pregnancy or childbirth or that occurred within two months of the birth or

termination of a pregnancy[2]. Estimates of maternal mortality are therefore based solely on the timing of the death in relationship to the pregnancy.

Table 17.3 presents direct estimates of maternal mortality for the ten-year period prior to the survey. The data indicate that the rate of mortality associated with pregnancy and childbearing is 0.8 maternal deaths per 1,000 woman-years of exposure. Although the estimated age-specific mortality rates display a generally plausible pattern, the risk of maternal death is higher at older ages; it is a pattern that differs from that observed with the 2003 KDHS data. Maternal deaths represent about 15 percent of all deaths to women age 15-49 (data not shown).

Table 17.3 Maternal mortality

Maternal mortality rates for the ten-year period prior to the survey, based on the survivorship of sisters of women respondents, Kenya 2008-09

Age	Maternal deaths	Exposure (years)	Mortality rates
15-19	9	32,004	0.3
20-24	27	34,544	0.8
25-29	22	31,332	0.7
30-34	22	25,764	0.8
35-39	26	18,846	1.4
40-44	16	11,890	1.3
45-49	6	6,733	0.9
15-49	127	161,113	0.8[a]
General fertility rate			0.161[a]
Maternal mortality ratio[b]	-	-	488

[a] Age standardised
[b] Per 100,000 births; calculated as maternal mortality rate divided by the general fertility rate

The maternal mortality rate can be converted to a maternal mortality ratio and expressed per 100,000 live births by dividing the rate by the general fertility rate of 0.161, which prevailed during the same 10-year time period. Using this procedure, the maternal mortality ratio (MMR) during the 10-year period before the survey is estimated as 488 maternal deaths per 100,000 live births. Although the maternal mortality ratio appears to be higher than the level of 414 from the 2003 KDHS, the 95 percent confidence intervals range from 328 to 501 for the 2003 figure and from 333 to 643 for the 2008-09 figure. The methodology used and the sample size implemented in these two surveys do not allow for precise estimates of maternal mortality. The sampling errors around each of the estimates are large and overlap considerably. Consequently, the two estimates are not significantly different. This implies that it is impossible to say with confidence that maternal mortality has increased.

Although overall female mortality rates from the 2008-09 data were lower than those of 2003, it should be noted that maternal mortality estimates are subject to larger sampling errors than are adult mortality estimates. Second, studies have shown that a rise in the maternal mortality ratio can be accompanied by falls in both the maternal mortality rate and the general fertility rate. In the case of the 2008-09 KDHS, there was a small increase in the maternal mortality rate (0.8 in 2008-09 and 0.6 in 2003) accompanied by a fall in the age-standardized general fertility rate (0.161 in 2008-09 and 0.166 in 2003); hence, there is an elevated maternal mortality ratio.

The fifth Millennium Development Goal is to reduce the maternal mortality ratio by 75 percent between 1990 and 2015. The 2008-09 KDHS results show that maternal mortality remains high in Kenya. A strategy essential to reducing the high maternal mortality rates is to ensure that all births are managed by skilled health professionals. Currently the proportion of births managed by health professionals and the proportion delivered in a health facility are 44 percent and 43 percent, respectively. However, the use of health professionals at birth varies, and hence differences in the risk of maternal mortality in the country cannot be measured through the survey.

[2] This time-dependent definition includes all deaths that occurred during pregnancy and two months after pregnancy, even if the death is due to non-maternal causes. However, this definition is unlikely to result in overreporting of maternal deaths because most deaths to women during the two-month period are due to maternal causes, and maternal deaths are more likely to be underreported than overreported.

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SAMPLE IMPLEMENTATION

Appendix A

Table A.1 Sample implementation: women

Percent distribution of households and eligible women by results of the household and individual interviews, and household, eligible women and overall response rates, according to urban-rural residence and province, Kenya 2008-09

	Residence		Province								
Result	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Selected households											
Completed (C)	88.6	92.4	85.2	93.6	97.0	91.6	90.6	90.5	88.4	93.9	91.2
Household present but no competent respondent at home (HP)	1.4	0.7	1.9	1.4	0.2	0.7	1.2	0.7	0.8	0.3	0.9
Refused (R)	1.8	0.5	2.5	0.9	0.6	1.0	0.2	0.8	0.5	0.6	0.9
Dwelling not found (DNF)	0.1	0.4	0.1	0.0	0.0	0.6	0.0	0.2	0.5	1.8	0.3
Household absent (HA)	2.7	2.0	3.2	1.3	0.2	2.7	2.3	3.0	2.3	2.8	2.2
Dwelling vacant/address not a dwelling (DV)	3.8	2.8	5.5	2.1	1.4	1.8	4.4	3.5	4.5	0.3	3.1
Dwelling destroy (DD)	1.5	1.1	1.4	0.6	0.6	1.6	0.8	1.2	3.1	0.1	1.2
Other (O)	0.2	0.1	0.2	0.1	0.0	0.0	0.5	0.2	0.0	0.1	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	3,286	6,650	1,300	1,211	1,250	1,350	1,450	1,500	1,200	675	9,936
Household response rate (HRR)	96.5	98.3	95.0	97.6	99.2	97.6	98.5	98.2	98.1	97.2	97.7
Eligible women											
Completed (EWC)	95.6	96.6	94.7	94.8	97.9	96.2	96.3	96.4	97.1	97.0	96.3
Not at home (EWNH)	2.3	1.7	2.9	2.3	0.9	2.0	2.5	1.9	1.2	1.3	1.9
Postponed (EWP)	0.1	0.0	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0
Refused (EWR)	1.4	0.6	1.4	1.3	0.6	0.9	0.6	0.9	0.3	1.0	0.8
Partly completed (EWPC)	0.3	0.2	0.5	0.3	0.2	0.1	0.1	0.2	0.3	0.0	0.2
Incapacitated (EWI)	0.3	0.8	0.3	1.1	0.5	0.8	0.4	0.6	1.1	0.8	0.7
Other (EWO)	0.1	0.0	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	2,735	6,032	1,005	1,026	1,174	1,171	1,368	1,326	1,070	627	8,767
Eligible women response rate (EWRR)	95.6	96.6	94.7	94.8	97.9	96.2	96.3	96.4	97.1	97.0	96.3
Overall response rate (ORR)	92.3	95.0	90.0	92.5	97.1	93.9	94.9	94.6	95.2	94.3	94.1

Table A.2 Sample implementation: men

Percent distribution of households and eligible men by results of the household and individual interviews, and household, eligible men and overall response rates, according to urban-rural residence and province, Kenya 2008-09

	Residence		Province								
Result	Urban	Rural	Nairobi	Central	Coast	Eastern	Nyanza	Rift Valley	Western	North Eastern	Total
Selected households											
Completed (C)	88.1	91.8	84.0	93.9	96.8	91.5	89.0	90.4	87.3	94.0	90.6
Household present but no competent respondent at home (HP)	1.0	0.8	1.8	0.8	0.2	1.0	1.1	0.4	0.8	0.3	0.8
Refused (R)	1.9	0.4	2.7	0.7	0.5	1.3	0.1	0.9	0.3	0.3	0.9
Dwelling not found (DNF)	0.1	0.5	0.2	0.0	0.0	0.6	0.0	0.0	0.8	2.1	0.3
Household absent (HA)	3.1	2.0	3.7	1.8	0.2	2.7	2.7	3.4	1.5	3.0	2.4
Dwelling vacant/address not a dwelling (DV)	4.0	3.2	6.1	2.1	1.4	1.5	5.5	3.4	5.6	0.0	3.4
Dwelling destroy (DD)	1.5	1.2	1.4	0.5	1.0	1.3	1.0	1.2	3.6	0.0	1.3
Other (O)	0.2	0.2	0.2	0.2	0.0	0.0	0.5	0.3	0.0	0.3	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households	1,653	3,319	656	611	625	670	728	742	604	336	4,972
Household response rate (HRR)	96.7	98.3	94.7	98.5	99.3	96.8	98.6	98.5	97.8	97.2	97.7
Eligible men											
Completed (EMC)	85.4	90.2	88.7	83.4	92.9	87.1	89.3	90.2	90.2	84.6	88.6
Not at home (EMNH)	10.0	7.1	6.9	10.5	5.0	8.5	9.1	7.5	5.8	13.9	8.1
Refused (EMR)	3.4	1.6	3.8	4.3	0.8	3.3	0.7	1.8	1.8	0.4	2.1
Partly completed (EMPC)	0.3	0.1	0.6	0.0	0.0	0.0	0.0	0.3	0.2	0.0	0.2
Incapacitated (EMI)	0.4	0.8	0.0	0.4	1.0	1.0	0.5	0.2	2.0	0.4	0.7
Other (EMO)	0.5	0.3	0.0	1.3	0.2	0.2	0.5	0.0	0.0	0.8	0.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men	1,269	2,641	477	465	482	519	606	602	500	259	3,910
Eligible men response rate (EMRR)	85.4	90.2	88.7	83.4	92.9	87.1	89.3	90.2	90.2	84.6	88.6
Overall response rate (ORR)	82.6	88.6	84.0	82.2	92.3	84.3	88.1	88.9	88.2	82.2	86.6

Table A.3 Coverage of HIV testing among interviewed women by social and demographic characteristics

Percent distribution of interviewed women age 15-49 by HIV testing status, according to social and demographic characteristics (unweighted), Kenya 2008-2009

Characteristic	Testing status				Total	Number
	DBS tested	Refused to provide blood	Absent at the time of blood collection	Other/ missing		
Marital status						
Never married	88.5	9.5	0.4	1.7	100.0	1,291
Ever had sex	89.8	8.1	0.7	1.4	100.0	571
Never had sex	87.4	10.6	0.1	1.9	100.0	720
Married/Living together	90.6	8.0	0.0	1.4	100.0	2,523
Divorced or separated	89.1	8.9	1.2	0.8	100.0	257
Widowed	89.1	9.2	0.0	1.7	100.0	174
Type of union						
In polygynous union	88.4	9.3	0.0	2.3	100.0	398
Not in polygynous union	90.9	7.7	0.0	1.3	100.0	2,085
Not currently in union	88.6	9.3	0.5	1.6	100.0	1,722
Ever had sexual intercourse						
Yes	90.3	8.1	0.2	1.4	100.0	3,521
No	87.4	10.6	0.1	1.9	100.0	720
Currently pregnant						
Pregnant	90.9	7.1	0.0	2.0	100.0	297
Not pregnant or not sure	89.7	8.6	0.2	1.4	100.0	3,948
Ethnicity						
Embu	95.0	3.8	0.0	1.3	100.0	80
Kalenjin	91.4	5.3	0.3	3.0	100.0	397
Kamba	88.4	10.1	0.0	1.5	100.0	336
Kikuyu	89.8	9.5	0.5	0.1	100.0	745
Kisii	95.5	4.5	0.0	0.0	100.0	221
Luhya	91.3	7.5	0.2	1.1	100.0	640
Luo	92.5	7.0	0.2	0.4	100.0	570
Maasai	63.6	32.7	1.8	1.8	100.0	55
Meru	94.6	4.3	0.0	1.1	100.0	184
Mijikenda/Swahili	92.9	6.5	0.0	0.6	100.0	336
Somali	74.2	17.4	0.3	8.1	100.0	345
Taita/Taveta	93.8	3.1	0.0	3.1	100.0	65
Other	90.7	9.3	0.0	0.0	100.0	270
Religion						
Roman Catholic	91.2	8.3	0.1	0.3	100.0	879
Protestant other Christian	91.2	7.3	0.3	1.2	100.0	2,578
Muslim	82.8	12.8	0.1	4.3	100.0	674
No religion	87.7	12.3	0.0	0.0	100.0	81
Total	89.8	8.5	0.2	1.5	100.0	4,245

Note: Total includes 40 women missing information on type of union, 4 missing information on sexual intercourse, 1 missing information on ethnicity, and 4 missing information on religion.

Table A.4 Coverage of HIV testing among interviewed men by social and demographic characteristics

Percent distribution of interviewed men 15-49[54] by HIV testing status, according to social and demographic characteristics (unweighted), Kenya 2008-09

Characteristic	Testing status				Total	Number
	DBS tested	Refused to provide blood	Absent at the time of blood collection	Other/ missing		
Marital status						
Never married	89.9	7.9	0.1	2.1	100.0	1,502
Ever had sex	90.2	7.8	0.1	1.9	100.0	964
Never had sex	89.2	8.0	0.2	2.6	100.0	538
Married/Living together	88.9	9.4	0.3	1.3	100.0	1,824
Divorced or separated	87.0	12.2	0.0	0.9	100.0	115
Type of union						
In polygynous union	87.9	10.2	0.6	1.3	100.0	157
Not in polygynous union	89.0	9.4	0.3	1.3	100.0	1,665
Not currently in union	89.8	8.1	0.1	2.0	100.0	1,641
Ever had sexual intercourse						
Yes	89.3	9.0	0.2	1.5	100.0	2,926
No	89.2	8.0	0.2	2.6	100.0	538
Male circumcision						
Circumcised	89.2	9.0	0.0	1.8	100.0	2,913
Not circumcised	90.2	7.6	1.3	0.9	100.0	551
Ethnicity						
Embu	88.0	12.0	0.0	0.0	100.0	83
Kalenjin	90.8	6.3	0.0	2.8	100.0	316
Kamba	87.8	10.8	0.3	1.0	100.0	286
Kikuyu	86.0	13.0	0.0	1.0	100.0	584
Kisii	94.7	4.8	0.0	0.5	100.0	188
Luhya	92.0	7.6	0.0	0.4	100.0	566
Luo	89.3	8.0	1.2	1.4	100.0	486
Maasai	(78.6)	(21.4)	(0.0)	(0.0)	100.0	42
Meru	86.6	10.5	0.0	2.9	100.0	172
Mijikenda/Swahili	94.9	4.3	0.0	0.8	100.0	257
Somali	80.7	10.3	0.0	9.0	100.0	223
Taita/Taveta	94.5	1.8	0.0	3.6	100.0	55
Other	92.3	7.2	0.5	0.0	100.0	207
Religion						
Roman Catholic	91.3	7.9	0.2	0.6	100.0	826
Protestant/other Christian	89.3	8.9	0.3	1.5	100.0	1,997
Muslim	86.7	8.7	0.0	4.6	100.0	459
No religion	90.6	8.6	0.0	0.7	100.0	139
Total	89.3	8.8	0.2	1.6	100.0	3,465

Note: Total includes 24 men widowed, 2 missing information on type of union, 1 missing information on sexual intercourse, 1 missing information on circumcision, and 2 missing information on religion. Figures in parentheses are based on 25-49 unweighted cases.

Table A.5 Coverage of HIV testing among interviewed women by sexual behaviour characteristics

Percent distribution of interviewed women who ever had sexual intercourse by HIV test status, according to sexual behaviour characteristics (unweighted), Kenya 2008-09

Sexual behaviour characteristic	Testing status				Total	Number
	DBS tested	Refused to provide blood	Absent at the time of blood collection	Other/ missing		
Age at first sexual intercourse						
<16	91.5	7.3	0.0	1.2	100.0	1,035
16-17	89.9	9.0	0.1	0.9	100.0	855
18-19	90.3	7.6	0.6	1.6	100.0	709
20+	88.5	9.1	0.2	2.2	100.0	646
Higher-risk intercourse in last 12 months						
Had higher-risk intercourse	90.3	8.2	0.2	1.4	100.0	513
Had sexual intercourse, not higher risk	90.6	7.9	0.0	1.4	100.0	2,489
No sexual intercourse in last 12 months	89.2	8.7	1.0	1.2	100.0	519
Number of sexual partners in last 12 months						
0	89.2	8.7	1.0	1.2	100.0	508
1	90.5	8.0	0.1	1.5	100.0	2,948
2	(93.9)	(6.1)	(0.0)	(0.0)	100.0	49
3+	*	*	*	*	100.0	3
Number of higher-risk partners in last 12 months						
0	90.4	8.0	0.2	1.4	100.0	3,008
1	90.0	8.4	0.2	1.4	100.0	491
2	*	*	*	*	100.0	20
3+	*	*	*	*	100.0	2
Condom use						
Ever used a condom	91.5	7.2	0.3	1.0	100.0	682
Never used a condom	90.1	8.3	0.2	1.4	100.0	2,832
Condom use at last sex in last 12 months						
Used condom	90.6	8.3	0.4	0.7	100.0	277
Did not use condom	90.5	7.9	0.0	1.5	100.0	2,724
No sexual intercourse in last 12 months	89.2	8.7	1.0	1.2	100.0	519
Number of lifetime partners						
1	88.7	8.9	0.2	2.2	100.0	1,608
2	91.1	7.8	0.2	0.9	100.0	979
3-4	93.2	6.2	0.3	0.3	100.0	710
5-9	90.3	7.8	0.0	1.9	100.0	154
10+	*	*	*	*	100.0	23
Prior HIV testing status						
Ever tested, got result	91.6	7.2	0.2	1.0	100.0	2,268
Ever tested, did not get result	92.4	7.6	0.0	0.0	100.0	66
Never tested	88.0	9.5	0.3	2.2	100.0	1,171
Condom use at last higher-risk intercourse in last 12 months						
Used condom	90.5	8.5	0.5	0.5	100.0	201
Did not use condom	90.1	8.0	0.0	1.9	100.0	312
No higher-risk intercourse/no intercourse last 12 months	90.4	8.0	0.2	1.4	100.0	3,008
Condom use at first sex						
Used condom	93.4	5.4	0.8	0.4	100.0	258
Did not use condom	90.3	7.5	0.0	2.2	100.0	822
Total	90.3	8.1	0.2	1.4	100.0	3,521

Note: Total includes 276 women with age at first sex inconsistent/missing, 13 missing information on number of sexual partners, 7 missing information on condom use, 1 missing information on condom use in last 12 months, 47 missing information on number of lifetime partners, 16 missing information on prior HIV testing status, and 22 missing information on condom use at first sex. Figures in parentheses are based on 25-49 unweighted cases; an asterisk denotes a figure based on fewer than 25 unweighted cases that has been suppressed.

Table A.6 Coverage of HIV testing among interviewed men by sexual behaviour characteristics

Percent distribution of interviewed men who ever had sexual intercourse by HIV test status, according to sexual behaviour characteristics (unweighted), Kenya 2008-09

Sexual behaviour characteristic	Testing status				Total	Number
	DBS tested	Refused to provide blood	Absent at the time of blood collection	Other/ missing		
Age at first sexual intercourse						
<16	90.0	8.5	0.3	1.3	100.0	1,119
16-17	90.6	8.2	0.2	1.1	100.0	649
18-19	89.1	8.9	0.4	1.6	100.0	549
20+	87.2	10.5	0.2	2.0	100.0	588
Higher-risk intercourse in last 12 months						
Had higher-risk intercourse	90.8	7.5	0.1	1.7	100.0	844
Had sexual intercourse, not higher risk	88.5	9.8	0.3	1.4	100.0	1,671
No sexual intercourse in last 12 months	89.8	8.8	0.2	1.2	100.0	411
Number of sexual partners in last 12 months						
0	89.9	8.9	0.0	1.2	100.0	406
1	88.8	9.3	0.2	1.6	100.0	2,140
2	91.3	8.0	0.0	0.6	100.0	311
3+	93.4	3.3	1.6	1.6	100.0	61
Number of higher-risk partners in last 12 months						
0	88.8	9.6	0.3	1.4	100.0	2,082
1	90.9	7.3	0.1	1.6	100.0	672
2	90.6	7.2	0.0	2.2	100.0	138
3+	(88.2)	(11.8)	(0.0)	(0.0)	100.0	34
Condom use						
Ever used a condom	89.3	9.0	0.2	1.5	100.0	1,617
Never used a condom	89.4	9.0	0.3	1.3	100.0	1,305
Condom use at last sex in last 12 months						
Used condom	89.5	8.4	0.2	1.9	100.0	583
Did not use condom	89.2	9.1	0.3	1.4	100.0	1,930
No sexual intercourse in last 12 months	89.8	8.8	0.2	1.2	100.0	411
Paid for sex in last 12 months						
Yes	88.6	10.0	0.0	1.4	100.0	70
No (No paid sex/no sex in last 12 months)	89.4	8.9	0.2	1.5	100.0	2,856
Number of lifetime partners						
1	86.7	9.1	0.2	4.0	100.0	496
2	93.7	6.1	0.0	0.2	100.0	427
3-4	91.0	7.8	0.3	0.9	100.0	658
5-9	90.9	7.8	0.2	1.2	100.0	591
10+	88.6	10.1	0.4	1.0	100.0	517
Prior HIV testing status						
Ever tested, got result	89.8	8.7	0.2	1.3	100.0	1,295
Ever tested, did not get result	94.4	5.6	0.0	0.0	100.0	54
Never tested	88.8	9.3	0.3	1.6	100.0	1,576
Condom use at last higher-risk intercourse in last 12 months						
Used condom	89.9	8.2	0.2	1.7	100.0	526
Did not use condom	92.1	6.3	0.0	1.6	100.0	318
No higher-risk sex/no sex in last 12 months	88.8	9.6	0.3	1.4	100.0	2,082
Condom use at first sex						
Used condom	89.6	7.0	0.4	3.0	100.0	230
Did not use condom	91.2	7.3	0.2	1.3	100.0	628
Total	89.3	9.0	0.2	1.5	100.0	2,926

Note: Total includes 21 men with age at first sex inconsistent/missing, 8 missing information on number of sexual partners in last 12 months, 4 missing information on condom use, 2 missing information on condom use in last 12 months, 237 missing information on number of lifetime partners, 1 missing information on prior HIV testing status, and 8 missing information on condom use at first sex. Figures in parentheses are based on 25-49 unweighted cases.

ESTIMATES OF SAMPLING ERRORS

Appendix B

Estimates derived from a sample survey are affected by two types of errors: 1) non-sampling errors and 2) sampling errors. Non-sampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the 2008-09 Kenya Demographic and Health Survey (2008-09 KDHS) to minimize this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the 2008-09 KDHS is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

Sampling error is usually measured in terms of the standard error for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the 2008-09 KDHS sample is the result of a multi-stage stratified design, and consequently, it was necessary to use a more complex formula. The computer software used to calculate sampling errors for the 2008-09 KDHS is the sampling error module in ISSA (Integrated System for Survey Analysis). This module uses the Taylor linearization method of variance estimation for survey estimates that are means or proportions. Another approach, the Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$SE^2(r) = var(r) = \frac{1-f}{x^2}\sum_{h=1}^{H}\left[\frac{m_h}{m_{h-1}}\left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h}\right)\right]$$

in which

$$z_{hi} = y_{hi} - rx_{hi}\text{, and } z_h = y_h - rx_h$$

where h represents the stratum which varies from *1* to H,
m_h is the total number of clusters selected in the h^{th} stratum,
y_{hi} is the sum of the weighted values of variable y in the i^{th} cluster in the h^{th} stratum,
x_{hi} is the sum of the weighted number of cases in the i^{th} cluster in the h^{th} stratum, and
f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulas. Each replication considers *all but one* cluster in the calculation of the estimates. Pseudo-independent replications are thus created. In the 2008-09 KDHS, there were 398 non-empty clusters. Hence, 398 replications were created. The variance of a rate r is calculated as follows:

$$SE^2(r) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of 398 clusters,
$r_{(i)}$ is the estimate computed from the reduced sample of 397 clusters (i^{th} cluster excluded), and
k is the total number of clusters.

In addition to the standard error, the design effect (DEFT) for each estimate is also calculated. The design effect is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. Relative errors and confidence limits for the estimates are also computed.

Sampling errors for the 2008-09 KDHS are calculated for selected variables considered to be of primary interest for the women's and men's samples. The results are presented in this appendix for the country as a whole, for urban and rural areas, and for 8 provinces. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 to B.12 present the value of the statistic (R), its standard error (SE), the number of unweighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for the selected variables including fertility and mortality rates. The sampling errors for mortality rates are presented for the whole country for the five-year period preceding the survey and by residence and province for the ten-year period preceding the survey. The DEFT is considered undefined when the standard error considering a simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of unweighted cases is not relevant, as there is no known unweighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for children ever born to women age 40-49) can be interpreted as follows: the overall average from the national sample is 5.601 and its standard error is 0.144. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate (i.e., 5.601 ± 2×0.144; in others words between 5.313 and 5.888). There is a high probability (95 percent) that the true average number of children ever born to all women aged 40 to 49 is between 5.313 and 5.888.

For the women, the relative standard errors (SE/R) for the means and proportions range between 2 percent and 15 percent, with an average relative standard error of 6.2 percent; the highest

relative standard errors are for indicators with very small values (e.g., *Currently using IUD* at 15 percent, *Currently using condom* at 15 percent, and *maternal mortality ratio* at 16 percent). If indicators with very high values of relative standard errors (less those three indicators) were removed, then the average drops to 5.6 percent. So in general, the relative standard error for most indicators for the country as a whole is small, except for indicators of very small size. The relative standard error for the total fertility rate is small (under 4 percent). However, for the childhood mortality rates, the average relative standard error at the national level is much higher, about 11 percent.

There are differentials in the relative standard error for indicators by sub-populations. For example, for the variable *Unmet need for family planning*, the relative standard errors as a percent of the estimated mean for the whole country, urban areas and rural areas are 3.2 percent, 5.6 percent, and 3.7 percent, respectively.

For the total women sample, the value of the design effect (DEFT) averaged over all variables is 1.83, which means that due to multi-stage clustering of the sample the average standard error is increased by a factor of 1.83 over that in an equivalent simple random sample.

Table B.1 List of selected variables for sampling errors, Kenya 2008-09

Variable	Type	Base population
	WOMEN	
No education	Proportion	All women 15-49
At least some secondary education	Proportion	All women 15-49
Total fertility rate (last 3 years)	Rate	All women 15-49
Children ever born to women 40-49	Proportion	All women 40-49
Currently using any method	Proportion	Currently married women 15-49
Currently using any modern method	Proportion	Currently married women 15-49
Currently using female sterilisation	*Proportion*	*Currently married women 15-49*
Currently using pill	*Proportion*	*Currently married women 15-49*
Currently using IUD	*Proportion*	*Currently married women 15-49*
Currently using injectables	*Proportion*	*Currently married women 15-49*
Currently using male condoms	*Proportion*	*Currently married women 15-49*
Currently using periodic abstinence	*Proportion*	*Currently married women 15-49*
Using public sector source for family planning	*Proportion*	*All women 15-49 using a modern method*
Want no more children or sterilised	*Proportion*	*Currently married women 15-49*
Unmet need for family planning	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
Neonatal mortality rate (last 5 years)	*Rate*	*Births in last 5 years*
Postneonatal mortality rate (last 5 years)	*Rate*	*Births in last 5 years*
Infant mortality rate (last 5 or 10 years)*	Rate	Births in last 10 (5) years
Child mortality rate (last 5 years)	*Rate*	*Births in last 5 years*
Under five mortality rate (last 5 or 10 years)*	Rate	Births in last 10 (5) years
Antenatal care from doctor, nurse, or midwife	Proportion	Women 15-49 with birth in last 5 years
Birth protected against tetanus	Proportion	Women 15-49 with birth in last 5 years
Delivery assistance from doctor, nurse, midwife	Proportion	Births in last 5 years
Delivery in health facility	Proportion	Births in last 5 years
Child received DPT 3	Proportion	Children 12-23 months
Child fully immunised	Proportion	Children 12-23 months
Child had diarrhoea in last 2 weeks	Proportion	Children under 5
Child treated with ORS	Proportion	Children under 5 with diarrhoea in last 2 weeks
Height for age (<-2SD)	Proportion	Children under 5 who were measured
Weight for height (<-2SD)	Proportion	Children under 5 who were measured
Weight for age (<-2SD)	Proportion	Children under 5 who were measured
Vitamin A supplementation in last 6 months	Proportion	Children 6-59 months
Owns at least 1 insecticide-treated net (ITN)	Proportion	Households
Child slept under an ITN last night	Proportion	Children under 5 in household
Woman slept under an ITN last night	Proportion	All women 15-49
Received 2+ doses of SP/Fansidar during antenatal visit (IPT)	Proportion	Women 15-49 with birth in last 2 years
Child has fever in last 2 weeks	Proportion	Children under 5 in woman's birth history
Child took antimalarial	Proportion	Children under 5 with fever in last 2 weeks
Comprehensive knowledge about HIV	Proportion	All women 15-49
Multiple sexual partners in the last 12 months	Proportion	All women 15-49
Sex with a non-marital, non-cohabiting partner in last 12 months	Proportion	Women 15-49 who had sex in last 12 months
Ever experienced physical or sexual violence by husband	Proportion	Ever-married women 15-49
Maternal mortality ratio 0-9 years before the survey	*Ratio*	*Number of births in last 10 years*
HIV prevalence rate	Proportion	Women 15-49 tested for HIV
	MEN	
No education	Proportion	All men 15-49
At least some secondary education	Proportion	All men 15-49
Want no more children	*Proportion*	*Currently married men 15-49*
Ideal number of children	*Mean*	*All men 15-49*
Comprehensive knowledge about HIV	Proportion	All men 15-49
Having multiple sexual partners in the last 12 months	Proportion	All men 15-49
Sex with a non-marital, non-cohabiting partner in last 12 months	Proportion	Men 15-49 who had sex in last 12 months
HIV prevalence rate	Proportion	Men 15-49 tested for HIV

Note: Items in italics presented for national level only
* 5 years at the national level; 10 years for residence and province

Table B.2 Sampling Errors for Kenya

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.089	0.010	8444	8444	3.232	0.112	0.069	0.109
At least some secondary education	0.343	0.016	8444	8444	3.006	0.045	0.312	0.374
Total fertility rate (last 3 years)	4.558	0.170	na	23664	2.084	0.037	4.218	4.899
Children ever born to women age 40-49	5.601	0.144	1400	1429	1.910	0.026	5.313	5.888
Currently using any contraceptive method	0.455	0.013	5041	4928	1.824	0.028	0.429	0.480
Currently using a modern method	0.394	0.012	5041	4928	1.711	0.030	0.371	0.418
Currently using female sterilization	0.048	0.005	5041	4928	1.679	0.105	0.038	0.058
Currently using pill	0.072	0.006	5041	4928	1.601	0.081	0.061	0.084
Currently using IUD	0.016	0.002	5041	4928	1.306	0.146	0.011	0.020
Using injectable	0.216	0.009	5041	4928	1.615	0.043	0.197	0.235
Currently using condom	0.018	0.003	5041	4928	1.404	0.146	0.013	0.023
Currently using periodic abstinence	0.047	0.006	5041	4928	1.946	0.124	0.035	0.058
Obtained method from public sector source	0.573	0.019	2198	2329	1.758	0.032	0.536	0.610
Want no more children or sterilised	0.536	0.015	5041	4928	2.117	0.028	0.506	0.566
Unmet need for family planning	0.256	0.008	5041	4928	1.327	0.032	0.240	0.272
Ideal number of children	3.752	0.057	7911	8139	2.594	0.015	3.638	3.866
Neonatal mortality rate (last 5 years)	30.922	3.738	6087	5882	1.453	0.121	23.446	38.399
Postneonatal mortality rate (last 5 years)	20.822	2.615	6092	5884	1.301	0.126	15.591	26.053
Infant mortality rate (last 5 years)	51.744	4.702	6096	5889	1.455	0.091	42.340	61.149
Child mortality rate (last 5 years)	23.082	2.866	6128	5914	1.327	0.124	17.350	28.813
Under five mortality rate (last 5 years)	73.632	5.974	6141	5926	1.548	0.081	61.684	85.580
Antenatal care from doctor, nurse, midwife	0.915	0.008	4082	3973	1.776	0.009	0.899	0.931
Birth protected against neonatal tetanus	0.725	0.010	4082	3973	1.491	0.014	0.704	0.746
Delivery assistance from doctor, nurse, midwife	0.438	0.017	6079	5852	2.185	0.039	0.404	0.471
Delivery in health facility	0.426	0.017	6079	5852	2.179	0.039	0.393	0.459
DPT-3 dose	0.864	0.015	1119	1096	1.441	0.017	0.834	0.894
Fully immunized	0.683	0.020	1119	1096	1.391	0.029	0.644	0.722
Had diarrhoea in two weeks before survey	0.166	0.009	5706	5481	1.790	0.057	0.147	0.185
Treated with oral rehydration salts (ORS)	0.388	0.025	946	909	1.462	0.064	0.338	0.438
Height-for-age (below -2 SD)	0.353	0.011	5563	5470	1.539	0.030	0.332	0.374
Weight-for-height (below -2 SD)	0.067	0.005	5563	5470	1.408	0.074	0.057	0.077
Weight-for-age (below -2 SD)	0.161	0.010	5563	5470	1.853	0.063	0.141	0.181
Vitamin A supplement	0.303	0.012	5111	4946	1.616	0.038	0.280	0.326
Owns at least 1 insecticide-treated net (ITN)	0.557	0.015	9057	9057	2.930	0.027	0.527	0.588
Child slept under an ITN last night	0.467	0.017	6098	5953	2.182	0.037	0.432	0.502
Woman slept under ITN last night	0.411	0.016	8767	8849	2.672	0.039	0.379	0.443
Received 2+ doses of SP/Fansidar antenatal visit	0.140	0.011	2373	2264	1.550	0.079	0.118	0.162
Child has fever in last 2 weeks	0.237	0.012	5706	5481	1.946	0.052	0.213	0.262
Child took antimalarial	0.232	0.019	1385	1302	1.501	0.080	0.194	0.269
Has comprehensive knowledge of HIV/AIDS	0.487	0.013	8444	8444	2.360	0.026	0.462	0.513
Multiple sexual partners in last 12 months	0.012	0.002	8444	8444	1.369	0.136	0.009	0.015
Sex with non-marital partner in last 12 months	0.180	0.009	5995	5981	1.754	0.048	0.163	0.198
Ever have physical/sexual violence by husband	0.392	0.012	4906	4336	1.728	0.031	0.368	0.416
Maternal mortality ratio (last 10 years)	488.349	77.467	na	na	na	0.159	333.415	643.284
HIV prevalence rate 15-49	0.080	0.006	3811	3641	1.411	0.078	0.067	0.092
			MEN					
No education	0.034	0.006	3256	3258	1.749	0.163	0.023	0.046
At least some secondary education	0.448	0.022	3256	3258	2.478	0.048	0.405	0.491
Want no more children	0.440	0.029	1632	1592	2.384	0.067	0.381	0.499
Ideal number of children	4.037	0.085	3095	3123	1.726	0.021	3.867	4.207
Has comprehensive knowledge of HIV/AIDS	0.558	0.015	3256	3258	1.764	0.027	0.528	0.589
Multiple sexual partners in last 12 months	0.093	0.007	3256	3258	1.334	0.073	0.080	0.107
Sex with non-marital partner in last 12 months	0.354	0.015	2329	2323	1.546	0.043	0.324	0.385
HIV prevalence rate 15-49	0.043	0.005	2907	3066	1.343	0.118	0.033	0.053

Table B.3 Sampling Errors for Urban

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.047	0.010	2615	2148	2.515	0.222	0.026	0.067
At least some secondary education	0.576	0.025	2615	2148	2.634	0.044	0.525	0.627
Total fertility rate (last 3 years)	2.920	0.288	na	6194	2.561	0.099	2.344	3.496
Children ever born to women age 40-49	3.567	0.172	338	264	1.562	0.048	3.223	3.911
Currently using any contraceptive method	0.531	0.019	1421	1154	1.422	0.035	0.493	0.568
Currently using a modern method	0.466	0.019	1421	1154	1.454	0.041	0.428	0.505
Unmet need for family planning	0.202	0.011	1421	1154	1.067	0.056	0.179	0.225
Ideal number of children	3.122	0.057	2497	2097	1.804	0.018	3.008	3.237
Infant mortality rate (last 10 years)	62.757	7.936	2618	2039	1.372	0.126	46.885	78.629
Under five mortality rate (last 10 years)	74.457	8.962	2629	2042	1.443	0.120	56.533	92.381
Antenatal care from doctor, nurse, midwife	0.958	0.010	1092	823	1.508	0.010	0.939	0.977
Birth protected against neonatal tetanus	0.741	0.026	1092	823	1.976	0.035	0.689	0.794
Delivery assistance from doctor, nurse, midwife	0.748	0.030	1467	1074	2.132	0.040	0.688	0.808
Delivery in health facility	0.747	0.030	1467	1074	2.142	0.040	0.687	0.807
DPT-3 dose	0.877	0.033	294	252	1.785	0.038	0.811	0.944
Fully immunized	0.629	0.033	294	252	1.198	0.053	0.563	0.696
Had diarrhoea in two weeks before survey	0.168	0.022	1386	1010	2.021	0.133	0.123	0.212
Treated with oral rehydration salts (ORS)	0.403	0.061	212	169	1.768	0.151	0.282	0.525
Height-for-age (below -2 SD)	0.264	0.026	1270	912	1.905	0.098	0.212	0.316
Weight-for-height (below -2 SD)	0.053	0.009	1270	912	1.316	0.170	0.035	0.071
Weight-for-age (below -2 SD)	0.103	0.018	1270	912	1.776	0.170	0.068	0.138
Vitamin A supplement	0.348	0.024	1241	926	1.626	0.069	0.301	0.396
Owns at least 1 insecticide-treated net (ITN)	0.578	0.034	2910	2350	3.697	0.059	0.510	0.645
Child slept under an ITN last night	0.618	0.024	1406	1007	1.497	0.039	0.570	0.665
Woman slept under ITN last night	0.469	0.042	2735	2244	3.716	0.089	0.385	0.552
Received 2+ doses of SP/Fansidar antenatal visit	0.155	0.031	614	457	2.100	0.198	0.094	0.217
Child has fever in last 2 weeks	0.220	0.020	1386	1010	1.629	0.093	0.180	0.261
Child took antimalarial	0.257	0.057	298	223	2.009	0.221	0.144	0.371
Has comprehensive knowledge of HIV/AIDS	0.620	0.025	2615	2148	2.598	0.040	0.571	0.669
Multiple sexual partners in last 12 months	0.022	0.005	2615	2148	1.686	0.220	0.012	0.032
Sex with non-marital partner in last 12 months	0.251	0.017	1860	1545	1.691	0.068	0.217	0.285
Ever have physical/sexual violence by husband	0.332	0.026	1398	1022	2.062	0.078	0.280	0.384
HIV prevalence rate 15-49	0.104	0.016	1093	862	1.698	0.151	0.073	0.136
			MEN					
No education	0.014	0.006	1023	866	1.611	0.426	0.002	0.026
At least some secondary education	0.709	0.040	1023	866	2.834	0.057	0.628	0.789
Has comprehensive knowledge of HIV/AIDS	0.695	0.034	1023	866	2.376	0.049	0.626	0.763
Multiple sexual partners in last 12 months	0.105	0.016	1023	866	1.665	0.152	0.073	0.137
Sex with non-marital partner in last 12 months	0.322	0.027	818	708	1.640	0.083	0.269	0.376
HIV prevalence rate 15-49	0.037	0.010	889	798	1.511	0.260	0.018	0.056

Table B.4 Sampling Errors for Rural

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.104	0.013	5829	6296	3.193	0.123	0.078	0.129
At least some secondary education	0.263	0.013	5829	6296	2.204	0.048	0.238	0.288
Total fertility rate (last 3 years)	5.177	0.147	na	17470	1.622	0.028	4.883	5.470
Children ever born to women age 40-49	6.061	0.138	1062	1165	1.622	0.023	5.786	6.336
Currently using any contraceptive method	0.431	0.015	3620	3774	1.819	0.035	0.402	0.461
Currently using a modern method	0.372	0.014	3620	3774	1.714	0.037	0.345	0.400
Unmet need for family planning	0.273	0.010	3620	3774	1.345	0.037	0.253	0.293
Ideal number of children	3.971	0.063	5414	6042	2.316	0.016	3.844	4.098
Infant mortality rate (last 10 years)	58.488	4.147	8979	9427	1.476	0.071	50.194	66.782
Under five mortality rate (last 10 years)	85.624	6.250	9033	9482	1.754	0.073	73.124	98.123
Antenatal care from doctor, nurse, midwife	0.903	0.010	2990	3150	1.746	0.011	0.884	0.923
Birth protected against neonatal tetanus	0.720	0.011	2990	3150	1.354	0.015	0.698	0.743
Delivery assistance from doctor, nurse, midwife	0.368	0.017	4612	4777	2.021	0.047	0.333	0.402
Delivery in health facility	0.354	0.017	4612	4777	2.015	0.048	0.320	0.388
DPT-3 dose	0.860	0.016	825	844	1.318	0.019	0.827	0.893
Fully immunized	0.699	0.023	825	844	1.392	0.033	0.653	0.745
Had diarrhoea in two weeks before survey	0.165	0.010	4320	4471	1.712	0.063	0.145	0.186
Treated with oral rehydration salts (ORS)	0.385	0.027	734	740	1.372	0.071	0.330	0.439
Height-for-age (below -2 SD)	0.371	0.011	4293	4557	1.424	0.031	0.348	0.393
Weight-for-height (below -2 SD)	0.070	0.006	4293	4557	1.371	0.081	0.059	0.081
Weight-for-age (below -2 SD)	0.173	0.012	4293	4557	1.791	0.067	0.150	0.196
Vitamin A supplement	0.292	0.013	3870	4020	1.578	0.045	0.266	0.318
Owns at least 1 insecticide-treated net (ITN)	0.550	0.017	6147	6707	2.716	0.031	0.516	0.585
Child slept under an ITN last night	0.436	0.020	4692	4946	2.147	0.045	0.397	0.476
Woman slept under ITN last night	0.391	0.017	6032	6605	2.434	0.044	0.357	0.425
Received 2+ doses of SP/Fansidar antenatal visit	0.136	0.011	1759	1806	1.385	0.083	0.114	0.159
Child has fever in last 2 weeks	0.241	0.014	4320	4471	1.952	0.060	0.213	0.270
Child took antimalarial	0.226	0.019	1087	1079	1.356	0.084	0.188	0.264
Has comprehensive knowledge of HIV/AIDS	0.442	0.011	5829	6296	1.720	0.025	0.420	0.464
Multiple sexual partners in last 12 months	0.008	0.001	5829	6296	1.149	0.164	0.006	0.011
Sex with non-marital partner in last 12 months	0.156	0.009	4135	4436	1.637	0.059	0.138	0.175
Ever have physical/sexual violence by husband	0.411	0.014	3508	3314	1.709	0.035	0.382	0.439
HIV prevalence rate 15-49	0.072	0.006	2718	2779	1.291	0.089	0.059	0.085
			MEN					
No education	0.042	0.007	2233	2392	1.709	0.173	0.027	0.056
At least some secondary education	0.353	0.017	2233	2392	1.647	0.047	0.320	0.387
Has comprehensive knowledge of HIV/AIDS	0.509	0.014	2233	2392	1.296	0.027	0.482	0.537
Multiple sexual partners in last 12 months	0.089	0.007	2233	2392	1.185	0.080	0.075	0.103
Sex with non-marital partner in last 12 months	0.368	0.018	1511	1615	1.452	0.049	0.332	0.404
HIV prevalence rate 15-49	0.045	0.006	2018	2268	1.271	0.131	0.033	0.056

Table B.5 Sampling Errors for Nairobi

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.025	0.012	952	728	2.386	0.488	0.001	0.048
At least some secondary education	0.681	0.040	952	728	2.627	0.058	0.602	0.760
Total fertility rate (last 3 years)	2.825	0.414	na	2111	2.023	0.147	1.997	3.653
Children ever born to women age 40-49	3.407	0.298	120	73	1.579	0.088	2.811	4.004
Currently using any contraceptive method	0.553	0.034	470	363	1.489	0.062	0.485	0.622
Currently using a modern method	0.490	0.036	470	363	1.570	0.074	0.418	0.563
Unmet need for family planning	0.151	0.020	470	363	1.221	0.134	0.110	0.191
Ideal number of children	2.849	0.080	934	714	1.741	0.028	2.689	3.008
Infant mortality rate (last 10 years)	59.647	13.930	731	582	1.259	0.234	31.788	87.507
Under five mortality rate (last 10 years)	63.540	13.924	733	582	1.228	0.219	35.693	91.387
Antenatal care from doctor, nurse, midwife	0.964	0.013	333	269	1.347	0.014	0.937	0.991
Birth protected against neonatal tetanus	0.735	0.033	333	269	1.355	0.045	0.669	0.801
Delivery assistance from doctor, nurse, midwife	0.889	0.029	414	334	1.766	0.033	0.830	0.947
Delivery in health facility	0.894	0.027	414	334	1.668	0.031	0.839	0.948
DPT-3 dose	0.822	0.068	72	56	1.526	0.083	0.686	0.958
Fully immunized	0.570	0.063	72	56	1.084	0.110	0.445	0.696
Had diarrhoea in two weeks before survey	0.119	0.028	396	312	1.677	0.232	0.064	0.175
Treated with oral rehydration salts (ORS)	0.288	0.058	37	37	0.881	0.202	0.172	0.403
Height-for-age (below -2 SD)	0.285	0.033	345	264	1.304	0.115	0.219	0.351
Weight-for-height (below -2 SD)	0.038	0.015	345	264	1.480	0.392	0.008	0.067
Weight-for-age (below -2 SD)	0.079	0.018	345	264	1.230	0.229	0.043	0.115
Vitamin A supplement	0.387	0.041	351	277	1.546	0.106	0.305	0.469
Owns at least 1 insecticide-treated net (ITN)	0.508	0.032	1108	801	2.102	0.062	0.445	0.572
Child slept under an ITN last night	0.519	0.043	397	306	1.571	0.084	0.432	0.606
Woman slept under ITN last night	0.477	0.037	1005	758	1.963	0.078	0.403	0.551
Received 2+ doses of SP/Fansidar antenatal visit	0.102	0.040	170	136	1.734	0.396	0.021	0.182
Child has fever in last 2 weeks	0.182	0.036	396	312	1.809	0.198	0.110	0.254
Child took antimalarial	0.169	0.084	58	57	1.919	0.498	0.001	0.338
Has comprehensive knowledge of HIV/AIDS	0.667	0.025	952	728	1.624	0.037	0.617	0.716
Multiple sexual partners in last 12 months	0.018	0.006	952	728	1.293	0.308	0.007	0.029
Sex with non-marital partner in last 12 months	0.302	0.038	669	519	2.144	0.126	0.226	0.378
Ever have physical/sexual violence by husband	0.242	0.031	448	320	1.551	0.130	0.180	0.305
HIV prevalence rate 15-49	0.108	0.030	402	287	1.912	0.275	0.049	0.167
			MEN					
No education	0.015	0.014	399	314	2.312	0.934	0.000	0.044
At least some secondary education	0.781	0.049	399	314	2.362	0.063	0.683	0.879
Has comprehensive knowledge of HIV/AIDS	0.766	0.045	399	314	2.114	0.059	0.676	0.855
Multiple sexual partners in last 12 months	0.075	0.017	399	314	1.276	0.225	0.041	0.109
Sex with non-marital partner in last 12 months	0.407	0.041	335	265	1.534	0.101	0.324	0.489
HIV prevalence rate 15-49	0.034	0.013	356	297	1.343	0.380	0.008	0.060

Table B.6 Sampling Errors for Central Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.007	0.002	973	905	0.884	0.335	0.002	0.012
At least some secondary education	0.414	0.027	973	905	1.683	0.064	0.361	0.467
Total fertility rate (last 3 years)	3.420	0.240	na	2580	1.504	0.070	2.939	3.901
Children ever born to women age 40-49	4.432	0.186	223	219	1.288	0.042	4.060	4.803
Currently using any contraceptive method	0.667	0.027	565	535	1.339	0.040	0.614	0.720
Currently using a modern method	0.625	0.029	565	535	1.418	0.046	0.568	0.683
Unmet need for family planning	0.156	0.020	565	535	1.281	0.126	0.117	0.195
Ideal number of children	3.081	0.058	959	892	1.535	0.019	2.965	3.197
Infant mortality rate (last 10 years)	41.836	7.707	998	935	1.153	0.184	26.423	57.249
Under five mortality rate (last 10 years)	51.127	8.350	999	936	1.161	0.163	34.427	67.826
Antenatal care from doctor, nurse, midwife	0.927	0.015	396	371	1.124	0.016	0.898	0.956
Birth protected against neonatal tetanus	0.818	0.021	396	371	1.062	0.025	0.777	0.859
Delivery assistance from doctor, nurse, midwife	0.738	0.037	496	466	1.678	0.050	0.664	0.812
Delivery in health facility	0.730	0.037	496	466	1.676	0.051	0.656	0.804
DPT-3 dose	0.922	0.029	81	74	0.951	0.031	0.865	0.979
Fully immunized	0.815	0.054	81	74	1.246	0.067	0.707	0.924
Had diarrhoea in two weeks before survey	0.144	0.028	460	437	1.651	0.197	0.087	0.201
Treated with oral rehydration salts (ORS)	0.280	0.055	62	63	1.061	0.198	0.169	0.390
Height-for-age (below -2 SD)	0.324	0.036	466	442	1.534	0.111	0.252	0.395
Weight-for-height (below -2 SD)	0.049	0.012	466	442	1.154	0.236	0.026	0.072
Weight-for-age (below -2 SD)	0.121	0.021	466	442	1.329	0.170	0.080	0.163
Vitamin A supplement	0.277	0.030	418	397	1.287	0.107	0.218	0.336
Owns at least 1 insecticide-treated net (ITN)	0.327	0.045	1134	1079	3.256	0.139	0.237	0.418
Child slept under an ITN last night	0.350	0.052	508	483	2.099	0.149	0.246	0.454
Woman slept under ITN last night	0.232	0.042	1026	953	2.831	0.183	0.147	0.317
Received 2+ doses of SP/Fansidar antenatal visit	0.162	0.033	184	168	1.196	0.201	0.097	0.227
Child has fever in last 2 weeks	0.265	0.024	460	437	1.104	0.090	0.218	0.313
Child took antimalarial	0.117	0.032	118	116	1.009	0.276	0.052	0.181
Has comprehensive knowledge of HIV/AIDS	0.578	0.021	973	905	1.297	0.036	0.537	0.619
Multiple sexual partners in last 12 months	0.018	0.006	973	905	1.335	0.317	0.007	0.029
Sex with non-marital partner in last 12 months	0.149	0.017	683	650	1.222	0.112	0.116	0.182
Ever have physical/sexual violence by husband	0.361	0.019	587	495	0.962	0.053	0.323	0.399
HIV prevalence rate 15-49	0.062	0.013	444	405	1.123	0.207	0.036	0.088
			MEN					
No education	0.011	0.006	365	347	1.061	0.536	0.000	0.022
At least some secondary education	0.430	0.042	365	347	1.629	0.098	0.345	0.514
Has comprehensive knowledge of HIV/AIDS	0.639	0.042	365	347	1.676	0.066	0.555	0.724
Multiple sexual partners in last 12 months	0.051	0.012	365	347	1.005	0.227	0.028	0.074
Sex with non-marital partner in last 12 months	0.412	0.034	251	246	1.101	0.083	0.343	0.480
HIV prevalence rate 15-49	0.026	0.010	310	329	1.065	0.373	0.007	0.045

Table B.7 Sampling Errors for Coast Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.243	0.039	1149	674	3.045	0.159	0.166	0.320
At least some secondary education	0.284	0.038	1149	674	2.870	0.134	0.208	0.361
Total fertility rate (last 3 years)	4.805	0.495	na	1902	1.789	0.103	3.814	5.796
Children ever born to women age 40-49	5.564	0.424	169	100	1.985	0.076	4.716	6.413
Currently using any contraceptive method	0.343	0.027	718	427	1.540	0.080	0.288	0.398
Currently using a modern method	0.297	0.024	718	427	1.403	0.081	0.249	0.345
Unmet need for family planning	0.254	0.019	718	427	1.160	0.074	0.217	0.292
Ideal number of children	4.593	0.306	1080	642	3.558	0.067	3.982	5.205
Infant mortality rate (last 10 years)	71.088	12.853	1666	965	1.789	0.181	45.383	96.794
Under five mortality rate (last 10 years)	87.358	14.989	1676	969	1.925	0.172	57.381	117.336
Antenatal care from doctor, nurse, midwife	0.945	0.017	590	330	1.812	0.018	0.910	0.980
Birth protected against neonatal tetanus	0.777	0.027	590	330	1.560	0.034	0.723	0.830
Delivery assistance from doctor, nurse, midwife	0.456	0.039	883	495	1.826	0.085	0.379	0.534
Delivery in health facility	0.444	0.041	883	495	1.921	0.092	0.362	0.525
DPT-3 dose	0.867	0.044	155	104	1.735	0.051	0.778	0.956
Fully immunized	0.670	0.047	155	104	1.328	0.071	0.575	0.765
Had diarrhoea in two weeks before survey	0.272	0.037	831	466	2.226	0.136	0.198	0.346
Treated with oral rehydration salts (ORS)	0.418	0.034	190	127	0.949	0.082	0.349	0.487
Height-for-age (below -2 SD)	0.390	0.028	831	485	1.487	0.073	0.334	0.447
Weight-for-height (below -2 SD)	0.107	0.019	831	485	1.656	0.178	0.069	0.146
Weight-for-age (below -2 SD)	0.235	0.026	831	485	1.487	0.109	0.184	0.286
Vitamin A supplement	0.383	0.022	744	425	1.127	0.058	0.339	0.428
Owns at least 1 insecticide-treated net (ITN)	0.663	0.042	1212	755	3.117	0.064	0.579	0.748
Child slept under an ITN last night	0.569	0.027	865	503	1.240	0.048	0.514	0.623
Woman slept under ITN last night	0.493	0.056	1174	709	3.135	0.113	0.382	0.605
Received 2+ doses of SP/Fansidar antenatal visit	0.129	0.031	358	211	1.765	0.243	0.066	0.192
Child has fever in last 2 weeks	0.350	0.036	831	466	1.968	0.103	0.277	0.422
Child took antimalarial	0.203	0.038	291	163	1.467	0.186	0.127	0.278
Has comprehensive knowledge of HIV/AIDS	0.433	0.030	1149	674	2.035	0.069	0.374	0.493
Multiple sexual partners in last 12 months	0.025	0.006	1149	674	1.318	0.241	0.013	0.038
Sex with non-marital partner in last 12 months	0.171	0.020	839	501	1.561	0.119	0.131	0.212
Ever have physical/sexual violence by husband	0.284	0.024	671	365	1.382	0.085	0.236	0.332
HIV prevalence rate 15-49	0.058	0.016	507	284	1.587	0.284	0.025	0.091
			MEN					
No education	0.031	0.012	419	252	1.432	0.392	0.007	0.055
At least some secondary education	0.494	0.041	419	252	1.672	0.083	0.412	0.576
Has comprehensive knowledge of HIV/AIDS	0.529	0.030	419	252	1.213	0.056	0.470	0.589
Multiple sexual partners in last 12 months	0.126	0.034	419	252	2.092	0.270	0.058	0.194
Sex with non-marital partner in last 12 months	0.315	0.054	320	200	2.064	0.170	0.208	0.423
HIV prevalence rate 15-49	0.023	0.009	390	231	1.126	0.371	0.006	0.040

Table B.8 Sampling Errors for Eastern Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.057	0.013	1127	1376	1.819	0.220	0.032	0.082
At least some secondary education	0.284	0.032	1127	1376	2.352	0.111	0.220	0.347
Total fertility rate (last 3 years)	4.444	0.395	na	3883	1.872	0.089	3.655	5.233
Children ever born to women age 40-49	5.587	0.295	201	238	1.587	0.053	4.997	6.176
Currently using any contraceptive method	0.520	0.034	699	844	1.797	0.065	0.453	0.588
Currently using a modern method	0.438	0.034	699	844	1.798	0.077	0.370	0.505
Unmet need for family planning	0.237	0.020	699	844	1.215	0.083	0.197	0.276
Ideal number of children	3.373	0.098	1089	1338	1.930	0.029	3.177	3.570
Infant mortality rate (last 10 years)	38.847	7.124	1508	1859	1.346	0.183	24.600	53.094
Under five mortality rate (last 10 years)	51.876	8.818	1512	1865	1.407	0.170	34.241	69.512
Antenatal care from doctor, nurse, midwife	0.934	0.013	522	630	1.201	0.014	0.908	0.961
Birth protected against neonatal tetanus	0.766	0.021	522	630	1.124	0.027	0.724	0.808
Delivery assistance from doctor, nurse, midwife	0.431	0.044	744	890	2.059	0.101	0.343	0.518
Delivery in health facility	0.428	0.043	744	890	2.035	0.100	0.342	0.514
DPT-3 dose	0.917	0.029	149	157	1.182	0.031	0.860	0.975
Fully immunized	0.807	0.042	149	157	1.207	0.052	0.723	0.891
Had diarrhoea in two weeks before survey	0.149	0.021	717	843	1.480	0.139	0.108	0.191
Treated with oral rehydration salts (ORS)	0.294	0.059	90	126	1.296	0.200	0.177	0.412
Height-for-age (below -2 SD)	0.419	0.027	707	881	1.389	0.065	0.365	0.473
Weight-for-height (below -2 SD)	0.073	0.010	707	881	1.025	0.139	0.053	0.094
Weight-for-age (below -2 SD)	0.198	0.023	707	881	1.376	0.115	0.153	0.243
Vitamin A supplement	0.255	0.029	641	752	1.545	0.114	0.197	0.313
Owns at least 1 insecticide-treated net (ITN)	0.604	0.025	1237	1512	1.790	0.041	0.554	0.654
Child slept under an ITN last night	0.506	0.041	767	928	1.926	0.081	0.424	0.587
Woman slept under ITN last night	0.428	0.026	1171	1444	1.682	0.062	0.375	0.481
Received 2+ doses of SP/Fansidar antenatal visit	0.153	0.026	297	334	1.264	0.173	0.100	0.206
Child has fever in last 2 weeks	0.179	0.027	717	843	1.644	0.149	0.126	0.232
Child took antimalarial	0.227	0.079	100	151	2.083	0.346	0.070	0.384
Has comprehensive knowledge of HIV/AIDS	0.463	0.024	1127	1376	1.585	0.051	0.416	0.510
Multiple sexual partners in last 12 months	0.005	0.003	1127	1376	1.199	0.503	0.000	0.010
Sex with non-marital partner in last 12 months	0.127	0.017	796	975	1.479	0.138	0.092	0.162
Ever have physical/sexual violence by husband	0.323	0.025	672	702	1.411	0.079	0.272	0.374
HIV prevalence rate 15-49	0.038	0.010	535	610	1.188	0.257	0.019	0.058
			MEN					
No education	0.013	0.006	417	530	0.998	0.422	0.002	0.025
At least some secondary education	0.376	0.035	417	530	1.459	0.092	0.306	0.445
Has comprehensive knowledge of HIV/AIDS	0.483	0.032	417	530	1.294	0.066	0.419	0.546
Multiple sexual partners in last 12 months	0.049	0.009	417	530	0.870	0.189	0.030	0.067
Sex with non-marital partner in last 12 months	0.336	0.036	251	310	1.194	0.106	0.265	0.407
HIV prevalence rate 15-49	0.030	0.012	371	502	1.296	0.381	0.007	0.054

Table B.9 Sampling Errors for Nyanza Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.021	0.005	1318	1389	1.196	0.226	0.011	0.030
At least some secondary education	0.332	0.035	1318	1389	2.675	0.105	0.263	0.402
Total fertility rate (last 3 years)	5.365	0.258	na	3831	1.338	0.048	4.850	5.881
Children ever born to women age 40-49	6.117	0.267	201	218	1.277	0.044	5.582	6.652
Currently using any contraceptive method	0.373	0.025	805	832	1.450	0.066	0.324	0.422
Currently using a modern method	0.329	0.022	805	832	1.333	0.067	0.285	0.373
Unmet need for family planning	0.317	0.017	805	832	1.028	0.053	0.283	0.351
Ideal number of children	3.730	0.065	1262	1335	1.527	0.017	3.599	3.860
Infant mortality rate (last 10 years)	94.688	8.438	2038	2092	1.183	0.089	77.813	111.564
Under five mortality rate (last 10 years)	148.854	13.164	2056	2108	1.392	0.088	122.525	175.182
Antenatal care from doctor, nurse, midwife	0.936	0.013	719	733	1.421	0.014	0.910	0.963
Birth protected against neonatal tetanus	0.739	0.025	719	733	1.502	0.033	0.690	0.789
Delivery assistance from doctor, nurse, midwife	0.455	0.029	1109	1145	1.637	0.065	0.396	0.514
Delivery in health facility	0.442	0.029	1109	1145	1.618	0.065	0.384	0.499
DPT-3 dose	0.770	0.040	205	203	1.330	0.052	0.689	0.850
Fully immunized	0.552	0.043	205	203	1.186	0.077	0.467	0.637
Had diarrhoea in two weeks before survey	0.162	0.020	999	1024	1.633	0.125	0.122	0.203
Treated with oral rehydration salts (ORS)	0.476	0.061	182	166	1.465	0.127	0.354	0.597
Height-for-age (below -2 SD)	0.309	0.020	961	991	1.228	0.065	0.269	0.349
Weight-for-height (below -2 SD)	0.039	0.007	961	991	1.162	0.190	0.024	0.054
Weight-for-age (below -2 SD)	0.106	0.013	961	991	1.205	0.122	0.080	0.132
Vitamin A supplement	0.358	0.027	886	912	1.537	0.077	0.303	0.413
Owns at least 1 insecticide-treated net (ITN)	0.765	0.022	1314	1411	1.875	0.029	0.721	0.809
Child slept under an ITN last night	0.609	0.028	1044	1078	1.470	0.045	0.554	0.664
Woman slept under ITN last night	0.584	0.025	1368	1456	1.624	0.043	0.534	0.634
Received 2+ doses of SP/Fansidar antenatal visit	0.172	0.023	452	452	1.303	0.135	0.125	0.218
Child has fever in last 2 weeks	0.243	0.029	999	1024	1.865	0.117	0.186	0.300
Child took antimalarial	0.326	0.037	243	249	1.099	0.113	0.253	0.400
Has comprehensive knowledge of HIV/AIDS	0.548	0.019	1318	1389	1.349	0.034	0.511	0.585
Multiple sexual partners in last 12 months	0.013	0.004	1318	1389	1.226	0.292	0.006	0.021
Sex with non-marital partner in last 12 months	0.200	0.015	977	1023	1.150	0.074	0.171	0.230
Ever have physical/sexual violence by husband	0.535	0.027	793	774	1.497	0.050	0.482	0.588
HIV prevalence rate 15-49	0.160	0.021	617	599	1.393	0.129	0.119	0.201
			MEN					
No education	0.008	0.004	511	520	1.019	0.508	0.000	0.016
At least some secondary education	0.431	0.040	511	520	1.834	0.093	0.351	0.512
Has comprehensive knowledge of HIV/AIDS	0.629	0.023	511	520	1.069	0.036	0.584	0.675
Multiple sexual partners in last 12 months	0.159	0.020	511	520	1.232	0.125	0.119	0.199
Sex with non-marital partner in last 12 months	0.403	0.028	369	370	1.099	0.070	0.347	0.459
HIV prevalence rate 15-49	0.114	0.018	465	494	1.229	0.159	0.077	0.150

Table B.10 Sampling Errors for Rift Valley Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.122	0.034	1278	2262	3.679	0.276	0.055	0.189
At least some secondary education	0.312	0.042	1278	2262	3.236	0.134	0.228	0.396
Total fertility rate (last 3 years)	4.663	0.513	na	6291	2.290	0.110	3.637	5.688
Children ever born to women age 40-49	5.894	0.412	212	388	2.020	0.070	5.069	6.719
Currently using any contraceptive method	0.424	0.034	757	1279	1.884	0.080	0.356	0.491
Currently using a modern method	0.347	0.029	757	1279	1.667	0.083	0.289	0.405
Unmet need for family planning	0.311	0.021	757	1279	1.250	0.068	0.269	0.353
Ideal number of children	4.040	0.169	1252	2212	3.058	0.042	3.701	4.379
Infant mortality rate (last 10 years)	47.834	7.059	2047	3340	1.226	0.148	33.716	61.952
Under five mortality rate (last 10 years)	58.928	8.406	2054	3357	1.292	0.143	42.117	75.739
Antenatal care from doctor, nurse, midwife	0.884	0.022	694	1103	1.750	0.025	0.839	0.929
Birth protected against neonatal tetanus	0.651	0.026	694	1103	1.457	0.041	0.598	0.704
Delivery assistance from doctor, nurse, midwife	0.337	0.036	1060	1642	1.950	0.106	0.266	0.408
Delivery in health facility	0.329	0.036	1060	1642	1.981	0.109	0.257	0.400
DPT-3 dose	0.929	0.021	210	347	1.142	0.022	0.888	0.971
Fully immunized	0.729	0.036	210	347	1.124	0.049	0.657	0.801
Had diarrhoea in two weeks before survey	0.159	0.021	1014	1581	1.625	0.131	0.117	0.200
Treated with oral rehydration salts (ORS)	0.395	0.059	162	251	1.396	0.149	0.277	0.512
Height-for-age (below -2 SD)	0.357	0.022	994	1541	1.274	0.061	0.313	0.400
Weight-for-height (below -2 SD)	0.089	0.012	994	1541	1.226	0.137	0.065	0.113
Weight-for-age (below -2 SD)	0.191	0.026	994	1541	1.846	0.137	0.139	0.244
Vitamin A supplement	0.309	0.025	912	1432	1.314	0.080	0.259	0.358
Owns at least 1 insecticide-treated net (ITN)	0.414	0.035	1357	2363	2.616	0.084	0.344	0.484
Child slept under an ITN last night	0.295	0.037	1088	1707	2.018	0.126	0.220	0.369
Woman slept under ITN last night	0.256	0.028	1326	2361	2.203	0.111	0.199	0.313
Received 2+ doses of SP/Fansidar antenatal visit	0.125	0.026	413	647	1.587	0.207	0.074	0.177
Child has fever in last 2 weeks	0.209	0.029	1014	1581	1.910	0.136	0.152	0.267
Child took antimalarial	0.178	0.041	239	331	1.412	0.231	0.096	0.260
Has comprehensive knowledge of HIV/AIDS	0.435	0.043	1278	2262	3.103	0.099	0.349	0.521
Multiple sexual partners in last 12 months	0.006	0.003	1278	2262	1.356	0.481	0.000	0.012
Sex with non-marital partner in last 12 months	0.205	0.021	898	1577	1.549	0.102	0.163	0.246
Ever have physical/sexual violence by husband	0.394	0.032	739	1112	1.773	0.081	0.330	0.458
HIV prevalence rate 15-49	0.063	0.014	585	976	1.382	0.220	0.036	0.091
			MEN					
No education	0.060	0.019	517	885	1.785	0.311	0.023	0.097
At least some secondary education	0.441	0.060	517	885	2.757	0.137	0.321	0.562
Has comprehensive knowledge of HIV/AIDS	0.537	0.040	517	885	1.805	0.074	0.457	0.616
Multiple sexual partners in last 12 months	0.098	0.015	517	885	1.159	0.155	0.068	0.129
Sex with non-marital partner in last 12 months	0.299	0.034	397	668	1.485	0.114	0.231	0.368
HIV prevalence rate 15-49	0.028	0.011	462	818	1.411	0.385	0.007	0.050

Table B.11 Sampling Errors for Western Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.041	0.010	1039	927	1.618	0.243	0.021	0.061
At least some secondary education	0.280	0.028	1039	927	2.025	0.101	0.223	0.336
Total fertility rate (last 3 years)	5.565	0.313	na	2552	1.409	0.056	4.939	6.191
Children ever born to women age 40-49	6.611	0.308	181	167	1.615	0.047	5.996	7.226
Currently using any contraceptive method	0.465	0.028	603	518	1.380	0.060	0.409	0.521
Currently using a modern method	0.411	0.026	603	518	1.310	0.064	0.359	0.464
Unmet need for family planning	0.258	0.021	603	518	1.163	0.080	0.217	0.300
Ideal number of children	3.910	0.066	1023	913	1.285	0.017	3.777	4.042
Infant mortality rate (last 10 years)	65.189	12.275	1507	1354	1.792	0.188	40.639	89.740
Under five mortality rate (last 10 years)	121.353	19.189	1521	1365	2.079	0.158	82.976	159.731
Antenatal care from doctor, nurse, midwife	0.915	0.019	514	442	1.506	0.021	0.877	0.953
Birth protected against neonatal tetanus	0.722	0.024	514	442	1.211	0.033	0.675	0.770
Delivery assistance from doctor, nurse, midwife	0.258	0.031	790	703	1.721	0.120	0.196	0.320
Delivery in health facility	0.253	0.030	790	703	1.702	0.120	0.193	0.314
DPT-3 dose	0.815	0.052	153	129	1.594	0.063	0.712	0.918
Fully immunized	0.644	0.076	153	129	1.884	0.118	0.492	0.795
Had diarrhoea in two weeks before survey	0.172	0.020	741	653	1.299	0.117	0.132	0.212
Treated with oral rehydration salts (ORS)	0.356	0.072	140	113	1.397	0.202	0.212	0.500
Height-for-age (below -2 SD)	0.342	0.030	820	733	1.675	0.087	0.283	0.402
Weight-for-height (below -2 SD)	0.023	0.009	820	733	1.515	0.383	0.005	0.041
Weight-for-age (below -2 SD)	0.118	0.021	820	733	1.649	0.179	0.076	0.160
Vitamin A supplement	0.198	0.018	672	605	1.163	0.089	0.162	0.233
Owns at least 1 insecticide-treated net (ITN)	0.714	0.024	1061	937	1.728	0.034	0.666	0.762
Child slept under an ITN last night	0.554	0.027	847	768	1.268	0.048	0.500	0.607
Woman slept under ITN last night	0.542	0.040	1070	974	2.274	0.073	0.463	0.621
Received 2+ doses of SP/Fansidar antenatal visit	0.129	0.031	301	254	1.583	0.237	0.068	0.190
Child has fever in last 2 weeks	0.301	0.026	741	653	1.372	0.087	0.248	0.354
Child took antimalarial	0.321	0.043	222	197	1.258	0.134	0.235	0.407
Has comprehensive knowledge of HIV/AIDS	0.458	0.022	1039	927	1.413	0.048	0.414	0.501
Multiple sexual partners in last 12 months	0.015	0.004	1039	927	1.184	0.298	0.006	0.024
Sex with non-marital partner in last 12 months	0.146	0.022	716	608	1.633	0.148	0.103	0.189
Ever have physical/sexual violence by husband	0.493	0.032	576	458	1.512	0.064	0.430	0.556
HIV prevalence rate 15-49	0.092	0.014	486	394	1.095	0.156	0.063	0.121
			MEN					
No education	0.017	0.008	429	349	1.257	0.459	0.001	0.033
At least some secondary education	0.317	0.029	429	349	1.282	0.091	0.260	0.375
Has comprehensive knowledge of HIV/AIDS	0.453	0.036	429	349	1.509	0.080	0.381	0.526
Multiple sexual partners in last 12 months	0.088	0.017	429	349	1.241	0.193	0.054	0.123
Sex with non-marital partner in last 12 months	0.421	0.035	292	229	1.226	0.084	0.350	0.492
HIV prevalence rate 15-49	0.034	0.011	395	334	1.183	0.315	0.013	0.056

Table B.12 Sampling Errors for North Eastern Province

Variable	R	SE	N-UNWE	N-WEIG	DEFT	SE/R	R-2SE	R+2SE
			WOMEN					
No education	0.777	0.029	608	184	1.699	0.037	0.719	0.834
At least some secondary education	0.082	0.021	608	184	1.845	0.250	0.041	0.123
Total fertility rate (last 3 years)	5.920	0.421	na	513	1.526	0.071	5.077	6.762
Children ever born to women age 40-49	6.651	0.313	93	26	1.027	0.047	6.024	7.278
Currently using any contraceptive method	0.035	0.016	424	130	1.857	0.478	0.002	0.067
Currently using a modern method	0.035	0.016	424	130	1.857	0.478	0.002	0.067
Unmet need for family planning	0.160	0.027	424	130	1.498	0.167	0.107	0.213
Ideal number of children	8.754	0.276	312	92	1.322	0.032	8.201	9.307
Infant mortality rate (last 10 years)	57.060	11.251	1102	338	1.424	0.197	34.558	79.562
Under five mortality rate (last 10 years)	79.875	15.670	1111	341	1.606	0.196	48.535	111.216
Antenatal care from doctor, nurse, midwife	0.695	0.076	314	97	2.938	0.109	0.544	0.847
Birth protected against neonatal tetanus	0.631	0.047	314	97	1.707	0.074	0.538	0.724
Delivery assistance from doctor, nurse, midwife	0.316	0.061	583	178	2.295	0.194	0.193	0.439
Delivery in health facility	0.173	0.043	583	178	1.941	0.247	0.088	0.259
DPT-3 dose	0.571	0.099	94	27	1.871	0.174	0.373	0.769
Fully immunized	0.474	0.089	94	27	1.661	0.188	0.296	0.652
Had diarrhoea in two weeks before survey	0.160	0.024	548	166	1.607	0.153	0.111	0.209
Treated with oral rehydration salts (ORS)	0.621	0.087	83	27	1.579	0.139	0.448	0.794
Height-for-age (below -2 SD)	0.352	0.030	439	133	1.286	0.085	0.292	0.412
Weight-for-height (below -2 SD)	0.195	0.026	439	133	1.304	0.135	0.143	0.248
Weight-for-age (below -2 SD)	0.245	0.019	439	133	0.856	0.080	0.206	0.284
Vitamin A supplement	0.256	0.036	487	147	1.634	0.139	0.185	0.327
Owns at least 1 insecticide-treated net (ITN)	0.733	0.029	634	199	1.640	0.039	0.675	0.790
Child slept under an ITN last night	0.627	0.051	582	181	1.876	0.081	0.525	0.728
Woman slept under ITN last night	0.527	0.039	627	195	1.727	0.075	0.448	0.606
Received 2+ doses of SP/Fansidar antenatal visit	0.100	0.033	198	62	1.543	0.330	0.034	0.166
Child has fever in last 2 weeks	0.234	0.024	548	166	1.302	0.102	0.187	0.282
Child took antimalarial	0.204	0.039	114	39	1.037	0.192	0.126	0.282
Has comprehensive knowledge of HIV/AIDS	0.051	0.012	608	184	1.318	0.232	0.027	0.074
Multiple sexual partners in last 12 months	0.000	0.000	608	184	na	na	0.000	0.000
Sex with non-marital partner in last 12 months	0.000	0.000	417	128	na	na	0.000	0.000
Ever have physical/sexual violence by husband	0.327	0.070	420	110	3.054	0.214	0.187	0.466
HIV prevalence rate 15-49	0.009	0.007	235	86	1.070	0.727	0.000	0.023
			MEN					
No education	0.412	0.056	199	62	1.608	0.137	0.299	0.524
At least some secondary education	0.253	0.046	199	62	1.481	0.181	0.162	0.345
Has comprehensive knowledge of HIV/AIDS	0.125	0.029	199	62	1.249	0.235	0.066	0.184
Multiple sexual partners in last 12 months	0.072	0.023	199	62	1.246	0.317	0.026	0.118
Sex with non-marital partner in last 12 months	0.047	0.022	114	36	1.104	0.468	0.003	0.091
HIV prevalence rate 15-49	0.009	0.009	158	63	1.207	0.999	0.000	0.028

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), Kenya 2008-09

	Women		Men			Women		Men	
Age	Number	Percent	Number	Percent	Age	Number	Percent	Number	Percent
0	563.6	2.9	652.4	3.5	37	135.8	0.7	115.5	0.6
1	552.0	2.8	554.3	3.0	38	205.7	1.1	184.6	1.0
2	590.1	3.0	666.9	3.6	39	154.7	0.8	120.4	0.7
3	612.8	3.1	587.9	3.2	40	232.5	1.2	285.3	1.5
4	593.7	3.0	601.2	3.2	41	126.4	0.6	101.2	0.5
5	542.5	2.8	558.7	3.0	42	140.9	0.7	137.2	0.7
6	657.2	3.4	700.3	3.8	43	134.3	0.7	129.7	0.7
7	482.0	2.5	531.2	2.9	44	156.5	0.8	120.6	0.7
8	622.7	3.2	687.7	3.7	45	199.5	1.0	216.6	1.2
9	480.3	2.5	534.2	2.9	46	144.3	0.7	150.6	0.8
10	624.0	3.2	614.3	3.3	47	111.8	0.6	69.2	0.4
11	467.0	2.4	415.8	2.2	48	121.9	0.6	93.6	0.5
12	607.4	3.1	555.1	3.0	49	119.2	0.6	99.0	0.5
13	491.4	2.5	447.0	2.4	50	177.3	0.9	178.6	1.0
14	490.7	2.5	524.8	2.8	51	120.9	0.6	37.1	0.2
15	361.3	1.9	358.7	1.9	52	125.2	0.6	89.6	0.5
16	441.3	2.3	453.8	2.5	53	83.7	0.4	78.5	0.4
17	349.3	1.8	332.9	1.8	54	117.7	0.6	92.0	0.5
18	397.7	2.0	465.9	2.5	55	129.1	0.7	96.3	0.5
19	312.8	1.6	341.1	1.8	56	134.2	0.7	104.2	0.6
20	440.8	2.3	339.7	1.8	57	35.7	0.2	62.6	0.3
21	315.7	1.6	281.7	1.5	58	96.1	0.5	59.9	0.3
22	399.1	2.0	326.0	1.8	59	44.4	0.2	55.1	0.3
23	291.3	1.5	266.3	1.4	60	159.6	0.8	148.0	0.8
24	358.9	1.8	258.1	1.4	61	43.4	0.2	44.4	0.2
25	331.6	1.7	295.3	1.6	62	55.3	0.3	71.5	0.4
26	271.6	1.4	263.0	1.4	63	60.5	0.3	44.1	0.2
27	274.2	1.4	208.4	1.1	64	61.5	0.3	39.1	0.2
28	361.0	1.8	263.2	1.4	65	87.7	0.4	65.9	0.4
29	290.1	1.5	196.0	1.1	66	47.5	0.2	37.2	0.2
30	379.7	1.9	340.3	1.8	67	36.2	0.2	34.9	0.2
31	143.1	0.7	163.2	0.9	68	51.7	0.3	48.3	0.3
32	249.6	1.3	228.5	1.2	69	43.1	0.2	38.1	0.2
33	219.7	1.1	141.1	0.8	70+	561.6	2.9	453.9	2.5
34	240.0	1.2	194.2	1.0	Don't know/ missing	17.2	0.1	8.7	0.0
35	242.9	1.2	255.4	1.4					
36	193.6	1.0	187.0	1.0					
					Total	19,516	100.0	18,503	100.0

Note: The de facto population includes all residents and nonresidents who stayed in the household the night before interview.

Table C.2.1 Age distribution of eligible and interviewed women

De facto household population of women age 10-54, interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted), by five-year age groups, Kenya 2008-09

Age group	Household population of women age 10-54	Interviewed women age 15-49		Percent of women
		Number	Percent	
10-14	2,681	na	na	na
15-19	1,862	1,781	20.8	95.6
20-24	1,806	1,756	20.5	97.2
25-29	1,529	1,485	17.4	97.2
30-34	1,232	1,193	14.0	96.8
25-39	933	902	10.6	96.7
40-44	791	758	8.9	95.8
45-49	697	672	7.9	96.4
50-54	625	na	na	na
15-49	8,849	8,545	100.0	96.6

Table C.2.2 Age distribution of eligible and interviewed men

De facto household population of men aged 10-59, interviewed men aged 15-54 and percent of eligible men who were interviewed (weighted), Kenya 2008-09

Age group	Household population of men age 10-59	Interviewed men age 15-54		Percentage of eligible men interviewed
		Number	Percent	
10-14	1,330	na	na	na
15-19	894	817	22.7	91.4
20-24	704	629	17.5	89.4
25-29	589	513	14.3	87.2
30-34	564	485	13.5	86.1
25-39	434	370	10.3	85.3
40-44	319	296	8.2	92.7
45-49	325	290	8.1	89.4
50-54	221	194	5.4	87.9
55-59	185	na	na	na
15-54	4,049	3,595	100.0	84.9

Table C.3 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), Kenya 2008-09

Subject	Reference group	Percentage with missing information	Number of cases
Birth date	Births in the 15 years preceding the survey		
Month only		1.70	15,911
Month and year		0.13	15,911
Age at death	Deceased children born in the 15 years preceding the survey	0.11	1,312
Age/date at first union[1]	Ever-married women age 15-49	0.48	5,810
	Ever-married men age 15-54	0.42	1,941
Respondent's education	All women age 15-49	0.00	8,444
	All men age 15-54	0.03	3,465
Diarrhoea in last 2 weeks	Living children age 0-59 months	1.45	5,481
Anthropometry	Living children age 0-59 (from the Household Questionnaire)		
Height		3.23	5,932
Weight		2.84	5,932
Height or weight		3.35	5,932

[1] Both year and age missing

Table C.4 Births by calendar years

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living, dead, and total children (weighted), Kenya 2008-09

	Number of births			Percentage with complete birth date			Sex ratio at birth			Calendar year ratio		
Calendar year	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
2009	60	6	67	100.0	100.0	100.0	109.7	298.3	119.8	na	na	na
2008	1,137	44	1,181	99.9	100.0	100.0	116.2	209.9	118.7	na	na	na
2007	1,085	80	1,164	100.0	100.0	100.0	100.7	119.1	101.8	95.6	117.5	96.9
2006	1,132	91	1,223	100.0	100.0	100.0	107.6	126.9	108.9	105.1	121.7	106.1
2005	1,070	70	1,140	100.0	100.0	100.0	97.1	127.5	98.7	98.1	81.0	96.9
2004	1,048	83	1,131	100.0	100.0	100.0	109.1	129.8	110.4	102.2	123.3	103.5
2003	982	64	1,045	100.0	100.0	100.0	97.6	121.3	98.9	86.3	62.4	84.3
2002	1,226	121	1,347	97.2	92.7	96.8	103.7	120.5	105.1	131.6	156.9	133.6
2001	882	91	972	97.1	94.5	96.8	110.2	79.7	106.9	76.5	72.0	76.0
2000	1,080	131	1,211	97.6	96.4	97.5	95.8	135.5	99.4	120.7	141.3	122.6
0-4	4,483	292	4,776	100.0	100.0	100.0	105.4	136.6	107.1	na	na	na
5-9	5,218	489	5,707	98.3	96.2	98.2	102.9	116.7	104.0	na	na	na
10-14	4,175	464	4,639	96.7	95.7	96.6	95.3	104.4	96.2	na	na	na
15-19	3,087	345	3,431	97.1	91.0	96.4	100.5	128.0	102.9	na	na	na
20+	3,535	517	4,052	96.6	92.2	96.0	106.0	141.1	109.9	na	na	na
All	20,498	2,106	22,605	97.9	94.8	97.6	102.0	123.7	103.9	na	na	na

Table C.5 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods of birth preceding the survey (weighted), Kenya 2008-09

Age at death (days)	Number of years preceding the survey				Total
	0-4	5-9	10-14	15-19	0-19
<1	75	56	45	33	208
1	25	45	18	12	101
2	19	20	4	7	50
3	22	18	5	9	55
4	4	4	2	6	15
5	2	5	3	3	12
6	2	1	0	3	6
7	14	19	16	5	54
8	1	1	0	0	3
9	0	1	0	1	2
10	1	5	2	3	10
12	0	3	0	1	3
13	0	0	0	0	0
14	9	13	10	5	37
15	4	2	2	0	8
18	0	0	0	0	0
20	0	0	0	0	0
21	2	2	5	0	9
22	0	0	0	0	0
25	2	0	0	0	2
26	0	0	0	0	0
29	0	1	0	0	1
31+	3	2	0	0	5
Total 0-30	182	196	113	87	578
Percent early neonatal	82	76	68	84	77

Table C.6 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, for five-year periods of birth preceding the survey, Kenya 2008-09

Age at death (months)	Number of years preceding the survey				Total
	0-4	5-9	10-14	15-19	0-19
<1	182	196	113	87	578
1	21	25	25	13	84
2	13	15	20	4	52
3	18	20	16	24	77
4	14	14	17	5	50
5	6	14	11	6	37
6	10	26	18	15	69
7	8	6	10	6	30
8	3	12	11	4	30
9	12	27	16	5	60
10	5	5	4	3	17
11	4	1	3	3	11
12	8	18	12	8	46
13	3	2	2	2	9
14	2	5	3	6	15
15	4	4	0	1	9
16	2	1	3	3	9
17	1	3	1	1	6
18	7	10	6	6	29
19	0	0	0	1	2
20	3	1	3	2	9
21	3	0	5	1	9
22	0	0	2	0	2
24+	1	4	0	2	7
Missing	0	0	0	0	0
1 Year	21	19	28	16	84
Total 0-11	296	361	263	174	1,094
Percent neonatal	61	54	43	50	53

Table C.7 Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Kenya 2008-2009

Background characteristic	Height-for-age			Weight-for-height				Weight-for-age				Number of children
	Percentage below -3 SD	Percentage below -2 SD[1]	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	Percentage below -3 SD	Percentage below -2 SD[1]	Percentage above +2 SD	Mean Z-score (SD)	
Age in months												
<6	1.4	5.4	0.0	0.0	3.9	9.0	0.4	0.1	2.5	8.2	0.4	462
6-8	5.3	16.7	-0.6	0.7	6.4	10.9	-0.1	0.9	10.2	3.6	-0.6	311
9-11	9.4	27.3	-1.1	0.2	5.2	6.2	-0.1	4.2	20.9	1.2	-0.9	270
12-17	13.0	39.7	-1.5	2.3	8.2	3.8	-0.3	4.8	28.1	1.0	-1.3	537
18-23	17.2	43.6	-1.7	0.4	6.9	4.5	-0.2	3.0	19.5	1.8	-1.1	548
24-35	11.2	32.5	-1.4	1.0	7.0	1.5	-0.4	6.6	25.0	1.1	-1.2	1,142
36-47	9.5	28.3	-1.3	0.8	3.2	1.3	-0.4	3.8	20.2	0.6	-1.1	1,089
48-59	10.4	30.4	-1.4	1.1	6.3	1.9	-0.4	3.0	22.2	0.6	-1.1	1,091
Sex												
Male	11.1	30.8	-1.3	0.9	6.7	2.6	-0.3	4.2	20.7	1.7	-1.0	2,782
Female	9.2	28.3	-1.2	0.9	4.9	4.3	-0.2	3.4	19.8	1.7	-0.9	2,667
Birth interval in months[2]												
First birth[3]	6.7	25.4	-1.1	0.6	4.9	5.2	-0.2	3.5	16.7	1.7	-0.9	1,075
<24	14.8	36.0	-1.5	0.8	6.1	2.8	-0.3	5.2	24.9	1.1	-1.2	870
24-47	10.1	30.2	-1.2	1.3	6.6	2.8	-0.4	3.8	22.4	1.7	-1.1	2,070
48+	8.9	26.6	-1.1	0.4	4.2	3.5	-0.1	2.0	16.2	2.1	-0.8	981
Size at birth												
Very small	17.8	37.3	-1.7	0.0	6.8	2.3	-0.6	9 3	32.8	1.3	-1.6	157
Small	12.9	37.6	-1.6	1.2	8.9	3.0	-0.6	8.2	34.8	0.2	-1.5	629
Average or larger	9.1	27.8	-1.2	0.8	5.1	3.6	-0.2	2.7	17.6	1.9	-0.9	4,176
Mother's interview status												
Interviewed	9.9	29.5	-1.2	0.9	5.7	3.4	-0.3	3.7	20.4	1.7	-1.0	4,995
Not interviewed[4]	13.3	31.1	-1.2	1.1	7.5	3.9	-0.3	5.2	19.4	2.1	-1.0	454
Residence												
Urban	6.2	21.6	-0.9	0.7	4.6	3.9	-0.1	1.7	12.6	3.0	-0.6	913
Rural	11.0	31.2	-1.3	0.9	6.1	3.4	-0.3	4.2	21.8	1.5	-1.1	4,536
Province												
Nairobi	6.8	22.7	-0.9	0.2	2.6	4.7	0.1	1.5	10.0	3.9	-0.5	264
Central	7.3	25.7	-1.2	0.8	4.5	4.6	-0.1	2 5	16.7	0.8	-0.8	444
Coast	10.8	34.0	-1.2	1.7	11.2	2.4	-0.5	5.7	28.5	1.4	-1.2	483
Eastern	12.1	32.8	-1.5	0.5	6.7	3.3	-0.3	3.6	25.2	1.1	-1.2	870
Nyanza	10.7	26.9	-1.0	0.3	3.2	4.4	-0.1	2.3	13.7	2.5	-0.7	992
Rift Valley	9.8	30.9	-1.3	1.2	6.7	2.9	-0.4	4.9	23.7	1.5	-1.2	1,535
Western	10.2	28.4	-1.3	0.7	2.6	2.8	-0.1	3.2	14.8	1.5	-0.9	730
North Eastern	13.5	31.1	-1.0	4.7	18.4	5.3	-0.7	8.6	31.1	2.9	-1.2	132
Mother's education[5]												
No education	12.6	34.2	-1.3	2.6	12.8	2.2	-0.7	7.6	34.5	1.1	-1.4	628
Primary incomplete	11.2	34.4	-1.4	0.9	5.9	2.6	-0.4	3.9	23.5	1.3	-1.1	1,692
Primary complete	10.7	29.8	-1.3	0.7	4.6	3.8	-0.2	3.4	18.9	1.5	-1.0	1,518
Secondary+	5.7	19.3	-0.9	0.2	3.0	4.8	0.0	1.5	10.0	2.8	-0.6	1,156
Wealth quintile												
Lowest	14.3	38.6	-1.5	2.1	9.9	3.1	-0.5	6.7	30.9	0.8	-1.3	1,347
Second	13.3	32.8	-1.4	0.2	5.5	3.1	-0.3	4.6	21.4	1.1	-1.1	1,142
Middle	8.2	28.6	-1.2	0.8	4.5	2.4	-0.3	2.3	20.8	1.9	-1.0	1,051
Fourth	6.6	24.2	-1.0	0.5	4.1	4.1	-0.2	2.4	12.5	2.5	-0.8	982
Highest	6.7	19.4	-0.9	0.5	3.6	4.9	-0.0	1.7	11.3	2.8	-0.6	928
Total	10.2	29.6	-1.2	0.9	5.8	3.5	-0.3	3.8	20.3	1.7	-1.0	5,449

Note: Table is based on children who slept in the household the night before the interview and who had valid dates of birth (month and year) and valid measurements of both height and weight. Each of the indices is expressed in terms of standard deviation units (SD) from the median of the NCHS/CDC/WHO international reference population. The indices are not comparable to those in Table 11.1.

[1] Includes children who are below -3 standard deviations (SD) from the International Reference Population median

[2] Excludes children whose mothers were not interviewed

[3] First born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

[4] Includes children whose mothers are deceased

[5] Excludes children whose mothers were not interviewed

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QUESTIONNAIRES

Appendix E

Serial number_____

CONFIDENTIAL

KENYA NATIONAL BUREAU OF STATISTICS
KENYA DEMOGRAPHIC AND HEALTH SURVEY 2008
HOUSEHOLD QUESTIONNAIRE

IDENTIFICATION

PROVINCE* _____

DISTRICT _____

LOCATION/TOWN _____

SUBLOCATION/WARD _____

NASSEP CLUSTER NUMBER . . . . . .

KDHS CLUSTER NUMBER . . . . . .

HOUSEHOLD NUMBER . . . . . .

NAIROBI/MOMBASA/KISUMU=1; NAKURU/ELDORET/THIKA/NYERI=2; SMALL TOWN=3; RURAL=4 . . . . . .

NAME OF HOUSEHOLD HEAD _____

IS HOUSEHOLD SELECTED FOR MAN'S SURVEY? (YES=1; NO=2) . . . . . .

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR (2 0 0)
INTERVIEWER'S NAME				INT. CODE
RESULT**				FINAL RESULT
NEXT VISIT: DATE				TOTAL NUMBER OF VISITS
TIME				

**RESULT CODES:
1 COMPLETED
2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT HOME AT TIME OF VISIT
3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD OF TIME
4 POSTPONED
5 REFUSED
6 DWELLING VACANT OR ADDRESS NOT A DWELLING
7 DWELLING DESTROYED
8 DWELLING NOT FOUND
9 OTHER _____ (SPECIFY)

ENGLISH

TOTAL PERSONS IN HOUSEHOLD

TOTAL ELIGIBLE WOMEN

TOTAL ELIGIBLE MEN

LINE NO. OF RESPONDENT TO HH QUESTION.

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____	DATE _____		

* Province: NAIROBI=1; CENTRAL=2; COAST=3; EASTERN=4; NYANZA=5; R.VALLEY=6; WESTERN=7; NORTHEASTERN=8

INTRODUCTION AND CONSENT

Hello. My name is _____ and I am working with the Kenya National Bureau of Statistics. We are conducting a national survey that asks about various health issues. We would very much appreciate your participation in this survey.
This information will help the government to plan health services. The survey usually takes between 30 to 60 minutes to complete. Whatever information you provide will be kept confidential and will not be shared with anyone other than members of our survey team.

Participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and I will go on to the next question; or you can stop the interview at any time. However, we hope that you will participate in this survey since your views are important.
At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Signature of interviewer: _____ Date: _____

RESPONDENT AGREES TO BE INTERVIEWED . . . 1 RESPONDENT DOES NOT AGREE TO BE INTERVIEWED . . . 2→ END

HOUSEHOLD SCHEDULE

Now we would like some information about the people who usually live in your household or who are staying with you now.

							IF AGE 15 OR OLDER			
L NE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	MARITAL STATUS	ELIG B LITY		
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING THE NAMES AND RECORDING THE RELATIONSHIP AND SEX FOR EACH PERSON, ASK QUESTIONS 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK APPROPRIATE QUESTIONS IN COLUMNS 5-33 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household? SEE CODES BELOW.	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	What is (NAME'S) current marital status? 1 = MARR ED OR LIVING TOGETHER 2 = DIVOR-CED/ SEPARATED 3 = W DOWED 4 = NEVER-MARRIED AND NEVER LIVED TOGETHER	C RCLE L NE NUMBER OF ALL **WOMEN** AGE 15-49 * LINE NO. OF WOMAN SEL-ECTED FOR Qs. ON DOM-ESTIC VIO-LENCE.	C RCLE L NE NUMBER OF ALL **CHILD-REN** AGE 0-5	C RCLE L NE NUMBER OF ALL **MEN** AGE 15 - 54
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
01			M F 1 2	Y N 1 2	Y N 1 2	IN YEARS		01	01	01
02			1 2	1 2	1 2			02	02	02
03			1 2	1 2	1 2			03	03	03
04			1 2	1 2	1 2			04	04	04
05			1 2	1 2	1 2			05	05	05
06			1 2	1 2	1 2			06	06	06
07			1 2	1 2	1 2			07	07	07
08			1 2	1 2	1 2			08	08	08
09			1 2	1 2	1 2			09	09	09
10			1 2	1 2	1 2			10	10	10

CODES FOR Q. 3 RELATIONSHIP TO HEAD OF HOUSEHOLD

01 = HEAD
02 = W FE OR HUSBAND
03 = SON OR DAUGHTER
04 = SON- N-LAW OR DAUGHTER-IN-LAW
05 = GRANDCHILD
06 = PARENT
07 = PARENT-IN-LAW
08 = BROTHER OR SISTER
09 = NIECE/NEPHEW BY BLOOD
10 = NIECE/NEPHEW BY MARRIAGE
11 = OTHER RELATIVE
12 = ADOPTED/FOSTER/ STEPCH LD
13 = NOT RELATED
98 = DON'T KNOW

2A) Just to make sure that I have a complete listing. Are there any other persons such as small children or infants that we have not listed? YES ☐ → ADD TO TABLE NO ☐

2B) Are there any other people who may not be members of your family, such as domestic servants, lodgers, or friends who usually live here YES ☐ → ADD TO TABLE NO ☐

2C) Are there any guests or temporary visitors staying here, or anyone else who stayed here last night, who have not been listed? YES ☐ → ADD TO TABLE NO ☐

	IF AGE 4 YEARS OR OLDER		IF AGE 4-24 YEARS				IF AGE 0-4 YEARS	
LINE NO.	EVER ATTENDED SCHOOL		CURRENT/RECENT SCHOOL ATTENDANCE				BIRTH REGISTRATION	
	Has (NAME) ever attended school?	What is the highest level of school (NAME) has attended? SEE CODES BELOW. What is the highest grade (NAME) completed at that level? SEE CODES BELOW.	Did (NAME) attend school at any time during the 2008 school year?	During the 2008 school year, what level and grade is/was (NAME) attending? SEE CODES BELOW.	Did (NAME) attend school at any time during the 2007 school year?	During the 2007 school year, what level and grade did (NAME) attend? SEE CODES BELOW.	Has (NAME) ever been registered with the civil authority? 1 = YES, REGISTERED WITH BIRTH CERTIFICATE 2 = YES, REGISTERED WITHOUT B RTH CERTIFICATE 8 = DON'T KNOW 3 = NOT REGISTERED	Why was (NAME) never? registered 1=TOO FAR 2=LITTLE MONEY 3=NOT AWARE 4=NOT NECESARY 5=NOMADIC LIFE DIFFICULT TERRAIN NSECURITY 8=OTHER
	(23)	(24)	(25)	(26)	(27)	(28)	(32)	(33)
01	Y N 1 2 ↓ GO TO 32	LEVEL GRADE ☐☐☐	Y N 1 2 ↓ GO TO 27	LEVEL GRADE ☐☐☐	Y N 1 2 ↓ GO TO 32	LEVEL GRADE ☐☐☐	Y Y DK NO 1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
02	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
03	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
04	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
05	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
06	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
07	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
08	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
09	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
10	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐

CODES FOR Qs. 24, 26, AND 28 EDUCATION

LEVEL

0= NURSERY/KINDERGARTEN
1 = PRIMARY
2= POST-PR MARY, VOCATIONAL
3 = SECONDARY, A LEVEL
4 = COLLEGE (M DDLE LEVEL)
5= UNIVERSITY
8 = DON'T KNOW

GRADE

00 = LESS THAN 1 YEAR COMPLETED
(USE '00' FOR Q. 24 ONLY.
THIS CODE IS NOT ALLOWED
FOR QS. 26 AND 28)
98 = DON'T KNOW

							IF AGE 15 OR OLDER			
L NE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	SEX	RESIDENCE		AGE	MARITAL STATUS	ELIG B LITY		
	Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household. AFTER LISTING THE NAMES AND RECORDING THE RELATIONSHIP AND SEX FOR EACH PERSON, ASK QUESTIONS 2A-2C TO BE SURE THAT THE LISTING IS COMPLETE. THEN ASK APPROPRIATE QUESTIONS IN COLUMNS 5-33 FOR EACH PERSON.	What is the relationship of (NAME) to the head of the household? SEE CODES BELOW.	Is (NAME) male or female?	Does (NAME) usually live here?	Did (NAME) stay here last night?	How old is (NAME)?	What is (NAME'S) current marital status? 1 = MARR ED OR LIVING TOGETHER 2 = DIVOR-CED/ SEPARATED 3 = W DOWED 4 = NEVER-MARRIED AND NEVER LIVED TOGETHER	C RCLE L NE NUMBER OF ALL **WOMEN** AGE 15-49 * LINE NO. OF WOMAN SEL-ECTED FOR Qs. ON DOM-ESTIC VIO-LENCE.	C RCLE L NE NUMBER OF ALL **CHILD-REN** AGE 0-5	C RCLE L NE NUMBER OF ALL **MEN** AGE 15 - 54
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
11			M F 1 2	Y N 1 2	Y N 1 2	IN YEARS		11	11	11
12			1 2	1 2	1 2			12	12	12
13			1 2	1 2	1 2			13	13	13
14			1 2	1 2	1 2			14	14	14
15			1 2	1 2	1 2			15	15	15
16			1 2	1 2	1 2			16	16	16
17			1 2	1 2	1 2			17	17	17
18			1 2	1 2	1 2			18	18	18
19			1 2	1 2	1 2			19	19	19
20			1 2	1 2	1 2			20	20	20

TICK HERE IF CONTINUATION SHEET USED ☐

2A) Just to make sure that I have a complete listing. Are there any other persons such as small children or infants that we have not listed? YES ☐ → ADD TO TABLE NO ☐

2B) Are there any other people who may not be members of your family, such as domestic servants, lodgers, or friends who usually live here YES ☐ → ADD TO TABLE NO ☐

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	IF AGE 4 YEARS OR OLDER		IF AGE 4-24 YEARS				IF AGE 0-4 YEARS	
LINE NO.	EVER ATTENDED SCHOOL		CURRENT/RECENT SCHOOL ATTENDANCE				BIRTH REGISTRATION	
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	(23)	(24)	(25)	(26)	(27)	(28)	(32)	(33)
11	Y N 1 2 ↓ GO TO 32	LEVEL GRADE ☐☐☐	Y N 1 2 ↓ GO TO 27	LEVEL GRADE ☐☐☐	Y N 1 2 ↓ GO TO 32	LEVEL GRADE ☐☐☐	Y Y DK NO 1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
12	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
13	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
14	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
15	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
16	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
17	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
18	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
19	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐
20	1 2 ↓ GO TO 32	☐☐☐	1 2 ↓ GO TO 27	☐☐☐	1 2 ↓ GO TO 32	☐☐☐	1 2 8 3 ↓ ↓ ↓ ↓ TO NEXT LINE TO 33	☐

CODES FOR Qs. 24, 26, AND 28 EDUCATION

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3 = SECONDARY, A LEVEL	FOR QS. 26 AND 28)
4 = COLLEGE (M DDLE LEVEL)	
5= UNIVERSITY	98 = DON'T KNOW
8 = DON'T KNOW	

GRID TO SELECT ONE WOMAN PER HOUSEHOLD

LOOK AT THE LAST DIGIT OF THE **QUESTIONNAIRE** SERIAL NUMBER ON THE COVER PAGE. THIS IS THE NUMBER OF THE **ROW** YOU SHOULD GO TO.

CHECK THE TOTAL NUMBER OF WOMEN 15-49 IN COLUMN (9) OF THE HOUSEHOLD QUESTIONNAIRE.
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 NUMBER IS USED TO IDENTIFY WHETHER THE FIRST ('1'), SECOND ('2'), THIRD ('3'), ETC. ELIGIBLE WOMAN LISTED IN THE HOUSEHOLD SCHEDULE WILL BE ASKED THE DOMESTIC VIOLENCE QUESTIONS.

PUT AN ASTERISK (*) NEXT TO THE LINE NUMBER OF THE SELECTED WOMAN IN COL.9.

EXAMPLE: IF THE QUESTIONNAIRE SERIAL NUMBER IS '3716', GO TO ROW '6'.
IF THERE ARE THREE ELIGIBLE WOMEN IN THE HOUSEHOLD, GO TO COLUMN '3'.
FIND THE BOX WHERE ROW '6' AND COLUMN '3' MEET. THE NUMBER IN THAT BOX ('2') INDICATES THAT THE SECOND ELIGIBLE WOMAN IN THE HOUSEHOLD LISTING SHOULD BE ASKED THE DOMESTIC VIOLENCE QUESTIONS.
SUPPOSE THE LINE NUMBERS OF THE THREE WOMEN ARE '02', '03', AND '07'. THE WOMAN TO BE ASKED THE DOMESTIC VIOLENCE QUESTIONS IS THE SECOND ONE, I.E., THE WOMAN ON LINE '03'.

LAST DIGIT OF THE QUESTIONNAIRE SERIAL NUMBER (ROW)	**TOTAL NUMBER OF ELIGIBLE WOMEN IN HOUSEHOLD (COLUMN)**							
	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

HOUSEHOLD CHARACTERISTICS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	What is the main source of drinking water for members of your household?	PIPED WATER PIPED INTO DWELLING . . . . . 11 PIPED TO COMPOUND/PLOT . . . . . 12 PUBLIC TAP/STANDPIPE . . . . . 13 TUBE WELL OR BOREHOLE . . . . . 21 DUG WELL PROTECTED WELL . . . . . 31 UNPROTECTED WELL . . . . . 32 WATER FROM SPRING PROTECTED SPRING . . . . . 41 UNPROTECTED SPRING . . . . . 42 RAINWATER . . . . . 51 TANKER TRUCK . . . . . 61 CART WITH SMALL TANK . . . . . 71 SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL) . . . . . 81 BOTTLED WATER . . . . . 91 OTHER _____ 96 (SPECIFY)	→ 106 → 103 → 106 → 103 → 103
102	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 TO COMPOUND/PLOT . . . . . 12 PUBLIC TAP/STANDPIPE . . . . . 13 TUBE WELL OR BOREHOLE . . . . . 21 DUG WELL PROTECTED WELL . . . . . 31 UNPROTECTED WELL . . . . . 32 WATER FROM SPRING PROTECTED SPRING . . . . . 41 UNPROTECTED SPRING . . . . . 42 RAINWATER . . . . . 51 TANKER TRUCK . . . . . 61 CART WITH SMALL TANK . . . . . 71 SURFACE WATER (RIVER/DAM/ LAKE/POND/STREAM/CANAL/ IRRIGATION CHANNEL) . . . . . 81 OTHER _____ 96 (SPECIFY)	→ 106 → 106
103	Where is that water source located?	IN OWN DWELLING . . . . . 1 IN OWN YARD/PLOT . . . . . 2 ELSEWHERE 3	→ 106
104	How long does it take to go there, get water, and come back?	MINUTES . . . . . ☐☐☐ MORE THAN 12 HOURS . . . . . 995 DON'T KNOW 998	
105	Who usually goes to this source to fetch the water for your household?	ADULT WOMAN . . . . . 1 ADULT MAN . . . . . 2 FEMALE CHILD UNDER 15 YEARS OLD . . . . . 3 MALE CHILD UNDER 15 YEARS OLD . . . . . 4 OTHER _____ 6 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
106	Do you do anything to the water to make it safer to drink?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 108
107	What do you usually do to make the water safer to drink? Anything else? RECORD ALL MENTIONED.	BOIL . . . . . A ADD BLEACH/CHLORINE . . . . . B STRAIN THROUGH A CLOTH . . . . . C USE WATER FILTER (CERAMIC/ SAND/COMPOSITE/ETC.) . . . . . D SOLAR DISINFECTION . . . . . E LET IT STAND AND SETTLE . . . . . F OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	
108	What kind of toilet facility do members of your household usually use?	FLUSH OR POUR FLUSH TOILET FLUSH TO PIPED SEWER SYSTEM . . . 11 FLUSH TO SEPTIC TANK . . . . . 12 FLUSH TO PIT LATRINE . . . . . 13 FLUSH TO SOMEWHERE ELSE . . . 14 FLUSH, DON'T KNOW WHERE . . . 15 PIT LATRINE VENTILATED IMPROVED PIT LATRINE . . . . . 21 PIT LATRINE WITH SLAB . . . . . 22 PIT LATRINE WITHOUT SLAB/ OPEN PIT . . . . . 23 COMPOSTING TOILET . . . . . 31 BUCKET TOILET . . . . . 41 HANGING TOILET/HANGING LATRINE . 51 NO FACILITY/BUSH/FIELD . . . . . 61 OTHER _____ 96 (SPECIFY)	→ 111
109	Do you share this toilet facility with other households?	YES . . . . . 1 NO 2	→ 111
110	How many households use this toilet facility?	NO. OF HOUSEHOLDS IF LESS THAN 10 . . . . . 0 [ ] 10 OR MORE HOUSEHOLDS . . . . . 95 DON'T KNOW 98	
111	Does your household have:	YES NO	
	A clock or watch?	CLOCK/WATCH 1 2	
	Electricity?	ELECTRICITY 1 2	
	A radio?	RADIO 1 2	
	A television?	TELEVISION 1 2	
	A mobile telephone?	MOBILE TELEPHONE 1 2	
	A non-mobile telephone?	NON-MOBILE TELEPHONE . 1 2	
	A refrigerator?	REFRIGERATOR 1 2	
	A solar panel?	SOLAR PANEL 1 2	
112	What type of fuel does your household mainly use for cooking?	ELECTRICITY . . . . . 01 LPG/NATURAL GAS . . . . . 02 BIOGAS . . . . . 03 KEROSENE . . . . . 04 COAL, LIGNITE . . . . . 05 CHARCOAL . . . . . 06 WOOD . . . . . 07 STRAW/SHRUBS/GRASS . . . . . 08 AGRICULTURAL CROP . . . . . 09 ANIMAL DUNG . . . . . 10 NO FOOD COOKED IN HOUSEHOLD . . . . . 95 OTHER _____ 96 (SPECIFY)	→ 117

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
115	Is the cooking usually done in the house, in a separate building, or outdoors?	IN THE HOUSE . . . . . 1 IN A SEPARATE BUILDING . . . . . 2 OUTDOORS . . . . . 3 OTHER _____ 6 (SPECIFY)	→ 117
116	Do you have a separate room which is used as a kitchen?	YES . . . . . 1 NO 2	
117	MAIN MATERIAL OF THE 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 _____ 96 (SPECIFY)	
118	MAIN MATERIAL OF THE ROOF. RECORD OBSERVATION.	**NATURAL ROOFING** GRASS / THATCH / MAKUTI . . . . . 11 DUNG / MUD . . . . . 12 **RUDIMENTARY ROOFING** CORRUGATED IRON (MABATI) . . . . . 21 TIN CANS . . . . . 22 **FINISHED ROOFING** ASBESTOS SHEET . . . . . 31 CONCRETE . . . . . 32 TILES . . . . . 33 OTHER _____ 96 (SPECIFY)	
119	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 _____ 96 (SPECIFY)	
120	How many rooms in this household are used for sleeping?	ROOMS . . . . . ☐☐	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
121	Does any member of this household own:	**YES** **NO**	
	A bicycle?	BICYCLE 1 2	
	A motorcycle or motor scooter?	MOTORCYCLE/SCOOTER . . . 1 2	
	An animal-drawn cart?	ANIMAL-DRAWN CART 1 2	
	A car or truck?	CAR/TRUCK 1 2	
	A boat with a motor?	BOAT WITH MOTOR 1 2	
121A	Does your household own this structure (house, flat, shack), do you rent it, or do you live here without pay?	OWNS . . . . . 1 PAYS RENT/LEASE . . . . . 2 NO RENT,W. CONSENT OF OWNER . . . . . 3 NO RENT, SQUATTING 4	
121B	Does your household own the land on which the structure (house, flat, shack) sits?	OWNS . . . . . 1 PAYS RENT/LEASE . . . . . 2 NO RENT,W. CONSENT OF OWNER . . . . . 3 NO RENT, SQUATTING 4	
122	Does any member of this household own any agricultural land?	YES . . . . . 1 NO 2	→ 124
123	How many hectares of land (altogether) are owned by the members of this family. IF MORE THAN 95, WRITE '95.0'. IF UNKNOWN, WRITE '99.8'.	NUMBER OF HECTARES ..... ☐☐.☐	
124	Does this household own any livestock, herds, other farm animals, or poultry?	YES . . . . . 1 NO 2	→ 125A
125	How many of the following animals does this household own? IF NONE, WRITE '00'. IF MORE THAN 95, WRITE '95'. IF UNKNOWN, WRITE '98'.		
	Local cattle (indegeneous)?	CATTLE (INDIGENEOUS) . . . . . ☐☐	
	Milk cows or bulls?	COWS/BULLS . . . . . ☐☐	
	Horses, donkeys, or mules?	HORSES/DONKEYS/MULES . . . ☐☐	
	Goats?	GOATS . . . . . ☐☐	
	Sheep?	SHEEP . . . . . ☐☐	
	Chicken?	CHICKEN . . . . . ☐☐	
125A	At any time in the past 12 months, has anyone come into your house to spray the inside walls against mosquitoes?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 127 → 127
125B	How many months ago was the house sprayed? IF LESS THAN ONE MONTH, WRITE '00'	MONTHS AGO . . . . . ☐☐	
125C	Who sprayed the house?	GOVERNMENT WORKER/PROGRAMME . 1 PRIVATE COMPANY . . . . . 2 OTHER_____ 6 (SPECIFY) DON'T KNOW 8	
127	Does your household have any mosquito nets that can be used while sleeping?	YES . . . . . 1 NO 2	→ 138
128	How many mosquito nets does your household have? IF 7 OR MORE NETS, RECORD '7'.	NUMBER OF NETS . . . . . ☐	

		NET #1	NET #2	NET #3
129	ASK THE RESPONDENT TO SHOW YOU THE NETS IN THE HOUSEHOLD. IF MORE THAN 3 NETS, USE ADDITIONAL QUESTIONNAIRE(S).	OBSERVED . . . . . 1 NOT OBSERVED . 2	OBSERVED . . . . . 1 NOT OBSERVED . 2	OBSERVED . . . . . 1 NOT OBSERVED . 2
130	How many months ago did your household obtain the mosquito net? IF LESS THAN ONE MONTH, RECORD '00'.	MONTHS AGO . . . . . [ ][ ] 37 OR MORE MONTHS AGO . . . 95 NOT SURE 98	MONTHS AGO . . . . . [ ][ ] 37 OR MORE MONTHS AGO . . . 95 NOT SURE 98	MONTHS AGO . . . . . [ ][ ] 37 OR MORE MONTHS AGO . . . 95 NOT SURE 98
131	OBSERVE OR ASK THE BRAND/ TYPE OF MOSQUITO NET.	'LONG LASTING' NET PERMANET . . . . . 11 OLYSET . . . . . 12 SUPANET EXTRA 13 OTHER/ DK BRAND . . . . . 16 (SKIP TO 135) 'CONVENTIONAL' NET KINGA NET . . . . . 21 SUPANET . . . . . 22 UNBRANDED RURAL NET . . . 23 OTHER/ DK BRAND . . . . . 26 (SKIP TO 133) OTHER . . . . . 31 DK BRAND 98	'LONG LASTING' NET PERMANET . . . . . 11 OLYSET . . . . . 12 SUPANET EXTRA 13 OTHER/ DK BRAND . . . . . 16 (SKIP TO 135) 'CONVENTIONAL' NET KINGA NET . . . . . 21 SUPANET . . . . . 22 UNBRANDED RURAL NET . . . 23 OTHER/ DK BRAND . . . . . 26 (SKIP TO 133) OTHER . . . . . 31 DK BRAND 98	'LONG LASTING' NET PERMANET . . . . . 11 OLYSET . . . . . 12 SUPANET EXTRA 13 OTHER/ DK BRAND . . . . . 16 (SKIP TO 135) 'CONVENTIONAL' NET KINGA NET . . . . . 21 SUPANET . . . . . 22 UNBRANDED RURAL NET . . . 23 OTHER/ DK BRAND . . . . . 26 (SKIP TO 133) OTHER . . . . . 31 DK BRAND 98
132	When you got the net, was it treated with an insecticide to kill or repel mosquitos?	YES . . . . . 1 NO . . . . . 2 NOT SURE 8	YES . . . . . 1 NO . . . . . 2 NOT SURE 8	YES . . . . . 1 NO . . . . . 2 NOT SURE 8
133	Since you got the mosquito net, was it ever soaked or dipped in a liquid to kill or repel mosquitos?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 135) NOT SURE 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 135) NOT SURE 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 135) NOT SURE 8
134	How many months ago was the net last soaked or dipped? IF LESS THAN ONE MONTH, RECORD '00'.	MONTHS AGO . . . . . [ ][ ] 25 OR MORE MONTHS AGO . . . 95 NOT SURE 98	MONTHS AGO . . . . . [ ][ ] 25 OR MORE MONTHS AGO . . . 95 NOT SURE 98	MONTHS AGO . . . . . [ ][ ] 25 OR MORE MONTHS AGO . . . 95 NOT SURE 98
134A	The <u>last</u> time the net was treated, was a liquid from a packet like this added to the treatment solution? SHOW SACHET FOR K-O TAB 1-2-3 BINDING AGENT.	YES . . . . . 1 NO . . . . . 2 NOT SURE 8	YES . . . . . 1 NO . . . . . 2 NOT SURE 8	YES . . . . . 1 NO . . . . . 2 NOT SURE 8
134B	The <u>last</u> time the net was treated, was it treated as part of a net retreatment campaign?	YES . . . . . 1 NO . . . . . 2 NOT SURE 8	YES . . . . . 1 NO . . . . . 2 NOT SURE 8	YES . . . . . 1 NO . . . . . 2 NOT SURE 8
135	Did anyone sleep under this mosquito net last night?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 137) NOT SURE 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 137) NOT SURE 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 137) NOT SURE 8

		NET #1	NET #2	NET #3
136	Who slept under this mosquito net last night? RECORD THE PERSON'S LINE NUMBER FROM THE HOUSEHOLD SCHEDULE.	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. . . . . [ ][ ]
137		GO BACK TO 129 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 138.	GO BACK TO 129 FOR NEXT NET; OR, IF NO MORE NETS, GO TO 138.	GO TO 129 IN FIRST COLUMN OF A NEW QUESTIONNAIRE; OR, IF NO MORE NETS, GO TO 138.

138	ASK RESPONDENT FOR A TEASPOONFUL OF COOKING SALT TEST SALT FOR IODINE RECORD PPM (PARTS PER MILLION)	0 PPM (NO IODINE)…… 1 BELOW 15 PPM…… 2 15 PPM AND ABOVE…… 3 NO SALT IN HH…… 4 SALT NOT TESTED_____ 6 (SPECIFY REASON)

501	CHECK COLUMN 10. RECORD THE LINE NUMBER AND AGE FOR ALL ELIGIBLE CHILDREN 0-5 YEARS IN QUESTION 502. IF MORE THAN SIX CHILDREN, USE ADDITIONAL QUESTIONNAIRE. A FINAL OUTCOME MUST BE RECORDED FOR THE WEIGHT AND HEIGHT MEASUREMENT IN 508.			
		CHILD 1	CHILD 2	CHILD 3
502	LINE NUMBER FROM COLUMN 10 NAME FROM COLUMN 2	LINE NUMBER . . . ☐☐ NAME _____	LINE NUMBER . . . ☐☐ NAME _____	LINE NUMBER . . . ☐☐ NAME _____
503	IF MOTHER INTERVIEWED, COPY MONTH AND YEAR FROM BIRTH HISTORY AND ASK DAY; IF MOTHER NOT INTERVIEWED, ASK: What is (NAME'S) birth date?	DAY . . . . . ☐☐ MONTH . . . . . ☐☐ YEAR ☐☐☐☐	DAY . . . . . ☐☐ MONTH . . . . . ☐☐ YEAR ☐☐☐☐	DAY . . . . . ☐☐ MONTH . . . . . ☐☐ YEAR ☐☐☐☐
504	CHECK 503: CHILD BORN IN JANUARY 2003 OR LATER?	YES . . . . . 1 NO . . . . . 2 (GO TO 503 FOR NEXT CHILD OR, IF NO MORE, GO TO 515)	YES . . . . . 1 NO . . . . . 2 (GO TO 503 FOR NEXT CHILD OR, IF NO MORE, GO TO 515)	YES . . . . . 1 NO . . . . . 2 (GO TO 503 FOR NEXT CHILD OR, IF NO MORE, GO TO 515)
505	WEIGHT IN KILOGRAMS	KG. . . . ☐☐.☐	KG. . . . ☐☐.☐	KG. . . . ☐☐.☐
506	HEIGHT IN CENTIMETERS	CM. ☐☐☐.☐	CM. ☐☐☐.☐	CM. ☐☐☐.☐
507	MEASURED LYING DOWN OR STANDING UP?	LYING DOWN . . . . . 1 STANDING UP 2	LYING DOWN . . . . . 1 STANDING UP 2	LYING DOWN . . . . . 1 STANDING UP 2
508	RESULT OF WEIGHT AND HEIGHT MEASUREMENT	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6
514		GO BACK TO 503 N NEXT COLUMN IN THIS QUESTIONNAIRE OR IN THE FIRST COLUMN OF THE ADDITIONAL QUESTIONNAIRE(S); IF NO MORE CHILDREN, GO TO 515.		

		CHILD 4	CHILD 5	CHILD 6
502	LINE NUMBER FROM COLUMN 10 NAME FROM COLUMN 2	LINE NUMBER . . . ☐☐ NAME _____	LINE NUMBER . . . ☐☐ NAME _____	LINE NUMBER . . . ☐☐ NAME _____
503	IF MOTHER INTERVIEWED, COPY MONTH AND YEAR FROM BIRTH HISTORY AND ASK DAY; IF MOTHER NOT INTERVIEWED, ASK: What is (NAME'S) birth date?	DAY . . . . . ☐☐ MONTH . . . . . ☐☐ YEAR ☐☐☐☐	DAY . . . . . ☐☐ MONTH . . . . . ☐☐ YEAR ☐☐☐☐	DAY . . . . . ☐☐ MONTH . . . . . ☐☐ YEAR ☐☐☐☐
504	CHECK 503: CHILD BORN IN JANUARY 2003 OR LATER	YES . . . . . 1 NO . . . . . 2 (GO TO 503 FOR NEXT CHILD OR, IF NO MORE, GO TO 515)	YES . . . . . 1 NO . . . . . 2 (GO TO 503 FOR NEXT CHILD OR, IF NO MORE, GO TO 515)	YES . . . . . 1 NO . . . . . 2 (GO TO 503 FOR NEXT CHILD OR, IF NO MORE, GO TO 515)
505	WEIGHT IN KILOGRAMS	KG. . . . ☐☐.☐	KG. . . . ☐☐.☐	KG. . . . ☐☐.☐
506	HEIGHT IN CENTIMETERS	CM. ☐☐☐.☐	CM. ☐☐☐.☐	CM. ☐☐☐.☐
507	MEASURED LYING DOWN OR STANDING UP?	LYING DOWN . . . . . 1 STANDING UP 2	LYING DOWN . . . . . 1 STANDING UP 2	LYING DOWN . . . . . 1 STANDING UP 2
508	RESULT OF WEIGHT AND HEIGHT MEASUREMENT	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6
514		GO BACK TO 503 N NEXT COLUMN IN THIS QUESTIONNAIRE OR IN THE FIRST COLUMN OF ADDITIONAL QUESTIONNAIRE(S); IF NO MORE CHILDREN, GO TO 515.		

WEIGHT, HEIGHT AND HIV TESTING FOR WOMEN AGE 15-49

515	CHECK COLUMN 9. RECORD THE LINE NUMBER AND NAME FOR ALL ELIGIBLE WOMEN IN 516. IF THERE ARE MORE THAN THREE WOMEN, USE ADDITIONAL QUESTIONNAIRE(S). A FINAL OUTCOME MUST BE RECORDED FOR THE WEIGHT AND HEIGHT MEASUREMENT IN 519 AND FOR THE HIV TEST PROCEDURE IN 530.			
		WOMAN 1	WOMAN 2	WOMAN 3
516	LINE NUMBER (COLUMN 9) NAME (COLUMN 2)	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____
517	WEIGHT IN KILOGRAMS	KG. . . . . ☐☐☐.☐	KG. . . . . ☐☐☐.☐	KG. . . . . ☐☐☐.☐
518	HEIGHT IN CENT METERS	CM. . . . . ☐☐☐.☐	CM. . . . . ☐☐☐.☐	CM. . . . . ☐☐☐.☐
519	RESULT OF WEIGHT AND HEIGHT MEASUREMENT	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	MEASURED . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6
520	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 525) ↵	15-17 YEARS . . . . . 1 18-49 YEARS . . . . . 2 (GO TO 525) ↵	15-17 YEARS . . . . . . 18-49 YEARS . . . . . . (GO TO 525) ↵
521	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION) . . . 1 OTHER . . . . . 2 (GO TO 525) ↵	CODE 4 (NEVER IN UNION) . . . 1 OTHER . . . . . 2 (GO TO 525) ↵	CODE 4 (NEVER IN UNION) . . . . . . OTHER . . . . . . (GO TO 525) ↵
522	RECORD LINE NUMBER OF PARENT/OTHER ADULT RESPONSIBLE FOR ADOLESCENT. RECORD '00' IF NOT LISTED.	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT . ☐☐	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT . ☐☐	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT . ☐☐
525	READ THE HIV TEST CONSENT STATEMENT. FOR NEVER-IN-UNION WOMEN AGE 15-17, ASK CONSENT FROM PARENT/ OTHER ADULT IDENTIFIED IN 522 BEFORE ASKING RESPONDENT'S CONSENT.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)

CONSENT STATEMENT FOR HIV TEST

READ CONSENT STATEMENT TO EACH RESPONDENT. CIRCLE CODE '1' N 525 F RESPONDENT CONSENTS TO THE HIV TEST AND CODE '3' F SHE REFUSES.

FOR NEVER- N-UNION WOMEN AGE 15-17, ASK CONSENT FROM THE PARENT OR OTHER ADULT IDENT FIED AS RESPONS BLE FOR THE ADOLESCENT (SEE 522) BEFORE ASK NG THE ADOLESCENT FOR HER CONSENT. CIRCLE CODE '2' IN 525 F THE PARENT (OTHER ADULT) REFUSES. CONDUCT THE TEST ONLY IF BOTH THE PARENT (OTHER ADULT) AND THE ADOLESCENT CONSENT.

As part of the survey we also are asking people all over he country to take an HIV test. HIV is he virus that causes AIDS. AIDS is a very serious illness. The HIV test is being done to see how big the AIDS problem is in Kenya.

For the HIV test, we need a few drops of blood from a finger. The equipment used in taking the blood is clean and completely safe. It has never been used before and will be hrown away after each test.

No names will be attached so we will not be able to tell you the test results. No one else will be able to know (your/NAME OF ADOLESCENT's) test results ei her.

If you want to know whether you have HIV, I can provide you with a list of nearby facili ies offering counseling and tes ing for HIV. I will also give you a voucher for free services for you (and for your partner if you want) that you can use at any of hese facilities.

Do you have any questions?

You can say yes to he test, or you can say no. It is up to you to decide.
Will you allow (NAME OF ADOLESCENT to) take the HIV test?

		WOMAN 1	WOMAN 2	WOMAN 3
	LINE NUMBER (COLUMN 9) NAME (COLUMN 2)	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____
526	CHECK 525 AND PREPARE EQUIPMENT AND SUPPLIES FOR THE HIV TEST IF CONSENT HAS BEEN OBTAINED AND PROCEED WITH THE TEST. A FINAL OUTCOME FOR THE THE HIV TEST PROCEDURE MUST BE RECORDED IN 530 FOR EACH ELIGIBLE WOMAN EVEN IF SHE WAS NOT PRESENT, REFUSED, OR COULD NOT BE TESTED FOR SOME OTHER REASON.			
529	BAR CODE LABEL	PUT THE 1ST BAR CODE LABEL HERE. PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 1ST BAR CODE LABEL HERE. PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 1ST BAR CODE LABEL HERE. PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.
530	OUTCOME OF HIV TEST PROCEDURE	BLOOD TAKEN . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	BLOOD TAKEN . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	BLOOD TAKEN . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6
530A	CHECK 530: OUTCOME OF HIV TEST	BLOOD TAKEN → ; BLOOD NOT TAKEN → GO TO NEXT WOMAN	BLOOD TAKEN → ; BLOOD NOT TAKEN → GO TO NEXT WOMAN	BLOOD TAKEN → ; BLOOD NOT TAKEN → GO TO NEXT WOMAN
530B	READ THE CONSENT STATEMENT FOR ADDITIONAL TESTS FOR NEVER-IN UNION WOMEN AGE 15-17, ASK CONSENT FROM PARENT/ OTHER ADULT IDENTIFIED IN 522 BEFORE ASKING RESPONDENT'S CONSENT.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)
530C	ADDITIONAL TESTS	CHECK 530B: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 530B: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 530B: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.
530D	GO BACK TO 517 IN NEXT COLUMN IN THIS QUESTIONNAIRE OR IN THE FIRST COLUMNS OF ADDITIONAL QUESTIONNAIRE(S); IF NO MORE WOMEN, GO TO 531.			

CONSENT STATEMENT FOR ADDITIONAL TESTS

READ CONSENT STATEMENT TO EACH RESPONDENT. CIRCLE CODE '1' N 530B F RESPONDENT CONSENTS TO THE ADDITIONAL TESTS AND CODE '3' F SHE REFUSES.

FOR NEVER- N-UNION WOMEN AGE 15-17, ASK CONSENT FROM THE PARENT OR OTHER ADULT IDENT FIED AS RESPONS BLE FOR THE ADOLESCENT (SEE 522) BEFORE ASK NG THE ADOLESCENT FOR HER CONSENT. CIRCLE CODE '2' IN 530B F THE PARENT (OTHER ADULT) REFUSES. CIRCLE CODE '1' IN 530B F BOTH THE PARENT (OTHER ADULT) AND THE ADOLESCENT CONSENT.

We ask you to allow Kenya Na ional Bureau of Sta istics to store part of the blood sample at the laboratory to be used for testing or research in the future. We are not certain about what tests might be done.

The blood sample will not have any name or other data attached that could iden ify (you/NAME OF ADOLESCENT). You do not have to agree. If you do not want the blood sample stored for later use, (you/NAME OF ADOLESCENT) can still participate in the HIV testing in this survey. Will you allow us to keep the blood sample stored for later testing or research?

HIV TESTING FOR MEN AGE 15-54

531	CHECK COLUMN 11. RECORD THE LINE NUMBER AND NAME FOR ALL ELIGIBLE MEN IN 532. IF THERE ARE MORE THAN THREE MEN, USE ADDITIONAL QUESTIONNAIRE(S). A FINAL OUTCOME MUST BE RECORDED FOR THE HIV TEST PROCEDURE IN 545.			
		MAN 1	MAN 2	MAN 3
532	LINE NUMBER (COLUMN 11) NAME (COLUMN 2)	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____
536	AGE: CHECK COLUMN 7.	15-17 YEARS . . . . . 1 18-54 YEARS . . . . . 2 (GO TO 540) ↵	15-17 YEARS . . . . . 1 18-54 YEARS . . . . . 2 (GO TO 540) ↵	15-17 YEARS . . . . . . 18-54 YEARS . . . . . . (GO TO 540) ↵
537	MARITAL STATUS: CHECK COLUMN 8.	CODE 4 (NEVER IN UNION). . . . . 1 OTHER . . . . . 2 (GO TO 540) ↵	CODE 4 (NEVER IN UNION). . . . . 1 OTHER . . . . . 2 (GO TO 540) ↵	CODE 4 (NEVER IN UNION). . . . . . OTHER . . . . . . (GO TO 540) ↵
538	RECORD LINE NUMBER OF PARENT/OTHER ADULT RESPON-SIBLE FOR ADOLESCENT. RECORD '00' IF NOT LISTED.	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT . ☐☐	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT . ☐☐	LINE NUMBER OF PARENT OR OTHER RESPONSIBLE ADULT . ☐☐
540	READ THE HIV TEST CONSENT STATEMENT. FOR NEVER-IN-UNION MEN AGE 15-17, ASK CONSENT FROM PARENT/ OTHER ADULT IDENTIFIED IN 538 BEFORE ASKING RESPONDENT'S CONSENT.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)
541	CHECK 540 AND PREPARE EQUIPMENT AND SUPPLIES FOR THE HIV TEST IFCONSENT HAS BEEN OBTAINED AND PROCEED WITH THE TEST. A FINAL OUTCOME OF THE HIV TEST PROCEDURE MUST BE RECORDED IN 545 FOR EACH ELIGIBLE MAN EVEN IF HE WAS NOT PRESENT, REFUSED, OR COULD NOT BE TESTED FOR SOME OTHER REASON.			
544	BAR CODE LABEL	PUT THE 1ST BAR CODE LABEL HERE. PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 1ST BAR CODE LABEL HERE. PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.	PUT THE 1ST BAR CODE LABEL HERE. PUT THE 2ND BAR CODE LABEL ON THE RESPONDENT'S FILTER PAPER AND THE 3RD ON THE TRANSMITTAL FORM.

CONSENT STATEMENT FOR HIV TEST

READ CONSENT STATEMENT TO EACH RESPONDENT. C RCLE CODE '1' IN 540 IF RESPONDENT CONSENTS TO THE HIV TEST AND CODE '3' IF HE REFUSES.

FOR NEVER-IN-UNION MEN AGE 15-17, ASK CONSENT FROM THE PARENT OR OTHER ADULT IDENTIFIED AS RESPONSIBLE FOR THE ADOLESCENT (SEE 538) BEFORE ASKING THE ADOLESCENT FOR HIS CONSENT. C RCLE CODE '2' IN 540 IF THE PARENT (OTHER ADULT) REFUSES. CONDUCT THE TEST ONLY IF BOTH THE PARENT (OTHER ADULT) AND THE ADOLESCENT CONSENT.

As part of the survey we also are asking people all over he country to take an HIV test. HIV is the virus that causes AIDS. AIDS is a very serious illness. The HIV test is being done to see how big the AIDS problem is in Kenya.

For he HIV test, we need a few drops of blood from a finger. The equipment used in taking the blood is clean and completely safe. It has never been used before and will be thrown away after each test.

No names will be attached so we will not be able to tell you the test results. No one else will be able to know (your/NAME OF ADOLESCENT's) test results ei her.

If you want to know whether you have HIV, I can provide you with a list of nearby facilities offering counseling and testing for HIV. I will also give you a voucher for free services for you (and for your partner if you want) that you can use at any of hese facilities.

Do you have any ques ions?

You can say yes to he test, or you can say no. It is up to you to decide.
Will you allow (NAME OF ADOLESCENT to) take the HIV test?

		MAN 1	MAN 2	MAN 3
	LINE NUMBER (COLUMN 11) NAME (COLUMN 2)	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____	LINE NUMBER . . . . . ☐☐ NAME _____
545	OUTCOME OF HIV TEST PROCEDURE	BLOOD TAKEN . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	BLOOD TAKEN . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6	BLOOD TAKEN . . . . . 1 NOT PRESENT . . . . . 2 REFUSED . . . . . 3 OTHER 6
545A	CHECK 545 OUTCOME OF HIV TEST	BLOOD TAKEN ↓ BLOOD NOT TAKEN ↓ GO TO NEXT MAN	BLOOD TAKEN ↓ BLOOD NOT TAKEN ↓ GO TO NEXT MAN	BLOOD TAKEN ↓ BLOOD NOT TAKEN ↓ GO TO NEXT MAN
545B	READ THE CONSENT STATEMENT FOR ADDITIONAL TESTS WITH LEFT OVER BLOOD. FOR NEVER-IN-UNION MEN AGE 15-17, ASK CONSENT FROM PARENT/ OTHER ADULT IDENTIFIED IN 538 BEFORE ASKING RESPONDENT'S CONSENT.	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)	GRANTED . . . . . 1 PARENT/OTHER RESPONSIBLE ADULT REFUSED . . . . . 2 RESPONDENT REFUSED . . . . . 3 _____ (SIGN)
545C	ADDITIONAL TESTS	CHECK 545B: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 545B: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.	CHECK 545B: IF CONSENT HAS NOT BEEN GRANTED WRITE "NO ADDITIONAL TEST" ON THE FILTER PAPER.
545D	GO BACK TO 536 IN NEXT COLUMN IN THIS QUESTIONNAIRE OR IN THE FIRST COLUMNS OF ADDITIONAL QUESTIONNAIRE(S); IF NO MORE MEN, END INTERVIEW.			

CONSENT STATEMENT FOR ADDITIONAL TESTS

READ CONSENT STATEMENT TO EACH RESPONDENT. C RCLE CODE '1' IN 545B IF RESPONDENT CONSENTS TO THE ADDITIONAL TESTS AND CODE '3' IF HE REFUSES.

FOR NEVER-IN-UNION MEN AGE 15-17, ASK CONSENT FROM THE PARENT OR OTHER ADULT IDENTIFIED AS RESPONSIBLE FOR THE ADOLESCENT (SEE 538) BEFORE ASKING THE ADOLESCENT FOR HIS CONSENT. C RCLE CODE '2' IN 545B IF THE PARENT (OTHER ADULT) REFUSES. CIRCLE CODE '1' IN 545B ONLY IF BOTH THE PARENT (OTHER ADULT) AND THE ADOLESCENT CONSENT.

We ask you to allow Kenya National Bureau of Statistics to store part of the blood sample at he laboratory to be used for testing or research in he future. We are not certain about what tests might be done.

The blood sample will not have any name or o her data attached hat could iden ify (you/NAME OF ADOLESCENT). You do not have to agree. If you do not want the blood sample stored for later use, (you/NAME OF ADOLESCENT) can still participate in the HIV testing in this survey. Will you allow us to keep the blood sample stored for later testing or research?

CONFIDENTIAL

KENYA NATIONAL BUREAU OF STATISTICS
KENYA DEMOGRAPHIC AND HEALTH SURVEY 2008
WOMAN'S QUESTIONNAIRE

IDENTIFICATION

PROVINCE* _____

DISTRICT _____

LOCATION/TOWN _____

SUBLOCATION/WARD _____

NASSEP CLUSTER NUMBER . . . . . .

KDHS CLUSTER NUMBER . . . . . .

HOUSEHOLD NUMBER . . . . . .

NAIROBI/MOMBASA/KISUMU=1; NAKURU/ELDORET/THIKA/NYERI=2;
SMALL TOWN=3; RURAL=4 . . . . . .

NAME OF HOUSEHOLD HEAD _____

NAME AND LINE NUMBER OF WOMAN _____

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY / MONTH / YEAR (2 0 0)
INTERVIEWER'S NAME				INT. NUMBER
RESULT**				FINAL RESULT
NEXT VISIT: DATE				TOTAL NUMBER OF VISITS
T ME				

**RESULT CODES:

1	COMPLETED	4	REFUSED		
2	NOT AT HOME	5	PARTLY COMPLETED	7	OTHER _____ (SPECIFY)
3	POSTPONED	6	INCAPACITATED		

LANGUAGE

LANGUAGE OF QUESTIONNAIRE: ENGLISH

LANGUAGE OF INTERVIEW*** _____

HOME LANGUAGE OF RESPONDENT*** _____

WAS A TRANSLATOR USED? (YES=1, NO=2) . . . . . .

***LANGUAGE CODES:

01 EMBU	04 KIKUYU	07 LUO	10 MIJIKENDA	13 ENGLISH
02 KALENJIN	05 KISII	08 MAASAI	11 SOMALI	14 OTHER
03 KAMBA	06 LUHYA	09 MERU	12 KISWAHILI	

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____	DATE _____		

* Province: NAIROBI=1; CENTRAL=2; COAST=3; EASTERN=4; NYANZA=5; R.VALLEY=6; WESTERN=7; NORTHEASTERN=8

SECTION 1. RESPONDENT'S BACKGROUND

INTRODUCTION AND CONSENT

Hello. My name is _____ and I am working with the Kenya National Bureau of Statistics. We are conducting a national survey that asks women about various health issues. We would very much appreciate your participation in this survey.
This information will help the government to plan health services. The survey usually takes between 30 to 60 minutes to complete. Whatever information you provide will be kept confidential and will not be shown to anyone other than members of our survey team.

Participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and I will go on to the next question; or you can stop the interview at any time. However, we hope that you will participate in this survey since your views are important.
At this time, do you want to ask me anything about the survey?

May I begin the interview now?

Signature of interviewer: _____ Date: _____

RESPONDENT AGREES TO BE INTERVIEWED . . . . . 1 ↓ RESPONDENT DOES NOT AGREE TO BE INTERVIEWED . . . 2 → END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR . . . . . [ ][ ] MINUTES . . . . . [ ][ ]	
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in Nairobi, Mombasa, in another city or town, or in the country-side?	NAIROBI/ MOMBASA/KISUMU . . . . . 1 OTHER CITY/TOWN . . . . . 2 COUNTRY SIDE . . . . . 3 OUTSIDE KENYA 4	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS . . . . . [ ][ ] ALWAYS . . . . . 95 VISITOR 96	→ 106
104	Just before you moved here, did you live in a city, in a town, or in the countryside?	CITY . . . . . 1 TOWN . . . . . 2 COUNTRYSIDE 3	
106	In what month and year were you born?	MONTH . . . . . [ ][ ] DON'T KNOW MONTH . . . . . 98 YEAR . . . . . [ ][ ][ ][ ] DON'T KNOW YEAR 9998	
107	How old were you at your last birthday? COMPARE AND CORRECT 106 AND/OR 107 IF INCONSISTENT.	AGE IN COMPLETED YEARS [ ][ ]	
108	Have you ever attended school?	YES . . . . . 1 NO 2	→ 112
109	What is the highest level of school you attended: primary, vocational, secondary, or higher?	PRIMARY . . . . . 1 POST-PRIMARY/VOCATIONAL . . . . . 2 SECONDARY/'A' LEVEL . . . . . 3 COLLEGE (MIDDLE LEVEL) . . . . . 4 UNIVERSITY 5	
110	What is the highest (standard/form/year) you completed at that level? IF NONE, WRITE '00'.	STANDARD/FORM/YEAR . . . [ ][ ]	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
111	CHECK 109: PRIMARY, POST-PRIMARY/VOCATIONAL, ↓ SECONDARY OR HIGHER → 115		
112	Now I would like you to read this sentence to me. SHOW SENTENCES BELOW TO RESPONDENT. IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL . . . . . 1 ABLE TO READ ONLY PARTS OF SENTENCE . . . . . 2 ABLE TO READ WHOLE SENTENCE. . 3 NO CARD WITH REQUIRED LANGUAGE _____ 4 (SPECIFY LANGUAGE) BLIND/VISUALLY IMPAIRED 5	
113	Have you ever participated in a literacy program or any other program that involves learning to read or write (not including primary school)?	YES . . . . . 1 NO 2	
114	CHECK 112: CODE '2', '3', OR '4' CIRCLED ↓ CODE '1' OR '5' CIRCLED → 116		
115	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
116	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
117	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
118	What is your religion?	ROMAN CATHOLIC . . . . . 1 PROTESTANT/OTHER CHRISTIAN . . . 2 MUSLIM . . . . . 3 NO RELIGION . . . . . 4 OTHER _____ 6 (SPECIFY)	
119	What is your ethnic group/tribe?	EMBU . . . . . 01 KALENJIN . . . . . 02 KAMBA . . . . . 03 KIKUYU . . . . . 04 KISII . . . . . 05 LUHYA . . . . . 06 LUO . . . . . 07 MASAI . . . . . 08 MERU . . . . . 09 MIJIKENDA/SWAHILI . . . . . 10 SOMALI . . . . . 11 TAITA/TAVETA . . . . . 12 OTHER _____ 96 (SPECIFY)	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the live births you have had during your life. Have you ever given birth?	YES . . . . . 1 NO 2	→ 206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES . . . . . 1 NO 2	→ 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME . . . . . [ ][ ] DAUGHTERS AT HOME . . . . . [ ][ ]	
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES . . . . . 1 NO 2	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE . . . . . [ ][ ] DAUGHTERS ELSEWHERE . . . [ ][ ]	
206	Sometimes it happens that children die. It may be painful to talk about and I am sorry to ask you about painful memories, but it is important to get correct information. Have you ever given birth to a son or daughter who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES . . . . . 1 NO 2	→ 208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD . . . . . [ ][ ] GIRLS DEAD . . . . . [ ][ ]	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL . . . . . [ ][ ]	
209	CHECK 208: Just to make sure that I have this right: you have had in TOTAL _____ births during your life. Is that correct? YES ☐ NO ☐ → PROBE AND CORRECT 201-208 AS NECESSARY.		
210	CHECK 208: ONE OR MORE BIRTHS ☐ NO BIRTHS ☐ → 226		

211 Now I would like to record the names of all your births, whether still alive or not, starting with the first one you had.
RECORD NAMES OF ALL THE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.
(IF THERE ARE MORE THAN 12 BIRTHS, USE AN ADDITIONAL QUESTIONNAIRE, STARTING WITH THE SECOND ROW).

212 What name was given to your (first/next) baby? (NAME)	213 Were any of these births twins?	214 Is (NAME) a boy or a girl?	215 In what month and year was (NAME) born? PROBE: What is his/her birthday?	216 Is (NAME) still alive?	217 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	218 IF ALIVE: Is (NAME) living with you?	219 IF ALIVE: RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD).	220 IF DEAD: How old was (NAME) when he/she died? IF '1 YR', PROBE: How many mon hs old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221 Were there any other live bir hs between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
01	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (NEXT BIRTH)	DAYS . . . 1 MONTHS 2 YEARS . . 3	
02	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
03	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
04	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
05	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
06	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
07	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH

212 What name was given to your next baby? (NAME)	213 Were any of these births twins?	214 Is (NAME) a boy or a girl?	215 In what month and year was (NAME) born? PROBE: What is his/her birthday?	216 Is (NAME) still alive?	217 IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COM-PLETED YEARS.	218 IF ALIVE: Is (NAME) living with you?	219 IF ALIVE: RECORD HOUSE-HOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSE-HOLD).	220 IF DEAD: How old was (NAME) when he/she died? IF '1 YR', PROBE: How many mon hs old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH; MONTHS IF LESS THAN TWO YEARS; OR YEARS.	221 Were there any other live bir hs between (NAME OF PREVIOUS BIRTH) and (NAME), including any children who died after birth?
08	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
09	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
10	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
11	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH
12	SING 1 MULT 2	BOY 1 GIRL 2	MONTH YEAR	YES . . 1 NO . . . 2 → 220	AGE IN YEARS	YES . . . 1 NO 2	LINE NUMBER (GO TO 221)	DAYS . . . 1 MONTHS 2 YEARS . . 3	YES . . . . 1 ADD BIRTH NO . . . . . 2 NEXT BIRTH

222	Have you had any live births since the birth of (NAME OF LAST BIRTH)? IF YES, RECORD BIRTH(S) IN TABLE.	YES . . . . . 1 NO 2

223 COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:

NUMBERS ARE SAME ↓ NUMBERS ARE DIFFERENT → (PROBE AND RECONCILE)

CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED.

FOR EACH BIRTH SINCE JANUARY 2003: MONTH AND YEAR OF BIRTH ARE RECORDED.

FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED.

FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED.

FOR AGE AT DEATH 12 MONTHS OR 1 YEAR: PROBE TO DETERMINE EXACT NUMBER OF MONTHS.

224 CHECK 215 AND ENTER THE NUMBER OF BIRTHS IN 2003 OR LATER.
IF NONE, RECORD '0' AND SKIP TO 226.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
225	FOR EACH BIRTH SINCE JANUARY 2003, ENTER 'B' IN THE MONTH OF BIRTH IN THE CALENDAR. WRITE THE NAME OF THE CHILD TO THE LEFT OF THE 'B' CODE. FOR EACH BIRTH, ASK THE NUMBER OF MONTHS THE PREGNANCY LASTED AND RECORD 'P' IN EACH OF THE PRECEDING MONTHS ACCORDING TO THE DURATION OF PREGNANCY. (NOTE: THE NUMBER OF 'P's MUST BE ONE LESS THAN THE NUMBER OF MONTHS THAT THE PREGNANCY LASTED.)		
226	Are you pregnant now?	YES . . . . . 1 NO . . . . . 2 UNSURE 8	→ 229
227	How many months pregnant are you? RECORD NUMBER OF COMPLETED MONTHS. ENTER 'P's IN THE CALENDAR, BEGINNING WITH THE MONTH OF INTERVIEW AND FOR THE TOTAL NUMBER OF COMPLETED MONTHS.	MONTHS	
228	At the time you became pregnant, did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?	THEN . . . . . 1 LATER . . . . . 2 NOT AT ALL 3	
229	Have you ever had a pregnancy that miscarried, was aborted, or ended in a stillbirth?	YES . . . . . 1 NO 2	→ 237
230	When did the last such pregnancy end?	MONTH . . . . . YEAR	
231	CHECK 230: LAST PREGNANCY ENDED IN JAN. 2003 OR LATER LAST PREGNANCY ENDED BEFORE JAN. 2003		→ 237
232	How many months pregnant were you when the last such pregnancy ended? RECORD NUMBER OF COMPLETED MONTHS. ENTER 'T' IN THE CALENDAR IN THE MONTH THAT THE PREGNANCY TERMINATED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS.	MONTHS	
233	Since January 2003, have you had any other pregnancies that did not result in a live birth?	YES . . . . . 1 NO 2	→ 235
234	ASK THE DATE AND THE DURATION OF PREGNANCY FOR EACH EARLIER NON-LIVE BIRTH PREGNANCY BACK TO JANUARY 2003. ENTER 'T' IN THE CALENDAR IN THE MONTH THAT EACH PREGNANCY TERMINATED AND 'P' FOR THE REMAINING NUMBER OF COMPLETED MONTHS.		
235	Did you have any miscarriages, abortions or stil births that ended before 2003?	YES . . . . . 1 NO 2	→ 237
236	When did the last such pregnancy that terminated before 2003 end?	MONTH . . . . . YEAR	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
237	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO . . . . . 1 | | | WEEKS AGO . . . . . 2 | | | MONTHS AGO . . . . . 3 | | | YEARS AGO . . . . . 4 | | | IN MENOPAUSE/ HAS HAD HYSTERECTOMY . . . 994 BEFORE LAST BIRTH . . . . . 995 NEVER MENSTRUATED 996	
238	From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant if she has sexual relations?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 301
239	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS . . . . . 1 DURING HER PERIOD . . . . . 2 RIGHT AFTER HER PERIOD HAS ENDED . . . . . 3 HALFWAY BETWEEN TWO PERIODS . . . . . 4 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	

SECTION 3. CONTRACEPTION

301	Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)? CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNIZED, AND CODE 2 IF NOT RECOGNIZED. THEN, FOR EACH METHOD WITH CODE 1 CIRCLED IN 301, ASK 302.		302 Have you ever used (METHOD)?
01	FEMALE STERILIZATION Women can have an operation to avoid having any more children.	YES . . . . . 1 NO 2	Have you ever had an operation to avoid having any more children? YES . . . . . 1 NO 2
02	MALE STERILIZATION Men can have an operation to avoid having any more children.	YES . . . . . 1 NO 2	Have you ever had a partner who had an operation to avoid having any more children? YES . . . . . 1 NO 2
03	PILL Women can take a pill every day to avoid becoming pregnant.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
05	INJECTABLES Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
06	IMPLANTS Women can have several small rods placed in heir upper arm by a doctor or nurse which can prevent pregnancy for one or more years.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
07	CONDOM Men can put a rubber sheath on heir penis before sexual intercourse.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
09	LACTATIONAL AMENORRHEA METHOD (LAM)	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
10	RHYTHM METHOD Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the mon h she is most likely to get pregnant.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
11	WITHDRAWAL Men can be careful and pull out before climax.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
12	EMERGENCY CONTRACEPTION As an emergency measure after unprotected sexual intercourse, women can take special pills at any time within five days to prevent pregnancy.	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
13	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES . . . . . 1 _____ (SPECIFY) _____ (SPECIFY) NO 2	YES . . . . . 1 NO . . . . . 2 YES . . . . . 1 NO 2
303	CHECK 302: NOT A SINGLE "YES" (NEVER USED) →	AT LEAST ONE "YES" (EVER USED) → 307	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
304	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES . . . . . 1 NO 2	→ 306
305	ENTER '0' IN THE CALENDAR IN EACH BLANK MONTH.		→ 333
306	What have you used or done? CORRECT 302 AND 303 (AND 301 IF NECESSARY).		
307	Now I would like to ask you about the first time that you did something or used a method to avoid getting pregnant. How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN	
308	CHECK 302 (01): WOMAN NOT STERILIZED ↓ ☐ WOMAN STERILIZED ☐ →		311A
309	CHECK 226: NOT PREGNANT OR UNSURE ↓ ☐ PREGNANT ☐ →		322
310	Are you currently doing something or using any method to delay or avoid getting pregnant?	YES . . . . . 1 NO 2	→ 322
311 311A	Which method are you using? CIRCLE ALL MENTIONED. IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD IN LIST. CIRCLE 'A' FOR FEMALE STERILIZATION.	FEMALE STERILIZATION . . . . . A MALE STERILIZATION . . . . . B → 316 PILL . . . . . C IUD . . . . . D INJECTABLES . . . . . E → 315 IMPLANTS . . . . . F CONDOM . . . . . G FEMALE CONDOM . . . . . H → 315 LACTATIONAL AMENORRHEA (LAM) I RHYTHM METHOD . . . . . L WITHDRAWAL . . . . . M → 319A OTHER _____ X (SPECIFY)	
312	RECORD IF CODE 'C' FOR PILL IS CIRCLED IN 311. YES (USING PILL) ↓ ☐ May I see the package of pills you are using? NO (USING CONDOM BUT NOT PILL) ↓ ☐ May I see the package of condoms you are using? RECORD NAME OF BRAND IF PACKAGE SEEN.	PACKAGE SEEN . . . . . 1 BRAND NAME _____ ☐☐ (SPECIFY) PACKAGE NOT SEEN 2	→ 314
313	Do you know the brand name of the (pills/condoms) you are using? RECORD NAME OF BRAND.	BRAND NAME _____ ☐☐ (SPECIFY) DON'T KNOW 98	
314	How many (pill cycles/condoms) did you get the last time?	NUMBER OF PILL CYCLES/CONDOMS . . . ☐☐☐ DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
315	The last time you obtained (HIGHEST METHOD ON LIST IN 311), how much did you pay in total, including the cost of the method and any consultation you may have had?	COST . . . . . ☐☐☐☐ FREE . . . . . 9995 DON'T KNOW 9998	→ 319A
316	In what facility did the sterilization take place? PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 GOVERNMENT DISPENSARY . . . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . 21 FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . 22 PRIVATE HOSPITAL/CLINIC . . . . . 23 NURSING/MATERNITY HOME . . . . . 25 MOBILE CLINIC . . . . . 31 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	
317	CHECK 311/311A: CODE 'A' CIRCLED → Before your sterilization o. eration, were . ou told that you would not be able to have any (more) children because of the operation? CODE 'A' NOT CIRCLED → Before the sterilization operation, was . our husband/. artner told that he would not be able to have any (more) children because of the operation?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
318	How much did you (your husband/partner) pay in total for the sterilization, including any consultation you (he) may have had?	COST . . . . . ☐☐☐☐ FREE . . . . . 9995 DON'T KNOW 9998	
319	In what month and year was the sterilization performed?		
319A	Since what month and year have you been using (CURRENT METHOD) without stopping? PROBE: For how long have you been using (CURRENT METHOD) now without stopping?	MONTH . . . . . ☐☐ YEAR . . . . . ☐☐☐☐	
320	CHECK 319/319A, 215 AND 230: ANY BIRTH OR PREGNANCY TERMINATION AFTER MONTH AND YEAR OF START OF USE OF CONTRACEPTION IN 319/319A → YES NO GO BACK TO 319/319A, PROBE AND RECORD MONTH AND YEAR AT START OF CONTINUOUS USE OF CURRENT METHOD (MUST BE AFTER LAST BIRTH OR PREGNANCY TERMINATION).		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
321	CHECK 319/319A: YEAR IS 2003 OR LATER ENTER CODE FOR METHOD USED IN MONTH OF INTERVIEW IN THE CALENDAR AND IN EACH MONTH BACK TO THE DATE STARTED USING. YEAR IS 2002 OR EARLIER ENTER CODE FOR METHOD USED IN MONTH OF INTERVIEW IN THE CALENDAR AND EACH MONTH BACK TO JANUARY 2003 THEN SKIP TO → 331		
322	I would like to ask you some questions about the times you or your partner may have used a method to avoid getting pregnant during the last few years. USE CALENDAR TO PROBE FOR EARLIER PERIODS OF USE AND NONUSE, STARTING WITH MOST RECENT USE, BACK TO JANUARY 2003. USE NAMES OF CHILDREN, DATES OF BIRTH, AND PERIODS OF PREGNANCY AS REFERENCE POINTS. ENTER METHOD USE CODE OR '0' FOR NONUSE IN EACH BLANK MONTH. ILLUSTRATIVE QUESTIONS: * When was the last time you used a method? Which method was that? * When did you start using that method? How long after the birth of (NAME)? * How long did you use the method then?		
323	CHECK 311/311A: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 311/311A, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	NO CODE CIRCLED . . . . . 00 FEMALE STERILIZATION . . . . . 01 MALE STERILIZATION . . . . . 02 PILL . . . . . 03 IUD . . . . . 04 INJECTABLES . . . . . 05 IMPLANTS . . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM . . . . . 08 LACTATIONAL AMENORRHEA (LAM) 09 RHYTHM METHOD . . . . . 10 WITHDRAWAL 11 96	→ 333 → 326 → 335 → 324A → 324A → 335 → 335
324	Where did you obtain (CURRENT METHOD) when you started using it? IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 GOVERNMENT DISPENSARY . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . 21 FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . 22 PRIVATE HOSPITAL/CLINIC . . . . . 23 PHARMACY/CHEMIST . . . . . 24 NURSING/MATERNITY HOME 25	
324A	Where did you learn how to use the rhythm/lactational amenorrhoea method?	OTHER SOURCE MOBILE CLINIC . . . . . 31 COMMUNITY-BASED DISTRIBUTOR 41 SHOP . . . . . 51 FRIEND/RELATIVE . . . . . 61 OTHER _____ 96 (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
325	CHECK 311/311A: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 311/311A, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	PILL . . . . . 03 IUD . . . . . 04 INJECTABLES . . . . . 05 IMPLANTS . . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM . . . . . 08 LACTATIONAL AMENORRHEA (LAM) 09 RHYTHM METHOD 10	→ 332 → 329 → 335 → 335
326	You obtained (CURRENT METHOD FROM 323) from (SOURCE OF METHOD FROM 316 OR 324) in (DATE FROM 319/319A). At that time, were you told about side effects or problems you might have with the method?	YES . . . . . 1 NO 2	→ 328
327	Were you ever told by a health or family planning worker about side effects or problems you might have with the method?	YES . . . . . 1 NO 2	→ 329
328	Were you told what to do if you experienced side effects or problems?	YES . . . . . 1 NO 2	
329	CHECK 326: CODE '1' CIRCLED → At that time, were you told about other methods of family planning that you could use? CODE '1' NOT CIRCLED → When you obtained (CURRENT METHOD FROM 323) from (SOURCE OF METHOD FROM 316 OR 324) were you told about other methods of family planning that you could use?	YES . . . . . 1 NO 2	→ 331
330	Were you ever told by a health or family planning worker about other methods of family planning that you could use?	YES . . . . . 1 NO 2	
331	CHECK 311/311A: CIRCLE METHOD CODE: IF MORE THAN ONE METHOD CODE CIRCLED IN 311/311A, CIRCLE CODE FOR HIGHEST METHOD IN LIST.	FEMALE STERILIZATION . . . . . 01 MALE STERILIZATION . . . . . 02 PILL . . . . . 03 IUD . . . . . 04 INJECTABLES . . . . . 05 IMPLANTS . . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM . . . . . 08 LACTATIONAL AMENORRHEA (LAM) 09 RHYTHM METHOD . . . . . 10 WITHDRAWAL . . . . . 11 OTHER METHOD 96	→ 335 → 335

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
332	Where did you obtain (CURRENT METHOD) the last time? PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 GOVERNMENT DISPENSARY . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . 21 FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . 22 PRIVATE HOSPITAL/CLINIC . . . . . 23 PHARMACY/CHEMIST . . . . . 24 NURSING/MATERNITY HOME . . . . . 25 OTHER PRIV. MEDICAL _____ 26 (SPECIFY) OTHER SOURCE MOBILE CLINIC . . . . . 31 COMMUNITY-BASED DISTRIBUTOR. 41 SHOP . . . . . 51 FRIEND/RELATIVE . . . . . 61 OTHER _____ 96 (SPECIFY)	→ 335
333	Do you know of a place where you can obtain a method of family planning?	YES . . . . . 1 NO 2	→ 335
334	Where is that? An_ other _ lace? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . B GOVT. HEALTH CENTER . . . . . C GOVERNMENT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . F FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . G PRIVATE HOSPITAL/CLINIC . . . . . H PHARMACY/CHEMIST . . . . . I NURSING/MATERNITY HOME . . . . . J OTHER PRIV. MEDICAL _____ K (SPECIFY) OTHER SOURCE MOBILE CLINIC . . . . . L COMMUNITY-BASED DISTRIBUTOR M SHOP . . . . . N FRIEND/RELATIVE . . . . . P OTHER _____ X (SPECIFY)	
335	In the last 12 months, were you visited by a fieldworker who talked to you about family planning?	YES . . . . . 1 NO 2	
336	In the last 12 months, have you visited a health facility for care for yourself (or your children)?	YES . . . . . 1 NO 2	→ 401
337	Did any staff member at the health facility speak to you about family planning methods?	YES . . . . . 1 NO 2	

SECTION 4. PREGNANCY AND POSTNATAL CARE

401	CHECK 224: ONE OR MORE BIRTHS IN 2003 OR LATER ↓ NO BIRTHS IN 2003 OR LATER → 576			
402	CHECK 215: ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 2003 OR LATER. ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 3 BIRTHS, USE LAST 2 COLUMNS OF ADDITIONAL QUESTIONNAIRES). Now I would like to ask you some questions about the health of all your children born in the last five years. (We will talk about each separately.)			
403	LINE NUMBER FROM 212	LAST BIRTH LINE NO. ☐☐	NEXT-TO-LAST BIRTH LINE NO. ☐☐	SECOND-FROM-LAST BIRTH LINE NO. ☐☐
404	FROM 212 AND 216	NAME _____ LIVING ☐ DEAD ☐	NAME _____ LIVING ☐ DEAD ☐	NAME _____ LIVING ☐ DEAD ☐
405	At the time you became pregnant with (NAME), did you want to become pregnant then, did you want to wait until later, or did you not want to have any (more) children at all?	THEN . . . . . 1 (SKIP TO 407) LATER . . . . . 2 NOT AT ALL . . . . . 3 (SKIP TO 407)	THEN . . . . . 1 (SKIP TO 432) LATER . . . . . 2 NOT AT ALL . . . . . 3 (SKIP TO 432)	THEN . . . . . 1 (SKIP TO 432) LATER . . . . . 2 NOT AT ALL . . . . . 3 (SKIP TO 432)
406	How much longer would you have liked to wait?	MONTHS . .1 ☐☐ YEARS . .2 ☐☐ DON'T KNOW . . . 998	MONTHS . .1 ☐☐ YEARS . .2 ☐☐ DON'T KNOW . . . 998	MONTHS . .1 ☐☐ YEARS . .2 ☐☐ DON'T KNOW . . . 998
407	Did you see anyone for antenatal care for this pregnancy? IF YES: Whom did you see? Anyone else? PROBE TO IDENTIFY EACH TYPE OF PERSON AND RECORD ALL MENTIONED.	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE B OTHER PERSON TRADITIONAL BIRTH ATTENDANT . C COMMUNITY HEALTH WORKER . . . . . D OTHER _____ X (SPECIFY) NO ONE . . . . . Y (SKIP TO 414)		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
408	Where did you receive antenatal care for this pregnancy? Anywhere else? PROBE TO IDENTIFY TYPE(S) OF SOURCE(S) AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	HOME . . . . . A PUBLIC SECTOR GOV. HOSPITAL B GOV. HEALTH CTR C GOV. DISPENSARY D OTHER PUBLIC _____ (SPECIFY) E PRIVATE MED SECTOR FAITH-BASED, CHURCH, HOSP./CLINIC . F PRIVATE HOSPITAL/ CLINIC . . . . . H NURSING/MATERNITY HOME . . . . . J OTHER PVT. MED. _____ (SPECIFY) K OTHER _____ X (SPECIFY)		
409	How many months pregnant were you when you first received antenatal care for this pregnancy?	MONTHS . . . ☐☐ DON'T KNOW 98		
410	How many times did you receive antenatal care during this pregnancy?	NUMBER OF TIMES . ☐☐ DON'T KNOW 98		
411	As part of your antenatal care during this pregnancy, were any of the following done at least once?	YES NO		
	Were you weighed?	WEIGHT . . . 1 2		
	Was your height measured?	HEIGHT . . . 1 2		
	Was your blood pressure taken?	BP 1 2		
	Did you give a urine sample?	URINE 1 2		
	Did you give a blood sample?	BLOOD . . . 1 2		
412	Were you given any information or counselled about breast-feeding?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
412A	During (any of) your antenatal care visit(s), were you told about the signs of pregnancy complications?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 414) ← DON'T KNOW 8		
413	Were you told where to go if you had any of these complications?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
414	During this pregnancy, were you given an injection in the arm to prevent the baby from getting tetanus, that is, convulsions after birth?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 417) ← DON'T KNOW 8		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
415	During this pregnancy, how many times did you get this tetanus injection?	TIMES . . . . . [ ] DON'T KNOW . . . 8		
416	CHECK 415:	2 OR MORE TIMES → (SKIP TO 421) OTHER →		
417	At any time before this pregnancy, did you receive any tetanus injections, either to protect yourself or another baby?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 421) DON'T KNOW 8		
418	Before this pregnancy, how many other times did you receive a tetanus injection? IF 7 OR MORE TIMES, WRITE '7'.	TIMES . . . . . [ ] DON'T KNOW . . . 8		
419	In what month and year did you receive the last tetanus injection before this pregnancy?	MONTH . . . [ ][ ] DK MONTH . . . . . 98 YEAR [ ][ ][ ][ ] (SKIP TO 421) DK YEAR 9998		
420	How many years ago did you receive that tetanus injection?	YEARS AGO . . . . . [ ][ ]		
421	During this pregnancy, were you given or did you buy any iron tablets or iron syrup? SHOW TABLETS/SYRUP.	YES . . . . . 1 NO . . . . . 2 (SKIP TO 423) DON'T KNOW 8		
422	During the whole pregnancy, for how many days did you take the tablets or syrup? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER OF DAYS.	DAYS . [ ][ ][ ] DON'T KNOW . . . 998		
423	During this pregnancy, did you take any drug for intestinal worms?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
424	During this pregnancy, did you have difficulty with your vision during daylight?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
425	During this pregnancy, did you suffer from night blindness?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
426	During this pregnancy, did you take any drugs to keep you from getting malaria?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 432) DON'T KNOW 8		
427	What drugs did you take? RECORD ALL MENTIONED. IF TYPE OF DRUG IS NOT DETERMINED, SHOW TYPICAL ANTIMALARIAL DRUGS TO RESPONDENT.	SP/FANSIDAR . . . . . A CHLOROQUINE . . . B OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z		
428	CHECK 427: DRUGS TAKEN FOR MALARIA PREVENTION.	CODE 'A' CIRCLED CODE A' NOT CIRCLED (SKIP TO 432)		
429	How many times did you take (SP/Fansidar) during this pregnancy?	TIMES		
430	CHECK 407: ANTENATAL CARE FROM HEALTH PERSONNEL DURING THIS PREGNANCY	CODE 'A' OR 'B' CIRCLED OTHER (SKIP TO 432)		
431	Did you get the (SP/Fansidar) during any antenatal care visit, during another visit to a health facility or from another source?	ANTENATAL VISIT . . 1 ANOTHER FACILITY VISIT . . . . . 2 OTHER SOURCE 6		
432	When (NAME) was born, was he/she very large, larger than average, average, smaller than average, or very small?	VERY LARGE . . . . . 1 LARGER THAN AVERAGE . . . . . 2 AVERAGE . . . . . 3 SMALLER THAN AVERAGE . . . . . 4 VERY SMALL . . . . . 5 DON'T KNOW 8	VERY LARGE . . . . . 1 LARGER THAN AVERAGE . . . . . 2 AVERAGE . . . . . 3 SMALLER THAN AVERAGE . . . . . 4 VERY SMALL . . . . . 5 DON'T KNOW 8	VERY LARGE . . . . . 1 LARGER THAN AVERAGE . . . . . 2 AVERAGE . . . . . 3 SMALLER THAN AVERAGE . . . . . 4 VERY SMALL . . . . . 5 DON'T KNOW 8
433	Was (NAME) weighed at birth?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 435) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 435) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 435) DON'T KNOW 8
434	How much did (NAME) weigh? RECORD WEIGHT IN KILOGRAMS FROM HEALTH CARD, IF AVAILABLE.	KG FROM CARD 1 . . . KG FROM RECALL 2 . . . DON'T KNOW . 99.998	KG FROM CARD 1 . . . KG FROM RECALL 2 . . . DON'T KNOW . 99.998	KG FROM CARD 1 . . . KG FROM RECALL 2 . . . DON'T KNOW . 99.998

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
435	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE(S) OF PERSON(S) AND RECORD ALL MENTIONED. IF RESPONDENT SAYS NO ONE ASSISTED, PROBE TO SEE IF ANY ADULTS WERE PRESENT AT THE DELIVERY.	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE . B OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . C COMMUNITY HLTH WORKER . . . D RELATIVE/FRIEND E OTHER _____ X (SPECIFY) NO ONE . . . . . Y	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE . B OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . C COMMUNITY HLTH WORKER . . . D RELATIVE/FRIEND E OTHER _____ X (SPECIFY) NO ONE . . . . . Y	HEALTH PERSONNEL DOCTOR . . . . . A NURSE/MIDWIFE . B OTHER PERSON TRADITIONAL BIRTH ATTENDANT . . C COMMUNITY HLTH WORKER . . . D RELATIVE/FRIEND E OTHER _____ X (SPECIFY) NO ONE . . . . . Y
436	Where did you give birth to (NAME)? PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	HOME YOUR HOME . . . 11 (SKIP TO 443) ← OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. DIS-PENSARY . . . 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MED. SECTOR MISSION HOSPITAL/ CLINIC . . . . . 31 PVT. HOSPITAL/ CLINIC . . . . . 33 NURSING/MATERNITY HOME . . . . . 35 OTHER PRIVATE MED. _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY) (SKIP TO 443) ←	HOME YOUR HOME . . . 11 (SKIP TO 444) ← OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. DIS-PENSARY . . . 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MED. SECTOR MISSION HOSPITAL/ CLINIC . . . . . 31 PVT. HOSPITAL/ CLINIC . . . . . 33 NURSING/MATERNITY HOME . . . . . 35 OTHER PRIVATE MED. _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY) (SKIP TO 444) ←	HOME YOUR HOME . . . 11 (SKIP TO 444) ← OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. DIS-PENSARY . . . 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MED. SECTOR MISSION HOSPITAL/ CLINIC . . . . . 31 PVT. HOSPITAL/ CLINIC . . . . . 33 NURSING/MATERNITY HOME . . . . . 35 OTHER PRIVATE MED. _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY) (SKIP TO 444) ←
437	How long after (NAME) was delivered did you stay there? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . 998	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . . . 998	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . . . 998
438	Was (NAME) delivered by caesarean section?	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
439	Before you were discharged after (NAME) was born, did any health care provider check on your health?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 442) ←	YES . . . . . 1 (SKIP TO 455) ← NO 2	YES . . . . . 1 (SKIP TO 455) ← NO 2

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
440	How long after delivery did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . . . 998		
441	Who checked on your health at that time? PROBE FOR MOST QUALIFIED PERSON.	HEALTH PERSONNEL DOCTOR . . . . . 11 NURSE/MIDWIFE 12 OTHER PERSON TRADITIONAL BIRTH ATTENDANT . 21 COMMUNITY HLTH WORKER . . . 22 OTHER _____ 96 (SPECIFY) (SKIP TO 453)		
442	After you were discharged, did any health care provider or a traditional birth attendant check on your health?	YES . . . . . 1 (SKIP TO 445) NO . . . . . 2 (SKIP TO 453)	YES . . . . . 1 (SKIP TO 455) NO 2	YES . . . . . 1 (SKIP TO 455) NO 2
443	Why didn't you deliver in a health facility? PROBE: Any other reason? RECORD ALL MENTIONED.	COST TOO MUCH . . A FACILITY NOT OPEN . B TOO FAR/ NO TRANS-PORTATION C DON'T TRUST FACILITY/POOR QUALITY SERVICE D NO FEMALE PROVID-ER AT FACILITY . . E HUSBAND/FAMILY DID NOT ALLOW . . F NOT NECESSARY . . G NOT CUSTOMARY . . H OTHER _____ X (SPECIFY)		
444	After (NAME) was born, did any health care provider or a traditional birth attendant check on your health?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 449)	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
445	How long after delivery did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . . . 998		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
446	Who checked on your health at that time? PROBE FOR MOST QUALIFIED PERSON.	HEALTH PERSONNEL DOCTOR . . . . . 11 NURSE/MIDWIFE 12 OTHER PERSON TRADITIONAL BIRTH ATTENDANT . 21 COMMUNITY HLTH WORKER . . . 22 OTHER _____ 96 (SPECIFY)		
447	Where did this first check take place? PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	HOME YOUR HOME . . . 11 OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. DISPENSARY . . . 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MED. SECTOR MISSION HOSPITAL/ CLINIC . . . . . 31 PVT. HOSPITAL/ CLINIC . . . . . 33 NURSING/MATERNITY HOME . . . . . 35 OTHER PRIVATE MED. _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY)		
448	CHECK 442:	YES ☐ → (SKIP TO 453) NOT ASKED ☐ →		
449	In the two months after (NAME) was born, did any health care provider or a traditional birth attendant check on his/her health?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 453) ← DON'T KNOW 8		
450	How many hours, days or weeks after the birth of (NAME) did the first check take place? IF LESS THAN ONE DAY, RECORD HOURS. IF LESS THAN ONE WEEK, RECORD DAYS.	HOURS 1 ☐☐ DAYS 2 ☐☐ WEEKS 3 ☐☐ DON'T KNOW . . . 998		

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
451	Who checked on (NAME)'s health at that time? PROBE FOR MOST QUALIFIED PERSON.	HEALTH PERSONNEL DOCTOR . . . . . 11 NURSE/MIDWIFE 12 OTHER PERSON TRADITIONAL BIRTH ATTENDANT . 21 COMMUNITY HLTH WORKER . . . 22 OTHER _____ 96 (SPECIFY)		
452	Where did this first check of (NAME) take place? PROBE TO IDENTIFY THE TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	HOME YOUR HOME . . . 11 OTHER HOME . . . 12 PUBLIC SECTOR GOVT. HOSPITAL 21 GOVT. HEALTH CENTER . . . . . 22 GOVT. DISPENSARY . . . 23 OTHER PUBLIC _____ 26 (SPECIFY) PRIVATE MED. SECTOR FAITH-BASED, CHURCH HOSP/CLINIC . 31 PVT. HOSPITAL/ CLINIC . . . . . 33 NURSING/MATERNITY HOME . . . . . 35 OTHER PRIVATE MED. _____ 36 (SPECIFY) OTHER _____ 96 (SPECIFY)		
453	In the first two months after delivery, did you receive a vitamin A dose (l ke this)? SHOW COMMON TYPES OF AMPULES/CAPSULES/SYRUPS.	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8		
454	Has your menstrual period returned since the birth of (NAME)?	YES . . . . . 1 (SKIP TO 456)←┘ NO . . . . . 2 (SKIP TO 457)←┘		
455	Did your period return between the birth of (NAME) and your next pregnancy?		YES . . . . . 1 NO . . . . . 2 (SKIP TO 459)←┘	YES . . . . . 1 NO . . . . . 2 (SKIP TO 459)←┘
456	For how many months after the birth of (NAME) did you not have a period?	MONTHS . . . ☐☐ DON'T KNOW 98	MONTHS . . . ☐☐ DON'T KNOW 98	MONTHS . . . ☐☐ DON'T KNOW 98

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
457	CHECK 226: IS RESPONDENT PREGNANT?	NOT PREGNANT → (SKIP TO 459) PREGNANT OR UNSURE		
458	Have you begun to have sexual intercourse again since the birth of (NAME)?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 460)		
459	For how many months after the birth of (NAME) did you not have sexual intercourse?	MONTHS . . . ☐☐ DON'T KNOW 98	MONTHS . . . ☐☐ DON'T KNOW 98	MONTHS . . . ☐☐ DON'T KNOW 98
460	Did you ever breastfeed (NAME)?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 467)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 467)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 467)
461	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY . . . 000 HOURS 1 ☐☐ DAYS 2 ☐☐		
462	In the first three days after delivery, was (NAME) given anything to drink other than breast milk?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 464)		
463	What was (NAME) given to drink? Anything else? RECORD ALL LIQUIDS MENTIONED.	MILK (OTHER THAN BREAST MILK) . A PLAIN WATER . . . B SUGAR OR GLUCOSE WATER . . . C GRIPE WATER . . . D SUGAR-SALT-WATER SOLUTION . . . . . E FRUIT JUICE . . . . . F INFANT FORMULA . G TEA/INFUSIONS . . . H HONEY . . . . . I OTHER _____ X (SPECIFY)		
464	CHECK 404: IS CHILD LIVING?	LIVING → (SKIP TO 466) DEAD		
465	Are you still breastfeeding (NAME)?	YES . . . . . 1 (SKIP TO 468) NO 2		
466	For how many months did you breastfeed (NAME)?	MONTHS . . . ☐☐ DON'T KNOW . . . 98	MONTHS . . . ☐☐ STILL BF . . . . . 95 DON'T KNOW . . . 98	MONTHS . . . ☐☐ STILL BF . . . . . 95 DON'T KNOW . . . 98

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
467	CHECK 404: IS CHILD LIVING?	LIVING → (SKIP TO 470) DEAD → (GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501)	LIVING → (SKIP TO 470) DEAD → (GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501)	LIVING → (SKIP TO 470) DEAD → (GO BACK TO 405 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 501)
468	How many times did you breastfeed last night between sunset and sunrise? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF NIGHTTIME FEEDINGS . ☐☐		
469	How many times did you breastfeed yesterday during the daylight hours? IF ANSWER IS NOT NUMERIC, PROBE FOR APPROXIMATE NUMBER.	NUMBER OF DAYLIGHT FEEDINGS . ☐☐		
470	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
471		GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501.	GO BACK TO 405 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 501.	GO BACK TO 405 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 501.

SECTION 5. IMMUNIZATION, HEALTH AND NUTRITION

501 ENTER IN THE TABLE THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF EACH BIRTH IN 2003 OR LATER.
ASK THE QUESTIONS ABOUT ALL OF THESE BIRTHS. BEGIN WITH THE LAST BIRTH.
(IF THERE ARE MORE THAN 3 BIRTHS, USE LAST 2 COLUMNS OF ADDITIONAL QUESTIONNAIRES).

		LAST BIRTH	NEXT-TO-LAST BIRTH	SECOND-FROM-LAST BIRTH
502	LINE NUMBER FROM 212	LINE NUMBER	LINE NUMBER	LINE NUMBER . . . . .
503	FROM 212 AND 216	NAME _____ LIVING / DEAD (GO TO 503 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 573)	NAME _____ LIVING / DEAD (GO TO 503 IN NEXT COLUMN OR, IF NO MORE BIRTHS, GO TO 573)	NAME _____ LIVING / DEAD (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE, OR IF NO MORE BIRTHS, GO TO 573)
504	Do you have a child welfare card with (NAME)'s vaccinations? IF YES: May I see it please?	YES, SEEN . . . . . 1 (SKIP TO 506) YES, NOT SEEN . . . . . 2 (SKIP TO 508) NO CARD 3	YES, SEEN . . . . . 1 (SKIP TO 506) YES, NOT SEEN . . . . . 2 (SKIP TO 508) NO CARD 3	YES, SEEN . . . . . 1 (SKIP TO 506) YES, NOT SEEN . . . . . 2 (SKIP TO 508) NO CARD 3
505	Did you ever have a vaccination card for (NAME)?	YES . . . . . 1 (SKIP TO 508) NO 2	YES . . . . . 1 (SKIP TO 508) NO 2	YES . . . . . 1 (SKIP TO 508) NO 2

506 (1) COPY VACCINATION DATE FOR EACH VACCINE FROM THE CARD.
(2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.
(3) IF MORE THAN TWO VITAMIN 'A' DOSES, RECORD DATES FOR MOST RECENT AND SECOND MOST RECENT DOSES.

	LAST BIRTH DAY	LAST BIRTH MONTH	LAST BIRTH YEAR		NEXT-TO-LAST BIRTH DAY	NEXT-TO-LAST BIRTH MONTH	NEXT-TO-LAST BIRTH YEAR		SECOND-FROM-LAST BIRTH DAY	SECOND-FROM-LAST BIRTH MONTH	SECOND-FROM-LAST BIRTH YEAR
BCG				BCG				BCG			
DPT, HEPATITIS, HIB, 1st DOSE				D1				D1			
DPT, HEPATITIS, HIB, 2nd DOSE				D2				D2			
DPT, HEPATITIS, HIB, 3rd DOSE				D3				D3			
POLIO 0 (POLIO GIVEN AT BIRTH)				P0				P0			
OPV 1				P1				P1			
OPV 2				P2				P2			
OPV 3				P3				P3			
MEASLES				MEA				MEA			
VITAMIN A (MOST RECENT)				VIT A				VIT A			
VITAMIN A (2nd MOST RECENT)				VIT A				VIT A			
YELLOW FEVER											

506A	CHECK 506:	BCG TO MEASLES ALL RECORDED / OTHER (GO TO 510)	BCG TO MEASLES ALL RECORDED / OTHER (GO TO 510)	BCG TO MEASLES ALL RECORDED / OTHER (GO TO 510)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
507	Has (NAME) received any vaccinations that are not recorded on this card, including vaccinations received in a national immunization day campaign? RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, POLIO 0-3, DPT 1-3, AND/OR MEASLES VACCINES.	YES . . . . . 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 506) (SKIP TO 510) NO . . . . . 2 (SKIP TO 510) DON'T KNOW 8	YES . . . . . 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 506) (SKIP TO 510) NO . . . . . 2 (SKIP TO 510) DON'T KNOW 8	YES . . . . . 1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 506) (SKIP TO 510) NO . . . . . 2 (SKIP TO 510) DON'T KNOW 8
508	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases, including vaccinations received in a national immunization campaign?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 512) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 512) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 512) DON'T KNOW 8
509	Please tell me if (NAME) received any of the following vaccinations:			
509A	A BCG vaccination against tuberculosis, that is, an injection in the arm or shoulder that usually causes a scar?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
509B	Polio vaccine, that is, drops in the mouth?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 509E) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 509E) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 509E) DON'T KNOW 8
509C	Was the first polio vaccine received in the first two weeks after birth or later?	FIRST 2 WEEKS . . . 1 LATER 2	FIRST 2 WEEKS . . . 1 LATER 2	FIRST 2 WEEKS . . . 1 LATER 2
509D	How many times was the polio vaccine received?	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐
509E	A Pentavalent vaccination, that is an injection given in the thigh, sometimes at the same time as polio drops?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 509G) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 509G) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 509G) DON'T KNOW 8
509F	How many times was a Penta valent vaccination received?	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐	NUMBER OF TIMES . . . . . ☐
509G	A measles injection- that is , a shot in the right upper arm at the age of 9 months or older - to prevent him/her from getting measles?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
510	Were any of the vaccinations (NAME) received during the last two years given as part of a national immunization day campaign?	YES . . . . . 1 NO . . . . . 2 NO VACCINATION IN THE LAST 2 YRS. 3 DON'T KNOW . . . 8	YES . . . . . 1 NO . . . . . 2 NO VACCINATION IN THE LAST 2 YRS. 3 DON'T KNOW . . . 8	YES . . . . . 1 NO . . . . . 2 NO VACCINATION IN THE LAST 2 YRS. 3 DON'T KNOW . . . 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
512	CHECK 506: DATE SHOWN FOR VITAMIN A DOSE	DATE FOR MOST RECENT VITAMIN A DOSE OTHER (SKIP TO 514)	DATE FOR MOST RECENT VITAMIN A DOSE OTHER (SKIP TO 514)	DATE FOR MOST RECENT VITAMIN A DOSE OTHER (SKIP TO 514)
513	According to (NAME)'s health card, he/she received a vitamin A dose (l ke this/any of these) in (MONTH AND YEAR OF MOST RECENT DOSE FROM CARD). Has (NAME) received another vitamin A dose since then? SHOW COMMON TYPES OF AMPULES/CAPSULES/SYRUPS.	YES . . . . . 1 (SKIP TO 515) NO . . . . . 2 (SKIP TO 516) DON'T KNOW 8	YES . . . . . 1 (SKIP TO 515) NO . . . . . 2 (SKIP TO 516) DON'T KNOW 8	YES . . . . . 1 (SKIP TO 515) NO . . . . . 2 (SKIP TO 516) DON'T KNOW 8
514	HAS (NAME) ever received a vitamin A dose (l ke this/ any of these)? SHOW COMMON TYPES OF AMPULES/CAPSULES/SYRUPS.	YES . . . . . 1 NO . . . . . 2 (SKIP TO 516) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 516) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 516) DON'T KNOW 8
515	Did (NAME) receive a vitamin A dose within the last six months?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
516	In the last seven days, did (NAME) take iron pills, sprinkles with iron, or iron syrup (like this/any of these)? SHOW COMMON TYPES OF PILLS/SPRINKLES/SYRUPS	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
517	Has (NAME) taken any drug for intestinal worms in the last six months?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
518	Has (NAME) had diarrhoea in the last 2 weeks?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 533) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 533) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 533) DON'T KNOW 8
519	Was there any blood in the stools?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
520	Now I would like to know how much (NAME) was given to drink during the diarrhoea (including breastmilk). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she given much less than usual to drink or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
521	When (NAME) had diarrhoea, was he/she given less than usual to eat, about the same amount, more than usual, or nothing to eat? IF LESS, PROBE: Was he/she given much less than usual to eat or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 STOPPED FOOD . 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 STOPPED FOOD . 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 STOPPED FOOD . 5 NEVER GAVE FOOD 6 DON'T KNOW 8
522	Did you seek advice or treatment for the diarrhoea from any source?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 527)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 527)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 527)
523	Where did you seek advice or treatment? Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT HOSPITAL B GOVT HEALTH CENTER . . . . . C GOVT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR MISSION HOSP./ CLINIC . . . . . F PVT. HOSPITAL/ CLINIC . . . . . H PHARMACY . . . I OTHER PRIVATE MED. _____ K (SPECIFY) MOBILE CLINIC . . . L COMMUNITY HEALTH WORKER . . . . . M OTHER SOURCE SHOP . . . . . N TRADITIONAL PRACTITIONER O RELATIVE/FRIEND P OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL B GOVT HEALTH CENTER . . . . . C GOVT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR MISSION HOSP./ CLINIC . . . . . F PVT. HOSPITAL/ CLINIC . . . . . H PHARMACY . . . I OTHER PRIVATE MED. _____ K (SPECIFY) MOBILE CLINIC . . . L COMMUNITY HEALTH WORKER . . . . . M OTHER SOURCE SHOP . . . . . N TRADITIONAL PRACTITIONER O RELATIVE/FRIEND P OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL B GOVT HEALTH CENTER . . . . . C GOVT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR MISSION HOSP./ CLINIC . . . . . F PVT. HOSPITAL/ CLINIC . . . . . H PHARMACY . . . I OTHER PRIVATE MED. _____ K (SPECIFY) MOBILE CLINIC . . . L COMMUNITY HEALTH WORKER . . . . . M OTHER SOURCE SHOP . . . . . N TRADITIONAL PRACTITIONER O RELATIVE/FRIEND P OTHER _____ X (SPECIFY)
524	CHECK 523:	TWO OR MORE CODES CIRCLED ONLY ONE CODE CIRCLED (SKIP TO 526)	TWO OR MORE CODES CIRCLED ONLY ONE CODE CIRCLED (SKIP TO 526)	TWO OR MORE CODES CIRCLED ONLY ONE CODE CIRCLED (SKIP TO 526)
525	Where did you first seek advice or treatment? USE LETTER CODE FROM 523.	FIRST PLACE . . .	FIRST PLACE . . .	FIRST PLACE . . .

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
526	How many days after the diarrhoea began did you first seek advice or treatment for (NAME)? IF THE SAME DAY, RECORD '00'.	DAYS . . . . . ☐☐	DAYS . . . . . ☐☐	DAYS . . . . . ☐☐
527	Does (NAME) still have diarrhoea?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
528	Was he/she given any of the following to drink at any time since he/she started having the diarrhoea:	YES NO DK	YES NO DK	YES NO DK
	a) A fluid made from a special packet called Oralite or ORS?	FLUID FROM ORS PKT . . 1 2 8	FLUID FROM ORS PKT . . 1 2 8	FLUID FROM ORS PKT . . 1 2 8
	b) A home-made sugar-salt solution?	SUGAR-SALT SOL'N . . . 1 2 8	SUGAR-SALT SOL'N . . . 1 2 8	SUGAR-SALT SOL'N . . . 1 2 8
	c) Another home-made liquid such as porridge, soup, yoghurt, coconut water, fresh fruit juice, tea, milk, or rice water?	HOMEMADE FLUID . . . 1 2 8	HOMEMADE FLUID . . . 1 2 8	HOMEMADE FLUID . . . 1 2 8
529	Was anything (else) given to treat the diarrhea?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 533) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 533) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 533) DON'T KNOW 8
530	What (else) was given to treat the diarrhoea? Anything else? RECORD ALL TREATMENTS GIVEN.	PILL OR SYRUP ANTIBIOTIC . . . . . A ANTIMOTILITY . B ZINC . . . . . C OTHER (NOT ANTI-BIOTIC, ANTI-MOTILITY, OR ZINC) . . . . . D UNKNOWN PILL OR SYRUP . . . E INJECTION ANTIBIOTIC . . . . . F NON-ANTIBIOTIC . G UNKNOWN INJECTION . . . H (IV) INTRAVENOUS . I HOME REMEDY/ HERBAL MED-ICINE . . . . . J OTHER _____ X (SPECIFY)	PILL OR SYRUP ANTIBIOTIC . . . . . A ANTIMOTILITY . B ZINC . . . . . C OTHER (NOT ANTI-BIOTIC, ANTI-MOTILITY, OR ZINC) . . . . . D UNKNOWN PILL OR SYRUP . . . E INJECTION ANTIBIOTIC . . . . . F NON-ANTIBIOTIC . G UNKNOWN INJECTION . . . H (IV) INTRAVENOUS . I HOME REMEDY/ HERBAL MED-ICINE . . . . . J OTHER _____ X (SPECIFY)	PILL OR SYRUP ANTIBIOTIC . . . . . A ANTIMOTILITY . B ZINC . . . . . C OTHER (NOT ANTI-BIOTIC, ANTI-MOTILITY, OR ZINC) . . . . . D UNKNOWN PILL OR SYRUP . . . E INJECTION ANTIBIOTIC . . . . . F NON-ANTIBIOTIC . G UNKNOWN INJECTION . . . H (IV) INTRAVENOUS . I HOME REMEDY/ HERBAL MED-ICINE . . . . . J OTHER _____ X (SPECIFY)
531	CHECK 530: GIVEN ZINC?	CODE "C" CIRCLED / CODE "C" NOT CIRCLED (SKIP TO 533)	CODE "C" CIRCLED / CODE "C" NOT CIRCLED (SKIP TO 533)	CODE "C" CIRCLED / CODE "C" NOT CIRCLED (SKIP TO 533)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
532	How many times was (NAME) given zinc?	TIMES . . . . . ☐☐ DON'T KNOW 98	TIMES . . . . . ☐☐ DON'T KNOW 98	TIMES . . . . . ☐☐ DON'T KNOW 98
533	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8
534	Has (NAME) had an illness with a cough at any time in the last 2 weeks?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 537) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 537) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 537) DON'T KNOW 8
535	When (NAME) had an illness with a cough, did he/she breathe faster than usual with short, rapid breaths or have difficulty breathing?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 538) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 538) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 538) DON'T KNOW 8
536	Was the fast or difficult breathing due to a problem in the chest or to a blocked or runny nose?	CHEST ONLY . . . 1 NOSE ONLY . . . . . 2 BOTH . . . . . 3 OTHER _____ 6 (SPECIFY) DON'T KNOW . . . . . 8 (SKIP TO 538)	CHEST ONLY . . . 1 NOSE ONLY . . . . . 2 BOTH . . . . . 3 OTHER _____ 6 (SPECIFY) DON'T KNOW . . . . . 8 (SKIP TO 538)	CHEST ONLY . . . 1 NOSE ONLY . . . . . 2 BOTH . . . . . 3 OTHER _____ 6 (SPECIFY) DON'T KNOW . . . . . 8 (SKIP TO 538)
537	CHECK 533: HAD FEVER?	YES ☐ NO OR DK (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573)	YES ☐ NO OR DK (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573)	YES ☐ NO OR DK (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 573)
538	Now I would like to know how much (NAME) was given to drink (including breastmilk) during the illness with a (fever/cough). Was he/she given less than usual to drink, about the same amount, or more than usual to drink? IF LESS, PROBE: Was he/she given much less than usual to drink or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 NOTHING TO DRINK 5 DON'T KNOW 8
539	When (NAME) had a (fever/cough), was he/she given less than usual to eat, about the same amount, more than usual, or nothing to eat? IF LESS, PROBE: Was he/she given much less than usual to eat or somewhat less?	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 STOPPED FOOD . 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 STOPPED FOOD . 5 NEVER GAVE FOOD 6 DON'T KNOW 8	MUCH LESS . . . . . 1 SOMEWHAT LESS . 2 ABOUT THE SAME . 3 MORE . . . . . 4 STOPPED FOOD . 5 NEVER GAVE FOOD 6 DON'T KNOW 8
540	Did you seek advice or treatment for the illness from any source?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 545)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 545)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 545)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
541	Where did you seek advice or treatment? Anywhere else? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF A HOSPITAL, HEALTH CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT HOSPITAL B GOVT HEALTH CENTER . . . . . C GOVT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR MISSION HOSP./ CLINIC . . . . . F PVT. HOSPITAL/ CLINIC . . . . . H PHARMACY . . . I OTHER PRIVATE MED. _____ K (SPECIFY) MOBILE CLINIC . . . L COMMUNITY HEALTH WORKER . . . . . M OTHER SOURCE SHOP . . . . . N TRADITIONAL PRACTITIONER O RELATIVE/FRIEND P OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL B GOVT HEALTH CENTER . . . . . C GOVT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR MISSION HOSP./ CLINIC . . . . . F PVT. HOSPITAL/ CLINIC . . . . . H PHARMACY . . . I OTHER PRIVATE MED. _____ K (SPECIFY) MOBILE CLINIC . . . L COMMUNITY HEALTH WORKER . . . . . M OTHER SOURCE SHOP . . . . . N TRADITIONAL PRACTITIONER O RELATIVE/FRIEND P OTHER _____ X (SPECIFY)	PUBLIC SECTOR GOVT HOSPITAL B GOVT HEALTH CENTER . . . . . C GOVT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR MISSION HOSP./ CLINIC . . . . . F PVT. HOSPITAL/ CLINIC . . . . . H PHARMACY . . . I OTHER PRIVATE MED. _____ K (SPECIFY) MOBILE CLINIC . . . L COMMUNITY HEALTH WORKER . . . . . M OTHER SOURCE SHOP . . . . . N TRADITIONAL PRACTITIONER O RELATIVE/FRIEND P OTHER _____ X (SPECIFY)
542	CHECK 541:	TWO OR MORE CODES CIRCLED ☐ → (SKIP TO 544) ONLY ONE CODE CIRCLED ☐ → (SKIP TO 544)	TWO OR MORE CODES CIRCLED ☐ → (SKIP TO 544) ONLY ONE CODE CIRCLED ☐ → (SKIP TO 544)	TWO OR MORE CODES CIRCLED ☐ → (SKIP TO 544) ONLY ONE CODE CIRCLED ☐ → (SKIP TO 544)
543	Where did you first seek advice or treatment? USE LETTER CODE FROM 541.	FIRST PLACE . . . ☐	FIRST PLACE . . . ☐	FIRST PLACE . . . ☐
544	How many days after the illness began did you first seek advice or treatment for (NAME)? IF THE SAME DAY, RECORD '00'.	DAYS . . . . . ☐☐	DAYS . . . . . ☐☐	DAYS . . . . . ☐☐
545	Is (NAME) still sick with a (fever/ cough)?	FEVER ONLY . . . . . 1 COUGH ONLY . . . 2 BOTH FEVER AND COUGH . . . . . 3 NO, NEITHER . . . . . 4 DON'T KNOW 8	FEVER ONLY . . . . . 1 COUGH ONLY . . . 2 BOTH FEVER AND COUGH . . . . . 3 NO, NEITHER . . . . . 4 DON'T KNOW 8	FEVER ONLY . . . . . 1 COUGH ONLY . . . 2 BOTH FEVER AND COUGH . . . . . 3 NO, NEITHER . . . . . 4 DON'T KNOW 8
546	At any time during the illness, did (NAME) take any drugs for the illness?	YES . . . . . 1 NO . . . . . 2 (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 573) DON'T KNOW 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
547	What drugs did (NAME) take? Any other drugs? RECORD ALL MENTIONED.	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE . C QUININE . . . . . D AL/COARTEM . . . E OTHER ANTI-MALARIAL _____ F (SPECIFY) ANTIBIOTIC DRUGS PILL/SYRUP . . . G INJECTION . . . H OTHER DRUGS ASPIRIN . . . . . I ACETA-MINOPHEN . . . J IBUPROFEN . . . K OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE . C QUININE . . . . . D AL/COARTEM . . . E OTHER ANTI-MALARIAL _____ F (SPECIFY) ANTIBIOTIC DRUGS PILL/SYRUP . . . G INJECTION . . . H OTHER DRUGS ASPIRIN . . . . . I ACETA-MINOPHEN . . . J IBUPROFEN . . . K OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE . C QUININE . . . . . D AL/COARTEM . . . E OTHER ANTI-MALARIAL _____ F (SPECIFY) ANTIBIOTIC DRUGS PILL/SYRUP . . . G INJECTION . . . H OTHER DRUGS ASPIRIN . . . . . I ACETA-MINOPHEN . . . J IBUPROFEN . . . K OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z
548	CHECK 547: ANY CODE A-G CIRCLED?	YES ☐ NO ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573)	YES ☐ NO ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573)	YES ☐ NO ☐ (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 573)
549	Did you already have (NAME OF DRUG FROM 547) at home when the child became ill? ASK SEPARATELY FOR EACH OF THE DRUGS 'A' THROUGH 'G' THAT THE CHILD IS RECORDED AS HAVING TAKEN IN 547. IF YES FOR ANY DRUG, CIRCLE CODE FOR THAT DRUG. IF NO FOR ALL DRUGS, CIRCLE 'Y'.	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE . . . C QUININE . . . . . D AL/COARTEM . . . E OTHER ANTI-MALARIAL . . . F ANTIBIOTIC PILL/SYRUP . . . . . G NO DRUG AT HOME . Y	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE . . . C QUININE . . . . . D AL/COARTEM . . . E OTHER ANTI-MALARIAL . . . F ANTIBIOTIC PILL/SYRUP . . . . . G NO DRUG AT HOME . Y	ANTIMALARIAL DRUGS SP/FANSIDAR . . . A CHLOROQUINE . B AMODIAQUINE . . . C QUININE . . . . . D AL/COARTEM . . . E OTHER ANTI-MALARIAL . . . F ANTIBIOTIC PILL/SYRUP . . . . . G NO DRUG AT HOME . Y

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
550	CHECK 547: ANY CODE A-F CIRCLED?	YES ☐ NO ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573)	YES ☐ NO ☐ (GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573)	YES ☐ NO ☐ (GO TO 503 IN NEXT-TO-LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 573)
551	CHECK 547: SP/FANSIDAR ('A') GIVEN	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 554)	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 554)	CODE 'A' CIRCLED ☐ CODE 'A' NOT CIRCLED ☐ (SKIP TO 554)
552	How long after the fever started did (NAME) first take SP/Fansidar?	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8
553	For how many days did (NAME) take the SP/Fansidar? IF 7 DAYS OR MORE, WRITE 7.	DAYS . . . . . ☐ DON'T KNOW . . . 8	DAYS . . . . . ☐ DON'T KNOW . . . 8	DAYS . . . . . ☐ DON'T KNOW . . . 8
554	CHECK 547: CHLOROQUINE ('B') GIVEN	CODE 'B' CIRCLED ☐ CODE 'B' NOT CIRCLED ☐ (SKIP TO 557)	CODE 'B' CIRCLED ☐ CODE 'B' NOT CIRCLED ☐ (SKIP TO 557)	CODE 'B' CIRCLED ☐ CODE 'B' NOT CIRCLED ☐ (SKIP TO 557)
555	How long after the fever started did (NAME) first take chloroquine?	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8
556	For how many days did (NAME) take the chloroquine? IF 7 DAYS OR MORE, WRITE 7.	DAYS . . . . . ☐ DON'T KNOW 8	DAYS . . . . . ☐ DON'T KNOW 8	DAYS . . . . . ☐ DON'T KNOW 8
557	CHECK 547: AMODIAQUINE ('C') GIVEN	CODE 'C' CIRCLED ☐ CODE 'C' NOT CIRCLED ☐ (SKIP TO 560)	CODE 'C' CIRCLED ☐ CODE 'C' NOT CIRCLED ☐ (SKIP TO 560)	CODE 'C' CIRCLED ☐ CODE 'C' NOT CIRCLED ☐ (SKIP TO 560)

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
558	How long after the fever started did (NAME) first take Amodiaquine?	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8
559	For how many days did (NAME) take the Amodiaquine? IF 7 DAYS OR MORE, WRITE 7.	DAYS . . . . . ☐ DON'T KNOW 8	DAYS . . . . . ☐ DON'T KNOW 8	DAYS . . . . . ☐ DON'T KNOW 8
560	CHECK 547: QUININE ('D') GIVEN	CODE 'D' CIRCLED ☐ → (SKIP TO 563) CODE 'D' NOT CIRCLED ☐ → (SKIP TO 563)	CODE 'D' CIRCLED ☐ → (SKIP TO 563) CODE 'D' NOT CIRCLED ☐ → (SKIP TO 563)	CODE 'D' CIRCLED ☐ → (SKIP TO 563) CODE 'D' NOT CIRCLED ☐ → (SKIP TO 563)
561	How long after the fever started did (NAME) first take quinine?	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8
562	For how many days did (NAME) take the quinine? IF 7 DAYS OR MORE, WRITE 7.	DAYS . . . . . ☐ DON'T KNOW . . . 8	DAYS . . . . . ☐ DON'T KNOW . . . 8	DAYS . . . . . ☐ DON'T KNOW . . . 8
563	CHECK 547: ARTEMETER+LUMEFANTRINE (AL/COARTEM) ('E') GIVEN	CODE 'E' CIRCLED ☐ → (SKIP TO 569) CODE 'E' NOT CIRCLED ☐ → (SKIP TO 569)	CODE 'E' CIRCLED ☐ → (SKIP TO 569) CODE 'E' NOT CIRCLED ☐ → (SKIP TO 569)	CODE 'E' CIRCLED ☐ → (SKIP TO 569) CODE 'E' NOT CIRCLED ☐ → (SKIP TO 569)
564	How long after the fever started did (NAME) first take AL?	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW 8
565	For how many days did (NAME) take AL? IF 7 DAYS OR MORE, WRITE 7.	DAYS . . . . . ☐ DON'T KNOW 8	DAYS . . . . . ☐ DON'T KNOW 8	DAYS . . . . . ☐ DON'T KNOW 8

NO.	QUESTIONS AND FILTERS	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	SECOND-FROM-LAST BIRTH NAME _____
569	CHECK 547: OTHER ANTIMALARIAL ('F') GIVEN	CODE 'F' CIRCLED / CODE 'F' NOT CIRCLED (GO TO 571A)	CODE 'F' CIRCLED / CODE 'F' NOT CIRCLED (GO TO 571A)	CODE 'F' CIRCLED / CODE 'F' NOT CIRCLED (GO TO 571A)
570	How long after the fever started did (NAME) first take (OTHER ANTIMALARIAL)?	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW . . . 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW . . . 8	SAME DAY . . . . . 0 NEXT DAY . . . . . 1 TWO DAYS AFTER FEVER . . . . . 2 THREE DAYS AFTER FEVER . . . . . 3 FOUR OR MORE DAYS AFTER FEVER . . 4 DON'T KNOW . . . 8
571	For how many days did (NAME) take the (OTHER ANTIMALARIAL)? IF 7 DAYS OR MORE, WRITE 7.	DAYS . . . . . ☐ DON'T KNOW . . . 8	DAYS . . . . . ☐ DON'T KNOW . . . 8	DAYS . . . . . ☐ DON'T KNOW . . . 8
571A	Was anything else done about (NAME)'s fever?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 572) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 572) DON'T KNOW 8	YES . . . . . 1 NO . . . . . 2 (SKIP TO 572) DON'T KNOW 8
571B	What was done about (NAME)'s fever?	CONSULTED TRAD'L HEALER . . . A GAVE WARM SPONGING . . . . . B GAVE HERBS . . . . . C OTHER X	CONSULTED TRAD'L HEALER . . . A GAVE WARM SPONGING . . . . . B GAVE HERBS . . . . . C OTHER X	CONSULTED TRAD'L HEALER . . . A GAVE WARM SPONGING . . . . . B GAVE HERBS . . . . . C OTHER X
572		GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573.	GO BACK TO 503 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 573.	GO TO 503 IN NEXT-TO LAST COLUMN OF NEW QUESTIONNAIRE; OR, IF NO MORE BIRTHS, GO TO 573.

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
573	CHECK 215 AND 218, ALL ROWS: NUMBER OF CHILDREN **BORN IN 2003 OR LATER AND LIVING** WITH THE RESPONDENT ONE OR MORE ☐ NONE ☐ → 576 RECORD NAME OF YOUNGEST CHILD LIVING WITH HER (AND CONTINUE WITH 574) _____ (NAME)		
574	The last time (NAME FROM 573) passed stools, what was done to dispose of the stools?	CHILD USED TOILET OR LATRINE . . . 01 PUT/RINSED INTO TOILET OR LATRINE . . . . . 02 PUT/RINSED INTO DRAIN OR DITCH . . . . . 03 THROWN INTO GARBAGE . . . . . 04 BURIED . . . . . 05 LEFT IN THE OPEN . . . . . 06 OTHER _____ 96 (SPECIFY)	
575	CHECK 528(a) AND 528(b), ALL COLUMNS: NO CHILD RECEIVED FLUID FROM ORS PACKET ☐ ANY CHILD RECEIVED FLUID FROM ORS PACKET ☐ → 576B		
576	Have you ever heard of a special product called Oralite or ORS that you can get for the treatment of diarrhoea?	YES . . . . . 1 NO 2	
576A	CHECK 224: ONE OR MORE BIRTHS IN 2003 OR LATER ☐ NO BIRTHS IN 2003 OR LATER ☐ → 601		
576B	CHECK 218, ALL ROWS: **ANY** CHILD LIVING WITH RESPONDENT? YES, ONE OR MORE CHILDREN LIVING WITH HER ☐ NO CHILDREN LIVING WITH HER ☐ → 601		
576C	When a child is ill, what signs of illness would tell you that he or she should be taken to health facility or health worker? CIRCLE ALL MENTIONED.	NOT ABLE TO DRINK/BREASTFEED .. A FEVER, SHIVERING . . . . . B REPEATED VOMITING . . . . . C DIARRHOEA . . . . . D BLOOD IN STOOLS . . . . . E FAST BREATHING . . . . . F CONVULSIONS . . . . . G WEAKNESS . . . . . H GETTING SICKER . . . . . I OTHER_____ X (SPECIFY)	
577	CHECK 215 AND 218, ALL ROWS: NUMBER OF CHILDREN **BORN IN 2005 OR LATER AND LIVING** WITH THE RESPONDENT ONE OR MORE ☐ NONE ☐ → 601 RECORD NAME OF YOUNGEST CHILD LIVING WITH HER (AND CONTINUE WITH 578) _____ (NAME)		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
578	Now I would like to ask you about liquids or foods (NAME FROM 577) had yesterday during the day or at night. Did (NAME FROM 577) (drink/eat):	**YES NO DK**	
	Plain water?	PLAIN WATER 1 2 8	
	Commercially produced infant formula?	FORMULA 1 2 8	
	Milk, such as tinned, powdered, or fresh animal mi k?	MILK 1 2 8	
	Tea or coffee?	TEA OR COFFEE 1 2 8	
	Any other liquids?	OTHER LIQUIDS 1 2 8	
	Any fortified baby food l ke Cerelac?	BABY CEREAL 1 2 8	
	Any (other) porridge or gruel?	OTHER PORRIDGE/GRUEL. . 1 2 8	
579	Now I would like to ask you about other foods (NAME FROM 577) ate over the last 24 hours. I am interested in whether (NAME) had the item even if it was combined with other foods. Yesterday, did (NAME) eat:	**YES NO DK**	
	a) Any foods made from grains, l ke maize, rice, wheat, porridge, sorghum or other local grains?	GRAINS 1 2 8	
	b) Pumpkin, yellow yams, butternut, carrots or yellow sweet potatoes?	RED-YELLOW VEGETABLES 1 2 8	
	c) Any other food made from roots or tubers, like white potatoes, arrowroot, cassava, or other roots or tubers?	ROOTS, TUBERS 1 2 8	
	d) Any green leafy vegetables?	GREEN LEAFY VEGETABLES 1 2 8	
	e) Mango, pawpaw, guava?	MANGO, PAWPAW, GUAVA 1 2 8	
	f) Any other fruits and vegetables like bananas, apples, green beans, avocados, tomatoes, oranges, pineapples, passion fruit?	OTHER FRUITS 1 2 8	
	g) Meat, chicken, fish, liver, kidney, blood, termites, sea food or eggs?	MEAT, CHICKEN, FISH, EGGS 1 2 8	
	h) Any food made from legumes, e.g. lentils, beans, soybeans, pulses or pea nuts?	BEANS, PULSES 1 2 8	
	i) Sour milk, cheese, or yoghurt?	SOUR MILK, CHEESE 1 2 8	
	j) Any other solid or semi-solid food?	ANY OTHER SOLID OR MUSHY FOOD 1 2 8	
580	CHECK 578 (LAST 2 CATEGORIES: BABY CEREAL OR OTHER PORRIDGE/GRUEL) AND 579: AT LEAST ONE "YES" ☐ ↓ NOT A SINGLE "YES" ☐ →		601
581	How many times did (NAME FROM 577) eat solid, semisolid, or soft foods yesterday during the day or at night? IF 7 OR MORE TIMES, RECORD '7'.	NUMBER OF TIMES . . . . . ☐ DON'T KNOW 8	

SECTION 6. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	Are you currently married or living together with a man as if married?	YES, CURRENTLY MARRIED . . . . . 1 YES, LIVING WITH A MAN . . . . . 2 NO, NOT IN UNION 3	→ 604
602	Have you ever been married or lived together with a man as if married?	YES, FORMERLY MARRIED . . . . . 1 YES, LIVED WITH A MAN . . . . . 2 NO 3	→ 617
603	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED . . . . . 1 DIVORCED . . . . . 2 SEPARATED 3	→ 609
604	Is your husband/partner living with you now or is he staying elsewhere?	LIVING WITH HER . . . . . 1 STAYING ELSEWHERE 2	
605	RECORD THE HUSBAND'S/PARTNER'S NAME AND LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE. IF HE IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'.	NAME _____ LINE NO.	
606	Does your husband/partner have other wives or does he live with other women as if married?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 609
607	Including yourself, in total, how many wives or partners does your husband live with now as if married?	TOTAL NUMBER OF WIVES AND LIVE-IN PARTNERS . . . . . DON'T KNOW 98	
608	Are you the first, second, ... wife?	RANK	
609	Have you been married or lived with a man only once or more than once?	ONLY ONCE . . . . . 1 MORE THAN ONCE 2	
615	CHECK 609: MARRIED/ LIVED WITH A MAN ONLY ONCE → In what month and year did you start living with your husband/partner? MARRIED/ LIVED WITH A MAN MORE THAN ONCE → Now I would like to ask about when you started living with your first husband/partner. In what month and year was that?	MONTH . . . . . DON'T KNOW MONTH . . . . . 98 YEAR . . . . . DON'T KNOW YEAR 9998	→ 616A
616	How old were you when you first started living with him?	AGE	
616A	When you got married or lived with a man, was it your choice or it was arranged?	OWN CHOICE . . . . . 1 ARRANGED 2	
616B	When you first got married or lived with a man, was the man older than you, younger than you or the same age as you?	OLDER . . . . . 1 YOUNGER . . . . . 2 ABOUT THE SAME AGE . . . . . 3 DON'T KNOW/DON'T REMEMBER . . . 8	→ 617
616C	Would you say this person was ten or more years older than you or less than ten years older than you?	TEN OR MORE YEARS OLDER . . . . . 1 LESS THAN TEN YEARS OLDER . . . 2 OLDER, UNSURE HOW MUCH 3	
617	CHECK FOR THE PRESENCE OF OTHER PEOPLE BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
618	Now I need to ask you some questions about sexual activity in order to gain a better understanding of some important life issues. How old were you when you had sexual intercourse for the very first time?	NEVER HAD SEXUAL INTERCOURSE . . . . . 00 AGE IN YEARS . . . . . ☐☐ FIRST TIME WHEN STARTED LIVING WITH (FIRST) HUSBAND/PARTNER 95	→ 621 → 621
619	CHECK 107: AGE 15-24 ☐ AGE 25-49 ☐		→ 641
620	Do you intend to wait until you get married to have sexual intercourse for the first time?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	→ 641
621	CHECK 107: AGE 15-24 ☐ AGE 25-49 ☐		→ 626
622	The first time you had sexual intercourse, was a condom used?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/DON'T REMEMBER . . . 8	
623	How old was the person you first had sexual intercourse with?	AGE OF PARTNER . . . . . ☐☐ DON'T KNOW 98	→ 626
624	Was this person older than you, younger than you, or about the same age as you?	OLDER . . . . . 1 YOUNGER . . . . . 2 ABOUT THE SAME AGE . . . . . 3 DON'T KNOW/DON'T REMEMBER . . . 8	→ 626
625	Would you say this person was ten or more years older than you or less than ten years older than you?	TEN OR MORE YEARS OLDER . . . . . 1 LESS THAN TEN YEARS OLDER . . . 2 OLDER, UNSURE HOW MUCH 3	
626	When was the last time you had sexual intercourse? IF LESS THAN 12 MONTHS, ANSWER MUST BE RECORDED IN DAYS, WEEKS OR MONTHS. IF 12 MONTHS (ONE YEAR) OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO . . . . . 1 ☐☐ WEEKS AGO . . . . . 2 ☐☐ MONTHS AGO . . . . . 3 ☐☐ YEARS AGO . . . . . 4 ☐☐	→ 640

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
626A	Now I would like to ask you some questions about your recent sexual activity. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question. → SKIP TO 628			
627	When was the last time you had sexual intercourse with this person?		DAYS . 1 WEEKS 2 MONTHS 3	DAYS . 1 WEEKS 2 MONTHS 3
628	The last time you had sexual intercourse (with this second/third person), was a condom used?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 630)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 630)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 630)
629A	What is the main reason you used a condom on that occasion?	PREVENT STD/HIV . . . . 1 AVOID PREGNANCY . . . . 2 BOTH PREVENT STD/HIV AND PREGNANCY . . . . 3 DID NOT TRUST PARTNER/ HE MAY HAVE OTHER PARTNERS . . . . . 4 PARTNER WANTED TO USE 5 OTHER _____ 6 (SPECIFY)	PREVENT STD/HIV . . . . 1 AVOID PREGNANCY . . . . 2 BOTH PREVENT STD/HIV AND PREGNANCY . . . . 3 DID NOT TRUST PARTNER/ HE MAY HAVE OTHER PARTNERS . . . . . 4 PARTNER WANTED TO USE 5 OTHER _____ 6 (SPECIFY)	PREVENT STD/HIV . . . . 1 AVOID PREGNANCY . . . . 2 BOTH PREVENT STD/HIV AND PREGNANCY . . . . 3 DID NOT TRUST PARTNER/ HE MAY HAVE OTHER PARTNERS . . . . . 4 PARTNER WANTED TO USE 5 OTHER _____ 6 (SPECIFY)
629	Did you use a condom every time you had sexual intercourse with this person in the last 12 months?	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
630	What was your relationship to this person with whom you had sexual intercourse? IF BOYFRIEND: Were you living together as if married? IF YES, CIRCLE '2'. IF NO, CIRCLE '3'.	HUSBAND . . . . . 1 (SKIP TO 636) LIVE-IN PARTNER . . . . 2 BOYFRIEND NOT LIVING WITH RESPONDENT . . . . 3 CASUAL ACQUAINTANCE . . . 4 PAYING CLIENT 5 OTHER _____ 6 (SPECIFY)	HUSBAND . . . . . 1 (SKIP TO 636) LIVE-IN PARTNER . . . . 2 BOYFRIEND NOT LIVING WITH RESPONDENT . . . . 3 CASUAL ACQUAINTANCE . . . 4 PAYING CLIENT 5 OTHER _____ 6 (SPECIFY)	HUSBAND . . . . . 1 (SKIP TO 636) LIVE-IN PARTNER . . . . 2 BOYFRIEND NOT LIVING WITH RESPONDENT . . . . 3 CASUAL ACQUAINTANCE . . . 4 PAYING CLIENT 5 OTHER _____ 6 (SPECIFY)
631	For how long (have you had/did you have) a sexual relationship with this person? IF ONLY HAD SEXUAL RELATIONS WITH THIS PERSON ONCE, RECORD '01' DAYS.	DAYS . 1 MONTHS 2 YEARS 3	DAYS . 1 MONTHS 2 YEARS 3	DAYS . 1 MONTHS 2 YEARS 3
632	CHECK 107:	AGE 15-24 / AGE 25-49 (SKIP TO 636)	AGE 15-24 / AGE 25-49 (SKIP TO 636)	AGE 15-24 / AGE 25-49 (SKIP TO 636)
633	How old is this person?	AGE OF PARTNER (SKIP TO 636) DON'T KNOW 98	AGE OF PARTNER (SKIP TO 636) DON'T KNOW 98	AGE OF PARTNER (SKIP TO 636) DON'T KNOW 98
634	Is this person older than you, younger than you, or about the same age?	OLDER . . . . . 1 YOUNGER . . . . . 2 SAME AGE . . . . . 3 DON'T KNOW . . . 8 (SKIP TO 636)	OLDER . . . . . 1 YOUNGER . . . . . 2 SAME AGE . . . . . 3 DON'T KNOW . . . 8 (SKIP TO 636)	OLDER . . . . . 1 YOUNGER . . . . . 2 SAME AGE . . . . . 3 DON'T KNOW . . . 8 (SKIP TO 636)

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
635	Would you say this person is ten or more years older than you or less than ten years older than you?	TEN OR MORE YEARS OLDER . 1 LESS THAN TEN YEARS OLDER . 2 OLDER, UNSURE HOW MUCH . . . 3	TEN OR MORE YEARS OLDER . 1 LESS THAN TEN YEARS OLDER . 2 OLDER, UNSURE HOW MUCH . . . 3	TEN OR MORE YEARS OLDER . 1 LESS THAN TEN YEARS OLDER . 2 OLDER, UNSURE HOW MUCH . . . 3
636	The last time you had sexual intercourse with this person, did you or this person drink alcohol?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 638)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 638)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 639)
637	Were you or your partner drunk at that time? IF YES: Who was drunk?	RESPONDENT ONLY 1 PARTNER ONLY . . . 2 BOTH RESPONDENT AND PARTNER . 3 NEITHER 4	RESPONDENT ONLY 1 PARTNER ONLY . . . 2 BOTH RESPONDENT AND PARTNER . 3 NEITHER 4	RESPONDENT ONLY 1 PARTNER ONLY . . . 2 BOTH RESPONDENT AND PARTNER . 3 NEITHER 4
638	Apart from [this person/these two people], have you had sexual intercourse with any other person in the last 12 months?	YES . . . . . 1 (GO BACK TO 627 IN NEXT COLUMN) NO . . . . . 2 (SKIP TO 640)	YES . . . . . 1 (GO BACK TO 627 IN NEXT COLUMN) NO . . . . . 2 (SKIP TO 640)	
639	In total, with how many different people have you had sexual intercourse in the last 12 months? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS GREATER THAN 95, WRITE '95.'			NUMBER OF PARTNERS LAST 12 MONTHS . . . ☐☐ DON'T KNOW . . . 98

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
640	In total, with how many different people have you had sexual intercourse in your lifetime? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS GREATER THAN 95, WRITE '95'.	NUMBER OF PARTNERS IN LIFETIME . . . . . [ ][ ] DON'T KNOW 98	
640A	In the last 12 months, have you ever given or received money, gifts or favours in return for sex?	YES . . . . . 1 NO 2	
641	Do you know of a place where a person can get male condoms?	YES . . . . . 1 NO 2	→ 644
642	Where is that? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT. HOSPITAL . . . . . B GOVT. HEALTH CENTER . . . . . C GOVERNMENT DISPENSARY . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . F FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . G PRIVATE HOSPITAL/CLINIC . . . . . H PHARMACY/CHEMIST . . . . . I NURSING/MATERNITY HOME . . . . . J OTHER PRIV. MEDICAL _____ K (SPECIFY) OTHER SOURCE MOBILE CLINIC . . . . . L COMMUNITY-BASED DISTRIBUTOR M SHOP . . . . . N FRIEND/RELATIVE . . . . . P OTHER _____ X (SPECIFY)	
643	If you wanted to, could you yourself get a male condom?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	
644	Do you know of a place where a person can get female condoms?	YES . . . . . 1 NO 2	→ 647

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
645	Where is that? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT. HOSPITAL . . . . . B GOVT. HEALTH CENTER . . . . . C GOVERNMENT DISPENSARY . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . F FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . G PRIVATE HOSPITAL/CLINIC . . . . . H PHARMACY/CHEMIST . . . . . I NURSING/MATERNITY HOME . . . . . J OTHER PRIV. MEDICAL _____ K (SPECIFY) OTHER SOURCE MOBILE CLINIC . . . . . L COMMUNITY-BASED DISTRIBUTOR M SHOP . . . . . N FRIEND/RELATIVE . . . . . P OTHER _____ X (SPECIFY)	
646	If you wanted to, could you yourself get a female condom?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	
647	In the last few months have you heard or read about condoms:	**YES** **NO** RADIO . . . . . 1 2 TELEVISION . . . . . 1 2 NEWSPAPER OR MAGAZINE . . 1 2 BILLBOARDS 1 2	
	On the radio?		
	On the television?		
	In a newspaper or magazine?		
	On billboards?		
648	In your opinion,is it acceptable or unacceptable for condoms to be advertised:	**ACCEP-TABLE** **NOT ACCEP-TABLE** **DK/ UN-SURE**	
	On the radio?	ON THE RADIO. . 1 2 8	
	On the TV?	ON THE TV. 1 2 8	
	In newspapers?	NEWSPAPERS. . 1 2 8	
	On billboards	BILLBOARDS. . . 1 2 8	

SECTION 7. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	CHECK 311/311A: NEITHER STERILIZED HE OR SHE STERILIZED → 713		
702	CHECK 226: NOT PREGNANT OR UNSURE: Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? PREGNANT: Now I have some questions about the future. After the child you are expecting now, would you like to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD . . . . . 1 NO MORE/NONE . . . . . 2 SAYS SHE CAN'T GET PREGNANT . 3 UNDECIDED/DON'T KNOW AND PREGNANT . . . . . 4 UNDECIDED/DON'T KNOW AND NOT PREGNANT OR UNSURE 5	→ 704 → 713 → 709 → 708
703	CHECK 226: NOT PREGNANT OR UNSURE: How long would you like to wait from now before the birth of (a/another) child? PREGNANT: After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS . . . . . 1 ☐☐ YEARS . . . . . 2 ☐☐ SOON/NOW . . . . . 993 SAYS SHE CAN'T GET PREGNANT 994 AFTER MARRIAGE . . . . . 995 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	→ 708 → 713 → 708
704	CHECK 226: NOT PREGNANT OR UNSURE PREGNANT → 709		
705	CHECK 310: USING A CONTRACEPTIVE METHOD? NOT ASKED NOT CURRENTLY USING CURRENTLY USING → 713		
706	CHECK 703: NOT ASKED 24 OR MORE MONTHS OR 02 OR MORE YEARS 00-23 MONTHS OR 00-01 YEAR → 709		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
707	CHECK 702: WANTS TO HAVE A/ANOTHER CHILD → You have said that you do not want (a/another) child soon, but you are not using any method to avoid pregnancy. WANTS NO MORE/ NONE → You have said that you do not want any (more) children, but you are not using any method to avoid pregnancy. Can you tell me why you are not using a method? Any other reason? RECORD ALL REASONS MENTIONED.	NOT MARRIED . . . . . A FERTILITY-RELATED REASONS NOT HAVING SEX . . . . . B INFREQUENT SEX . . . . . C MENOPAUSAL/HYSTERECTOMY . D SUBFECUND/INFECUND . . . . . E POSTPARTUM AMENORRHEIC . . . F BREASTFEEDING . . . . . G FATALISTIC . . . . . H OPPOSITION TO USE RESPONDENT OPPOSED . . . . . I HUSBAND/PARTNER OPPOSED . J OTHERS OPPOSED . . . . . K RELIGIOUS PROHIBITION . . . . . L LACK OF KNOWLEDGE KNOWS NO METHOD . . . . . M KNOWS NO SOURCE . . . . . N METHOD-RELATED REASONS HEALTH CONCERNS . . . . . O FEAR OF SIDE EFFECTS . . . . . P LACK OF ACCESS/TOO FAR . . . . . Q COSTS TOO MUCH . . . . . R INCONVENIENT TO USE . . . . . S INTERFERES WITH BODY'S NORMAL PROCESSES . . . . . T OTHER _____ X (SPECIFY) DON'T KNOW	
707A	In the next few weeks, if you dicovered that you were pregnant, would that be a big problem, a small problem, or no problem for you?	BIG PROBLEM . . . . . 1 SMALL PROBLEM . . . . . 2 NO PROBLEM . . . . . 3 SAYS SHE CAN'T GET PREGNANT/ NOT HAVING SEX 4	
708	CHECK 310: USING A CONTRACEPTIVE METHOD? NOT ASKED NO, NOT CURRENTLY USING YES, CURRENTLY USING → 713		
709	Do you think you will use a contraceptive method to delay or avoid pregnancy at any time in the future?	YES . . . . . 1 NO . . . . . 2 → 711 DON'T KNOW . . . . . 8 → 713	
710	Which contraceptive method would you prefer to use?	FEMALE STERILIZATION . . . . . 01 MALE STERILIZATION . . . . . 02 PILL . . . . . 03 IUD . . . . . 04 INJECTABLES . . . . . 05 IMPLANTS . . . . . 06 CONDOM . . . . . 07 FEMALE CONDOM . . . . . 08 LACTATIONAL AMEN. METHOD . . . . . 09 RHYTHM METHOD . . . . . 10 WITHDRAWAL . . . . . 11 OTHER _____ 96 (SPECIFY) UNSURE 98	→ 713

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
711	What is the main reason that you think you will not use a contraceptive method at any time in the future?	NOT MARRIED . . . . . 11 FERTILITY-RELATED REASONS INFREQUENT SEX/NO SEX . . . . . 22 MENOPAUSAL/HYSTERECTOMY 23 SUBFECUND/INFECUND . . . . . 24 WANTS AS MANY CHILDREN AS POSSIBLE . . . . . 26 OPPOSITION TO USE RESPONDENT OPPOSED . . . . . 31 HUSBAND/PARTNER OPPOSED 32 OTHERS OPPOSED . . . . . 33 RELIGIOUS PROHIBITION . . . . . 34 LACK OF KNOWLEDGE KNOWS NO METHOD . . . . . 41 KNOWS NO SOURCE . . . . . 42 METHOD-RELATED REASONS HEALTH CONCERNS . . . . . 51 FEAR OF SIDE EFFECTS . . . . . 52 LACK OF ACCESS/TOO FAR . . . . . 53 COSTS TOO MUCH . . . . . 54 INCONVENIENT TO USE . . . . . 55 INTERFERES WITH BODY'S NORMAL PROCESSES . . . . . 56 OTHER _____ 96 (SPECIFY) DON'T KNOW 98	→ 713
712	Would you ever use a contraceptive method if you were married?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
713	CHECK 216: HAS LIVING CHILDREN If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? NO LIVING CHILDREN If you could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NONE . . . . . 00 NUMBER . . . . . ☐☐ OTHER _____ 96 (SPECIFY)	→ 715 → 715
714	How many of these children would you like to be boys, how many would you l ke to be girls and for how many would the sex not matter?	BOYS GIRLS EITHER NUMBER ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	
715	In the last few months have you: Heard about family planning on the radio? Seen about family planning on the television? Read about family planning in a newspaper or magazine?	YES NO RADIO . . . . . 1 2 TELEVISION . . . . . 1 2 NEWSPAPER OR MAGAZINE . . . 1 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
717	CHECK 601: YES, CURRENTLY MARRIED ↓ YES, LIVING WITH A MAN ↓ NO, NOT IN UNION → 801		
718	CHECK 311/311A: CODE B, G, OR M CIRCLED → 720 NO CODE CIRCLED → 722 OTHER ↓		
719	Does your husband/partner know that you are using a method of family planning?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
720	Would you say that using contraception is mainly your decision, mainly your husband's/partner's decision, or did you both decide together?	MAINLY RESPONDENT . . . . . 1 MAINLY HUSBAND/PARTNER . . . . . 2 JOINT DECISION . . . . . 3 OTHER _____ 6 (SPECIFY)	
720A	Now I want to ask you about your husband's/partner's views on family planning. Do you think that your husband/partner approves or disapproves of couples using a method to avoid pregnancy?	APPROVES . . . . . 1 DISAPPROVES . . . . . 2 DOES NOT KNOW 8	
720B	How often have you talked to your husband/partner about family planning in the past year?	NEVER . . . . . 1 ONCE OR TWICE . . . . . 2 MORE OFTEN 3	
721	CHECK 311/311A: NEITHER STERILIZED ↓ HE OR SHE STERILIZED → 801		
722	Does your husband/partner want the same number of children that you want, or does he want more or fewer than you want?	SAME NUMBER . . . . . 1 MORE CHILDREN . . . . . 2 FEWER CHILDREN . . . . . 3 DON'T KNOW 8	

SECTION 8. HUSBAND'S BACKGROUND AND WOMAN'S WORK

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	CHECK 601 AND 602: CURRENTLY MARRIED/ LIVING WITH A MAN FORMERLY MARRIED/ LIVED WITH A MAN NEVER MARRIED AND NEVER LIVED WITH A MAN		→ 803 → 807
802	How old was your husband/partner on his last birthday?	AGE IN COMPLETED YEARS ☐☐	
803	Did your (last) husband/partner ever attend school?	YES . . . . . 1 NO 2	→ 806
804	What is the highest level of school he attended: primary, vocational, secondary, or higher?	PRIMARY . . . . . 1 POST-PRIMARY/VOCATIONAL . . . . . 2 SECONDARY/'A' LEVEL . . . . . 3 COLLEGE (MIDDLE LEVEL) . . . . . 4 UNIVERSITY . . . . . 5 DON'T KNOW 8	→ 806
805	What is the highest (standard/form/year) he completed at that level? IF NONE, WRITE '00'.	STANDARD/FORM/YEAR . . . ☐☐ DON'T KNOW 98	
806	CHECK 801: CURRENTLY MARRIED/ LIVING WITH A MAN: What is your husband's/partner's occupation? That is, what kind of work does he mainly do? FORMERLY MARRIED/ LIVED WITH A MAN: What was your (last) husband's/ partner's occupation? That is, what kind of work did he mainly do?	_____ ☐☐ _____ _____	
807	Aside from your own housework, have you done any work in the last seven days?	YES . . . . . 1 NO 2	→ 811
808	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. In the last seven days, have you done any of these things or any other work?	YES . . . . . 1 NO 2	→ 811
809	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, maternity leave or any other such reason?	YES . . . . . 1 NO 2	→ 811
810	Have you done any work in the last 12 months?	YES . . . . . 1 NO 2	→ 818
811	What is your occupation, that is, what kind of work do you mainly do?	_____ ☐☐ _____ _____	
812	CHECK 811: WORKS IN AGRICULTURE DOES NOT WORK IN AGRICULTURE		→ 814

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
813	Do you work mainly on your own land or on family land, or do you work on land that you rent from someone else, or do you work on someone else's land?	OWN LAND . . . . . 1 FAMILY LAND . . . . . 2 RENTED LAND . . . . . 3 SOMEONE ELSE'S LAND . . . . . 4 OTHER _____ 6 (SPECIFY)	
814	Do you do this work for a member of your family, for someone else, or are you self-employed?	FOR FAMILY MEMBER . . . . . 1 FOR SOMEONE ELSE . . . . . 2 SELF-EMPLOYED 3	
815	Do you usually work at home or away from home?	HOME . . . . . 1 AWAY 2	
816	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR . . . . . 1 SEASONALLY/PART OF THE YEAR . 2 ONCE IN A WHILE 3	
817	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY . . . . . 1 CASH AND KIND . . . . . 2 IN KIND ONLY . . . . . 3 NOT PAID 4	
818	CHECK 601: CURRENTLY MARRIED/LIVING WITH A MAN ☐ NOT IN UNION ☐		→ 827
819	CHECK 817: CODE 1 OR 2 CIRCLED ☐ OTHER ☐		→ 822
820	Who usually decides how the money you earn will be used: mainly you, mainly your husband/partner, or you and your husband/partner jointly?	RESPONDENT . . . . . 1 HUSBAND/PARTNER . . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 OTHER _____ 6 (SPECIFY)	
821	Would you say that the money that you earn is more than what your husband/partner earns, less than what he earns, or about the same?	MORE THAN HIM . . . . . 1 LESS THAN HIM . . . . . 2 ABOUT THE SAME . . . . . 3 HUSBAND/PARTNER DOESN'T BRING IN ANY MONEY . . . . . 4 DON'T KNOW 8	→ 823
822	Who usually decides how your husband's/partner's earnings will be used: you, your husband/partner, or you and your husband/partner jointly?	RESPONDENT . . . . . 1 HUSBAND/PARTNER . . . . . 2 RESPONDENT AND HUSBAND/PARTNER JOINTLY . . . 3 HUSBAND/PARTNER HAS NO EARNINGS . . . . . 4 OTHER _____ 6 (SPECIFY)	
823	Who usually makes decisions about health care for yourself: you, your husband/partner, you and your husband/partner jointly, or someone else?	RESPONDENT = 1 HUSBAND/PARTNER = 2 RESPONDENT & HUSBAND/PARTNER JO NTLY = 3 SOMEONE ELSE = 4 OTHER = 6 1 2 3 4 6	
824	Who usually makes decisions about making major household purchases?	1 2 3 4 6	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
825	Who usually makes decisions about making purchases for daily household needs?	1 2 3 4 6	
826	Who usually makes decisions about visits to your family or relatives?	1 2 3 4 6	
826A	Who usually makes decisions about what food should be cooked each day?	1 2 3 4 6	
827	PRESENCE OF OTHERS AT THIS POINT (PRESENT AND LISTENING, PRESENT BUT NOT LISTENING, OR NOT PRESENT)	PRES./ LISTEN. / PRES./ NOT LISTEN. / NOT PRES. CHILDREN < 10 . . . . . 1 2 3 HUSBAND . . . . . 1 2 3 OTHER MALES . . . . . 1 2 3 OTHER FEMALES . . . 1 2 3	
828	Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:	YES / NO / DK	
	If she goes out without telling him?	GOES OUT 1 2 8	
	If she neglects the children?	NEGL. CHILDREN . . . 1 2 8	
	If she argues with him?	ARGUES 1 2 8	
	If she refuses to have sex with him?	REFUSES SEX 1 2 8	
	If she burns the food?	BURNS FOOD 1 2 8	

SECTION 9. HIV/AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
901	Now I would l ke to talk about something else. Have you ever heard of an illness called AIDS?	YES . . . . . 1 NO 2	→ 917
902	Can people reduce their chance of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
903	Can people get the AIDS virus from mosquito bites?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
904	Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
905	Can people get the AIDS virus by sharing food with a person who has AIDS?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
906	Can people reduce their chance of getting the AIDS virus by not having sexual intercourse at all?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
907	Can people get the AIDS virus because of witchcraft or other supernatural means?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
908A	Is there anything else a person can do to avoid getting AIDS or the virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 909 → 909
908B	What can a person do? Anything else? CIRCLE ALL MENTIONED	ABSTAIN FROM SEX . . . . . A USE CONDOMS . . . . . B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER . . . . . C LIMIT NUMBER OF SEX PARTNER . . . D AVOID SEX WITH PROSTITUTES . . . . . E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS . . . . . F AVOID SEX WITH HOMOSEXUALS . . . G AVOID SEX WITH DRUG USERS . . . . . H AVOID BLOOD TRANSFUSIONS . . . . . I AVOID INJECTIONS . . . . . J AVOID SHARING RAZORS/BLADES . . . K AVOID KISSING . . . . . L AVOID MOSQUITO BITES . . . . . M SEEK PROTECTION FROM TRADITIONAL HEALER . . . . . N OTHERS (SPECIFY)_____ W OTHERS (SPECIFY)_____ X DON'T KNOW Z	
909	Is it possible for a healthy-looking person to have the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
910	Do you know someone personally who has the virus that causes AIDS or someone who died of AIDS?	YES . . . . . 1 NO 2	
911	Can the virus that causes AIDS be transmitted from a mother to her baby: During pregnancy? During delivery? By breastfeeding?	YES NO DK DURING PREG. . . . . 1 2 8 DURING DELIVERY . . . 1 2 8 BREASTFEEDING . . . 1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
912	CHECK 911: AT LEAST ONE 'YES' ↓ OTHER →		913
912A	Are there any special drugs that a doctor or a nurse can give to a woman infected with the AIDS virus to reduce the risk of transmission to the baby?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
913	CHECK 801: CURRENTLY MARRIED/ LIVING WITH A MAN ↓ FORMERLY MARRIED/ LIVED WITH A MAN ↓ NEVER MARRIED/ NEVER LIVED WITH A MAN →		914A
914	Have you ever ta ked with (your husband/the man you are with) about ways to prevent getting the virus that causes AIDS?	YES . . . . . 1 NO 2	
914A	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
915	If a member of your family got infected with the AIDS virus, would you want it to remain a secret or not?	YES, REMAIN A SECRET . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
916	If a member of your family became sick with AIDS, would you be willing to care for her or him in your own household?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
916A	In your opinion, if a female teacher has the AIDS virus, but is not sick, should she be allowed to continue teaching in the school?	SHOULD BE ALLOWED . . . . . 1 SHOULD NOT BE ALLOWED . . . . . 2 DK/NOT SURE/DEPENDS 8	
916B	Should children age 12-14 years be taught about using condoms to avoid ˻ettin˼ AIDS?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
916B1	Do you think your chances of getting AIDS are small, moderate, great or no risk at all?	NO RISK AT ALL . . . . . 1 SMALL . . . . . 2 MODERATE . . . . . 3 GREAT . . . . . 4 HAS AIDS 5	916B3 916B4
916B2	Why do you think that you have (no risk/small chance) of getting AIDS? Any reasons? CIRCLE ALL MENTIONED	IS NOT HAVING SEX . . . . . A USES CONDOM . . . . . B HAS ONLY ONE PARTNER . . . . . C LIMITS THE NUMBER OF PARTNERS .. D PATNER HAS NO OTHER PATNERS .. E OTHER_____ X (SPECIFY)	916B4
916B3	Why do you think that you have (moderate/great) chance of getting AIDS? Any reasons? CIRCLE ALL MENTIONED	DOES NOT USE CONDOM . . . . . A HAS MORE THAN ONE SEX PARTNER .. B PARTNER HAS OTHER PARTNERS . . . C HOMOSEXUAL CONTACTS . . . . . D HAD BLOOD TRANSFUSION/INJECTION E OTHER_____ X (SPECIFY)	
916B4	Have you ever heard of VCT?	YES . . . . . 1 NO 2	
916B5	CHECK 208 AND 215: NO BIRTHS → LAST BIRTH SINCE JANUARY 2005 ↓ LAST BIRTH BEFORE JANUARY 2005 →		916C 916C

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
916B6	CHECK 407 FOR LAST BIRTH: HAD ANTENATAL CARE ↓ NO ANTENATAL CARE → 916C		
916B7	CHECK FOR PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
916B8	During any of the antenatal visits for your last birth, did anyone talk to you about: Babies getting the AIDS virus from their mother? Things that you can do to prevent getting the AIDS virus? Getting tested for the AIDS virus?	YES NO DK AIDS FROM MOTHER 1 2 8 THINGS TO DO . . . 1 2 8 TESTED FOR AIDS .. 1 2 8	
916B9	Were you offered a test for the AIDS virus as part of your antenatal care?	YES . . . . . 1 NO 2	
916B10	I don't want to know the results, but were you tested for the AIDS virus as part of your antenatal care?	YES . . . . . 1 NO 2	→ 916C
916B11	I don't want to know the results, but did you get the results of the test?	YES . . . . . 1 NO 2	
916B12	Where was the test done? IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE SOURCE AND CIRCLE THE APPROPRIATE CODE. NAME OF PLACE _____ .. NURSING/MATERNITY HOME, ASK .. . . IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE "21".	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTRE/CLINIC . . . 12 GOVERNMENT DISPENSARY . . . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC 21 FPAK HEALTH CENTRE/CLINIC . . . 22 PRIVATE HOSP./CLINIC . . . . . 23 VCT CENTRE . . . . . 24 NURSING/MATERNITY HOMES . . . 25 BLOOD TRANSFUSION SERVICES 26 OTHER PRIVATE MEDICAL _____ 27 (SPECIFY) OTHER _____ 96 (SPECIFY)	
916B13	Have you been tested for the AIDS virus since that time you were tested during your pregnancy?	YES . . . . . 1 NO 2	→ 916C1
916B14	When was the last time you were tested for the AIDS virus?	LESS THAN 12 MONTHS AGO . . . . . 1 12 - 23 MONTHS AGO . . . . . 2 2 OR MORE YEARS AGO 3	→ 917
916C	I do not want to know the results, but have you ever been tested to see if you have the AIDS virus?	YES . . . . . 1 NO 2	→ 916D
916C1	When was the last time you were tested?	LESS THAN 12 MONTHS AGO . . . . . 1 12 - 23 MONTHS AGO . . . . . 2 2 OR MORE YEARS AGO 3	
916C2	The last time you were tested, did you ask for the test, was it offered to you and you accepted, or was ir required?	ASKED FOR TEST . . . . . 1 OFFERED AND ACCEPTED . . . . . 2 REQUIRED 3	
916C3	I donot want to know the results, but did you get the results of the test?	YES . . . . . 1 NO 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
916C4	Where was the test done? IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE SOURCE AND CIRCLE THE APPROPRIATE CODE. NAME OF PLACE _____ IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE "21".	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTRE/CLINIC . . . 12 GOVERNMENT DISPENSARY . . . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC 21 FPAK HEALTH CENTRE/CLINIC . . . 22 PRIVATE HOSPITAL/CLINIC . . . . . 23 VCT CENTRE . . . . . 24 NURSING/MATERNITY HOMES . . . 25 BLOOD TRANSFUSION SERVICES 26 OTHER PRIVATE MEDICAL _____ 27 (SPECIFY) OTHER _____ 96 (SPECIFY)	→ 917
916D	Would you want to be tested for the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE 8	
916E	Do you know of a place where people can go to get tested for the AIDS virus?	YES . . . . . 1 NO 2	→ 917
916F	Where is that? Any other place? IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE SOURCE AND CIRCLE THE APPROPRIATE CODE(S). NAME OF PLACE _____ IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE "E".	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTRE/CLINIC . . . B GOVERNMENT DISPENSARY . . . . . C OTHER PUBLIC _____ D (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC E FPAK HEALTH CENTRE/CLINIC . . . F PRIVATE HOSPITAL/CLINIC . . . . . G VCT CENTRE . . . . . H NURSING/MATERNITY HOMES . . . I BLOOD TRANSFUSION SERVICES J OTHER PRIVATE MEDICAL _____ K (SPECIFY) OTHER _____ X (SPECIFY)	
917	CHECK 901: HEARD ABOUT AIDS → Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact? NOT HEARD ABOUT AIDS → Have you heard about infections that can be transmitted through sexual contact?	YES . . . . . 1 NO 2	→ 919A

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
918	If a man has a sexually transmitted disease, what symptoms might he have? Any others? RECORD ALL MENTIONED	ABDOMINAL PAIN . . . . . A GENITAL DISCHARGE/DRIPPING . . . . . B FOUL SMELL/DISCHARGE . . . . . C BURNING PAIN ON URINATION . . . . . D REDNESS/INFLAMATION IN GENITAL AREA . . . . . E SWELLING IN GENITAL AREA . . . . . F GENITAL SORES/ULCERS . . . . . G GENITAL WARTS . . . . . H GENITAL ITCHING . . . . . I BLOOD IN URINE . . . . . J LOSS OF WEIGHT . . . . . K IMPOTENCE/NO ERECTION . . . . . L OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) NO SYMPTOMS . . . . . Y DOES NOT KNOW . . . . . Z	
919	If a woman has a sexually transmitted disease, what symptoms might she have? Any others? RECORD ALL MENTIONED	ABDOMINAL PAIN . . . . . A GENITAL DISCHARGE . . . . . B FOUL SMELL/DISCHARGE . . . . . C BURNING PAIN ON URINATION . . . . . D REDNESS/INFLAMATION IN GENITAL AREA . . . . . E SWELLING IN GENITAL AREA . . . . . F GENITAL SORES/ULCERS . . . . . G GENITAL WARTS . . . . . H GENITAL ITCHING . . . . . I BLOOD IN URINE . . . . . J LOSS OF WEIGHT . . . . . K HARD TO GET PREGNANT . . . . . L OTHER _____ W (SPECIFY) OTHER _____ X (SPECIFY) NO SYMPTOMS . . . . . Y DOES NOT KNOW . . . . . Z	
919A	CHECK 618: HAS HAD SEXUAL INTERCOURSE ☐	HAS NOT HAD SEXUAL INTERCOURSE ☐ →	1001
919A1	CHECK917: HEARD ABOUT OTHER SEXUALLY TRANSMITTED INFECTIONS? YES ☐	NO ☐ →	919C
919B	Now I would l ke to ask you some questions about your health in the last twelve months. During the last twelve months have you had a sexually transmitted disease?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
919C	Sometimes women experience an abnormal vaginal discharge. During the last twelve months, have you had a bad smelling unusual discharge from your vagina?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
919D	Sometimes women have a genital sore or ulcer. During the last twelve months have you had a genital sore or ulcer?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
919E	CHECK 919B, 919C AND 919D HAS HAD AN INFECTION (ANY 'YES') ☐	HAS NOT HAD AN INFECTION OR DOES NOT KNOW ☐ →	1001
919F	Last time you had (PROBLEM(S) FROM 919B/919C/919D), did you seek any kind of advice or treatment?	YES . . . . . 1 NO . . . . . 2 →	919H

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
919G	Where did you go? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER VCT CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTRE/CLINIC . . . B GOVERNMENT DISPENSARY . . . . . C OTHER PUBLIC _____ D (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC E FPAK HEALTH CENTRE/CLINIC . . . F PRIVATE HOSPITAL/CLINIC . . . . . G VCT CENTRE . . . . . H NURSING/MATERNITY HOMES . . . I BLOOD TRANSFUSION SERVICES J OTHER PRIVATE MEDICAL _____ K (SPECIFY) OTHER SOURCE TRADITIONAL HEALER . . . . . L SHOP/PHARMACY . . . . . M FRIENDS OR RELATIVES. . . . . N OTHER _____ X (SPECIFY)	
919H	When you had (PROBLEM(S) FROM 919B/919C/919D), did you inform the person(s) with whom you were having sex?	YES, INFORMED ALL PARTNERS . . . 1 NO, INFORMED NONE . . . . . 2 INFORMED SOME NOT ALL . . . . . 3 DID NOT HAVE A PARTNER 4	→ 1001
919I	When you had (PROBLEM(S) FROM 919B/919C/919D), did you do anything to avoid infecting your sexual partners(s)	YES . . . . . 1 NO . . . . . 2 DID NOT HAVE A PARTNER 3	→ 1001 → 1001
919J	What did you do to avoid infecting your partner(s)? Did you: Use medicine? Stop having sex? Use a condom when having sex?	YES NO USE MEDICINE . . . . . 1 2 STOP SEX . . . . . 1 2 USE CONDOM 1 2	

SECTION 10. OTHER HEALTH ISSUES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1001	Have you ever heard of an illness called tuberculosis or TB?	YES . . . . . 1 NO 2	→ 1009
1002	How does tuberculosis spread from one person to another? PROBE: Any other ways? RECORD ALL MENTIONED.	THROUGH THE AIR WHEN COUGHING OR SNEEZING . . . . . A THROUGH SHARING UTENSILS . . . . . B THROUGH TOUCHING A PERSON WITH TB . . . . . C THROUGH FOOD . . . . . D THROUGH SEXUAL CONTACT . . . . . E THROUGH MOSQUITO BITES . . . . . F OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	
1003	Can tuberculosis be cured?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1004	If a member of your family got tuberculosis, would you want it to remain a secret or not?	YES, REMAIN A SECRET . . . . . 1 NO . . . . . 2 DON'T KNOW/NOT SURE/ DEPENDS 8	
1009	Do you currently smoke cigarettes?	YES . . . . . 1 NO 2	→ 1011
1010	In the last 24 hours, how many cigarettes did you smoke?	CIGARETTES	
1011	Do you currently smoke or use any other type of tobacco?	YES . . . . . 1 NO 2	→ 1014
1012	What (other) type of tobacco do you currently smoke or use? RECORD ALL MENTIONED.	PIPE . . . . . A CHEWING TOBACCO . . . . . B SNUFF . . . . . C OTHER _____ X (SPECIFY)	
1014	Are you covered by any health insurance?	YES . . . . . 1 NO 2	→ 1016
1015	What type of health insurance? RECORD ALL MENTIONED.	MUTUAL HEALTH ORGANIZATION/ COMMUNITY-BASED HEALTH INSURANCE . . . . . A HEALTH INSURANCE THROUGH EMPLOYER . . . . . B SOCIAL SECURITY . . . . . C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE. D OTHER _____ X (SPECIFY)	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1016	Sometimes a woman can have a problem such that she experiences a constant leakage of urine or stool from her vagina during the day and night. This problem usually occurs after a difficult childbirth, but may also occur after a sexual assault or after a pelvic surgery. Have you ever experienced a constant leakage of urine or stool from your vagina during the day and night?	YES . . . . . 1 NO 2	→ 1101
1017	Did this problem occur after a **delivery**?	YES . . . . . 1 NO 2	→ 1021
1018	Did this problem occur after a **sexual assault**?	YES . . . . . 1 NO 2	→ 1023
1019	Did this problem occur after you had **pelvic surgery**?	YES . . . . . 1 NO 2	→ 1023
1020	Did this problem occur after some other event happened to you? IF YES: What happened?	YES . . . . . 1 NO . . . . . 2 EVENT _____ (SPECIFY)	→ 1023 → 1024
1021	Did this problem occur after an uncomplicated delivery, after a difficult delivery where the child was born alive, or after a difficult delivery where the child was born still?	UNCOMP. DELIVERY . . . . . 1 DIFF DELIVERY, LIVEBORN . . . . . 2 DIFF DELIVERY, STILLBORN 3	
1022	After which delivery did this occur?	DELIVERY NUMBER: ☐☐	
1023	How many days after did the leakage start? IF MORE THAN 99 DAYS, WRITE '99'.	NUMBER OF DAYS AFTER PRECIPITATING EVENT . . . . . ☐☐	
1024	Have you sought treatment for this condition?	YES . . . . . 1 NO 2	

SECTION 11. MATERNAL MORTALITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1101	Now I would like to ask you some questions about your brothers and sisters, that is, all of the children born to your biological mother, including those who are living with you, those living elsewhere and those who have died. How many children did your mother give birth to, including you?	NUMBER OF BIRTHS TO NATURAL MOTHER	
1102	CHECK 1101: TWO OR MORE BIRTHS ☐ → CONTINUE ONLY ONE BIRTH (RESPONDENT ONLY) ☐ → 1200		
1103	How many of these births did your mother have before you were born?	NUMBER OF PRECEDING BIRTHS	

1104	What was the name given to your oldest (next oldest) brother or sister?	(1) _____	(2) _____	(3) _____	(4) _____	(5) _____	(6) _____
1105	Is (NAME) male or female?	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2
1106	Is (NAME) still alive?	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (2)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (3)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (4)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (5)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (6)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (7)
1107	How old is (NAME)?	☐☐ GO TO (2)	☐☐ GO TO (3)	☐☐ GO TO (4)	☐☐ GO TO (5)	☐☐ GO TO (6)	☐☐ GO TO (7)
1108	How many years ago did (NAME) die?	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐
1109	How old was (NAME) when he/she died?	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (2)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (3)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (4)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (5)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (6)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (7)
1110	Was (NAME) pregnant when she died?	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2
1111	Did (NAME) die during childbirth?	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2
1112	Did (NAME) die within two months after the end of a pregnancy or childbirth?	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2
1113	How many live born children did (NAME) give birth to during her lifetime (before this pregnancy)?	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐

IF NO MORE BROTHERS OR SISTERS, GO TO 1200

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES					SKIP
1104	What was the name given to your oldest (next oldest) brother or sister?	(7) _____	(8) _____	(9) _____	(10) _____	(11) _____	(12) _____
1105	Is (NAME) male or female?	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2	MALE 1 FEMALE 2
1106	Is (NAME) still alive?	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (8)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (9)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (10)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (11)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (12)	YES . . . 1 NO . . . 2 → GO TO 1108 DK . . . 8 → GO TO (13)
1107	How old is (NAME)?	☐☐ GO TO (8)	☐☐ GO TO (9)	☐☐ GO TO (10)	☐☐ GO TO (11)	☐☐ GO TO (12)	☐☐ GO TO (13)
1108	How many years ago did (NAME) die?	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐
1109	How old was (NAME) when he/she died?	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (8)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (9)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (10)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (11)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (12)	☐☐ IF MALE OR DIED BEFORE 12 YEARS OF AGE GO TO (13)
1110	Was (NAME) pregnant when she died?	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2
1111	Did (NAME) die during childbirth?	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2	YES . . . 1 → GO TO 1113 NO . . . 2
1112	Did (NAME) die within two months after the end of a pregnancy or childbirth?	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2	YES . . . 1 NO . . . 2
1113	How many live born children did (NAME) give birth to during her lifetime (before this pregnancy)?	☐☐	☐☐	☐☐	☐☐	☐☐	☐☐
IF NO MORE BROTHERS OR SISTERS, GO TO 1200.							

SECTION 12. DOMESTIC VIOLENCE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1200	CHECK HOUSEHOLD QUESTIONNAIRE, COLUMN 9. WOMAN SELECTED FOR THIS SECTION WOMAN NOT SELECTED → 1301		
1201	CHECK FOR PRESENCE OF OTHERS: DO NOT CONTINUE UNTIL EFFECTIVE PRIVACY IS ENSURED. PRIVACY OBTAINED . . . . . 1 PRIVACY NOT POSSIBLE . . . . . 2 → 1234		
	READ TO THE RESPONDENT Now I would l ke to ask you questions about some other important aspects of a woman's life. I know that some of these questions are very personal. However, your answers are crucial for helping to understand the condition of women in Kenya. Let me assure you that your answers are completely confidential and will not be told to anyone and no one else will know that you were asked these questions.		
1202	CHECK 601 AND 602: CURRENTLY MARRIED/ LIVING WITH A MAN FORMERLY MARRIED/ LIVED WITH A MAN (READ IN PAST TENSE) NEVER MARRIED/ NEVER LIVED WITH A MAN → 1214		
1203	First, I am going to ask you about some situations which happen to some women. Please tell me if these apply to your relationship with your (last) husband/partner?		
	a) He (is/was) jealous or angry if you (talk/talked) to other men?	JEALOUS 1 2 8	
	b) He frequently (accuses/accused) you of being unfaithful?	ACCUSES 1 2 8	
	c) He (does/did) not permit you to meet your female friends?	N T MEET FRIEND 1 2 8	
	d) He (tries/tried) to limit your contact with your family?	NO FAMILY 1 2 8	
	e) He (insists/insisted) on knowing where you (are/were) at all times?	WHERE YOU ARE . . . 1 2 8	
	f) He (does/did) not trust you with any money?	MONEY 1 2 8	
1204	Now if you will permit me, I need to ask some more questions about your relationship with your (last) husband/partner. If we should come to any question that you do not want to answer, just let me know and we will go on to the next question.		
	A (Does/did) your (last) husband/partner ever:	B How often did this happen during the last 12 months: often, only sometimes, or not at all?	
	a) say or do something to humiliate you in front of others?	YES 1 → OFTEN 1 / SOMETIMES 2 / NOT AT ALL 3 NO 2	
	b) threaten to hurt or harm you or someone close to you?	YES 1 → OFTEN 1 / SOMETIMES 2 / NOT AT ALL 3 NO 2	
	c) insult you or make you feel bad about yourself?	YES 1 → OFTEN 1 / SOMETIMES 2 / NOT AT ALL 3 NO 2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1205	A (Does/did) your (last) husband/partner ever do any of the following things to you:	B How often did this happen during the last 12 months: often, only sometimes, or not at all?	

				OFTEN	SOME-TIMES	NOT AT ALL
a)	push you, shake you, or throw something at you?	YES 1 →		1	2	3
		NO 2 ↓				
b)	slap you?	YES 1 →		1	2	3
		NO 2 ↓				
c)	twist your arm or pull your hair?	YES 1 →		1	2	3
		NO 2 ↓				
d)	punch you with his fist or with something that could hurt you?	YES 1 →		1	2	3
		NO 2 ↓				
e)	kick you, drag you or beat you up?	YES 1 →		1	2	3
		NO 2 ↓				
f)	try to choke you or burn you on purpose?	YES 1 →		1	2	3
		NO 2 ↓				
g)	threaten or attack you with a knife, gun, or any other weapon?	YES 1 →		1	2	3
		NO 2 ↓				
h)	physically force you to have sexual intercourse with him even when you did not want to?	YES 1 →		1	2	3
		NO 2 ↓				
i)	force you to perform any sexual acts you did not want to?	YES 1 →		1	2	3
		NO 2 ↓				

1206	CHECK 1205 (a-i): AT LEAST ONE 'YES' ↓ NOT A SINGLE 'YES' →		1209
1207	How long after you first got married to/started living with your (last) husband/partner did (this/any of these things) first happen? IF LESS THAN ONE YEAR, RECORD '00'.	NUMBER OF YEARS . . . . . ☐☐ BEFORE MARRIAGE/BEFORE LIVING TOGETHER 95	
1208	Did the following ever happen as a result of what your (last) husband/partner did to you:		
	a) You had cuts, bruises or aches?	YES . . . . . 1 NO 2	
	b) You had eye injuries, sprains, dislocations, or burns?	YES . . . . . 1 NO 2	
	c) You had deep wounds, broken bones, broken teeth, or any other serious injury?	YES . . . . . 1 NO 2	
1209	Have you ever hit, slapped, kicked, or done anything else to physically hurt your (last) husband/partner at times when he was not already beating or physically hurting you?	YES . . . . . 1 NO 2	→ 1212
1210	CHECK 603: RESPONDENT IS **NOT** A WIDOW ↓ RESPONDENT IS A WIDOW →		1212
1211	In the last 12 months, how often have you done this to your husband/partner: often, only sometimes, or not at all?	OFTEN . . . . . 1 SOMETIMES . . . . . 2 NOT AT ALL 3	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1212	Does (did) your husband/partner drink alcohol?	YES . . . . . 1 NO 2	→ 1214
1213	How often does (did) he get drunk: often, only sometimes, or never?	OFTEN . . . . . 1 SOMETIMES . . . . . 2 NEVER 3	
1214	CHECK 601 AND 602: EVER MARRIED/LIVED WITH A MAN → From the time you were 15 years old has anyone other than your (current/last) husband/partner hit, slapped, kicked, or done anything else to hurt you physically? NEVER MARRIED/ NEVER LIVED WITH A MAN → From the time you were 15 years old has anyone ever hit, slapped, kicked, or done anything else to hurt you physically?	YES . . . . . 1 NO . . . . . 2 REFUSED TO ANSWER/ NO ANSWER 3	→ 1220
1215	Who has hurt you in this way? Anyone else? RECORD ALL MENTIONED.	MOTHER/STEP-MOTHER . . . . . A FATHER/STEP-FATHER . . . . . B SISTER/BROTHER . . . . . C DAUGHTER/SON . . . . . D OTHER RELATIVE . . . . . E FORMER HUSBAND/PARTNER . . . . . F CURRENT BOYFRIEND . . . . . G FORMER BOYFRIEND . . . . . H MOTHER-IN-LAW . . . . . I FATHER-IN-LAW . . . . . J OTHER IN-LAW . . . . . K TEACHER . . . . . L EMPLOYER/SOMEONE AT WORK . . . M POLICE/SOLDIER . . . . . N OTHER _____ X (SPECIFY)	
1216	In the last 12 months, how often have you been hit, slapped, kicked, or physically hurt by this/these person(s): often, only sometimes, or not at all?	OFTEN . . . . . 1 SOMETIMES . . . . . 2 NOT AT ALL 3	
1220	CHECK 618: EVER HAD SEX? HAS EVER HAD SEX NEVER HAD SEX		→ 1225
1221	The first time you had sexual intercourse, would you say that you had it because you wanted to, or because you were forced to have it against your will?	WANTED TO . . . . . 1 FORCED TO . . . . . 2 REFUSED TO ANSWER/ NO RESPONSE 3	
1222	CHECK 601 AND 602: EVER MARRIED/LIVED WITH A MAN → In the last 12 months, has anyone other than your (current/last) husband/ partner forced you to have sexual intercourse against your will? NEVER MARRIED/ NEVER LIVED WITH A MAN → In the last 12 months has anyone forced you to have sexual intercourse against your will?	YES . . . . . 1 NO . . . . . 2 REFUSED TO ANSWER/ NO ANSWER 3	
1223	CHECK 1221 AND 1222: 1221 ='1' OR '3' **AND** 1222 ='2' OR '3' OTHER		→ 1226
1224	CHECK 1205A(h) and 1205A(i): 1205A(h) IS NOT '1' **AND** 1205A(i) IS NOT '1' OTHER		→ 1228

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1225	At any time in your life, as a child or as an adult, has anyone ever forced you in any way to have sexual intercourse or perform any other sexual acts?	YES . . . . . 1 NO . . . . . 2 REFUSED TO ANSWER/ NO ANSWER 3	→ 1228
1226	How old were you the first time you were forced to have sexual intercourse or perform any other sexual acts?	AGE IN COMPLETED YEAR . . . ☐☐ DON'T KNOW 98	
1227	Who was the person who was forcing you at that time?	CURRENT HUSBAND/PARTNER . . . 01 FORMER HUSBAND/PARTNER . . . . . 02 CURRENT/FORMER BOYFRIEND . . . 03 FATHER . . . . . 04 STEP FATHER . . . . . 05 OTHER RELATIVE . . . . . 06 IN-LAW . . . . . 07 OWN FRIEND/ACQUAINTANCE . . . . . 08 FAMILY FRIEND . . . . . 09 TEACHER . . . . . 10 EMPLOYER/SOMEONE AT WORK . . . 11 POLICE/SOLDIER . . . . . 12 PRIEST/RELIGIOUS LEADER . . . . . 13 STRANGER . . . . . 14 OTHER _____ . . . 96 (SPECIFY)	
1228	CHECK 1205A (a-i), 1214, 1222 AND 1225: AT LEAST ONE 'YES' ☐ ↓ NOT A SINGLE 'YES' ☐ →		1232
1229	Thinking about what you yourself have experienced among the different things we have been talking about, have you ever tried to seek help to stop (the/these) person(s) from doing this to you again?	YES . . . . . 1 NO 2	→ 1231
1230	From whom have you sought help? Anyone else? RECORD ALL MENTIONED.	OWN . . . . . A HUSBAND/PARTNER'S FAMILY . . . . . B CURRENT/LAST/LATE HUSBAND/PARTNER . . . . . C CURRENT/FORMER BOYFRIEND . . . D FRIEND . . . . . E NEIGHBOR . . . . . F RELIGIOUS LEADER . . . . . G DOCTOR/MEDICAL PERSONNEL . . . H POLICE . . . . . I LAWYER . . . . . J SOCIAL SERVICE ORGANIZATION . . . K COMMUNITYLEADER/LOCAL ADMN L OTHER _____ X (SPECIFY)	→ 1232
1231	Have you ever told any one else about this?	YES . . . . . 1 NO 2	
1232	As far as you know, did your father ever beat your mother?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	

THANK THE RESPONDENT FOR HER COOPERATION AND REASSURE HER ABOUT THE CONFIDENTIALITY OF HER ANSWERS. FILL OUT THE QUESTIONS BELOW WITH REFERENCE TO THE DOMESTIC VIOLENCE MODULE ONLY.

1233	DID YOU HAVE TO INTERRUPT THE INTERVIEW BECAUSE SOME ADULT WAS TRYING TO LISTEN, OR CAME INTO THE ROOM, OR INTERFERED IN ANY OTHER WAY?		YES ONCE	YES, MORE THAN ONCE	NO
		HUSBAND	1	2	3
		OTHER MALE ADULT . . .	1	2	3
		FEMALE ADULT	1	2	3
1234	INTERVIEWER'S COMMENTS / EXPLANATION FOR NOT COMPLETING THE DOMESTIC VIOLENCE MODULE _____				

SECTION 13. FEMALE GENITAL CUTTING

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1301	Have you ever heard of female circumcision?	YES . . . . . 1 NO 2	→ 1303
1302	In some countries, there is a practice in which a girl may have part of her genitals cut. Have you ever heard about this practice?	YES . . . . . 1 NO 2	→ 1322
1303	Have you yourself ever been circumcised?	YES . . . . . 1 NO 2	→ 1309A
1304	Now I would like to ask you what was done to you at that time. Was any flesh removed from the genital area?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 1306
1305	Was the genital area just nicked without removing any flesh?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1306	Was your genital area sewn closed?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1307	How old were you when you were circumcised? IF THE RESPONDENT DOES NOT KNOW THE EXACT AGE, PROBE TO GET AN ESTIMATE.	AGE IN COMPLETED YEARS .. ☐☐ DURING INFANCY . . . . . 95 DON'T KNOW 98	
1308	Who performed the circumcision?	**TRADITIONAL** TRAD. CIRCUMCISER . . . . . 11 TRAD. BIRTH ATTENDANT . . . . . 12 OTHER TRAD. _____ 16 (SPECIFY) **HEALTH PROFESSIONAL** DOCTOR . . . . . 21 TRAINED NURSE/MIDWIFE . . . . . 22 OTHER HEALTH PROFESSIONAL _____ 26 (SPECIFY) DON'T KNOW 98	
1309A	CHECK 214 AND 216: NUMBER OF LIVING DAUGHTERS . . . . . ☐☐		
1309B	CHECK 1309A: HAS ONE LIVING DAUGHTER ☐ ↓	HAS MORE THAN ONE LIVING DAUGHTER ☐ ↓	HAS NO LIVING DAUGHTER ☐ → 1319
1310	CHECK 1309B: ONE LIVING DAUGHTER ☐ ↓ Has your daughter been circumcised? IF YES: RECORD '01'	MORE THAN ONE LIVING DAUGHTER ☐ ↓ Have any of your daughters been circumcised? IF YES: How many?	NUMBER CIRCUMCISED . . . . . ☐☐ NO DAUGHTER CIRCUMCISED . . . . 00 → 1318
1311	CHECK 1310: ONE LIVING DAUGHTER ☐ ↓ What is your daughter's name? _____ (DAUGHTER'S NAME)	MORE THAN ONE LIVING DAUGHTER ☐ ↓ Which of your daughters was circumcised most recently?	DAUGHTER'S LINE NUMBER FROM Q. 212 . . . . . ☐☐

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
1312	Now I would like to ask you what was done to (NAME OF THE DAUGHTER FROM Q. 1311) at that time. Was any flesh removed from her genital area?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 1314
1313	Was her genital area just nicked without removing any flesh?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1314	Was her genital area sewn closed?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1315	How old was (NAME OF THE DAUGHTER FROM Q. 1311) when this occurred? IF THE RESPONDENT DOES NOT KNOW THE AGE, PROBE TO GET AN ESTIMATE.	AGE IN COMPLETED YEARS . ☐☐ DURING INFANCY . . . . . 95 DON'T KNOW 98	
1316	Who performed the circumcision?	**TRADITIONAL** TRAD. CIRCUMCISER . . . . . 11 TRAD. BIRTH ATTENDANT . . . . . 12 OTHER TRAD. _____ 16 (SPECIFY) **HEALTH PROFESSIONAL** DOCTOR . . . . . 21 TRAINED NURSE/MIDWIFE . . . . . 22 OTHER HEALTH PROFESSIONAL _____ 26 (SPECIFY) DON'T KNOW 98	
1317	CHECK 1309A AND 1310: 1309A IS HIGHER THAN 1310 ☐ ↓ 1309A = 1310 ☐ →		1319
1318	Do you intend to have [your (other) daughter/any of your (other) daughters] circumcised?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1319	What benefits do girls themselves get if they are circumcised? PROBE: Any other benefits? RECORD ALL MENTIONED.	CLEANLINESS/HYGIENE . . . . . A SOCIAL ACCEPTANCE . . . . . B BETTER MARRIAGE PROSPECTS . . C PRESERVE VIRGINITY/PREVENT PREMARITAL SEX . . . . . D MORE SEXUAL PLEASURE FOR THE MAN . . . . . E RELIGIOUS APPROVAL . . . . . F OTHER _____ X (SPECIFY) NO BENEFITS . . . . . Y	
1320	Do you believe that this practice is required by your religion?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
1321	Do you think that this practice should be continued, or should it be stopped?	CONTINUED . . . . . 1 STOPPED . . . . . 2 DEPENDS . . . . . 3 DON'T KNOW 8	
1322	RECORD THE TIME.	HOUR . . . . . ☐☐ MINUTES . . . . . ☐☐	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF SUPERVISOR: _____ DATE: _____

EDITOR'S OBSERVATIONS

NAME OF EDITOR: _____ DATE: _____

INSTRUCTIONS:
ONLY ONE CODE SHOULD APPEAR IN ANY BOX.
ALL MONTHS SHOULD BE FILLED IN.

INFORMATION TO BE CODED FOR EACH COLUMN

BIRTHS, PREGNANCIES, CONTRACEPTIVE USE

B BIRTHS
P PREGNANCIES
T TERMINATIONS

0 NO METHOD
1 FEMALE STERILIZATION
2 MALE STERILIZATION
3 PILL
4 IUD
5 INJECTABLES
6 IMPLANTS
7 CONDOM
8 FEMALE CONDOM
9 RHYTHM METHOD
J WITHDRAWAL
K LACTATIONAL AMENORRHEA METHOD

X OTHER _____
(SPECIFY)

2	04	APR	01		2
0	03	MAR	02		0
0	02	FEB	03		0
9	01	JAN	04		9
	12	DEC	05		
	11	NOV	06		
	10	OCT	07		
	09	SEP	08		
2	08	AUG	09		2
0	07	JUL	10		0
0	06	JUN	11		0
8	05	MAY	12		8
	04	APR	13		
	03	MAR	14		
	02	FEB	15		
	01	JAN	16		
	12	DEC	17		
	11	NOV	18		
	10	OCT	19		
	09	SEP	20		
2	08	AUG	21		2
0	07	JUL	22		0
0	06	JUN	23		0
7	05	MAY	24		7
	04	APR	25		
	03	MAR	26		
	02	FEB	27		
	01	JAN	28		
	12	DEC	29		
	11	NOV	30		
	10	OCT	31		
	09	SEP	32		
2	08	AUG	33		2
0	07	JUL	34		0
0	06	JUN	35		0
6	05	MAY	36		6
	04	APR	37		
	03	MAR	38		
	02	FEB	39		
	01	JAN	40		
	12	DEC	41		
	11	NOV	42		
	10	OCT	43		
	09	SEP	44		
2	08	AUG	45		2
0	07	JUL	46		0
0	06	JUN	47		0
5	05	MAY	48		5
	04	APR	49		
	03	MAR	50		
	02	FEB	51		
	01	JAN	52		
	12	DEC	53		
	11	NOV	54		
	10	OCT	55		
	09	SEP	56		
2	08	AUG	57		2
0	07	JUL	58		0
0	06	JUN	59		0
4	05	MAY	60		4
	04	APR	61		
	03	MAR	62		
	02	FEB	63		
	01	JAN	64		
	12	DEC	65		
	11	NOV	66		
	10	OCT	67		
	09	SEP	68		
2	08	AUG	69		2
0	07	JUL	70		0
0	06	JUN	71		0
3	05	MAY	72		3
	04	APR	73		
	03	MAR	74		
	02	FEB	75		
	01	JAN	76		

CONFIDENTIAL

KENYA NATIONAL BUREAU OF STATISTICS
KENYA DEMOGRAPHIC AND HEALTH SURVEY 2008
MAN'S QUESTIONNAIRE

IDENTIFICATION

PROVINCE* _____ ☐☐

DISTRICT _____ ☐☐

LOCATION/TOWN _____

SUBLOCATION/WARD _____

NASSEP CLUSTER NUMBER . . . . . ☐☐☐☐

KDHS CLUSTER NUMBER . . . . . ☐☐☐

HOUSEHOLD NUMBER . . . . . ☐☐☐

NAIROBI/MOMBASA/KISUMU=1; NAKURU/ELDORET/THIKA/NYERI=2;
SMALL TOWN=3; RURAL=4 . . . . . ☐

NAME OF HOUSEHOLD HEAD _____

NAME AND LINE NUMBER OF MAN _____ ☐☐

INTERVIEWER VISITS

	1	2	3	FINAL VISIT
DATE				DAY ☐☐
				MONTH ☐☐
				YEAR 2 0 0 ☐
INTERVIEWER'S NAME				INT. NUMBER ☐☐☐
RESULT**				FINAL RESULT ☐
NEXT VISIT: DATE				TOTAL NUMBER OF VISITS ☐
TIME				

**RESULT CODES:

1	COMPLETED	4	REFUSED		
2	NOT AT HOME	5	PARTLY COMPLETED	7	OTHER _____ (SPECIFY)
3	POSTPONED	6	INCAPACITATED		

LANGUAGE

LANGUAGE OF QUESTIONNAIRE: ENGLISH ☐☐

LANGUAGE OF INTERVIEW*** _____ ☐☐

HOME LANGUAGE OF RESPONDENT*** _____ ☐☐

WAS A TRANSLATOR USED? (YES=1, NO=2) . . . . . ☐

***LANGUAGE CODES:

01 EMBU	04 KIKUYU	07 LUO	10 MIJIKENDA	13 ENGLISH
02 KALENJIN	05 KISII	08 MAASAI	11 SOMALI	14 OTHER
03 KAMBA	06 LUHYA	09 MERU	12 KISWAHILI	

SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY
NAME _____	NAME _____		
DATE _____ ☐☐	DATE _____ ☐☐	☐☐	☐☐

* Province: NAIROBI=1; CENTRAL=2; COAST=3; EASTERN=4; NYANZA=5; R.VALLEY=6; WESTERN=7; NORTHEASTERN=8

SECTION 1. RESPONDENT'S BACKGROUND

INFORMED CONSENT

Hello. My name is _____ and I am working with the Kenya National Bureau of Statistics. We are conducting a national survey that asks women about various health issues. We would very much appreciate your participation in this survey.
This information will help the government to plan health services. The survey usually takes between 30 to 60 minutes to complete. Whatever information you provide will be kept confidential and will not be shown to anyone other than members of our survey team.

Participation in this survey is voluntary, and if we should come to any question you don't want to answer, just let me know and I will go on to the next question; or you can stop the interview at any time. However, we hope that you will participate in this survey since your views are important.

At this time, do you want to ask me anything about the survey?
May I begin the interview now?

Signature of interviewer: _____ Date: _____

RESPONDENT AGREES TO BE INTERVIEWED . . . . . 1 ↓ RESPONDENT DOES NOT AGREE TO BE INTERVIEWED . . . 2 → END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR . . . . . [ ][ ] MINUTES . . . . . [ ][ ]	
102	First I would l ke to ask some questions about you and your household. For most of the time untill you were 12 years old, did you live in Nairobi, Mombasa, in another city or town, or in the countryside?	NAIROBI/ MOMBASA/KISUMU . . . . . 1 OTHER CITY/TOWN . . . . . 2 COUNTRY SIDE . . . . . 3 OUTSIDE KENYA 4	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)? IF LESS THAN ONE YEAR, RECORD '00' YEARS.	YEARS . . . . . [ ][ ] ALWAYS . . . . . 95 VISITOR 96	→ 106
104	Just before you moved here, did you live in a city, in a town, or in the countryside?	NAIROBI/ MOMBASA/KISUMU . . . . . 1 OTHER CITY/TOWN . . . . . 2 COUNTRY SIDE . . . . . 3 OUTSIDE KENYA 4	
106	In what month and year were you born?	MONTH . . . . . [ ][ ] DON'T KNOW MONTH . . . . . 98 YEAR . . . . . [ ][ ][ ][ ] DON'T KNOW YEAR 9998	
107	How old were you at your last birthday? COMPARE AND CORRECT 106 AND/OR 107 IF INCONSISTENT.	AGE IN COMPLETED YEARS [ ][ ]	
108	Have you ever attended school?	YES . . . . . 1 NO 2	→ 112
109	What is the highest level of school you attended: primary, vocational, secondary, or higher?	PRIMARY . . . . . 1 POST-PRIMARY/VOCATIONAL . . . . . 2 SECONDARY/'A' LEVEL . . . . . 3 COLLEGE (MIDDLE LEVEL) . . . . . 4 UNIVERSITY 5	
110	What is the highest (standard/form/year) you completed at that level? IF NONE, WRITE '00'.	STANDARD/FORM/YEAR . . . [ ][ ]	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
111	CHECK 109: PRIMARY, POST-PRIMARY/VOCATIONAL, → SECONDARY OR HIGHER → 115		
112	Now I would like you to read this sentence to me. SHOW SENTENCES BELOW TO RESPONDENT. IF RESPONDENT CANNOT READ WHOLE SENTENCE, PROBE: Can you read any part of the sentence to me?	CANNOT READ AT ALL . . . . . 1 ABLE TO READ ONLY PARTS OF SENTENCE . . . . . 2 ABLE TO READ WHOLE SENTENCE. . 3 NO CARD WITH REQUIRED LANGUAGE _____ 4 (SPECIFY LANGUAGE) BLIND/VISUALLY IMPAIRED 5	
113	Have you ever participated in a literacy program or any other program that involves learning to read or write (not including primary school)?	YES . . . . . 1 NO 2	
114	CHECK 112: CODE '2', '3' OR '4' CIRCLED → CODE '1' OR '5' CIRCLED → 116		
115	Do you read a newspaper or magazine almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
116	Do you listen to the radio almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
117	Do you watch television almost every day, at least once a week, less than once a week or not at all?	ALMOST EVERY DAY . . . . . 1 AT LEAST ONCE A WEEK . . . . . 2 LESS THAN ONCE A WEEK . . . . . 3 NOT AT ALL 4	
118	What is your religion?	ROMAN CATHOLIC . . . . . 1 PROTESTANT/OTHER CHRISTIAN . . . 2 MUSLIM . . . . . 3 NO RELIGION . . . . . 4 OTHER _____ 6 (SPECIFY)	
119	What is your ethnic group/tribe?	EMBU . . . . . 01 KALENJIN . . . . . 02 KAMBA . . . . . 03 KIKUYU . . . . . 04 KISII . . . . . 05 LUHYA . . . . . 06 LUO . . . . . 07 MASAI . . . . . 08 MERU . . . . . 09 MIJIKENDA/SWAHILI . . . . . 10 SOMALI . . . . . 11 TAITA/TAVETA . . . . . 12 OTHER _____ 96 (SPECIFY)	

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about any children you have had during your life. I am interested in all of the children that are biologically yours, even if they are not legally yours or do not have your last name. Have you ever fathered any children with any woman?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 206
202	Do you have any sons or daughters that you have fathered who are now living with you?	YES . . . . . 1 NO 2	→ 204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME . . . . . [ ][ ] DAUGHTERS AT HOME . . . . . [ ][ ]	
204	Do you have any sons or daughters that you have fathered who are alive but do not live with you?	YES . . . . . 1 NO 2	→ 206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE . . . . . [ ][ ] DAUGHTERS ELSEWHERE . . . . [ ][ ]	
206	Have you ever fathered a son or a daughter who was born alive but later died? IF NO, PROBE: Any baby who cried or showed signs of life but did not survive?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 208
207	How many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD . . . . . [ ][ ] GIRLS DEAD . . . . . [ ][ ]	
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE, RECORD '00'.	TOTAL CHILDREN . . . . . [ ][ ]	
209	CHECK 208: HAS HAD MORE THAN ONE CHILD HAS HAD ONLY ONE CHILD → 212 HAS NOT HAD ANY CHILDREN → 301		
210	Did all of the children you have fathered have the same biological mother?	YES . . . . . 1 NO 2	→ 212
211	In all, how many women have you fathered children with?	NUMBER OF WOMEN . . . . . [ ][ ]	
212	How old were you when your (first) child was born?	AGE IN YEARS . . . . . [ ][ ]	
213	CHECK 203 AND 205: AT LEAST ONE LIVING CHILD NO LIVING CHILDREN → 301		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
214	How old is your (youngest) child?	AGE IN YEARS	
215	CHECK 214: (YOUNGEST) CHILD IS AGE 0-3 YEARS OTHER		→ 301
216	What is the name of your (youngest) child? WRITE NAME OF (YOUNGEST) CHILD (NAME OF (YOUNGEST) CHILD)		
217	When (NAME)'s mother was pregnant with (NAME), did she have any antenatal check-ups?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 3	→ 219
218	Were you ever present during any of those antenatal check-ups?	PRESENT . . . . . 1 NOT PRESENT 2	
219	Was (NAME) born in a hospital or health facility?	HOSPITAL/HEALTH FACILITY . . . . . 1 OTHER 2	→ 221
220	What was the main reason why (NAME)'s mother did not deliver in a hospital or health facility?	COST TOO MUCH . . . . . 01 FACILITY CLOSED . . . . . 02 TOO FAR/NO TRANSPORTATION . . . 03 DON'T TRUST FACILITY/POOR QUALITY SERVICE . . . . . 04 NO FEMALE PROVIDER . . . . . 05 NOT THE FIRST CHILD . . . . . 06 CHILD'S MOTHER DID NOT THINK IT WAS NECESSARY . . . . . 07 HE DID NOT THINK IT WAS NECESSARY . . . . . 08 FAMILY DID NOT THINK IT WAS NECESSARY . . . . . 09 OTHER _____ 96 (SPECIFY) DON"T KNOW 98	
221	When a child has diarrhea, how much should he or she be given to drink: more than usual, the same amount as usual, less than usual, or should he or she not be given anything to drink at all?	MORE THAN USUAL . . . . . 1 ABOUT THE SAME . . . . . 2 LESS THAN USUAL . . . . . 3 NOTHING TO DRINK . . . . . 4 DON'T KNOW 8	

SECTION 3. CONTRACEPTION

301	Now I would l ke to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy. Which ways or methods have you heard about? FOR METHODS NOT MENTIONED SPONTANEOUSLY, ASK: Have you ever heard of (METHOD)? CIRCLE CODE 1 IN 301 FOR EACH METHOD MENTIONED SPONTANEOUSLY. THEN PROCEED DOWN COLUMN 301, READING THE NAME AND DESCRIPTION OF EACH METHOD NOT MENTIONED SPONTANEOUSLY. CIRCLE CODE 1 IF METHOD IS RECOGNIZED, AND CODE 2 IF NOT RECOGNIZED. THEN, FOR METHODS 02, 07, 10, AND 11, ASK 302 IF 301 HAS CODE 1 CIRCLED.		302 Have you or partner ever used (METHOD)?
01	FEMALE STERILIZATION Women can have an operation to avoid having any more children.	YES . . . . . 1 NO . . . . . 2 →	Have you ever had a partner who had an operation to avoid having any more children? YES . . . . . 1 NO 2
02	MALE STERILIZATION Men can have an operation to avoid having any more children.	YES . . . . . 1 NO . . . . . 2 →	Have you ever had an operation to avoid having any more children? YES . . . . . 1 NO 2
03	PILL Women can take a pill every day to avoid becoming pregnant.	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
04	IUD Women can have a loop or coil placed inside them by a doctor or a nurse.	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
05	INJECTABLES Women can have an injection by a health provider that stops them from becoming pregnant for one or more months.	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
06	IMPLANTS Women can have several small rods placed in their upper arm by a doctor or nurse which can prevent re nanc for one or more ears.	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
07	CONDOM Men can put a rubber sheath on their penis before sexual ntercourse.	YES . . . . . 1 NO . . . . . 2 →	Have you ever used a condom? YES . . . . . 1 NO 2
08	FEMALE CONDOM Women can place a sheath in their vagina before sexual intercourse.	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
09	LACTATIONAL AMENORRHEA METHOD (LAM)	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
10	RHYTHM METHOD Every month that a woman is sexually active she can avoid pregnancy by not having sexual intercourse on the days of the month she is most likely to get pregnant.	YES . . . . . 1 NO . . . . . 2 →	Have you and your partner ever used rhythm method? YES . . . . . 1 NO 2
11	WITHDRAWAL Men can be careful and pull out before climax.	YES . . . . . 1 NO . . . . . 2 →	Have you ever used the withdrawal method? YES . . . . . 1 NO 2
12	EMERGENCY CONTRACEPTION As an emergency measure after sexual intercourse, women can take special pills at any time within 5 days to prevent pregnancy.	YES . . . . . 1 NO . . . . . 2 →	YES . . . . . 1 NO 2
13	Have you heard of any other ways or methods that women or men can use to avoid pregnancy?	YES . . . . . 1 → _____ (SPECIFY) _____ (SPECIFY) NO 2	YES . . . . . 1 NO . . . . . 2 YES . . . . . 1 NO 2

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
302A	CHECK 302: AT LEAST ONE "YES" **(EVER USED)** ↓ NOT A SINGLE "YES" **(NEVER USED)** →		303
302B	Are you currently doing something or using any method with any partner to delay or avoid a pregnancy?	YES . . . . . 1 NO 2	→ 303
302C	Which method are you using? CIRCLE ALL MENTIONED. IF MORE THAN ONE METHOD MENTIONED, FOLLOW SKIP INSTRUCTION FOR HIGHEST METHOD IN LIST.	FEMALE STERILIZATION . . . . . A MALE STERILIZATION . . . . . B PILL . . . . . C IUD . . . . . D INJECTABLES . . . . . E IMPLANTS . . . . . F MALE CONDOM . . . . . G FEMALE CONDOM . . . . . H LACTATIONAL AMENORRHOEA M. . I RHYTHM METHOD . . . . . L WITHDRAWAL . . . . . M OTHER _____ X (SPECIFY)	→ 302E → 302E → 302E → 302E
302D	Does your wife/partner know that you are using a method of family planning?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
302E	Would you say that using contraception is mainly your decision, mainly your wife's/partner's decision, or did you both decide together?	MAINLY RESPONDENT . . . . . 1 MAINLY WIFE/PARTNER . . . . . 2 JOINT DECISION . . . . . 3 OTHER _____ 6 (SPECIFY)	
303	In the last few months have you: Heard about family planning on the radio? Seen about family planning on the television? Read about family planning in a newspaper or magazine?	YES NO RADIO . . . . . 1 2 TELEVISION . . . . . 1 2 NEWSPAPER OR MAGAZINE 1 2	
304	In the last few months, have you ta ked about family planning with a health worker or health professional?	YES . . . . . 1 NO 2	
305	Now I would l ke to ask you about a woman's risk of pregnancy. From one menstrual period to the next, are there certain days when a woman is more likely to become pregnant if she has sexual relations?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 307
306	Is this time just before her period begins, during her period, right after her period has ended, or halfway between two periods?	JUST BEFORE HER PERIOD BEGINS .. 1 DURING HER PERIOD . . . . . 2 RIGHT AFTER HER PERIOD HAS ENDED . . . . . 3 HALFWAY BETWEEN 2 PERIODS . . . 4 OTHER _____ 6 (SPECIFY) DON'T KNOW 8	
307	Do you think that a woman who is breastfeeding her baby can become pregnant?	YES . . . . . 1 NO . . . . . 2 DEPENDS . . . . . 3 DON'T KNOW 8	
308	I will now read you some statements about contraception. Please tell me if you agree or disagree with each one. a) Contraception is women's business and a man should not have to worry about it. b) Women who use contraception may become promiscuous.	AGREE / DISAGREE / DK CONTRACEPTION WOMAN'S BUSINESS . 1 2 8 WOMAN MAY BECOME PROMISCUOUS . . . 1 2 8	

309	CHECK 301 (07) KNOWS MALE CONDOM YES ☐ NO ☐ → 401		
310	Do you know of a place where a person can get condoms?	YES . . . . . 1 NO 2	→ 401
311	Where is that? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVT. HOSPITAL . . . . . B GOVT. HEALTH CENTER . . . . . C GOVERNMENT DISPENSARY . . . . . D OTHER PUBLIC _____ E (SPECIFY) PRIVATE MEDICAL SECTOR FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . F FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . G PRIVATE HOSPITAL/CLINIC . . . . . H PHARMACY/CHEMIST . . . . . I NURSING/MATERNITY HOME . . . . . J OTHER PRIV. MEDICAL _____ K (SPECIFY) OTHER SOURCE MOBILE CLINIC . . . . . L COMMUNITY-BASED DISTRIBUTOR M SHOP . . . . . N FRIEND/RELATIVE . . . . . P OTHER _____ X (SPECIFY)	
312	If you wanted to, could you yourself get a condom?	YES . . . . . 1 NO 2	

SECTION 4. MARRIAGE AND SEXUAL ACTIVITY

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
401	Are you currently married or living together with a woman as if married?	YES, CURRENTLY MARRIED . . . . . 1 YES, LIVING WITH A WOMAN . . . . . 2 NO, NOT IN UNION 3	→ 404
402	Have you ever been married or lived together with a woman as if married?	YES, FORMERLY MARRIED . . . . . 1 YES, LIVED WITH A WOMAN . . . . . 2 NO 3	→ 413
403	What is your marital status now: are you widowed, divorced, or separated?	WIDOWED . . . . . 1 DIVORCED . . . . . 2 SEPARATED 3	→ 410
404	Is your wife/partner living with you now or is she staying elsewhere?	LIVING WITH HIM . . . . . 1 STAYING ELSEWHERE 2	
405	Do you have more than one wife or woman you live with as if married?	YES . . . . . 1 NO 2	→ 407
406	Altogether, how many wives do you have or other partners do you live with as if married?	TOTAL NUMBER OF WIVES AND LIVE-IN PARTNERS . . .	
407	CHECK 405: ONE WIFE/ PARTNER → Please tell me the name of your wife (the woman you are living with as if married). MORE THAN ONE WIFE/ PARTNER → Please tell me the name of each of your current wives (and/or of each woman you are living with as if married). RECORD THE NAME AND THE LINE NUMBER FROM THE HOUSEHOLD QUESTIONNAIRE FOR EACH WIFE AND LIVE-IN PARTNER. IF A WOMAN IS NOT LISTED IN THE HOUSEHOLD, RECORD '00'. ASK 408 FOR EACH PERSON.	NAME _____ LINE NUMBER ☐☐ 408 How old was (NAME) on her last birthday? AGE ☐☐ _____ ☐☐ ☐☐ _____ ☐☐ ☐☐ _____ ☐☐ ☐☐ _____ ☐☐ ☐☐	
409	CHECK 407: ONE WIFE/ PARTNER MORE THAN ONE WIFE/ PARTNER	→ 411A
410	Have you been married or lived with a woman only once or more than once?	ONLY ONCE . . . . . 1 MORE THAN ONCE 2	→ 411A
411	In what month and year did you start living with your (wife/ partner)?	MONTH . . . . . ☐☐ DON'T KNOW MONTH . . . . . 98 YEAR . . . . . ☐☐☐☐ DON'T KNOW YEAR 9998	→ 413
411A	Now I would like to ask a question about your first wife/partner. In what month and year did you start living with your first wife/ partner?		

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
412	How old were you when you first started living with her?	AGE	
413	CHECK FOR THE PRESENCE OF OTHERS. BEFORE CONTINUING, MAKE EVERY EFFORT TO ENSURE PRIVACY.		
414	Now I would like to ask you some questions about sexual activity in order to gain a better understanding of some important life issues. How old were you when you had sexual intercourse for the very first time?	NEVER HAD SEXUAL INTERCOURSE . . . . . .00 AGE IN YEARS . . . . . → 417 FIRST TIME WHEN STARTED LIVING WITH (FIRST) WIFE/PARTNER . . . . . .95 → 417	
415	CHECK 107: AGE 15-24 ↓ AGE 25-54 →		501
416	Do you intend to wait until you get married to have sexual intercourse for the first time?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/UNSURE 8	→ 501
417	**CHECK 107:** AGE 15-24 ↓ AGE 25-54 →		419
418	The first time you had sexual intercourse, was a condom used?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW/DON'T REMEMBER . . . 8	
419	When was the last time you had sexual intercourse? IF LESS THAN 12 MONTHS, ANSWER MUST BE RECORDED IN DAYS, WEEKS OR MONTHS. IF 12 MONTHS (ONE YEAR) OR MORE, ANSWER MUST BE RECORDED IN YEARS.	DAYS AGO . . . . . 1 WEEKS AGO . . . . . 2 MONTHS AGO . . . . . 3 YEARS AGO 4	→ 435

		LAST SEXUAL PARTNER	SECOND-TO-LAST SEXUAL PARTNER	THIRD-TO-LAST SEXUAL PARTNER
420	Now I would like to ask you some questions about your recent sexual activity. Let me assure you again that your answers are completely confidential and will not be told to anyone. If we should come to any question that you don't want to answer, just let me know and we will go to the next question. → SKIP TO 422			
421	When was the last time you had sexual intercourse with this person?		DAYS . 1 WEEKS 2 MONTHS 3	DAYS . 1 WEEKS 2 MONTHS 3
422	The last time you had sexual intercourse (with this second/third person), was a condom used?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 424)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 424)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 424)
423	Was a condom used every time you had sexual intercourse with this person in the last 12 months?	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2	YES . . . . . 1 NO 2
424	What was your relationship to this (second/third) person with whom you had sexual intercourse? IF GIRLFRIEND: Were you living together as if married? IF YES, CIRCLE '2'. IF NO, CIRCLE '3'.	WIFE . . . . . 1 (SKIP TO 426) LIVE-IN PARTNER . . . . 2 GIRLFRIEND NOT LIVING WITH RESPONDENT . . . . 3 CASUAL ACQUAINTANCE . . . 4 PROSTITUTE . . . . . 5 OTHER _____ 6 (SPECIFY)	WIFE . . . . . 1 (SKIP TO 426) LIVE-IN PARTNER . . . . 2 GIRLFRIEND NOT LIVING WITH RESPONDENT . . . . 3 CASUAL ACQUAINTANCE . . . 4 PROSTITUTE . . . . . 5 OTHER _____ 6 (SPECIFY)	WIFE . . . . . 1 (SKIP TO 426) LIVE-IN PARTNER . . . . 2 GIRLFRIEND NOT LIVING WITH RESPONDENT . . . . 3 CASUAL ACQUAINTANCE . . . 4 PROSTITUTE . . . . . 5 OTHER _____ 6 (SPECIFY)
425	For how long (have you had/did you have) a sexual relationship with this (second/third) person? IF ONLY HAD SEXUAL RELATIONS WITH THIS PERSON ONCE, RECORD '01' DAYS.	DAYS . 1 MONTHS 2 YEARS 3	DAYS . 1 MONTHS 2 YEARS 3	DAYS . 1 MONTHS 2 YEARS 3
426	The last time you had sexual intercourse with this (second/third) person, did you or this person drink alcohol?	YES . . . . . 1 NO . . . . . 2 (SKIP TO 428)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 428)	YES . . . . . 1 NO . . . . . 2 (SKIP TO 429)
427	Were you or your partner drunk at that time? IF YES: Who was drunk?	RESPONDENT ONLY 1 PARTNER ONLY . . . 2 RESPONDENT AND PARTNER BOTH . 3 NEITHER 4	RESPONDENT ONLY 1 PARTNER ONLY . . . 2 RESPONDENT AND PARTNER BOTH . 3 NEITHER 4	RESPONDENT ONLY 1 PARTNER ONLY . . . 2 RESPONDENT AND PARTNER BOTH . 3 NEITHER 4
428	Apart from [this person/these two people], have you had sexual intercourse with any other person in the last 12 months?	YES . . . . . 1 (GO BACK TO 421 IN NEXT COLUMN) NO . . . . . 2 (SKIP TO 430)	YES . . . . . 1 (GO BACK TO 421 IN NEXT COLUMN) NO . . . . . 2 (SKIP TO 430)	
429	In total, with how many different people have you had sexual intercourse in the last 12 months? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS GREATER THAN 95, WRITE '95.'			NUMBER OF PARTNERS LAST 12 MONTHS . . . DON'T KNOW . . . 98

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
430	CHECK 424 (ALL COLUMNS): AT LEAST ONE PARTNER IS PROSTITUTE ☐ NO PARTNERS ARE PROSTITUTES ☐ → 432		
431	CHECK 424 AND 422 (ALL COLUMNS): CONDOM USED WITH EVERY PROSTITUTE ☐ → 434 OTHER ☐ → 435		
432	In the last 12 months, did you pay anyone in exchange for having sexual intercourse?	YES . . . . . 1 NO 2	→ 435
433	The last time you paid someone in exchange for having sexual intercourse, was a (male/famale) condom used?	YES . . . . . 1 NO 2	→ 435
434	Was a condom used during sexual intercourse every time you paid someone in exchange for having sexual intercourse in the last 12 months?	YES . . . . . 1 NO . . . . . 2 DK 8	
435	In total, with how many different people have you had sexual intercourse in your lifetime? IF NON-NUMERIC ANSWER, PROBE TO GET AN ESTIMATE. IF NUMBER OF PARTNERS IS GREATER THAN 95, WRITE '95.'	NUMBER OF PARTNERS IN LIFETIME . . . . . ☐☐ DON'T KNOW 98	
436	CHECK 422, MOST RECENT PARTNER (FIRST COLUMN): NOT ASKED ☐ → 442 CONDOM USED ☐ NO CONDOM USED ☐ → 442		
437	You told me that a condom was used the last time you had sex. May I see the package of condoms you were using at that time? RECORD NAME OF BRAND IF PACKAGE SEEN.	PACKAGE SEEN . . . . . 1 BRAND NAME _____ (SPECIFY) ☐☐ DOES NOT HAVE/NOT SEEN 2	→ 439
438	Do you know the brand name of the condom used at that time? RECORD NAME OF BRAND.	BRAND NAME _____ (SPECIFY) ☐☐ DON'T KNOW 98	
439	How many condoms did you get the last time?	NUMBER OF CONDOMS . . . . . ☐☐☐ DON'T KNOW 998	
440	The last time you obtained the condoms, how much did you pay in total, including the cost of the condom(s) and any consultation you may have had?	COST . . . . . ☐☐☐ FREE . . . . . 995 DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
441	Where did you get the condom the last time? PROBE TO IDENTIFY TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE. IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE)	**PUBLIC SECTOR** GOVT. HOSPITAL . . . . . 11 GOVT. HEALTH CENTER . . . . . 12 GOVERNMENT DISPENSARY . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) **PRIVATE MEDICAL SECTOR** FAITH-BASED, CHURCH, MISSION HOSPITAL / CLINIC . . . . . 21 FHOK/FPAK HEALTH CENTER/ CLINIC . . . . . 22 PRIVATE HOSPITAL/CLINIC . . . . . 23 PHARMACY/CHEMIST . . . . . 24 NURSING/MATERNITY HOME . . . . . 25 OTHER PRIV. MEDICAL _____ 26 (SPECIFY) **OTHER SOURCE** MOBILE CLINIC . . . . . 31 COMMUNITY-BASED DISTRIBUTOR 41 SHOP . . . . . 51 FRIEND/RELATIVE . . . . . 61 OTHER _____ 96 (SPECIFY)	
442	CHECK 302 (02): RESPONDENT EVER STERILIZED NO ☐ YES ☐ → 501		
443	The last time you had sex did you or your partner use any method ˛other than a condom˝ to avoid or ˛revent a pregnancy?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 501
444	What method did you or your partner use? PROBE: Did you or your partner use any other method to prevent pregnancy? RECORD ALL MENTIONED.	FEMALE STERILIZATION . . . . . A PILL . . . . . C IUD . . . . . D INJECTABLES . . . . . E IMPLANTS . . . . . F CONDOM . . . . . G FEMALE CONDOM . . . . . H LACTATION AMENORRHEA METHOD I RHYTHM METHOD . . . . . L WITHDRAWAL . . . . . M OTHER _____ X (SPECIFY)	

SECTION 5. FERTILITY PREFERENCES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
501	CHECK 407: ONE OR MORE WIVES/PARTNERS ☐ QUESTION NOT ASKED ☐ → 508		
502	CHECK 302: MAN NOT STERILIZED ☐ MAN STERILIZED ☐ → 508		
503	(Is your wife (partner) orAre any of your wives (partners)) currently pregnant?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
504	CHECK 503: NO WIFE/PARTNER PREGNANT OR DON'T KNOW ☐ WIFE(WIVES)/ PARTNER(S) PREGNANT ☐ Now I have some questions about the future. Would you like to have (a/another) child, or would you prefer not to have any (more) children? Now I have some questions about the future. After the child(ren) you and your (wife(wives)/partner(s)) are expecting now, would you l ke to have another child, or would you prefer not to have any more children?	HAVE (A/ANOTHER) CHILD . . . . . 1 NO MORE/NONE . . . . . 2 COUPLE INFECUND . . . . . 3 WIFE (WIVES)/PARTNER(S) STERILIZED . . . . . 4 UNDECIDED/DON'T KNOW 8	→ 508
505	CHECK 407: ONE WIFE/ PARTNER ☐ MORE THAN ONE WIFE/ PARTNER ☐ → 507		
506	CHECK 503: WIFE/PARTNER NOT PREGNANT OR DON'T KNOW ☐ WIFE/PARTNER PREGNANT ☐ How long would you like to wait from now before the birth of (a/another) child? After the birth of the child you are expecting now, how long would you like to wait before the birth of another child?	MONTHS . . . . . 1 ☐☐ YEARS . . . . . 2 ☐☐ SOON/NOW . . . . . 993 COUPLE INFECUND . . . . . 994 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	→ 508
507	How long would you like to wait from now before the birth of (a/another) child?	MONTHS . . . . . 1 ☐☐ YEARS . . . . . 2 ☐☐ SOON/NOW . . . . . 993 HE/ALL HIS WIVES/PARTNERS ARE INFECUND . . . . . 994 OTHER _____ 996 (SPECIFY) DON'T KNOW 998	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
508	CHECK 203 AND 205: HAS LIVING CHILDREN ⚑ ↓ If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be? NO LIVING CHILDREN ⚑ ↓ If you could choose exactly the number of children to have in your whole life, how many would that be? PROBE FOR A NUMERIC RESPONSE.	NONE . . . . . 00 NUMBER . . . . . ☐☐ OTHER _____ 96 (SPECIFY)	→ 601 → 601
509	How many of these children would you like to be boys, how many would you l ke to be girls and for how many would the sex not matter?	BOYS GIRLS EITHER NUMBER ☐☐ ☐☐ ☐☐ OTHER _____ 96 (SPECIFY)	

SECTION 6. EMPLOYMENT AND GENDER ROLES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	Have you done any work in the last seven days?	YES . . . . . 1 NO 2	→ 604
602	Although you did not work in the last seven days, do you have any job or business from which you were absent for leave, illness, vacation, or any other such reason?	YES . . . . . 1 NO 2	→ 604
603	Have you done any work in the last 12 months?	YES . . . . . 1 NO 2	→ 613
604	What is your occupation, that is, what kind of work do you mainly do?	_____ ☐☐ _____ _____	
605	CHECK 604: WORKS IN AGRICULTURE ☐ DOES NOT WORK IN AGRICULTURE ☐		→ 607
606	Do you work mainly on your own land or on family land, or do you work on land that you rent from someone else, or do you work on someone else's land?	OWN LAND . . . . . 1 FAMILY LAND . . . . . 2 RENTED LAND . . . . . 3 SOMEONE ELSE'S LAND . . . . . 4 OTHER _____ 6 (SPECIFY)	→ 607
606A	Think back over the past year. Were there any times when your household did not have enough food to eat? How often did it happen that people went hungry because there was not enough food?	NEVER / SELDOM/ ONLY A FEW TIMES 1 OFTEN . . . . . 2 ALWAYS / EVERY DAY 3	
606B	Do you believe there is sufficient land here for your children to stay and live?	YES . . . . . 1 NO 2	
607	Do you do this work for a member of your family, for someone else, or are you self-employed?	FOR FAMILY MEMBER . . . . . 1 FOR SOMEONE ELSE . . . . . 2 SELF-EMPLOYED 3	
608	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR . . . . . 1 SEASONALLY/PART OF THE YEAR . 2 ONCE IN A WHILE 3	
609	Are you paid in cash or kind for this work or are you not paid at all?	CASH ONLY . . . . . 1 CASH AND KIND . . . . . 2 IN KIND ONLY . . . . . 3 NOT PAID 4	
610	CHECK 407: ONE OR MORE WIVES/PARTNERS ☐ QUESTION NOT ASKED ☐		→ 613
611	CHECK 609: CODE 1 OR 2 CIRCLED ☐ OTHER ☐		→ 613
612	Who usually decides how the money you earn will be used: mainly you, mainly your (wife (wives)/partner(s)), or you and your (wife (wives)/partner(s)) jointly?	RESPONDENT . . . . . 1 WIFE(WIVES)/PARTNER(S) . . . . . 2 RESPONDENT AND WIFE (WIVES)/ PARTNER(S) JOINTLY . . . . . 3 OTHER _____ 6 SPECIFY	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
613	In a couple, who do you think should have the greater say in each of the following decisions: the husband, the wife or both equally:	HUS-BAND / WIFE / BOTH EQUALLY / DON'T KNOW/ DEPENDS	
	a) making major household purchases?	a) 1 2 3 8	
	b) making purchases for daily household needs?	b) 1 2 3 8	
	c) deciding about visits to the wife's family or relatives?	c) 1 2 3 8	
	d) deciding what to do with the money she earns for her work?	d) 1 2 3 8	
	e) deciding how many children to have and when?	e) 1 2 3 8	
614	I will now read you some statements about pregnancy. Please tell me if you agree or disagree with them.	AGREE / DIS-AGREE / DK	
	a) Childbearing is a woman's concern and there is no need for the father to get involved.	CHILDBEARING WOMAN'S CONCERN 1 2 8	
	b) It is crucial for the mother's and child's health that a woman have assistance from a doctor or nurse at delivery.	DOCTOR/NURSE'S ASSISTANCE CRUCIAL 1 2 8	
615	Sometimes a husband is annoyed or angered by things that his wife does. In your opinion, is a husband justified in hitting or beating his wife in the following situations:	YES / NO / DK	
	If she goes out without telling him?	GOES OUT 1 2 8	
	If she neglects the children?	NEGL. CHILDREN . . . 1 2 8	
	If she argues with him?	ARGUES 1 2 8	
	If she refuses to have sex with him?	REFUSES SEX 1 2 8	
	If she burns the food?	BURNS FOOD 1 2 8	
616	Do you think that if a woman refuses to have sex with her husband when he wants her to, he has the right to…	YES / NO / DON'T KNOW/ DEPENDS	
	a) Get angry and reprimand her?	a) 1 2 8	
	b) Refuse to give her money or other means of support?	b) 1 2 8	
	c) Use force and have sex with her even if she doesn't want to?	c) 1 2 8	
	d) Have sex with another woman?	d) 1 2 8	

SECTION 7. HIV/AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
701	Now I would l ke to talk about something else. Have you ever heard of an illness called AIDS?	YES . . . . . 1 NO 2	→ 717
702	Can people reduce their chance of getting the AIDS virus by having just one uninfected sex partner who has no other sex partners?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
703	Can people get the AIDS virus from mosquito bites?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
704	Can people reduce their chance of getting the AIDS virus by using a condom every time they have sex?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
705	Can people get the AIDS virus by sharing food with a person who has AIDS?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
706	Can people reduce their chance of getting the AIDS virus by not having sexual intercourse at all?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
707	Can people get the AIDS virus because of witchcraft or other supernatural means?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
708A	Is there anything else a person can do to avoid getting AIDS or the virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	→ 709 → 709
708B	What can a person do? Anything else? CIRCLE ALL MENTIONED	ABSTAIN FROM SEX . . . . . A USE CONDOMS . . . . . B LIMIT SEX TO ONE PARTNER/STAY FAITHFUL TO ONE PARTNER . . . . . C LIMIT NUMBER OF SEX PARTNER . . . D AVOID SEX WITH PROSTITUTES . . . . . E AVOID SEX WITH PERSONS WHO HAVE MANY PARTNERS . . . . . F AVOID SEX WITH HOMOSEXUALS . . . G AVOID SEX WITH DRUG USERS . . . . . H AVOID BLOOD TRANSFUSIONS . . . . . I AVOID INJECTIONS . . . . . J AVOID SHARING RAZORS/BLADES . . . K AVOID KISSING . . . . . L AVOID MOSQUITO BITES . . . . . M SEEK PROTECTION FROM TRADITIONAL HEALER . . . . . N OTHERS (SPECIFY)_____ W OTHERS (SPECIFY)_____ X DON'T KNOW Z	
709	Is it possible for a healthy-looking person to have the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
710	Do you know someone personally who has the virus that causes AIDS or someone who died of AIDS?	YES . . . . . 1 NO 2	
711	Can the virus that causes AIDS be transmitted from a mother to her baby: During pregnancy? During delivery? By breastfeeding?	YES NO DK DURING PREG. . . . . 1 2 8 DURING DELIVERY . . . 1 2 8 BREASTFEEDING . . . 1 2 8	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
712	CHECK 711: AT LEAST ONE 'YES' ☐ ↓ OTHER ☐ → 713		
712A	Are there any special drugs that a doctor or a nurse can give to a woman infected with the AIDS virus to reduce the risk of transmission to the baby?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
713	CHECK 401: YES, CURRENTLY MARRIED/ LIVING WITH A WOMAN ☐ ↓ FORMERLY MARRIED/ LIVED WITH A WOMAN ☐ ↓ NEVER MARRIED/ NEVER LIVED WITH A WOMAN ☐ → 714A		
714	Have you ever ta ked with (your wife/the woman you are with) about ways to prevent getting the virus that causes AIDS?	YES . . . . . 1 NO 2	
714A	Would you buy fresh vegetables from a shopkeeper or vendor if you knew that this person had the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
715	If a member of your family got infected with the AIDS virus, would you want it to remain a secret or not?	YES, REMAIN A SECRET . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
716	If a member of your family became sick with AIDS, would you be willing to care for her or him in your own household?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
716A	In your opinion, if a female teacher has the AIDS virus, but is not sick, should she be allowed to continue teaching in the school?	SHOULD BE ALLOWED . . . . . 1 SHOULD NOT BE ALLOWED . . . . . 2 DK/NOT SURE/DEPENDS 8	
716B	Should children age 12-14 years be taught about using condoms to avoid getting AIDS?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE/DEPENDS 8	
716B1	Do you think your chances of getting AIDS are small, moderate, great or no risk at all?	NO RISK AT ALL . . . . . 1 SMALL . . . . . 2 MODERATE . . . . . 3 → 716B3 GREAT . . . . . 4 HAS AIDS . . . . . 5 → 716B4	
716B2	Why do you think that you have (no risk/small chance) of getting AIDS? Any reasons? CIRCLE ALL MENTIONED	IS NOT HAVING SEX . . . . . A USES CONDOM . . . . . B HAS ONLY ONE PARTNER . . . . . C LIMITS THE NUMBER OF PARTNERS .. D PATNER HAS NO OTHER PATNERS .. E OTHERS _____ X (SPECIFY)	→ 716B4
716B3	Why do you think that you have (moderate/great) chance of getting AIDS? Any reasons? CIRCLE ALL MENTIONED	DOES NOT USE CONDOM . . . . . A HAS MORE THAN ONE SEX PARTNER B PARTNER HAS OTHER PARTNERS . . . C HOMOSEXUAL CONTACTS . . . . . D HAD BLOOD TRANSFUSION/INJECTION E OTHERS _____ X (SPECIFY)	
716B4	Have you ever heard of VCT?	YES . . . . . 1 NO 2	
716C	I do not want to know the results, but have you ever been tested to see if you have the AIDS virus?	YES . . . . . 1 NO . . . . . 2 → 716D	
716C1	When was the last time you were ever tested?	LESS THAN 12 MONTHS AGO . . . . . 1 12-23 MONTHS AGO . . . . . 2 2 YEARS OR MORE AGO 3	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
716C2	The last time you were tested, did you ask for the test, was it offered to you and you accepted, or was ir required?	ASKED FOR TEST . . . . . 1 OFFERED AND ACCEPTED . . . . . 2 REQUIRED 3	
716C3	I do not want to know the results, but did you get the results of the test?	YES . . . . . 1 NO 2	
716C4	Where was the test done? IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE SOURCE AND CIRCLE THE APPROPRIATE CODE. NAME OF PLACE _____ IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE "21".	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . 11 GOVT. HEALTH CENTRE/CLINIC . . . 12 GOVERNMENT DISPENSARY . . . . . 13 OTHER PUBLIC _____ 16 (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC 21 FPAK HEALTH CENTRE/CLINIC . . . 22 PRIVATE HOSPITAL/CLINIC . . . . . 23 VCT CENTRE . . . . . 24 NURSING/MATERNITY HOMES . . . 25 BLOOD TRANSFUSION SERVICES 26 OTHER PRIVATE MEDICAL _____ 27 (SPECIFY) OTHER _____ 96 (SPECIFY)	→ 717
716D	Would you want to be tested for the AIDS virus?	YES . . . . . 1 NO . . . . . 2 DK/NOT SURE 8	
716E	Do you know of a place where people can go to get tested for the AIDS virus?	YES . . . . . 1 NO 2	→ 717
716F	Where is that? Any other place? IF SOURCE IS HOSPITAL, HEALTH CENTRE OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE SOURCE AND CIRCLE THE APPROPRIATE CODE(S). NAME OF PLACE _____ IF NURSING/MATERNITY HOME, ASK IF IT IS RUN BY A CHURCH OR MISSION. IF SO, CIRCLE CODE "E".	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTRE/CLINIC . . . B GOVERNMENT DISPENSARY . . . . . C OTHER PUBLIC _____ D (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC E FPAK HEALTH CENTRE/CLINIC . . . F PRIVATE HOSPITAL/CLINIC . . . . . G VCT CENTRE . . . . . H NURSING/MATERNITY HOMES . . . I BLOOD TRANSFUSION SERVICES J OTHER PRIVATE MEDICAL _____ K (SPECIFY) OTHER _____ X (SPECIFY)	
717	CHECK 701: HEARD ABOUT AIDS → Apart from AIDS, have you heard about other infections that can be transmitted through sexual contact? NOT HEARD ABOUT AIDS → Have you heard about infections that can be transmitted through sexual contact?	YES . . . . . 1 NO 2	→ 719A

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
718	If a man has a sexually transmitted disease, what symptoms might he have? Any others? RECORD ALL MENTIONED	ABDOMINAL PAIN . . . . . A GENITAL DISCHARGE/DRIPPINC . . . . . B FOUL SMELL/DISCHARGE . . . . . C BURNING PAIN ON URINATION . . . . . D REDNESS/INFLAMATION IN GENITAL AREA . . . . . E SWELLING IN GENITAL AREA . . . . . F GENITAL SORES/ULCERS . . . . . G GENITAL WARTS . . . . . H GENITAL ITCHING . . . . . I BLOOD IN URINE . . . . . J LOSS OF WEIGHT . . . . . K IMPOTENCE/NO ERECTION . . . . . L OTHERS _____ (SPECIFY) W OTHERS _____ (SPECIFY) X NO SYMPTOMS . . . . . Y DOES NOT KNOW . . . . . Z	
719	If a woman has a sexually transmitted disease, what symptoms might she have? Any others? RECORD ALL MENTIONED	ABDOMINAL PAIN . . . . . A GENITAL DISCHARGE . . . . . B FOUL SMELL/DISCHARGE . . . . . C BURNING PAIN ON URINATION . . . . . D REDNESS/INFLAMATION IN GENITAL AREA . . . . . E SWELLING IN GENITAL AREA . . . . . F GENITAL SORES/ULCERS . . . . . G GENITAL WARTS . . . . . H GENITAL ITCHING . . . . . I BLOOD IN URINE . . . . . J LOSS OF WEIGHT . . . . . K HARD TO GET PREGNANT . . . . . L OTHERS _____ (SPECIFY) W OTHERS _____ (SPECIFY) X NO SYMPTOMS . . . . . Y DOES NOT KNOW . . . . . Z	
719A	CHECK 414: HAS HAD SEXUAL INTERCOURSE HAS NOT HAD SEXUAL INTERCOURSE		801
719A1	CHECK 717: HEARD ABOUT OTHER SEXUALLY TRANSMITTED INFECTIONS? YES NO		719C
719B	Now I would l ke to ask you some questions about your health in the last twelve months. During the last twelve months have you had a sexually transmitted disease?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
719C	Sometimes men experience an abnormal discharge from their penis. During the last twelve months, have you had an abnomal discharge from your penis?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
719D	Sometimes men have a sore or ulcer on or near their penis. During the last twelve months have you had a sore or ulcer on or near your penis?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
719E	CHECK 719B, 719C AND 719D HAS HAD AN INFECTION (ANY 'YES') HAS NOT HAD AN INFECTION OR DOES NOT KNOW		801
719F	Last time you had (PROBLEM(S) FROM 719B/719C/719D), did you seek any kind of advice or treatment?	YES . . . . . 1 NO 2	719H

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
719G	Where did you go? Any other place? PROBE TO IDENTIFY EACH TYPE OF SOURCE AND CIRCLE THE APPROPRIATE CODE(S). IF UNABLE TO DETERMINE IF HOSPITAL, HEALTH CENTER VCT CENTER, OR CLINIC IS PUBLIC OR PRIVATE MEDICAL, WRITE THE NAME OF THE PLACE. _____ (NAME OF PLACE(S))	PUBLIC SECTOR GOVERNMENT HOSPITAL . . . . . A GOVT. HEALTH CENTRE/CLINIC . . . B GOVERNMENT DISPENSARY . . . . . C OTHER PUBLIC _____ D (SPECIFY) PRIVATE MEDICAL SECTOR MISSIONARY/CHURCH HOSP./CLINIC E FPAK HEALTH CENTRE/CLINIC . . . F PRIVATE HOSPITAL/CLINIC . . . . . G VCT CENTRE . . . . . H NURSING/MATERNITY HOMES . . . I BLOOD TRANSFUSION SERVICES J OTHER PRIVATE MEDICAL _____ K (SPECIFY) OTHER SOURCE TRADITIONAL HEALER . . . . . L SHOP/PHARMACY . . . . . M FRIENDS OR RELATIVES . . . . . N OTHER _____ X (SPECIFY)	
719H	When you had (PROBLEM(S) FROM 719B/719C/719D), did you inform the person(s) with whom you were having sex?	YES, INFORMED ALL PARTNERS . . . 1 NO, INFORMED NONE . . . . . 2 INFORMED SOME NOT ALL . . . . . 3 DID NOT HAVE A PARTNER 4	→ 801
719I	When you had (PROBLEM(S) FROM 719B/719C/719D), did you do anything to avoid infecting your sexual partners(s)	YES . . . . . 1 NO . . . . . 2 DID NOT HAVE A PARTNER 3	→ 801 → 801
719J	What did you do to avoid infecting your partner(s) ? Did you: Use medicine? Stop having sex? Use a condom when having sex?	YES NO USE MEDICINE . . . . . 1 2 STOP SEX . . . . . 1 2 USE CONDOM 1 2	

SECTION 8. OTHER HEALTH ISSUES

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
801	Have you ever heard of an illness called tuberculosis or TB?	YES . . . . . 1 NO 2	→ 805
802	How does tuberculosis spread from one person to another? PROBE: Any other ways? RECORD ALL MENTIONED.	THROUGH THE AIR WHEN COUGHING OR SNEEZING . . . . . A THROUGH SHARING UTENSILS . . . . . B THROUGH TOUCHING A PERSON WITH TB . . . . . C THROUGH FOOD . . . . . D THROUGH SEXUAL CONTACT . . . . . E THROUGH MOSQUITO BITES . . . . . F OTHER _____ X (SPECIFY) DON'T KNOW . . . . . Z	
803	Can tuberculosis be cured?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
804	If a member of your family got tuberculosis, would you want it to remain a secret or not?	YES, REMAIN A SECRET . . . . . 1 NO . . . . . 2 DON'T KNOW/NOT SURE/ DEPENDS 8	
805	Some men are circumcised. Are you circumcised?	YES . . . . . 1 NO . . . . . 2 DON'T KNOW 8	
810	Do you currently smoke cigarettes?	YES . . . . . 1 NO 2	→ 812
811	In the last 24 hours, how many cigarettes did you smoke?	CIGARETTES	
812	Do you currently smoke or use any other type of tobacco?	YES . . . . . 1 NO 2	→ 814
813	What (other) type of tobacco do you currently smoke or use? RECORD ALL MENTIONED.	PIPE . . . . . A CHEWING TOBACCO . . . . . B SNUFF . . . . . C OTHER _____ X (SPECIFY)	
814	Are you covered by any health insurance?	YES . . . . . 1 NO 2	→ 820
815	What type of health insurance? RECORD ALL MENTIONED.	MUTUAL HEALTH ORGANIZATION/ COMMUNITY BASED HEALTH INSURANCE . . . . . A HEALTH INSURANCE THROUGH EMPLOYER . . . . . B SOCIAL SECURITY . . . . . C OTHER PRIVATELY PURCHASED COMMERCIAL HEALTH INSURANCE. D OTHER _____ X (SPECIFY)	
820	RECORD THE TIME.	HOUR . . . . . MINUTES	

INTERVIEWER'S OBSERVATIONS

TO BE FILLED IN AFTER COMPLETING INTERVIEW

COMMENTS ABOUT RESPONDENT:

COMMENTS ON SPECIFIC QUESTIONS:

ANY OTHER COMMENTS:

SUPERVISOR'S OBSERVATIONS

NAME OF SUPERVISOR: _____ DATE: _____

EDITOR'S OBSERVATIONS

NAME OF EDITOR: _____ DATE: _____