Uganda

Demographic and Health Survey 2016

Key Indicators

GOVERNMENT OF UGANDA

Uganda

Demographic and Health Survey 2016

Key Indicators Report

Uganda Bureau of Statistics
Kampala, Uganda

The DHS Program
ICF
Rockville, Maryland, USA

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The 2016 Uganda Demographic and Health Survey (2016 UDHS) was implemented by the Uganda Bureau of Statistics from 15 June to 18 December 2016. The funding for the 2016 UDHS was provided by the Government of Uganda, the United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF), and the United Nations Population Fund (UNFPA). ICF provided technical assistance through The DHS Program, a USAID-funded project that provides support and technical assistance in the implementation of population and health surveys in countries worldwide.

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CONTENTS

TABLES AND FIGURES

ABBREVIATIONS

ACT	artemisinin-based combination therapy
AIDS	acquired immune deficiency syndrome
ANC	antenatal care
ARI	acute respiratory infection
BCG	Bacille Calmette-Guérin
CAPI	computer-assisted personal interviewing
CBR	crude birth rate
CPR	contraceptive prevalence rate
CSPro	Censuses and Surveys Processing
DBS	dried blood spot
DHS	Demographic and Health Survey
DPT	diphtheria, pertussis, and tetanus vaccine
EA	enumeration area
ECDI	Early Child Development Index
GFR	general fertility rate
HepB	Hepatitis B
Hib	Haemophilus Influenzae Type B
HIV	human immunodeficiency virus
HSSP	Health Sector Strategic Plan
HTC	HIV testing and counselling
ICD-10	International Classification of Diseases-10
ICF	ICF *(originally, Inner City Fund)*
IRS	indoor residual spraying
ITN	insecticide-treated net
IUD	intrauterine contraceptive device
LAM	lactational amenorrhoea method
LLIN	long-lasting insecticidal nets
MICS	Multiple Indicator Cluster Survey
NDP	national development plan
NGO	non-governmental organisation
NPHC	National Population and Housing Census
ORS	oral rehydration salts
ORT	oral rehydration therapy
RDT	rapid diagnostic test
SD	standard deviations
SDG	Sustainable Development Goals
SDM	standard days method
STD	sexually transmitted disease
TFR	total fertility rate
TOT	training of trainers
UBOS	Uganda Bureau of Statistics
UDHS	Uganda Demographic and Health Survey
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization

FOREWORD

The data collection for the 2016 Uganda Demographic and Health Survey (UDHS) was implemented between June 15 and December 18 2016 by the Uganda Bureau of Statistics (UBOS) in collaboration with the Ministry of Health. The Demographic and Health Surveys (DHS) Program is a global programme coordinated by ICF in Rockville, Maryland, USA. Technical and financial support for the 2016 UDHS was provided by the Government of Uganda, the United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF), and the United Nations Population Fund (UNFPA).

The main purpose of the 2016 UDHS is to provide the data needed to monitor and evaluate population, health, and nutrition programmes on a regular basis. Increasing emphasis by planners and policy makers on the utilisation of objective indicators for policy formulation, planning, and measuring progress has increased the reliance on regular household survey data, given the inadequate availability of appropriate information from administrative statistics and other routine data-collection systems. The UDHS provides a comprehensive overview of population and maternal and child health issues, and the data are freely accessible to all stakeholders.

The 2016 UDHS covers household and respondent characteristics, fertility and family planning, infant and child health and mortality, maternal health and maternal and adult mortality, child and adult nutrition, malaria, HIV/AIDS, disability, road traffic accidents, child discipline, early childhood development and domestic violence. The survey also included measuring the height and weight of children and adults, testing children and adults for anaemia, and testing children for malaria and vitamin A deficiency; these measures will provide data for analysis of nutrition indicators throughout the country.

Special thanks to the Steering and Technical working committees that oversaw the implementation of the 2016 UDHS. I would like to thank the Management and staff of UBOS that was involved in the survey, through coordination, implementation or monitoring according to the UBOS Strategic Plan. I would also like to thank all the respondents and the community that participated in providing information during the survey field work.

This Key Indicators Report is a preliminary report of key findings that UBOS has produced, with technical assistance from ICF.

Ben Paul Mungyereza
Executive Director

1 INTRODUCTION

The Uganda Bureau of Statistics (UBOS) conducted the sixth Uganda Demographic and Health Survey (UDHS) from June 15 through December 18 2016, with a nationally representative sample of over 20,000 households. All women age 15-49 in selected households were eligible for individual interviews. In a subsample (one-third) of households, all men age 15-54 were eligible for individual interviews. The 2016 UDHS is a follow-up to the 1988/89, 1995, 2000-01, 2006 and 2011 Uganda Demographic and Health Surveys. The 2016 UDHS was implemented under the Uganda Bureau of Statistics Act 1998, in accordance with the UBOS Strategic Plan (2013/14-2017/18) as an activity under the strategic initiative of increasing the availability of census and survey data.

ICF provided technical assistance through The DHS Program, which is funded by the United States Agency for International Development (USAID), and offers support and technical assistance for the implementation of population and health surveys in countries worldwide.

Financial support for the 2016 UDHS was provided by the Government of Uganda, USAID, the United Nations Children's Fund (UNICEF), and the United Nations Population Fund (UNFPA).

This Key Indicators Report presents selected findings of the 2016 UDHS. A comprehensive analysis of the survey data will be presented in a final report to be published in mid-2017.

1.1 SURVEY OBJECTIVES

The 2016 UDHS was undertaken to address the needs of health sector programmes. The survey was designed to provide policy makers in the Ministry of Health and other organizations with information for monitoring and planning future interventions effectively, especially in its health sector reform activities.

Specifically, the 2016 UDHS collected information on fertility levels, marriage, sexual activity, fertility preferences, breastfeeding practices, and awareness and use of family planning methods. The 2016 UDHS also generated other indicators relevant to the Health Sector Strategic and Investment Plan (HSSP III), the National Development Plan II (NDP II), and the Sustainable Development Goals (SDGs).

The primary objective of the 2016 UDHS is to provide current estimates of basic demographic and health indicators. More specifically, the 2016 UDHS:

- Collected data at the national level, which allows the calculation of key demographic indicators, particularly fertility, and under-5, adult, and maternal mortality rates
- Provided data to explore the direct and indirect factors that determine the levels and trends of fertility and child mortality
- Measured the levels of contraceptive knowledge and practice
- Obtained data on key aspects of maternal and child health, including immunisation coverage among children, prevalence and treatment of diarrhoea and other diseases among children under age 5, and maternity care indicators, including antenatal visits and assistance at delivery
- Obtained data on child feeding practices, including breastfeeding, and collected anthropometric measures to assess nutritional status in women, men, and children
- Collected data on the knowledge and attitudes of women and men about sexually-transmitted diseases and HIV/AIDS, potential exposure to the risk of HIV infection (risk behaviours and condom use), and coverage of HIV Testing and Counselling (HTC) and other key HIV/AIDS programmes

- Collected dried blood spot (DBS) samples for vitamin A deficiency testing from children age 6-59 months
- Measured anaemia in women, men, and children
- Measured malaria prevalence in children as a follow-up to the 2015 Uganda Malaria Indicator Survey
- Measured key education indicators, including school attendance ratios, level of educational attainment, and literacy levels
- Collected information on the extent of disability
- Collected information on early childhood development
- Collected information on the extent of gender-based violence

2 SURVEY IMPLEMENTATION

2.1 SAMPLE DESIGN

The sampling frame used for the 2016 UDHS is the frame of the Uganda National Population and Housing Census (NPHC), conducted in 2014, and provided by the Uganda Bureau of Statistics (UBOS). The census frame is a complete list of all census *enumeration areas* (EAs) created for the 2014 NPHC. In Uganda, an EA is a geographic area that covers an average of 130 households. The sampling frame contains information about the EA location, type of residence (urban or rural), and the estimated number of residential households.

At the time of the NPHC, Uganda was divided administratively into 112 districts, which were grouped for this survey into 15 subregions. The sample for the 2016 UDHS was designed to provide estimates of key indicators for the country as a whole, for urban and rural areas separately, and for each of the 15 subregions. Indicators are also shown for three special areas: the Lake Victoria island districts, the mountain districts, and greater Kampala.

The 2016 UDHS subregions include the following districts:

- **South Central:** Butambala, Gomba, Mpigi, Bukomansimbi, Kalangala, Kalungu, Lwengo, Lyantonde, Masaka, Rakai, Sembabule, Wakiso
- **North Central:** Buikwe, Buvuma, Kayunga, Kiboga, Kyankwanzi, Luwero, Mityana, Mubende, Mukono, Nakaseke, Nakasongola
- **Kampala:** Kampala
- **Busoga:** Bugiri, Namutumba, Buyende, Iganga, Jinja, Kaliro, Kamuli, Luuka, Mayuge, Namayingo
- **Bukedi:** Budaka, Butaleja, Kibuku, Pallisa, Tororo, Busia
- **Bugisu:** Bulambuli, Kapchorwa, Kween, Bududa, Manafwa, Mbale, Sironko, Bukwo
- **Teso:** Amuria, Bukedea, Katakwi, Kumi, Ngora, Soroti, Kaberamaido, Serere
- **Karamoja:** Abim, Amudat, Kaabong, Kotido, Moroto, Nakapiripirit, Napak
- **Lango:** Alebtong, Amolatar, Dokolo, Lira, Otuke, Apac, Kole, Oyam
- **Acholi:** Agago, Amuru, Gulu, Lamwo, Pader, Kitgum, Nwoya
- **West Nile:** Adjumani, Arua, Koboko, Maracha, Moyo, Nebbi, Yumbe, Zombo
- **Bunyoro:** Buliisa, Hoima, Kibaale, Kiryandongo, Masindi
- **Tooro:** Bundibugyo, Kabarole, Kasese, Ntoroko, Kyenjojo, Kamwenge, Kyegegwa
- **Kigezi:** Kabale, Kisoro, Kanungu, Rukungiri
- **Ankole:** Buhweju, Bushenyi, Ibanda, Isingiro, Kiruhura, Mbarara, Mitooma, Ntungamo, Rubirizi, Sheema

The 2016 UDHS special areas include the following districts:

- **Islands:** Islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts
- **Mountains:** Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sronko, Mbale, and Kaabong districts
- **Greater Kampala:** Kampala district and urban areas in Mukono and Wakiso districts

The 2016 UDHS sample was stratified and selected in two stages. In the first stage, 697 EAs were selected from the 2014 Uganda NPHC; 162 EAs in urban areas and 535 in rural areas. One cluster from Acholi subregion was eliminated because of land disputes. Households comprised the second stage of sampling. A listing of households was compiled in each of the 696 accessible selected EAs from April–October 2016, with some listing overlapping with fieldwork. Maps were drawn for each of the sampled clusters and of all the listed households. The listing excluded institutional living arrangements such as army barracks, hospitals, police camps, and boarding schools. To minimise the task of household listing, each large EA (i.e., more than 300 households) selected for the 2016 UDHS was segmented. Only one segment was selected for the survey with probability proportional to the segment size. The household listing was conducted only in the selected segment. Thus, a 2016 UDHS cluster is either an EA or a segment of a EA. In total, a representative sample of 20,880 households (30 per EA or EA segment) was randomly selected for the 2016 UDHS.

The allocation of the sample EAs features a power allocation with a small adjustment because a proportional allocation would not meet the minimum number of clusters per survey domain required for a DHS survey. The sample EAs were selected independently from each stratum using probability proportional to size. The 20,880 selected households resulted in 18,506 women successfully interviewed, with an average of 1,200 complete interviews per domain.

All women age 15-49 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In one-third of the sampled households, all men age 15-54, including both usual residents and visitors who stayed in the household the night before the interview, were eligible for individual interview. In the subsample of households selected for the male survey, anaemia testing was performed among eligible women age 15-49 and men age 15-54 who consented to being tested, and among children age 6-59 months whose parents or guardians consented. In the same subsample, blood samples were collected from children age 6-59 months whose parents or guardians consented to malaria testing with rapid diagnostic test (RDT) kits and laboratory testing of vitamin A deficiency. Height and weight information was also collected from eligible women and men, as well as children age 0-59 months. In addition, a sub-sample of one eligible woman in two-thirds of households (those households not selected for the male survey and biomarker collection) and one eligible man in one-third of households (those households selected for the male survey) was randomly selected to be asked questions about domestic violence.

2.2 QUESTIONNAIRES

Four questionnaires were used for the 2016 UDHS: the Household Questionnaire, the Woman's Questionnaire, the Man's Questionnaire, and the Biomarker Questionnaire. These questionnaires, based on The DHS Program's standard Demographic and Health Survey questionnaires, were adapted to reflect the population and health issues relevant to Uganda. Input was solicited from various stakeholders representing government ministries and agencies, nongovernmental organisations, and development partners. After the preparation of the questionnaires in English, the questionnaires were then translated into eight major languages: Ateso, Ngakarimojong, Luganda, Lugbara, Luo, Runyankole-Rukiga, Runyoro-Rutoro, and Lusoga. The Household, Woman's, and Man's Questionnaires were programmed into tablet computers to facilitate computer-assisted personal interviewing (CAPI) for data collection purposes, with

the capability to choose any of the nine languages for each questionnaire. The Biomarker Questionnaire was completed on paper during data collection, and then entered into the CAPI system.

The Household Questionnaire listed all members of and visitors to the selected households. Basic demographic information was collected on the characteristics of each person, including his or her age, sex, marital status, education, and relationship to the head of the household. The parents' survival status was determined for children under age 18. The data on age and sex of household members obtained in the Household Questionnaire were used to identify women and men who were eligible for individual interviews, anthropometry measurement, and anaemia testing. The Household Questionnaire was also used to identify children for anthropometry measurement, anaemia and malaria testing, and blood sample collection for vitamin A testing. The Household Questionnaire also collected information on characteristics of the household's dwelling unit, such as source of water, type of toilet facilities, materials used for the floor of the dwelling unit, and ownership of various durable goods. The Household Questionnaire further collected information on the ownership and use of bed nets, child discipline, road traffic accidents and other causes of injury/death, and death in the household. An additional module based on the Short Set of disability questions developed by the Washington Group on Disability Statistics to estimate the prevalence of disabilities among persons age 5 or more was also included in the Household Questionnaire.

The Woman's Questionnaire collected information from all eligible women age 15-49. These women were asked questions on:

- Background characteristics: age, education, and media exposure
- Reproduction: children ever born, birth history, and current pregnancy
- Family planning: knowledge and use of contraception, sources of contraceptive methods, and information on family planning
- Maternal and child health, breastfeeding, and nutrition: prenatal care, delivery, postnatal care, breastfeeding and complementary feeding practices, vaccination coverage, prevalence and treatment of diarrhoea, symptoms of acute respiratory infection (ARI), fever, knowledge of oral rehydration salts (ORS) and use of oral rehydration therapy (ORT), breastfeeding, and feeding practices
- Marriage and sexual activity: marital status, age at first marriage, number of unions, age at first sexual intercourse, recent sexual activity, number and type of sexual partners, use of condoms, knowledge and experience of obstetric fistula, and female genital cutting
- Fertility preferences: desire for more children, ideal number of children, gender preferences, and intention to use family planning
- Husband's background and woman's work: husband's age, level of education, and occupation, and woman's occupation and sources of earnings
- STDs and HIV/AIDS: knowledge of STDs and AIDS, methods of transmission, sources of information, behaviours to avoid STDs and HIV, and stigma
- Knowledge, attitudes, and behaviours related to other health issues such as injections and smoking
- Adult and maternal mortality
- Domestic violence (1 woman per household)
- Early childhood development

The Man's Questionnaire was administered to all men age 15-54 in the subsample of households selected for the male survey. The Man's Questionnaire collected much of the same information elicited with the Woman's Questionnaire although it was shorter and did not contain a detailed reproductive history, or questions on maternal and child health.

The Biomarker Questionnaire recorded the anthropometry measurements, anaemia and malaria testing results, and the vitamin A sample collection for testing in the laboratory, as well as the signatures of the fieldworker who conducted the interview and obtained consent.

For this survey, interviewers used tablet computers to record all questionnaire responses during the interviews. The tablet computers were equipped with Bluetooth® technology to enable remote electronic transfer of files, such as assignments from the team supervisor to the interviewers, individual questionnaires among survey team members, and completed questionnaires from interviewers to team supervisors. The computer-assisted personal interviewing (CAPI) data collection system employed in the 2016 UDHS was developed by The DHS Program with the mobile version of CSPro. The CSPro software was developed jointly by the U.S. Census Bureau, Serpro S.A., and The DHS Program.

2.3 ANTHROPOMETRY, ANAEMIA TESTING, MALARIA TESTING, AND VITAMIN A DEFICIENCY TESTING

The 2016 UDHS incorporated four biomarkers: anthropometry, anaemia testing, malaria testing, and vitamin A testing. Biomarkers were collected in the one-third of households selected for the male survey. In contrast with the data collection procedure for the household and individual interviews, data related to the biomarkers were initially recorded on a paper Biomarker Questionnaire and subsequently entered into interviewers' tablet computers. The survey protocol, including biomarker collection, was reviewed and approved by the ICF Institutional Review Board.

Anthropometry. Height and weight measurements were recorded for children age 0-59 months, women age 15-49, and men age 15-54.

Anaemia testing. Blood specimens for anaemia testing were collected from eligible women and men who voluntarily consented to be tested and from all children age 6-59 months for whom consent was obtained from their parents or the adult responsible for the children. Blood samples were obtained from a drop of blood taken from a finger prick (or a heel prick for children age 6-11 months). A drop of blood from the prick site was drawn into a microcuvette and haemoglobin analysis was carried out on-site with a battery-operated portable HemoCue analyser. Results were provided verbally and in writing. Parents of children with a haemoglobin level below 8 g/dl were instructed to take the child to a health facility for follow-up care. Likewise, nonpregnant women, pregnant women, and men were referred for follow-up care if their haemoglobin levels were below 8 g/dl, 7 g/dl, and 8 g/dl, respectively. All households in which anaemia testing was conducted were given a brochure that explained the causes and prevention of anaemia.

Malaria testing. Malaria testing was only carried out among children age 6-59 months; no adults were tested. With the same finger (or heel) prick used for anaemia testing, a drop of blood was tested immediately using the SD Bioline Pf/Pv RDT, which is a qualitative test for the detection of histidine-rich protein II (HRP-II) antigen of *Plasmodium falciparum* and/or *Plasmodium vivax* in human whole blood. *Plasmodium falciparum* (Pf) is the predominant *Plasmodium* species found in Uganda. A tiny volume of blood is captured with a disposable sample applicator and placed in the well of the testing device. All health technicians were trained to perform RDTs in the field according to the manufacturers' instructions. Technicians read, interpreted, and recorded the RDT results after 15 minutes, following the instructions in the kit insert. The RDT results were recorded as Pf positive, Pv positive, Pf/Pv positive, or negative, with faint test lines being considered positive. As with anaemia testing, malaria RDT results were provided to the child's parent or guardian in oral and written form and were recorded on the Household Questionnaire. Children who tested positive for malaria by RDT were offered a full course of treatment according to the standard procedures for treating malaria in Uganda, they did not have a severe case of malaria (diagnosed

by symptoms or the presence of severe anaemia), were not currently on treatment, and had not completed a full course of artemisinin-based combination therapy (ACT) during the preceding 2 weeks. Nurses on each field team were instructed to ask about signs of severe malaria and about any medications the child might be taking. The nurses then provided the age-appropriate dose of ACT and instructions for administering the medicine to the child.[1,2] The anaemia brochure also contained information on malaria, and was given to all households in which malaria testing was conducted.

Vitamin A deficiency testing. Blood collection for vitamin A testing was only carried out among children age 6-59 months; no adults were tested. Using the same finger (or heel) prick used for anaemia and malaria testing, a drop of blood was collected on a filter paper card. The protocol for blood specimen collection and analysis was based on the anonymous linked protocol developed for The DHS Program. This protocol allows for merging of vitamin A deficiency test results with the sociodemographic data collected in the individual questionnaires after removal of all information that could potentially identify an individual.

Interviewers explained the procedure, the confidentiality of the data, and the fact that the test results would not be made available to respondents. If a parent or guardian consented to the testing, up to five blood spots from the finger/heel prick were collected on a filter paper card to which a barcode label unique to the child was affixed. A duplicate label was attached to the Biomarker Data Collection Form. A third copy of the same barcode was affixed to the Dried Blood Spot Transmittal Sheet to track the blood samples from the field to the laboratory.

The parent or guardian of child was asked if they would consent to the laboratory storing the child's blood sample for future unspecified testing. If the parent or guardian did not consent to additional testing on the sample, it was indicated on the Biomarker Data Collection Form that they refused additional tests on their child's specimen, and the words "no additional testing" were written on the filter paper card.

Blood samples were dried overnight and packaged for storage the following morning. Samples were periodically transported to the laboratory at the biochemistry department at Makerere University in Kampala. Upon arrival at the laboratory, each blood sample was logged into the CSPro vitamin A Test Tracking System database, given a laboratory number, and stored at -20˚C until tested.

The vitamin A testing protocol stipulated that blood could be tested only after questionnaire data collection had been completed, the data had been verified and cleaned, and all unique identifiers other than the anonymous barcode number had been removed from the data file. At the time of this report's release, vitamin A testing had not been completed.

Upon finalising vitamin A testing, the vitamin A test results for the 2016 UDHS will be entered into a spreadsheet with a barcode as the unique identifier for each result. The barcode will be used to link the vitamin A test results with the data from the individual questionnaires. Data from the vitamin A results and linked demographic and health data will be published in the 2016 UDHS Final Report.

[1] Dosage of ACT was based on the age of the recipient. The proper dosage for a child age 4 months to 3 years is one tablet of artemether-lumefantrine (co-formulated tablets containing 20 mg artemether and 120 mg lumefantrine) to be taken twice daily for three days, while the dosage for a child age 3-7 is two tablets of artemether-lumefantrine to be taken twice daily for three days.

[2] Children who exhibited signs of severe malaria (based on symptoms or the laboratory confirmation of severe anaemia) were referred to the nearest facility for treatment.

2.4 PRETEST

The UDHS technical team, composed of UBOS staff and ICF, participated in a 2-day training of trainers (TOT) conducted March 17-18, 2016. Immediately following the TOT, the pretest training took place March 21–April 8, 2016 at the Imperial Golf View Hotel in Entebbe Municipality. The UDHS technical team and ICF technical specialists trained 45 participants to administer the paper and electronic Household, Woman's, and Man's Questionnaires with tablet computers, and 8 participants to take anthropometric measurements; collect blood samples for haemoglobin, malaria, and vitamin A testing; and complete the paper Biomarker Questionnaire. All trainees had some experience with household surveys, either involvement in previous Uganda DHS surveys or in other similar surveys such as the Uganda National Panel Survey. The pretest fieldwork was conducted April 13-15, 2016. The pretest fieldwork was conducted in clusters surrounding the training venue in Entebbe Municipality that were not included in the 2016 UDHS survey sample area, which covered approximately 240 households. The UDHS technical team and ICF conducted debriefing sessions with the pretest field staff on April 16 2016; modifications to the questionnaires were made based on lessons learned from the exercise. Teams then spent an additional week upcountry testing the translations.

2.5 TRAINING OF FIELD STAFF

UBOS recruited and trained a total of 173 fieldworkers (108 women and 65 men) to serve as supervisors, CAPI managers, interviewers, health technicians, and reserve interviewers for the main fieldwork. Health technicians were trained separately from interviewers. The training took place from 14 May 2016 to 14 June 2016 at the Imperial Golf View Hotel in Entebbe Municipality. The training course included instruction on interviewing techniques and field procedures, a detailed review of questionnaire content, instruction on administering the paper and electronic questionnaires, mock interviews between participants in the classroom, and practice interviews with actual respondents in areas outside of the 2016 UDHS survey sample.

Twenty-one individuals were recruited and trained on collecting biomarker data, including taking height and weight measurements, testing for anaemia by measuring haemoglobin levels, and preparing dried blood spots (DBS) for subsequent vitamin A deficiency testing. The biomarker training was held from 21 May 2016 to 14 June 2016 at the same venue with interviewers. The training included lectures, demonstrations of biomarker measurement or testing procedures, field practice with children at a health clinic, and standardisation of height and weight measurements.

To help place the importance of the 2016 UDHS into context for the trainees, the training also included presentations by staff from the Ministry of Health, UN Women, and UNICEF on Uganda-specific policies and programmes on child immunisation, domestic violence, and early childhood development.

A two-day field practice was organised on June 11 and 13 2016 to provide trainees with additional hands-on practice before the actual fieldwork.

Training participants were evaluated through classwork, in-class exercises, quizzes, and observations conducted during field practice. A total of 84 participants were selected to serve as interviewers, 21 as health technicians, 21 as field data managers, and 21 as team leaders. The selection of team leaders and field data managers was based on experience in leading survey teams and performance during the pretest and main training. Team leaders and field data managers received additional instructions and practice on performing supervisory activities with the CAPI system. Supervisory activities included assigning households and receiving completed interviews from interviewers, recognising and dealing with error messages, receiving a system update and distributing updates to interviewers, completing biomarker questionnaires and DBS transmittal sheets, resolving duplicated cases, closing clusters, and transferring interviews to the central office via a secure Internet file streaming system (IFSS). In addition to the CAPI material, team leaders and field data managers received additional training on their roles and responsibilities.

2.6 FIELDWORK

Data collection was conducted by 21 field teams, each consisting of one team leader, one field data manager, three female interviewers, one male interviewer, one health technician, and one driver. The health technicians were responsible for anthropometry measurements, blood sample collection for haemoglobin and malaria testing, and DBS specimen collection for the vitamin A testing. Electronic data files were transferred from each interviewer's tablet computer to the team supervisor's tablet computer every day. The field supervisors transferred data to the central data processing office via IFSS. Senior staff from Makerere University School of Public Health, the Ministry of Health, UBOS, and a survey technical specialist from The DHS Program coordinated and supervised fieldwork activities. Data collection took place over a 6-month period, from 20 June 2016 through 16 December 2016.

2.7 DATA PROCESSING

All electronic data files for the 2016 UDHS were transferred via IFSS to the UBOS central office in Kampala, where they were stored on a password-protected computer. The data processing operation included registering and checking for inconsistencies, incompleteness, and outliers. Data editing and cleaning included structure and consistency checks to ensure completeness of work in the field. The central office also conducted secondary editing, which required resolution of computer-identified inconsistencies and coding of open-ended questions. The data were processed by four staff (two programmers and two data editors) who took part in the main fieldwork training. They were supervised by three senior staff from UBOS. Data editing was accomplished with CSPro software. Secondary editing and data processing were initiated in August and completed in January 2017.

2.8 COMMUNITY MOBILIZATION

Prior to the onset of fieldwork, the UBOS Communication and Public Relations Team conducted advocacy and mobilisation activities that were designed to encourage promotion of the 2016 UDHS and encourage maximum community support and participation.

Radio and television talk shows and community meetings were conducted to mobilise the general public and create greater public awareness. The advocacy also included field visits to the local communities before fieldwork began in a given area. During these visits, the advocacy teams discussed the survey objectives, implementation, content, and how the community would benefit from the exercise.

3 KEY FINDINGS

3.1 RESPONSE RATES

Table 1 shows response rates for the 2016 UDHS. A total of 20,791 households were selected for the sample, of which 19,938 were occupied. Of the occupied households, 19,588 were successfully interviewed, which yielded a response rate of 98 percent.

In the interviewed households, 19,088 eligible women were identified for individual interviews. Interviews were completed with 18,506 women, yielding a response rate of 97 percent. In the subsample of households selected for the male survey, 5,676 eligible men were identified and 5,336 were successfully interviewed, yielding a response rate of 94 percent. Response rates were higher in rural than in urban areas, with the rural-urban difference being more pronounced among men (95 and 90 percent, respectively) than among women (98 and 95 percent, respectively).

Table 1 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Uganda DHS 2016

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected	4,843	15,948	20,791
Households occupied	4,625	15,313	19,938
Households interviewed	4,469	15,119	19,588
Household response rate[1]	96.6	98.7	98.2
Interviews with women age 15-49			
Number of eligible women	4,619	14,469	19,088
Number of eligible women interviewed	4,379	14,127	18,506
Eligible women response rate[2]	94.8	97.6	97.0
Interviews with men age 15-54			
Number of eligible men	1,280	4,396	5,676
Number of eligible men interviewed	1,150	4,186	5,336
Eligible men response rate[2]	89.8	95.2	94.0

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

3.2 CHARACTERISTICS OF RESPONDENTS

Table 2 shows the weighted and unweighted numbers and the weighted percent distributions of women and men age 15-49 interviewed in the 2016 UDHS, by background characteristics. About 6 respondents in 10 were under age 30, reflecting the young age structure of the population. The majority of respondents are Catholic (40 percent of women and men) or Anglican (31 percent of women and 33 percent of men), while 13 percent of women and 14 percent of men are Muslim.

One in four women (26 percent) and two in five men (41 percent) have never married. Women are more likely to be married or living together with a partner (i.e., in union) than men (61 percent and 54 percent, respectively). Women are also more likely than men to report being divorced or separated (11 percent and 5 percent, respectively). Three percent of women reported being widowed, as compared with less than 1 percent of men.

A majority of respondents live in rural areas (73 percent of women and 75 percent of men). Women have slightly less education than men; 10 percent of women have no education compared with 4 percent of their male counterparts. Twelve percent of men reported attending more than secondary school, compared with 8 percent of women.

Table 2 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Uganda DHS 2016

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	23.0	4,264	4,276	25.6	1,288	1,270
20-24	20.7	3,822	3,782	18.8	949	944
25-29	16.5	3,051	3,014	14.7	741	740
30-34	13.7	2,543	2,600	14.6	735	737
35-39	10.9	2,011	2,029	9.8	491	497
40-44	8.7	1,608	1,621	10.2	511	492
45-49	6.5	1,207	1,184	6.4	320	363
Religion						
Catholic	39.6	7,335	7,552	40.4	2,035	2,074
Anglican	31.2	5,774	5,799	33.4	1,685	1,721
Muslim	12.9	2,388	2,166	13.5	681	617
Pentecostal	13.3	2,464	2,429	9.6	482	472
Seventh Day Adventist	1.6	305	292	1.4	72	66
Other	1.3	240	268	1.6	83	93
Ethnicity						
Acholi	4.9	906	1,081	5.5	276	336
Alur	2.8	518	546	2.7	138	148
Baganda	16.8	3,104	2,436	18.0	905	698
Bagisu	5.1	940	991	4.4	224	258
Bakiga	6.8	1,264	1,419	6.9	349	375
Bakonzo	2.5	459	415	2.3	118	106
Banyankore	10.8	2,002	1,687	10.6	533	443
Banyoro	3.1	565	609	2.4	120	138
Basoga	7.6	1,409	1,161	7.5	377	340
Batoro	2.9	539	499	3.1	156	153
Iteso	7.5	1,388	1,637	7.6	382	440
Lango	5.7	1,051	1,298	6.6	332	410
Lugbara	3.0	549	539	2.3	117	121
Other	20.6	3,812	4,188	20.1	1,012	1,077
Marital status						
Never married	25.8	4,783	4,738	41.3	2,080	2,027
Married	30.3	5,614	5,813	34.1	1,716	1,835
Living together	30.3	5,609	5,566	19.4	979	920
Divorced/separated	10.7	1,978	1,866	4.9	248	246
Widowed	2.8	522	523	0.3	14	15
Residence						
Urban	26.7	4,943	4,379	25.3	1,274	1,106
Rural	73.3	13,563	14,127	74.7	3,763	3,937
Region						
South Central	13.5	2,494	1,615	13.1	661	423
North Central	10.6	1,963	1,410	11.8	592	433
Kampala	5.5	1,025	1,300	5.8	291	340
Busoga	9.1	1,690	1,530	8.2	412	417
Bukedi	6.3	1,169	1,205	6.6	335	341
Bugisu	5.0	921	957	5.1	258	274
Teso	5.9	1,099	1,347	5.5	276	328
Karamoja	2.0	365	741	1.6	80	153
Lango	5.5	1,010	1,236	6.5	328	403
Acholi	5.0	924	1,110	5.4	271	333
West Nile	6.7	1,247	1,281	5.6	281	297
Bunyoro	5.5	1,014	1,213	5.3	265	323
Tooro	7.3	1,357	1,301	7.9	400	393
Kigezi	4.0	732	959	3.6	181	234
Ankole	8.1	1,498	1,301	8.1	406	351
Special area[1]						
Islands[2]	1.1	203	1,001	1.5	75	355
Mountains[3]	8.0	1,481	1,493	8.3	420	418
Greater Kampala[4]	11.1	2,048	1,802	11.1	560	461
Education						
No education	9.6	1,781	2,071	3.8	194	204
Primary	57.4	10,630	10,893	54.9	2,767	2,863
Secondary	25.1	4,639	4,213	28.8	1,451	1,402
More than secondary	7.9	1,456	1,329	12.4	626	574
Wealth quintile						
Lowest	17.5	3,247	3,884	17.0	859	1,008
Second	18.4	3,397	3,640	17.9	899	993
Middle	18.7	3,460	3,485	19.1	963	968
Fourth	19.9	3,683	3,454	21.9	1,102	1,019
Highest	25.5	4,720	4,043	24.1	1,213	1,055
Total 15-49	100.0	18,506	18,506	100.0	5,037	5,043
50-54	na	na	na	na	299	293
Total 15-54	na	na	na	na	5,336	5,336

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
na = not applicable.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.3 FERTILITY

To generate data on fertility, all women who were interviewed were asked to report the total number of sons and daughters to whom they had ever given birth. To ensure that all information was reported, women were asked separately about children still living at home, those living elsewhere, and those who had died. A complete birth history was then obtained, including information on the sex, date of birth, and survival status of each child. Age at death for children who had died was also recorded.

Table 3 shows age-specific fertility rates among women by five-year age groups for the three-year period preceding the survey. Age-specific and total fertility rates were calculated directly from the birth history data. The sum of age-specific fertility rates (known as the Total Fertility Rate, or TFR) is a summary measure of the level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the current observed age-specific rates. If fertility were to remain constant at current levels, a woman from Uganda would bear an average of 5.4 children in her lifetime.

Table 3 Current Fertility

Age-specific and total fertility rates, general fertility rate, and crude birth rate for the 3 years preceding the survey, according to residence, Uganda DHS 2016

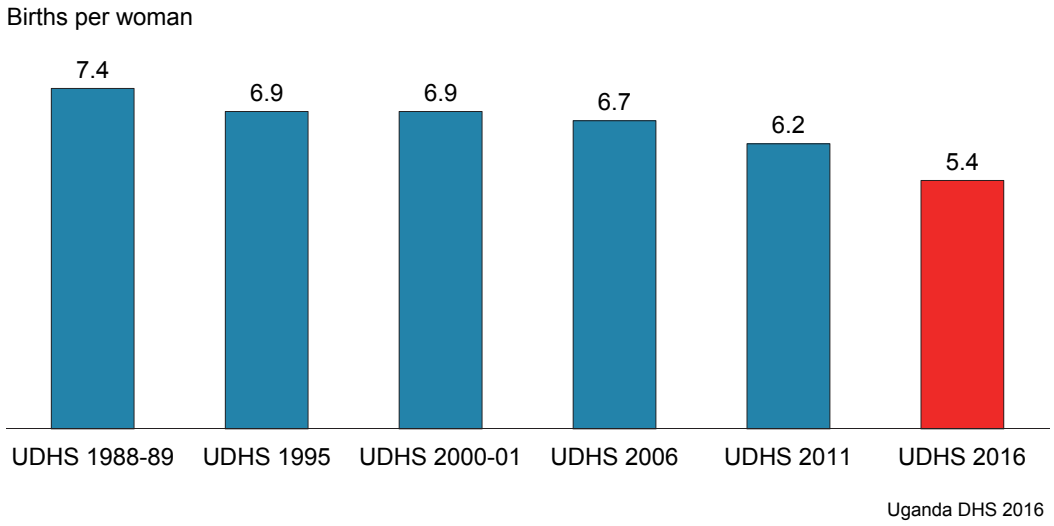
Age group	Residence		Total
	Urban	Rural	
15-19	92	145	132
20-24	197	289	260
25-29	194	270	247
30-34	152	229	209
35-39	102	162	147
40-44	47	73	67
45-49	14	14	14
TFR (15-49)	4.0	5.9	5.4
GFR	146	205	189
CBR	37.0	39.3	38.7

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 age 15-44.
CBR: Crude birth rate expressed per 1,000 population.

Trends in fertility in Uganda since the late 1980s can be examined by observing a time series of estimates produced from demographic surveys conducted in Uganda over the last 30 years, beginning with the 1988-89 UDHS. The TFRs for the six UDHS surveys since 1988-89 are presented in Figure 1. The data indicate that fertility in Uganda has been declining since the 1980s. The TFR declined from 7.4 children per woman in 1988-89 to 5.4 children per woman in 2016.

Data presented in Table 3 also indicate that fertility is notably higher among rural women than among urban women. On average, rural women will give birth to nearly two more children during their reproductive years than urban women (5.9 and 4.0, respectively).

Figure 1 **Trends in total fertility rate, 1988-89–2016**



3.4 TEENAGE PREGNANCY AND MOTHERHOOD

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

Table 4 shows that 25 percent of adolescents age 15-19 in Uganda have begun childbearing: 19 percent of women age 15-19 have given birth, and another 5 percent were pregnant with their first child at the time of interview. As expected, the proportion of women age 15-19 who have begun childbearing rises rapidly with age, from 3 percent among women age 15 to 22 percent among women age 17 and 54 percent among women age 19. Adolescent childbearing is more common in rural than in urban areas (27 versus 19 percent, respectively). There is regional variation, with Teso subregion having the highest proportion of adolescents who have begun childbearing and Kigezi subregion having the lowest (31 and 16 percent respectively). The proportion of teenagers who have started childbearing decreases with increasing level of education: slightly more than one third of teenagers age 15-19 with no education (35 percent) have begun childbearing compared with 11 percent of those who have more than secondary education. Teenagers in the lowest wealth quintile tend to begin childbearing earlier than those in the highest quintile (34 versus 15 percent, respectively).

Table 4 Teenage pregnancy and motherhood

Percentage of women age 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, according to background characteristics, Uganda DHS 2016

Background characteristic	Percentage of women age 15-19 who: Have had a live birth	Are pregnant with first child	Percentage who have begun childbearing	Number of women
Age				
15	1.6	1.6	3.1	871
16	5.5	3.8	9.4	966
17	15.0	7.0	22.1	792
18	33.0	7.2	40.2	851
19	45.8	8.0	53.9	785
Residence				
Urban	14.7	4.0	18.8	1,034
Rural	20.9	5.8	26.7	3,230
Region				
South Central	15.4	4.2	19.6	514
North Central	23.6	6.7	30.3	418
Kampala	14.8	2.0	16.8	200
Busoga	15.6	5.1	20.7	389
Bukedi	22.0	7.5	29.5	326
Bugisu	23.4	4.8	28.2	236
Teso	26.2	5.2	31.4	296
Karamoja	16.5	7.1	23.6	80
Lango	22.4	5.5	27.9	254
Acholi	19.1	4.7	23.8	246
West Nile	19.3	3.0	22.4	321
Bunyoro	21.8	7.1	29.0	251
Tooro	22.4	7.9	30.3	296
Kigezi	8.8	6.7	15.5	162
Ankole	14.1	4.8	18.9	273
Special area[1]				
Islands[2]	39.2	9.1	48.3	38
Mountains[3]	20.1	4.2	24.3	367
Greater Kampala[4]	13.1	3.6	16.7	395
Education				
No education	29.8	4.8	34.6	76
Primary	22.3	6.4	28.7	2,759
Secondary	13.5	3.5	17.0	1,351
More than secondary	6.7	4.3	11.0	78
Wealth quintile				
Lowest	26.7	6.8	33.5	764
Second	25.8	6.0	31.9	840
Middle	17.6	7.0	24.6	815
Fourth	16.5	5.0	21.5	854
Highest	12.2	2.9	15.1	990
Total	19.4	5.4	24.8	4,264

[1] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[2] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[3] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[4] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.5 FERTILITY PREFERENCES

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

Overall, nearly four in ten married women age 15-49 (38 percent) do not want any more children or are sterilised. The proportion of women who want to stop childbearing or are sterilised increases with the number of living children, from 4 percent of women with one child to 25 percent of women with three children to 80 percent of women with six or more children. The proportion of women who want to have another child soon decreases sharply with the number of living children, from 80 percent among women with no living children to 24 percent among women with one living child, and to 7 percent or less among those with five or more living children. The majority (85 percent) of married women want to either space their next birth or cease childbearing altogether.

Table 5 Fertility preferences according to number of living children

Percent distribution of currently married women age 15-49 by desire for children, according to number of living children, Uganda DHS 2016

	Number of living children[1]							
Desire for children	0	1	2	3	4	5	6+	Total
Have another soon[2]	79.7	24.0	18.3	12.6	10.9	7.2	3.0	14.7
Have another later[3]	10.3	66.8	64.5	53.4	39.0	25.7	9.6	40.2
Have another, undecided when	1.5	2.5	2.4	2.7	2.3	1.4	1.0	2.0
Undecided	0.3	0.9	1.8	4.5	3.8	4.1	3.4	3.0
Want no more	0.6	4.0	11.5	24.3	40.5	54.6	72.1	35.1
Sterilized[4]	0.4	0.1	0.5	0.9	1.8	4.4	7.6	2.8
Declared infecund	7.4	1.6	0.9	1.6	1.7	2.5	3.4	2.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	429	1,670	1,905	1,780	1,500	1,293	2,644	11,223

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

3.6 FAMILY PLANNING

Family planning refers to a conscious effort by a couple to limit or space the number of children they have through the use of contraceptive methods. Contraceptive methods are classified as modern or traditional methods. Modern methods include female sterilisation, male sterilisation, the pill, the intrauterine contraceptive device (IUD), implants, injectables, male condoms, female condoms, emergency contraception, standard days method (SDM), and lactational amhenorrea method (LAM). Methods such as rhythm, withdrawal, and folk methods are grouped as traditional.

Table 6 shows the percent distribution of currently married women and sexually active unmarried women by the contraceptive method they currently use and according to background characteristics. Overall, 39 percent of currently married women are using a method of family planning; 35 percent of currently married women are using a modern method while 4 percent of currently married women are using a traditional method. Among currently married women, the most popular methods are injectables (19 percent) and implants (6 percent). The contraceptive prevalence rate (CPR) among married women generally increases with age, peaking at age 40-45 (47 percent) before declining to 29 percent among women age 45-49. Women with no education are less likely (26 percent) than women who have any education (38-51 percent) to use a method. Contraceptive use increases with wealth and number of living children.

Among sexually active unmarried women, 51 percent are currently using a contraceptive method; 47 percent are using a modern method and 4 percent are using a traditional method. The most commonly used methods among sexually active unmarried women are injectables (21 percent) and male condoms (14 percent).

Table 6 Current use of contraception by background characteristics

Percent distribution of currently married women and sexually active unmarried women age 15-49, by contraceptive method currently used, according to background characteristics, Uganda DHS 2016

Background characteristic	Any method	Any modern method	Modern method												Any tradi-tional method	Traditional method			Not currently using	Total	Number of women
			Female sterili-zation	Male sterili-zation	Pill	IUD	Inject-ables	Implants	Male condom	Female condom	Emer-gency contra-ception	SDM	LAM	Other		Rhythm	With-drawal	Other			
									CURRENTLY MARRIED WOMEN												
Number of living children																					
0	8.1	6.2	0.2	0.0	0.1	0.3	2.8	0.1	1.7	0.0	0.9	0.1	0.0	0.0	1.9	0.6	1.3	0.0	91.9	100.0	781
1-2	37.0	33.3	0.3	0.0	1.9	1.5	19.9	5.2	3.1	0.0	0.0	0.4	0.9	0.0	3.6	1.2	2.4	0.1	63.0	100.0	3,526
3-4	44.5	40.3	1.3	0.1	2.7	2.1	22.2	7.5	2.7	0.0	0.0	0.6	1.2	0.0	4.2	1.2	2.9	0.2	55.5	100.0	3,142
5+	42.6	37.6	6.7	0.2	1.5	1.2	17.4	7.5	1.7	0.0	0.0	0.3	0.9	0.1	5.0	1.5	2.9	0.6	57.4	100.0	3,774
Age																					
15-19	21.9	20.7	0.0	0.0	1.3	0.6	13.4	2.7	2.2	0.0	0.0	0.1	0.4	0.0	1.2	0.5	0.8	0.0	78.1	100.0	850
20-24	34.0	31.1	0.0	0.0	0.9	0.8	19.8	5.2	2.6	0.0	0.3	0.3	1.2	0.0	2.9	1.0	1.7	0.1	66.0	100.0	2,445
25-29	43.0	38.7	0.2	0.1	2.0	1.7	23.0	7.5	2.5	0.0	0.0	0.3	1.3	0.0	4.3	1.2	3.0	0.1	57.0	100.0	2,359
30-34	42.9	38.6	1.8	0.0	3.2	2.2	19.7	7.8	2.2	0.0	0.0	0.6	1.1	0.0	4.3	1.2	2.9	0.2	57.1	100.0	1,996
35-39	44.1	39.5	5.3	0.3	2.0	1.9	18.8	7.3	2.5	0.0	0.1	0.4	0.9	0.0	4.6	1.2	3.0	0.4	55.9	100.0	1,551
40-44	47.1	40.4	10.6	0.1	2.1	1.9	15.5	6.5	2.5	0.0	0.0	0.4	0.6	0.1	6.8	2.6	3.6	0.5	52.9	100.0	1,183
45-49	29.0	23.4	7.0	0.1	1.0	0.5	8.1	3.5	2.3	0.0	0.0	0.6	0.0	0.2	5.7	1.2	3.4	1.1	71.0	100.0	839
Residence																					
Urban	46.0	40.7	2.6	0.0	3.9	2.3	19.4	6.8	3.6	0.0	0.3	0.5	1.2	0.1	5.3	1.3	3.9	0.2	54.0	100.0	2,644
Rural	36.8	33.0	2.8	0.1	1.2	1.2	18.2	6.1	2.1	0.0	0.0	0.4	0.8	0.0	3.8	1.2	2.2	0.3	63.2	100.0	8,579
Region																					
South Central	46.7	40.4	2.8	0.0	2.7	3.0	19.8	5.8	3.1	0.0	0.4	0.9	1.9	0.1	6.3	0.9	5.1	0.3	53.3	100.0	1,390
North Central	47.4	42.1	2.8	0.3	2.7	1.8	21.0	7.4	4.4	0.0	0.0	0.5	1.1	0.1	5.3	1.1	3.7	0.6	52.6	100.0	1,130
Kampala	44.8	39.4	1.5	0.0	6.7	2.5	16.7	5.2	4.6	0.0	0.2	0.8	0.9	0.2	5.4	1.8	3.4	0.2	55.2	100.0	485
Busoga	31.5	28.6	2.0	0.0	1.1	0.4	17.6	2.9	3.4	0.0	0.0	0.3	0.8	0.0	2.9	0.4	2.3	0.2	68.5	100.0	1,072
Bukedi	40.4	34.7	5.8	0.0	1.4	1.0	16.7	5.6	2.0	0.0	0.0	0.5	1.5	0.2	5.7	2.8	2.3	0.5	59.6	100.0	782
Bugisu	44.8	43.2	3.2	0.0	0.7	0.7	28.8	8.5	1.2	0.0	0.0	0.0	0.1	0.0	1.7	1.2	0.3	0.2	55.2	100.0	587
Teso	33.9	30.4	4.4	0.0	0.6	1.7	13.2	5.3	3.5	0.0	0.0	0.6	1.1	0.0	3.5	2.0	1.5	0.0	66.1	100.0	663
Karamoja	7.3	6.5	0.3	0.0	0.0	0.6	1.4	3.1	1.1	0.0	0.0	0.0	0.0	0.0	0.8	0.7	0.2	0.0	92.7	100.0	268
Lango	43.0	41.4	5.2	0.0	0.7	0.9	22.5	9.1	0.7	0.0	0.2	0.5	1.7	0.0	1.6	1.3	0.3	0.0	57.0	100.0	656
Acholi	31.3	30.2	3.6	0.0	0.4	1.5	15.2	7.3	1.3	0.2	0.0	0.2	0.5	0.0	1.1	0.7	0.4	0.0	68.7	100.0	544
West Nile	21.8	19.0	1.6	0.0	0.5	1.1	8.0	6.5	1.0	0.0	0.0	0.0	0.2	0.0	2.9	2.4	0.4	0.0	78.2	100.0	744
Bunyoro	31.2	29.6	1.7	0.3	1.7	0.9	17.3	5.1	1.5	0.0	0.0	0.1	1.0	0.0	1.6	0.7	0.6	0.3	68.8	100.0	615
Tooro	43.3	37.4	2.0	0.1	2.2	0.6	23.1	4.9	2.9	0.0	0.2	0.4	1.0	0.0	6.0	1.1	4.6	0.3	56.7	100.0	849
Kigezi	46.5	43.2	0.8	0.2	3.9	2.1	21.8	12.1	1.3	0.1	0.2	0.0	0.8	0.0	3.2	0.7	2.1	0.5	53.5	100.0	454
Ankole	43.1	36.2	1.7	0.2	2.1	1.9	21.7	7.0	1.4	0.0	0.0	0.0	0.1	0.0	6.9	1.1	5.3	0.5	56.9	100.0	984
Special area[1]																					
Islands[2]	35.5	32.3	1.7	0.0	0.1	0.4	20.1	6.0	2.4	0.0	0.0	0.5	1.0	0.2	3.2	0.7	2.2	0.3	64.5	100.0	144
Mountains[3]	40.1	37.2	2.8	0.1	1.6	0.6	24.9	5.2	1.3	0.0	0.1	0.2	0.5	0.0	2.8	0.9	1.8	0.1	59.9	100.0	921
Greater Kampala[4]	48.7	43.3	2.9	0.0	5.0	3.2	19.6	5.8	3.7	0.0	0.6	0.4	2.0	0.1	5.4	1.1	4.0	0.4	51.3	100.0	1,003
Education																					
No education	26.0	22.6	3.6	0.1	0.7	0.6	11.6	3.8	1.6	0.1	0.0	0.2	0.5	0.0	3.3	1.1	1.7	0.5	74.0	100.0	1,345
Primary	37.8	34.2	3.1	0.1	1.3	1.1	18.9	6.7	1.8	0.0	0.0	0.2	0.9	0.0	3.5	1.3	2.0	0.3	62.2	100.0	6,667
Secondary	45.4	40.5	1.4	0.0	3.3	1.3	22.5	6.5	3.6	0.0	0.1	0.5	1.1	0.1	4.9	0.9	3.9	0.1	54.6	100.0	2,353
More than secondary	51.1	43.0	2.4	0.0	4.1	6.0	15.4	5.9	5.4	0.0	0.7	1.5	1.5	0.0	8.1	2.3	5.8	0.0	48.9	100.0	857

(*Continued…*)

Table 6—*Continued*

Background characteristic	Any method	Any modern method	Modern method: Female sterilization	Male sterilization	Pill	IUD	Injectables	Implants	Male condom	Female condom	Emergency contraception	SDM	LAM	Other	Any traditional method	Traditional method: Rhythm	Withdrawal	Other	Not currently using	Total	Number of women
Wealth quintile																					
Lowest	24.5	22.4	2.3	0.0	0.5	0.8	11.6	4.7	1.3	0.0	0.0	0.2	0.9	0.0	2.1	1.3	0.6	0.2	75.5	100.0	2,163
Second	34.9	32.2	2.9	0.1	0.9	0.7	18.2	6.4	1.8	0.1	0.0	0.3	0.7	0.0	2.7	1.0	1.4	0.3	65.1	100.0	2,208
Middle	39.7	35.9	2.8	0.0	1.3	1.1	20.6	7.1	1.9	0.0	0.1	0.1	0.8	0.0	3.9	0.9	2.5	0.4	60.3	100.0	2,192
Fourth	45.5	40.2	2.7	0.3	2.5	1.4	21.8	6.8	2.9	0.0	0.0	0.6	1.1	0.1	5.2	1.3	3.5	0.5	54.5	100.0	2,185
Highest	48.8	42.2	2.9	0.0	3.9	3.0	20.1	6.2	4.0	0.0	0.3	0.7	1.0	0.1	6.6	1.6	4.8	0.1	51.2	100.0	2,476
Total	39.0	34.8	2.7	0.1	1.9	1.5	18.5	6.3	2.4	0.0	0.1	0.4	0.9	0.1	4.1	1.2	2.6	0.3	61.0	100.0	11,223
SEXUALLY ACTIVE UNMARRIED WOMEN																					
Region																					
Urban	57.5	52.1	0.4	0.0	7	1.4	13.5	7.9	20.8	0.0	0.7	0.4	0.0	0.0	5.4	1.5	3.3	0.6	42.5	100.0	328
Rural	46.8	44.4	0.7	0.0	3	0.9	24.7	4.9	10	0.0	0.0	0.0	0.2	0.0	2.4	0.6	1.5	0.3	53.2	100.0	588
Total	50.6	47.1	0.6	0.0	4	1.1	20.7	6	13.9	0.0	0.3	0.1	0.1	0.0	3.5	0.9	2.2	0.4	49.4	100.0	915

Note: If more than one method is used, only the most effective method is considered in this tabulation.
SDM = Standard days method.
LAM = Lactational amenorrhea method.
[1] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[2] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[3] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[4] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.
[5] Women who have had sexual intercourse within 30 days preceding the survey.

3.7 NEED AND DEMAND FOR FAMILY PLANNING

The proportion of women who want to stop childbearing or who want to space their next birth is a crude measure of the extent of the need for family planning, given that not all of these women are exposed to the risk of pregnancy and some may already be using contraception. This section discusses the extent of the need and potential demand for family planning services. Women who want to postpone their next birth for 2 or more years or who want to stop childbearing altogether but are not using a contraceptive method are said to have an unmet need for family planning. Pregnant women are considered to have an unmet need for spacing or limiting if their pregnancy was mistimed or unwanted. Similarly, amenorrhoeic women are categorised as having an unmet need if their last birth was mistimed or unwanted. Women who are currently using a family planning method are said to have a met need for family planning. Total demand for family planning services comprises those who fall in the met need and unmet need categories.

Table 7 presents data on unmet need, met need, and total demand for family planning among currently married women and sexually active unmarried women. Figure 2 presents trends in unmet need, modern contraceptive use, and percentage of total demand satisfied with modern methods among currently married women. These indicators help evaluate the extent to which family planning programmes in Uganda meet the demand for services. The definition of unmet need for family planning has been revised so that data on levels of unmet need are comparable over time and across surveys. The unmet need estimates in Figure 2 for the previous UDHS surveys have been recalculated using the revised definition of unmet need (Bradley et al. 2012).

Table 7 shows that 28 percent of currently married women have an unmet need for family planning services, while 39 percent of married women are currently using a contraceptive method. Therefore, nearly seven in ten currently married women in Uganda (67 percent) have a demand for family planning. At present, 58 percent of the total demand for family planning is being met, almost entirely by modern methods (52 percent of total demand). Thus, if all married women who said they want to space or limit their children were to use family planning methods, the CPR would increase from the current level of 39 percent to 67 percent.

Among sexually active unmarried women, 32 percent have an unmet need for family planning, and 51 percent are currently using a contraceptive method. The total demand for family planning among unmarried sexually active women is 83 percent, and at present 61 percent of the potential demand for family planning is being met. If all of the unmarried sexually active women who said they want to space or limit their births were to use family planning methods, the CPR would increase from 51 percent to 83 percent.

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

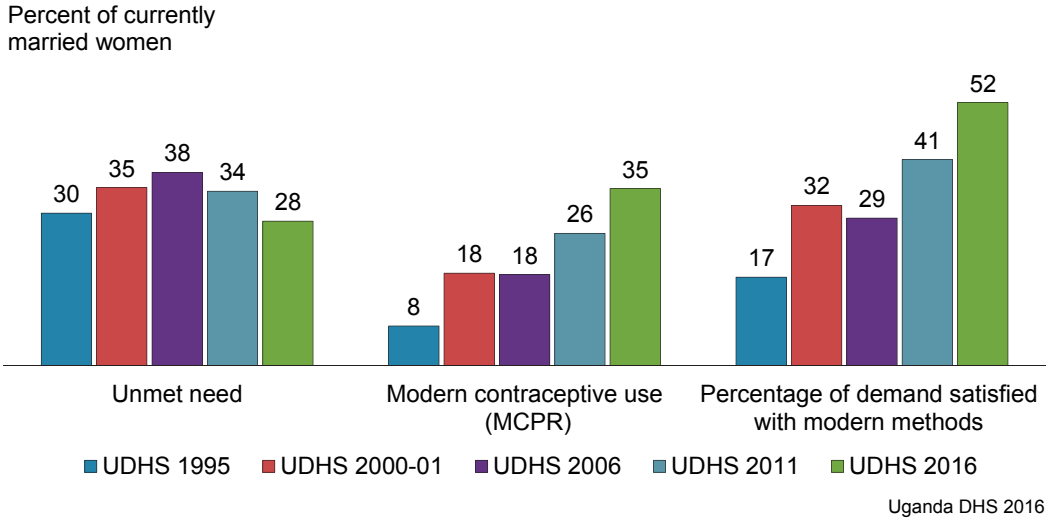
Percentage of currently married women and sexually active unmarried women age 15-49 with unmet need for family planning, percentage with met need for family planning, percentage with met need for family planning who are using modern methods, percentage with demand for family planning, percentage of the demand for family planning that is satisfied, and percentage of the demand for family planning that is satisfied with modern methods, according to background characteristics, Uganda DHS 2016

Background characteristic	Unmet need for family planning	Met need for family planning (currently using)		Total demand for family planning[3]	Number of women	Percentage of demand satisfied[1]	
		All methods	Modern methods[2]			All methods	Modern methods[2]
CURRENTLY MARRIED WOMEN							
Age							
15-19	30.4	21.9	20.7	52.3	850	41.8	39.5
20-24	29.3	34.0	31.1	63.3	2,445	53.7	49.1
25-29	26.9	43.0	38.7	70.0	2,359	61.5	55.4
30-34	29.8	42.9	38.6	72.7	1,996	59.0	53.1
35-39	30.3	44.1	39.5	74.4	1,551	59.3	53.2
40-44	26.9	47.1	40.4	74.1	1,183	63.6	54.5
45-49	22.4	29.0	23.4	51.5	839	56.4	45.3
Residence							
Urban	22.8	46.0	40.7	68.7	2,644	66.9	59.2
Rural	30.1	36.8	33.0	66.9	8,579	55.0	49.4
Region							
South Central	20.5	46.7	40.4	67.2	1,390	69.5	60.2
North Central	24.1	47.4	42.1	71.5	1,130	66.3	58.9
Kampala	24.0	44.8	39.4	68.8	485	65.1	57.3
Busoga	36.5	31.5	28.6	68.0	1,072	46.3	42.0
Bukedi	30.4	40.4	34.7	70.8	782	57.1	49.1
Bugisu	27.2	44.8	43.2	72.0	587	62.3	59.9
Teso	36.3	33.9	30.4	70.2	663	48.3	43.3
Karamoja	19.7	7.3	6.5	27.0	268	27.1	24.0
Lango	27.4	43.0	41.4	70.5	656	61.1	58.8
Acholi	39.0	31.3	30.2	70.2	544	44.5	42.9
West Nile	43.2	21.8	19.0	65.0	744	33.6	29.2
Bunyoro	28.8	31.2	29.6	60.0	615	52.0	49.3
Tooro	25.9	43.3	37.4	69.2	849	62.6	54.0
Kigezi	19.9	46.5	43.2	66.3	454	70.0	65.2
Ankole	23.0	43.1	36.2	66.1	984	65.1	54.7
Special area[1]							
Islands[2]	30.9	35.5	32.3	66.4	144	53.5	48.6
Mountains[3]	25.9	40.1	37.2	66.0	921	60.8	56.5
Greater Kampala[4]	21.9	48.7	43.3	70.6	1,003	69.0	61.3
Education							
No education	31.1	26.0	22.6	57.1	1,345	45.5	39.7
Primary	30.5	37.8	34.2	68.3	6,667	55.3	50.1
Secondary	23.4	45.4	40.5	68.7	2,353	66.0	58.9
More than secondary	20.7	51.1	43.0	71.8	857	71.1	59.9
Wealth quintile							
Lowest	37.3	24.5	22.4	61.8	2,163	39.6	36.3
Second	31.9	34.9	32.2	66.8	2,208	52.3	48.3
Middle	29.2	39.7	35.9	68.9	2,192	57.7	52.0
Fourth	22.9	45.5	40.2	68.4	2,185	66.5	58.8
Highest	21.5	48.8	42.2	70.2	2,476	69.4	60.1
Total	28.4	39.0	34.8	67.3	11,223	57.9	51.7
SEXUALLY ACTIVE UNMARRIED WOMEN							
Residence							
Urban	24.8	57.5	52.1	82.3	328	69.8	63.3
Rural	35.9	46.8	44.4	82.7	588	56.6	53.6
Total	31.9	50.6	47.1	82.5	915	61.3	57.1

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al., 2012.
[1] Percentage of demand satisfied is met need divided by total demand.
[2] Modern methods include female sterilization, male sterilization, pill, IUD, injectables, implants, male condom, female condom, emergency contraception, standard days method (SDM), lactational amenorrhea method (LAM), and other modern methods.
[3] Total demand is the sum of unmet need and met need.
[4] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[5] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[6] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[7] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.
[8] Women who have had sexual intercourse within 30 days preceding the survey.

Figure 2 shows that the proportion of married women with unmet need for family planning has changed over time, reaching a peak of 38 percent in 2006, decreasing to 34 percent in 2011, and continuing to decrease to 28 percent in 2016. At the same time, the proportion of married women using modern contraceptive methods has increased from 8 percent in 1995 to 35 percent in 2016. The percentage of the demand for family planning that is satisfied with modern contraceptive methods has also increased from 17 percent in 1995 to 52 percent in 2016.

Figure 2 **Trends in unmet need, modern contraceptive use, and percentage of demand satisfied with modern methods, 1995-2016**



3.8 EARLY CHILDHOOD MORTALITY

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP 2007). Estimates of childhood mortality are based on information collected in the birth history section of the questionnaire administered to women, which includes questions about women's aggregate childbearing experience (the number of sons and daughters who live with their mother, the number who live elsewhere, and the number who have died). Table 8 presents estimates for three successive five-year periods prior to the 2016 UDHS. The rates are estimated directly from the information in the birth history on a child's birth date, survivorship status, and age at death for children who died. This information is used to directly estimate the following five mortality rates:

Neonatal mortality:	the probability of dying within the first month of life
Postneonatal mortality:	the probability of dying after the first month of life but before the first birthday (the difference between infant and neonatal mortality)
Infant mortality:	the probability of dying before the first birthday
Child mortality:	the probability of dying between the first and the fifth birthday
Under-5 mortality:	the probability of dying between birth and the fifth birthday

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

As shown in Table 8, during the 5 years immediately preceding the survey, the infant mortality rate was 43 deaths per 1,000 live births. The child mortality rate was 22 deaths per 1,000 children surviving to age 12 months, while the overall under-5 mortality rate was 64 deaths per 1,000 live births. The neonatal mortality rate was 27 deaths per 1,000 live births. The postneonatal mortality rate was 16 deaths per 1,000 live

births. The 2016 UDHS indicates that under-5 mortality rates have declined over time, from 116 deaths per 1,000 live births 10-14 years before the survey (2002-2006) to 64 deaths per 1,000 live births in the 0-4 years prior to the survey (2012-2016).

Table 8 Early childhood mortality rates

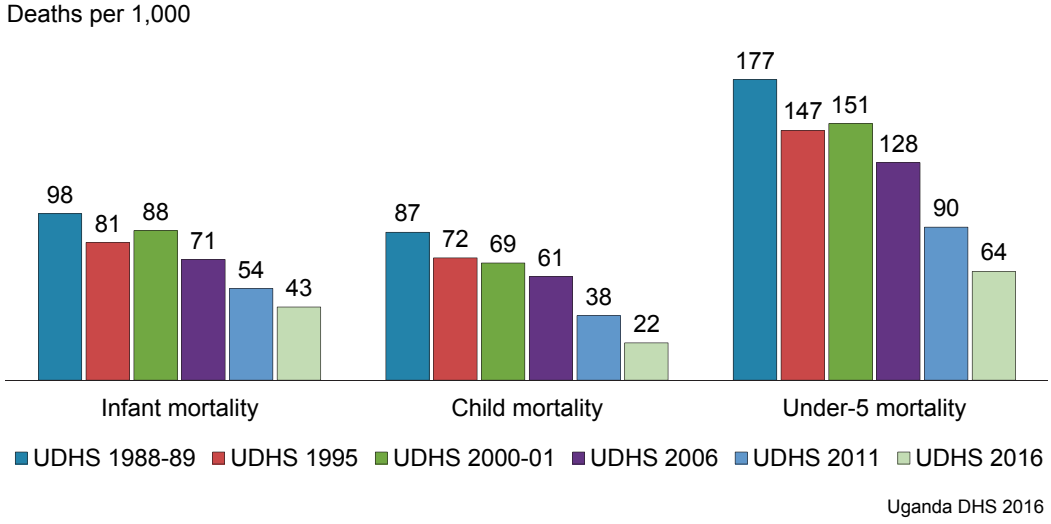
Neonatal, postneonatal, infant, child and under-5 mortality rates for five year periods preceding the survey, Uganda DHS 2016

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
0-4	27	16	43	22	64
5-9	28	25	53	32	83
10-14	24	45	69	51	116

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

Figure 3 presents trends in childhood mortality, as assessed through the 1988-89, 1995, 2000-01, 2006, 2011, and 2016 UDHS surveys. The data presented in Figure 3 document an overall decline in under-5 mortality rates from 177 deaths per 1,000 live births during the 5 years immediately preceding the 1988-89 UDHS, to 128 deaths per 1,000 live births in the 5 years prior to the 2006 UDHS, to 64 deaths per 1,000 live births in the most recent 5-year period. Infant mortality decreased from 98 deaths per 1,000 live births, to 71 deaths per 1,000 live births, to 43 deaths per 1,000 live births over the same periods.

***Figure 3* Trends in childhood mortality, 1988-89–2016**



3.9 MATERNAL CARE

In the 2016 UDHS, women who had given birth in the 5 years preceding the survey were asked a number of questions about maternal care. Mothers were asked if they had obtained antenatal care (ANC) during the pregnancy for their most recent live birth in the 5 years preceding the survey and whether they had received tetanus toxoid injections while pregnant. For each live birth over the same period, mothers were also asked what type of assistance they received at the time of delivery. Finally, women who had a live birth in the 2 years before the survey were asked if they received a postnatal check during the first 2 days after delivery. Table 9 summarises information on the coverage of these maternal health services.

Table 9 Maternal care indicators

Among women age 15-49 who had a live birth in the 5 years preceding the survey, percentage who received antenatal care (ANC) from a skilled provider for the most recent live birth, percentage with four or more ANC visits for the most recent live birth, and percentage whose most recent live birth was protected against neonatal tetanus; among all live births in the 5 years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility; and among women age 15-49 who had a live birth in the 2 years preceding the survey, percentage who received a postnatal check during the first 2 days after the most recent live birth, according to background characteristics, Uganda DHS 2016

	Women who had a live birth in the 5 years preceding the survey				Live births in the 5 years preceding the survey			Women who had a live birth in the 2 years preceding the survey	
Background characteristic	Percentage receiving antenatal care from a skilled provider[1]	Percentage with 4+ ANC visits	Percentage whose most recent live birth was protected against neonatal tetanus[2]	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births	Percentage of women with a postnatal check during the first 2 days after birth[3]	Number of women
Mother's age at birth									
<20	97.3	59.9	74.3	1,633	78.3	78.6	2,737	53.1	1,030
20-34	97.6	61.5	82.0	6,942	74.2	73.4	10,591	55.2	4,108
35-49	96.0	52.6	81.0	1,577	68.1	65.9	1,943	51.3	764
Residence									
Urban	98.1	65.2	83.5	2,346	89.6	87.8	3,233	66.8	1,258
Rural	97.1	58.3	79.8	7,807	70.0	69.5	12,038	50.9	4,643
Region									
South Central	95.8	63.2	72.9	1,290	82.4	81.1	1,881	56.3	719
North Central	98.8	57.5	82.8	1,070	77.3	74.7	1,645	57.8	647
Kampala	97.9	65.7	80.8	445	95.5	94.3	580	77.6	235
Busoga	97.8	66.0	79.0	939	74.7	76.5	1,527	43.3	580
Bukedi	96.8	54.7	86.4	682	67.2	66.0	1,060	58.5	397
Bugisu	97.1	47.0	71.9	493	57.6	56.2	763	55.5	300
Teso	98.9	53.4	80.7	614	75.3	73.9	948	65.7	412
Karamoja	97.3	66.0	91.9	250	72.5	71.2	432	85.4	168
Lango	97.1	55.9	86.3	569	68.3	66.3	799	54.6	302
Acholi	97.3	60.8	83.6	515	80.8	84.1	741	53.5	282
West Nile	98.7	65.2	93.9	726	77.9	78.2	1,067	60.5	420
Bunyoro	92.3	44.5	71.3	582	57.7	56.9	905	38.9	340
Tooro	98.0	63.6	78.7	806	75.9	73.6	1,210	42.8	460
Kigezi	99.8	59.2	87.0	353	70.7	69.7	506	47.7	181
Ankole	96.9	67.8	76.9	819	70.8	70.6	1,209	42.6	458
Special area[4]									
Islands[5]	97.1	61.6	78.0	132	70.4	69.1	202	56.5	79
Mountains[6]	97.7	54.5	77.6	806	67.5	65.4	1,260	55.4	471
Greater Kampala[7]	98.0	64.0	80.1	924	95.2	93.3	1,247	73.3	474
Mother's education									
No education	95.5	53.4	78.9	1,061	63.4	61.3	1,680	52.1	566
Primary	97.1	57.5	79.2	6,091	69.2	68.4	9,391	48.2	3,577
Secondary	98.4	65.3	83.4	2,285	87.2	87.2	3,243	63.8	1,325
More than secondary	98.8	72.0	86.6	715	97.8	96.3	958	78.5	432
Wealth quintile									
Lowest	96.0	53.9	81.5	2,117	64.3	64.2	3,442	50.4	1,326
Second	96.9	57.4	78.7	2,074	64.3	63.1	3,203	47.4	1,253
Middle	98.3	59.0	78.7	1,921	71.7	70.7	2,950	50.0	1,120
Fourth	97.3	62.8	81.6	1,862	79.3	79.0	2,735	53.1	1,037
Highest	98.1	66.4	82.5	2,178	94.1	92.7	2,940	71.5	1,166
Total	97.3	59.9	80.6	10,152	74.2	73.4	15,270	54.3	5,901

Note: If more than one source of assistance was mentioned, only the provider with the highest qualifications is considered in this tabulation.
[1] Skilled provider includes doctor, nurse/midwife, and medical assistant/clinical officer.
[2] Includes mothers with two injections during the pregnancy of her most recent live birth, or two or more injections (the last within 3 years of the most recent live birth), or three or more injections (the last within 5 years of the most recent live birth), or four or more injections (the last within 10 years of the most recent live birth), or five or more injections at any time prior to the most recent live birth.
[3] Includes women who received a check from a doctor, midwife, nurse, community health worker, or traditional birth attendant.
[4] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[5] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[6] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[7] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.9.1 Antenatal Care

Antenatal care (ANC) from a skilled provider is important to monitor pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy, delivery, and the postnatal period (within 42 days after delivery). The 2016 UDHS results show that 97 percent of women who gave birth in the 5 years preceding the survey received ANC from a skilled provider at least once for their last birth. Six of evey ten women had four or more ANC visits (60 percent). While there is no difference between the proportion of women that received ANC from a skilled provider by residence (98 percent of women in urban areas and 97 percent of women in rural areas), women in urban areas are more likely to have had four or more ANC visits than rural women (65 percent and 58 percent, respectively). Bunyooro and Bugisu subregions have the lowest percentage of women have had four or more ANC visits (45 percent and 47 percent, respectively). The percentage of women who had four or more ANC visits for their most recent birth in the 5 years preceding the survey increases greatly with women's education. Among women with no education, 53 percent went on four or more ANC visits compared with 72 percent of women with more than a secondary education. The proportion of women with four or more ANC visits also increases with household wealth.

3.9.2 Tetanus Toxoid Vaccination

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, a major cause of early infant death in many developing countries that often results from failure to observe hygienic procedures during delivery. Table 9 shows that 81 percent of women received sufficient doses of tetanus toxoid to protect their last birth against neonatal tetanus. The percentage of women whose last birth was protected from tetanus shows some regional variation, from a low of 71 percent in Bunyoro subregion to a high of 94 percent in West Nile subregion. This increases with education, from 79% among women with no education or primary education to 87% among those with more than secondary education.

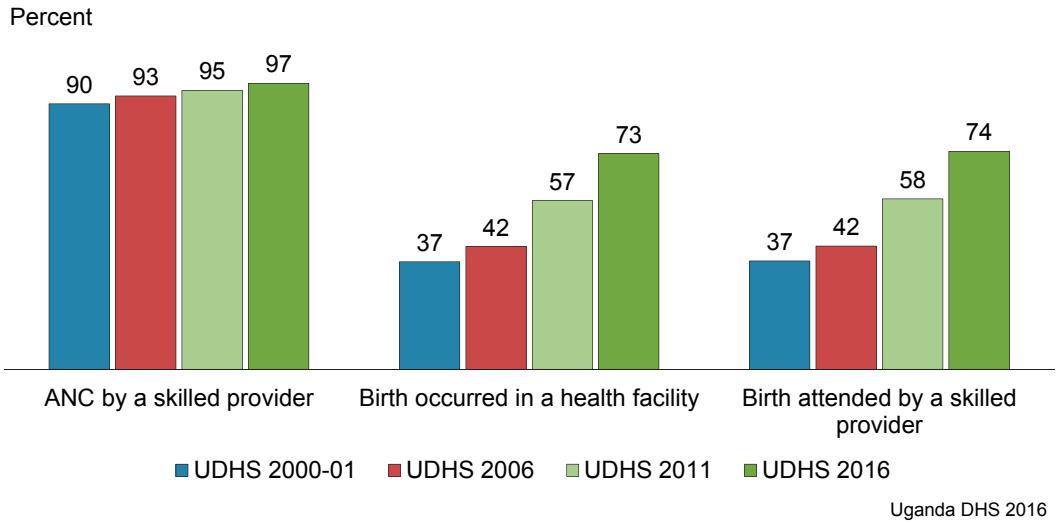
3.9.3 Delivery Care

Access to proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother, baby, or both (Van Lerberghe and De Brouwere 2001; WHO 2006). Nearly three-quarters (74%) of live births in the 5 years preceding the survey were delivered by a skilled provider and almost the same proportion (73 percent) were delivered in a health facility.

Ninety percent of births to urban mothers were assisted by a skilled provider and 88 percent were delivered in a health facility, as compared with 70 percent of births to rural women. Regionally, the percentage of births assisted by a skilled provider and percentage delivered in a health facility is lowest in Bugisu (58 and 56 percent) and Bunyoro (58 percent and 57 percent) subregions and highest in Kampala subregion (96 and 94 percent). The likelihood that a delivery was assisted by a skilled provider and or took place in a health facility increases with the mother's educational status. For example, 63 percent of births to mothers with no education were assisted by a skilled provider and 61 percent were delivered in a health facility, as compared with 98 percent and 96 percent of births to mothers with more than a secondary education. A similar relationship is apparent with wealth.

As shown in Figure 4, the percentage of women receiving ANC from a skilled provider has increased from 90 percent in 2000-01 to 97 percent in 2016, while the proportion of women whose births occurred in a health facility have increased more dramatically (from 37 percent in 2000-01 to 73 percent in 2016). Similarly, the proportion of women whose births were attended by a skilled provider has risen from 37 percent in 2000-01 to 74 percent in 2016.

Figure 4 **Trends in maternal health care, 2000-01–2016**



3.9.4 Postnatal Care for the Mother

A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery. Thus, prompt postnatal care (PNC) for both the mother and the child is important to treat any complications that arise from the delivery, as well as to provide the mother with important information on caring for herself and her child. Safe motherhood programmes recommend that all women receive a check of their health within 2 days after delivery.

To assess the extent of postnatal care utilisation, respondents were asked, for their last birth in the 2 years preceding the survey, whether they had received a postnatal check and the timing of the first postnatal check. As shown in Table 9, 54 percent of women reported receiving a postnatal check during the first 2 days after birth.

The proportion of women who received a postnatal check during the first 2 days after delivery is higher in urban areas than rural area (67 versus 51 percent), and generally increases with both education and wealth. There is variation in the proportion of women who received a timely postnatal check by region, ranging from a low of 39 percent in Bunyoro subregion to a high of 85 percent in Karamoja subregion.

3.10 CHILD HEALTH AND NUTRITION

The 2016 UDHS collected data on a number of key child health indicators such as vaccinations of young children, nutritional status as assessed by anthropometry, infant feeding practices, and treatment practices when a child is ill.

3.10.1 Vaccination of Children

Universal immunisation of children against six common vaccine-preventable diseases (tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles) is crucial to reducing infant and child mortality. The vaccine given in Uganda against diphtheria, whooping cough, and tetanus (DPT) also protects against hepatitis B (HepB) and *Haemophilus influenzae* type b (Hib), and is called the DPT-HepB-Hib or pentavalent vaccine. The Government of Uganda introduced the pneumococcal conjugate vaccine (PCV) into the national infant immunisation programme in November 2011. The pneumococcal vaccine protects against *Streptococcus pneumoniae* bacteria, which cause severe pneumonia, meningitis, and other illnesses. The 2016 UDHS collected information on the coverage of all of these vaccines among children born in the 3 years preceding the survey. The information obtained in the survey on differences in vaccination coverage among subgroups of children is useful for programme planning and targeting resources toward areas most in need.

According to the guidelines developed by the World Health Organization (WHO), children are considered to have received all basic vaccinations when they have received a vaccination against tuberculosis (also known as BCG), three doses each of the DPT-HepB-Hib/pentavalent and polio vaccines, and a vaccination against measles. The BCG vaccine is usually given at birth or at first clinical contact, while the DPT-HepB-Hib and polio vaccines are given at approximately age 6, 10, and 14 weeks. Measles vaccinations should be given at or soon after age 9 months. A child age 12-23 months is considered to be fully immunized (all age-appropriate vaccinations) in Uganda if the child has received all basic vaccinations, plus a birth dose of polio vaccine and three doses of the PCV vaccine (also given at age 6, 10, and 14 weeks).

Information on vaccination coverage was obtained in two ways in the 2016 UDHS: from written vaccination records, including the Child Health cards and other health cards/books, and from mothers' verbal reports. In the UDHS, for each child born in the 3 years before the survey, mothers were asked to show the interviewer the Child Health card or book used for recording the child's immunisations. If the Child Health card or book was available, the interviewer copied the dates of each vaccination received. If a vaccination was not recorded in the Child Health card or in the book as being given, the mother was asked to recall whether the child had received any vaccinations in addition to those on the card. If the mother was not able to present the Child Health card or book for a child, she was asked to recall whether the child had received BCG, polio, DPT-HepB-Hib, measles, pneumococcal, and rotavirus[3] vaccine. If she indicated that the child had received the polio, DPT-HepB-Hib, pneumococcal, or rotavirus vaccine, she was asked the number of doses that the child received.

Table 10 presents data on vaccination coverage among children age 12-23 months by background information. Children age 12-23 months are the youngest cohort to have reached the age by which a child should have received the required vaccines. Table 10 shows that 55 percent of children age 12-23 months received all basic vaccinations, and 37 percent received all age-appropriate vaccinations. One percent of children in this age group had not received any vaccinations. Ninety-six percent of children received the BCG vaccination, 95 percent the first dose of DPT-HepB-Hib, 95 percent the first (non-birth) dose of polio, and 87 percent the first dose of the pneumococcal vaccine. Eighty percent of children received a measles vaccination. Coverage rates decline for subsequent doses, with 79 percent of children receiving the recommended three doses of DPT-HepB-Hib, 66 percent the three doses of polio, and 64 percent the three doses of the pneumococcal vaccine.

There is little difference in the coverage rates for all basic vaccinations between male (56 percent) and female (55 percent) children, or children in urban (55 percent) and rural (56 percent) areas. Basic vaccination coverage is highest in Karamoja subregion (73 percent) and lowest in Busoga subregion (45 percent). Immunisation coverage increases with mother's education; children whose mothers have more than secondary education are more likely to have all basic vaccinations (64 percent) than mothers with less education (53-57 percent).

[3] The monovalent human rotavirus vaccine was introduced in October 2012; data on rotavirus vaccinations were collected, but are not presented in this tabulation.

Table 10 Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), percentage with all basic vaccinations, and percentage with all age appropriate vaccinations, according to background characteristics, Uganda DHS 2016

Background characteristic	BCG	DPT-HebB-Hib			Polio[1]				Pneumococcal			Measles	All basic vaccinations[2]	All age appropriate vaccinations[3]	No vaccinations	Number of children
		1	2	3	0	1	2	3	1	2	3					
Sex																
Male	96.1	95.2	90.1	78.7	78.9	95.2	86.7	66.1	87.4	78.5	65.2	81.4	55.8	38.0	1.1	1,477
Female	96.4	94.6	89.7	78.4	80.2	93.7	85.6	65.5	87.5	79.7	63.4	78.6	54.6	36.0	1.5	1,382
Residence																
Urban	97.6	94.6	90.3	77.2	86.7	94.1	84.9	63.3	88.7	81.6	67.6	84.1	54.5	40.9	0.5	670
Rural	95.9	95.0	89.8	79.0	77.4	94.6	86.5	66.6	87.0	78.3	63.3	78.8	55.5	35.9	1.6	2,189
Region																
South Central	92.5	90.9	85.9	74.8	72.1	91.8	81.4	62.0	82.0	70.6	64.1	75.7	50.0	31.3	2.1	360
North Central	94.5	92.0	85.6	75.0	65.3	94.1	82.2	56.3	83.4	77.2	57.2	73.3	46.7	25.5	1.6	313
Kampala	99.3	94.8	88.2	80.9	94.7	94.4	83.8	56.9	92.9	80.9	69.7	82.8	51.1	44.7	0.7	143
Busoga	96.7	93.1	88.9	68.9	79.6	94.9	86.5	57.2	89.5	81.3	64.4	70.2	44.9	31.9	3.0	266
Bukedi	97.8	95.6	90.3	76.0	84.3	95.2	82.2	60.6	92.2	84.8	62.8	77.3	52.3	39.4	1.2	192
Bugisu	98.7	97.9	84.6	72.5	87.0	87.1	75.2	56.5	94.2	75.1	53.1	79.8	47.8	31.1	0.0	140
Teso	98.6	97.9	97.9	90.0	94.8	97.3	95.4	78.6	85.7	80.4	63.1	87.2	67.7	47.5	0.5	192
Karamoja	98.9	98.5	94.4	86.8	93.7	95.3	90.2	78.3	94.8	90.0	81.6	91.3	73.0	64.8	0.0	79
Lango	96.0	95.5	92.4	80.2	73.9	96.3	86.3	64.7	79.7	67.9	53.0	74.5	50.4	26.0	0.7	155
Acholi	98.7	98.7	93.6	86.0	96.9	96.5	92.0	78.6	96.9	89.9	73.4	84.6	65.1	54.8	0.0	126
West Nile	95.9	97.6	93.5	83.1	89.8	96.5	90.8	74.8	91.3	83.5	70.6	82.0	63.1	51.5	1.5	207
Bunyoro	93.8	94.4	89.5	79.9	77.9	93.3	89.5	75.7	82.7	77.0	66.4	84.1	66.9	45.1	1.8	149
Tooro	96.3	93.7	87.8	74.7	76.3	92.8	84.8	61.5	78.1	71.1	53.8	86.9	51.2	23.2	1.0	241
Kigezi	98.3	98.3	95.0	88.1	87.3	98.5	94.4	78.2	98.6	94.4	83.4	95.6	72.0	56.9	0.0	87
Ankole	96.7	96.9	92.4	83.4	59.9	97.4	90.0	75.6	91.7	86.1	74.7	82.0	61.8	32.8	1.6	210
Special area[4]																
Islands[5]	91.7	91.3	81.9	64.3	70.6	90.9	77.0	50.3	86.1	71.2	54.6	68.1	37.1	24.4	3.0	40
Mountains[6]	98.5	97.9	92.8	79.6	86.8	93.9	84.8	63.1	83.8	74.0	55.9	87.0	54.0	33.9	0.4	232
Greater Kampala[7]	97.0	92.2	86.6	73.8	87.8	92.6	80.7	57.3	86.9	77.2	66.5	81.1	51.6	42.0	1.1	278
Mother's education																
No education	92.6	92.2	86.4	76.1	74.4	91.5	83.3	69.0	84.6	77.2	65.0	76.9	56.4	38.5	3.4	251
Primary	96.0	94.9	89.6	77.6	79.0	94.2	85.6	64.5	86.1	77.7	61.8	76.8	53.3	34.8	1.3	1,736
Secondary	97.5	95.4	90.7	79.2	79.0	95.5	86.6	67.0	89.1	80.7	67.0	85.0	57.0	38.3	0.7	662
More than secondary	98.7	96.6	93.9	87.6	92.1	97.2	92.9	69.5	96.0	88.1	75.7	94.6	64.3	50.4	0.9	210

(*Continued…*)

Table 10–*Continued*

Background characteristic	BCG	DPT-HebB-Hib			Polio[1]				Pneumococcal			Measles	All basic vaccina-tions[2]	All age appro-priate vaccina-tions[3]	No vaccina-tions	Number of children
		1	2	3	0	1	2	3	1	2	3					
Wealth quintile																
Lowest	95.1	95.3	91.2	78.0	83.8	94.6	87.3	69.7	86.5	77.0	62.2	75.9	56.1	41.0	1.6	614
Second	96.9	94.9	88.2	77.9	74.8	94.3	84.1	64.6	87.5	79.9	63.9	76.4	54.7	32.8	1.2	604
Middle	96.3	95.3	90.1	78.4	73.4	95.1	87.9	64.9	86.6	78.4	62.3	83.0	55.9	35.1	1.5	530
Fourth	95.2	94.4	90.5	80.9	79.2	95.0	88.0	68.6	87.7	79.7	64.7	79.4	55.2	34.7	2.0	498
Highest	97.6	94.6	89.5	78.0	85.6	93.6	84.1	61.8	88.7	80.4	68.2	85.7	54.3	40.9	0.4	613
Total	96.3	94.9	89.9	78.6	79.5	94.5	86.2	65.8	87.4	79.1	64.3	80.0	55.2	37.1	1.3	2,859

BCG = Bacille Calmette-Guérin ; DPT = Diphtheria-pertussis-tetanus ; HepB = Hepatitis B; Hib = Haemophilus influenzae type b.
The DPT-HepB-Hib conjugate vaccine is sometimes known as pentavalent.
Note: Children are considered to have received the vaccine if it was either written on the child's vaccination card or reported by the mother. For children whose vaccination information is based on the mother's report, date of vaccination is not collected. The proportions of vaccinations given during the first and second years of life are assumed to be the same as for children with a written record of vaccination.
[1] Polio 0 is the polio vaccination given at birth.
[2] BCG, three doses of DPT-HepB-Hib, three doses of oral polio vaccine (excluding polio vaccine given at birth), and one dose of measles vaccine.
[3] BCG, three doses of DPT-HepB-Hib, four doses of oral polio vaccine, three doses of pneumococcal vaccine, and one dose of measles vaccine.
[4] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[5] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[6] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[7] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.10.2 Childhood Acute Respiratory Infection, Fever, and Diarrhoea

Acute respiratory infection (ARI), fever, and dehydration from diarrhoea are important contributing causes of childhood morbidity and mortality in developing countries (WHO 2003). Prompt medical attention when a child has the symptoms of these illnesses is crucial in reducing child deaths. In the 2016 UDHS, mothers were asked if each child under age 5 had experienced an episode of diarrhoea; a cough accompanied by short, rapid breathing or difficulty breathing as a result of a chest-related problem (symptoms of ARI); or a fever in the 2 weeks preceding the survey. Respondents were also asked if treatment was sought when the child was ill.

Overall, 9 percent of children under age 5 showed symptoms of an ARI, 33 percent had a fever, and 20 percent experienced diarrhoea in the 2 weeks preceding the survey (data not shown). It should be noted that the morbidity data collected are subjective because they are based on a mother's perception of illnesses without validation by medical personnel.

Table 11 shows that treatment was sought for 80 percent of children with ARI symptoms, 81 percent of those with a fever, and 69 percent of children with diarrhoea. Forty-seven percent of children with diarrhoea received a rehydration solution from an oral rehydration salt (ORS) packet; 40 percent of children with diarrhoea were given zinc supplements, and 30 percent received both ORS and zinc supplements.

Table 11 Treatment for ARI symptoms, fever, and diarrhoea

Among children under age 5 who had symptoms of acute respiratory infection (ARI) or had fever in the 2 weeks preceding the survey, percentage for whom advice or treatment was sought, and among children under age 5 who had diarrhoea during the 2 weeks preceding the survey, percentage for whom advice or treatment was sought, percentage given a fluid made from oral rehydration salt (ORS) packets, percentage given zinc, and percentage given ORS and zinc, according to background characteristics, Uganda DHS 2016

	Children with symptoms of ARI[1]		Children with fever		Children with diarrhoea				
Background characteristic	Percentage for whom advice or treatment was sought[2]	Number of children	Percentage for whom advice or treatment was sought[2]	Number of children	Percentage for whom advice or treatment was sought[2]	Percentage given fluid from ORS packet	Percentage given zinc	Percentage given ORS and zinc	Number of children
Age in months									
<6	69.0	122	72.8	340	49.9	14.9	24.2	8.9	284
6-11	76.3	196	82.4	612	68.2	46.5	41.9	30.0	621
12-23	84.3	331	82.8	1,121	73.4	55.6	46.2	36.8	884
24-35	79.1	283	80.8	1,026	72.3	51.9	40.6	30.4	523
36-47	86.0	209	80.0	911	71.8	47.0	39.8	30.7	309
48-59	78.6	213	80.3	813	62.5	39.8	31.9	22.6	211
Sex									
Male	79.6	703	80.3	2,461	68.0	48.8	42.2	31.0	1,522
Female	80.5	651	81.1	2,363	69.7	44.4	38.1	28.0	1,310
Residence									
Urban	81.9	219	86.9	680	68.0	52.9	43.4	34.0	526
Rural	79.7	1,135	79.7	4,143	68.9	45.3	39.6	28.6	2,306
Region									
South Central	80.4	147	87.3	459	63.2	49.8	39.4	29.9	359
North Central	84.8	131	89.0	420	67.0	46.5	39.9	32.6	256
Kampala	(82.0)	27	89.0	78	71.1	42.7	36.5	23.0	86
Busoga	79.9	175	77.7	939	70.7	50.4	39.6	28.5	390
Bukedi	80.6	50	78.1	345	72.1	50.4	53.7	36.7	182
Bugisu	73.8	68	88.6	139	68.9	36.8	34.7	21.1	105
Teso	70.0	131	64.1	541	59.8	29.8	28.9	20.0	266
Karamoja	83.9	105	89.7	170	82.9	80.0	57.0	53.2	94
Lango	82.7	135	82.4	337	84.7	33.8	26.4	16.9	157
Acholi	94.6	65	85.1	350	77.1	53.2	41.7	31.9	174
West Nile	93.4	78	88.5	423	79.8	54.7	53.9	41.3	159
Bunyoro	*	8	72.6	96	70.5	52.9	52.5	36.6	85
Tooro	69.0	150	73.1	273	61.4	54.4	47.4	37.3	250
Kigezi	(73.5)	31	79.5	71	67.5	54.1	34.9	24.6	76
Ankole	(80.5)	54	83.3	182	58.1	27.0	29.4	17.4	192
Special area[3]									
Islands[4]	89.4	14	74.8	82	72.2	44.6	34.9	21.1	53
Mountains[5]	74.5	133	85.0	230	68.8	55.2	48.5	37.9	219
Greater Kampala[6]	(84.4)	51	91.5	188	69.8	55.3	39.8	30.7	200

(*Continued…*)

Table 11–*Continued*

Background characteristic	Children with symptoms of ARI[1]		Children with fever		Children with diarrhoea				
	Percentage for whom advice or treatment was sought[2]	Number of children	Percentage for whom advice or treatment was sought[2]	Number of children	Percentage for whom advice or treatment was sought[2]	Percentage given fluid from ORS packet	Percentage given zinc	Percentage given ORS and zinc	Number of children
Mother's education									
No education	79.9	184	79.3	585	72.2	46.8	41.2	25.8	290
Primary	77.9	853	79.3	3,180	67.8	44.8	38.1	28.4	1,774
Secondary	85.1	263	86.1	886	70.4	51.7	43.3	33.2	588
More than secondary	(88.8)	54	83.8	172	66.8	48.9	50.0	36.0	181
Wealth quintile									
Lowest	79.7	414	77.9	1,428	72.4	47.7	37.9	28.2	722
Second	77.2	318	79.0	1,124	67.9	45.8	39.7	29.9	639
Middle	78.2	252	81.0	912	67.4	44.1	38.9	28.3	539
Fourth	84.5	214	83.2	804	65.6	43.7	43.6	31.7	466
Highest	83.5	156	87.5	555	69.0	52.7	42.9	30.7	465
Total	80.0	1,354	80.7	4,824	68.7	46.7	40.3	29.6	2,832

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] Symptoms of ARI include cough accompanied by short, rapid breathing which was chest-related and/or by difficult breathing which was chest-related.
[2] Excludes advice or treatment from a traditional practitioner.
[3] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[4] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[5] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[6] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.10.3 Nutritional Status of Children

Anthropometric indicators for young children were collected in the 2016 UDHS to provide outcome measures of nutritional status. As recommended by WHO, evaluation of nutritional status in this report is based on a comparison of three indices for the children in this survey with indices reported for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group 2006). The three indices (height-for-age, weight-for-height, and weight-for-age) are expressed as standard deviation units from the median for the reference group. Children who fall below minus two standard deviations (-2 SD) from the median of the reference population are regarded as moderately malnourished, while those who fall below minus three standard deviations (-3 SD) from the reference population median are considered severely malnourished. Marked differences, especially with regard to height-for-age and weight-for-age, are often seen among different subgroups of children within a country.

A total of 5,418 children under age 5 were eligible for weight and height measurements. For some of the eligible children, however, complete and credible data on height, weight and/or age were not obtained. In this report, height-for-age is based on 95 percent of eligible children, while weight-for-height is based on 97 percent of eligible children, and weight-for-age is based on 96 percent of eligible children.

Table 12 and Figure 5 show nutritional status for children under age 5, according to the three anthropometric indices. Height-for-age is a measure of linear growth. A child who is below -2 SD from the reference median for height-for-age is considered short for his or her age, or stunted, which is a condition that reflects the cumulative effect of chronic malnutrition. The data show that 29 percent of children under 5 are considered to be short for their age or stunted (below -2 SD), and 9 percent are severely stunted (below -3 SD). Stunting is slightly higher among male children (31 percent) than among female children (27 percent). Stunting is greater among children in rural areas (30 percent) than urban areas (24 percent). There are some regional variations. Stunting ranges from a high of 41 percent in Tooro subregion to a low of 14 percent in Teso subregion. The prevalence of stunting decreases with increasing levels of the mother's education. About 4 in 10 children born to mothers with no education (37 percent) are stunted compared with 1 in 10 (10 percent) of children born to mothers with more than a secondary education. Similarly, stunting decreases with increasing wealth quintiles, from 32 percent among children in the lowest wealth quintile to 17 percent of children in the highest wealth quintile.

Weight-for-height describes current nutritional status. A child who is below -2 SD from the reference median for weight-for-height is considered too thin for his or her height, or wasted, which is a condition that reflects acute or recent nutritional deficits. Overall, 4 percent of children are wasted and 1 percent are severely wasted (below -3 SD). Regional variations exist, with the Karamoja and West Nile subregions having the highest percentages of children who are wasted (10 percent each).

Weight-for-age is a composite index of weight-for-height and height-for-age and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). Children can be underweight for their age because they are stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. The results show that 11 percent of all children are underweight (below -2 SD), and 2 percent are severely underweight (below -3 SD). Children in rural areas are slightly more likely than those in urban areas to be underweight (11 percent and 8 percent, respectively). The highest percentages of underweight children are observed in Karamoja subregion (26 percent) and the lowest in Teso subregion (4 percent). The proportion of children who are underweight decreases with increasing levels of the mother's education and increasing wealth quintiles.

Table 12 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, according to background characteristics, Uganda DHS 2016

Background characteristic	Height-for-age[1]				Weight-for-height					Weight-for-age				
	Percentage below -3 SD	Percentage below -2 SD[2]	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-Score (SD)	Number of children
Age in months														
<6	5.2	11.8	-0.2	468	4.6	7.5	9.7	0.1	454	4.2	10.0	3.4	-0.3	471
6-8	4.8	16.0	-0.4	265	3.4	7.1	5.5	-0.1	265	3.6	10.3	2.8	-0.4	268
9-11	5.9	16.3	-0.8	253	3.0	10.5	5.4	-0.2	253	3.6	14.5	2.9	-0.6	253
12-17	9.0	35.2	-1.4	500	1.2	6.0	4.8	0.1	509	3.4	13.5	3.5	-0.6	506
18-23	11.1	36.5	-1.5	506	1.4	2.5	4.3	0.2	511	2.4	10.1	1.9	-0.6	510
24-35	13.7	36.8	-1.5	1,061	0.5	2.3	2.6	0.2	1,074	2.4	11.3	0.9	-0.7	1,064
36-47	9.5	32.6	-1.3	1,041	0.7	1.9	2.5	0.2	1,068	1.3	10.1	1.0	-0.7	1,041
48-59	7.4	24.3	-1.2	1,016	0.5	1.6	1.9	0.0	1,051	1.3	7.9	0.6	-0.7	1,015
Sex														
Male	11.2	30.9	-1.3	2,566	1.7	4.1	4.9	0.1	2,607	2.7	11.5	2.1	-0.6	2,578
Female	7.3	26.9	-1.1	2,544	1.0	3.0	2.6	0.1	2,576	2.0	9.5	1.1	-0.6	2,550
Mother's interview status														
Interviewed	8.8	28.2	-1.2	4,350	1.4	3.8	4.0	0.1	4,336	2.3	10.3	1.5	-0.6	4,365
Not interviewed, but in household	8.6	24.5	-1.0	103	0.0	1.2	3.3	0.2	113	2.3	6.0	3.0	-0.4	104
Not interviewed, not in household[3]	12.1	34.4	-1.2	657	1.2	2.7	2.3	0.1	735	2.4	12.3	2.4	-0.6	659
Residence														
Urban	7.1	23.5	-1.0	971	0.9	2.9	2.8	0.1	982	1.4	7.5	1.9	-0.5	972
Rural	9.8	30.2	-1.2	4,139	1.4	3.7	3.9	0.1	4,201	2.6	11.2	1.6	-0.6	4,157
Region														
South Central	7.2	26.5	-1.2	611	0.3	1.1	2.3	0.2	634	1.4	7.5	1.8	-0.5	611
North Central	8.0	28.1	-1.2	517	0.9	2.3	3.4	0.3	543	1.8	7.5	2.8	-0.5	521
Kampala	8.3	18.1	-0.9	145	1.4	3.9	3.9	0.1	148	1.8	7.0	1.4	-0.4	147
Busoga	10.6	29.0	-1.2	538	0.9	3.6	5.1	0.2	548	2.1	9.4	1.3	-0.6	541
Bukedi	8.0	22.8	-1.0	364	1.0	2.8	1.5	-0.0	364	2.0	12.0	1.9	-0.6	364
Bugisu	13.1	35.9	-1.4	252	2.7	5.0	3.8	-0.0	253	3.8	14.8	0.7	-0.8	248
Teso	3.3	14.3	-0.7	324	0.3	2.2	2.8	0.1	327	0.4	4.0	1.1	-0.3	324
Karamoja	12.1	35.2	-1.3	119	3.0	10.0	1.5	-0.6	119	8.8	25.8	1.1	-1.2	120
Lango	4.8	22.3	-1.0	290	2.2	5.0	3.6	0.0	289	1.1	7.5	1.9	-0.5	291
Acholi	6.3	30.6	-1.3	268	1.2	3.9	4.1	-0.1	267	2.6	15.4	1.2	-0.8	269
West Nile	12.4	33.9	-1.1	347	5.6	10.4	3.1	-0.3	339	5.1	16.7	0.6	-0.9	350
Bunyoro	12.5	34.5	-1.3	312	0.1	2.3	3.8	0.2	316	2.0	9.1	2.3	-0.6	316
Tooro	14.2	40.6	-1.6	454	1.3	3.4	5.3	0.2	460	2.9	13.3	2.7	-0.7	457
Kigezi	9.0	30.8	-1.4	168	1.3	3.7	9.1	0.3	174	1.4	9.8	1.2	-0.6	168
Ankole	9.7	29.3	-1.3	401	0.6	1.8	4.2	0.3	402	2.6	9.9	0.7	-0.6	402
Special area[4]														
Islands[5]	6.8	27.1	-1.2	60	1.2	2.0	5.0	0.2	61	1.9	9.2	2.5	-0.5	60
Mountains[6]	12.6	36.5	-1.4	420	2.1	5.4	3.8	-0.1	424	3.0	14.5	2.0	-0.8	414
Greater Kampala[7]	7.3	19.6	-1.0	336	0.6	1.7	3.7	0.2	346	0.8	3.3	2.3	-0.4	337

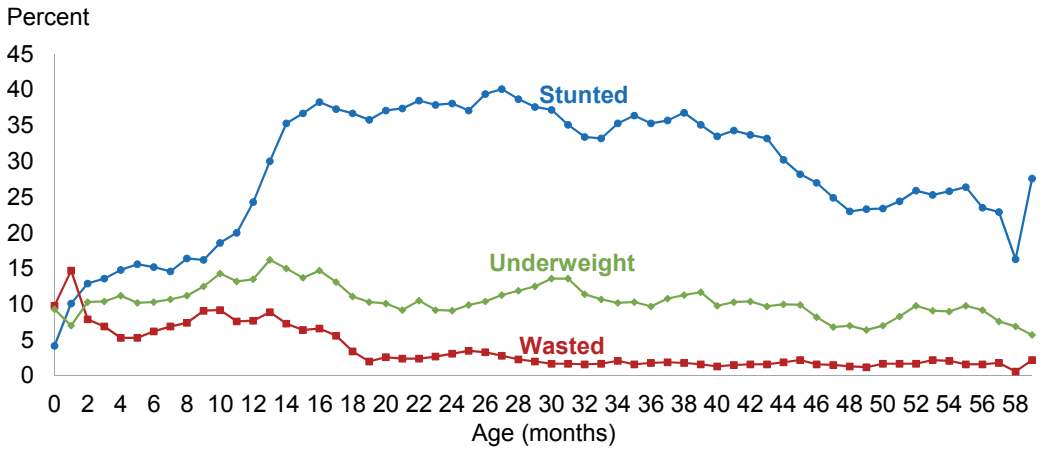
(Continued...)

Table 12–*Continued*

Background characteristic	Height-for-age[1]				Weight-for-height					Weight-for-age				
	Percentage below -3 SD	Percentage below -2 SD[2]	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-Score (SD)	Number of children
Mother's education[8]														
No education	12.6	37.0	-1.4	508	1.9	3.9	2.4	-0.1	514	4.3	16.1	0.8	-0.9	513
Primary	9.9	30.0	-1.3	2,754	1.4	3.9	4.0	0.1	2,743	2.5	11.1	0.9	-0.7	2,764
Secondary	5.3	22.8	-1.0	908	1.3	2.8	4.4	0.1	908	1.4	5.9	2.6	-0.4	909
More than secondary	2.9	9.8	-0.5	282	0.4	3.8	4.9	0.2	281	0.4	4.3	5.0	-0.1	283
Missing	*	*	*	1	*	*	*	*	3	*	*	*	*	1
Wealth quintile														
Lowest	10.1	32.2	-1.3	1,134	2.1	5.5	2.7	-0.1	1,137	3.8	15.0	0.9	-0.8	1,138
Second	12.2	33.2	-1.4	1,050	1.7	4.2	4.0	0.1	1,071	2.4	11.5	1.6	-0.7	1,054
Middle	10.7	33.0	-1.3	1,058	1.1	3.1	4.6	0.2	1,067	2.5	11.6	1.2	-0.6	1,060
Fourth	8.4	27.3	-1.2	971	0.8	2.3	3.9	0.2	1,001	1.8	8.6	2.2	-0.6	977
Highest	4.0	16.7	-0.7	897	0.8	2.4	3.5	0.2	907	0.9	4.4	2.4	-0.3	900
Total	9.3	28.9	-1.2	5,110	1.3	3.6	3.7	0.1	5,183	2.4	10.5	1.6	-0.6	5,129

Note: Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards.
[1] Recumbent length is measured for children under age 2; standing height is measured for all other children.
[2] Includes children who are below -3 standard deviations (SD) from the WHO Growth Standards population median.
[3] Includes children whose mothers are deceased.
[4] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[5] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[6] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[7] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.
[8] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

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



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

Uganda DHS 2016

3.10.4 Infant and Young Child Feeding Practices

Breastfeeding is sufficient and beneficial for infant nutrition in the first 6 months of life. Breastfeeding immediately after birth also helps the uterus contract, which reduces the mother's postpartum blood loss. Supplementing breast milk before the child is age 6 months is discouraged because it may inhibit breastfeeding and expose the infant to illness. At a later stage of the baby's development, breast milk should be supplemented by other liquids and eventually by solid or mushy food to provide adequate nourishment (Pan American Health Organization 2002).

The 2016 UDHS collected data on infant and young child feeding (IYCF) practices for all children born in the 2 years preceding the survey. Table 13 shows breastfeeding practices by child's age. Sixty-six percent of infants under age 6 months are exclusively breastfed. Contrary to the recommendation that children under age 6 months be exclusively breastfed, 7 percent of infants consume plain water, 6 percent consume nonmilk liquids, 8 percent consume other milk, and 11 percent consume complementary foods in addition to breast milk. Two percent of infants under age 6 months are not breastfed at all. The percentage of children exclusively breastfed decreases sharply with age from 83 percent of infants age 0-1 month to 69 percent of infants age 2-3 months and, further, to 43 percent of infants age 4-5 months. Eleven percent of infants under age 6 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

Breastfeeding a child until age 2 is recommended. However, the proportion of children who are currently breastfeeding decreases with increasing child age from 82 percent among children age 12-17 months to 50 percent among children age 18-23 months.

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

1. Breastfeeding, or not breastfeeding and receiving two or more feedings of commercial infant formula; fresh, tinned, or powdered animal milk; or yoghurt

2. Fed with foods from four or more of the following groups: a. infant formula, milk other than breast milk, and cheese or yoghurt or other milk products; b. foods made from grains, roots, and tubers, including porridge and fortified baby food from grains; c. vitamin A-rich fruits and vegetables; d. other fruits and vegetables; e. eggs; f. meat, poultry, fish, and shellfish (and organ meats); and g. legumes and nuts

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

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

   b. For children age 6-23 months who are not breast fed, minimum meal frequency is receiving solid or semisolid food or milk feeds at least four times a day.

Table 13 Breastfeeding status according to age

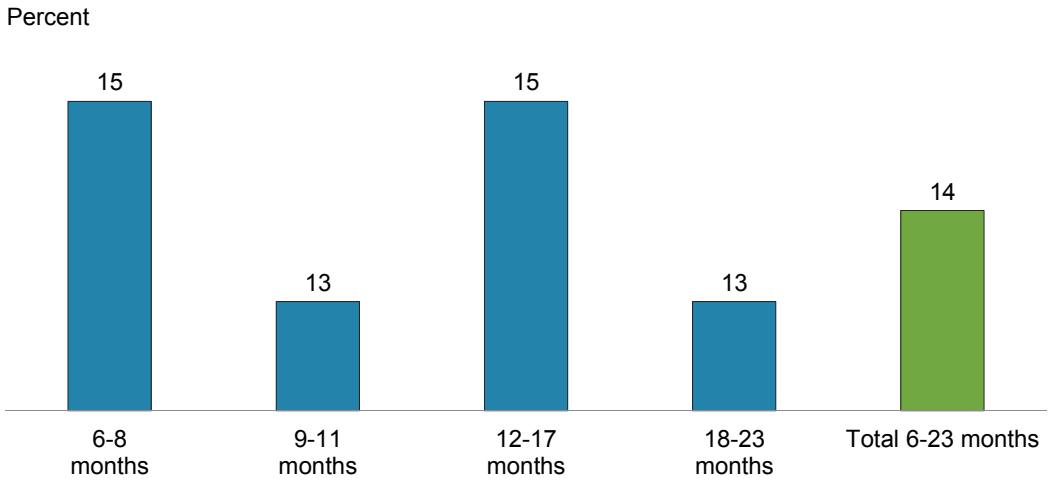
Percent distribution of youngest children under age 2 who are living with their mother, by breastfeeding status and percentage currently breastfeeding; and the percentage of all children under age 2 using a bottle with a nipple, according to age in months, Uganda DHS 2016

	Breastfeeding status										
Age in months	Not breast-feeding	Exclusively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids[1]	Breast-feeding and consuming other milk	Breast-feeding and consuming comple-mentary foods	Total	Percentage currently breast-feeding	Number of youngest children under age 2 living with the mother	Percentage using a bottle with a nipple	Number of all children under age 2
0-1	1.8	82.6	7.8	3.0	3.8	1.1	100.0	98.2	513	5.2	526
2-3	2.9	68.9	7.1	6.5	9.1	5.5	100.0	97.1	481	9.5	490
4-5	2.3	42.6	7.2	8.8	10.5	28.6	100.0	97.7	450	18.3	464
6-8	2.7	7.0	1.8	5.5	4.2	78.8	100.0	97.3	794	20.1	807
9-11	5.4	3.4	1.1	1.4	1.2	87.4	100.0	94.6	750	21.8	774
12-17	17.7	1.2	0.4	0.4	0.9	79.4	100.0	82.3	1,325	14.1	1,431
18-23	49.7	0.4	0.2	0.4	0.0	49.3	100.0	50.3	1,238	10.4	1,428
0-3	2.3	75.9	7.5	4.7	6.3	3.3	100.0	97.7	993	7.3	1,016
0-5	2.3	65.5	7.4	6.0	7.6	11.2	100.0	97.7	1,443	10.7	1,480
6-9	3.0	6.8	1.6	4.9	3.7	80.0	100.0	97.0	1,055	20.5	1,078
12-15	13.1	1.0	0.2	0.4	1.1	84.3	100.0	86.9	852	14.5	911
12-23	33.2	0.8	0.3	0.4	0.5	64.8	100.0	66.8	2,562	12.3	2,859
20-23	56.8	0.6	0.2	0.4	0.0	42.1	100.0	43.2	802	10.0	945

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfeeding, breastfeeding and consuming plain water, non-milk liquids, other milk, and complementary foods (solids and 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 other milk and who do not receive complementary foods are classified in the non-milk liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.
[1] Non-milk liquids include juice, juice drinks, clear broth or other liquids.

Figure 6 shows the percentage of children being fed the minimum acceptable diet, by age. In total, only 14 percent of children age 6-23 months have met the criteria for a minimum acceptable diet.

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



3.11 ANAEMIA PREVALENCE IN CHILDREN AND WOMEN

Anaemia is a condition marked by low levels of haemoglobin in the blood. Iron is a key component of haemoglobin, and iron deficiency is estimated to be responsible for half of all anaemia globally. Other causes of anaemia include hookworm and other helminths, malaria infection, other nutritional deficiencies, chronic infections, and genetic conditions. Anaemia is a serious concern for children because it can impair cognitive development, stunt growth, and increase morbidity from infectious diseases. As a part of the 2016 UDHS, haemoglobin levels were successfully measured for 97 percent of children age 6-59 months eligible for testing and 98 percent of women age 15-49 eligible for testing (data not shown).

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

Half of children age 6-59 months (53 percent) suffered from some degree of anaemia: 24 percent were classified as mildly anaemic, 27 percent as moderately anaemic, and 2 percent as severely anaemic. The prevalence of anaemia shows an overall decrease with age from a high of 78 percent among children age 9-11 months to a low of 39 percent among children age 48-59 months. Children in rural areas are more likely to be anaemic than those in urban areas (54 percent and 48 percent, respectively). The lowest regional prevalence of anaemia is among children living in Ankole subregion (31 percent), and the highest in Acholi subregion (71 percent). Anaemia prevalence generally decreases with increasing level of wealth quintile, from a high of 66 percent among children from households in the lowest wealth quintile to a low of 45 percent among children from households in the highest wealth quintile.

About one in three women age 15-49 (32 percent) are anaemic. The majority of these women are mildly anaemic (25 percent of all women); 6 percent are moderately anaemic, and less than 1 percent are severely anaemic. The proportion of women with any anaemia is slightly higher in rural areas than urban areas (33 percent and 27 percent, respectively). Regional differences in anaemia prevalence among women range from 17 percent in Kigezi subregion to 47 percent in Acholi subregion.

Table 14 Anemia among children and women

Percentage of children age 6-59 months and women age 15-49 years classified as having any, mild, moderate, and severe anemia, according to background characteristics, Uganda DHS 2016

Background characteristic	Any anemia	Severity of anemia: Mild anemia	Moderate anemia	Severe anemia	Number
		CHILDREN			
	<11.0 g/dl	10.0-10.9 g/dl	7.0-9.9 g/dl	<7.0 g/dl	
Age in months					
6-8	71.8	23.8	44.2	3.8	263
9-11	78.2	29.5	42.1	6.6	253
12-17	74.0	28.0	43.1	2.9	509
18-23	65.8	26.9	35.9	2.9	512
24-35	49.4	24.6	22.9	1.9	1,077
36-47	42.8	21.0	19.7	2.1	1,070
48-59	38.9	20.2	17.9	0.9	1,049
Sex					
Male	53.7	22.5	28.6	2.6	2,375
Female	51.8	24.8	25.1	2.0	2,358
Residence					
Urban	47.7	23.1	23.7	0.9	914
Rural	54.0	23.8	27.6	2.6	3,819
Region					
South Central	52.0	25.6	23.1	3.3	584
North Central	55.1	27.1	25.9	2.1	508
Kampala	50.9	25.0	25.1	0.7	134
Busoga	63.4	22.8	38.1	2.4	502
Bukedi	47.8	27.0	20.2	0.6	334
Bugisu	47.6	25.4	21.1	1.2	239
Teso	58.9	27.9	30.1	0.9	275
Karamoja	67.7	22.0	37.6	8.0	109
Lango	61.0	23.4	34.7	3.0	276
Acholi	70.8	22.1	44.8	3.9	242
West Nile	56.4	24.2	29.9	2.3	317
Bunyoro	55.3	19.2	32.2	3.9	275
Tooro	45.0	20.3	22.1	2.6	422
Kigezi	31.5	22.2	9.3	0.0	156
Ankole	30.6	18.1	11.9	0.7	361
Special area[1]					
Islands[2]	57.9	23.2	31.8	2.9	54
Mountains[3]	40.3	20.6	18.2	1.4	396
Greater Kampala[4]	49.4	25.5	23.5	0.3	324
Wealth quintile					
Lowest	65.5	26.0	34.8	4.7	1,028
Second	54.4	23.1	29.6	1.6	980
Middle	48.7	22.6	23.4	2.7	980
Fourth	48.5	23.5	23.4	1.6	913
Highest	44.7	22.8	21.7	0.3	831
Total	52.8	23.7	26.9	2.3	4,733
		WOMEN			
Non-pregnant	<12.0 g/dl	10.0-11.9 g/dl	7.0-9.9 g/dl	<7.0 g/dl	
Pregnant	<11.0 g/dl	10.0-10.9 g/dl	7.0-9.9 g/dl	<7.0 g/dl	
Residence					
Urban	27.4	21.9	4.8	0.7	1,491
Rural	33.2	26.3	6.4	0.6	4,495
Region					
South Central	27.6	21.1	5.4	1.1	754
North Central	31.6	25.3	6.0	0.3	649
Kampala	25.2	21.9	2.7	0.6	292
Busoga	41.0	32.0	8.8	0.3	575
Bukedi	17.7	15.1	1.9	0.7	375
Bugisu	34.6	26.2	8.3	0.0	281
Teso	31.9	26.9	4.7	0.3	376
Karamoja	32.0	23.7	7.8	0.4	119
Lango	39.4	33.0	5.5	0.8	365
Acholi	47.1	35.9	10.4	0.9	308
West Nile	39.6	28.8	10.6	0.1	400
Bunyoro	32.1	26.5	4.5	1.1	324
Tooro	29.4	22.4	6.4	0.6	451
Kigezi	16.9	14.3	2.3	0.3	224
Ankole	27.5	22.4	4.4	0.7	493

(*Continued…*)

Table 14–*Continued*

Background characteristic	Any anemia	Severity of anemia: Mild anemia	Moderate anemia	Severe anemia	Number
		CHILDREN			
	<11.0 g/dl	10.0-10.9 g/dl	7.0-9.9 g/dl	<7.0 g/dl	
Special area[1]					
Islands[2]	35.7	30.1	5.3	0.3	72
Mountains[3]	30.6	24.6	5.7	0.4	487
Greater Kampala[4]	26.6	19.2	6.0	1.4	592
Wealth quintile					
Lowest	40.6	31.2	8.8	0.5	1,093
Second	32.9	27.2	5.1	0.6	1,077
Middle	30.7	24.5	5.5	0.6	1,129
Fourth	31.9	25.0	6.5	0.4	1,226
Highest	25.1	19.7	4.6	0.8	1,461
Total	31.8	25.2	6.0	0.6	5,986

Note: Table is based on children and women who stayed in the household the night before the interview. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude (for children and women) and smoking (for women) using CDC formulas (CDC, 1998). Hemoglobin in grams per deciliter (g/dl).
[1] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[2] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[3] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[4] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.12 OWNERSHIP AND USE OF MOSQUITO NETS

3.12.1 Ownership of Mosquito Nets

The use of insecticide-treated mosquito nets is a primary health intervention designed to reduce malaria transmission in Uganda. An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment or (2) a net that has been soaked with insecticide within the past 12 months. Long-lasting insecticidal nets (LLINs) are a subset of ITNs. An LLIN is a factory-treated mosquito net made with netting material that has insecticide incorporated within or bound around the fibers. The current generation of LLINs lasts 3 to 5 years, after which the net should be replaced.

All households in the 2016 UDHS were asked if they owned mosquito nets and if so, what type and how many. Table 15 presents the percentage of households with at least one ITN, the average number of nets per household, and the percentage of households with at least one ITN for each two persons who stayed in the household the previous night, according to background characteristics. Among all households in Uganda, 78 percent possess at least one ITN. On average, there are two ITNs per household.

Household ownership of at least one ITN is highest in West Nile subregion (92 percent) and lowest in Karamoja subregion (55 percent). The percentage of households that own at least one ITN increases with increasing wealth, from 71 percent of households in the lowest quintile to 84 percent of households in the highest quintile.

Half (51 percent) of households in Uganda had at least one ITN for every two persons who stayed in the household the night before the survey. The percentage of households with at least one ITN for every two persons who stayed in the household the night before the survey is higher among urban households than in rural households (60 percent and 48 percent, respectively). By region, the percentage of households with at least one ITN for every two persons who stayed in the household the night before the survey is highest in Kigezi subregion at 68 percent and lowest in Karamoja subregion at 23 percent. The percentage of households with at least one ITN for every two persons increases with increasing wealth, from a low of 36 percent in the lowest wealth quintile to a high of 67 percent in the highest quintile.

Table 15 Household possession of insecticide-treated nets

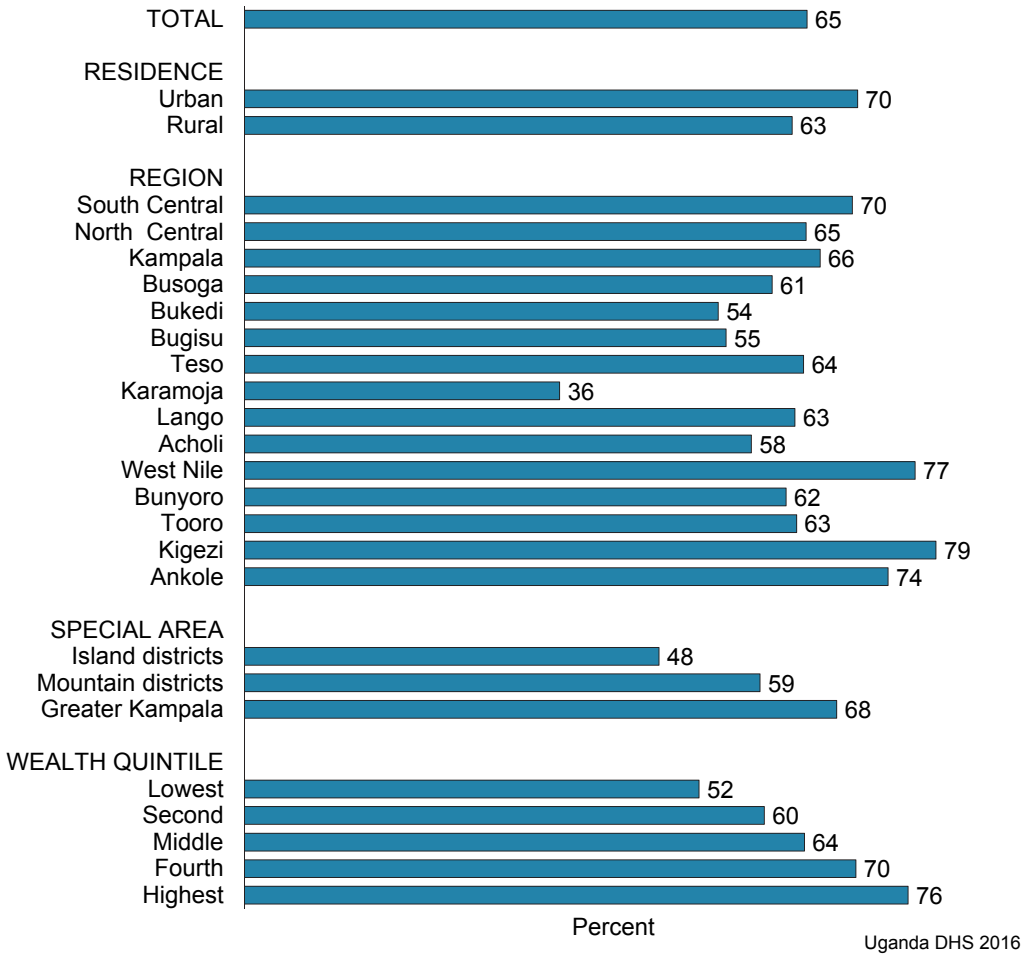
Percentage of households with at least one insecticide-treated net (ITN); average number of ITNs per household; and percentage of households with at least one ITN per two persons who stayed in the household last night, according to background characteristics, Uganda DHS 2016

Background characteristic	Percentage of households with at least one insecticide-treated net (ITN)[1]	Average number of insecticide-treated nets (ITN)[1] per household	Number of households	Percentage of households with at least one insecticide-treated net (ITN)[1] for every two persons who stayed in the household last night[2]	Number of households with at least one person who stayed in the household last night
Residence					
Urban	79.3	2.0	5,027	60.4	4,997
Rural	78.1	1.9	14,561	47.9	14,468
Region					
South Central	78.8	2.0	2,668	59.0	2,648
North Central	74.8	1.9	2,229	49.9	2,204
Kampala	75.4	1.7	979	58.2	975
Busoga	74.8	1.8	1,840	48.3	1,816
Bukedi	73.7	1.8	1,123	41.4	1,122
Bugisu	71.7	1.4	1,098	39.3	1,096
Teso	83.9	2.2	961	48.2	956
Karamoja	54.8	1.0	469	23.2	463
Lango	78.9	1.9	1,043	47.3	1,038
Acholi	80.7	1.7	955	41.2	952
West Nile	92.0	2.5	1,257	60.7	1,251
Bunyoro	75.7	1.8	1,089	48.5	1,085
Tooro	77.1	2.0	1,401	49.4	1,398
Kigezi	89.0	2.3	847	67.9	841
Ankole	85.4	2.2	1,630	58.3	1,619
Special area[3]					
Islands[4]	61.3	1.2	266	39.0	261
Mountains[5]	73.3	1.7	1,641	42.9	1,635
Greater Kampala[6]	77.3	1.8	1,901	60.3	1,892
Wealth quintile					
Lowest	70.9	1.4	3,838	36.0	3,819
Second	75.5	1.7	3,753	44.6	3,732
Middle	79.9	2.0	3,616	48.8	3,597
Fourth	81.0	2.1	3,914	56.3	3,885
Highest	83.9	2.3	4,467	66.9	4,433
Total	78.4	1.9	19,588	51.1	19,465

[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment including long-lasting insecticidal nets (LLINs) or (2) a net that has been soaked with insecticide within the past 12 months.
[2] De facto household members.
[3] Special areas are a subsample and do not sum the total survey sample; for detail, see Section 2.1 Sample Design.
[4] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[5] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[6] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

Figure 7 shows the percentage of the de facto population with access to an ITN. Overall, 65 percent of the household population has access to an ITN, which means that all de facto household members could sleep under ITN if each ITN in the household were used by up to two people. Those living in urban areas (70 percent), those living in Kigezi (79 percent), West Nile (77 percent), and Ankole (74 percent) subregions, and those in the highest wealth quintile (76 percent) are the most likely to have access to an ITN.

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



3.12.2 Use of ITNs by Children and Pregnant Women

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

As shown in Table 16, 62 percent of children under age 5 slept under an ITN the night before the survey, and 67 percent either slept under an ITN the night before the survey or slept within a dwelling that had been sprayed in the past 6 months. Children living in urban areas are more likely than children in rural areas to have slept under an ITN (67 percent and 61 percent, respectively). The proportion of children who slept under an ITN the night before the survey is highest in West Nile subregion (77 percent) and lowest in Karamoja subregion (47 percent). The proportion of children who slept under an ITN the night before the survey increases with increasing wealth quintile from 58 percent of children in the lowest quintile to 73 percent among children in the highest wealth quintile. Among households with at least one ITN, three quarters of children (75 percent) slept under an ITN the night before the survey.

Table 16 also shows that 64 percent of pregnant women slept under an ITN the night before the survey; and 7 in 10 pregnant women (70 percent) either slept under an ITN the night before the survey or slept in a dwelling that had been sprayed in the past 6 months. Among households with at least one ITN, almost 8 in 10 pregnant women (79 percent) slept under an ITN the night before the survey.

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

Percentage of children under age 5 who, the night before the survey, slept under an insecticide-treated net (ITN), and slept under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 6 months; and among children under age 5 in households with at least one ITN, percentage who slept under an ITN the night before the survey; percentage of pregnant women age 15-49 who, the night before the survey, slept under an ITN, and slept under an ITN or in a dwelling in which the interior walls have been sprayed with IRS in the past 6 months; and among pregnant women age 15-49 in households with at least one ITN, percentage who slept under an ITN the night before the survey, according to background characteristics, Uganda DHS 2016

	Children under age 5 in all households			Children under age 5 in households with at least one ITN[1]		Pregnant women age 15-49 in all households			Pregnant women age 15-49 in households with at least one ITN[1]	
Background characteristic	Percentage who slept under an ITN[1] last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 6 months	Number of children	Percentage who slept under an ITN[1] last night	Number of children	Percentage who slept under an ITN[1] last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 6 months	Number of pregnant women	Percentage who slept under an ITN[1] last night	Number of pregnant women
Residence										
Urban	67.0	69.6	3,180	80.2	2,657	70.7	74.6	417	82.6	357
Rural	60.8	66.6	12,770	74.1	10,483	62.2	69.1	1,440	77.6	1,155
Region										
South Central	67.0	67.1	1,951	77.5	1,687	69.5	71.3	203	84.9	166
North Central	63.3	63.3	1,715	75.8	1,433	58.9	58.9	206	72.6	168
Kampala	68.9	69.2	539	84.8	438	74.7	74.7	65	81.2	60
Busoga	58.4	65.6	1,642	74.6	1,286	63.6	70.7	214	83.3	164
Bukedi	49.3	89.5	1,133	65.8	849	45.8	87.0	163	66.7	112
Bugisu	59.8	60.0	829	80.3	618	68.8	68.8	85	85.5	68
Teso	72.0	82.5	963	83.5	830	69.9	79.3	116	78.3	103
Karamoja	47.4	47.4	422	70.9	282	51.0	51.0	56	75.9	38
Lango	65.9	81.1	841	78.7	704	67.7	83.4	107	81.2	89
Acholi	67.8	68.3	789	80.5	664	68.2	68.2	91	88.1	70
West Nile	76.6	76.7	1,087	80.9	1,028	83.0	83.0	113	86.9	108
Bunyoro	59.7	59.7	938	78.1	717	63.6	63.6	88	80.4	70
Tooro	53.3	53.3	1,249	67.8	981	60.2	60.2	147	74.5	119
Kigezi	59.7	59.9	553	65.4	505	67.6	69.0	71	75.7	63
Ankole	57.6	57.7	1,299	66.7	1,122	60.6	61.6	133	70.5	114
Special area[3]										
Islands[4]	50.4	50.5	200	71.8	141	55.5	57.5	25	84.9	16
Mountains[5]	57.7	57.7	1,311	75.2	1,007	64.7	64.7	141	81.6	112
Greater Kampala[6]	68.5	68.6	1,138	83.4	935	80.6	81.8	162	89.0	147
Wealth quintile										
Lowest	57.8	65.5	3,503	75.4	2,684	59.9	69.3	409	79.4	308
Second	58.2	65.8	3,360	73.5	2,659	61.2	69.0	398	78.2	312
Middle	59.1	63.8	3,207	71.7	2,641	59.5	66.7	373	71.3	311
Fourth	64.3	68.1	3,025	74.1	2,627	65.5	69.2	330	80.3	269
Highest	72.8	73.7	2,855	82.2	2,529	76.2	78.1	348	85.0	312
Total	62.0	67.2	15,950	75.3	13,141	64.1	70.4	1,858	78.8	1,512

Note: Table is based on children and pregnant women who stayed in the household the night before the interview.
[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment including long-lasting insecticidal nets (LLINs) or (2) a net that has been soaked with insecticide within the past 12 months.
[2] Indoor residual spraying (IRS) is limited to spraying conducted by a government, private or non-governmental organization.
[3] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[4] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[5] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[6] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.12.3 Intermittent Preventive Treatment of Malaria in Pregnancy

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

In the 2016 UDHS, women who had a live birth in the 2 years preceding the survey were asked if they took any SP/Fansidar during the pregnancy leading to their most recent birth and, if so, how many times they took SP/Fansidar. Women were also asked if the SP/Fansidar was received during an ANC visit.

Table 17 shows that 77 percent of women with a live birth in the 2 years preceding the survey reported taking at least one dose of SP/Fansidar during an ANC visit; 45 percent reported taking two or more doses of SP/Fansidar, at least one of which was received during an ANC visit, and 17 percent reported taking three or more doses of SP/Fansidar, at least one of which was received during an ANC visit. There was some regional variation in the percentage of women with a live birth in the 2 years preceding the survey taking 3 or more doses of SP/Fansidar, at least one of which was received during an ANC visit, with Karamoja subregion having the lowest (8 percent) and North Central, Busoga, and Lango subregions having the highest (22 percent).

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

Percentage of women age 15-49 with a live birth in the 2 years preceding the survey who, during the pregnancy that resulted in the last birth, received one or more doses of SP/Fansidar at least one of which was received during an ANC visit, received two or more doses of SP/Fansidar at least one of which was received during an ANC visit, and received three or more doses of SP/Fansidar at least one of which was received during an ANC visit, according to background characteristics, Uganda DHS 2016

Background characteristic	Percentage who received one or more doses of SP/Fansidar[1]	Percentage who received two or more doses of SP/Fansidar[1]	Percentage who received three or more doses of SP/Fansidar[1]	Number of women with a live birth in the 2 years preceding the survey
Residence				
Urban	81.0	44.6	15.3	1,258
Rural	75.8	45.1	17.2	4,643
Region				
South Central	75.1	44.5	12.2	719
North Central	82.1	51.8	22.4	647
Kampala	77.3	47.0	12.3	235
Busoga	67.3	47.9	21.5	580
Bukedi	81.3	46.0	18.0	397
Bugisu	68.6	39.9	15.7	300
Teso	88.6	51.3	13.6	412
Karamoja	90.7	26.0	8.2	168
Lango	67.5	43.5	21.9	302
Acholi	69.9	37.2	16.2	282
West Nile	73.6	47.7	18.8	420
Bunyoro	83.6	43.1	12.2	340
Tooro	82.5	45.2	20.8	460
Kigezi	78.4	43.7	16.0	181
Ankole	73.2	40.1	12.4	458
Special area[2]				
Islands[3]	66.9	45.8	19.2	79
Mountains[4]	78.7	43.6	17.8	471
Greater Kampala[5]	80.2	44.2	13.1	474
Wealth quintile				
Lowest	73.4	42.2	15.0	1,326
Second	75.0	43.3	17.8	1,253
Middle	77.8	45.2	18.2	1,120
Fourth	77.8	47.6	18.3	1,037
Highest	81.4	47.3	14.9	1,166
Total	76.9	45.0	16.8	5,901

[1] Received the specified number of doses of SP/Fansidar, at least one of which was received during an ANC visit.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

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

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

In the 2016 UDHS, for each child under age 5, mothers were asked if the child had experienced an episode of fever in the 2 weeks preceding the survey and, if so, whether treatment and advice were sought. Information was also collected about the type and timing of the treatment given.

Table 18 shows the percentage of children under age 5 who had a fever in the 2 weeks preceding the survey. Also shown, among those children with a fever, are the percentage for whom advice or treatment was sought; the percentage of such children who had a drop of blood taken from a finger or heel prick (presumably for a malaria test); and among children who took any antimalarial drug, the percentage who took any ACT.

One-third of children under age 5 (33 percent) had a fever during the 2 weeks preceding the survey. The prevalence of fever is higher among children in rural areas than children in urban areas (36 percent and 22 percent, respectively). Advice or treatment was sought for 81 percent of children with a fever, and 49 percent had blood taken from a finger or heel for testing. Advice or treatment for fever is more likely to be sought for children in urban areas than for children in rural areas (87 percent and 80 percent, respectively). Nearly 9 in 10 (88 percent) of children with a fever who took any antimalarial drug took an ACT.

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

Percentage of children under age 5 with fever in the 2 weeks preceding the survey; among children under age 5 with fever, percentage for whom advice or treatment was sought, percentage who had blood taken from a finger or heel; and among children under age 5 with fever who took any antimalarial drug, percentage who took any artemisinin-based combination therapy (ACT), according to background characteristics, Uganda DHS 2016

	Children under age 5		Children under age 5 with fever			Children under age 5 with fever who took any antimalarial drug	
Background characteristic	Percentage with fever in the 2 weeks preceding the survey	Number of children	Percentage for whom advice or treatment was sought[1]	Percentage who had blood taken from a finger or heel for testing	Number of children	Percentage who took any ACT	Number of children
Residence							
Urban	22.0	3,094	87.0	61.4	680	83.3	464
Rural	36.4	11,398	79.7	47.0	4,143	88.5	2,985
Region							
South Central	25.4	1,808	87.3	58.7	459	81.0	336
North Central	27.3	1,537	89.0	42.7	420	90.1	295
Kampala	14.0	554	90.0	54.8	78	(72.2)	40
Busoga	65.7	1,430	77.7	42.8	939	90.6	647
Bukedi	34.0	1,016	78.1	33.7	345	89.1	223
Bugisu	19.0	733	88.6	36.2	139	85.7	121
Teso	59.4	911	64.1	44.1	541	88.9	406
Karamoja	43.1	394	89.7	68.0	170	92.7	129
Lango	44.1	765	82.4	49.3	337	87.1	269
Acholi	49.1	713	85.1	66.8	350	90.9	296
West Nile	42.1	1,005	88.5	56.6	423	89.7	349
Bunyoro	11.3	845	72.6	48.3	96	91.9	66
Tooro	24.0	1,140	73.1	56.6	273	86.3	170
Kigezi	14.6	484	79.5	37.3	71	(58.8)	20
Ankole	15.7	1,157	83.3	46.8	182	70.6	82
Special area[2]							
Islands[3]	43.6	189	74.8	34.7	82	87.8	49
Mountains[4]	19.2	1,198	85.0	54.6	230	82.7	174
Greater Kampala[5]	15.7	1,197	91.9	59.6	188	80.1	122
Wealth quintile							
Lowest	43.9	3,251	77.9	50.3	1,428	91.3	1,061
Second	37.0	3,038	79.0	45.6	1,124	88.9	815
Middle	32.6	2,799	81.0	44.2	912	87.5	641
Fourth	31.2	2,579	83.2	48.8	804	84.7	566
Highest	19.6	2,826	87.6	61.0	555	81.0	367
Total	33.3	14,493	80.7	49.0	4,824	87.8	3,449

Figures in parentheses are based on 25-49 unweighted cases.
[1] Excludes advice or treatment from a traditional practitioner.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.12.5 Prevalence of Low Haemoglobin in Children

One of the objectives of the 2016 UDHS was to assess the prevalence of anaemia among children age 6-59 months. Poor dietary intake of iron is one of numerous causes of anaemia; malaria infection can also result in anaemia. A haemoglobin concentration of less than 8.0 g/dl is considered low and may be an indication that an individual has malaria (Korenromp et al. 2004).

Overall, 6 percent of children age 6-59 months have a haemoglobin level less than 8.0 g/dl (Table 19). Children in Karamoja subregion (13 percent) and the lowest wealth quintile (10 percent) are more likely to have low haemoglobin levels than children in other regions or higher wealth quintiles.

Table 19 Hemoglobin <8.0 g/dl in children

Percentage of children age 6-59 months with hemoglobin lower than 8.0 g/dl, according to background characteristics, Uganda DHS 2016

Background characteristic	Hemoglobin <8.0 g/dl	Number of children
Residence		
Urban	3.2	914
Rural	6.8	3,819
Region		
South Central	7.9	584
North Central	6.1	508
Kampala	3.0	134
Busoga	8.5	502
Bukedi	1.7	334
Bugisu	3.6	239
Teso	4.0	275
Karamoja	13.0	109
Lango	9.9	276
Acholi	10.4	242
West Nile	5.6	317
Bunyoro	10.0	275
Tooro	5.4	422
Kigezi	1.3	156
Ankole	1.4	361
Special area[1]		
Islands[2]	7.1	54
Mountains[3]	3.6	396
Greater Kampala[4]	3.3	324
Wealth quintile		
Lowest	10.2	1,028
Second	6.0	980
Middle	5.9	980
Fourth	5.3	913
Highest	2.6	831
Total	6.1	4,733

Note: Table is based on children who stayed in the household the night before the interview. Hemoglobin levels are adjusted for altitude using CDC formulas (CDC, 1998). Hemoglobin is measured in grams per deciliter (g/dl).
[1] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[2] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[3] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[4] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.13 PREVALENCE OF MALARIA IN CHILDREN

The 2016 UDHS conducted malaria testing among children age 6-59 months. The malaria test involved testing a small amount of blood from a finger or heel prick with a rapid diagnostic test (RDT). The RDT detected evidence of *Plasmodium falciparum* and *Plasmodium vivax* infections. Testing was peformed on 97 percent of eligible children.

Table 20 shows the percentage of children age 6-59 months classified as having malaria according to the RDT done in the field. The prevalence of malaria in children was 30 percent. Children in rural areas are almost three times more likely to test positive than urban children (35 percent and 12 percent respectively). Substantial regional variations exist with malaria prevalence in children, with the lowest in Kampala subregion (1 percent) and highest in Karamoja subregion (70 percent). Malaria prevalence declines as wealth increases, from 52 percent of children in the lowest wealth quintile to 5 percent of children in the highest wealth quintle.

Table 20 Prevalence of malaria in children

Percentage of children age 6-59 months classified as having malaria, according to background characteristics, Uganda DHS 2016

Background characteristic	Malaria prevalence according to RDT: RDT positive	Malaria prevalence according to RDT: Number of children
Residence		
Urban	11.5	912
Rural	34.9	3,799
Region		
South Central	16.1	575
North Central	21.5	508
Kampala	0.9	134
Busoga	53.1	498
Bukedi	27.1	333
Bugisu	19.8	236
Teso	51.7	274
Karamoja	70.3	107
Lango	62.2	275
Acholi	62.8	243
West Nile	24.5	317
Bunyoro	31.9	273
Tooro	18.3	420
Kigezi	2.8	156
Ankole	11.3	361
Special area[1]		
Islands[2]	44.0	54
Mountains[3]	18.0	392
Greater Kampala[4]	1.4	324
Wealth quintile		
Lowest	52.4	1,025
Second	35.3	980
Middle	29.4	968
Fourth	24.6	909
Highest	4.9	829
Total	30.4	4,711

RDT = Rapid Diagnostic Test SD Bioline Pf/Pv.
[1] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[2] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[3] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[4] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.14 HIV/AIDS AWARENESS, KNOWLEDGE, AND BEHAVIOUR

3.14.1 Knowledge of HIV Prevention

The 2016 UDHS included a series of questions that addressed respondents' knowledge of HIV prevention, their awareness of modes of HIV transmission, and behaviours that can prevent the spread of HIV.

Table 21 shows that 87 percent of women and 88 percent of men age 15-49 know that consistent use of condoms is a means of preventing the spread of HIV. Ninety-four percent of women and 92 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. Slightly more than 8 in 10 women (84 percent) and men (83 percent) know that both using condoms and limiting sexual intercourse to one uninfected partner are means of preventing HIV.

Table 21 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting HIV by using condoms every time they have sexual intercourse, and by having one sex partner who is not infected and has no other partners, according to background characteristics, Uganda DHS 2016

	Women				Men			
	Percentage who say HIV can be prevented by:				Percentage who say HIV can be prevented by:			
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of men
Age								
15-24	85.5	91.9	81.5	8,086	87.1	89.6	80.2	2,238
15-19	81.8	89.2	77.0	4,264	85.6	87.7	78.3	1,288
20-24	89.7	94.8	86.5	3,822	89.0	92.1	82.9	949
25-29	90.1	95.1	87.0	3,051	88.7	96.0	86.0	741
30-39	88.8	95.6	86.1	4,554	88.5	93.1	83.8	1,226
40-49	85.9	95.3	82.9	2,814	88.2	93.0	84.3	832
Residence								
Urban	89.7	94.5	86.4	4,943	88.9	94.0	84.6	1,274
Rural	86.2	93.6	82.8	13,563	87.5	91.3	82.0	3,763
Region								
South Central	92.2	94.6	88.4	2,494	88.7	91.6	82.0	661
North Central	91.6	94.1	88.3	1,963	86.8	90.1	80.7	592
Kampala	90.0	95.7	87.9	1,025	88.0	91.5	81.8	291
Busoga	90.8	92.9	85.8	1,690	91.8	94.7	89.3	412
Bukedi	85.8	93.9	83.0	1,169	95.5	96.3	94.8	335
Bugisu	92.2	96.7	90.9	921	70.7	90.4	64.9	258
Teso	82.9	96.2	81.0	1,099	95.6	74.1	71.3	276
Karamoja	75.9	94.4	73.4	365	47.4	64.8	37.6	80
Lango	81.2	93.8	78.9	1,010	88.5	93.0	83.9	328
Acholi	86.6	88.5	79.5	924	90.3	95.8	88.2	271
West Nile	68.0	84.9	61.5	1,247	88.1	96.5	86.8	281
Bunyoro	90.2	95.6	87.6	1,014	87.3	94.2	84.9	265
Tooro	86.1	94.2	82.6	1,357	94.2	96.4	92.0	400
Kigezi	90.1	96.1	87.8	732	81.8	91.1	75.0	181
Ankole	88.4	96.5	86.7	1,498	85.4	95.4	83.1	406
Special area[3]								
Islands[4]	91.2	94.9	87.4	203	91.1	93.0	86.1	75
Mountains[5]	89.0	96.5	87.5	1,481	79.4	91.8	74.5	420
Greater Kampala[6]	91.2	95.2	88.4	2,048	90.5	93.2	85.4	560
Education								
No education	80.2	91.9	76.1	1,781	78.1	83.4	74.8	194
Primary	85.9	93.1	82.5	10,630	87.0	90.7	81.0	2,767
Secondary	91.1	95.7	88.3	4,639	89.6	94.7	85.4	1,451
More than secondary	92.2	95.4	88.2	1,456	90.5	93.8	85.7	626

(*Continued…*)

Table 21–*Continued*

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting HIV by using condoms every time they have sexual intercourse, and by having one sex partner who is not infected and has no other partners, according to background characteristics, Uganda DHS 2016

	Women				Men			
	Percentage who say HIV can be prevented by:				Percentage who say HIV can be prevented by:			
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of men
Wealth quintile								
Lowest	80.0	90.7	75.4	3,247	84.9	89.3	79.2	859
Second	85.4	93.1	81.8	3,397	86.9	90.2	80.7	899
Middle	88.1	95.0	85.5	3,460	89.8	91.8	83.5	963
Fourth	88.8	94.8	85.7	3,683	87.4	92.2	82.5	1,102
Highest	91.4	95.0	88.1	4,720	89.5	95.0	85.9	1,213
Total 15-49	87.1	93.8	83.8	18,506	87.8	91.9	82.6	5,037
50-54	na	na	na	na	86.5	94.1	82.3	299
Total 15-54	na	na	na	na	87.8	92.1	82.6	5,336

na = Not applicable.
[1] Using condoms every time they have sexual intercourse.
[2] Partner who has no other partners.
[3] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[4] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[5] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[6] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

Across subregions, there are some large differences in knowledge that using condoms and limiting sexual intercourse to one uninfected partner reduces the risk of HIV transmission among men and women. In Bugisu and Karamoja subregions, more women (91 and 73 percent, respectively) than men (65 and 38 percent, respectively) know that both using condoms and limiting sexual intercourse to one uninfected partner are means of preventing HIV. In West Nile subregion, more men (87 percent) than women (62 percent) know that both using condoms and limiting sexual intercourse to one uninfected partner are means of preventing HIV. Respondents with no education and those in the lowest wealth quintile are less knowledgeable about HIV prevention methods compared with other respondents.

3.14.2 Comprehensive knowledge about HIV prevention among young people

Table 22 shows comprehensive knowledge about HIV prevention among young people age 15-24. Comprehensive knowledge about HIV prevention is defined as knowing that both condom use and limiting sexual intercourse to one uninfected partner are HIV prevention methods, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about HIV transmission: that HIV can be transmitted by mosquito bites or by sharing food with a person who has HIV. Knowledge of how HIV is transmitted is crucial to enabling people to avoid HIV infection, and this is especially true for young people, who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviours.

Table 22 shows that 46 percent of young women and 45 percent of young men have comprehensive knowledge about HIV. Among both sexes, the proportion with comprehensive knowledge increases with age and education, and is positively correlated with residence in an urban area.

Table 22 Comprehensive knowledge about HIV prevention among young people

Percentage of young women and young men age 15-24 with comprehensive knowledge about HIV prevention, according to background characteristics, Uganda DHS 2016

Background characteristic	Women age 15-24		Men age 15-24	
	Percentage with comprehensive knowledge about HIV prevention[1]	Number of women	Percentage with comprehensive knowledge about HIV prevention[1]	Number of men
Age				
15-19	40.7	4,264	40.2	1,288
15-17	37.8	2,629	36.9	811
18-19	45.2	1,636	45.9	477
20-24	51.3	3,822	51.0	949
20-22	50.4	2,368	53.4	581
23-24	52.8	1,453	47.3	368
Marital status				
Never married	45.0	4,266	44.7	1,837
Ever had sex	52.3	1,650	49.4	992
Never had sex	40.3	2,617	39.1	845
Ever married	46.5	3,820	45.3	401
Residence				
Urban	54.7	2,178	55.5	511
Rural	42.4	5,908	41.6	1,726
Education				
No education	32.8	202	(41.2)	39
Primary	36.7	4,706	34.0	1,282
Secondary	58.4	2,691	58.1	757
More than secondary	68.3	486	69.0	160
Total 15-24	45.7	8,086	44.8	2,238

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

[1] Comprehensive knowledge about HIV prevention means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about transmission or prevention of HIV: that HIV can be transmitted by mosquito bites, and that a person can become infected by sharing food with a person who has HIV.

3.14.3 Multiple Sexual Partners

Information on sexual behaviour is important in designing and monitoring intervention programmes to control the spread of HIV. The 2016 UDHS included questions on respondents' sexual partners during the 12 months preceding the survey and during their lifetime. Information was also collected on use of condoms at respondents' last sexual intercourse. These questions are sensitive, and it is recognised that some respondents may have been reluctant to provide information on recent sexual behaviour. Results are shown in Table 23.1 for women and Table 23.2 for men.

Overall, 2 percent of women age 15-49 reported that they had two or more partners in the past 12 months. Among women who had two or more partners in the past 12 months, 21 percent reported using a condom during their last sexual intercourse. The mean number of lifetime partners among all women who have ever had sexual intercourse is 2.3.

Twenty-one percent of men age 15-49 reported that they had two or more partners in the past 12 months. Among men who had two or more partners in the past 12 months, 22 percent of them reported using a condom during their last sexual intercourse. The mean number of lifetime partners among all men who have ever had sexual intercourse is 6.3.

Table 23.1 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Women

Among all women age 15-49, percentage who had sexual intercourse with more than one sexual partner in the past 12 months, and percentage who had intercourse in the past 12 months with a person who was neither their husband nor lived with them; among those having more than one partner in the past 12 months, percentage reporting that a condom was used during last intercourse; among women age 15-49 who had sexual intercourse in the past 12 months with a person who was neither their husband nor lived with them, percentage who used a condom during last sexual intercourse with such a partner; and among women who ever had sexual intercourse, mean number of sexual partners during their lifetime, according to background characteristics, Uganda DHS 2016

	All women			Women who had 2+ partners in the past 12 months		Women who had intercourse in the past 12 months with a person who was neither their husband nor lived with them		Women who ever had sexual intercourse[1]	
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 lived with them	Number of women	Percentage who reported using a condom during last sexual inter-course	Number of women	Percentage who reported using a condom during last sexual intercourse with such a partner	Number of women	Mean number of sexual partners in lifetime	Number of women
Age									
15-24	2.7	19.4	8,086	26.4	220	42.8	1,571	2.0	5,470
15-19	2.2	18.9	4,264	26.0	93	42.9	807	1.7	1,947
20-24	3.3	20.0	3,822	26.6	127	42.7	764	2.2	3,523
25-29	2.7	13.8	3,051	21.6	82	35.9	421	2.3	2,998
30-39	1.9	10.9	4,554	9.9	87	28.5	496	2.4	4,514
40-49	1.3	9.1	2,814	(18.1)	37	23.0	255	2.6	2,794
Marital status									
Never married	2.0	31.3	4,783	40.1	93	42.8	1,499	2.2	2,080
Married/living together	1.9	2.9	11,223	7.9	218	34.8	326	2.2	11,206
Divorced/separated/ widowed	4.6	36.7	2,500	31.5	115	29.2	918	2.9	2,489
Residence									
Urban	2.2	19.3	4,943	27.4	109	43.1	952	2.4	4,145
Rural	2.3	13.2	13,563	19.3	317	34.2	1,791	2.2	11,630
Region									
South Central	3.0	18.5	2,494	31.6	75	42.7	462	2.6	2,112
North Central	3.1	18.8	1,963	13.7	61	35.6	368	2.6	1,723
Kampala	2.0	22.4	1,025	(44.7)	21	47.7	229	2.7	854
Busoga	3.2	14.8	1,690	19.8	54	46.7	250	2.3	1,439
Bukedi	5.0	14.9	1,169	16.8	58	33.4	174	2.0	1,015
Bugisu	1.6	14.0	921	*	15	33.9	129	2.2	797
Teso	2.7	15.1	1,099	(22.1)	30	34.5	166	2.1	928
Karamoja	0.1	5.7	365	*	0	(6.3)	21	1.2	309
Lango	0.5	11.3	1,010	*	5	30.2	114	2.0	875
Acholi	1.0	10.8	924	*	9	63.0	100	2.1	777
West Nile	0.7	8.2	1,247	*	9	35.9	102	1.9	1,020
Bunyoro	2.2	17.3	1,014	(9.9)	22	21.0	175	2.8	872
Tooro	3.2	16.6	1,357	(16.1)	44	29.3	226	2.9	1,180
Kigezi	1.5	9.8	732	*	11	25.7	72	1.8	588
Ankole	0.8	10.3	1,498	*	12	34.3	154	1.7	1,285
Special area[2]									
Islands[3]	6.7	16.8	203	18.8	14	41.1	34	3.4	190
Mountains[4]	2.3	12.7	1,481	(8.6)	34	29.9	189	2.1	1,244
Greater Kampala[5]	2.4	21.9	2,048	(36.7)	50	46.1	449	2.7	1,719
Education									
No education	1.0	7.6	1,781	(14.6)	18	10.7	136	2.2	1,731
Primary	2.5	13.0	10,630	19.2	264	30.9	1,379	2.3	9,029
Secondary	2.5	19.4	4,639	28.4	115	48.7	899	2.3	3,689
More than secondary	2.0	22.6	1,456	(17.1)	29	44.1	329	2.3	1,326
Wealth quintile									
Lowest	1.6	10.8	3,247	17.2	54	32.6	350	2.0	2,854
Second	1.9	11.9	3,397	18.1	66	29.4	404	2.3	2,929
Middle	3.0	13.1	3,460	14.3	102	32.8	453	2.3	2,935
Fourth	2.7	16.9	3,683	26.1	100	35.1	623	2.3	3,148
Highest	2.2	19.3	4,720	27.8	105	46.4	913	2.5	3,908
Total	2.3	14.8	18,506	21.3	426	37.3	2,743	2.3	15,775

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

[1] Means are calculated excluding respondents who gave non-numeric responses.

[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.

[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.

[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.

[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

Table 23.2 Multiple sexual partners and higher-risk sexual intercourse in the past 12 months: Men

Among all men age 15-49, percentage who had sexual intercourse with more than one sexual partner in the past 12 months, and percentage who had intercourse in the past 12 months with a person who was neither their wife nor lived with them; among those having more than one partner in the past 12 months, percentage reporting that a condom was used at last intercourse; among men age 15-49 who had sexual intercourse in the past 12 months with a person who was neither their wife nor lived with them, percentage who used a condom during last sexual intercourse with such a partner; and among men who ever had sexual intercourse, mean number of sexual partners during their lifetime, according to background characteristics, Uganda DHS 2016

Background characteristic	All men			Men who had 2+ partners in the past 12 months		Men who had intercourse in the past 12 months with a person who was neither their wife nor lived with them		Men who ever had sexual intercourse[1]	
	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 lived with them	Number of men	Percentage who reported using a condom during last sexual inter-course	Number of men	Percentage who reported using a condom during last sexual intercourse with such a partner	Number of men	Mean number of sexual partners in lifetime	Number of men
Age									
15-24	14.3	37.6	2,238	41.4	320	57.0	841	4.8	1,376
15-19	6.6	27.6	1,288	52.1	85	55.0	355	3.4	553
20-24	24.8	51.2	949	37.5	235	58.5	486	5.8	823
25-29	25.2	35.8	741	18.3	187	58.5	265	7.3	716
30-39	26.7	24.5	1,226	11.5	328	59.7	301	6.2	1,177
40-49	23.8	14.6	832	9.0	198	50.4	121	8.0	811
Marital status									
Never married	11.0	41.3	2,080	55.4	229	59.0	859	4.5	1,187
Married/living together	27.4	18.7	2,695	9.7	738	58.1	505	6.7	2,643
Divorced/separated/ widowed	25.0	62.4	262	36.8	65	45.9	163	10.6	249
Type of union									
In polygynous union	81.6	15.1	356	4.1	291	52.0	54	7.9	349
In non-polygynous union	19.1	19.3	2,339	13.3	447	58.8	451	6.5	2,295
Not currently in union	12.6	43.7	2,342	51.3	294	56.9	1,023	5.5	1,436
Residence									
Urban	21.1	36.2	1,274	29.0	268	66.8	461	6.9	1,060
Rural	20.3	28.4	3,763	18.9	764	53.1	1,067	6.1	3,019
Region									
South Central	16.0	32.1	661	16.4	106	60.8	212	6.0	545
North Central	25.1	36.5	592	23.9	148	59.4	216	7.5	470
Kampala	21.7	45.8	291	56.7	63	68.6	133	8.5	248
Busoga	21.6	29.6	412	19.5	89	55.6	122	5.4	329
Bukedi	11.1	14.3	335	(2.6)	37	50.4	48	4.6	246
Bugisu	23.5	33.5	258	27.8	61	48.5	86	9.1	225
Teso	16.8	26.4	276	21.9	46	68.1	73	4.1	231
Karamoja	13.0	8.5	80	*	10	*	7	1.9	56
Lango	18.5	27.4	328	16.9	61	52.3	90	5.1	266
Acholi	26.2	30.1	271	28.4	71	81.3	82	7.2	222
West Nile	22.8	22.0	281	14.1	64	63.1	62	6.3	213
Bunyoro	21.8	26.9	265	18.9	58	50.0	71	7.6	203
Tooro	26.5	37.4	400	15.1	106	35.6	149	7.9	350
Kigezi	22.5	32.2	181	(19.3)	41	57.8	58	4.8	149
Ankole	17.6	28.9	406	19.5	71	53.2	117	4.3	325
Special area[2]									
Islands[3]	34.6	34.3	75	20.9	26	55.2	26	10.7	68
Mountains[4]	26.9	32.8	420	22.6	113	43.0	138	9.8	363
Greater Kampala[5]	18.2	38.0	560	42.7	102	71.2	213	7.3	466
Education									
No education	16.8	21.1	194	(5.7)	33	(28.0)	41	6.8	171
Primary	20.7	27.0	2,767	15.5	574	47.4	748	6.3	2,175
Secondary	20.7	36.5	1,451	31.6	300	66.2	529	6.3	1,158
More than secondary	20.2	33.6	626	28.9	126	75.7	210	5.8	576
Wealth quintile									
Lowest	18.1	20.0	859	14.6	156	52.1	172	5.5	669
Second	20.2	26.0	899	16.8	182	55.9	234	6.1	731
Middle	20.5	31.1	963	19.8	198	51.5	299	5.7	785
Fourth	21.0	31.9	1,102	20.2	231	52.5	352	6.8	879
Highest	22.0	38.8	1,213	31.3	266	67.1	470	7.0	1,015
Total 15-49	20.5	30.3	5,037	21.5	1,032	57.3	1,528	6.3	4,080
50-54	22.9	11.8	299	9.1	69	(46.5)	35	10.4	287
Total 15-54	20.6	29.3	5,336	20.8	1,101	57.0	1,563	6.6	4,366

An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] Means are calculated excluding respondents who gave non-numeric responses.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.15 COVERAGE OF HIV TESTING SERVICES

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

To assess awareness and coverage of HIV testing services, UDHS respondents were asked if they had ever been tested for HIV. If they said that they had, they were asked if 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 24.1 and 24.2 show that the majority of respondents age 15-49 (97 percent of women and 96 percent of men) knew of a place where they could get an HIV test. Respondents age 15-19 (89 percent of women and men) were less likely than those age 20-49 to know a place where they could go to be tested. Never-married respondents who had never had sex (85 percent of women and 87 percent of men) were less likely than others to know a place to get an HIV test. Knowledge of a place to get an HIV test is lower among men with no education (85 percent) than men with any education (94-100 percent).

Tables 24.1 and 24.2 also show coverage of HIV testing services. Among respondents age 15-49, a larger proportion of men (27 percent) than women (15 percent) had never been tested. Most of those who had been tested said that they had received the results of the last test they took. Overall, 83 percent of women and 70 percent of men had ever been tested and had received the results of their last test. The likelihood of having ever had an HIV test and receiving the results of the last test was lowest in the 15-19 age group (54 percent of women and 44 percent of men), in respondents who had never married and had never had sex (38 percent of women and 40 percent of men), and among men in Karamoja subregion (39 percent). Fifty-five percent of women and 47 percent of men age 15-49 had been tested in the 12-month period preceding the survey and had been told the results of the last test they took.

Table 24.1 Coverage of prior HIV testing: Women

Percentage of women age 15-49 who know where to get an HIV test, percent distribution of women age 15-49 by testing status and by whether they received the results of the last test, percentage of women ever tested, and percentage of women who were tested in the past 12 months and received the results of the last test, according to background characteristics, Uganda DHS 2016

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women by testing status and by whether they received the results of the last test			Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of women
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]				
Age								
15-24	93.9	71.2	2.3	26.5	100.0	73.5	52.2	8,086
15-19	89.4	53.6	2.6	43.7	100.0	56.3	39.4	4,264
20-24	98.9	90.7	2.0	7.2	100.0	92.8	66.5	3,822
25-29	99.5	95.4	1.4	3.2	100.0	96.8	64.4	3,051
30-39	99.4	91.9	2.3	5.8	100.0	94.2	56.4	4,554
40-49	99.4	89.8	1.9	8.2	100.0	91.8	47.6	2,814
Marital status								
Never married	90.3	56.7	2.0	41.3	100.0	58.7	40.4	4,783
Ever had sex	96.6	80.3	1.5	18.2	100.0	81.8	60.4	2,086
Never had sex	85.4	38.4	2.4	59.2	100.0	40.8	24.8	2,697
Married or living together	99.3	92.6	2.2	5.2	100.0	94.8	60.2	11,223
Divorced/separated/widowed	99.5	91.2	2.0	6.8	100.0	93.2	56.6	2,500
Residence								
Urban	97.9	87.4	1.0	11.7	100.0	88.3	58.8	4,943
Rural	96.7	81.6	2.5	15.9	100.0	84.1	53.0	13,563
Region								
South Central	98.1	86.3	1.5	12.2	100.0	87.8	57.2	2,494
North Central	97.6	84.6	2.4	13.1	100.0	86.9	52.2	1,963
Kampala	98.2	87.9	0.8	11.4	100.0	88.6	56.5	1,025
Busoga	94.2	76.6	4.3	19.1	100.0	80.9	53.7	1,690
Bukedi	96.4	75.3	4.0	20.7	100.0	79.3	49.7	1,169
Bugisu	95.8	78.0	2.2	19.8	100.0	80.2	47.8	921
Teso	97.7	89.3	0.6	10.1	100.0	89.9	64.4	1,099
Karamoja	97.7	84.9	0.5	14.6	100.0	85.4	53.1	365
Lango	96.0	83.9	3.1	13.1	100.0	86.9	48.7	1,010
Acholi	98.0	87.8	1.6	10.5	100.0	89.5	61.4	924
West Nile	95.1	80.8	2.9	16.3	100.0	83.7	52.8	1,247
Bunyoro	97.4	78.5	0.8	20.6	100.0	79.4	44.1	1,014
Tooro	97.4	86.2	1.7	12.0	100.0	88.0	64.2	1,357
Kigezi	98.8	80.2	2.6	17.2	100.0	82.8	50.7	732
Ankole	97.3	84.7	1.1	14.2	100.0	85.8	55.3	1,498
Special area[2]								
Islands[3]	97.5	87.5	3.6	9.0	100.0	91.0	65.0	203
Mountains[4]	96.6	80.9	1.9	17.2	100.0	82.8	53.0	1,481
Greater Kampala[5]	97.8	87.8	0.7	11.5	100.0	88.5	54.3	2,048
Education								
No education	97.8	85.6	2.2	12.2	100.0	87.8	47.7	1,781
Primary	96.0	80.2	2.4	17.4	100.0	82.6	51.3	10,630
Secondary	98.2	84.8	1.8	13.4	100.0	86.6	59.7	4,639
More than secondary	99.8	96.5	0.5	3.0	100.0	97.0	70.1	1,456
Wealth quintile								
Lowest	96.4	81.2	2.5	16.3	100.0	83.7	50.8	3,247
Second	96.7	80.0	2.8	17.2	100.0	82.8	51.9	3,397
Middle	96.4	81.6	2.8	15.6	100.0	84.4	53.3	3,460
Fourth	97.3	83.4	2.0	14.7	100.0	85.3	56.3	3,683
Highest	97.9	87.6	0.9	11.5	100.0	88.5	58.7	4,720
Total	97.0	83.1	2.1	14.8	100.0	85.2	54.6	18,506

[1] Includes 'don't know/missing'.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

Table 24.2 Coverage of prior HIV testing: Men

Percentage of men age 15-49 who know where to get an HIV test, percent distribution of men age 15-49 by testing status and by whether they received the results of the last test, percentage of men ever tested, and percentage of men who were tested in the past 12 months and received the results of the last test, according to background characteristics, Uganda DHS 2016

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: Ever tested and received results	Ever tested, did not receive results	Never tested[1]	Total	Percentage ever tested	Percentage who have been tested for HIV in the past 12 months and received the results of the last test	Number of men
Age								
15-24	92.6	56.9	2.6	40.5	100.0	59.5	38.9	2,238
15-19	89.4	44.1	2.8	53.1	100.0	46.9	28.4	1,288
20-24	97.0	74.4	2.4	23.2	100.0	76.8	53.1	949
25-29	98.7	83.0	2.6	14.3	100.0	85.7	58.4	741
30-39	97.5	81.8	2.4	15.7	100.0	84.3	54.4	1,226
40-49	98.1	78.4	2.3	19.3	100.0	80.7	44.5	832
Marital status								
Never married	92.3	54.8	2.3	42.9	100.0	57.1	36.3	2,080
Ever had sex	95.9	65.8	2.0	32.2	100.0	67.8	44.3	1,199
Never had sex	87.4	39.9	2.7	57.4	100.0	42.6	25.4	881
Married or living together	97.9	82.1	2.8	15.1	100.0	84.9	54.4	2,695
Divorced/separated/widowed	98.2	73.0	1.7	25.3	100.0	74.7	45.1	262
Residence								
Urban	98.2	78.3	2.2	19.5	100.0	80.5	54.4	1,274
Rural	94.7	67.7	2.6	29.7	100.0	70.3	43.8	3,763
Region								
South Central	98.3	74.8	2.4	22.8	100.0	77.2	49.0	661
North Central	96.1	64.4	4.1	31.5	100.0	68.5	40.1	592
Kampala	99.1	84.9	1.0	14.1	100.0	85.9	56.2	291
Busoga	93.2	62.1	2.3	35.6	100.0	64.4	34.6	412
Bukedi	84.5	52.3	5.8	41.8	100.0	58.2	33.8	335
Bugisu	92.7	59.6	3.8	36.6	100.0	63.4	41.1	258
Teso	96.5	81.7	2.5	15.9	100.0	84.1	59.1	276
Karamoja	82.6	39.0	0.8	60.3	100.0	39.7	24.3	80
Lango	94.8	70.5	3.3	26.2	100.0	73.8	46.6	328
Acholi	97.6	83.6	1.8	14.6	100.0	85.4	63.7	271
West Nile	97.9	77.3	1.7	20.9	100.0	79.1	53.1	281
Bunyoro	94.1	69.6	1.4	29.0	100.0	71.0	45.6	265
Tooro	97.7	75.2	0.7	24.1	100.0	75.9	54.0	400
Kigezi	98.8	68.3	2.3	29.4	100.0	70.6	38.8	181
Ankole	98.4	72.8	1.8	25.4	100.0	74.6	46.8	406
Special area[2]								
Islands[3]	98.1	75.1	4.9	20.0	100.0	80.0	51.3	75
Mountains[4]	94.1	63.2	2.2	34.7	100.0	65.3	42.9	420
Greater Kampala[5]	99.1	83.3	2.3	14.4	100.0	85.6	53.6	560
Education								
No education	85.3	53.8	1.2	45.0	100.0	55.0	30.7	194
Primary	93.6	62.6	3.1	34.3	100.0	65.7	38.5	2,767
Secondary	99.0	77.9	2.3	19.8	100.0	80.2	54.2	1,451
More than secondary	99.6	92.1	1.2	6.6	100.0	93.4	68.5	626
Wealth quintile								
Lowest	92.5	64.3	3.2	32.6	100.0	67.4	43.4	859
Second	93.0	64.4	3.7	31.9	100.0	68.1	43.4	899
Middle	95.1	66.3	2.7	31.0	100.0	69.0	40.6	963
Fourth	97.0	69.3	2.2	28.5	100.0	71.5	45.3	1,102
Highest	98.9	83.3	1.4	15.3	100.0	84.7	56.7	1,213
Total 15-49	95.6	70.4	2.5	27.1	100.0	72.9	46.5	5,037
50-54	97.6	74.4	1.7	23.9	100.0	76.1	40.7	299
Total 15-54	95.7	70.6	2.5	26.9	100.0	73.1	46.1	5,336

[1] Includes 'don't know/missing'.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.16 SEXUAL VIOLENCE

In Uganda, domestic violence is widely acknowledged to be of great concern, not just from a human rights perspective, but also from economic and health perspectives. The Government of Uganda revised its family law in 2000 and its criminal law and constitution in 2005 to protect and guarantee the rights of women and children and to promote gender equality and equity. Reliable data are needed to further inform and educate the population about the problem and to generate data for the SDG indicators under Goal 5: Achieve gender equality and empower all women and girls. To collect data on this topic, the 2016 UDHS included questions on violence against women and men. Information was collected on both domestic violence (also known as spousal violence or intimate partner violence) and violence by other family members and unrelated individuals. Table 25 shows the percentage of women and men age 15-49 who have ever experienced sexual violence and the percentage who have experienced sexual violence in the 12 months before the survey. The final report will present additional data on domestic and sexual violence.

Women in Uganda are more than twice as likely to experience sexual violence as men. More than 1 in 5 women age 15-49 (22 percent) report that they have experienced sexual violence at some point in time compared with fewer than 1 in 10 (8 percent) men. Thirteen percent of women and 4 percent of the men reported experiencing sexual violence in the 12 months preceding the survey. Women age 15-19 are less likely (5 percent) to report recent experience of sexual violence age than older women (13-16 percent). Women in urban areas (9 percent), women in Acholi subregion (5 percent), and never married women (1 percent) are less likely than other women to report recent experience of sexual violence. Experience of sexual violence ever and in the past 12 months is lowest among women with more than secondary education.

Table 25 Experience of sexual violence

Percentage of women and men age 15-49 who have ever experienced sexual violence and percentage who have experienced sexual violence in the 12 months preceding the survey, according to background characteristics, Uganda DHS 2016

Background characteristic	Women			Men		
	Percentage who have experienced sexual violence:		Number of women	Percentage who have experienced sexual violence:		Number of men
	Ever[1]	Past 12 months		Ever[1]	Past 12 months	
Age						
15-19	9.9	5.3	2,090	4.6	1.3	867
20-24	19.9	13.9	1,952	9.4	3.4	701
25-29	25.1	15.8	1,477	10.0	4.7	568
30-39	28.7	16.2	2,301	9.8	6.2	933
40-49	28.2	13.2	1,412	8.4	4.6	690
Religion						
Catholic	21.3	12.4	3,676	8.0	4.3	1,521
Anglican	22.1	13.7	2,880	8.0	3.5	1,245
Muslim	20.9	11.7	1,190	9.5	4.1	487
Pentecostal	25.3	13.1	1,240	9.3	4.2	378
Seventh Day Adventist	19.7	11.0	126	11.2	8.6	60
Other	17.3	6.9	120	5.2	1.5	66
Ethnicity						
Acholi	9.6	5.0	467	8.2	5.1	218
Alur	21.1	8.8	253	8.6	6.1	108
Baganda	19.9	8.8	1,474	10.1	4.0	632
Bagisu	19.6	11.7	491	3.7	2.1	165
Bakiga	25.0	16.4	656	8.1	6.3	253
Bakonzo	18.0	13.7	215	12.0	4.7	89
Banyankore	23.6	14.7	993	10.2	3.7	401
Banyoro	18.1	10.5	285	7.0	3.3	89
Basoga	27.5	15.7	735	7.8	2.3	288
Batoro	23.8	16.9	273	12.6	5.6	117
Iteso	23.4	13.8	679	9.9	6.5	280
Lango	18.8	10.6	513	4.8	1.0	259
Lugbara	24.8	11.7	276	4.6	2.5	95
Other	23.8	15.0	1,923	7.3	4.1	763
Residence						
Urban	18.9	8.5	2,414	8.7	3.6	915
Rural	23.0	14.2	6,818	8.2	4.2	2,844
Region						
South Central	20.1	10.9	1,177	12.5	5.7	436
North Central	23.0	10.8	993	9.9	4.4	452
Kampala	18.1	6.3	496	9.5	3.0	198
Busoga	26.1	13.2	860	9.2	3.2	324
Bukedi	39.8	28.4	600	6.4	1.5	252
Bugisu	17.6	11.2	465	4.4	4.0	192
Teso	18.3	9.8	529	10.8	7.9	204
Karamoja	13.6	10.8	184	0.3	0.3	59
Lango	21.5	11.9	498	4.3	1.0	252
Acholi	10.2	4.8	478	7.5	4.6	218
West Nile	21.9	9.9	639	5.2	4.1	223
Bunyoro	11.0	6.9	532	6.5	3.3	213
Tooro	26.3	17.2	658	12.2	5.3	304
Kigezi	22.7	16.7	370	10.1	7.4	128
Ankole	25.8	19.1	752	5.3	2.7	304
Special area[2]						
Islands[3]	29.6	13.7	100	17.4	8.1	59
Mountains[4]	19.1	11.7	730	8.9	4.9	319
Greater Kampala[5]	18.1	7.1	968	10.1	3.3	376
Marital status						
Never married	5.7	1.1	2,353	4.4	0.7	1,450
Married/living together	25.7	16.9	5,642	10.2	6.2	2,117
Divorced/separated/ widowed	35.9	15.9	1,237	17.9	6.0	191
Number of living children						
0	9.5	3.7	2,468	5.5	1.8	1,573
1-2	21.6	14.1	2,492	11.6	5.4	706
3-4	28.4	17.9	1,922	11.2	5.5	613
5+	30.2	16.5	2,349	8.8	5.9	866
Education						
No education	24.2	12.8	940	6.1	4.6	155
Primary	24.9	15.3	5,325	8.9	4.3	2,101
Secondary	16.6	9.2	2,241	8.8	3.8	1,027
More than secondary	14.1	5.1	726	5.5	3.4	475
Wealth quintile						
Lowest	23.0	13.5	1,625	6.0	3.1	675
Second	24.9	15.3	1,743	9.3	4.8	688
Middle	24.0	16.5	1,760	8.8	4.5	714
Fourth	21.7	13.2	1,831	8.0	4.6	811
Highest	17.5	7.0	2,273	9.2	3.3	871
Total 15-49	21.9	12.7	9,232	8.3	4.0	3,758
50-54	na	na	na	10.1	3.9	253
Total 15-54[4]	na	na	na	8.4	4.0	4,011

[1] Includes violence in the past 12 months.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

3.17 EARLY CHILDHOOD DEVELOPMENT

Children are the foundation of sustainable development. The early childhood period is crucial not only for individual health and physical development, but also for cognitive and social-emotional development. Events in the first few years of life are formative and play a vital role in building human capital. This section provides key data on early childhood education and development collected in the 2016 UDHS, based on the UNICEF Multiple Indicator Cluster Survey (MICS) Early Childhood Development Module.

Early child development is defined as an orderly, predictable process along a continuous path in which a child learns how to achieve more complicated levels of moving, thinking, speaking, feeling, and relating to others. Physical growth, literacy and numeracy skills, socioemotional development, and readiness to learn are vital domains of a child's overall development, which is a basis for overall human development (Shonkoff and Phillips 2000).

A 10-item module was used to calculate the Early Child Development Index (ECDI). The ECDI is based on benchmarks that children are expected to reach if they are progressing in their development at a pace similar to the majority of children in their age group. The primary purpose of the ECDI is to inform public policy regarding the developmental status of children in Uganda. Each of the 10 items is used in one of four domains to determine if children age 36-59 months are developmentally on track in that domain. The domains include:

Literacy-numeracy: Children are identified as being developmentally on track if they can identify/name at least 10 letters of the alphabet; can read at least four simple, popular words; and if they know the names and recognize the symbols of all numbers from 1 to 10. If at least two of these capabilities are observed, the child is considered developmentally on track.

Physical: If the child can pick up a small object such as a stick or a rock from the ground with two fingers and/or the mother does not indicate that the child is sometimes too sick to play, then the child is regarded as being developmentally on track in the physical domain. If child was able to perform one of those two activities, the child is regarded as on track in the physical domain.

Social-emotional: A child is considered to be developmentally on track if two of the following are true: the child gets along well with other children; the child does not kick, bite, or hit other children; and the child does not become distracted easily. If child was able to show two out of three behaviours, the child is regarded as on track in social-emotional domain.

Learning: If the child follows simple directions on how to do something correctly and/or when given something to do, and is able to do it independently, then the child is considered to be developmentally on track in this domain. If child was able to perform one of those two activities, the child is regarded as on track in learning domain.

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

Table 26 shows the percentages of children age 36-59 months who are developmentally on track in the literacy-numeracy, physical, social-emotional, and learning domains, and ECDI scores. While the majority of children are on track in the physical (92 percent), learning (86 percent), and social-emotional (65 domains, only a quarter (26 percent) are on track in the literacy-numeracy domain.

Table 26 Early childhood development index

Percentage of children age 36-59 months who are developmentally on track in literacy-numeracy, physical, social-emotional, and learning domains, and the early child development index score, according to background characteristics, Uganda DHS 2016

Background characteristic	Percentage of children age 36-59 months who are developmentally on track for indicated domains				Early childhood development index score[1]	Number of children
	Literacy-numeracy	Physical	Social-emotional	Learning		
Age						
36-47 months	14.0	91.2	65.7	83.1	57.9	1,654
48-59 months	35.3	93.3	64.9	88.2	69.5	2,265
Residence						
Urban	42.7	93.3	58.0	90.2	70.2	829
Rural	21.9	92.2	67.1	85.0	63.1	3,089
Region						
South Central	48.8	93.1	55.6	92.5	71.1	468
North Central	37.9	92.5	60.0	89.3	67.3	377
Kampala	43.8	91.0	51.6	89.1	68.3	139
Busoga	21.7	86.9	64.6	74.4	55.6	380
Bukedi	14.4	90.7	80.6	92.4	73.4	268
Bugisu	29.4	97.9	80.6	85.1	74.2	190
Teso	14.1	95.9	80.5	75.5	64.7	235
Karamoja	6.8	98.5	76.1	86.8	67.0	101
Lango	11.4	89.3	79.9	81.7	63.3	235
Acholi	22.8	96.4	66.5	86.3	66.1	201
West Nile	19.9	96.8	56.8	86.0	54.7	258
Bunyoro	18.7	89.2	68.1	88.7	61.6	228
Tooro	21.6	86.6	67.2	84.0	64.6	313
Kigezi	25.2	97.4	81.0	77.0	64.4	154
Ankole	29.3	94.0	42.7	94.7	58.3	373
Special area[2]						
Islands[3]	(23.7)	(91.4)	(68.4)	(82.3)	(63.0)	43
Mountains[4]	28.0	96.2	77.3	83.9	72.2	324
Greater Kampala[5]	54.2	92.4	51.8	90.6	75.7	286
Attendance to early childhood education						
Attending	59.2	95.9	61.6	94.9	79.7	1,436
Not attending	7.3	90.4	67.3	81.0	55.8	2,483
Mother's education						
No education	13.5	92.1	68.1	86.3	59.5	495
Primary	20.2	91.9	66.9	83.9	62.0	2,384
Secondary	41.1	92.3	61.6	89.8	70.4	777
More than secondary	62.3	98.0	55.1	94.7	80.3	263
Wealth quintile						
Lowest	10.6	92.9	67.8	82.1	57.2	865
Second	15.5	90.7	67.5	81.7	59.2	823
Middle	25.1	93.1	66.1	88.0	65.5	770
Fourth	30.7	91.7	65.9	87.8	67.9	697
Highest	52.9	93.7	58.2	91.8	74.8	764
Total	26.3	92.4	65.2	86.1	64.6	3,919

Figures in parentheses are based on 25-49 unweighted cases.
[1] MICS indicator 6.8—Early child development index.
[2] Special areas are a subsample and do not sum to the total survey sample; for detail, see Section 2.1 Sample Design.
[3] The islands special area includes islands and shoreline areas in Kalangala, Mayuge, Buvuma, Namayingo, Rakai, Mukono and Wakiso districts.
[4] The mountains special area includes Bundibugyo, Kasese, Ntoroko, Bukwo, Bulambuli, Kapchorwa, Kween, Kisoro, Sironko, Mbale and Kaabong districts.
[5] Greater Kampala includes Kampala district and urban areas in Mukono and Wakiso districts.

Variations in the percentage of children who are developmentally on track are more pronounced in the literacy-numeracy domain than in the other domains. As might be expected, children age 36-47 months are less likely to be on track in that domain than those age 48-59 months (14 percent and 35 percent, respectively). In addition, a higher proportion of urban children than rural children are on track (43 percent versus 22 percent). Sixty-two percent of children whose mothers have more than secondary education are on track in literacy-numeracy, as compared with only 14 percent of children whose mothers have no education. Similarly, 53 percent of children in the highest wealth quintile are on track, as compared with 11 percent in the lowest quintile.

More than 6 in 10 children age 36-59 months (65 percent) are developmentally on track in at least three of the four domains. The ECDI score increases with age, from 58 percent at age 36-47 months to 70 percent at age 48-59. The ECDI score is higher for urban children than rural children (70 percent versus 63 percent). The proportion of children developmentally on track varies by subregion, from a low of 55 percent in West Nile subregion to a high of 74 percent in Bugisu subregion. The ECDI score increases with mother's education, rising from 60 percent among children whose mothers have no education to 80 percent among those whose mothers have more than secondary education. There is a similar pattern with wealth quintile.

3.18 MATERNAL MORTALITY

The WHO relies on the International Classification of Disease (ICD)-10 definition of a maternal-related death: "death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the duration and the site of the pregnancy, from any cause related to or aggravated by the pregnancy or its management, but not from accidental or incidental causes" (WHO 2015). Two survey methods are generally used to estimate maternal mortality in developing countries: the indirect sisterhood method (Graham et al. 1989) and a direct variant of the sisterhood method (Rutenberg and Sullivan 1991; Stanton et al. 1997). Table 27 presents direct estimates of maternal mortality for the 7-year period prior to the 2016 UDHS.

Table 27 Maternal mortality

Direct estimates of maternal mortality rates for the 7 years preceding the survey, by 5-year age groups, Uganda DHS 2016

Age	Percentage of female deaths that are maternal	Maternal deaths[1]	Exposure years	Maternal mortality rate[2]
15-19	17.2	19	48,245	0.39
20-24	24.5	31	51,312	0.61
25-29	20.3	29	44,110	0.66
30-34	19.0	31	34,506	0.91
35-39	13.0	17	25,488	0.65
40-44	19.2	20	17,022	1.19
45-49	2.3	2	10,313	0.16
Total 15-49	17.5	149	230,995	0.63[a]
Total fertility rate (TFR)	5.8			
General fertility rate (GFR)[3]	188[a]			
Maternal mortality ratio (MMR)[4]	336	CI: (272, 401)		
Lifetime risk of maternal death[5]	0.019			

CI: Confidence interval.
[1] A maternal death is defined as the death of a woman while pregnant or within 42 days of termination of pregnancy, from any cause except accidents or violence.
[2] Expressed per 1,000 woman-years of exposure.
[3] Age adjusted rate expressed per 1,000 women age 15-49.
[4] Expressed per 100,000 live births; calculated as the age-adjusted maternal mortality rate times 100 divided by the age-adjusted general fertility rate.
[5] Calculated as $1-(1-MMR)^{TFR}$ where TFR represents the total fertility rate for the 7 years preceding the survey.
[a] Age-adjusted rate.

Age-specific estimates of maternal mortality from the reported survivorship of sisters are shown in Table 27. These rates were 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 among women interviewed in the survey is 49 years), the overall rate for women age 15-49 was standardised by the age distribution of survey respondents.

The results in Table 27 indicate that the rate of mortality associated with pregnancy and childbearing is 0.63 maternal deaths per 1,000 woman-years of exposure. The estimated age-specific mortality rate is highest among women age 40-44 (1.19) and lowest among women age 45-49 (0.16). However, age-specific patterns should be interpreted with caution because of the small number of events: only 149 maternal deaths among women of all ages in the 7-year period preceding the survey. Maternal deaths represent 18% of all deaths among women age 15-49 during the 7-year period preceding the survey (149 maternal deaths divided by 852 female deaths; data not shown).

The maternal mortality rate can be converted to a maternal mortality ratio by dividing the rate by the general fertility rate during the 7-year period preceding the 2016 UDHS. The maternal mortality ratio is expressed per 100,000 live births in order to emphasise the obstetrical risk of pregnancy and childbearing. The estimate of the maternal mortality ratio for the 7-year period preceding the 2016 UDHS is 336 deaths per 100,000 live births; that is, for every 1,000 births in Uganda, there are just over 3 maternal deaths. The

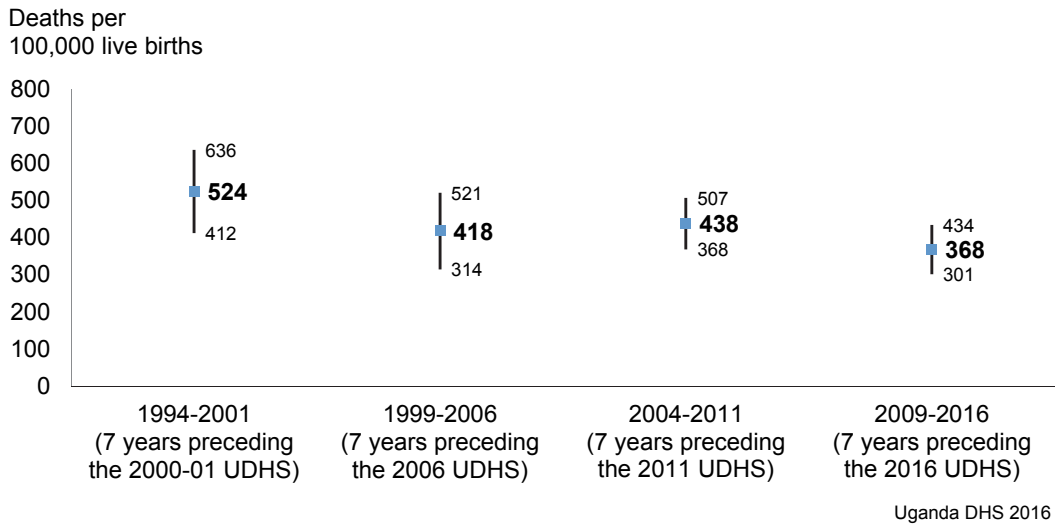
confidence interval surrounding the maternal mortality estimate is 272 to 401 deaths per 100,000 live births.

Before looking at trends, it is important to discuss two important differences between how the 2016 UDHS and previous UDHS surveys defined maternal mortality. In previous surveys, data were not collected on whether deaths were due to accident or violence, and the time limit between the end of a pregnancy and death was 2 months rather than 42 days. The term "maternal mortality" used in previous UDHS surveys corresponds more closely to the ICD-10 definition of pregnancy-related death: "death of a woman while pregnant or within 42 days of termination of pregnancy, irrespective of the cause of death" (WHO 2015), although a 2 month time period was used instead of 42 days. Although maternal mortality estimates from the 2016 UDHS are not strictly comparable to estimates from previous UDHS surveys, trends can be examined by calculating the 2016 UDHS pregnancy-related mortality ratio (PRMR) and comparing it with the maternal mortality rate (MMR) from previous surveys. In Figure 8, pregnancy-related mortality was calculated for the 2016 UDHS in the same way it was calculated (as maternal mortality) in the previous UDHS surveys.

Figure 8 presents trends in the PRMR for the 7-year period preceding the 2000-01, 2006, 2011, and 2016 UDHS surveys. Figure 8 shows a decline in the PRMR for the 7-year period preceding the surveys: from 524 deaths per 100,000 live births in the 2000-01 UDHS to 368 deaths per 100,000 live births in the 2016 UDHS.

As shown in Figure 8, the confidence intervals for the PRMR for the 2011 UDHS and the 2016 UDHS overlap. Since the confidence interval for the 2011 UDHS spans the point estimate of the PRMR in the 2016 UDHS, the difference between the 2016 and 2011 estimates of the PRMR is not statistically significant. Pregnancy-related mortality is a relatively rare event that requires very large sample sizes to measure. The overall trend indicates a decline in PRMR over time, and there may have been a statistically significant change that the sample size of the surveys was not large enough to detect.

Figure 8 **Pregnancy-related deaths per 100,000 live births**



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