TABULATION PLAN FOR DHS FINAL REPORT

Demographic and Health Surveys Methodology

**Figure 5.1
Trends in Fertility**
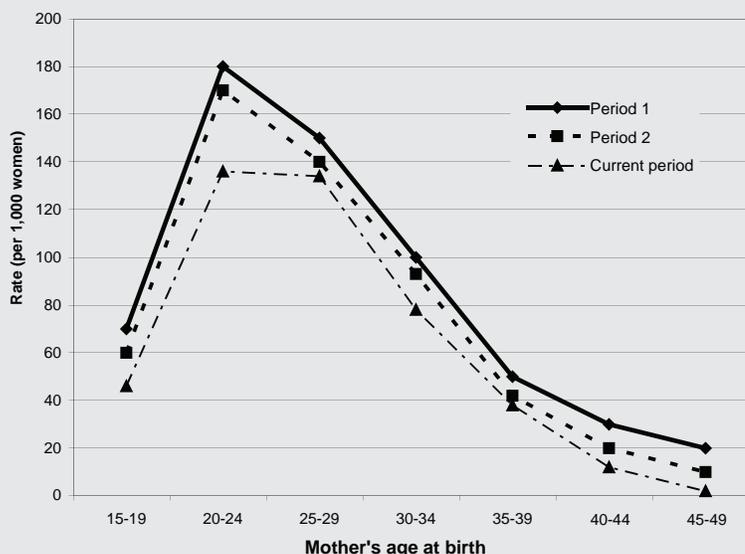
Table 9.2 Number of antenatal care visits and timing of first visit

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits for the most recent live birth, and by the timing of the first visit, and among women with ANC, median months pregnant at first visit, according to residence, [country, year]

Number and timing of ANC visits	Residence		Total
	Urban	Rural	
Number of ANC visits			
None			
1			
2-3			
4+			
Don't know/missing			
Total			100.0
Number of months pregnant at time of first ANC visit			
No antenatal care			
<4			
4-5			
6-7			
8+			
Don't know/missing			
Total			100.0
Number of women			

DHS TOOLKIT

[THIS PAGE IS INTENTIONALLY BLANK]

Guidelines
for the
MEASURE DHS Phase III
Main Survey Report

ICF International Inc.
Rockville, Maryland USA

24 October 2014

Contents

CHAPTER 4   **MARRIAGE AND SEXUAL ACTIVITY**

CHAPTER 5   **FERTILITY**

CHAPTER 6   **FERTILITY PREFERENCES**

CHAPTER 7   **FAMILY PLANNING**

CHAPTER 8   INFANT AND CHILD MORTALITY

CHAPTER 9   REPRODUCTIVE HEALTH

CHAPTER 10   CHILD HEALTH

CHAPTER 11   NUTRITION OF CHILDREN AND ADULTS

CHAPTER 12   MALARIA

CHAPTER 13   HIV/AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOR

CHAPTER 14   HIV PREVALENCE

**CHAPTER 15   WOMEN'S EMPOWERMENT AND DEMOGRAPHIC AND
                    HEALTH OUTCOMES**

APPENDIX A   SAMPLE DESIGN

APPENDIX B   ESTIMATES OF SAMPLING ERRORS

APPENDIX C   DATA QUALITY TABLES

Preface

This document is a description of the contents of the main survey report for the Demographic and Health Surveys. The report is intended to convey the main results of the survey in a timely and concise fashion. It is scheduled for publication 9-12 months after the completion of the fieldwork. Not all tables are relevant for every country, and some countries will want to add a few tables on country-specific subjects. The Guidelines complement the 2010 versions of the DHS Model Survey Questionnaires. This version of DHS Guidelines consists of over 175 tables contained in 15 substantive chapters. These chapters provide information on the demographic and socioeconomic characteristics of the population, levels of fertility and childhood mortality, family planning, women's status, malaria, orphanhood, and HIV/AIDS, to name some of the main topics covered.

The purpose of the Guidelines is to provide model tables that set forth the major findings of the survey in manner that will be useful to policy makers and program managers. The Guidelines provides guidance concerning the most important indicators to be presented in survey report, the level of analysis expected and ensures timely dissemination of survey results—which in the case of the main survey report means in less than a year following the end of data collection. The data are presented in terms of national level statistics and for population subgroups such as those defined by age, education, marital status, economic status, urban/rural residence and region of the country. When appropriate to a topic, further data desegregations are shown. For example, on the topic of HIV knowledge and behavior, detailed tabulations are shown for younger respondents (i.e., for the population age 15 to 24) and, on the topic of gender roles, health outcomes are shown by indices of women's status.

The level of analysis in the report is primarily descriptive and is particularly useful for assessing health and demographic conditions in a population, for identifying underserved population subgroups and for tracking the progress of intervention programs with successive surveys. While the main survey report is not designed to provide complex analysis due to various constraints, it should indicate areas where more detailed, complex analysis would be fruitful.

It is not expected that all of the tables in the Guidelines will be present in all country reports. For various reasons, certain data will not be collected in some surveys. This is particularly the case when reliable data on a topic are available form other sources or a topic is not relevant to a country, e.g., malaria in unaffected regions of the world. Nevertheless, for data collected in different survey in different areas of the world, Guidelines ensures a consistent level of analysis and presentation of results.

The model tables cover all of the major topics of interest. There are, however, questions included in the questionnaire which are not represented in this main survey report, partly because choices had to be made to restrict the length of the report, and, in other instances, because the topics will require much more extensive analysis than is appropriate here.

Many tables include background variables such as urban-rural residence, region, education, and household wealth. In some countries other characteristics also might be important (e.g., religion or ethnicity) and could be added.

Chapter 1 is introductory and presents the background of the survey, its objectives, and a brief summary of the survey procedures, sample design and response rates. (Implementation details are in Appendix A). The chapter begins with a description of the country and its population history.

Chapters 2 and 3 are intended to set the stage for the population and health chapters that follow. Chapter 2 describes the background characteristics of the household population, and their dwelling conditions. Chapter 3 contains tables describing eligible respondents by background characteristics, use of tobacco products, and attitudes concerning tuberculosis.

Chapter 4 covers marriage patterns and sexual activity, which are some of the factors that regulate the level of fertility.

Chapter 5 describes the current and past fertility of the population and includes a table on trends in fertility. The chapter also presents information on factors affecting fertility such as the postpartum amenorrhea, postpartum abstinence, menopause, and the beginning of a woman's childbearing, with tabulations on age at first birth and current teenage fertility behavior.

Chapter 6 covers fertility preferences and documents respondents' ideal number of children, and the unmet need for contraception.

Chapter 7 on family planning includes data on knowledge of contraception, source of supply, acceptability, use, discontinuation, attitudes toward contraception, intention to use in the future, informed choice, exposure to media messages about family planning, and a variety of related topics.

Chapter 8 describes the current and past levels of infant and child mortality as well as differentials in mortality due to demographic and background characteristics. It also includes information on perinatal mortality and the extra risk incurred by certain reproductive behaviors.

Chapter 9 covers reproductive health and women's health in general. The chapter describes maternal care during pregnancy and delivery, and postnatal care, as well as general access to health services, and exposure to injections.

Chapter 10 covers child health and describes birth weight and size, immunization and the extent and the prevalence and treatment of important childhood diseases (diarrhea, acute respiratory infection, and fever).

Chapter 11 covers nutritional concerns for children and for women including nutritional status, breastfeeding and complementary foods, food diversity, and micronutrients.

Chapter 12 on malaria is used when malaria-related questions have been asked in the household and individual questionnaires. It describes the availability and use of mosquito nets by women and children and the prophylactic and treatment use of antimalarial drugs.

Chapter 13 covers information on knowledge and behavior concerning HIV/AIDS and STIs and the use of condoms. Some tables or variables can only be presented when the comprehensive set of HIV/AIDS questions has been asked.

Chapter 14 is for surveys where HIV testing has been performed and is primarily based on respondent's who received the test. The chapter reports the response rate of testing and presents the HIV prevalence rates.

Chapter 15 shows information on indicators of women's empowerment, develops two empowerment indicators, and relates those indicators to select demographic and health outcomes.

Acknowledgments

Table Symbols and Notations

The following symbols should be used to represent special indications in tables:

Symbol	Significance
na	Not applicable
u	No information
[ ] Square brackets	Truncated, censored
( ) Parentheses	Based on a small number of cases
* Asterisk	Based on too few cases to show
0.0%	Less than 0.05%

Superscript lower case letters should be used to footnote numbers in tables. To footnote stub and column heads, superscript numbers should be used following letters and superscript lower case letters should be used following numbers. A footnote in a title or subtitle should never be used; a general note (i.e., "Note:") should be used instead.

Tables should be numbered consecutively within chapters.

Unless otherwise indicated in the specific table, percentages should be to one decimal place, for example 5.7%.

Weighted numbers of cases should be expressed as whole numbers (no decimals).

For tables in which the number of cases do not add up to the "total" column because some category or categories are not shown separately, a general footnote should appear at the bottom of the table, indicating that the total includes "x" number of cases for each dropped category, which are not shown separately.

Rounding

Percentages should be rounded to nearest tenth of a percent, 5 hundredths rounds up to next tenth. Numbers should be rounded to nearest unit, 5 tenths rounds up to next unit. Some examples follow.

Percentages:	23.100% to 23.149% rounds to 23.1%; 23.150% to 23.199% rounds to 23.2%
Numbers:	1215.0 to 1215.4 rounds to 1215; 1215.5 to 1215.9 rounds to 1216.

Decimals

Most statistics are given to three significant digits.

Percentages:	one decimal place
Total fertility rate (TFR):	one decimal place (expressed per woman)
Age-specific fertility rates (ASFR):	no decimal place (expressed per 1000 women)
General fertility rate (GFR):	no decimal place (expressed per 1000 women)
Crude birth rate (CBR):	no decimal place (expressed per 1000 persons)
Mortality rates	no decimal place
Mean number of children ever born and of living children:	two decimal places (in Table 4.2 only)
Other means:	one decimal place
Medians:	one decimal place
Risk ratios:	two decimal places

Minimum number of cases

The minimum number of cases for a statistic is based on the <u>unweighted</u> number of cases. For most statistics, parentheses will be used if based on 25 to 49 cases and an asterisk if based on fewer than 25 cases.

For fertility rates, including the TFR, parentheses are used if based on 125 to 249 person-years of exposure, and not shown if fewer than 125 person-years of exposure.

For mortality rates, parentheses are used if based on 250 to 499 children exposed in any of the component rates, and an asterisk if based on fewer than 250 children.

For contraceptive discontinuation rates, rates based on 125 to 249 exposed women in any month up to month 12 are shown in parentheses. Rates based on fewer than 125 exposed women are not shown.

Medians from smoothed data are shown in parentheses when the denominator of the smoothed percentage for the group preceding the first group which falls below 50 percent plus the number of cases in the adjacent categories that are used for smoothing that group is based on 25 to 49 cases. If this denominator is less than 25 cases then the median is not shown.

For fertility and mortality rates, and current status medians (Tables 5.7 and 11.4), the tabulation program will automatically indicate which values should be in parentheses (in this case the values in the affected cells will be displayed with a negative sign) and which values are not to be shown (in this case the values in the affected cells will have a dash or an asterisk).

Missing values

Many of the tables in this tabulation plan provide cross-tabulations of respondents by background characteristics (e.g., age, residence, region or education) and a substantive variable. The substantive variable may be either a percent distribution across mutually exclusive categories (e.g., current use of contraceptive methods, Table 7.3) or the percentage of respondents possessing each of a series of specific characteristics (accepting attitudes towards those living with HIV/AIDS, Table 13.5.1). In these tables, values can be missing for either the background variable or the substantive variable.

In the case of background variables, missing values are not shown. However, the "total" row or column should be footnoted to indicate that it includes cases with missing values for specific background variables (e.g., "Total includes 7 cases for which education level is missing and 5 cases for which birth size is missing"). The purpose of the footnote is to explain the difference between the sum of the categories shown in the background variable and the table total, so the number of cases in the footnote should refer to the weighted number of cases missing.

In the case of missing values on the substantive variables, the treatment differs depending on whether the table shows 1) a percent distribution or 2) individual cell percentages of respondents that do not sum to 100.0 percent. For tables presenting a percent distribution that sums to 100.0 percent, missing values must be shown when they account for at least 1 percent of cases in any row. When missing values account for less than 1 percent of the distribution in every row, they can be shown or not at the author's discretion. For tables showing individual cell percentages of respondents, rows of missing values are not shown. Medians are based on respondents with numerical answers to the questions on which the medians are based: missing, don't know and other non-numerical responses are excluded from the calculation.

Figures

All figures should display percentages as integers (whole numbers), with no decimal places. Where numbers do not add to 100 percent, a footnote should be added to the bottom left hand corner stating that percentages do not add to 100 due to rounding. Data entered in the data table should be identical to the data as they appear in the related table in the report, or in the working table, that is, they should be entered to one decimal place. However, in the case of a pie chart, when the data add to more or less than 100, the pie should <u>not</u> be recalculated to 100. If there is a missing/don't know category that is less than 0.5 percent, it should be left out of the pie chart. In this case too, the pie should not be recalculated to 100.

Measurement of Wealth Index

In the tables presented in the reports, information on the wealth index is based on data collected in the DHS household questionnaire. This questionnaire includes questions concerning the household's ownership of a number of consumer items such as a fan to a television and car; dwelling characteristics such as flooring material; type of drinking water source; toilet facilities; and other characteristics that are related to wealth status.

Each household asset for which information is collected is assigned a weight or factor score generated through principal components analysis. The resulting asset scores are standardized in relation to a standard normal distribution with a mean of zero and a standard deviation of one.

These standardized scores are then used to create the break points that define wealth quintiles as follows. Each household is assigned a standardized score for each asset, where the score differs depending on whether or not the household owned that asset (or, in the case of sleeping arrangements, the number of people per room). These scores are summed by household, and individuals are ranked according to the total score of the household in which they reside. The sample is then divided into population quintiles -- five groups with the same number of individuals in each.

A single asset index is developed on the basis of data from the entire country sample and used in all the tabulations presented. Separate asset indices are not prepared for rural and urban population groups on the basis of rural or urban data, respectively.

Wealth quintiles are expressed in terms of quintiles of individuals in the population, rather than quintiles of individuals at risk for any one health or population indicator. (Thus, for example, the quintile rates for infant mortality refer to the infant mortality rates per 1,000 live births among all people in the population quintile concerned, as distinct from quintiles of live births or newly born infants, who constitute the only members of the population at risk of mortality during infancy.)

This approach to defining wealth quintiles has the advantage of producing information directly relevant to the principal question of interest, for example, the health status or access to services for the poor in the population as a whole. This choice also facilitates comparisons across indicators for the same quintile, since the quintile denominators remain unchanged across indicators. However, some types of analysis may require data for quintiles of individuals at risk.

All health, nutrition and population indicators are calculated after applying the sampling weights so that the resulting numbers are generalizable to the total population. For each indicator in these tables, the total or population average presented is the weighted sum of the quintile values for that indicator, where the weight assigned to each quintile value is the proportion of the total number of individuals at risk in that quintile. The total value for indicators produced by this weighting scheme are representative of the total population, as they take into account the fact that the numbers of individuals at risk may vary across wealth quintiles (which, as

noted earlier, are defined on the basis of individuals in the population). Similarly, each quintile value itself can be reproduced as a weighted average of urban/rural rates (weighted by proportions urban/rural) or the male/female rates (weighted by the proportion male/female). As a result of this weighting scheme, the population average for a given indicator presented in the tables will usually differ from a simple mean of the population subgroups.

The tables do not show standard errors for the quintile specific (or gender- or residence-specific) indicators presented. Instead, where standard errors are likely to be unacceptably high due to small sample sizes, estimates are presented in parentheses or replaced by an asterisk. These sample sizes refer to the number of sample observations before DHS sampling weights are applied.

MILLENNIUM DEVELOPMENT GOAL INDICATORS

Millennium Development Goal Indicators

[Country, year]

Indicator	Sex		Total
	Male	Female	
1. Eradicate extreme poverty and hunger			
1.8 Prevalence of underweight children under 5 years of age			
2. Achieve universal primary education			
2.1 Net attendance ratio in primary education[1]			
2.3 Literacy rate of 15-24 year-olds[2]	%[a]		%[b]
3. Promote gender equality and empower women			
3.1 Ratio of girls to boys in primary, secondary and tertiary education			
3.1a Ratio of girls to boys in primary education[3]	na	na	
3.1b Ratio of girls to boys in secondary education[3]	na	na	
3.1c Ratio of girls to boys in tertiary education[3]	na	na	
4. Reduce child mortality			
4.1 Under five mortality rate[4]			
4.2 Infant mortality rate[4]			
4.3 Percentage of 1 year old children immunized against measles			
5. Improve maternal health			
5.1 Maternal mortality ratio[5]	na	na	
5.2 Percentage of births attended by skilled health personnel[6]	na	na	
5.3 Contraceptive prevalence rate[7]	na		na
5.4 Adolescent birth rate[8]	na		na
5.5 Antenatal care coverage			
5.5a At least one visit[9]	na		na
5.5b Four or more visits[10]	na		na
5.6 Unmet need for family planning	na		na
6. Combat HIV/AIDS, malaria and other diseases			
6.1 HIV prevalence among the population age 15-24 years			
6.2 Condom use at last higher-risk sex[11]	%[a]		%[b]
6.3 Percentage of the population age 15-24 years with comprehensive correct knowledge of HIV/AIDS[12]	%[a]		%[b]
6.4 Ratio of school attendance of orphans to school attendance of non-orphans age 10-14 years			
6.7 Percentage of children under 5 sleeping under insecticide-treated bednets			
6.8 Percentage of children under 5 with fever who are treated with appropriate antimalarial drugs[13]			

	Urban	Rural	Total
7. Ensure environmental sustainability			
7.8 Percentage of population using an improved water source[14]			
7.9 Percentage of population using an improved sanitation facility[15]			

na = Not applicable

[1] The ratio is based on reported attendance, not enrollment, in primary education among primary school age children (6-10 year-olds). The rate also includes children of primary school age enrolled in secondary education. This is a proxy for MDG indicator 2.1, Net enrollment ratio.

[2] Refers to respondents who attended secondary school or higher or who could read a whole sentence or part of a

sentence

[3] Based on reported net attendance, not gross enrollment, among [6-10] year-olds for primary, [11-15] year-olds for secondary and [16-20] year-olds for tertiary education

[4] Expressed in terms of deaths per 1,000 live births. Mortality by sex refers to a 10-year reference period preceding the survey. Mortality rates for males and females combined refer to the 5-year period preceding the survey.

[5] Expressed in terms of maternal deaths per 100,000 live births in the 7-year period preceding the survey

[6] Among births in the five years preceding the survey

[7] Percentage of currently married women age 15-49 using any method of contraception

[8] Equivalent to the age-specific fertility rate for women age 15-19 for the 3-year period preceding the survey, expressed in terms of births per 1,000 women age 15-19

[9] With a skilled provider

[10] with any healthcare provider

[11] Higher-risk sex refers to sexual intercourse with a non-marital, non-cohabiting partner. Expressed as a percentage of men and women age 15-24 who had higher-risk sex in the past 12 months.

[12] Comprehensive knowledge means knowing that consistent use of a condom during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus

[13] Measured as the percentage of children age 0-59 months who were ill with a fever in the two weeks preceding the interview and received any anti-malarial drug

[14] Percentage of de jure population whose main source of drinking water is a household connection (piped), public tap or standpipe, tubewell or borehole, protected dug well, protected spring, rainwater collection, or bottled water

[15] Percentage of de jure population whose household has a flush toilet, ventilated improved pit latrine, pit latrine with a slab, or composting toilet and does not share this facility with other households

[a] Restricted to men in sub-sample of households selected for the male interview

[b] The total is calculated as the simple arithmetic mean of the percentages in the columns for males and females

Notes on the MDG table for country managers:

Some of these figures, including mortality rates and HIV prevalence will need to be added manually from the chapter tables.

Adapt the age ranges for primary, secondary and tertiary education to match the country educational system in Indicators 2.1 and 2.3.

The data in the "male" column for indicators 2.3, 6.2, and 6.3 are based on respondents in the subsample of households selected for the male interview. The data in the "female" column are based on the complete sample. In order to obtain the numbers in the "Total" column, the DP application takes a simple, unweighted arithmetic mean of the two columns.

CHAPTER 1

INTRODUCTION

1.1   History, Geography, and Economy

A brief introduction to the country is necessary in order to place the survey findings in an appropriate context. The description should emphasize features relevant to interpretation of the findings, particularly explanatory or background variables used in the tabulations. Urban-rural residence, region, education, and religion are the most common explanatory variables. The educational system could be outlined and major changes over the last 30 years should be mentioned. The classification of urban and rural areas and some discussion of urban-rural migration are helpful. The distinguishing features of major regions and religions should be given.

1.2   Population

A brief synopsis of population size and growth is required. Detailed findings from previous fertility or family planning surveys should not be included at this point but discussed in the substantive chapters, where they can be compared with the results from this survey. A discussion of the main sources of demographic information is useful.

1.3   Objectives of the Survey

Both the broad objectives and country-specific priorities should be described.

1.4   Organization of the Survey

A summary account of the agency (or agencies) responsible for survey design and implementation, plus a description of any organizational structure created especially for the survey may be included. The timetable of the main phases should be presented. A brief summary of the survey, the procedures undertaken to ensure data quality, and a discussion of response rates should be given here. Details of the fieldwork and the sample design should be presented in an appendix.

Table 1.1 Basic demographic indicators		
Demographic indicators from selected sources, [country]		
Indicators	xx Census 19..	xx Census 20..
Population (millions) Intercensal growth rate (percent) Density (population/km^2)		
Percent urban		
Life expectancy (years) Male Female		
Source:		

This table provides a summary of basic demographic indicators available in the country from censuses. These indicators from different points in time also give an idea of major demographic trends experienced by the country. In order to assess their comparability, it is important to supply proper references. Moreover, it should be mentioned if some of these indicators are not calculated for standard reference periods. In cases where regional data on these indicators exist in the country, they should also be cited in the text to show regional differentials in these indicators.

Table 1.2 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), [country, year]

Result	Residence		Total
	Urban	Rural	
Household interviews			
Households selected			
Households occupied			
Households interviewed			
Household response rate[1]			
Interviews with women age 15-49			
Number of eligible women			
Number of eligible women interviewed			
Eligible women response rate[2]			
Interviews with men age 15-54[59]			
Number of eligible men			
Number of eligible men interviewed			
Eligible men response rate[2]			

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

This table presents information on the number of households selected and interviewed and the number of eligible women and of eligible men identified and interviewed. It also provides the response rates for households, women and men. A more detailed percent distribution of the results of the household and individual interviews by region is presented in Appendix A.

CHAPTER 2

HOUSING CHARACTERISTICS AND HOUSEHOLD POPULATION

In the following substantive chapters of this report, a number of demographic and health related topics (e.g., respondent characteristics, fertility, contraceptive behavior, infant and child mortality, etc.) are viewed across different subgroups of the population. One focus of this chapter is to describe the environment in which women and children live. This description shows housing facilities (sources of water supply, sanitation facilities, dwelling characteristics and household possessions), household arrangements (headship, size), and general characteristics of the population such as age-sex structure, literacy and education. A distinction is made between urban and rural settings where many of these indicators usually differ.

This chapter should also provide insights on the meaning of major characteristics in the context of the country and non-DHS explanatory information should be brought in to complement and expand the information given in the DHS tabulations.

Besides providing the background for better understanding of many social and demographic phenomena discussed in the following chapters, this general description is useful for assessing the level of economic and social development of the population.

Table 2.1 Household drinking water

Percent distribution of households and de jure population by source of drinking water, time to obtain drinking water, and treatment of drinking water, according to residence [country, year]

Characteristic	Households			Population		
	Urban	Rural	Total	Urban	Rural	Total
Source of drinking water						
Improved source						
Piped water into dwelling/yard/plot						
Public tap/standpipe						
Tubewell/borehole						
Protected dug well						
Protected spring						
Rainwater						
Bottled water						
Non-improved source						
Unprotected dug well						
Unprotected spring						
Tanker truck/cart with drum						
Surface water						
Other source						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Time to obtain drinking water (round trip)						
Water on premises						
Less than 30 minutes						
30 minutes or longer						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Water treatment prior to drinking[1]						
Boiled						
Bleach/chlorine added						
Strained through cloth						
Ceramic, sand or other filter						
Solar disinfection						
Other						
No treatment						
Percentage using an appropriate treatment method[2]						
Number						

[1] Respondents may report multiple treatment methods so the sum of treatment may exceed 100 percent
[2] Appropriate water treatment methods include boiling, bleaching, filtering and solar disinfecting

The source of drinking water is an indicator of whether it is suitable for drinking. Sources that are considered likely to be of suitable quality are listed under "Improved source", and sources that may not be of suitable quality are listed under "Non-improved source." The categorization into improved and non-improved is proposed by the WHO/UNICEF Joint Monitoring Program for Water Supply and Sanitation (*http://www.wssinfo.org/definitions-methods/watsan-categories/*).

For households using bottled water for drinking, the Joint Monitoring Program for Water Supply and Sanitation (JMP) classifies the household according to the source of water the members use for cooking and personal hygiene. Where information about a secondary water source is not collected, bottled water is included under improved sources. However, the JMP has not officially endorsed bottled water as an improved source. The DHS surveys no longer collect information on a secondary source of water, so all households using bottled water for drinking are considered to be using an improved source.

The table also provides information on the time to obtain drinking water and the treatment given to water used for drinking. Since water may be treated in several ways by a household, water treatment is given as the percentages of households using the treatment method and the percentage of the de jure population living in those households, rather than a distribution.

Information for the de jure population in this and other tables was added at the request of UNICEF. The Joint Monitoring Programme for Water Supply and Sanitation tabulates statistics by population rather than by households.

This table should include sub-totals on the rows next to the headings in bold. The row "Improved source" corresponds to MDG indicator 7.8 "Proportion of population using an improved drinking water source," and MICS4 Indicator 4.1 "Use of improved drinking water sources." The information provided here differs slightly from the MDG and MICS indicator definitions due to lack of information about the source of water for other uses for those households reporting bottled water as their source of drinking water.

Data on the row "Percentage using an appropriate treatment method" corresponds to MICS 4 Indicator 4.2 "Water treatment."

This table also measures two indicators of the Access and Behavioral Outcome Indicators for Water, Sanitation, and Hygiene of the Hygiene Improvement Project (USAID):

WA1: Percent of households that use an improved drinking water source
WA8: Percent of households practicing correct use of recommended household water treatment technologies

Table 2.2 Household sanitation facilities

Percent distribution of households and de jure population by type of toilet/latrine facilities, according to residence, [country, year]

Type of toilet/latrine facility	Households			Population		
	Urban	Rural	Total	Urban	Rural	Total
Improved, not shared facility						
Flush/pour flush to piped sewer system						
Flush/pour flush to septic tank						
Flush/pour flush to a pit latrine						
Ventilated improved pit (VIP) latrine						
Pit latrine with a slab						
Composting toilet						
Shared facility[1]						
Flush/pour flush to piped sewer system						
Flush/pour flush to septic tank						
Flush/pour flush to a pit latrine						
Ventilated improved pit (VIP) latrine						
Pit latrine with a slab						
Composting toilet						
Non-improved facility						
Flush/pour flush not to sewer/ septic tank/pit latrine						
Pit latrine without slab/open pit						
Bucket						
Hanging toilet/hanging latrine						
No facility/bush/field						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number						

[1] Facilities that would be considered improved if they were not shared by two or more households

The purpose of this table is to show the proportion of households and of the de jure population having access to hygienic sanitation facilities. Hygienic status is determined on the basis type of facility used and whether or not it is a shared facility.

A household's toilet/latrine facility is classified as hygienic if it is used only by household members (i.e., not shared) and the type of facility effectively separates human waste from human contact. The types of facilities that are most likely to accomplish this are flush or pour flush into a piped sewer system/septic tank/pit latrine, ventilated, improved pit (VIP) latrine, pit latrine with a slab and a composting toilet. A household's sanitation facility is classified as unhygienic if it is shared with other households or if it does not effectively separate human waste from human contact.

The response categories are those categories that have been proposed by the JMP (*http://www.wssinfo.org/definitions-methods/watsan-categories/*).

This table should include sub-totals on the rows next to the headings in bold. The row "Improved, not shared facility" corresponds to MDG indicator 7.9, "Proportion of the population using an improved sanitation facility," MICS4 Indicator 4.3, "Use of improved sanitation facilities," and indicator SAN1 "Percent of households with access to an improved sanitation facility" of the Access and Behavioral Outcome Indicators for Water, Sanitation, and Hygiene of the Hygiene Improvement Project (USAID).

Table 2.3 Household characteristics

Percent distribution of households by housing characteristics, percentage using solid fuel for cooking, and percent distribution by frequency of smoking in the home, according to residence, [country, year]

Housing characteristic	Residence		
	Urban	Rural	Total
Electricity			
Yes			
No			
Total	100.0	100.0	100.0
Flooring material			
Earth/sand			
Dung			
Wood planks			
Palm/bamboo			
Parquet or polished wood			
Vinyl or asphalt strips			
Ceramic tiles			
Cement			
Carpet			
Total	100.0	100.0	100.0
Rooms used for sleeping			
One			
Two			
Three or more			
Total	100.0	100.0	100.0
Place for cooking			
In the house			
In a separate building			
Outdoors			
No food cooked in household			
Total	100.0	100.0	100.0
Cooking fuel			
Electricity			
LPG/natural gas/biogas			
Kerosene			
Coal/lignite			
Charcoal			
Wood			
Straw/shrubs/grass			
Agricultural crop			
Animal dung			
Other fuel			
No food cooked in household			
Total	100.0	100.0	100.0
Percentage using solid fuel for cooking[1]			
Frequency of smoking in the home			
Daily			
Weekly			
Monthly			
Less than monthly			
Never			
Total	100.0	100.0	100.0
Number			

LPG = Liquefied petroleum gas
[1] Includes coal/lignite, charcoal, wood, straw/shrubs/grass, agricultural crops, and animal dung [list categories included in the country questionnaire]

Table 2.3 presents major housing characteristics of the study population. If additional household characteristics were included in a country-specific questionnaire, they can be added to the table.

The information on smoking inside the home is included to assess the percentage of households in which there is exposure to secondhand smoke. Secondhand smoke (SHS) causes health risks in children and adults who do not smoke. Pregnant women exposed to SHS have a higher risk of giving birth to a low-birth weight baby (Windham GC, Eaton A, Hopkins B. Evidence for an association between environmental tobacco smoke exposure and birth weight: a meta-analysis and new data. Paediatr Perinat Epidemiol. 1999;13:35-37.) Children who are exposed to SHS are at increased risk for respiratory and ear infections and poor lung development (US Department of Health and Human Services. The Health Consequences of Involuntary Exposure to Tobacco Smoke. A report of the Surgeon General. Rockville, MD: US Department of Health and Human Services, Public Health Service, Office of the Surgeon General; Washington, DC, 2006).

Table 2.4 Household possessions

Percentage of households possessing various household effects, means of transportation, agricultural land and livestock/farm animals by residence, [country, year]

Possession	Residence		
	Urban	Rural	Total
Household effects			
Radio			
Television			
Mobile telephone			
Non-mobile telephone			
Refrigerator			
Means of transport			
Bicycle			
Animal drawn cart			
Motorcycle/scooter			
Car/truck			
Boat with a motor			
Ownership of agricultural land			
Ownership of farm animals[1]			
Number			

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

The availability of durable consumer goods is a useful indicator of household socioeconomic level. Moreover, particular goods have specific benefits. Having access to a radio or a television exposes household members to innovative ideas; a refrigerator prolongs the wholesomeness of foods; and a means of transport allows greater access to many services away from the local area. This table shows the availability of selected household possessions by residence.

The DHS household questionnaire includes questions on ownership of agriculture land (Q119) and ownership of livestock/farm animals (Q121)

If additional household possessions were included in a country-specific questionnaire, they can be included in the table.

Table 2.5 Wealth quintiles

Percent distribution of the de jure population by wealth quintiles and the Gini Coefficient, according to residence and region, [country, year]

Residence/region	Wealth quintile					Total	Number of persons	Gini Coefficient
	Lowest	Second	Middle	Fourth	Highest			
Residence								
Urban						100.0		
Rural						100.0		
Region								
Region 1						100.0		
Region 2						100.0		
Region 3						100.0		
Region 4						100.0		
Total						100.0		

In addition to standard background characteristics, most of the results in the country reports are shown by wealth quintiles, an indicator of the economic status of households. Although surveys under the DHS program do not collect data on consumption or income, they do collect detailed information on dwelling and household characteristics and access to a variety of consumer goods and services, and assets which are used as a measure of economic status. The wealth index is a measure that has been used in many DHS and other country-level surveys to indicate inequalities in household characteristics, in the use of health and other services, and in health outcomes. The resulting wealth index is an indicator of the level of wealth that is consistent with expenditure and income measures.

The wealth index was constructed using household asset data via principal components analysis.

In its current form, which takes better account of urban-rural differences in the stores and indicators of wealth, the wealth index is created in three steps. In the first step, a subset of indicators common to both urban and rural areas is used to create wealth scores for households in both areas. Categorical variables to be used are transformed into separate dichotomous (0-1) indicators. These indicators and those that are continuous are then analyzed using principal components analysis to produce a common factor score for each household. In a second step, separate factor scores are produced for households in urban and in rural areas using area-specific indicators. The third step combines the separate area-specific factor scores to produce a nationally applicable combined wealth index by adjusting the area-specific score through regression on the common factor scores. This three-step procedure permits greater adaptability of the wealth index in both urban and rural areas. The resulting combined wealth index has a mean of zero and a standard deviation of one, and once it is obtained, national-level wealth quintiles are obtained by assigning the household score to each de jure household member, ranking each person in the population by their score and then dividing the ranking into five equal parts, from quintile one (lowest-poorest) to quintile five (highest-wealthiest), each having approximately 20% of the population.

Table 2.5 shows the distribution across the five wealth quintiles of the population of urban and rural areas and in each region. These distributions indicate the degree to which wealth is evenly (or unevenly) distributed by geographic areas. The distribution of households by quintiles is not exactly 20 percent due to the fact that members of the households, not households, were divided into quintiles.

Also included in Table 2.5 is the Gini Coefficient, which indicates the level of concentration of wealth, 0 being an equal distribution and 1 a totally unequal distribution. Said another way, if every person in the

country owned the same amount of wealth, the Gini coefficient would be 0. If one person in the country owned all of the wealth, then the Gini coefficient would be 1. In a country with a Gini coefficient of 0.2, wealth is fairly evenly distributed across the population. On the other hand, in a country with a Gini coefficient of 0.8, the top 10 percent of wealthiest people own much more wealth than the lowest 10 percent. A Gini coefficient that increases over time in a country indicates that wealth is becoming more concentrated, and disparities between the richest and poorest are increasing.

The Gini coefficient is calculated as a ratio of the areas on the Lorenz curve diagram (see figure below). If the area between the line of perfect equality and Lorenz curve is A, and the area underneath the Lorenz curve is B, then the Gini coefficient is A/(A+B). This ratio is expressed as a percentage or as the numerical equivalent of that percentage, which is always a number between 0 and 1. As wealth becomes more concentrated, the Lorenz curve moves down and to the right, area A increases as a proportion of A+B, and the Gini coefficient gets higher (closer to 1).
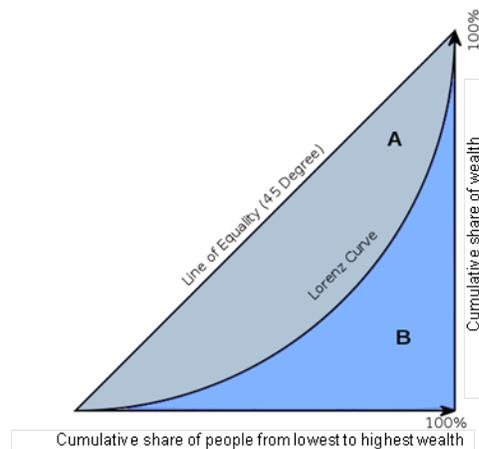
Source: based on http://en.wikipedia.org/wiki/file:economics_gini_coefficient2.svg

Because of its nature, smaller areas are more likely to have lower values of the Gini coefficient because they are more likely to be homogeneous than are larger areas. Thus the value of the coefficient in each region is often lower than the value of the nation as a whole.

The Gini coefficient is often calculated with the more practical Brown Formula shown below:

$$G = \left| 1 - \sum_{k=1}^{n}(X_k - X_{k-1})(Y_k + Y_{k-1}) \right|$$

G: Gini coefficient
X_k: cumulated proportion of the population variable, for k = 0,...,n, with $X_0 = 0$, $X_n = 1$
Y_k: cumulated proportion of the income variable, for k = 0,...,n, with $Y_0 = 0$, $Y_n = 1$

The small sample variance properties of G are not known, and large sample approximations to the variance of G are poor. In order for G to be an unbiased estimate of the true population value, it should be multiplied by n/(n-1).

Table 2.6 Hand washing

Percentage of households in which the place most often used for washing hands was observed, and among households in which the place for hand washing was observed, percent distribution by availability of water, soap and other cleansing agents [country, year]

Background characteristic	Percentage of households where place for washing hands was observed	Number of households	Among households where place for hand washing was observed, percentage with:						Total	Number of households with place for hand washing observed
			Soap and water[1]	Water and cleansing agent[2] other than soap only	Water only	Soap but no water[3]	Cleansing agent other than soap only[2]	No water, no soap, no other cleansing agent		
Residence										
Urban									100.0	
Rural									100.0	
Region										
Region 1									100.0	
Region 2									100.0	
Region 3									100.0	
Region 4									100.0	
Wealth quintile										
Lowest									100.0	
Second									100.0	
Middle									100.0	
Fourth									100.0	
Highest									100.0	
Total									100.0	

[1] Soap includes soap or detergent in bar, liquid, powder or paste form. This column includes households with soap and water only as well as those that had soap and water and another cleansing agent.
[2] Cleansing agents other than soap include locally available materials such as ash, mud or sand
[3] Includes households with soap only as well as those with soap and another cleansing agent

Washing with soap and water is the ideal hygienic practice. However, hand washing with a non-soap cleaning agent such as ash or sand is an improvement over not using any cleansing agent.

Column C is a proxy for the indicator HW2 "Percent of households with soap and water at a hand washing station commonly used by family members" of the Access and Behavioral Outcome Indicators for Water, Sanitation, and Hygiene of the Hygiene Improvement Project (USAID). The denominator for this indicator includes all households. However, MEASURE DHS is only able to provide information for those households where the interviewer observed the hand washing station. Households excluded from the denominator in this table include: households in which the respondent denied permission to see the place where household members wash their hands, households which do not have one specific place where members wash their hands, and households which have no place hand washing.

Table 2.7 Household population by age, sex, and residence

Percent distribution of the de facto household population by five-year age groups, according to sex and residence, [country, year]

Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<5									
5-9									
10-14									
15-19									
20-24									
25-29									
30-34									
35-39									
40-44									
45-49									
50-54									
55-59									
60-64									
65-69									
70-74									
75-79									
80 +									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number									

This table gives the distribution of the population by age, according to sex and residence. The population age structure derives from the past history of the population. It is also a device to test the quality of the data collected in regard to age reporting. In a high fertility country, the age structure shows large percentages in the first age group (<5) for each sex. The percentages decline progressively as age increases. Usually, the number of males is higher than that of females in the first few 5-year age groups and the reverse pattern is observed at older ages. This table is based on the de facto population, i.e., persons who stayed in the household the night before the interview.

Population pyramid (Working table for Figure 2.1)			
Percent distribution of the de facto household population by five-year age groups, according to sex, [country, year]			
Age	Male	Female	Total
<5			
5-9			
10-14			
15-19			
20-24			
25-29			
30-34			
35-39			
40-44			
45-49			
50-54			
55-59			
60-64			
65-69			
70-74			
75-79			
80+			
Total			100.0
Number			

Figure 2.1
Population Pyramid

[Country and year]
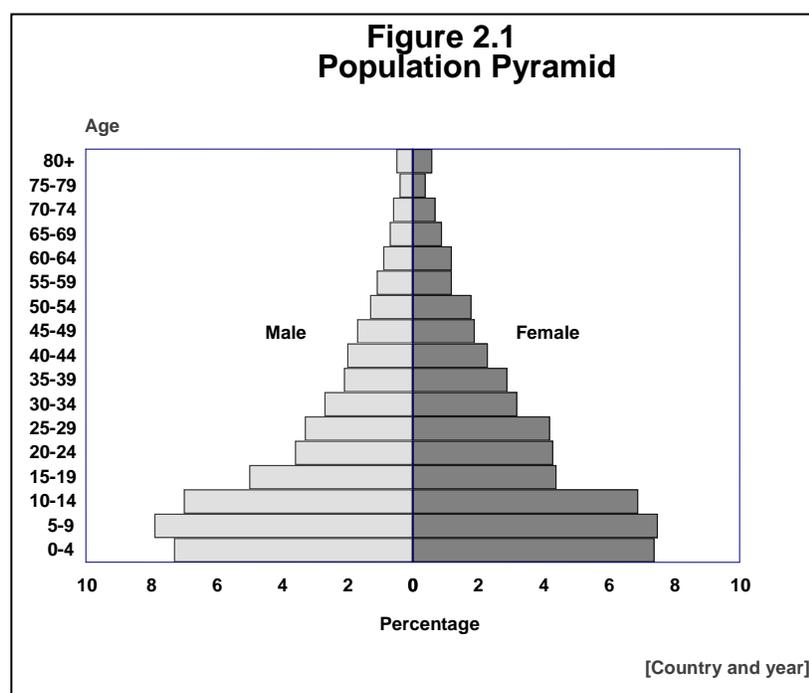
This is a working table for producing the population pyramid in Figure 2.1, not for presentation as a table in the printed report. The percent distribution of the population by age and sex is based on the overall total (both sexes combined).

The denominator for each age-sex category of the working table is the total de facto household population (usual residents and visitors who spent the night preceding the survey in the household). In this table males and females are two components of a single two-dimensional distribution (age and sex) of the population.

Table 2.8 Household composition

Percent distribution of households by sex of head of household and by household size; mean size of household, and percentage of households with orphans and foster children under 18 years of age, according to residence, [country, year]

Characteristic	Residence		
	Urban	Rural	Total
Household headship			
Male			
Female			
Total	100.0	100.0	100.0
Number of usual members			
1			
2			
3			
4			
5			
6			
7			
8			
9+			
Total	100.0	100.0	100.0
Mean size of households			
Percentage of households with orphans and foster children under 18 years of age			
Foster children[1]			
Double orphans			
Single orphans[2]			
Foster and/or orphan children			
Number of households			

Note: Table is based on de jure household members, i.e., usual residents
[1] Foster children are those under age 18 living in households with neither their mother nor their father present
[2] Includes children with one dead parent and an unknown survival status of the other parent.

The household composition usually affects the allocation of resources (financial, emotional, etc.) available to household members. In cases where women are heads of households, it is usually found that financial resources are limited. Similarly, the size of the household affects the well being of its members. Where the size of the household is large, crowding can lead to health problems.

Table 2.9 Birth registration of children under age five

Percentage of de jure children under five years of age whose births are registered with the civil authorities, according to background characteristics, [country, year]

Background characteristic	Children whose births are registered		Percentage registered	Number of children
	Percentage who had birth certificate	Percentage who did not have birth certificate		
Age				
<2				
2-4				
Sex				
Male				
Female				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

The registration of births is the inscription of the facts of the birth into an official log kept at the registrar's office. A birth certificate is issued at the time of registration or later as proof of the registration of the birth. Table 2.9 gives the percentage of children under five years of age whose births were officially registered and the percentage who had a birth certificate at the time of the survey. Not all children who are registered may have a birth certificate since some certificates may have been lost or were never issued. However, all children with a certificate have been registered.

Data column 3 (Percentage registered) corresponds to MICS4 Indicator 8.1, "Birth registration."

Table 2.10 Children's living arrangements and orphanhood

Percent distribution of de jure children under 18 years of age by living arrangements and survival status of parents, the percentage of children not living with a biological parent, and the percentage of children with one or both parents dead, according to background characteristics, [country, year]

Background characteristic	Living with both parents	Living with mother but not with father		Living with father but not with mother		Not living with either parent					Total	Percent-age not living with a biological parent	Percent-age with one or both parents dead[1]	Number of children
		Father alive	Father dead	Mother alive	Mother dead	Both alive	Only mother alive	Only father alive	Both dead	Missing information on father/ mother				
Age														
0-4											100.0			
<2											100.0			
2-4											100.0			
5-9											100.0			
10-14											100.0			
15-17											100.0			
Sex														
Male											100.0			
Female											100.0			
Residence														
Urban											100.0			
Rural											100.0			
Region														
Region 1											100.0			
Region 2											100.0			
Region 3											100.0			
Region 4											100.0			
Wealth quintile														
Lowest											100.0			
Second											100.0			
Middle											100.0			
Fourth											100.0			
Highest											100.0			
Total <15											100.0			
Total <18											100.0			

Note: Table is based on de jure members, i.e., usual residents.
[1] Includes children with father dead, mother dead, both dead, and one parent dead but missing information on survival status of the other parent

This table gives information relevant to children's living arrangements and orphanhood for children under 18 years of age. In the text it is also important to discuss the percentage of children with only one parent dead, since this is sometimes used to assess the orphanhood situation.

Data column 12 corresponds to MICS4 Indicator 9.17, "Children's living arrangements." Data column 13 corresponds to MICS4 Indicator 9.18, "Prevalence of children with at least one parent dead."

Table 2.11 School attendance by survivorship of parents

For de jure children 10-14 years of age, the percentage attending school by parental survival and the ratio of the percentage attending, by parental survival, according to background characteristics, [country, year]

Background characteristic	Both parents deceased	Number	Both parents alive and living with at least one parent	Number	Ratio[1]
Sex					
Male					
Female					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

Note: Table is based only on children who usually live in the household.
[1] Ratio of the percentage with both parents deceased to the percentage with both parents alive and living with at least one parent

This table shows school attendance of orphans relative to non-orphans to determine if orphans are disadvantaged in terms of access to education, and, if so, to what extent.

Data column 1 corresponds to MICS4 Indicator 9.19, "School attendance of orphans."
Data column 3 corresponds to MICS4 Indicator 9.20, "School attendance of non-orphans."

The final column corresponds to MDG Indicator 6.4, "Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years" and UNGASS Indicator 12, "Current school attendance among orphans and among non-orphans aged 10-14."

Table 2.12.1 Educational attainment of the female household population

Percent distribution of the de facto female household population age six and over by highest level of schooling attended or completed and median years completed, according to background characteristics, [country, year]

Background characteristic	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Don't know/ missing	Total	Number	Median years completed
Age										
6-9								100.0		
10-14								100.0		
15-19								100.0		
20-24								100.0		
25-29								100.0		
30-34								100.0		
35-39								100.0		
40-44								100.0		
45-49								100.0		
50-54								100.0		
55-59								100.0		
60-64								100.0		
65+								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total								100.0		

[1] Completed X grade at the primary level
[2] Completed X grade at the secondary level

Educational attainment is an important characteristic of household members. Many phenomena such as reproductive behavior, use of contraception, health of children, and proper hygienic habits are affected by the education of household members. Tables 2.12.1, 2.12.2, and 2.13 are used to assess the education of household members. Table 2.12.1 and 2.12.2 are a classification of the educational attainment of household members by age group, residence, and region for each sex. X and Y in the footnote refer to the number of grades required to complete that level and each is country specific.

Where fewer than half of women have been to school, the median years completed should be shown as "0.0".

Table 2.12.2 Educational attainment of the male household population

Percent distribution of the de facto male household population age six and over by highest level of schooling attended or completed and median years completed, according to background characteristics, [country, year]

Background characteristic	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Don't know/ missing	Total	Number	Median years completed
Age										
6-9								100.0		
10-14								100.0		
15-19								100.0		
20-24								100.0		
25-29								100.0		
30-34								100.0		
35-39								100.0		
40-44								100.0		
45-49								100.0		
50-54								100.0		
55-59								100.0		
60-64								100.0		
65+								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total								100.0		

[1] Completed X grade at the primary level
[2] Completed X grade at the secondary level

Where fewer than half of men have been to school, the median years completed should be shown as "0.0".

Table 2.13 School attendance ratios

Net attendance ratios (NAR) and gross attendance ratios (GAR) for the de facto household population by sex and level of schooling; and the Gender Parity Index (GPI), according to background characteristics, [country, year]

Background characteristic	Net attendance ratio[1]				Gross attendance ratio[2]			
	Male	Female	Total	Gender Parity Index[3]	Male	Female	Total	Gender Parity Index[3]
PRIMARY SCHOOL								
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total								
SECONDARY SCHOOL								
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total								

[1] The NAR for primary school is the percentage of the primary-school age (A-B years) population that is attending primary school. The NAR for secondary school is the percentage of the secondary-school age (C-D years) population that is attending secondary school. By definition the NAR cannot exceed 100 percent.
[2] The GAR for primary school is the total number of primary school students, expressed as a percentage of the official primary-school-age population. The GAR for secondary school is the total number of secondary school students, expressed as a percentage of the official secondary-school-age population. If there are significant numbers of overage and underage students at a given level of schooling, the GAR can exceed 100.0.
[3] The Gender Parity Index for primary school is the ratio of the primary school NAR (GAR) for females to the NAR (GAR) for males. The Gender Parity Index for secondary school is the ratio of the secondary school NAR (GAR) for females to the NAR (GAR) for males.

Table 2.13 provides net and gross attendance ratios by school level, sex, residence, and region. The net attendance ratio (NAR) is an indicator of participation in schooling among those of official school age. The gross attendance ratio (GAR) is an indicator of participation in schooling among those of any age, expressed as a percentage of the official school age population. The difference between the ratios indicates the incidence of overage and underage attendance. Children are considered to be attending school currently if they attended at any time during the current school year.

The Gender Parity Index (GPI), or the ratio of the female to the male GAR at the primary and secondary levels, indicates the magnitude of the gender gap in attendance ratios. If there is no gender difference, the GPI will be equal to one, whereas the wider the disparity in favor of males, the closer the GPI will be to 0. If the gender gap favors females, the GPI will exceed one.

The MEASURE DHS project is adopting a different method for calculating the NARs and GARs. Previously, eligibility of a child for attending school was determined by their age at the time of the survey. This methodology resulted in an underestimation of the attendance ratios because children who were not old enough to attend school when the school year began but who achieve school-going age between the start of the school year and the time of the survey were considered to be eligible to attend school at the time of the survey when, in fact, they were not. In the current method for calculating the NAR and GAR, children's age is "rejuvenated" back to the age they were at the start of the school year that is on-going at the time of the interview. This methodology is already being used in MICS surveys and is the methodology recommended by the international education community.

This methodology requires an additional piece of information not previously needed to run this table: the date of the start of the academic year. Also, if the cut-off date for age eligibility is not the same as the date of the start of the academic year, then the cut-off date for age eligibility is the date that should be used. For example, if a child has to be age 6 in order to begin primary school, and school begins in September 2012, but the child is still eligible to begin school that year if he/she is 6 years old by October 1st, then the child's age in the month of October is the data that should be used, rather than her age at the start of the school year. For each child, a new age variable must be calculated which subtracts from their current age the number of months elapsed between the date of interview and the date the on-going or most recent school year began. For surveys with fieldwork spanning more than one academic year, the date of the start of the on-going/most recent school year will not be the same for all children.

It is very important to note that the data on the NAR and GAR calculated using this new method will not be comparable to the older attendance ratios. The new numbers should be notably higher. You must note in the text that the numbers are not comparable with previous DHS surveys. However, they will now be comparable with MICS surveys.

Official age ranges for primary and secondary school in the country should be obtained from the Ministry of Education.

UNESCO (http://www.uis.unesco.org/ev_en.php?ID=7434_201&ID2=DO_TOPIC) has information up to 1997 only. Member states have requested for this information to be updated. A series of regional consultations is taking place 2009-2010, and a new International Standard Classification of Education (ISCED) will be proposed at the UNESCO General Conference in 2011.

This table includes data for the following indicators:

MDG Indicator 2.1, "Net enrolment ratio in primary education." Note that the DHS measures attendance rather than enrollment.
MDG Indicator 3.1, "Ratios of girls to boys in primary, secondary, and tertiary education." Note that the table only shows data for primary and secondary school.
MICS4 Indicator 7.4, "Primary school net attendance ratio"
MICS4 Indicator 7.5, "Secondary school net attendance ratio"
MICS4 Indicator 7.9, "Gender parity index (primary school)"
MICS4 Indicator 7.10, "Gender parity index (secondary school)"

**Figure 2.2
Age-specific Attendance Rates
of the de facto Population 5 to 24 Years**
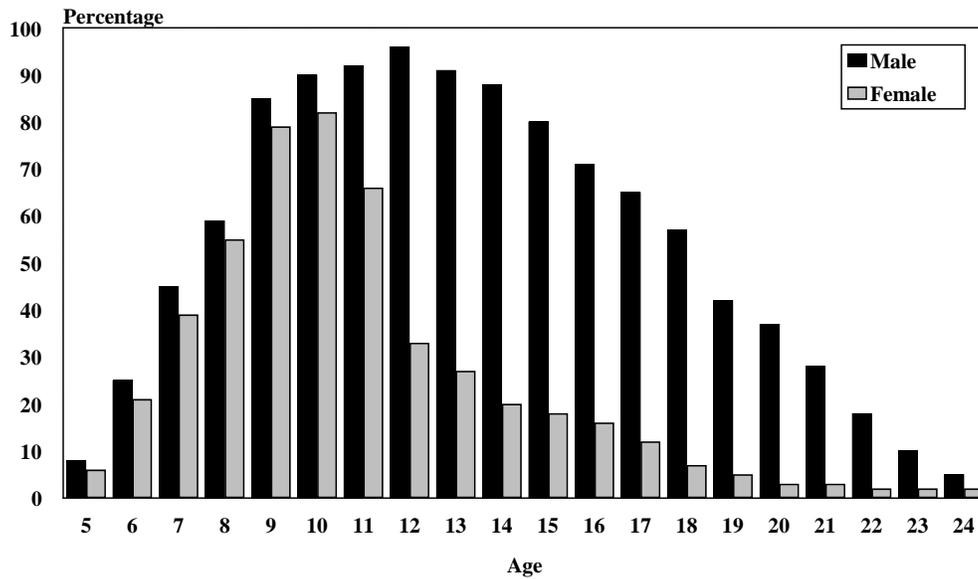
Figure 2.2 shows the age-specific attendance rates (ASAR) for the de-facto population regardless of the level of schooling, i.e., percentage of the population age 5-24 years attending school. The closer the ASAR is to 100 percent, the higher the proportion of the population in a given age attending school.

CHAPTER 3

CHARACTERISTICS OF SURVEY RESPONDENTS

The purpose of the chapter is to provide a description of the situation of respondents of reproductive age in the country. This information is useful for understanding the context of the reproductive and health status of women and men. Percent distributions of various demographic and socioeconomic characteristics are shown for the full sample. The main background characteristics that will be used in subsequent chapters on reproduction and health are age at the time of the survey, marital status, broad education levels, urban/rural residence, region and, the wealth quintile to which respondents belong. In addition, information is provided on employment and work status.

This chapter should also provide insights on the meaning of major characteristics of survey respondents in the context of the country, and non-DHS explanatory information should be brought in to complement and expand the DHS data.

Besides a better understanding of many social and demographic phenomena discussed in the following chapters, this general description of the population is useful for assessing the economic and social development of the country and its regions.

Table 3.1 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, [country, year]

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
Religion						
--						
--						
Ethnic group						
--						
--						
Marital status						
Never married						
Married						
Living together						
Divorced/separated						
Widowed						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49	100.0			100.0		
50-54[59]	na	na	na	na		
Total 15-54[59]	na	na	na	na		

Note: Education categories refer to the highest level of education attended, whether or not that level was completed.
na = Not applicable

Table 3.1 shows a description of the basic characteristics of the women and men interviewed in the survey and provides the background for interpreting findings presented later in the report. The variables included in Table 3.1 are illustrative. Other variables of interest for the population surveyed may be added to the table.

In Table 3.1 marital status is separated into five subcategories. In most tables the categories "married" and "living together" are combined and referred to collectively as "currently married" and in all other tables in this report the categories "divorced/separated" and "widowed" are combined into a single category.

For surveys involving a weighted sample, both the weighted and unweighted number of cases for each category should be included in Table 3.1. For such surveys only the weighted number of cases will be shown in all subsequent tables. However, all tabulations should be prepared on the unweighted as well as the weighted data files in order to determine the total number of cases in the relevant population subgroups since no statistics should be presented for subgroups including fewer than 25 unweighted cases.

Table 3.2.1 Educational attainment: Women

Percent distribution of women age 15-49 by highest level of schooling attended or completed, and median years completed, according to background characteristics, [country, year]

| Background characteristic | Highest level of schooling | | | | | | | | Median years completed | Number of women |
	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Missing	Total		
Age										
15-24								100.0		
15-19								100.0		
20-24								100.0		
25-29								100.0		
30-34								100.0		
35-39								100.0		
40-44								100.0		
45-49								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total								100.0		

[1] Completed X grade at the primary level
[2] Completed Y grade at the secondary level

This chapter provides an opportunity to discuss the relationship among the background variables used in later tabulations.

Of particular importance are possible differences in the educational attainment of women from different age groups, wealth quintiles urban/rural residence and regions. Some understanding of how these factors relate to each other will facilitate later interpretation of differentials. Table 3.2.1 shows how women classified by age, wealth quintile, residence, and region are distributed according to educational attainment. X and Y in the footnote refer to the number of grades required to complete that level and each is country specific.
In an all-woman sample (as opposed to a sample of ever married women), data in this table should be similar, but not necessarily identical, to data in Table 2.4 for the same age groups. Differences may occur because of non-response in the women's questionnaire and different responses on education and age in the household and women's questionnaires.

Table 3.2.2 shows the corresponding results for men.

Table 3.2.2 Educational attainment: Men

Percent distribution of men age 15-49 by highest level of schooling attended or completed, and median years completed, according to background characteristics, [country, year]

Background characteristic	No education	Some primary	Completed primary[1]	Some secondary	Completed secondary[2]	More than secondary	Missing	Total	Median years completed	Number of men
Age										
15-24								100.0		
15-19								100.0		
20-24								100.0		
25-29								100.0		
30-34								100.0		
35-39								100.0		
40-44								100.0		
45-49								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total 15-49								100.0		
50-54[59]								100.0		
Total 15-54[59]								100.0		

[1] Completed X grade at the primary level
[2] Completed Y grade at the secondary level

Table 3.3.1 Literacy: Women

Percent distribution of women age 15-49 by level of schooling attended and level of literacy, and percentage literate, according to background characteristics, [country, year]

| Background characteristic | Secondary school or higher | No schooling or primary school | | | | | Missing | Total | Percentage literate[1] | Number of women |
		Can read a whole sentence	Can read part of a sentence	Cannot read at all	No card with required language	Blind/ visually impaired				
Age										
15-24								100.0		
15-19								100.0		
20-24								100.0		
25-29								100.0		
30-34								100.0		
35-39								100.0		
40-44								100.0		
45-49								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total								100.0		

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

In Table 3.3.1, the level of literacy is based on the women's ability to read all, part, or none of a sentence in the language in which she is likely to be able to read if the she is literate.

The questions assessing literacy are asked only of respondents who have not attended school or have attended only primary school. It is assumed that those who attended at least secondary school are literate.

In DHS surveys, two variables can provide information about literacy. Respondents are 1) asked to read a simple sentence about everyday life, and 2) asked their highest grade or year of schooling completed. Although literacy is a complex construct, triangulating among these three measures allows some understanding of the likelihood of a woman being literate. Literacy is widely acknowledged as benefiting both the individual and society and, particularly among women, is associated with a number of positive outcomes, including intergenerational health and nutrition benefits.

The last column on percent literate excludes from the denominator respondents for whom no card with the required language was available, and respondents who are blind/visually impaired, since their literacy cannot be gauged.

Table 3.3.2 shows the corresponding results for men.

Table 3.3.2 Literacy: Men

Percent distribution of men age 15-49 by level of schooling attended and level of literacy, and percentage literate, according to background characteristics, [country, year]

| Background characteristic | Secondary school or higher | No schooling or primary school | | | | | Missing | Total | Percentage literate[1] | Number of men |
		Can read a whole sentence	Can read part of a sentence	Cannot read at all	No card with required language	Blind/ visually impaired				
Age										
15-24								100.0		
15-19								100.0		
20-24								100.0		
25-29								100.0		
30-34								100.0		
35-39								100.0		
40-44								100.0		
45-49								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total 15-49								100.0		
50-54[59]								100.0		
Total 15-54[59]								100.0		

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

Tables 3.3.1 and 3.3.2 include data for MDG Indicator 2.3, "Literacy rate of 15-24 year-olds," and MICS4 Indicator 7.1, "Literacy rate among young women."

Table 3.4.1 Exposure to mass media: Women

Percentage of women age 15-49 who are exposed to specific media on a weekly basis by background characteristics, [country, year]

Background characteristic	Reads a newspaper at least once a week	Watches television at least once a week	Listens to radio at least once a week	Accesses all three media at least once a week	Accesses none of the three media at least once a week	Number of women
Age						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

This table shows the percentage of women exposed to mass media by background characteristics. It is important to know which women are likely to be reached by the media for disseminating family planning, health and other information.

The denominator for the column 'Reads a newspaper at least once a week' includes women who cannot read at all and women who are blind/visually impaired.

The results for men are presented in Table 3.4.2.

Table 3.4.2 Exposure to mass media: Men

Percentage of men age 15-49 who are exposed to specific media on a weekly basis by background characteristics, [country, year]

Background characteristic	Reads a newspaper at least once a week	Watches television at least once a week	Listens to radio at least once a week	Accesses all three media at least once a week	Accesses none of the three media at least once a week	Number of men
Age						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49						
50-54[59]						
Total 15-54[59]						

Table 3.5.1 Employment status: Women

Percent distribution of women age 15-49 by employment status, according to background characteristics, [country, year]

| Background characteristic | Employed in the 12 months preceding the survey | | Not employed in the 12 months preceding the survey | Missing/ don't know | Total | Number of women |
	Currently employed[1]	Not currently employed				
Age						
15-19					100.0	
20-24					100.0	
25-29					100.0	
30-34					100.0	
35-39					100.0	
40-44					100.0	
45-49					100.0	
Marital status						
Never married					100.0	
Married or living together					100.0	
Divorced/separated/widowed					100.0	
Number of living children						
0					100.0	
1-2					100.0	
3-4					100.0	
5+					100.0	
Residence						
Urban					100.0	
Rural					100.0	
Region						
Region 1					100.0	
Region 2						
Region 3					100.0	
Region 4					100.0	
Education						
No education					100.0	
Primary					100.0	
Secondary					100.0	
More than secondary					100.0	
Wealth quintile						
Lowest					100.0	
Second					100.0	
Middle					100.0	
Fourth					100.0	
Highest					100.0	
Total					100.0	

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

The corresponding question in the new core questionnaire has changed. Currently employed is now defined as having worked in the last seven days.

Like education, employment can be a source of empowerment for women, especially if it puts them in control of income. The measurement of women's employment, however, is difficult. The difficulty arises largely because some of the work that women do, especially work on family farms, family businesses or in the informal sector is often not perceived by women themselves as employment, and hence not reported as such. To avoid underestimating women's employment, the DHS ask women several questions to probe for their

employment status and to ensure complete coverage of employment in both the formal or informal sectors. Respondents are asked a number of questions to elicit their current employment status and continuity of employment in the 12 months prior to the survey. Employed women are those who say that they are currently working (i.e., worked in the past 7 days) and those who worked at any time during the 12 months prior to the survey. Additional information is also obtained on the type of work women are doing, whether they worked continuously throughout the year, whom they worked for, and the form in which they received their earnings, in cash or in kind.

Figure 3.1

Women's Employment Status in the Past 12 Months

Currently employed
57 %

Did not work in last 12 months
36 %

Not currently employed, but worked in last 12 months
7 %

[country, year]
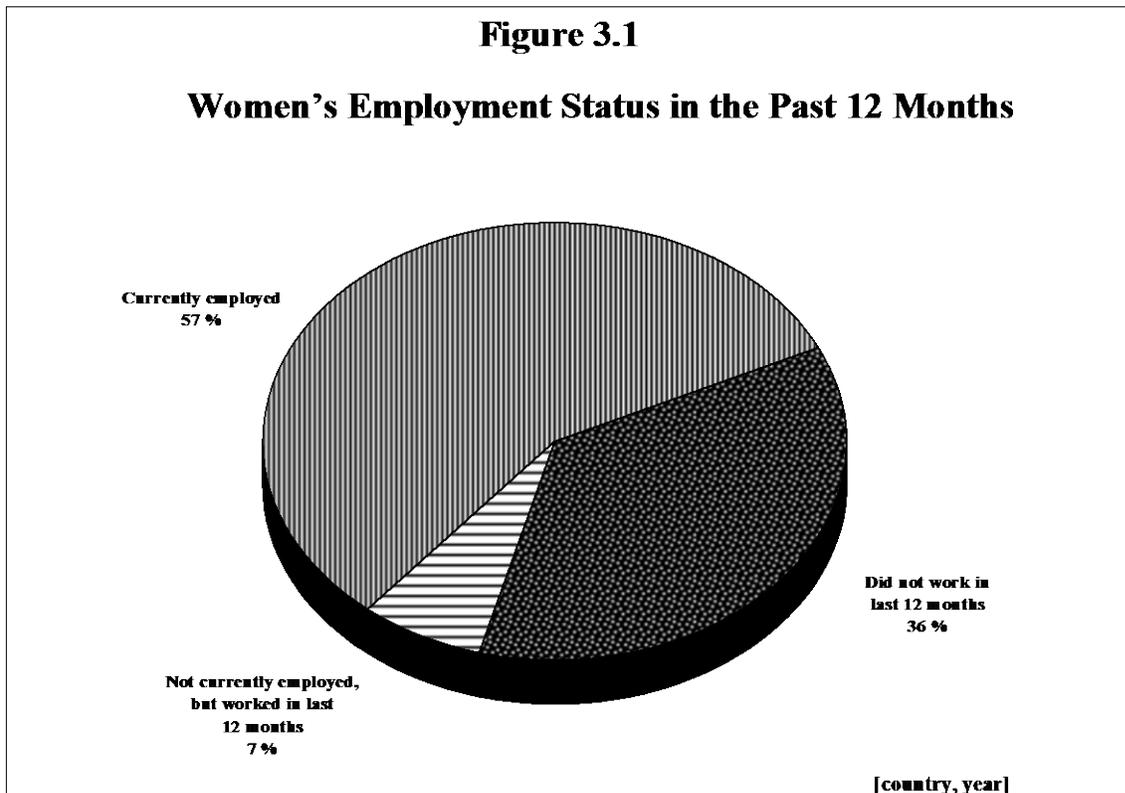
As Figure 3.1 reveals, some women are currently employed, others worked in the past 12 months but are not currently employed, and others did not work in the past 12 months.

37

Results on employment status of men are presented in Table 3.5.2.

Table 3.5.2 Employment status: Men

Percent distribution of men age 15-49 by employment status, according to background characteristics, [country, year]

Background characteristic	Employed in the 12 months preceding the survey		Not employed in the 12 months preceding the survey	Missing/ don't know	Total	Number of men
	Currently employed[1]	Not currently employed				
Age						
15-19					100.0	
20-24					100.0	
25-29					100.0	
30-34					100.0	
35-39					100.0	
40-44					100.0	
45-49					100.0	
Marital status						
Never married					100.0	
Married or living together					100.0	
Divorced/separated/widowed					100.0	
Number of living children						
0					100.0	
1-2					100.0	
3-4					100.0	
5+						
Residence						
Urban					100.0	
Rural					100.0	
Region						
Region 1					100.0	
Region 2						
Region 3					100.0	
Region 4					100.0	
Education						
No education					100.0	
Primary					100.0	
Secondary					100.0	
More than secondary					100.0	
Wealth quintile						
Lowest					100.0	
Second					100.0	
Middle					100.0	
Fourth					100.0	
Highest					100.0	
Total 15-49					100.0	
50-54[59]					100.0	
Total 15-54[59]					100.0	

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

Table 3.6.1 Occupation: Women

Percent distribution of women age 15-49 employed in the 12 months preceding the survey by occupation, according to background characteristics, [country, year]

Background characteristic	Professional/ technical/ managerial	Clerical	Sales and services	Skilled manual	Unskilled manual	Domestic service	Agriculture	Missing	Total	Number of women
Age										
15-19									100.0	
20-24									100.0	
25-29									100.0	
30-34									100.0	
35-39									100.0	
40-44									100.0	
45-49									100.0	
									100.0	
Marital status										
Never married									100.0	
Married or living together									100.0	
Divorced/separated/ widowed									100.0	
Number of living children										
0									100.0	
1-2									100.0	
3-4									100.0	
5+									100.0	
Residence										
Urban									100.0	
Rural									100.0	
Region										
Region 1									100.0	
Region 2									100.0	
Region 3									100.0	
Region 4									100.0	
Education										
No education									100.0	
Primary									100.0	
Secondary									100.0	
More than secondary									100.0	
Wealth quintile										
Lowest									100.0	
Second									100.0	
Middle									100.0	
Fourth									100.0	
Highest									100.0	
Total									100.0	

Table 3.6.1 shows the distribution of currently employed women by occupation, according to background characteristics.

The corresponding distribution for men is presented in Table 3.6.2.

Table 3.6.2 Occupation: Men

Percent distribution of men age 15-49 employed in the 12 months preceding the survey by occupation, according to background characteristics, [country, year]

Background characteristic	Professional/ technical/ managerial	Clerical	Sales and services	Skilled manual	Unskilled manual	Domestic service	Agriculture	Missing	Total	Number of men
Age										
15-19									100.0	
20-24									100.0	
25-29									100.0	
30-34									100.0	
35-39									100.0	
40-44									100.0	
45-49									100.0	
									100.0	
Marital status										
Never married									100.0	
Married or living together									100.0	
Divorced/separated/ widowed									100.0	
Number of living children										
0									100.0	
1-2									100.0	
3-4									100.0	
5+									100.0	
Residence										
Urban									100.0	
Rural									100.0	
Region										
Region 1									100.0	
Region 2									100.0	
Region 3									100.0	
Region 4									100.0	
Education										
No education									100.0	
Primary									100.0	
Secondary									100.0	
More than secondary									100.0	
Wealth quintile										
Lowest									100.0	
Second									100.0	
Middle									100.0	
Fourth									100.0	
Highest									100.0	
Total 15-49									100.0	
50-54[59]									100.0	
Total 15-54[59]									100.0	

40

Table 3.7 Type of employment: Women

Percent distribution of women age 15-49 employed in the 12 months preceding the survey by type of earnings, type of employer and continuity of employment, according to type of employment (agricultural or nonagricultural), [country, year]

Employment characteristic	Agricultural work	Nonagricultural work	Total
Type of earnings			
Cash only			
Cash and in-kind			
In-kind only			
Not paid			
Missing			
Total	100.0	100.0	100.0
Type of employer			
Employed by family member			
Employed by nonfamily member			
Self-employed			
Missing			
Total	100.0	100.0	100.0
Continuity of employment			
All year			
Seasonal			
Occasional			
Missing			
Total	100.0	100.0	100.0
Number of women employed during the past 12 months			

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

Table 3.7 shows the percent distribution of women who have worked at any time during the 12 months preceding the survey by the type of earnings women receive (cash, in-kind, or both), type of employer, and the continuity of employment and how this varies by type of employment (agricultural or non-agricultural).

Table 3.8.1 Health insurance coverage: Women

Percentage of women age 15-49 with specific types of health insurance coverage, according to background characteristics, [country, year]

Background characteristic	Social Security	Other employer-based insurance	Mutual Health Organization/ community-based insurance	Privately purchased commercial insurance	Other	None	Number of women
Age							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

Tables 3.8.1 and 3.8.2 are based on Q1009-1010 for women and Q812-813 for men.

Since respondents may report coverage by more than one type of insurance, the percentages by specific types of coverage may sum to more than 100 percent.

Table 3.8.2 Health insurance coverage: Men

Percentage of men age 15-49 with specific types of health insurance coverage, according to background characteristics, [country, year]

Background characteristic	Social Security	Other employer-based insurance	Mutual Health Organization/ community-based insurance	Privately purchased commercial insurance	Other	None	Number of men
Age							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total 15-49							
50-54[59]							
Total 15-54[59]							

Table 3.9.1 Use of tobacco: Women

Percentage of women age 15-49 who smoke cigarettes or a pipe or use other tobacco products, according to background characteristics and maternity status, [country, year]

Background characteristic	Uses tobacco			Does not use tobacco	Number of women
	Ciga-rettes	Pipe	Other tobacco		
Age					
15-19					
20-24					
25-29					
30-34					
35-39					
40-44					
45-49					
Maternity status					
Pregnant					
Breastfeeding (not pregnant)					
Neither					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

Tobacco use during pregnancy increases the risk of having a small or low birth weight baby. Smoking or other use of tobacco also affects women's health and may adversely affect their children's health, especially in terms of vulnerability to respiratory illness. The above table ascertains the prevalence of use of various tobacco products among women and, for cigarette smokers, the number of cigarettes smoked in the last 24 hours.

Since use of multiple tobacco products may be reported by a respondent, the percentages using the different tobacco products may sum to more than 100 percent.

In most countries, the number of women who smoke cigarettes will be too small to analyze by background characteristics. The totals from the following working table should be included in the text:

Working table	Number of cigarettes in the past 24 hours							Number of
	0	1-2	3-5	6-9	10+	Don't know/ missing	Total	cigarette smokers
Total							100.0	

Table 3.9.2 Use of tobacco: Men

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

| Background characteristic | Uses tobacco | | | Does not use tobacco | Number of men | Percent distribution of men who smoke cigarettes by number of cigarettes smoked in the past 24 hours | | | | | | | Number of cigarette smokers |
	Ciga-rettes	Pipe	Other tobacco			0	1-2	3-5	6-9	10+	Don't know/ missing	Total	
Age													
15-19												100.0	
20-24												100.0	
25-29												100.0	
30-34												100.0	
35-39												100.0	
40-44												100.0	
45-49												100.0	
Residence													
Urban												100.0	
Rural												100.0	
Region													
Region 1												100.0	
Region 2												100.0	
Region 3												100.0	
Region 4												100.0	
												100.0	
Education													
No education												100.0	
Primary												100.0	
Secondary												100.0	
More than secondary												100.0	
Wealth quintile													
Lowest												100.0	
Second												100.0	
Middle												100.0	
Fourth												100.0	
Highest												100.0	
Total 15-49												100.0	
50-54[59]												100.0	
Total 15-54[59]												100.0	

CHAPTER 4

MARRIAGE AND SEXUAL ACTIVITY

This chapter addresses age at first marriage, age at sexual initiation, and recent sexual activity. Marriage is a primary indication of the exposure of women to the risk of pregnancy and, therefore, is important for the understanding of fertility. Populations in which age at marriage is low tend to be populations with early childbearing and high fertility. For this reason, there is an interest in trends in age at marriage. The chapter also includes information on age at first sexual intercourse and the frequency of intercourse, which in some countries are more direct measures of the beginning of exposure to pregnancy and the level of exposure.

Table 4.1 Current marital status

Percent distribution of women and men age 15-49 by current marital status, according to age, [country, year]

| Age | Marital status | | | | | | Total | Percentage of respondents currently in union | Number of respondents |
	Never married	Married	Living together	Divorced	Separated	Widowed			
					WOMEN				
15-19							100.0		
20-24							100.0		
25-29							100.0		
30-34							100.0		
35-39							100.0		
40-44							100.0		
45-49							100.0		
Total							100.0		
					MEN				
15-19							100.0		
20-24							100.0		
25-29							100.0		
30-34							100.0		
35-39							100.0		
40-44							100.0		
45-49							100.0		
Total 15-49							100.0		
50-54[59]							100.0		
Total 15-54[59]							100.0		

Table 4.1 is a descriptive table of basic importance in defining the population base for many of the subsequent tables. In this table, the term "married" is intended to mean legal or formal marriage, while "living together" designates an informal union. Widowed, divorced, and separated women make up the remainder of the "ever-married" or "ever-in-union" category.

This table includes data for MICS4 Indicator 8.8 "Young women age 15-19 years currently married or in union."

Table 4.2.1 Number of women's co-wives

Percent distribution of currently married women age 15-49 by number of co-wives, according to background characteristics, [country, year]

Background characteristic	Number of co-wives				Total	Number of women
	0	1	2+	Don't know		
Age						
15-19					100.0	
20-24					100.0	
25-29					100.0	
30-34					100.0	
35-39					100.0	
40-44					100.0	
45-49					100.0	
Residence						
Urban					100.0	
Rural					100.0	
Region						
Region 1					100.0	
Region 2					100.0	
Region 3					100.0	
Region 4					100.0	
Education						
No education					100.0	
Primary					100.0	
Secondary					100.0	
More than secondary					100.0	
Wealth quintile						
Lowest					100.0	
Second					100.0	
Middle					100.0	
Fourth					100.0	
Highest					100.0	
Total					100.0	

Tables 4.2.1 and 4.2.2 should be included only for countries where polygyny is practiced. For some countries, mainly in Africa, marriages can be subdivided into polygynous and monogamous unions. The distinction has social significance and possible fertility implications, though the relationship between union type and fertility is complex. The prevalence of polygynous unions usually increases with age, a tendency that may reflect a trend away from polygyny among younger couples or a life cycle effect.

This table includes data for MICS4 Indicator 8.9 "Polygyny"

The column "Don't know" includes women who say they do not know if their husband has other wives, or if they do not know the number of other wives he has. The "Don't know" responses should not be combined with missing. If there are missing responses, they should be shown separately. If the "Don't know" column is very small, it can be suppressed.

Table 4.2.2 Number of men's wives

Percent distribution of currently married men age 15-49 by number of wives, according to background characteristics, [country, year]

Background characteristic	Number of wives		Total	Number of men
	1	2+		
Age				
15-19			100.0	
20-24			100.0	
25-29			100.0	
30-34			100.0	
35-39			100.0	
40-44			100.0	
45-49			100.0	
Residence				
Urban			100.0	
Rural			100.0	
Region				
Region 1			100.0	
Region 2			100.0	
Region 3			100.0	
Region 4			100.0	
Education				
No education			100.0	
Primary			100.0	
Secondary			100.0	
More than secondary			100.0	
Wealth quintile				
Lowest			100.0	
Second			100.0	
Middle			100.0	
Fourth			100.0	
Highest			100.0	
Total 15-49			100.0	
50-54[59]			100.0	
Total 15-54[59]			100.0	

Table 4.3 Age at first marriage

Percentage of women and men age 15-49 who were first married by specific exact ages, and median age at first marriage, according to current age, [country, year]

Current age	Percentage first married by exact age:					Percentage never married	Number of respondents	Median age at first marriage
	15	18	20	22	25			
WOMEN								
15-19		na	na	na	na			
20-24				na	na			
25-29								
30-34								
35-39								
40-44								
45-49								
20-49				na	na			
25-49								
MEN								
15-19		na	na	na	na			
20-24				na	na			
25-29								
30-34								
35-39								
40-44								
45-49								
20-49				na	na			
25-49								
20-59				na	na			
25-59								

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

Whether or not the start of marriage coincides with the initiation of sexual intercourse, and thus, the beginning of exposure to the risk of pregnancy, first marriage is an important social and demographic indicator and, in most societies, represents the point in a person's life when childbearing first becomes welcome. Note that in this table "married" includes "living with a woman/man". In this table, the age at first marriage is defined as the age at which the respondent began living with her/his first spouse or partner.

Trends in age at marriage by persons of different age cohorts can be described by comparing the cumulative distribution for successive younger age groups. In drawing conclusions concerning trends, the data for the oldest age cohorts should be interpreted cautiously since respondents may not recall dates or ages at marriage with accuracy, particularly in populations where informal unions are common.

For each cohort the accumulated percentages stop at the lower age boundary of the cohort to avoid censoring problems. For instance, for the cohort currently age 20-24, accumulation should stop with the percentage married by exact age 20.

As a measure of central tendency, the median age at marriage is used. The median here is defined as the age by which half of the cohort has married, not the age by which half of those married have started living with their spouse. The median is preferred over the mean as a measure of central tendency, because, unlike the mean, it can be estimated for all cohorts where at least half are ever-married at the time of survey.

Another, often more reliable, way of estimating trends is by comparison of the percentage ever married for five-year age groups with similar data from earlier censuses and surveys. Possible definitional inconsistencies between data sets should be considered when making such comparisons.

Table 4.3 includes data for MICS4 Indicators 8.6, "Marriage before age 15" and 8.7, "Marriage before age 18." Note that for Indicator 8.6, the table shows the percentage of women age 20-49 married before age 15, but the reference group for the MICS4 Indicator is women age 15-49.

Table 4.4 Median age at first marriage by background characteristics

Median age at first marriage among women age 20-49 and age 25-49, and median age at first marriage among men age 20-54[59] and 25-54[59], according to background characteristics, [country, year]

Background characteristic	Women age		Men age	
	20-49	25-49	20-54[59]	25-54[59]
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

Note: The age at first marriage is defined as the age at which the respondent began living with his/her first spouse/partner.
a = Omitted because less than 50 percent of the respondents began living with their spouses/partners for the first time before reaching the beginning of the age group

Table 4.4 presents the median age at first marriage for different cohorts and compares age at marriage for different subgroups of the population. Columns for ages 20-24 and 20-49 (women), 20-54[59] (men)may be omitted in countries where several of the cells have less than 50 percent of the respondents who started living with their spouse for the first time by age 20. Medians in individual cells should be omitted if less than 50 percent of the respondents in the cell started living with their spouse before the beginning of the age group.

Subgroup trends and differentials can be described on the basis of each table, in comparison with previous surveys. Again, to avoid the problem of censoring for young cohorts, the median should be shown for age groups 20-49 (women) and 20-54 (men) only in early marrying populations. In late-marrying populations, medians should be shown instead for age groups 25-49 (women) and 25-54 (men).

Table 4.5 Age at first sexual intercourse

Percentage of women and men age 15-49 who had first sexual intercourse by specific exact ages, percentage who never had sexual intercourse, and median age at first sexual intercourse, according to current age, [country, year

| Current age | Percentage who had first sexual intercourse by exact age: | | | | | Percentage who never had sexual intercourse | Number | Median age at first sexual intercourse |
	15	18	20	22	25			
WOMEN								
15-19		na	na	na	na			
20-24				na	na			
25-29								
30-34								
35-39								
40-44								
45-49								
20-49				na	na			
25-49								
15-24		na	na	na	na			
MEN								
15-19		na	na	na	na			
20-24				na	na			
25-29								
30-34								
35-39								
40-44								
45-49								
20-49				na	na			
25-49								
15-24		na	na	na	na			
20-54[59]				na	na			
25-54[59]								

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

Age at first marriage has long been used as a proxy for the beginning of exposure to the risk of pregnancy. In some countries, however, the beginning of exposure may occur before (or in a few cases after) the couple begins living together or is formally married. The information in Table 4.5 parallels the information in Table 4.3 on marriage. It allows an assessment of the age at which women and men start having sexual intercourse and the trend in this indicator across age cohorts.

Table 4.6 Median age at first sexual intercourse by background characteristics

Median age at first sexual intercourse among women age 20-49 and age 25-49, and median age at first sexual intercourse among men age 20-54[59] and 25-54[59], according to background characteristics, [country, year]

Background characteristic	Women age		Men age	
	20-49	25-49	20-54[59]	25-54[59]
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

a = Omitted because less than 50 percent of the respondents had sexual intercourse for the first time before reaching the beginning of the age group

Table 4.6 presents the median age at first sexual intercourse for different cohorts and compares age at first sexual intercourse for different subgroups of the population. Columns for ages 20-24 and 20-49 (women), 20-54[59] (men) may be omitted in countries where several of the cells have less than 50 percent who have had sexual intercourse for the first time by age 20. Medians in individual cells should be omitted if less than 50 percent in the cell had first sexual intercourse before the beginning of the age group.

The median is defined here as the exact age by which 50 percent of an age cohort had sexual intercourse for the first time. The tables should be used to describe differentials in age at first intercourse between population subgroups and to examine trends within subgroups.

Table 4.7.1 Recent sexual activity: Women

Percent distribution of women age 15-49 by timing of last sexual intercourse, according to background characteristics, [country, year]

| Background characteristic | Timing of last sexual intercourse | | | | Never had sexual intercourse | Total | Number of women |
	Within the past 4 weeks	Within 1 year[1]	One or more years	Missing			
Age							
15-19						100.0	
20-24						100.0	
25-29						100.0	
30-34						100.0	
35-39						100.0	
40-44						100.0	
45-49						100.0	
Marital status							
Never married						100.0	
Married or living together						100.0	
Divorced/separated/widowed						100.0	
Marital duration[2]							
0-4 years						100.0	
5-9 years						100.0	
10-14 years						100.0	
15-19 years						100.0	
20-24 years						100.0	
25+ years						100.0	
Married more than once						100.0	
Residence							
Urban						100.0	
Rural						100.0	
Region							
Region 1						100.0	
Region 2						100.0	
Region 3						100.0	
Region 4						100.0	
Education							
No education						100.0	
Primary						100.0	
Secondary						100.0	
More than secondary						100.0	
Wealth quintile							
Lowest						100.0	
Second						100.0	
Middle						100.0	
Fourth						100.0	
Highest						100.0	
Total						100.0	

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

In the absence of contraception, the probability of pregnancy is related to the regularity of sexual intercourse. Thus, information on intercourse is important for refinement of the measurement of exposure

to pregnancy. Tables 4.7.1 and 4.7.2 are based on the question on time since last intercourse and allows an assessment of the overall level of sexual activity across age- and marital-duration groups.

Table 4.7.2 Recent sexual activity: Men

Percent distribution of men age 15-49 by timing of last sexual intercourse, according to background characteristics, [country, year]

Background characteristic	Within the past 4 weeks	Within 1 year[1]	One or more years	Missing	Never had sexual intercourse	Total	Number of men
Age							
15-19						100.0	
20-24						100.0	
25-29						100.0	
30-34						100.0	
35-39						100.0	
40-44						100.0	
45-49						100.0	
Marital status							
Never married						100.0	
Married or living together						100.0	
Divorced/separated/widowed						100.0	
Marital duration[2]							
0-4 years						100.0	
5-9 years						100.0	
10-14 years						100.0	
15-19 years						100.0	
20-24 years						100.0	
25+ years						100.0	
Married more than once						100.0	
Residence							
Urban						100.0	
Rural						100.0	
Region							
Region 1						100.0	
Region 2						100.0	
Region 3						100.0	
Region 4						100.0	
Education							
No education						100.0	
Primary						100.0	
Secondary						100.0	
More than secondary						100.0	
Wealth quintile							
Lowest						100.0	
Second						100.0	
Middle						100.0	
Fourth						100.0	
Highest						100.0	
Total 15-49						100.0	
50-54[59]						100.0	
Total 15-54[59]						100.0	

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

CHAPTER 5

FERTILITY

In DHS surveys, information is collected on current, past, and cumulative fertility. Drawing on the birth history information collected in the survey, the chapter begins with a description of current fertility. This is followed by a description of differentials in fertility by background characteristics. Then, attention is focused on trends in fertility, which permits an examination of changes in age-specific fertility rates by time periods going back 20 years from the time of the survey.

The chapter also presents information on the cumulative fertility of female respondents. The cumulative fertility tables are derived from a sequence of questions about the number of sons and daughters that a woman has had who are living in the household, who are living elsewhere and who have died. The information on cumulative fertility is shown in terms of the mean number of children ever born and the mean number of surviving children to women classified by five-year age groups.

The chapter also presents information on birth intervals for births in the five years preceding the survey, age at first birth for five-year age groups of women and information on teenage pregnancy and motherhood by single year of age for youngest survey respondents, i.e., women age 15-19. These data are important because they indicate the beginning of a woman's reproductive life.

Table 5.1 Current fertility

Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence, [country, year]

Age group	Residence Urban	Rural	Total
15-19			
20-24			
25-29			
30-34			
35-39			
40-44			
45-49			
TFR (15-49)			
GFR			
CBR			

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

The current level of fertility is the most important topic in this chapter because of its direct relevance to population policies and programs. This table is designed to provide estimates of current levels of fertility for the country as a whole and for urban and rural areas. A three-year rate is chosen as a compromise among three criteria: to get the most current information, to reduce sampling error, and to avoid problems noted in previous surveys of the displacement of births from 5 to 6 years before the survey.

To compute the numerator for the age-specific rates, live births are classified by (1) segment of time preceding the survey, (i.e., 1-36 months) using the date of interview and date of birth and (2) by age of the mother at the time of birth (in conventional five-year groupings) using the date of birth of the mother. The denominators for the age-specific rates are the numbers of woman-years lived in the specified five-year age intervals during the time segment.

The total fertility rate (TFR) represents the average number of children a woman would have at the end of her reproductive period if she were to follow the currently prevalent age-specific fertility rates. The TFR is calculated as the sum of the age-specific fertility rates multiplied by five (since each age group covers five years of age).

The numerator for the general fertility rate is the total number of births in the time period, including births to women under 15 and 45 and over. The denominator is the number of woman-years lived between the ages of 15 and 44 during the period. The crude birth rate is calculated by summing the product of the age-specific rates multiplied by the proportion of women in the specific age group out of the total de facto population, male and female.

60

The TFR in this and other tables should be shown with one decimal place (e.g. 6.2), the GFR with no decimal places (e.g., 244) and the CBR with no decimal places (e.g., 43). The age-specific fertility rates (ASFR) in this and other tables are shown with no decimal places (e.g., 256).

The age-specific fertility rate for women age 15-19 corresponds to MDG Indicator 5.4 and MICS4 Indicator 5.1, "Adolescent birth rate."

Rules for checking denominators for TFR:

For Table 5.1, check the UNWEIGHTED working table T501E. If any age specific fertility rate (ASFR) is based on less than 125 person-years of exposure, it is marked as *. If it is based on 125-249, then it is shown in ( ). If the sum of the exposure years across all seven age groups is less than 125, the TFR is marked as *. If the sum of the exposure years across all age groups is 125-249, then the TFR is shown in ( ).

Example:

T501E	Residence		
	Urban	Rural	Total
15-19	1,123.2	4,395.4	5,518.6
20-24	1,002.6	3,649.2	4,651.8
25-29	766.7	3,402.1	4,168.8
30-34	441.8	2,921.3	3,363.1
35-39	325.7	2,334.3	2,659.9
40-44	244.8	1,756.1	2,000.9
45-49	117.3	1,054.6	1,171.9

The urban ASFR for 40-44 will be shown in ( ). The urban ASFR for 45-49 will be marked as *. The sum of all of the ASFRs for Urban is 4,022.1 person-years of exposure so the TFR for Urban can be shown with no ( ).

Table 5.2 Fertility by background characteristics

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

Background characteristic	Total fertility rate	Percentage of women age 15-49 currently pregnant	Mean number of children ever born to women age 40-49
Residence			
Urban			
Rural			
Region			
Region 1			
Region 2			
Region 3			
Region 4			
Education			
No education			
Primary			
Secondary			
More than secondary			
Wealth quintile			
Lowest			
Second			
Middle			
Fourth			
Highest			
Total			

Note: Total fertility rates are for the period 1-36 months preceding the interview.

This table summarizes current total fertility for major groups in the population. It also provides a basis for inferring trends in fertility by comparing the current synthetic measures with the average number of children ever born to women age 40-49 years. Although comparison of completed fertility among women age 40-49 with the total fertility rate can provide an indication of fertility change, such an approach is vulnerable to understatement of parity by older women. The findings on nuptiality and contraceptive use are also of crucial importance in reaching a balanced judgment about fertility trends. Unless there is evidence of increased age at marriage and/or appreciable use of contraception, it is unlikely that fertility has declined. In countries where earlier data on fertility are available, a table should be added showing trends in total fertility rates (and age-specific rates, if possible). Also shown, for comparative purposes, is the percentage of women who have reported themselves as currently pregnant. This percentage is known to be underreported since women who are early in their pregnancy may not yet know they are pregnant and because some pregnant women may not want to declare they are pregnant. However, it allows for a rough validation of the level of fertility.

The mean number of children ever born should be shown with one decimal place in this table.

The working table below (Table 5.2 working table) should be consulted to determine whether the number of women age 40-49 exceeds 25 unweighted cases (the denominator of the mean number of children ever born to women age 40-49).

Table 5.2 working table

Number of women age 40-49 [country, year] **Unweighted**

Use this table to verify whether there are a sufficient number of cases to report the mean number of children ever born to women age 40-49 in Table 5.2

Background characteristics	Women age 40-49
Residence	
Urban	
Rural	
Region	
Region 1	
Region 2	
Region 3	
Region 4	
Education	
No education	
Primary	
Secondary	
More than secondary	
Wealth quintile	
Lowest	
Second	
Middle	
Fourth	
Highest	
Total	

Table 5.3.1 Trends in age-specific fertility rates

Age-specific fertility rates for five-year periods preceding the survey, by mother's age at the time of the birth, [country, year]

Mother's age at birth	Number of years preceding survey			
	0-4	5-9	10-14	15-19
15-19	X	X	X	X
20-24	X	X	X	X
25-29	X	X	X	X
30-34	X	X	X	[X]
35-39	X	X	[X]	
40-44	X	[X]		
45-49	[X]			

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

With a complete birth history, more direct evidence on trends is available and the analyst may be able to reach firmer conclusions. Note that the age-specific rates are progressively truncated with increasing time before the survey. The bottom diagonal of estimates (enclosed in brackets) is also truncated.

Use of birth histories for analysis of trends places a burden on the quality of the data, which should be interpreted with caution. The first priority is to undertake a preliminary evaluation of reliability. The internal consistency and plausibility of the array should be examined. A peaking of fertility in the period 5-9 and/or 10-14 years prior to survey may indicate defects in the data. While it may be possible that fertility has risen and then fallen, a more likely explanation is that birth dates have been falsely shifted from the more distant past (and possibly from the most recent period) into these intermediate periods either due to misreporting of birth dates or by misreporting of the respondent's age at the time of the survey. These problems of misdating may be exacerbated by omission of distant births, which also gives a misleading impression of a rise in fertility. Conversely, monotonic trends are more plausible.

Age-specific trends should also be interpreted in the light of other evidence. For instance, a rise in age at marriage will be associated with a decline in fertility at ages 15-19 and perhaps 20-24. Because fertility early in marriage usually remains resistant to decline and may even increase when fertility later in marriage is declining, an increase in age at marriage may bring about a rise in fertility in certain age groups (usually 20-24 or 25-29) or at least sustain an unchanging level. Contraceptive use should lead to declines in fertility at older age groups. Provided these data pass preliminary and simple tests of consistency and plausibility, the analyst can proceed to a tentative substantive description of results. Cumulative fertility rates should be calculated only by accumulating across ages unaffected by truncation. For instance, changes over the last 20 years can be summarized by accumulating rates up to age 30.

It is also possible that the trend of the rates between the most recent time period (0-4 years) and the next most recent time period (5-9 years) is distorted as a result of interviewers misrecording the dates of some births, which actually occurred in the most recent time period, as occurring in the period 5-9 years before the survey. This occurs in many DHS surveys to varying degrees when interviewers try to lighten their workload and avoid asking the questions on child heath (questions only asked for children born after a cutoff of January of the fifth full calendar year prior to the survey.) The net affect of such birth transference is to bias negatively fertility estimates for the period 0-4 years preceding the survey, to bias positively estimates for the period 5-9 years preceding the survey and, resultantly, to accentuate any observed fertility decline over the recent ten year

period. When this type of birth date misreporting occurs it is usually easily detected by reference to Table C.4 of the Appendix C (Data Quality).

In many countries where DHS surveys are currently being conducted there have been previous DHS surveys which offer an opportunity for the assessment of fertility trend by tracking the pattern of the most recent fertility estimates from each survey in the series of available DHS (or other reliable) surveys. Particularly when there is evidence of misreporting of birth dates between recent time periods, this approach may be considered preferable for assessment of fertility trends. Table 5.4 and Figure 5.1 illustrate such an analysis.

Table 5.3.2 Trends in age-specific and total fertility rates

Age-specific and total fertility rates (TFR) for the three-year period preceding several surveys

Mother's age at birth	DHS 1 Period 1	DHS 2 Period 2	Current DHS Period 3
15-19			
20-24			
25-29			
30-34			
35-39			
40-44			
45-49			
TFR 15-49			

Note: Age-specific fertility rates are per 1,000 women.

**Figure 5.1
Trends in Fertility**
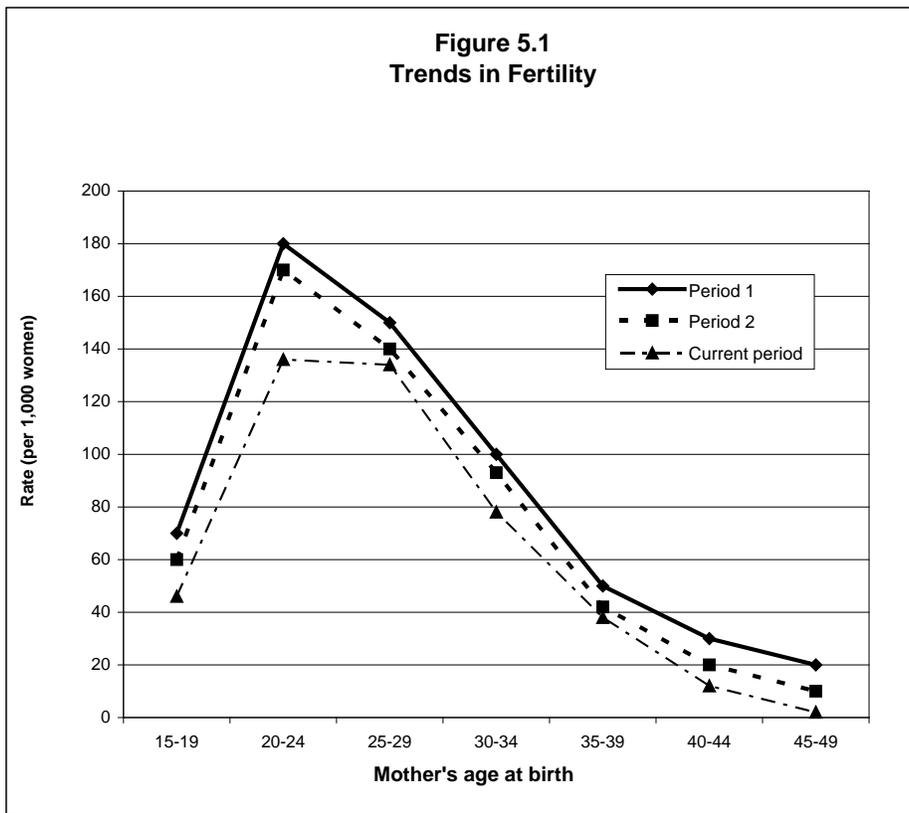
Table 5.4 Children ever born and living

Percent distribution of all women and currently married women age 15-49 by number of children ever born, mean number of children ever born and mean number of living children, according to age group, [country, year]

Age	Number of children ever born											Total	Number of women	Mean number of children ever born	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15-19												100.0			
20-24												100.0			
25-29												100.0			
30-34												100.0			
35-39												100.0			
40-44												100.0			
45-49												100.0			
Total												100.0			
CURRENTLY MARRIED WOMEN															
15-19												100.0			
20-24												100.0			
25-29												100.0			
30-34												100.0			
35-39												100.0			
40-44												100.0			
45-49												100.0			
Total												100.0			

The number of children ever born and living are presented here both for all women and for currently married women. In the DHS questionnaire, the total number of children ever born has been ascertained by a sequence of questions designed to maximize recall. Experience suggests that, even among high fertility and illiterate populations, omissions of births can be kept to a low level, except perhaps for the oldest women in the sample.

Results at younger ages for currently married women will usually diverge sharply from those for the whole sample because of the large number of unmarried women with negligible fertility in the latter group. In most developing countries, the majority of women are married by age 25. Thus, differences above these ages between parities for the whole sample and for currently married women will tend to reflect the impact of marital dissolution. The parity distributions for older, currently married women also provide a measure of primary infertility. Voluntary childlessness is rare in developing countries, and married women with no live births are predominantly those involuntarily so. The typical level of childlessness for married women at the end of the childbearing years is 3-5 percent.

As well as describing average family size, these results can also be used to calculate the proportions of children who have died, which can be used to indirectly estimate mortality levels and trends using special techniques. Chapter 3 of United Nations Manual X, *Indirect Techniques for Demographic Estimation,* presents a clear and detailed account of the techniques. Because direct estimates of infant and childhood mortality can be calculated using the data from the birth history of the survey (Chapter 8), the indirect estimates are not presented.

The mean number of children ever born and living should be shown with two decimal places in this table.

Table 5.5 Birth intervals

Percent distribution of non-first births in the five years preceding the survey by number of months since preceding birth, and median number of months since preceding birth, according to background characteristics, [country, year]

Background characteristic	Months since preceding birth						Total	Number of non-first births	Median number of months since preceding birth
	7-17	18-23	24-35	36-47	48-59	60+			
Age									
15-19							100.0		
20-29							100.0		
30-39							100.0		
40-49							100.0		
Sex of preceding birth									
Male							100.0		
Female							100.0		
Survival of preceding birth									
Living							100.0		
Dead							100.0		
Birth order									
2-3							100.0		
4-6							100.0		
7+							100.0		
Residence									
Urban							100.0		
Rural							100.0		
Region									
Region 1							100.0		
Region 2							100.0		
Region 3							100.0		
Region 4							100.0		
Education									
No education							100.0		
Primary							100.0		
Secondary							100.0		
More than secondary							100.0		
Wealth quintile									
Lowest							100.0		
Second							100.0		
Middle							100.0		
Fourth							100.0		
Highest							100.0		
Total							100.0		

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

Table 5.6 Postpartum amenorrhea, abstinence, and insusceptibility

Percentage of births in the three years preceding the survey for which mothers are postpartum amenorrheic, abstaining, and insusceptible, by number of months since birth, and median and mean durations, [country, year]

| Months since birth | Percentage of births for which the mother is: | | | Number of births |
	Amenorrheic	Abstaining	Insusceptible[1]	
< 2				
2-3				
4-5				
6-7				
8-9				
10-11				
12-13				
14-15				
16-17				
18-19				
20-21				
22-23				
24-25				
26-27				
28-29				
30-31				
32-33				
34-35				
Total				
Median				na
Mean				na

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

Postpartum protection from conception can be prolonged by breastfeeding, which can lengthen the duration of amenorrhea, and/or by delayed resumption of sexual relations.

In this table, the percentages of births for which mothers are postpartum amenorrheic and abstaining are presented along with the percentage of births for which mothers are defined as still postpartum insusceptible. The latter category includes births for which mothers are either still amenorrheic or still abstaining (or both) following birth and, thus, not exposed (i.e., insusceptible) to the risk of pregnancy.

These estimates are based on current status measures. The distributions of the proportion of births by the month of birth of the child are analogous to the l_x column of the synthetic life table. (Note that this tabulation is birth-based rather than woman-based.) For purposes of providing some stability to the proportions, the birth data should be grouped in two or three-month intervals. The l_x values should decline with duration but small sample sizes may cause some irregularity.

Estimates of means and medians are based on the current status proportions at each time since birth (duration) group. Non-surviving children are included.

Before estimating the median, the distribution is smoothed by a moving average of three age groups. The first age (duration) for which the proportion falls below 0.50 is used for the calculation of the median by linear interpolation between that age group and the next youngest group.

For estimating the median age at which the youngest age group contains a proportion less than 0.50, the value of 1.00 will be taken for the preceding age group. The width of the first interval will be taken to be 1.50 months (using 0.50 months for children born in the month of interview). Estimation of the mean durations will be done using the current-status proportions by summing the product of the proportion (not in percents) and width of the age (duration) interval. To this sum will be added one-half the width of the lowest duration interval (i.e., 0.75).

Table 5.7 Median duration of amenorrhea, postpartum abstinence, and postpartum insusceptibility

Median number of months of postpartum amenorrhea, postpartum abstinence, and postpartum insusceptibility following births in the three years preceding the survey, by background characteristics, [country, year]

Background characteristic	Postpartum amenorrhea	Postpartum abstinence	Postpartum insusceptibility[1]
Mother's age			
15-29			
30-49			
Residence			
Urban			
Rural			
Region			
Region 1			
Region 2			
Region 3			
Region 4			
Education			
No education			
Primary			
Secondary			
More than secondary			
Wealth quintile			
Lowest			
Second			
Middle			
Fourth			
Highest			
Total			

Note: Medians are based on the status at the time of the survey (current status).
[1] Includes births for which mothers are either still amenorrheic or still abstaining (or both) following birth

In the absence of contraception, variations in postpartum amenorrhea and abstinence are the most important determinants of the interval between births and, ultimately, of completed fertility. In some populations differentials across subgroups in the duration of postpartum amenorrhea and abstinence also may indicate incipient changes in traditional postpartum practices. A shortening of the period of postpartum insusceptibility has implications for the provision of family planning services to recent mothers.

Checking n's for current status medians:

Current status medians are calculated based on smoothed data. Data are smoothed by a three month moving average. Table 5.7 is based on two working tables: T507S and T507W. T507S is the raw data and T507W is the smoothed data.

To check the median duration of postpartum amenorrhea for births to women age 15-29:

1. Look at the WEIGHTED Table T507W under the section labeled Postpartum amenorrhea on the line next to Mother's age 15-29. This row shows the smoothed percentage of births for which the mother is still postpartum amenorrheic by the number of months since the birth.
2. Find the last column before the percentage drops below 50% (For example, 6-7 months)
3. Go to UNWEIGHTED T507S to the last section under "Number of births"
4. Find the number on the row next to Mother's age 15-29 under the column 6-7 months. Add this number to the number in the preceding column (4-5 months) and the number in the following column (8-9 months). (These are the numbers of births used to create the 3 month moving average for the column 6-7 months).
5. If the sum of these numbers is less than 25, the median is marked as *. If the sum is 25-49, the median is shown in ( ).
6. Repeat this step for each background characteristic under postpartum amenorrhea. The n for each cell is unique, so each cell must be checked one by one.
7. Repeat steps 1-6 for median duration of postpartum abstinence and then postpartum insusceptibility. Each of these variables has its own section in T507W.

Table 5.8 Menopause		
Percentage of women age 30-49 who are menopausal, by age, [country, year]		
Age	Percentage menopausal[1]	Number of women
30-34		
35-39		
40-41		
42-43		
44-45		
46-47		
48-49		
Total		

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

Above age 30, exposure to the risk of pregnancy declines with age. Table 5.8 presents an important indicator concerning fecundity as measured by evidence of menopause. The lack of a menstrual period in the preceding six months among women who are neither pregnant nor postpartum amenorrheic is taken as evidence of menopause and therefore infecundity.

Another facet of loss of exposure not shown in this table is terminal separation, divorce and widowhood where the woman does not remarry before the end of her childbearing years. Currently, there is not enough information on the marriage history to define a reasonably precise indicator, but some indication may be gathered from Table 4.1.

A third factor affecting the end of fertility is the lack of exposure due to long-term abstinence among currently married women. Many of these women will probably not resume sexual relations. This information is given in Table 5.6.

Table 5.9 Age at first birth

Percentage of women age 15-49 who gave birth by specific exact ages, percentage who have never given birth, and median age at first birth, according to current age, [country, year]

Current age	Percentage who gave birth by exact age					Percentage who have never given birth	Number of women	Median age at first birth
	15	18	20	22	25			
15-19		na	na	na	na			a
20-24				na	na			
25-29								
30-34								
35-39								
40-44								
45-49								
20-49				na	na			
25-49								

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

The onset of childbearing is an important demographic indicator. In many countries, postponement of first births, reflecting a rise in age at marriage, has made a large contribution to the overall fertility decline. The proportion of women who become mothers before the age of 20 also is a measure of the magnitude of adolescent fertility, which is a major health and social problem in many countries.

Medians generally should be presented only for women 25 years or older in order to avoid the censoring problem for younger cohorts who have not yet had their first birth. For countries where more than 50 percent of the women have had a birth by age 20, however, the medians should be presented for women age 20 and over.

This table includes data for MICS4 Indicator 5.2, "Early childbearing."

Table 5.10 Median age at first birth		
Median age at first birth among women age 20-49 (25-49) years, by background characteristics, [country, year]		
Background characteristic	Women age 20-49	Women age 25-49
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Education		
No education		
Primary		
Secondary		
More than secondary		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		

a = Omitted because less than 50 percent of the women had a birth before reaching the beginning of the age group

This table presents the median age at first birth for different cohorts and compares age at entry into parenthood for different subgroups of the population. The columns for ages 20-49 may be omitted in countries where several of the cells have less than 50 percent of the women who had a birth for the first time by age 20. Medians in individual cells should be omitted if less than 50 percent of the women in the cell had a birth before the beginning of the age group.

Trends in age at first birth may be less pronounced than trends in age at first marriage. Later marriages are often associated with a shorter interval at first birth because of an increase in premarital pregnancies and/or the reduced impact of adolescent subfecundity.

In interpreting these results and other results in this chapter, possible distortions caused by data defects should be borne in mind. Findings for older women should be regarded critically. For instance, unexpectedly high ages at first birth for older cohorts may well indicate omission or misdating of early births, rather than a genuine trend.

Table 5.11 Teenage pregnancy and motherhood

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

Background characteristic	Percentage of women age 15-19 who:		Percentage who have begun childbearing	Number of women
	Have had a live birth	Are pregnant with first child		
Age				
15				
16				
17				
18				
19				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

The percentage of women who have begun childbearing is the sum of the percentage who have had a live birth and the percentage who are pregnant with the first child.

CHAPTER 6

FERTILITY PREFERENCES

This chapter addresses three questions that allow an assessment of the need for contraception. Does the respondent want more children? If so, how long would she prefer to wait before the next child? If she could start afresh, how many children in all would she want? Two further issues are examined. To what extent do unwanted or mistimed pregnancies occur? What effect would the prevention of such pregnancies have on the fertility rates? Bearing in mind that the underlying rationale of most family planning programs is to give couples the freedom and ability to bear the number of children they want and to achieve the spacing of births they prefer, the importance of this chapter is obvious.

Interpretation of data on fertility preferences has always been the subject of controversy. Survey questions have been criticized on the grounds that answers are misleading because: a) they reflect unformed, ephemeral views, which are held with weak intensity and little conviction; and b) they do not take into account the effect of social pressures or the attitudes of other family members, particularly the husband, who may exert a major influence on reproductive decisions. The first objection has greater force in non-contracepting societies where the idea of conscious reproductive choice may still be alien; preference data from these settings should be interpreted with caution. In societies with moderate to high levels of contraceptive use, greater interpretive weight can be attached to the findings. The second objection is correct in principle. In practice, however, its importance is doubtful; for instance, the evidence from surveys in which both husbands and wives are interviewed suggests that there is no radical difference between the views of the two sexes.

The inclusion of women who are currently pregnant complicates the measurement of views on future childbearing. For these women, the question on desire for more children is rephrased to refer to desire for another child *after* the one that they are expecting. To take into account the way in which the preference variable is defined for pregnant women, the results are classified by number of living children, including the current pregnancy as equivalent to a living child.

Table 6.1 Fertility preferences by number of living children

Percent distribution of currently married women and currently married men age 15-49 by desire for children, according to number of living children, [country, year]

Desire for children	Number of living children							Total 15-49	Total 15-54[59]
	0	1	2	3	4	5	6+		
WOMEN[1]									
Have another soon[2]									na
Have another later[3]									na
Have another, undecided when									na
Undecided									na
Want no more									na
Sterilized[4]									na
Declared infecund									na
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	na
Number of women									na
MEN[5]									
Have another soon[2]									
Have another later[3]									
Have another, undecided when									
Undecided									
Want no more									
Sterilized									
Declared infecund									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	
Number of men									

na = Not applicable
[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
[5] The number of living children includes one additional child if respondent's wife is pregnant (or if any wife is pregnant for men with more than one current wife).

The table allows the potential need for contraceptive services for spacing as well as limiting births to be examined. Until recently, concern for providing appropriate contraceptive methods to couples who wish to have no further children has overshadowed contraception for child spacing purposes. The interest in spacing has been reinforced by recent evidence that: a) short birth intervals are harmful to the welfare of children and mothers; b) large numbers of couples wish to postpone childbearing by using contraception; and c) there is a potential demand for contraception for spacing births in some countries where demand for limiting family size has not yet emerged.

Table 6.2.1 Desire to limit childbearing: Women

Percentage of currently married women age 15-49 who want no more children, by number of living children, according to background characteristics, [country, year]

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total								

Note: Women who have been sterilized or whose husband has been sterilized are considered to want no more children.
[1] The number of living children includes the current pregnancy

In Tables 6.2.1 and 6.2.2 the percentage of respondents who want no more children is shown for each parity by selected background variables. This tabulation provides information about group variations in the potential demand for fertility control.

The working tables (Table 6.2.1 working table: Number of currently married women by number of living children and Table 6.2.2 working table: Number of currently married men by number of living children) should be consulted to determine whether the denominator for each cell requires that the percentage in the cell be suppressed (less than 25 unweighted cases) or placed in parentheses (25-49 unweighted cases).

Table 6.2.1 working table

Number of currently married women age 15-49 by number of living children (including pregnancy) [country, year] **Unweighted**

Use this table to verify whether there are a sufficient number of cases to report the percentage of women who want no more children in Table 6.2.1.

Background characteristics	Number of living children + current pregnancy							Total 15-49
	0	1	2	3	4	5	6+	
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total								

Table 6.2.2 Desire to limit childbearing: Men

Percentage of currently married men age 15-49 who want no more children, by number of living children, according to background characteristics, [country, year]

Background characteristic	Number of living children[1]							Total
	0	1	2	3	4	5	6+	
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total 15-49								
50-54[59]								
Total 15-54[59]								

Note: Men who have been sterilized or who state in response to the question about desire for children that their wife has been sterilized are considered to want no more children.
[1] The number of living children includes one additional child if respondent's wife is pregnant (or if any wife is pregnant for men with more than one current wife).

Number of currently married men age 15-49 by number of living children (including pregnancy of a wife) [country, year] **Unweighted**

Use this table to verify whether there are a sufficient number of cases to report the percentage of men who want no more children in Table 6.2.2.

Background characteristics	Number of living children + wife pregnant							Total 15-49
	0	1	2	3	4	5	6+	
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total 15-49								
Total 50-54[59]								
Total 15-54[59]								

Table 6.3 Ideal number of children by number of living children

Percent distribution of women and men age 15-49 by ideal number of children and mean ideal number of children for all respondents and for currently married respondents, according to the number of living children, [country, year]

	Number of living children							
Ideal number of children	0	1	2	3	4	5	6+	Total
WOMEN[1]								
0								
1								
2								
3								
4								
5								
6+								
Non-numeric response								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women								
Mean ideal number of children for:[2]								
All women								
Number of women								
Currently married women								
Number of currently married women								
MEN[3]								
0								
1								
2								
3								
4								
5								
6+								
Non-numeric response								
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men								
Mean ideal number of children for men 15-49:[2]								
All men								
Number of men								
Currently married men								
Number of currently married men								
Mean ideal number of children for men 15-54[59]:[2]								
All men								
Number of men								
Currently married men								
Number of currently married men								

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

Thus far in this chapter, interest has focused on the respondent's wishes for the future, implicitly taking into account the number of sons and daughters she/he already has. In ascertaining the total ideal number of children, the respondent is required to perform the more difficult task of considering abstractly and independently of her/his actual family size the number of children she/he would choose if she could start again.

There is usually a correlation between actual and ideal number of children. The reason is twofold. First, to the

extent that respondents implement their preferences, those who want larger families will tend to achieve larger families. Second, respondents may adjust upward their ideal size of family as the actual number of children increases (i.e., rationalization). It is also possible that respondents with large families, being on average older than those with small families, have larger ideal sizes because of attitudes they acquired 20 to 30 years ago.

Despite the likelihood that some rationalization occurs, it is common to find that many respondents state ideal sizes lower than their actual number of surviving children. The use of ungrouped variables in Table 7.4 permits the classification of respondents at each parity into three categories: ideal size is greater than actual size; ideal size is less than actual size; ideal size equals actual size.

The second category is of particular interest, because it is an indicator of surplus or unwanted fertility, which is also a topic in a later table.

The mean should not be shown in Table 6.3 if more than 30 percent of respondents have a non-numeric response.

Table 6.4 Mean ideal number of children by background characteristics

Mean ideal number of children for all women age 15-49 by background characteristics, [country, year]

Background characteristic	Mean	Number of women[1]
Age		
15-19		
20-24		
25-29		
30-34		
35-39		
40-44		
45-49		
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Education		
No education		
Primary		
Secondary		
More than secondary		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		

[1] Number of women who gave a numeric response

Mean desired family size by age should be discussed here prior to interpretation of the other differentials. Greater interpretive emphasis should be placed on the results for women age 20-29 than for women under age 20 or age 30 and over. For some subgroups, women under age 20 may be a small selective group whose views are atypical; while for older women, the dangers of rationalization are greater.

If more than 30 percent of women have a non-numeric response to ideal number of children, Table 6.4 should not be used.

Table 6.5 Fertility planning status

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

Birth order and mother's age at birth	Planning status of birth			Total	Number of births
	Wanted then	Wanted later	Wanted no more		
Birth order					
1				100.0	
2				100.0	
3				100.0	
4+				100.0	
Mother's age at birth					
<20				100.0	
20-24				100.0	
25-29				100.0	
30-34				100.0	
35-39				100.0	
40-44				100.0	
45-49				100.0	
Total				100.0	

Women are asked a series of questions for each child born in the preceding five years and any current pregnancy to determine whether the particular pregnancy was desired at the time ("planned"), not desired at the time but wanted at a later time, or unwanted at any time. These questions form a potentially powerful indicator of the degree to which couples successfully control childbearing. In addition, the data can be used to gauge the effect of the prevention of unwanted births on period fertility.

The questions are demanding. The respondent is required to recall accurately her wishes at one or more points in the last five years and to report them honestly. The danger of rationalization is present; an unwanted conception may well become a cherished child. Despite these potential problems of comprehension, recall and truthfulness, results from previous surveys have proved surprisingly plausible. Respondents are clearly willing to report unwanted conceptions, although some post-factum rationalization probably occurs; therefore the result is probably an underestimate of unwanted fertility.

In DHS surveys, these retrospective questions are asked independently of the questions on the desire for more children and total desired family size and have not been cross-edited at the data processing stage. Investigation of consistency of attitudes at the individual level is thus possible but is not attempted in this report. However, broad consistency at the average or aggregate level between the total ideal family size and actual fertility and wanted fertility can be examined.

Table 6.5 is a birth-based rather than a woman-based table. It provides a useful indicator of the degree of successful reproductive control exercised by couples in the recent past.

Total wanted fertility rates and total fertility rates for the three years preceding the survey, by background characteristics, [country, year]

Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Education		
No education		
Primary		
Secondary		
More than secondary		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		

Note: Rates are calculated based on births to women age 15-49 in the period 1-36 months preceding the survey. The total fertility rates are the same as those presented in Table 5.2.

Wanted fertility rates are calculated in the same manner as the conventional age-specific fertility rates presented in Chapter 4, except that births classified as unwanted are omitted from the numerator; the remainder can be cumulated to form a total wanted fertility rate (TWFR), which is analogous to the conventional total fertility rate (TFR). The total wanted fertility rate provides another indicator of fertility aspirations and may be interpreted as the number of wanted births that a woman would bear by age 50, if she experienced the wanted fertility rates observed for the past three years.

The Lightbourne method of calculating a "wanted" birth is used for this table: a birth is considered wanted if the number of living children at the time of conception was less than the ideal number of children reported at the time of the survey.

Wanted fertility rates express the level of fertility that theoretically would result if all unwanted births were prevented. Comparison of actual rates with wanted rates indicates the potential demographic impact of the elimination of unwanted births. This calculation is highly relevant for countries that have official policies to reduce the birth rate and thus the rate of population growth.

There is a difference between ideal family size and the wanted fertility rate in that the wanted fertility rate takes observed fertility as its starting point and can never be larger than the actual TFR; ideal family size can be and often is larger than the number of children born. This characteristic of the wanted fertility rate has an advantage and a disadvantage. It may be the more realistic measure, because it takes into account the fact that fecundity impairment prevents some women from having wanted births and from achieving their desired family size. But it has the disadvantage of interpretive complexity and, like any period measure, is vulnerable to temporary influences on the level of recent fertility.

If more than 30 percent of women have a non-numeric response to ideal number of children, Table 6.6 should not be used.

CHAPTER 7

FAMILY PLANNING

This chapter begins with an assessment of respondent knowledge of different contraceptive methods before moving on to a consideration of current practice of family planning methods. For users of rhythm and all women, knowledge of the ovulatory cycle is examined; while for those relying on sterilization, the timing of method adoption is reviewed. Special attention is focused on source of contraception, informed choice, nonuse, reasons for discontinuation, unmet need for family planning, and intention to use in the future. The chapter concludes with tabulations on exposure to media coverage on the topic of family planning and on contact with family planning providers.

These topics are of practical use to policy and program staff in several ways. The early sections concern the main pre-conditions to adoption of contraception such as knowledge of methods and basic reproductive biology. Levels of use of contraceptives provide the most obvious and widely accepted criterion of success of the program. When results from earlier surveys are available, progress can be charted. The examination of use in relation to need pinpoints segments of the population for whom intensified efforts at service provision are most needed. In countries where most women have tried at least one method, practical problems with particular methods or in obtaining supplies may be important obstacles to further advances in the program. Survey findings on these topics can provide important guidance to administrators for the improvement of services.

As in other chapters, comparison of survey results with other data sources (previous surveys, service statistics) should be made wherever possible. Care is needed to ensure that measurement procedures in these other sources do not differ from those employed by DHS, because reported levels of knowledge and use can be highly sensitive to seemingly minor changes in definition.

It may also be helpful to give the reader further details of family planning services. Such information will assist interpretation of survey results, particularly those concerning knowledge of specific methods.

Table 7.1 Knowledge of contraceptive methods

Percentage of all respondents, currently married respondents, and sexually active unmarried respondents age 15-49 who have heard of any contraceptive method, by specific method, [country, year]

Method	Women			Men		
	All women	Currently married women	Sexually active unmarried women[1]	All men	Currently married men	Sexually active unmarried men[1]
Any method						
Any modern method						
Female sterilization						
Male sterilization						
Pill						
IUD						
Injectables						
Implants						
Male condom						
Female condom						
Lactational amenorrhea (LAM)						
Emergency contraception						
Other modern method						
Any traditional method						
Rhythm						
Withdrawal						
Folk method						
Mean number of methods known by respondents 15-49						
Number of respondents						
Mean number of methods known by respondents 15-54[59]	na	na	na			
Number of respondents	na	na	na			

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

Knowledge of contraceptive methods is presented for all women, for currently married women, and for sexually active unmarried women, by specific method. The mean number of methods known is a rough indicator of the breadth of knowledge of family planning methods.

The row for the lactational amenorrhea method (LAM) should be included only when LAM (not just breastfeeding) was specified in the contraceptive grid of the questionnaire. It should also be discussed in the text what the LAM method is. Effective use of the lactational amenorrhea method (LAM) means that a woman is exclusively or predominantly breastfeeding, is less than 6 months postpartum, is postpartum amenorrheic, and knows to use another contraceptive method when any of the previous criteria do not hold.

If Standard days method (SDM) is included in the survey questionnaire, it should be tabulated as a modern method in all tables throughout the report.

During data editing, a new code for "Other modern method" will routinely be generated for Q301 (knowledge of methods) and column 1 in the calendar (current use of methods). Any contraceptive methods in the "Other–specify" category in Q301 that are modern methods will be reclassified into the new "Other modern method" category unless there are a sufficient number of cases for a single method to warrant creating a new code for that method. The reclassification decision should be made by the DHS country manager and/or the technical staff in the country implementing agency. Other modern methods may include the contraceptive patch, the hormonal vaginal ring, diaphragm, contraceptive foam and spermicidal jelly and cream, and standard days

method (if the number of cases is insufficient to warrant having a separate category under modern methods for SDM). Any remaining cases in the "Other – specify" category in Q301 should only include folk methods. Since in the questionnaire, "Other method" (including both folk methods and "other" modern methods) follows the same skip pattern as specific traditional methods, the questions on most recent source and side effects are not asked for this group. This means that Tables 7.6 and 7.8 for contraceptive source and informed choice about contraceptive methods will continue to exclude the small number of women currently using an "other" modern method. Earlier DHS surveys did not include "Other" modern methods in the "Any modern method" category and in more recent surveys, "folk method" was also not included in the "Any traditional method" category. This should be taken into consideration when drawing comparisons.

Table 7.2 Knowledge of contraceptive methods by background characteristics

Percentage of currently married women and currently married men age 15-49 who have heard of at least one contraceptive method and who have heard of at least one modern method, by background characteristics, [country, year]

	Women			Men		
Background characteristic	Heard of any method	Heard of any modern method[1]	Number of women	Heard of any method	Heard of any modern method[1]	Number of men
Age						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49						
50-54 [59]				na	na	na
Total 15-54[59]				na	na	na

na = Not applicable
[1] Female sterilization, male sterilization, pill, IUD, injectables, implants, male condom, female condom, lactational amenorrhea method (LAM), emergency contraception, and other modern methods

Knowledge of any *modern* method of contraception is chosen as a summary indicator of knowledge in addition to knowledge of *any* method, because of its greater relevance for program publicity, which is usually confined to modern methods. The table is restricted to currently married respondents in order to facilitate comparison between subgroups, which may differ in their marital composition.

Where knowledge is high (80 percent or more) among all subgroups of the population, there is little point in publishing the full table.

Table 7.3 Current use of contraception by age

Percent distribution of all women, currently married women, and sexually active unmarried women age 15-49 by contraceptive method currently used, according to age, [country, year]

Age	Any method	Any modern method	Modern method											Any traditional method	Traditional method			Not currently using	Total	Number of women
			Female sterilization	Male sterilization	Pill	IUD	Inject-ables	Im-plants	Male con-dom	Fe-male con-dom	LAM	Other		Rhythm	With-drawal	Other			
ALL WOMEN																			
15-19																		100.0	
20-24																		100.0	
25-29																		100.0	
30-34																		100.0	
35-39																		100.0	
40-44																		100.0	
45-49																		100.0	
Total																		100.0	
CURRENTLY MARRIED WOMEN																			
15-19																		100.0	
20-24																		100.0	
25-29																		100.0	
30-34																		100.0	
35-39																		100.0	
40-44																		100.0	
45-49																		100.0	
Total																		100.0	
SEXUALLY ACTIVE UNMARRIED WOMEN[1]																			
15-19																		100.0	
20-24																		100.0	
25+																		100.0	
Total																		100.0	

Note: If more than one method is used, only the most effective method is considered in this tabulation
na = Not applicable
LAM = Lactational amenorrhoea method
[1] Women who have had sexual intercourse within 30 days preceding the survey

Standard days method (SDM), if included, should be tabulated as a modern method.

The level of current use is the most widely used and valuable measure of the success of a family planning program. Furthermore, it can be used to estimate the reduction in fertility attributable to contraception.

Table 7.3 presents data for the whole sample, as well as for currently married women and sexually active unmarried women, by age group. Interpretation should focus on the results for currently married women. The data for never-married sexually inactive women (included in the "all women" category) are probably less reliable and, in any case, the meaning of current use is unclear when sexual intercourse is sporadic, which will often be the case for single women.

Typically, an inverted U-shaped pattern of prevalence by age will be observed for the currently married sample. Use is lower among young women (because they are in an early stage of family building) and among older women (some of whom are no longer fecund) than among those at intermediate ages.

Data column 1 for currently married women corresponds to MDG Indicator 5.3 and MICS4 Indicator 5.3, "Contraceptive prevalence rate."

Table 7.4.1 Current use of contraception by background characteristics

Percent distribution of currently married women age 15-49 by contraceptive method currently used, according to background characteristics, [country, year]

| Background characteristic | Any method | Any modern method | Modern method | | | | | | | | | | | | Traditional method | | | | Not currently using | Total | Number of women |
			Female sterili-zation	Male sterili-zation	Pill	IUD	Inject-ables	Im-plants	Male con-dom	Fe-male con-dom	LAM	Other	Any tradi-tional method	Rhythm	With-drawal	Other			
Number of living children																				
0																		100.0	
1-2																		100.0	
3-4																		100.0	
5+																		100.0	
Residence																				
Urban																		100.0	
Rural																		100.0	
Region																				
Region 1																		100.0	
Region 2																		100.0	
Region 3																		100.0	
Region 4																		100.0	
Education																				
No education																		100.0	
Primary																		100.0	
Secondary																		100.0	
More than secondary																		100.0	
Wealth quintile																				
Lowest																		100.0	
Second																		100.0	
Middle																		100.0	
Fourth																		100.0	
Highest																		100.0	
Total																		100.0	

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

This table allows the comparison of levels of current contraceptive use among major groups of the population. It also permits an examination of differences in the method mix among current users in the various subgroups.

Table 7.4.2 Trends in the current use of contraception

Percent distribution of currently married women age 15-49 by contraceptive method currently used, according to several surveys

Method	Survey 1	Survey 2	Current survey
Any method			
Any modern method			
Female sterilization			
Pill			
IUD			
Male condom			
Other modern method			
Any traditional method			
Rhythm			
Withdrawal			
Other			
Not currently using			
Total	100.0	100.0	100.0
Number of women			

Figure 7.1
Trends in Contraceptive Use
among Currently Married Women

Percentage of currently married women
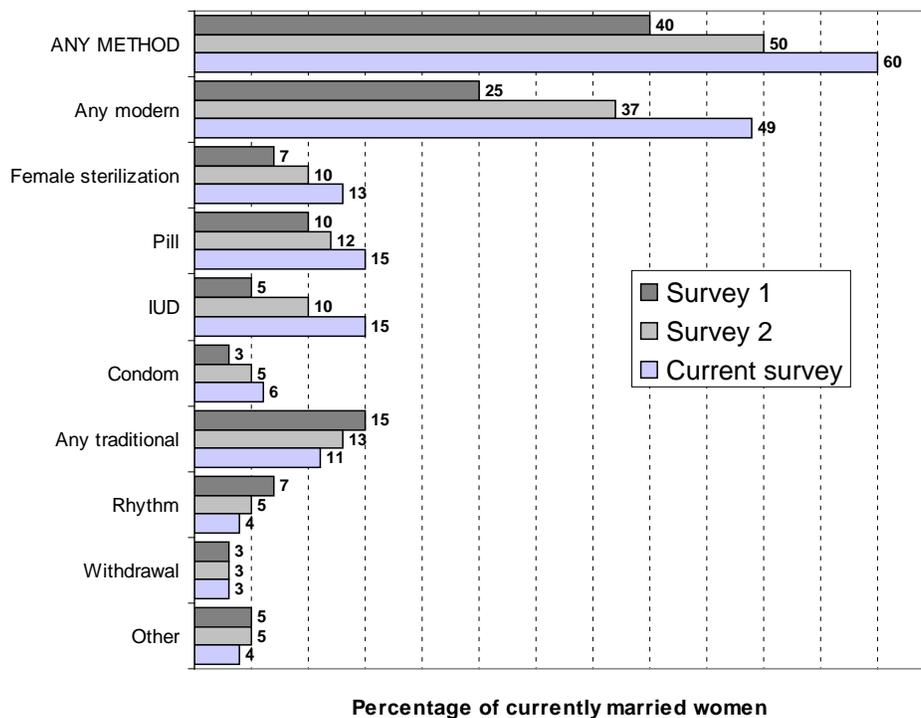
Table 7.5 Timing of sterilization

Percent distribution of sterilized women age 15-49 by age at the time of sterilization and median age at sterilization, according to the number of years since the operation, [country, year]

Years since operation	Age at time of sterilization						Total	Number of women	Median age[1]
	<25	25-29	30-34	35-39	40-44	45-49			
<2							100.0		
2-3							100.0		
4-5							100.0		
6-7							100.0		
8-9							100.0		
10+							100.0		a
Total							100.0		

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

In countries where contraceptive sterilization is prevalent, there is interest in knowing the trend in the adoption of the method and in determining whether the age at the time of sterilization is declining. To minimize problems of censoring, the median age at the time of sterilization should be presented only for women sterilized at less than 40 years of age.

Table 7.6 Source of modern contraception methods

Percent distribution of users of modern contraceptive methods age 15-49 by most recent source of the method, according to method, [country, year]

Source	Female sterilization	Male sterilization	Pill	IUD	Injectables	Implants	Male condom	Female condom	Total
Public sector									
Government hospital									
Government health center									
Family planning clinic									
Mobile clinic									
Fieldworker									
Other									
Private medical sector									
Private hospital/clinic									
Pharmacy									
Private doctor									
Mobile clinic									
Fieldworker									
Other									
Other source									
Shop									
Church									
Friend/relative									
Other									
Missing									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women									

Note: Total includes other modern methods but excludes lactational amenorrhea method (LAM).

This tabulation is intended simply to document the main sources of contraception for users of different contraceptive methods. Such information is important to family planning program officials. Since source is method-specific, it is not advisable to group a number of methods. Instead methods with a small number of users need not be shown.

If methods are dropped from the table a footnote should be added to state that the total includes X number of users of a method who are not shown separately.

Table 7.7 Use of social marketing brand pills and condoms

Percentage of pill and condom users age 15-49 using a specific social marketing brand, by background characteristics, [country, year]

Background characteristic	Among pill users		Among condom users[1]	
	Percentage using *Brand X [or Brand Y]*	Number of women using the pill	Percentage using *Brand X [or Brand Y]*	Number of women using condoms
Age				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

Note: Table excludes pill and condom users who do not know the brand name. Condom use is based on women's reports.
[1] Among condom users not also using the pill.

Table 7.7 is country-specific. For some countries in which a substantial number of women use oral contraceptives or condoms, there is an interest in determining the proportion currently using a social marketing brand. This table is for use in countries that have social marketing programs and may be modified to include brand names also.

Note that the information on condom brands is obtained from women.

It is useful to identify the specific brands either in the top stub or in a footnote.

Table 7.8 Informed choice

Among current users of selected modern methods age 15-49 who started the last episode of use within the five years preceding the survey, the percentage who were informed about possible side effects or problems of that method, the percentage who were informed about what to do if they experienced side effects and the percentage who were informed about other methods they could use, by method and initial source, [country, year]

Method/source	Among women who started last episode of modern contraceptive method within five years preceding the survey:			
	Percentage who were informed about side effects or problems of method used	Percentage who were informed about what to do if side effects experienced	Percentage who were informed by a health or family planning worker of other methods that could be used	Number of women
Method				
Female sterilization				
Pill				
IUD				
Injectables				
Implants				
Initial source of method[1]				
Public sector				
Government hospital				
Government health center				
Family planning clinic				
Mobile clinic				
Fieldworker				
Private medical sector				
Private hospital/clinic				
Private doctor				
Pharmacy				
Other private sector				
Total				

Note: Table includes users of only the methods listed individually.
[1] Source at start of current episode of use

Informed choice is a necessary part of family planning programs. Family planning providers should inform all method users of the potential side effects and what they should do if they encounter any of the effects. This information both assists the user in coping with side effects and decreases unnecessary discontinuation of temporary methods. Users of temporary methods should also be informed of the choices they have with respect to other methods. Informed choice should be analyzed by type of method and type of provider in order to improve policy and program practices.

Table 7.9 Twelve-month contraceptive discontinuation rates

Among women age 15-49 who experienced an episode of contraceptive use within the five years preceding the survey, the percentage of episodes discontinued within 12 months, by reason for discontinuation and specific method, [country, year]

Method	Reason for discontinuation								Switched to another method[5]	Number of episodes of use[6]
	Method failure	Desire to become pregnant	Other fertility related reasons[2]	Side effects/ health reasons	Wanted more effective method	Other method related reasons[3]	Other reasons	Any reason[4]		
Female sterilization										
Male sterilization										
Pill										
IUD										
Injectables										
Implants										
Male condom										
Female condom										
Diaphragm										
Foam/jelly										
Rhythm										
Withdrawal										
Other[1]										
All methods										

Note: Figures are based on life table calculations using information on episodes of use that began 3-62 months preceding the survey.
[1] Includes LAM and [LIST OTHER METHODS NOT SHOWN SEPARATELY]
[2] Includes infrequent sex/husband away, difficult to get pregnant/menopausal, and marital dissolution/separation
[3] Includes lack of access/too far, costs too much, and inconvenient to use
[4] Reasons for discontinuation are mutually exclusive and add to the total given in this column
[5] The episodes of use included in this column are a subset of the discontinued episodes included in the discontinuation rate. A woman is considered to have switched to another method if she used a different method in the month following discontinuation or if she gave "wanted a more effective method" as the reason for discontinuation and started another method within two months of discontinuation.
[6] Number of episodes of use includes both episodes of use that were discontinued during the period of observation and episodes of use that were not discontinued during the period of observation

Table 7.9 presents contraceptive discontinuation rates. The procedure for calculating these rates is outlined below.

Note that LAM should never be listed separately in the table. According to the definition of the method, it is impossible to use LAM for longer than 6 months. Therefore, a 12-month discontinuation rate for LAM would in theory always be 100 percent. However, LAM should be included in the total for all methods. The program to produce this table suppresses methods used by fewer than 125 women during the first month of the life table. These methods and LAM should be included in the row for "Other" (so long as the sum of users for all of the "Other" methods is at least 125 in the first month of the life table) so that in the last column of the table, the sum of episodes of use by individual methods and of the "Other" methods will sum to the total for all methods. If the number of episodes of use in the first month of all "Other" methods is fewer than 125, then the "Other" row should not appear. Footnote 1 will appear next to "All methods," and the total for the episodes of use of the individual methods (shown in the last column) will not sum to the total for all methods.

The table includes cumulative one-year discontinuation rates; these represent the proportion of users discontinuing a method within 12 months after the start of use (Q_{12j}). The monthly rates (q_{ij}) are calculated by dividing the number of discontinuations for reason j at each duration of use i in single months (d_{ij}) by the number of women exposed at that duration (e_i):

$$q_{ij} = \frac{d_{ij}}{e_i}$$

and p_{kj} is the probability of continuing to use at each duration,

$$p_{kj} = \prod_{i=1}^{k} (1 - q_{ij})$$

and the cumulative probability of discontinuing within 12 months is Q_{ij} where i=12 and

$$Q_{ij} = 1 - p_{kj}$$

Note that these are true multiple decrement life tables (sometimes referred to as "net rates"); the various reasons for discontinuation are treated as competing risks and the q's are additive across reasons for discontinuing. The tabulation program is set up to present results for four specific reasons for discontinuation—became pregnant while using (method failure), stopped to become pregnant, switched to another method, and "all other reasons", which includes side effects/health concerns, and a total column. It is, of course, possible to modify the program to include additional specific reasons for discontinuation. The program also provides working tables with the numbers of discontinuations and exposure, single month q's, and the probabilities of continuing.

The rates are calculated from information collected in the calendar portion of the questionnaire. All episodes of contraceptive use between January of the first year of the calendar and the date of interview are recorded in the calendar along with the reason for any discontinuation of use during this period. Thus, discontinuation rates presented in this table refer to only to episodes of contraceptive use that *began* during the period of time covered by the calendar, not all episodes that occurred during this period. Specifically, the rates presented in Table 7.10 refer to the period 3-62 months prior to the survey—the month of interview and the 2 months prior are ignored in order to avoid the bias that may be introduced by unrecognized pregnancies.

The program is currently set up to suppress results for specific contraceptive methods that have fewer than 125 women exposed in month 1. If any category is not shown, a footnote should be added indicating that these women are included under all methods.

The column indicating "switched to another method" should be used if either of the following occurs: 1) a different method is used in the month following discontinuation; or 2) "wanted a more effective method" is indicated in the reason for discontinuation column of the calendar and started another method within 2 months of discontinuing (only one month with no use following the discontinuation). If the woman restarted the same method after the one month of non-use, then the reason is "other". If the reason for discontinuation in the calendar is missing, the discontinuation is grouped in the "other" category.

Table 7.10   Reasons for discontinuation

Percent distribution of discontinuations of contraceptive methods in the five years preceding the survey by main reason stated for discontinuation, according to specific method, [country, year]

Reason	Pill	IUD	Inject-ables	Im-plants	Male condom	Female condom	Dia-phragm	Foam/ jelly	Rhythm	With-drawal	Other	All methods
Became pregnant while using												
Wanted to become pregnant												
Husband/partner disapproved												
Wanted more effective method												
Health concerns/side effects												
Lack of access/too far												
Costs too much												
Inconvenient to use												
Up to God/fatalistic												
Difficult to get pregnant/ menopausal												
Infrequent sex/husband away												
Marital dissolution/separation												
Other												
Don't know												
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of discontinuations												

This table considers the main reason for discontinuing contraceptive methods among ever users who have discontinued use of a method during the five years preceding the survey.

Table 7.11 Knowledge of fertile period

Percent distribution of women age 15-49 by knowledge of the fertile period during the ovulatory cycle, according to current use of the rhythm method, [country, year]

Perceived fertile period	Users of rhythm method	Nonusers of rhythm method	All women
Just before her menstrual period begins			
During her menstrual period			
Right after her menstrual period has ended			
Halfway between two menstrual periods			
Other			
No specific time			
Don't know			
Missing			
Total	100.0	100.0	100.0
Number of women			

An elementary knowledge of reproductive physiology provides a useful background for successful practice of coitus-associated methods such as withdrawal, condoms, and vaginal methods. Knowledge is particularly critical in the case of the rhythm method.

Table 7.12.1 Need and demand for family planning among currently married women

Percentage of currently married women age 15-49 with unmet need for family planning, percentage with met need for family planning, the total demand for family planning, and the percentage of the demand for contraception that is satisfied, by background characteristics, [country, year]

Background characteristic	Unmet need for family planning			Met need for family planning (currently using)			Total demand for family planning[1]			Percentage of demand satisfied[2]	Percentage of demand satisfied by modern methods[3]	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total			
Age												
15-19												
20-24												
25-29												
30-34												
35-39												
40-44												
45-49												
Residence												
Urban												
Rural												
Region												
Region 1												
Region 2												
Region 3												
Region 4												
Education												
No education												
Primary												
Secondary												
More than secondary												
Wealth quintile												
Lowest												
Second												
Middle												
Fourth												
Highest												
Total												

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al., 2012.
[1] Total demand is the sum of unmet need and met need
[2] Percentage of demand satisfied is met need divided by total demand
[3] Modern methods include female sterilization, male sterilization, pill, IUD, injectables, implants, male condom, female condom, and lactational amenorrhea method (LAM)

The definition of unmet need has been revised to be simpler and to improve interpretation of trends over time. Estimates of unmet need based on the revised definition should not be compared with estimates from previous final reports based on older definitions (though the differences are small in most countries). To discuss trends in unmet need, consult *Bradley, Sarah E. K., Trevor N. Croft, Joy D. Fishel, and Charles F. Westoff. 2012. Revising Unmet Need for Family Planning. DHS Analytical Studies No. 25. Calverton, Maryland, USA: ICF International.* Table 2, column 2, in this publication includes estimates of unmet need calculated using the revised definition for all prior DHS surveys. Thus, country managers will not need to request additional runs of older surveys from data processing in order to discuss trends.

To replace the complicated and incomplete footnote that used to appear in Table 7.12.1, the following section includes standard text that must be included in the chapter to introduce the definitions of total unmet need, unmet need for spacing, and unmet need for limiting.

"Unmet need for family planning refers to fecund women who are not using contraception but who wish to postpone the next birth (spacing) or stop childbearing altogether (limiting). Specifically, women are considered to have unmet need for spacing if they are:
- At risk of becoming pregnant, not using contraception, and either do not want to become pregnant within the next two years, or are unsure if or when they want to become pregnant.

- Pregnant with a mistimed pregnancy.
- Postpartum amenorrheic for up to two years following a mistimed birth and not using contraception.

Women are considered to have unmet need for limiting if they are:
- At risk of becoming pregnant, not using contraception, and want no (more) children.
- Pregnant with an unwanted pregnancy.
- Postpartum amenorrheic for up to two years following an unwanted birth and not using contraception.

Women who are classified as infecund have no unmet need because they are not at risk of becoming pregnant.

Women using contraception are considered to have met need. Women using contraception who say they want no (more) children are considered to have met need for limiting, and women who are using contraception and say they want to delay having a child, or are unsure if or when they want a/another child, are considered to have met need for spacing.

Unmet need, total demand, percentage of demand satisfied, and percentage of demand satisfied by modern methods are defined as follows:
- **Unmet need:** the sum of unmet need for spacing plus unmet need for limiting
- **Total demand for family planning**: the sum of unmet need plus total contraceptive use
- **Percentage of demand satisfied**: total contraceptive use divided by the sum of unmet need plus total contraceptive use
- **Percentage of demand satisfied by modern methods**: use of modern contraceptive methods divided by the sum of unmet need plus total contraceptive use"

Some explanation of how and why the definition of unmet need has changed must also be included in the chapter; however, the description of the change in the indicator will follow one of two models depending on whether or not the country included a contraceptive calendar with at least two columns in any previous survey. The effect of the change in definition is greater in countries that have used a 2+column contraceptive calendar than in those that have not. The following section provides two models of the standard text to explain the revision. The chapter will include the first section of standard text if the country has NEVER used a contraceptive calendar with 2+ columns. The chapter will include the second section of standard text if the country has EVER included a 2+ column contraceptive calendar. Country managers can determine which group their country is in by looking at Table 2 in *Bradley et al., 2012*.

1. Countries that never collected a 2+ column calendar

"The definition of unmet need for family planning has been revised to make levels of unmet need comparable over time and across surveys. All of the unmet need estimates in Figure 7.2 have been recalculated using the revised definition of unmet need and may differ slightly from numbers published in the final reports for each previous survey."

2. Countries that collected a 2+ column calendar (including contraceptive discontinuation) in at least 1 survey

"The definition of unmet need for family planning has been revised to make levels of unmet need comparable over time and across surveys. The aspect of the change in the definition that has the largest impact on levels of unmet need is the removal of information collected from the contraceptive calendar, which has not been included in all DHS surveys across countries. Previously, in surveys that included a calendar, women who were pregnant or postpartum amenorrheic resulting from contraceptive failure were not considered to have unmet need, even if their last pregnancy/birth was unwanted or mistimed. By contrast, if the survey did not collect information on contraceptive failure in the calendar, all pregnant and postpartum amenorrheic women whose last pregnancy/birth was unwanted or mistimed were considered to have unmet need. To make the definition of unmet need

comparable in both types of surveys, the new definition does not take information on contraceptive failure into account for any woman when assigning unmet need status. Removing contraceptive failure from the calculation can result in a small increase in the estimated level of unmet need by moving some women who were in the failure category into the unmet need category. All of the numbers in Figure 7.2 have been recalculated using the revised definition of unmet need and may differ slightly from numbers published in the final reports for each previous survey."

Data in column 3 correspond to MDG Indicator 5.6 and MICS4 Indicator 5.4, "Unmet need for family planning."

Figure 7.2 Trends in unmet need for family planning

Percent
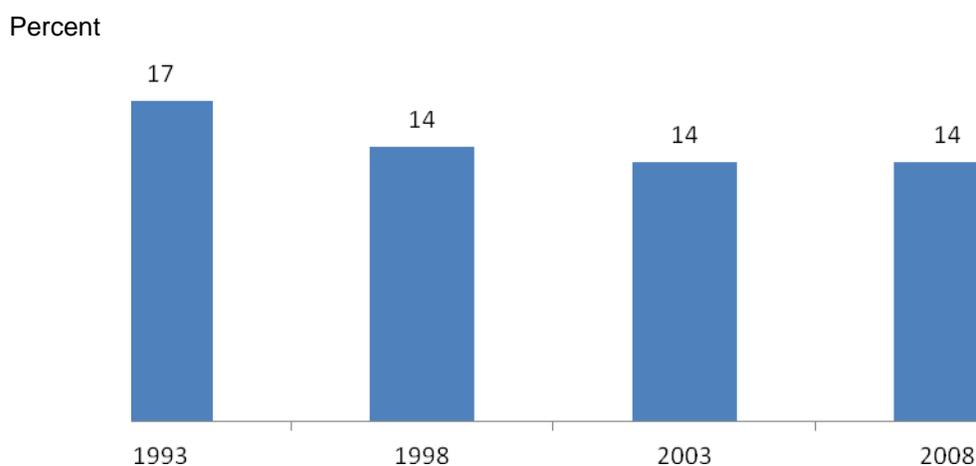
Note: Estimates for all years are based on the revised definition of unmet need

Table 7.12.2 is identical to Table 7.12.1 except results are shown for categories of "all women" and "unmarried sexually active women." The table should not be included in the report unless requested by the country or the USAID Mission.

Table 7.12.2 Need and demand for family planning for all women and for sexually active unmarried women

Percentage of all women and sexually active unmarried women age 15-49 with unmet need for family planning, percentage with met need for family planning, the total demand for family planning, and the percentage of the demand for contraception that is satisfied, by background characteristics, [country, year]

Background characteristic	Unmet need for family planning			Met need for family planning (currently using)			Total demand for family planning[1]			Percentage of demand satisfied[2]	Percentage of demand satisfied by modern methods[3]	Number of women
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total			
ALL WOMEN												
Age												
15-19												
20-24												
25-29												
30-34												
35-39												
40-44												
45-49												
Residence												
Urban												
Rural												
Region												
Region 1												
Region 2												
Region 3												
Region 4												
Education												
No education												
Primary												
Secondary												
More than secondary												
Wealth quintile												
Lowest												
Second												
Middle												
Fourth												
Highest												
Total												
SEXUALLY ACTIVE UNMARRIED WOMEN[4]												
Age												
15-19												
20-24												
25-29												
30-34												
35-39												
40-44												
45-49												
Residence												
Urban												
Rural												
Region												
Region 1												
Region 2												
Region 3												
Region 4												
Education												
No education												
Primary												
Secondary												
More than secondary												
Wealth quintile												
Lowest												
Second												
Middle												
Fourth												
Highest												
Total												

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al., 2012.
[1] Total demand is the sum of unmet need and met need
[2] Percentage of demand satisfied is met need divided by total demand
[3] Modern methods include female sterilization, male sterilization, pill, IUD, injectables, implants, male condom, female condom, and lactational amenorrhea method (LAM)
[4] Women who have had sexual intercourse within 30 days preceding the survey

Table 7.13 Future use of contraception

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

Intention to use in the future	Number of living children[1]					Total
	0	1	2	3	4+	
Intends to use						
Unsure						
Does not intend to use						
Missing						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women						

[1] Includes current pregnancy

Intention to use contraception in the future provides a forecast of potential demand for services and acts as a convenient summary indicator of disposition toward contraception among current nonusers. It should be realized that respondents may or may not adhere to their intentions for future use.

Table 7.14 Exposure to family planning messages

Percentage of women and men age 15-49 who heard or saw a family planning message on radio, on television or in a newspaper or magazine in the past few months, according to background characteristics, [country, year]

Background characteristic	Women					Men				
	Radio	Tele-vision	News-paper/ magazine	None of these three media sources	Number of women	Radio	Tele-vision	News-paper/ magazine	None of these three media sources	Number of men
Age										
15-19										
20-24										
25-29										
30-34										
35-39										
40-44										
45-49										
Residence										
Urban										
Rural										
Region										
Region 1										
Region 2										
Region 3										
Region 4										
Education										
No education										
Primary										
Secondary										
More than secondary										
Wealth quintile										
Lowest										
Second										
Middle										
Fourth										
Highest										
Total 15-49										
50-54[59]	na	na	na	na	na					
Total 15-54[59]	na	na	na	na	na					

na = Not applicable

Before presenting these results, some prior discussion is required of the extent to which radio, television and newspaper/magazine publicity is used by family planning agencies. The purpose of Table 7.14 is to assess the coverage of specific population groups achieved through various family planning messages in various media.

Table 7.15 Contact of nonusers with family planning providers

Among women age 15-49 who are not using contraception, the percentage who during the past 12 months were visited by a fieldworker who discussed family planning, the percentage who visited a health facility and discussed family planning, the percentage who visited a health facility but did not discuss family planning, and the percentage who did not discuss family planning either with a fieldworker or at a health facility, by background characteristics, [country, year]

Background characteristic	Percentage of women who were visited by fieldworker who discussed family planning	Percentage of women who visited a health facility in the past 12 months and who:		Percentage of women who did not discuss family planning either with a fieldworker or at a health facility	Number of women
		Discussed family planning	Did not discuss family planning		
Age					
15-19					
20-24					
25-29					
30-34					
35-39					
40-44					
45-49					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

CHAPTER 8

INFANT AND CHILD MORTALITY

This chapter reports information on levels, trends and differentials in perinatal, neonatal, postneonatal, infant, child and under age five years mortality. This information is relevant both to the demographic assessment of the population and to health policies and programs. Estimates of infant and child mortality may be an input into population projections, particularly if the level of adult mortality is known from another source or can be inferred with reasonable confidence. Information on mortality of children also serves the needs of health ministries by identifying sectors of the population that are at high risk.

The chapter should begin with a statement that the data for mortality estimation were collected in the birth history section of the questionnaire. Then the mortality rates that are to be presented (neonatal, postneonatal, infant, child, under-five and perinatal) should be clearly defined. There should also be a brief discussion of data quality prior to the presentation of mortality estimates.

The reliability of the mortality estimates depends upon full recall of children who have died, the absence of differential displacement of birth dates of surviving and dead children, and accurate reporting of ages at death. Previous survey results have often been characterized by some heaping of age at death at exactly 12 months or 1 year of age. Because age at death is recorded in completed months or years, deaths at 12 months are classified as child rather than infant deaths. In reality, some of these deaths may have occurred before the first birthday so that their classification as child deaths tends to negatively bias infant mortality estimates and positively bias child mortality estimates. The analyst should be aware that this may occur in DHS surveys, although the probable effect is usually modest and unlikely to bias the estimates by as much as 5 percent.

The issue of whether or not to present mortality estimates that are adjusted for heaping of deaths at 12 months of age is difficult to resolve, as any solution involves a somewhat arbitrary decision about the true distribution by age of the heaped deaths. In general, it is DHS policy not to present rates adjusted for heaping of age at death in the first country report. Accordingly, it is recommended that adjusted rates should only be presented as part of the discussion in the text of the chapter. Moreover, adjusted rates should only be presented if the adjustment procedure described in DHS Methodological Report No. 1 (Data Quality) results in an increase of 5 percent or more in the infant mortality estimate and if there is clear evidence (from the distribution of reported deaths by age at months as presented in Appendix Table C.6) that some deaths reported at 12 months or 1 year of age are actually infant deaths.

Included in the chapter is a table indicating the distribution of children and women according to fertility behavior that place children at an elevated risk of mortality (e.g., childbearing under age 18, over age 34 or after a birth interval less than 24 months). This information is useful for designing and monitoring programs to avoid high-risk behavior and to cope with the elevated risks.

Table 8.1 Early childhood mortality rates					
Neonatal, postneonatal, infant, child, and under-five mortality rates for five year periods preceding the survey, [country, year]					
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					
5-9					
10-14					
[1] Computed as the difference between the infant and neonatal mortality rates					

The table examines the variation in neonatal, post-neonatal, infant, child, and under-five mortality rates for successive five-year periods before the survey.

It is seldom possible to establish, with confidence, mortality levels for a period more than 15 years before a survey due primarily to the fact that women are interviewed up to 49 years of age at the time of the survey. Thus, there is no information for births to increasingly older women as the time before the survey increases. For example at fifteen years prior to the survey, there is no information on births to women 35 years of age and older at that point in time.

Even within the recent 15-year period considered here, apparent trends in mortality rates should be interpreted with caution. First, there may exist differences in the completeness of death reporting related to the length of time before the survey. Second, the accuracy of reports of age at death and of date of birth may deteriorate systematically with time. Thus, without a detailed evaluation of birth history data quality (which is not attempted in this report), conclusions regarding changes in mortality should be considered preliminary. Also, whenever possible, estimates from previous DHS surveys and external estimates should be sought and compared with the DHS estimates. However, the quality of the external estimates must also be taken into consideration. Rates are presented without any decimal points because of the relatively high sampling errors for the estimates.

For tables 8.1-8.5, rates based on 250 to 499 unweighted exposed persons should be shown in parentheses. Rates based on fewer than 250 unweighted exposed persons should not be shown (*) and appropriate footnotes should be added to the tables if either or both of these cases exist. Here are the recommended footnotes for suppression and notation of childhood mortality rates due to low sample size:

> "An asterisk indicates that a figure is based on fewer than 250 unweighted children and has been suppressed."

> "Figures in parentheses are based on 250-499 unweighted children."

Data column 3 corresponds to MDG Indicator 4.2 and MICS4 Indicator 1.2, "Infant mortality rate"
Data column 5 corresponds to MDG Indicator 4.1 and MICS4 Indicator 1.1, "Under-five mortality rate"

Steps to checking denominators for mortality rates in Table 8.1:

1. To check the national 5-year mortality rates shown in Table 8.1, use the numbers in the first column of UNWEIGHTED working table MT.1 in the rows under the heading "Exposure to age groups in months"

2.   For neonatal mortality: If the exposure years for age group '0 months' are less than 250, the neonatal mortality rate is marked as * and if they are between 250-499, the rate is put in ( ).
3.   For postneonatal mortality: Check the exposure years for age groups 0, 1-2, 3-5 and 6-11 months. If ANY of these is less than 250, the postneonatal mortality rate is marked as * and if any are between 250-499, the rate is put in ( ). Do not sum the age groups together.
4.   For infant mortality: Check the exposure years for age groups 0, 1-2, 3-5 and 6-11 months. If ANY of these is less than 250, the infant mortality rate is marked as * and if any are between 250-499, the rate is put in ( ). Do not sum the age groups together.
5.   For child mortality: Check the exposure years for age groups 12-23, 24-35, 36-47 and 48-59 months. If ANY of these is less than 250, the child mortality rate is marked as * and if any are between 250-499, the rate is put in ( ). Do not sum the age groups together.
6.   For under-five mortality: Check the exposure years for age groups 0, 1-2, 3-5, 6-11, 12-23, 24-35, 36-47 and 48-59 months. If ANY of these is less than 250, the under-five mortality rate is marked as * and if any are between 250-499, the rate is put in ( ). Do not sum the age groups together.

If available, the most recent estimates from consecutive surveys give the most accurate picture of trends—rather than a series of estimates from the same survey because of the problem of birth transference (especially deceased births) in a single DHS survey.

Some of these problems were discussed in more detail in Chapter 5 with reference to Table 5.3.1.

The following table, which displays data from three DHS surveys in Turkey, was used for the production of Figure 8.1. This figure is designed to present trends and therefore is only to be presented when the same type of data are available from earlier surveys. Data from the current survey can be taken from Table 8.1. The table below may be actually shown in addition to Figure 8.1 or may be omitted.

Turkey: mortality rates for the five years preceding the survey						
Survey	Approximate time period of estimated rates	Neonatal mortality	Postneonatal mortality	Infant mortality	Child mortality	Under-five mortality
TDHS 2003	1998-2003	17	12	29	9	37
TDHS 1998	1993-1998	26	17	43	10	57
TDHS 1993	1988-1993	29	23	53	9	61

Figure 8.1 Mortality Trends
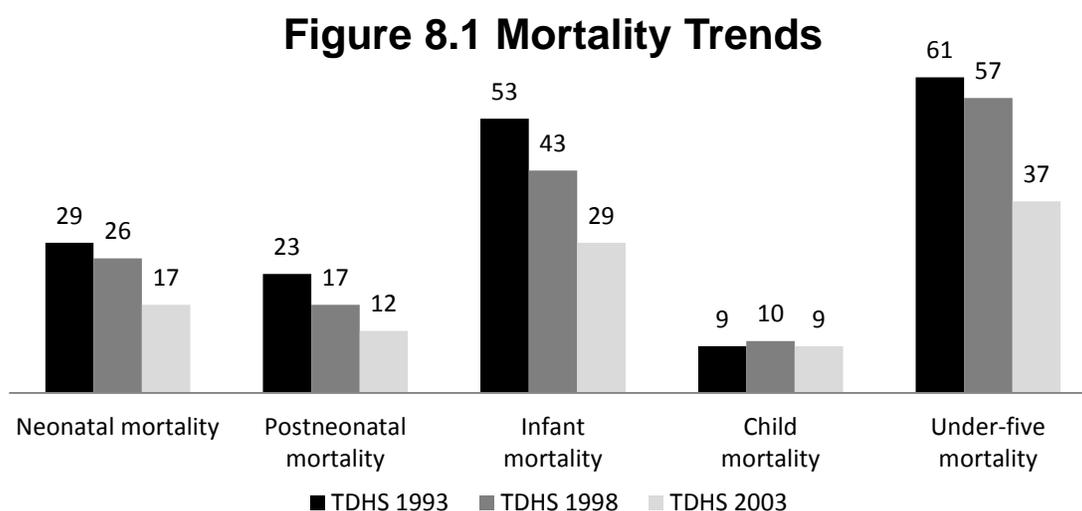
Table 8.2 Early childhood mortality rates by socioeconomic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by background characteristics, [country, year]

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Mother's education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					

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

Because of large sampling errors, 10-year rates are computed for Tables 8.2 and 8.3.

Checking denominators for mortality rates in Tables 8.2 and 8.3:

The steps for checking the denominators for the mortality rates in Tables 8.2 and 8.3 are similar to those used for checking the denominators for Table 8.1, except an extra step is needed because the rates in Tables 8.2 and 8.3 are for the 10 years before the survey. For each of the rates, it is necessary to sum together the exposure years in the first 2 columns of the working table (0-4 years and 5-9 years).

For example, to check the denominator for the infant mortality rate in urban areas, look at the exposure years in the first 2 columns of the UNWEIGHTED working table MT.1 under URBAN. Add the numbers in the first two columns together for the age group 0 months. Do the same for age groups 1-2, 3-5 and 6-11 months. If any of these sums is less than 250 the IMR is marked as * and if any of them are between 250-499, the rate is put in ( ).

Table 8.3 Early childhood mortality rates by demographic characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey, by demographic characteristics, [country, year]

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
Child's sex					
Male					
Female					
Mother's age at birth					
<20					
20-29					
30-39					
40-49					
Birth order					
1					
2-3					
4-6					
7+					
Previous birth interval[2]					
<2 years					
2 years					
3 years					
4+ years					
Birth size[3]					
Small/very small				na	na
Average or larger				na	na

na = Not available.
[1] Computed as the difference between the infant and neonatal mortality rates
[2] Excludes first-order births
[3] Rates for the five-year period before the survey

The pattern of mortality rates by demographic variables, which have been shown to be associated with the level of infant and child deaths, can be examined in this table.

Table 8.4 Perinatal mortality

Number of stillbirths and early neonatal deaths, and the perinatal mortality rate for the five-year period preceding the survey, by background characteristics, [country, year]

Background characteristic	Number of stillbirths[1]	Number of early neonatal deaths[2]	Perinatal mortality rate[3]	Number of pregnancies of 7+ months duration
Mother's age at birth				
<20				
20-29				
30-39				
40-49				
Previous pregnancy interval in months[4]				
First pregnancy				
<15				
15-26				
27-38				
39+				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Mother's education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

[1] Stillbirths are fetal deaths in pregnancies lasting seven or more months.
[2] Early neonatal deaths are deaths at age 0-6 days among live-born children.
[3] The sum of the number of stillbirths and early neonatal deaths divided by the number of pregnancies of seven or more months' duration, expressed per 1,000.
[4] Categories correspond to birth intervals of <24 months, 24-35 months, 36-47 months, and 48+ months

The distinction between a stillbirth and an early neonatal death is often a fine one, depending on observing and then recalling sometimes-faint signs of life following delivery. The causes of stillbirths and early neonatal deaths are closely linked, and just examining one or the other can understate the true level of mortality around delivery. For this reason deaths around delivery are combined into the perinatal mortality rate.

Information on stillbirths is available for the five years preceding the survey from the reproductive calendar section of the Woman's Questionnaire. Table 8.4 gives the level of perinatal mortality for the country as a whole and for selected demographic and socioeconomic characteristics. Note that information on perinatal mortality by pregnancy order is not presented in the table because pregnancy order cannot be computed from the information collected in the Woman's Questionnaire.

Table 8.5 High-risk fertility behaviour

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

| Risk category | Births in the 5 years preceding the survey | | Percentage of currently married women[1] |
	Percentage of births	Risk ratio	
Not in any high-risk category		1.00	%[a]
Unavoidable risk category			
First-order births between ages 18 and 34			
Single high-risk category			
Mother's age <18			
Mother's age >34			
Birth interval <24 months			
Birth order >3			
Subtotal			
Multiple high-risk category			
Age <18 and birth interval <24 months[2]			
Age >34 and birth interval <24 months			
Age >34 and birth order >3			
Age >34 and birth interval <24 months and birth order >3			
Birth interval <24 months and birth order >3			
Subtotal			
In any avoidable high-risk category			
Total	100.0	na	100.0
Number of births/women		na	

Note: Risk ratio is the ratio of the proportion dead among births in a specific high-risk category to the proportion dead among births not in any high-risk category.
na = Not applicable
[1] Women are assigned to risk categories according to the status they would have at the birth of a child if they were to conceive at the time of the survey: current age less than 17 years and 3 months or older than 34 years and 2 months, latest birth less than 15 months ago, or latest birth being of order 3 or higher.
[2] Includes the category age <18 and birth order >3
[a] Includes sterilized women

Table 8.5 presents the distribution of children born in the five years preceding the survey by category of increased risk of mortality due to the mother's fertility behavior characteristics: too young or too old at birth, too high a parity or too short a preceding birth interval. With regard to the last category, only children with a preceding interval of less than 24 months are included (rather than both a too short preceding and succeeding birth interval). Short succeeding birth intervals are not included, even though they can influence the survivorship of a child, because of the problem of reverse causality (i.e., a short succeeding birth interval can be the result of the death of a child rather than being the cause of the death of a child). Analysis beyond the scope of this report is required to disentangle one effect from the other.

First-order births may be at increased risk of dying relative to births of other orders; however, this distinction is not included in the risk categories in the table because it is not considered avoidable fertility behavior.

The table also presents the relative risk of dying (risk ratio) for children born in the five years preceding the survey by comparing the proportion dead in each risk category with the proportion dead among children with no risk factors.

In the final column, the table presents the distribution of currently married women by category of increased risk if they were to conceive at the time of the survey. Although many women are protected from pregnancy due to use of family planning, postpartum insusceptibility, and prolonged abstinence, for simplicity only those who have been sterilized are included in the not in any high-risk category. The criteria for placing women into specific risk categories are adjusted to take into account the gestation time for an additional birth.

How to check for * and ( ) on risk ratios in Table 8.5 High-risk fertility behavior

The risk ratios in the table are each a ratio of two other ratios (one ratio in the numerator and one ratio in the denominator). The following steps outline how to determine whether a * or ( ) is needed:

1. Using the Percentage of Births column in the UNWEIGHTED Table 8.5, calculate the cutoff points for asterisks (A) and parentheses (B) to one decimal place:
A = 100*[25/Total number of births (last row)]
B = 100*[50/Total number of births (last row)]

2. In UNWEIGHTED Table 8.5, compare each percentage in the Percentage of Births column to A and B above.

3. If the *percentage* is less than A, put a * in the *risk ratio* column in WEIGHTED Table 8.5.
If the *percentage* is ≥ A, but less than B, add parentheses around the *risk ratio* in WEIGHTED Table 8.5.

4. Any risk ratio that appears as a dash (-) in the data processing output of Table 8.5 should be replaced with nc (nc = Not calculated because there are no cases)

EXAMPLE:

The number of births in the UNWEIGHTED Table 8.5 = 2320
Calculate A = 100*[25/2320] = 1.1
Calculate B = 100*[50/2320] = 2.2

Any percentage in the Percentage of Births column in UNWEIGHTED Table 8.5 that is less than 1.1% should be replaced with an asterisk in the corresponding risk ratio in WEIGHTED Table 8.5 for the same row.

For any percentage in the Percentage of Births column in UNWEIGHTED Table 8.5 that is ≥ 1.1 and < 2.2, put the corresponding risk ratio in the WEIGHTED Table 8.5 in parentheses.

CHAPTER 9

REPRODUCTIVE HEALTH

This chapter presents findings from several areas of importance to reproductive and women's health, i.e. antenatal, delivery and postnatal care, and general access to health services.

Information on antenatal, delivery and postnatal care is of great value in identifying subgroups of women who do not utilize such services, and is useful in planning for improvements in service delivery. Information on antenatal care is shown according to the number of ANC visits made, the stage of pregnancy at the time of the first visit, the type of provider and the specific services and information provided during antenatal visits, including whether tetanus toxoid was received. Similarly, delivery services are described according to the place of the delivery, the type of person assisting the delivery and the rate of caesarean section. Information on postnatal care is shown by whether a woman delivered in a health facility or elsewhere and describes the time since delivery of the first postnatal care and from whom it was received. This information helps identify population groups who are underserved with maternity care services.

General information for access and barriers to use of health services for the woman herself, is also presented in this chapter.

Table 9.1 Antenatal care

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

Background characteristic	Antenatal care provider								No ANC	Total	Percentage receiving antenatal care from a skilled provider[1]	Number of women
	Doctor	Nurse/ midwife	Auxiliary nurse/ midwife	Com- munity health worker	Other health worker	Tradi- tional birth attend- ant	Other	Missing				
Mother's age at birth												
<20										100.0		
20-34										100.0		
35-49										100.0		
Birth order												
1										100.0		
2-3										100.0		
4-5										100.0		
6+										100.0		
Residence												
Urban										100.0		
Rural										100.0		
Region												
Region 1										100.0		
Region 2										100.0		
Region 3										100.0		
Region 4										100.0		
Education												
No education										100.0		
Primary										100.0		
Secondary										100.0		
More than secondary										100.0		
Wealth quintile												
Lowest										100.0		
Second										100.0		
Middle										100.0		
Fourth										100.0		
Highest										100.0		
Total										100.0		

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

The objective of this tabulation is to determine the extent of utilization of different types of antenatal care providers. Women in the DHS surveys were asked whether they had seen anyone for antenatal care during the pregnancy for the last live birth occurring in the preceding five years. The interviewer was instructed to record all responses if more than one source of antenatal care was mentioned for the same pregnancy. However, for the purposes of this tabulation only the provider with the highest qualifications is considered if there is more than one response. The statistics in Tables 9.1, 9.2, 9.3 and 9.4 are presented in terms of women. The category 'Auxiliary nurse midwife' is shown separately instead of being aggregated with 'Nurse/midwife.' These categories should be adapted to reflect the country's healthcare system. Please note that in most countries, not all cadres of health care professionals are considered "skilled" in providing ANC. Country managers must find out which cadres of providers should be considered skilled providers of ANC in a given country.

The second to last column corresponds to MICS4 Indicator 5.5a, "Antenatal care coverage: at least once by a skilled provider." Note that Table 9.1 includes all women who had a live birth in the past five years, but the MICS indicator is restricted to women who had a live birth in the past two years.

Table 9.2 Number of antenatal care visits and timing of first visit

Percent distribution of women age 15-49 who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits for the most recent live birth, and by the timing of the first visit, and among women with ANC, median months pregnant at first visit, according to residence, [country, year]

Number and timing of ANC visits	Residence		
	Urban	Rural	Total
Number of ANC visits			
None			
1			
2-3			
4+			
Don't know/missing			
Total			100.0
Number of months pregnant at time of first ANC visit			
No antenatal care			
<4			
4-5			
6-7			
8+			
Don't know/missing			
Total			100.0
Number of women			
Median months pregnant at first visit (for those with ANC)			
Number of women with ANC			

Respondents were asked for the number of antenatal care visits they had during the pregnancy preceding the last live birth in the five years preceding the survey and for the number of months pregnant at the time of the first visit. The objective of this tabulation is to assess the number of antenatal visits pregnant women receive and to determine the stage of pregnancy when they first seek care in relation to national and international recommendations for antenatal care.

Table 9.2 includes data for:

MDG Indicator 5.5, "Antenatal care coverage (at least one visit and at least four visits)"
MICS4 Indicator 5.5b, "Antenatal care coverage: at least four times by any provider." Note that Table 9.2 includes women who had a live birth in the past five years, but the MICS indicator is restricted to women who had a live birth in the past two years.

124

:

Table 9.3 Components of antenatal care

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

Background characteristic	Among women with a live birth in the past five years, the percentage who during the pregnancy for their last birth			Among women who received antenatal care for their most recent birth in the past five years, the percentage with the selected services				
	Took iron tablets or syrup	Took intestinal parasite drugs	Number of women with a live birth in the past five years	Informed of signs of pregnancy compli-cations	Blood pressure measured	Urine sample taken	Blood sample taken	Number of women with ANC for their most recent birth
Mother's age at birth								
<20								
20-34								
35-49								
Birth order								
1								
2-3								
4-5								
6+								
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total								

The content of antenatal care is important in judging its value. Certain items of care have been selected to be included in the questionnaire to indicate the level of the care required. Pregnancy complications are an important source of maternal and child mortality and morbidity, and thus both information on the signs of complications and tests for complications should be routinely included in antenatal care. Moreover, in many countries, neonatal tetanus, malaria and maternal anemia are major causes of neonatal mortality. The objective of this tabulation is to determine the extent of services given during antenatal care. DHS respondents who received antenatal care were asked whether they had received each service during at least one of the antenatal care visits. Height and weight measurement are no longer in the Core Questionnaire.

Additionally, Table 9.3 provides information for all women (whether or not a woman saw anyone for antenatal care) on the receipt of iron supplements and intestinal parasite drugs during the pregnancy of the most recent birth in the five years preceding the survey.

In many malaria-endemic countries, Intermittent Preventive Treatment of Malaria during pregnancy (IPTp) is a routine part of ANC. Information of IPTp is presented in Table 12.6.

Table 9.4 Tetanus toxoid injections

Among mothers age 15-49 with a live birth in the five years preceding the survey, the percentage receiving two or more tetanus toxoid injections during the pregnancy for the last live birth and the percentage whose last live birth was protected against neonatal tetanus, according to background characteristics, [country, year]

Background characteristic	Percentage receiving two or more injections during last pregnancy	Percentage whose last live birth was protected against neonatal tetanus[1]	Number of mothers
Mother's age at birth			
<20			
20-34			
35-49			
Birth order			
1			
2-3			
4-5			
6+			
Residence			
Urban			
Rural			
Region			
Region 1			
Region 2			
Region 3			
Region 4			
Education			
No education			
Primary			
Secondary			
More than secondary			
Wealth quintile			
Lowest			
Second			
Middle			
Fourth			
Highest			
Total			

[1] Includes mothers with two injections during the pregnancy of her last birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last birth), or four or more injections (the last within 10 years of the last live birth), or five or more injections at any time prior to the last birth

Tetanus toxoid injections are given to women during pregnancy to protect infants from neonatal tetanus, an important cause of infant death that is due primarily to unsanitary conditions at childbirth. Full protection is considered to be provided to an infant if the mother received two injections during the pregnancy of her last birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last birth), or four or more injections (the last within ten years of the last live birth), or five or more injections prior to the last birth.

Data column 2 corresponds to MICS4 Indicator 3.7, "Neonatal tetanus protection." Table 9.4 includes births in the past five years, but the MICS indicator is restricted to birth in the past 2 years.

Table 9.5 Place of delivery

Percent distribution of live births in the five years preceding the survey by place of delivery and percentage delivered in a health facility, according to background characteristics, [country, year]

| Background characteristic | Health facility | | Home | Other | Missing | Total | Percentage delivered in a health facility | Number of births |
	Public sector	Private sector						
Mother's age at birth								
<20						100.0		
20-34						100.0		
35-49						100.0		
Birth order								
1						100.0		
2-3						100.0		
4-5						100.0		
6+						100.0		
Antenatal care visits[1]								
None						100.0		
1-3						100.0		
4+						100.0		
Don't know/missing						100.0		
Residence								
Urban						100.0		
Rural						100.0		
Region								
Region 1						100.0		
Region 2						100.0		
Region 3						100.0		
Region 4						100.0		
Mother's education								
No education						100.0		
Primary						100.0		
Secondary						100.0		
More than secondary						100.0		
Wealth quintile								
Lowest						100.0		
Second						100.0		
Middle						100.0		
Fourth						100.0		
Highest						100.0		
Total						100.0		

[1] Includes only the most recent birth in the five years preceding the survey

Unlike antenatal care information, which was collected only for the last live birth, information on delivery care was collected for all births in the five years preceding the survey. As such, Tables 9.5 and 9.6 are organized around all births in the five years preceding the survey.

Table 9.5 documents the place of delivery by the background characteristics of respondents. Additionally, for the last live birth in the five years preceding the survey, the table indicates the place of delivery according to the number of antenatal care visits.

The second-to-last column corresponds to MICS4 Indicator 5.8, "Institutional deliveries." Table 9.5 includes births in the past five years, but the MICS indicator is restricted to birth in the past 2 years.

Table 9.6 Assistance during delivery

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery, percentage of births assisted by a skilled provider, and the percentage delivered by caesarian-section, according to background characteristics, [country, year]

Background characteristic	Doctor	Nurse/ midwife	Auxiliary nurse/ midwife	Other health worker	Traditional birth attendant	Relative/ other	No one	Don't know/ missing	Total	Percentage delivered by a skilled provider[1]	Percentage delivered by C-section	Number of births
Mother's age at birth												
<20									100.0			
20-34									100.0			
35-49									100.0			
Birth order												
1									100.0			
2-3									100.0			
4-5									100.0			
6+									100.0			
Antenatal care visits[2]												
None									100.0			
1-3									100.0			
4+									100.0			
Don't know/missing									100.0			
Place of delivery												
Health facility									100.0			
Elsewhere									100.0			
Residence												
Urban									100.0			
Rural									100.0			
Region												
Region 1									100.0			
Region 2									100.0			
Region 3									100.0			
Region 4									100.0			
Mother's education												
No education									100.0			
Primary									100.0			
Secondary									100.0			
More than secondary									100.0			
Wealth quintile												
Lowest									100.0			
Second									100.0			
Middle									100.0			
Fourth									100.0			
Highest									100.0			
Total									100.0			

Note: If the respondent mentioned more than one person attending during delivery, only the most qualified person is considered in this tabulation.
[1] Skilled provider includes doctor, nurse, midwife, and auxiliary nurse/midwife
[2] Includes only the most recent birth in the five years preceding the survey

This table presents information on the type of assistance received during delivery and the relative frequency of delivery by C-section. As with antenatal care, the interviewer was instructed to record all responses if more than one person assisted during delivery. However, for the purposes of this tabulation, only the most highly qualified person is considered if the respondent reported more than one type of attendant at delivery. The category 'Auxiliary nurse midwife' is shown separately instead of being aggregated with 'Nurse/midwife.' The cadres of health care providers shown should be adapted for the country. Country managers must find out which cadres of providers should be considered skilled providers for delivery. These are the cadres who are trained to attend deliveries as part of their pre-service curriculum and are defined as qualified to attend deliveries according to Ministry of Health policy. Note that the cadres of providers who are considered "skilled" for attending deliveries may not be the same as

those considered skilled in providing ANC. Whether or not providers are "skilled" is determined by the cadre of healthcare provider that they are. It does not reflect the actual skill level or competency of an individual provider.

Data column 10 corresponds to MDG Indicator 5.2, "Percentage of births attended by skilled health personnel" and MICS4 Indicator 5.7, "Skilled attendant at delivery."

Data column 11 corresponds to MICS4 Indicator 5.9, "Cesarean section." Note that Table 9.6 shows births in the past five years, but the MICS indicators are restricted two births in the past two years.

Figure 9.1 Mother's duration of stay in the health facility after giving birth

Figure 9.1 Mother's duration of stay in the health facility after giving birth

Percentage

Vaginal birth: <6 hours 14, 6-11 hours 43, 12-23 hours 23, 1-2 days 16, 3+ days 4

Cesarean section: <6 hours 6, 6-11 hours 15, 12-23 hours 25, 1-2 days 30, 3+ days 24

■ <6 hours □ 6-11 hours ■ 12-23 hours ■ 1-2 days □ 3+ days
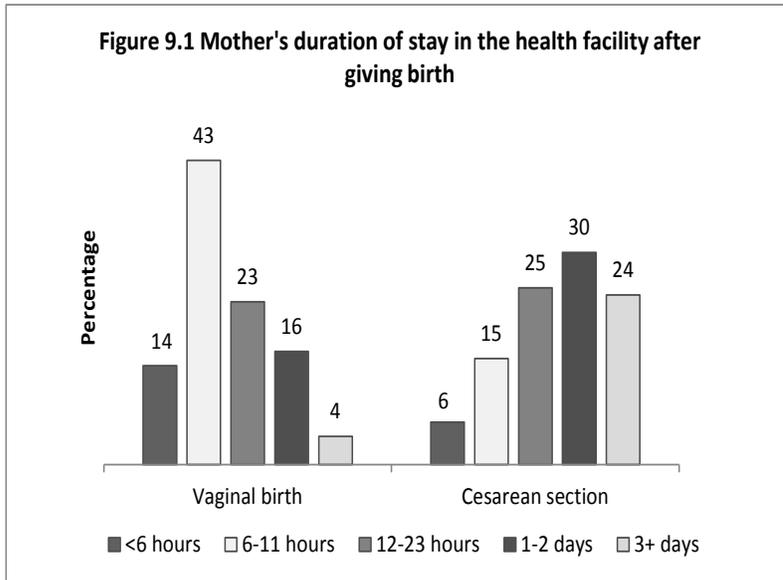
Working Table for Figure 9.1

Among women with a birth in the five years preceding the survey who delivered their last birth in a health facility, the percent distribution by duration of stay in the health facility following their last live birth, according to type of delivery [country, year]

Type of delivery	<6 hours	6-11 hours	12-23 hours	1-2 days	3+days	Total	Number of women
Vaginal birth						100.0	
Caesarean section						100.0	

131

Table 9.7 Timing of first postnatal checkup for the mother

Among women age 15-49 giving birth in the two years preceding the survey, the percent distribution of the mother's first postnatal checkup for the last live birth by time after delivery, and the percentage of women with a live birth in the two years preceding the survey who received a postnatal checkup in the first two days after giving birth, according to background characteristics, [country, year]

Background characteristic	Time after delivery of mother's first postnatal checkup					Don't know/ missing	No postnatal checkup[1]	Total	Percentage of women with a postnatal checkup in the first two days after birth	Number of women
	Less than 4 hours	4-23 hours	1-2 days	3-6 days	7-41 days					
Mother's age at birth										
<20								100.0		
20-34								100.0		
35-49								100.0		
Birth order										
1								100.0		
2-3								100.0		
4-5								100.0		
6+								100.0		
Place of delivery										
Health facility								100.0		
Elsewhere								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
Education										
No education								100.0		
Primary								100.0		
Secondary								100.0		
More than secondary								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total								100.0		

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

Providers included: Doctor, midwife, nurse, community health worker, TBA. Family/friend not included.

The second to last column, "Percentage of women with a postnatal checkup in the first two days after birth" is a Countdown indicator, and the results should be mentioned in the report text.

Table 9.8 Type of provider of first postnatal checkup for the mother

Among women age 15-49 giving birth in the two years preceding the survey, the percent distribution by type of provider of the mother's first postnatal health check in the two days after the last live birth, according to background characteristics [country, year]

Background characteristic	Type of health provider of mother's first postnatal checkup						No postnatal checkup in the first two days after the birth	Total	Number of women
	Doctor/ nurse/ midwife	Auxiliary nurse/ midwife	Com-munity health worker	Other health worker	Traditional birth attendant	Don't know/ missing			
Mother's age at birth									
<20								100.0	
20-34								100.0	
35-49								100.0	
Birth order									
1								100.0	
2-3								100.0	
4-5								100.0	
6+								100.0	
Place of delivery									
Health facility								100.0	
Elsewhere								100.0	
Residence									
Urban								100.0	
Rural								100.0	
Region									
Region 1								100.0	
Region 2								100.0	
Region 3								100.0	
Region 4								100.0	
Education									
No education								100.0	
Primary								100.0	
Secondary								100.0	
More than secondary								100.0	
Wealth quintile									
Lowest								100.0	
Second								100.0	
Middle								100.0	
Fourth								100.0	
Highest								100.0	
Total								100.0	

Table 9.9 Timing of first postnatal checkup for the newborn

Percent distribution of last births in the two years preceding the survey by time after birth of first postnatal checkup, and the percentage of births with a postnatal checkup in the first two days after birth, according to background characteristics, [country, year]

Background characteristic	Time after birth of newborn's first postnatal checkup					Don't know/ missing	No postnatal checkup[1]	Total	Percentage of births with a postnatal checkup in the first two days after birth	Number of births
	Less than 1 hour	1-3 hours	4-23 hours	1-2 days	3-6 days					
Mother's age at birth										
<20								100.0		
20-34								100.0		
35-49								100.0		
Birth order										
1								100.0		
2-3								100.0		
4-5								100.0		
6+								100.0		
Place of delivery										
Health facility								100.0		
Elsewhere								100.0		
Residence										
Urban								100.0		
Rural								100.0		
Region										
Region 1								100.0		
Region 2								100.0		
Region 3								100.0		
Region 4								100.0		
Mother's education										
No education								100.0		
Primary								100.0		
Secondary								100.0		
More than secondary								100.0		
Wealth quintile										
Lowest								100.0		
Second								100.0		
Middle								100.0		
Fourth								100.0		
Highest								100.0		
Total								100.0		

[1] Includes newborns who received a checkup after the first week

Providers included: Doctor, midwife, nurse, community health worker, TBA. Family/friend not included.

The second to last column, "Percentage of births with a postnatal checkup in the first two days after birth" is a Countdown indicator, and the results should be mentioned in the report text.

Table 9.10 Type of provider of first postnatal checkup for the newborn

Percent distribution of last births in the two years preceding the survey by type of provider of the newborn's first postnatal health check during the two days after the last live birth, according to background characteristics [country, year]

| Background characteristic | Type of health provider of newborn's first postnatal checkup | | | | | | No postnatal checkup during the first two days after the birth | Total | Number of births |
	Doctor/ nurse/ midwife	Auxiliary nurse/ midwife	Com- munity health worker	Other health worker	Traditional birth attendant	Don't know/ missing			
Mother's age at birth									
<20								100.0	
20-34								100.0	
35-49								100.0	
Birth order									
1								100.0	
2-3								100.0	
4-5								100.0	
6+								100.0	
Place of delivery									
Health facility								100.0	
Elsewhere								100.0	
Residence									
Urban								100.0	
Rural								100.0	
Region									
Region 1								100.0	
Region 2								100.0	
Region 3								100.0	
Region 4								100.0	
Mother's education									
No education								100.0	
Primary								100.0	
Secondary								100.0	
More than secondary								100.0	
Wealth quintile									
Lowest								100.0	
Second								100.0	
Middle								100.0	
Fourth								100.0	
Highest								100.0	
Total								100.0	

Table 9.11 Problems in accessing health care

Percentage of women age 15-49 who reported that they have serious problems in accessing health care for themselves when they are sick, by type of problem, according to background characteristics, [country, year]

| Background characteristic | Problems in accessing health care | | | | | Number of women |
	Getting permission to go for treatment	Getting money for treatment	Distance to health facility	Not wanting to go alone	At least one problem accessing health care	
Age						
15-19						
20-34						
35-49						
Number of living children						
0						
1-2						
3-4						
5+						
Marital status						
Never married						
Married or living together						
Divorced/ separated/widowed						
Employed past 12 months						
Not employed						
Employed for cash						
Employed not for cash						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

Many factors can prevent women from getting medical advice or treatment for themselves. In DHS surveys, all women were asked if getting medical advice or treatment was a big problem in terms of each of the potential obstacles indicated in Table 9.9. The table provides information on women's perception of these four potential problems as a barrier to obtaining health care. Note that answers to the question on getting permission to go for treatment do not necessarily refer to just the husband or family of the respondent but may include employer or health insurance company, for example.

CHAPTER 10

CHILD HEALTH

This chapter presents findings from several areas of importance to child health; characteristics of the neonate (birth weight and size at birth), vaccination status of children and important childhood illnesses and their treatment.

The information on birth weight and neonate's size assists in monitoring programs to decrease neonatal and infant mortality through a reduction in low birth weight infants.

The presentation of the vaccination coverage information focuses on the age group 12-23 months (or 18-29 months in countries where measles vaccination is not recommended in the first year of life). Overall coverage levels at the time of the survey and by 12 [18] months of age are shown for this age group. Additionally, the source of the vaccination information (whether based on a written vaccination card or on the mother's recall) is shown. Differences in vaccination coverage between different subgroups of the population are an aid in program planning.

Treatment practices and contact with health services among children with the three most important childhood illnesses (acute respiratory infection, fever and diarrhea) help in the assessment of national programs aimed at reducing the mortality impact of these illnesses. Information is provided on the prevalence and treatment of ARI and its treatment with antibiotics and the prevalence of fever and its treatment with antimalarial drugs and antibiotics. The treatment of diarrhea disease with oral rehydration therapy (including increased fluids) aids in the assessment of programs that recommend such treatment. Because appropriate sanitary practices can help prevent and reduce the severity of diarrheal disease, information is also provided on the manner of disposing of children's fecal matter.

Table 10.1 Child's size and weight at birth

Percent distribution of live births in the five years preceding the survey by mother's estimate of baby's size at birth, percentage of live births in the five years preceding the survey that have a reported birth weight, and among live births in the five years preceding the survey with a reported birth weight, percentage less than 2.5 kg, according to background characteristics, [country, year]

Background characteristic	Percent distribution of all live births by size of child at birth					Percentage of all births that have a reported birth weight[1]	Number of births	Births with a reported birth weight[1]	
	Very small	Smaller than average	Average or larger	Don't know/ missing	Total			Percentage less than 2.5 kg	Number of births
Mother's age at birth									
<20					100.0				
20-34					100.0				
35-49					100.0				
Birth order									
1					100.0				
2-3					100.0				
4-5					100.0				
6+					100.0				
Mother's smoking status									
Smokes cigarettes/tobacco					100.0				
Does not smoke					100.0				
Residence									
Urban					100.0				
Rural					100.0				
Region									
Region 1					100.0				
Region 2					100.0				
Region 3					100.0				
Region 4					100.0				
Mother's education									
No education					100.0				
Primary					100.0				
Secondary					100.0				
More than secondary					100.0				
Wealth quintile									
Lowest					100.0				
Second					100.0				
Middle					100.0				
Fourth					100.0				
Highest					100.0				
Total					100.0				

[1] Based on either a written record or the mother's recall

For births in the five years preceding the survey, birth weight was recorded in the questionnaire if available from either a written record or the mother's recall. Since birth weight may not be known for many babies, the mother's estimate of the baby's size at birth was also obtained.

The purpose of this table is to show the percent of babies who had a low birth weight (less than 2.5 kg.) and the percent that were reported to be 'very small' or 'smaller than average' at birth. Tobacco is a known cause of lowered birth weight. While the use of tobacco is measured only at the time of the survey, it is very likely that mothers who currently smoke did so in the past as well.

Table 10.2 Vaccinations by source of information

Percentage of children age 12-23 [18-29] months who received specific vaccines at any time before the survey, by source of information (vaccination card or mother's report), and percentage vaccinated by 12 [18] months of age, [country, year]

Source of information	BCG	DPT			Polio[1]				Measles	All basic vaccina-tions[2]	No vaccina-tions	Number of children
		1	2	3	0	1	2	3				
Vaccinated at any time before survey												
Vaccination card												
Mother's report												
Either source												
Vaccinated by 12 months of age[3]												

[1] Polio 0 is the polio vaccination given at birth
[2] BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)
[3] For children whose information is based on the mother's report, the proportion of vaccinations given during the first year of life is assumed to be the same as for children with a written record of vaccination.

Note: In countries where it is recommended that the measles vaccination for children be given around 12-14 months of age, the age range in this table should be changed to 18-29 months and the last row of the table should be changed to "Vaccinated by 18 months of age".

The purpose of the table is to show vaccination coverage for children age 12 to 23 [18-29] months at the time of the survey and to show the source of the data (vaccination card or mother's report) used for determining vaccination coverage. The table also shows the percentage of children who had been vaccinated by 12 [18] months of age. This latter percentage is to ascertain the proportion of children who had been vaccinated at approximately the proper times.

The information on childhood immunizations was obtained for all the respondent's children under five years of age. Whenever a vaccination card was available, this served as the source of information. The respondent was asked to recall which vaccines the child had received a) if there was no written vaccination record, or b) if the vaccination was not recorded on the card. Mothers were specifically asked whether the child had received BCG, measles, DPT and polio vaccine, including the number of doses of polio and DPT vaccines.

Since children should have received all vaccinations and doses listed in this table during the first year of life (by age 15 months where measles vaccination is recommended to be given later), the age group 12-23 [18-29] months has been selected to show the proportion of children vaccinated at any time before the interview according to a vaccination or health card and the proportion whose mothers reported that the child had been given each of the vaccines. In the row labeled "Vaccination Card", the numerator is the number of children who received the specific vaccination or dose any time prior to the survey and whose mothers showed a card to the interviewer. In the row labeled "Mother's Report", the numerator is the number of children vaccinated according to the mother's report (i.e., whose mothers did not show a card to the interviewer). Those cases where a vaccination card was shown but the receipt of a vaccination was based on the mother's report or where the date is missing or inconsistent on the vaccination card are also included in the first row. In the row labeled "Either source", the numerator is the sum of the numerators of the preceding two rows. The numerator for the fourth row, "Vaccinated by 12 [18]months of age", is the percentage of the children vaccinated during the first year of life (0-11 months) [first year and half of life (0-17 months)] according to a vaccination card plus an estimate of the percentage vaccinated by 12 [18]months of age according to the mother's report (including cases where there was no date on the card

or the specific vaccine was not recorded on the card). For children whose information is based on the mother's report, the proportion of vaccinations given during the first year [and a half] of life is assumed to be the same as for children with a written record of the date of vaccination.

The denominator for all the rows in Table 10.2 is all children in the age group 12-23 [18-29] months. However, the number in the last column for rows one and two should be the number of children whose mothers showed a card or reported without showing a card, respectively.

The last row of the table, "Vaccinated by 12 months of age" provides data for the following indicators:

MICS4 Indicator 3.1, "Tuberculosis immunization coverage"
MICS4 Indicator 3.2, "Polio immunization coverage"
MICS4 Indicator 3.3, "Immunization coverage for diphtheria, pertussis and tetanus (DPT)"
MICS4 Indicator 3.4, "Measles immunization coverage"
MDG Indicator 4.3, "Percentage of 1 year-old children immunized against measles"

Table 10.3 Vaccinations by background characteristics

Percentage of children age 12-23 [18-29] months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics, [country, year]

| Background characteristic | BCG | DPT | | | Polio[1] | | | | Measles | All basic vaccina-tions[2] | No vaccina-tions | Percent-age with a vaccina-tion card seen | Number of children |
		1	2	3	0	1	2	3					
Sex													
Male													
Female													
Birth order													
1													
2-3													
4-5													
6+													
Residence													
Urban													
Rural													
Region													
Region 1													
Region 2													
Region 3													
Region 4													
Mother's education													
No education													
Primary													
Secondary													
More than secondary													
Wealth quintile													
Lowest													
Second													
Middle													
Fourth													
Highest													
Total													

[1] Polio 0 is the polio vaccination given at birth
[2] BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

In countries where it is recommended that the measles vaccination for children be given around 12-14 months of age, the vaccinations rate should be calculated for ages 18-29 months, and the age range in the title of the table should be changed to 18-29 months.

This table shows the percentage of children who have a vaccination card that was shown to the interviewer, as well as the percentage of children given each vaccine or dose by the time of the survey, according to either a vaccination card or the mother's report. The purpose of this table is to examine the vaccination coverage levels among children age 12-23 [18-29] months by background characteristics in order to assess the success of the vaccination program in reaching all subgroups of the population.

Table 10.4 Vaccinations in the first year of life

Percentage of children age 12-59 [18-59] months at the time of the survey who received specific vaccines by 12 [18] months of age, and percentage with a vaccination card, by current age of child, [country, year]

Age in months	BCG	DPT			Polio[1]				Measles	All basic vaccina-tions[2]	No vaccina-tions	Percentage with a vaccination card seen	Number of children
		1	2	3	0	1	2	3					
12-23													
24-35													
36-47													
48-59													
12-59													

Note: Information was obtained from the vaccination card or if there was no written record, from the mother. For children whose information is based on the mother's report, the proportion of vaccinations given during the first year of life is assumed to be the same as for children with a written record of vaccinations.
[1] Polio 0 is the polio vaccination given at birth.
[2] BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

In countries where it is recommended that the measles vaccination for children be given around 12-14 months of age, the titles to table 10.4 should be changed to reflect vaccinations in the first 18 months of life and the age groups of children in the rows should be changed to 18-29, 30-41, 42-59, and 18-59.

This table should be used to assess trends in vaccination coverage only if coverage rates from a reliable earlier survey are not available. It is preferable to investigate trends in vaccination coverage for children of a fixed age interval (or by a specific age) with data from consecutive surveys. Figure 10.1 is an example of the preferable procedure for presenting trend information when data are available from earlier surveys.

Table 10.4 is based on children age 12 to 59 months, and shows the percentage of children who received specific vaccines or doses during the first year of life (according to a vaccination card or the mother's report) and the percentage of children with a vaccination card. This table illustrates changes in the vaccination program over time.

The method of estimating the vaccination coverage by 12 months of age is the same as that described for Table 10.2. For children without a vaccination card, the proportion vaccinated during the first year of life is estimated separately for each age group. 'No vaccinations' indicates the percentage of children who did not receive a single vaccination by 12 months of age.

Figure 10.1
Trends in Vaccination Coverage during the First Year of Life Among Children 12-23 [18-29] Months

Vaccine	Current survey	Survey 1
All	63	47
BCG	87	78
DPT1	88	76
DPT2	81	67
DPT3	72	60
Polio 0	70	61
Polio 1	8?	76
Polio 2	79	63
Polio 3	70	55
Measles	77	58

Percentage of children with specific vaccines
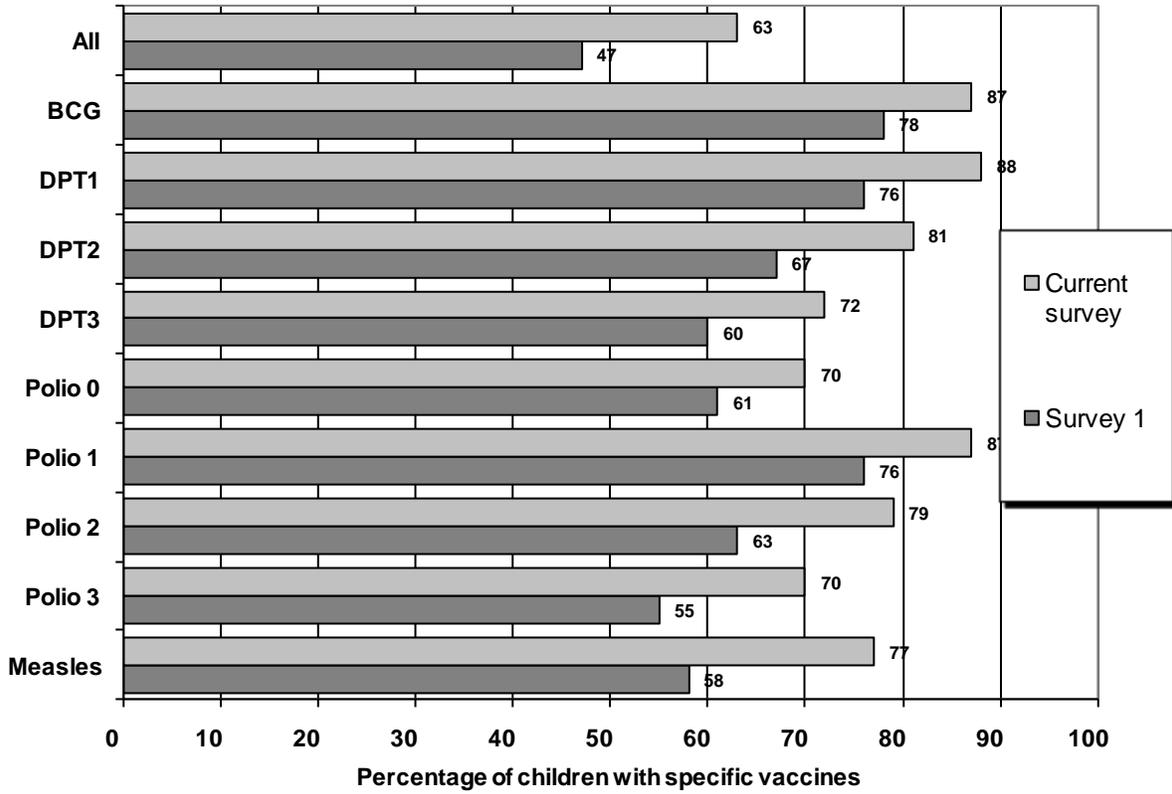
Table 10.5 Prevalence and treatment of symptoms of ARI

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

Background characteristic	Among children under age five: Percentage with symptoms of ARI[1]	Number of children	Among children under age five with symptoms of ARI: Percentage for whom advice or treatment was sought from a health facility or provider[2]	Percentage who received antibiotics	Number of children
Age in months					
<6					
6-11					
12-23					
24-35					
36-47					
48-59					
Sex					
Male					
Female					
Mother's smoking status					
Smokes cigarettes/tobacco					
Does not smoke					
Cooking fuel					
Electricity or gas					
Kerosene					
Coal/lignite					
Charcoal					
Wood/straw[3]					
Animal dung					
Other fuel					
No food cooked in household					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Mother's education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

[1] Symptoms of ARI (cough accompanied by short, rapid breathing which was chest-related and/or by difficult breathing which was chest-related) is considered a proxy for pneumonia
[2] Excludes pharmacy, shop, and traditional practitioner
[3] Includes grass, shrubs, crop residues

Table 10.5 shows the prevalence of symptoms of a recent episode of ARI (cough accompanied by short, rapid breathing which was chest-related and/or by difficult breathing which was chest related). Acute lower respiratory tract infection, primarily pneumonia, is a common cause of illness and death during infancy and childhood. Early diagnosis and treatment with antibiotics can prevent a large proportion of these ARI/pneumonia deaths. However, the reported treatment with antibiotics depends on the mother's ability to identify the drugs as antibiotics and may have a substantial margin of error. This table includes mother's smoking status and cooking fuel, factors known to be associated with ARI, as background characteristics.

The DHS data can be used to obtain period-prevalence estimates for ARI: the percentage of children under five years whose mothers report that the children had acute respiratory infection in a two-week period before the interview. This measure is affected by the reliability of the mother's recall as to when the ARI episode occurred.

Because the number of cases of ARI varies seasonally, the time of year that survey fieldwork is conducted must be considered when interpreting the findings.

Data column 3 corresponds to MICS4 Indicator 3.9, "Care-seeking for suspected pneumonia."
Data column 4 corresponds to MICS4 Indicator 3.10, "Antibiotic treatment of suspected pneumonia."

Among children under age five, the percentage who had a fever in the two weeks preceding the survey and among children with fever, the percentage for whom advice or treatment was sought from a health facility or provider, percentage who took antimalarial drugs, and the percentage who received antibiotics as treatment, by background characteristics, [country, year]

| | Among children under age five: | | Among children under age five with fever: | | | |
Background characteristic	Percentage with fever	Number of children	Percentage for whom advice or treatment was sought from a health facility or provider[1]	Percentage who took antimalarial drugs	Percentage who took antibiotic drugs	Number of children
Age in months						
<6						
6-11						
12-23						
24-35						
36-47						
48-59						
Sex						
Male						
Female						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Mother's education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

[1] Excludes pharmacy, shop, market, and traditional practitioner

This table shows the percentage of children less than five years of age who had fever in the two weeks preceding the survey. Fever is a manifestation of malaria, and it also accompanies various other illnesses. Malaria and fever contribute to high levels of malnutrition and high mortality. While fever can occur year-round, malaria is more prevalent during rainy seasons. For this reason, temporal factors must be taken into account when interpreting fever as an indicator of malaria prevalence.

The table also reports the types of drugs given to children with fever. Table 10.6 contains some information (prevalence of fever) which also appears in Table 12.7 (Malaria Chapter) when the more detailed questions on malaria are included in the survey questionnaire. Nevertheless, it is recommended that Table 10.6 include that information even when the Malaria Chapter is presented in the report. The

rationale for this is that the basic information on treatment of children with ARI, diarrhea and fever will be in the same chapter in all reports.

The DHS data can be used to obtain period-prevalence estimates for fever: the percentage of children under five years whose mothers report that the children had a fever in a two-week period before the interview. This measure is affected by the reliability of the mother's recall as to when the fever episode occurred.

Because the number of cases of febrile illness varies seasonally, the time of year that survey fieldwork was conducted must be considered when interpreting the findings, even where malaria is not present.

Table 10.7 Prevalence of diarrhea

Percentage of children under age five who had diarrhea in the two weeks preceding the survey, by background characteristics, [country, year]

Background characteristic	Diarrhea in the two weeks preceding the survey		Number of children
	All diarrhea	Diarrhea with blood	
Age in months			
<6			
6-11			
12-23			
24-35			
36-47			
48-59			
Sex			
Male			
Female			
Source of drinking water[1]			
Improved			
Not improved			
Toilet facility[2]			
Improved, not shared			
Shared[3]			
Non-improved			
Residence			
Urban			
Rural			
Region			
Region 1			
Region 2			
Region 3			
Region 4			
Mother's education			
No education			
Primary			
Secondary			
More than secondary			
Wealth quintile			
Lowest			
Second			
Middle			
Fourth			
Highest			
Total			

[1] See Table 2.1 for definition of categories
[2] See Table 2.2 for definition of categories
[3] Facilities that would be considered improved if they were not shared by two or more households

The purpose of this table is to show the prevalence of diarrhea in the two weeks preceding the survey among children less than five years of age. In many countries, dehydration from watery diarrhea is a major cause of death in infancy and childhood, and the condition is amenable to treatment by oral rehydration therapy. This combination of high cause-specific mortality and the existence of effective treatment make diarrhea and its treatment a priority concern for health services. Diarrhea with blood in the stools is indicative of an infection which needs to be treated differently than diarrhea without blood.

The DHS data can be used to obtain period-prevalence estimates for diarrhea: the percentage of children under five years whose mothers report that the children had diarrhea in a two-week period before the

interview. This measure is affected by the reliability of the mother's recall as to when the diarrheal episode occurred.

Because the number of cases of diarrhea varies seasonally, the time of year that survey fieldwork was conducted must be considered when interpreting the findings.

Table 10.8 Diarrhea treatment

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

Background characteristic	Percentage of children with diarrhea for whom advice or treatment was sought from a health facility or provider[1]	Oral rehydration therapy (ORT)					Other treatments					No treat-ment	Number of children with diarrhea
		Fluid from ORS packet or pre-packaged ORS fluid	Recom-mended home fluids (RHF)	Either ORS or RHF	Increased fluids	ORT or increased fluids	Anti-biotic drugs	Anti-motility drugs	Zinc supple-ments	Intra-venous solution	Home remedy/ other		
Age in months													
<6													
6-11													
12-23													
24-35													
36-47													
48-59													
Sex													
Male													
Female													
Type of diarrhea													
Non-bloody													
Bloody													
Residence													
Urban													
Rural													
Region													
Region 1													
Region 2													
Region 3													
Region 4													
Mother's education													
No education													
Primary													
Secondary													
More than secondary													
Wealth quintile													
Lowest													
Second													
Middle													
Fourth													
Highest													
Total													

Note: ORT includes fluid prepared from oral rehydration salt (ORS) packets, pre-packaged ORS fluid, and recommended home fluids (RHF).
[1] Excludes pharmacy, shop, and traditional practitioner

This table provides information on seeking of medical care, oral rehydration therapy and drug treatment for diarrheal episodes in the two weeks preceding the survey. The table shows the percentage of children with diarrhea in the two weeks preceding the survey who received various treatments.

Table 10.9 Feeding practices during diarrhea

Percent distribution of children under age five who had diarrhea in the two weeks preceding the survey by amount of liquids and food offered compared with normal practice, the percentage of children given increased fluids and continued feeding during the diarrhea episode, and the percentage of children who continued feeding and were given ORT and/or increased fluids during the episode of diarrhea, by background characteristics [country, year]

Background characteristic	Amount of liquids given							Amount of food given							Percentage given increased fluids and continued feeding[1]	Percentage who continued feeding and were given ORT and/or increased fluids[1]	Number of children with diarrhea
	More	Same as usual	Some-what less	Much less	None	Don't know	Total	More	Same as usual	Some-what less	Much less	None	Don't know	Total			
Age in months																	
<6							100.0							100.0			
6-11							100.0							100.0			
12-23							100.0							100.0			
24-35							100.0							100.0			
36-47							100.0							100.0			
48-59							100.0							100.0			
Sex																	
Male							100.0							100.0			
Female							100.0							100.0			
Type of diarrhea																	
Non-bloody							100.0							100.0			
Bloody							100.0							100.0			
Residence																	
Urban							100.0							100.0			
Rural							100.0							100.0			
Region																	
Region 1							100.0							100.0			
Region 2							100.0							100.0			
Region 3							100.0							100.0			
Region 4							100.0							100.0			
Mother's education																	
No education							100.0							100.0			
Primary							100.0							100.0			
Secondary							100.0							100.0			
More than secondary							100.0							100.0			
Wealth quintile																	
Lowest							100.0							100.0			
Second							100.0							100.0			
Middle							100.0							100.0			
Fourth							100.0							100.0			
Highest							100.0							100.0			
Total							100.0							100.0			

Note: It is recommended that children should be given more liquids to drink during diarrhea and food should not be reduced.
[1] Continued feeding includes children who were given more, same as usual, or somewhat less food during the diarrhea episode.

The next-to-last column corresponds to MICS4 Indicator 3.8, "Oral rehydration therapy with continued feeding."

Table 10.10 Knowledge of ORS packets or pre-packaged liquids

Percentage of women age 15-49 with a live birth in the five years preceding the survey who know about ORS packets or ORS pre-packaged liquids for treatment of diarrhea by background characteristics, [country, year]

Background characteristic	Percentage of women who know about ORS packets or ORS pre-packaged liquids	Number of women
Age		
15-19		
20-24		
25-34		
35-49		
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Education		
No education		
Primary		
Secondary		
More than secondary		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		

ORS = Oral rehydration salts

Table 10.11 Disposal of children's stools

Percent distribution of youngest children under age five living with the mother by the manner of disposal of the child's last fecal matter, and percentage of children whose stools are disposed of safely, according to background characteristics, [country, year]

| Background characteristic | Manner of disposal of children's stools | | | | | | | | | Percentage of children whose stools are disposed of safely[1] | Number of children |
	Child used toilet or latrine	Put/rinsed into toilet or latrine	Buried	Put/rinsed into drain or ditch	Thrown into garbage	Left in the open	Other	Don't know/ missing	Total		
Age of child in months											
<6									100.0		
6-11									100.0		
12-23									100.0		
24-35									100.0		
36-47									100.0		
48-59									100.0		
Toilet facility[2]											
Improved, not shared									100.0		
Shared[3]											
Non-improved or shared									100.0		
Residence											
Urban									100.0		
Rural									100.0		
Region											
Region 1									100.0		
Region 2									100.0		
Region 3									100.0		
Region 4									100.0		
Mother's education											
No education									100.0		
Primary									100.0		
Secondary									100.0		
More than secondary									100.0		
Wealth quintile											
Lowest									100.0		
Second									100.0		
Middle									100.0		
Fourth									100.0		
Highest									100.0		
Total									100.0		

[1] Children's stools are considered to be disposed of safely if the child used a toilet or latrine, if the fecal matter was put/rinsed into a toilet or latrine or if it was buried
[2] See Table 2.2 for definition of categories
[3] Facilities that would be considered improved if they were not shared by two or more households

The proper disposal of children's feces is important in preventing the spread of disease. If feces are left uncontained, disease may be spread by direct contact or through animal contact. The safe disposal of children's feces is of particular importance because children's feces are more likely to be the cause of fecal contamination to the household environment than other causes as they are often not disposed of properly and may be mistakenly considered less harmful than adult feces. The table presents information on the disposal of young children's most recent stools, by background characteristics.

The revised response categories of Q554 are those proposed by WHO, UNICEF and JMP (see page 15 of Core Questions on Drinking Water and Sanitation in Household Surveys, dated August 2008, by WHO and UNICEF.

The next-to-last column corresponds to MICS4 Indicator 4.4, "Safe disposal of child's feces."

CHAPTER 11

NUTRITION OF CHILDREN AND ADULTS

This chapter covers nutritional concerns for children and adults. The section on children covers the following related topics: anthropometric assessment of the nutritional status of children under five years of age; infant and young child feeding practices, including breastfeeding and feeding with solid/semi-solid foods; diversity of foods fed; frequency of feeding; and micronutrient status, supplementation and fortification. The section on adults covers: nutritional status of women and men 15 to 49 years of age; and micronutrient status, supplementation and fortification.

Anthropometric indicators for young children and for adults provide outcome measures of nutritional status. Marked differences, especially in regard to height-for-age and weight-for-age are often seen between different subgroups of children within a country. An adult's nutritional status has important implications for the health status of the adult her/himself as well as that of the children that women may bear.

Adequate nutrition is critical to child development. The period from birth to two years of age is important to optimal growth, health and development. This period is one marked for growth faltering, micronutrient deficiencies, and common childhood illnesses, such as diarrhea and acute respiratory infections (ARI) (Black, R.E., L.H. Allen, Z.A. Bhutta, L.E. Caulfied, M. de Onis, M. Ezzati, C. Mathers, and J. Rivera, for the Maternal and Child Undernutrition Study Group. 2008. Maternal and child undernutrition: Global and regional exposures and health consequences. *Lancet* 371:243. doi:10.1016/S0140-6736(07)61690-0) .

 Optimal feeding practices reported in this chapter include early initiation of breastfeeding, exclusive breastfeeding during the first six months of life, continued breastfeeding for up to two years of age and beyond, timely introduction of complementary feeding at six months of age, frequency of feeding solid/semi solid foods, and the diversity of food groups fed to children between 6 and 23 months of age. A summary indicator of feeding practices that describes the quality of infant and young child (age 6-23 months) feeding practices (IYCF) is included.

Malnutrition in adults results in reduced productivity, an increased susceptibility to infections, retarded recovery from illness, and for women, heightened risks of adverse pregnancy outcomes. Moreover, a woman who has poor nutritional status as indicated by a low Body Mass Index (BMI), short stature, anemia, or other micronutrient deficiency has a greater risk of obstructed labor, of having a baby with a low birth weight, of producing lower quality breast milk, of mortality due to postpartum hemorrhage, and of morbidity of both herself and her baby.

Micronutrient deficiencies are a result of inadequate intake of micronutrient-rich foods and the inadequate utilization of available micronutrients in the diet due to infections, parasitic infestations, and other dietary factors. Measures of micronutrient status (anemia and night blindness), consumption of vitamin-A rich and iron-rich foods, micronutrient supplementation for iron and vitamin A, and micronutrient fortification (iodized or iodated household cooking salt) are included in this chapter for both women and children.

Table 11.1 Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, [country, year]

Background characteristic	Height-for-age[1]			Weight-for-height				Weight-for-age				Number of children
	Percent-age below -3 SD	Percent-age below -2 SD[2]	Mean Z-score (SD)	Percent-age below -3 SD	Percent-age below -2 SD[2]	Percent-age above +2 SD	Mean Z-score (SD)	Percent-age below -3 SD	Percent-age below -2 SD[2]	Percent-age above +2 SD	Mean Z-score (SD)	
Age in months												
<6												
6-8												
9-11												
12-17												
18-23												
24-35												
36-47												
48-59												
Sex												
Male												
Female												
Birth interval in months[3]												
First birth[4]												
<24												
24-47												
48+												
Size at birth[3]												
Very small												
Small												
Average or larger												
Mother's interview status												
Interviewed												
Not interviewed but in household												
Not interviewed and not in the household[5]												
Mother's nutritional status[6]												
Thin (BMI<18.5)												
Normal (BMI 18.5-24.9)												
Overweight/obese (BMI ≥25)												
Missing												
Residence												
Urban												
Rural												
Region												
Region 1												
Region 2												
Region 3												
Region 4												
Mother's education[7]												
No education												
Primary												
Secondary												
More than secondary												
Wealth quintile												
Lowest												
Second												
Middle												
Fourth												
Highest												
Total												

Note: Table is based on children who stayed in the household on the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards adopted in 2006. The indices in this table are NOT comparable to those based on the previously used 1977 NCHS/CDC/WHO Reference. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.
[1] Recumbent length is measured for children under age 2, or in the few cases when the age of the child is unknown and the child is less than 85 cm; 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] Excludes children whose mothers were not interviewed
[4] First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval
[5] Includes children whose mothers are deceased
[6] Excludes children whose mothers were not weighed and measured, children whose mothers were not interviewed, and children whose mothers are pregnant or gave birth within the preceding 2 months. Mother's nutritional status in terms of BMI (Body Mass Index) is presented in Table 11.10.1.
[7] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

NOTE TO COUNTRY MANAGERS: IN OUTPUT FROM DATA PROCESSING, PARENTHESES AROUND MEAN Z-SCORES INDICATE Z-SCORES THAT FALL BELOW ZERO. CHANGE PARENTHESES TO NEGATIVE SIGNS.

	Height or weight missing	Data quality Height/Weight			Number of children
		Data flagged	Age in months incomplete	Correct data	
Age in months					
<6					
6-8					
9-11					
12-17					
18-23					
24-35					
36-47					
48-59					
Sex					
Male					
Female					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Mother's education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

Working Table. Breakdown of Height and Weight Data (unweighted), [country, year]

The working table above shows the completeness and quality of data on anthropometry for children. As in other tables on survey coverage, the data are shown unweighted. Column 1 shows the percentage of children missing data for height or weight. Column 2 includes children whose z-scores on any of the anthropometric indices are extreme outliers (likely indicating that the data for height, weight, or age for that child are incorrect). Column 3 includes children whose month or year of birth was imputed. Column 4 shows the percentage of children whose data on height, weight, and age are present and valid; these are the children for whom the three anthropometric indices are calculated in Table 11.1. **The percentage in the total row in data column 4 should be mentioned in the text describing Table 11.1 in the final report.** This percentage should be close to 100 percent. If the percentage is below around 90 percent, concerns about the representativeness of the nutritional status data in Table 11.1 should be raised, especially if the percentage of children in column 4 varies widely background characteristics.

You must include in the text a description of the sample for anthropometry. State whether or not height and weight of children was measured in all households, or if not, describe the sub-sample.

Note that 2006 WHO Child Growth Standards are used in Table 11.1. The resulting indices are not comparable to the previously used 1977 Reference. For trends the older survey data will need to be retabulated with the new Standards.

Nutritional status, along with mortality rates, represents an outcome measure. Marked differences, especially with regard to height-for-age and weight-for-age are often seen between different subgroups within a country. It is also important to point out that there is often a marked worsening in nutritional status during the first year of life. One of the major contributions of the DHS surveys to the study of child health status is the anthropometric data collected for all children under five years of age. Both height (length) and weight measurements are obtained for each child. Employing this information, the following standard indices are used to describe the nutritional status of children:

      Height-for-age
      Weight-for-height
      Weight-for-age

The anthropometric results are influenced by the quality of the height and weight measurements on which they are based. Any evidence that the measurements may be systematically biased should be mentioned in the report. Two of the indices (height-for-age and weight-for-age) are also influenced by the accuracy of the reporting of the child's age. Patterns of age heaping should be examined to determine any possible effect on the indices.

In presenting the anthropometric results, the nutritional status of children in the survey population is compared with the 2006 WHO Child Growth standards[1] that are based on an international sample (from Brazil, Ghana, India, Norway, Oman, and the USA) of ethnically, culturally and genetically diverse, healthy children living under optimum conditions conducive to achieving a child's full genetic growth potential. The use of the 2006 WHO Child Growth Standards over the previously used 1977 NCHS/CDC/WHO Reference is due to the prescriptive rather than descriptive nature of the WHO Standards versus the NCHS Reference. The 2006 WHO Child Growth Standards identifies the breastfed child as the normative model for growth and development and documents how children should grow under optimum conditions and infant feeding and child health practices.

The use of the 2006 WHO Child Growth Standards is based on the finding that well-nourished children of all population groups for which data exist follow very similar growth patterns before puberty. The internationally-based standard population serves as a point of comparison, facilitating the examination of differences in the anthropometric status of subgroups in a population and of changes in nutritional status over time.

In any large population, there are natural variations in height and weight. These variations approximate a normal distribution with the following percentages found in each standard deviation category:

Malnutrition classification: Standard deviations from the median of the 2006 WHO Child Growth Standards population

	Severe 3.01 or below	Moderate -2.01 to -3.00	Mild -1.01 to -2.00	-1.00 to +1.00	+1.01 to +2.00	Over-nourished +2.01 or above	Total
Expected percentage	0.1	2.2	13.6	68.2	13.6	2.3	100.0

---

[1] WHO Multicentre Growth Reference Study Group. 2006. *WHO Child Growth Standards: Length/height-for-age, weight-for-age, weight-for-length, weight-for-height and body mass index-for-age: Methods and development.* Geneva. World Health Organization.

In assessing the results in Table 11.1, attention should be focused on the percentage of the DHS survey population that falls into the category of more than two standard deviations below or above the median of the Standards population. The extent to which children falling into these categories exceed 2.3 percent (the expected percentage in a well nourished population) indicates the level of specific aspects of malnutrition in the population. The percentage of children who are severely malnourished, i.e., who fall more than three standard deviations below the Standards population median, is also shown.

Prevalence (percentage) range used by WHO to categorize the public health significance of different measures of undernutrition (< -2 SD):

	Height-for-age (Stunted)	Weight-for-height (Wasted)	Weight-for-age (Underweight)
Low	<20	<5	<10
Medium	20-29	5-9	10-19
High	30-39	10-14	20-29
Very high	40+	15+	30+

It should be noted that the above categorization is not based on correlations with functional outcomes and simply reflects a convenient statistical grouping of prevalence levels from different countries (Physical Status: The use and interpretation of anthropometry, WHO Technical Report Series 1995).

The height-for-age index presented in Table 11.1 provides an indicator of linear growth retardation among children. Children who are less than two standard deviations below the median of the WHO Standards population in terms of height-for-age may be considered short for their age ("stunted") or chronically malnourished. Severe linear growth retardation ("stunting") reflects the outcome of a failure to receive adequate nutrition over a number of years and is also affected by recurrent and chronic illness. Height-for-age, therefore, represents a measure of the long-term effects of malnutrition in a population and does not vary appreciably according to the season of data collection. Stunted children are not immediately obvious in a population. For example, a stunted three-year-old child could look like a well-fed two-year old. It should be noted that, stunting usually will be greater using the 2006 WHO Child Growth Standards than the 1977 NCHS/CDC/WHO Reference but not necessarily at all ages.

The weight-for-height index looks at body mass in relation to body length. Children who are less than two standard deviations below the median of the Standards population in terms of their weight-for-height may be considered too thin ("wasted"), i.e., acutely malnourished. Wasting represents the failure to receive adequate nutrition in the period immediately before the survey and may be the result of recent illness episodes, especially diarrhea, or of seasonal variations in food supply. The difference between the 2006 WHO Standards and the 1977 Reference is that wasting often will be substantially higher during infancy using the new Standards, particularly in the first six months of life.

Weight-for-age takes into account both chronic and acute malnutrition and is often used to monitor nutritional status on a longitudinal basis. It is presented in DHS reports to allow comparison with the results of studies or clinic-based monitoring efforts that employ the weight-for-age measure. Similar to weight-for-height, this index is subject to seasonal variation. The use of the 2006 WHO Standards usually will result in substantial increases in underweight during the first 0-5 months and a decrease thereafter when compared to the 1977 Reference.

Overweight and obesity are becoming problems for some children in developing countries. The percentage of children more than two standard deviations above the median for weight-for-height indicates the level of this potential problem. The 2006 WHO Standards will result in a greater prevalence of overweight compared to the 1977 Reference that will vary by age, sex and nutritional status of the

index population. The percentage of children more than two standard deviations above the median for weight-for-age is included here in order to compare with other data sources that did not measure height. Children who are more than two standard deviations above the median for height-for-age are overly tall. However since being overly tall is not considered a health problem, the percentages are not shown here.

The mean z-score is calculated as one of the summary statistics to represent the nutritional status of children in a population. This indicator describes the nutritional status of the population as a whole without the use of a cut-off. A mean z-score of less than 0, i.e., a negative value, for stunting, wasting, or underweight, suggests the nutritional status of the survey population is poorer on average than that of the WHO Growth Standards population.

The percentage of children not measured should be mentioned in the text. Data processing will prepare a working table to show missing information. The age groups 6-8, 9-11, 12-17, 18-23 and 24-35 are included in conformance with the age groups for which there are infant and young child feeding recommendations and if there are too few cases, can be combined as follows (<6, 6-11, 12-23, 24+ months).

Data column 9 corresponds to MDG Indicator 1.8, "Prevalence of underweight children under five years of age" and MICS4 Indicator 2.1a, Underweight prevalence: moderate and severe.
Data column 8 corresponds to MICS4 Indicator 2.1b, Underweight prevalence: severe.
Data column 2 corresponds to MICS4 Indicator 2.2a, Stunting prevalence: moderate and severe.
Data column 1 corresponds to MICS4 Indicator 2.2b, Stunting prevalence: severe.
Data column 5 corresponds to MICS4 Indicator 2.3a, Wasting prevalence: moderate and severe.
Data column 4 corresponds to MICS4 Indicator 2.3b, Wasting prevalence: severe.

Tabulation for Figure 11.1 on nutritional status of children, not to be shown as a table in the report:

Nutritional status of children by age [Line graph only]

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height for age, weight for height, and weight for age, by child's age in months, smoothed by a five-month moving average,[country, year]

Age in months	Height-for-age Percentage below -2SD[1]	Weight-for-height Percentage below -2SD[1]	Weight-for-age Percentage below -2SD[1]	Number of children
0				
1				
2				
3				
59				

Note: Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards.
[1] Includes children who are below -3 standard deviations from the WHO Child Growth Standards median

Figure 11.1
Nutritional status of children by age
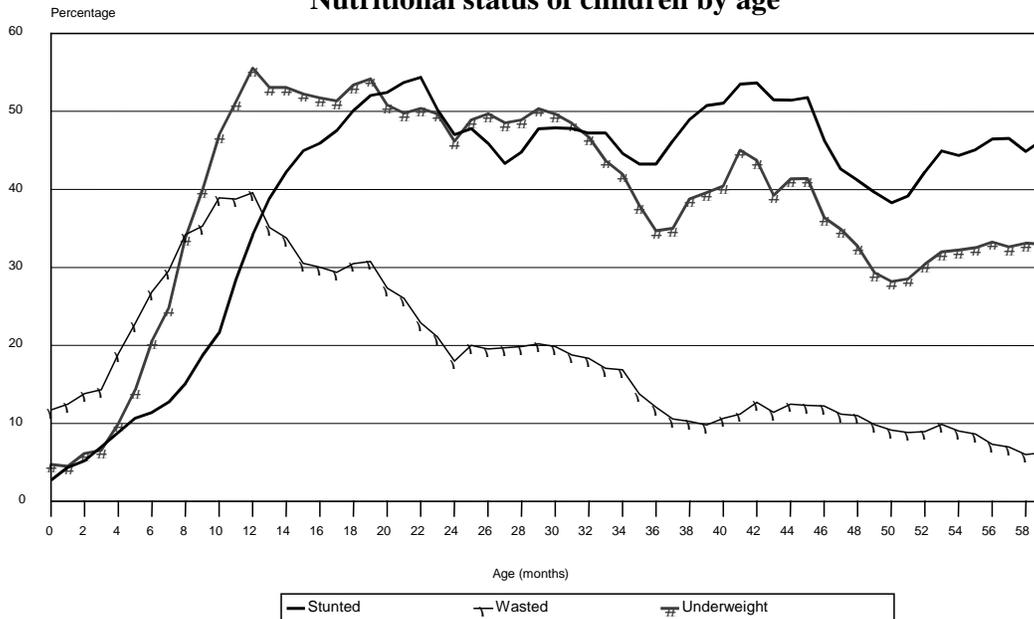
Note: *Stunting* reflects chronic malnutrition; *wasting* reflects acute malnutrition; *underweight* reflects chronic or acute malnutrition or a combination of both. Plotted values are smoothed by a 5-month moving average.

Source: Country and year

161

Figure 11.2

Trends in Nutritional Status of Children under Five Years

Note: *Stunting* reflects chronic malnutrition; *Wasting* reflects acute malnutrition; *Underweight* reflects chronic or acute malnutrition or a combination of both.
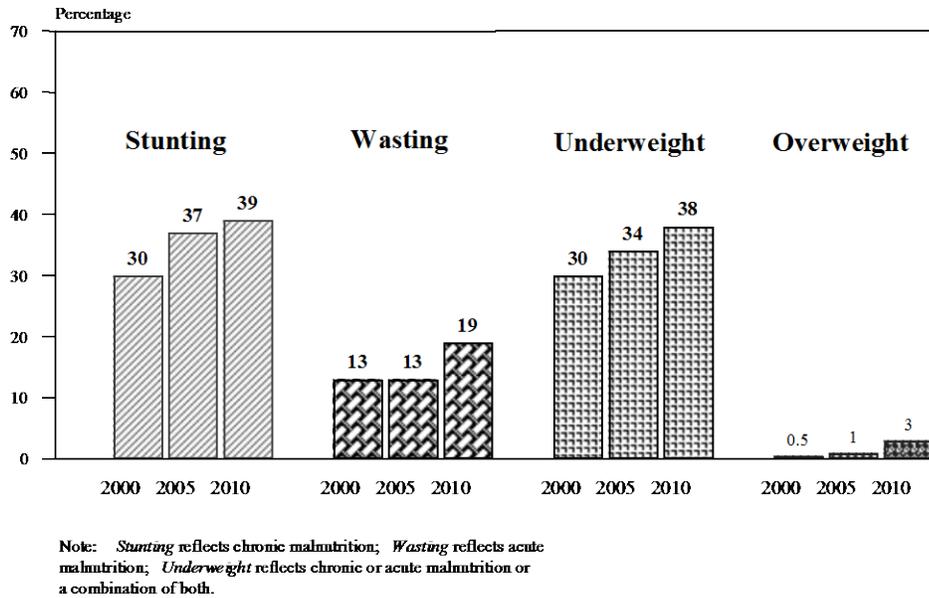
To make comparisons across survey years in Figure 11.2 meaningful, anthropometric data from prior years will have to be reanalyzed using the new WHO Child Growth Standards. In addition, since data from prior surveys are based on children whose mothers were interviewed, only years in which data are comparable should be included in this figure, e.g., most recent survey years in which all children were included. If all survey years are included, a footnote should be added noting that the chart is based only on children whose mothers were interviewed.

Table 11.2 Initial breastfeeding

Among last-born children who were born in the two years preceding the survey, the percentage who were ever breastfed and the percentages who started breastfeeding within one hour and within one day of birth; and among last-born children born in the two years preceding the survey who were ever breastfed, the percentage who received a prelacteal feed, by background characteristics, [country, year]

Background characteristic	Among last-born children born in the past two years:				Among last-born children born in the past two years who were ever breastfed:	
	Percentage ever breastfed	Percentage who started breastfeeding within 1 hour of birth	Percentage who started breastfeeding within 1 day of birth[1]	Number of last-born children	Percentage who received a prelacteal feed[2]	Number of last-born children ever breastfed
Sex						
Male						
Female						
Assistance at delivery						
Health personnel[3]						
Traditional birth attendant						
Other						
No one						
Place of delivery						
Health facility						
At home						
Other						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Mother's education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

Note: Table is based on last-born children born in the two years preceding the survey regardless of whether the children are living or dead at the time of interview.
[1] Includes children who started breastfeeding within one hour of birth
[2] Children given something other than breast milk during the first three days of life
[3] Doctor, nurse/midwife, or auxiliary nurse/midwife

Tables 11.2 through 11.6 describe infant and young child feeding (IYCF) practices. Early breastfeeding practices determine the successful establishment and duration of breastfeeding. It is recommended that children be put to the breast immediately or within one hour after birth. During the first three days after delivery, colostrum, an important source of nutrition and protection to the newborn, is produced and should be given to the newborn while awaiting the production of regular breast milk. Footnote 3 should be modified for each country.

Table 11.2 shows the percentage of all last-born children born in the past two years who ever breastfed and who started initial breastfeeding within 1 hour or 1 day of birth, and the percentage of ever-breastfed, last-born children born in the past two years who were given a prelacteal feed (anything

other than breast milk before breast milk was regularly given). Characteristics of the infant and mother, type of delivery attendant and place of delivery may have important influences on these early breastfeeding practices.

Data column 1 corresponds to IYCF Indicator 9 and MICS4 Indicator 2.4, "Children ever breastfed."
Data column 2 corresponds to IYCF Indicator 1: Early initiation of breastfeeding.

Table 11.3 Breastfeeding status by age

Percent distribution of youngest children under two years who are living with their mother by breastfeeding status and the percentage currently breastfeeding; and the percentage of all children under two years using a bottle with a nipple, according to age in months, [country, year]

Age in months	Breastfeeding status							Percentage currently breast-feeding	Number of youngest children under two years living with the mother	Percentage using a bottle with a nipple	Number of all children under two years
	Not breast-feeding	Exclusively breastfed	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				
0-1							100.0				
2-3							100.0				
4-5							100.0				
6-8							100.0				
9-11							100.0				
12-17							100.0				
18-23							100.0				
0-3							100.0				
0-5							100.0				
6-9							100.0				
12-15							100.0				
12-23							100.0				
20-23							100.0				

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, non-milk liquids, 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

UNICEF and WHO recommend that children be exclusively breastfed (no other complementary liquid or solid food or plain water) during the first 6 months of life and that children be given solid/semisolid complementary food in addition to continued breastfeeding beginning with when the child is six months old. Note that previous surveys used children age 6-9 months for the indicator of timely complementary feeding. That indicator is no longer current. It is also recommended that breastfeeding be continued throughout the second year of life. Use of bottles with nipples is not recommended at any age.

Table 11.3 includes data for the following indicators:

MICS Indicator 2.6, "Exclusive breastfeeding under 6 months." Note that the MICS indicator makes a specific point of including in exclusive breastfeeding children who received ORS, vitamins, mineral supplements and medicines in addition to breastmilk. The DHS questionnaire does not ask comparable questions on all of these items.
MICS Indicator 2.7, "Continued breastfeeding at 1 year"
MICS Indicator 2.8, "Continued breastfeeding at 2 years"
MICS Indicator 2.9, "Predominant breastfeeding under 6 months"
MICS Indicator 2.12, "Introduction of solid, semi-solid, or soft foods"
PEPFAR Indicator P1.6.D, "Percentage of infants by feeding type"
IYCF 2: Exclusive breastfeeding under 6 months
IYCF 3: Continued breastfeeding at 1 year
IYCF 10: Continued breastfeeding at 2 years

The data for all children by two-month age groups can be graphed in an area graph with age on the horizontal axis and the various feeding categories shown as distinct areas that sum to 100 percent (Figure 11.4).

Figure 11.3
Infant Feeding Practices by Age

Age group in months

[country, year]
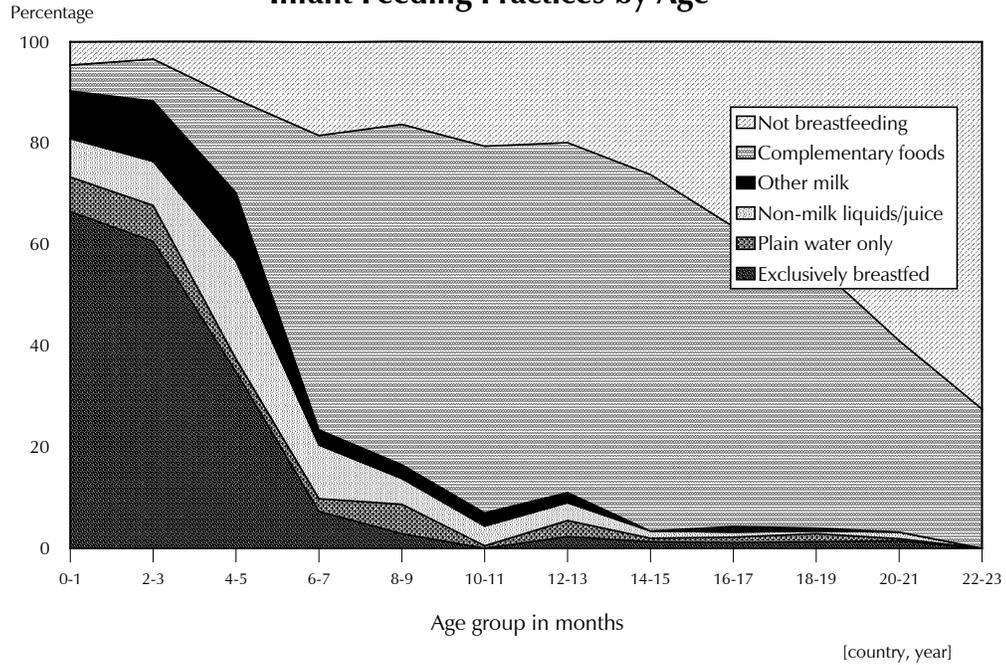
In the working table for Figure 11.4, all definitions, with the exception of IYCF 4, refer to Table 11.3. Indicators 2, 3, 10 and "Exclusive breastfeeding at 4-5 months of age" appear in single cells in Table 11.3. Indicators 11, 12 and 14 require further calculation.

Working Table for Figure 11.4. IYCF indicators on breastfeeding status		
Indicator	Definition	Value
Exclusive breastfeeding under 6 months	**Numerator**: column 2 "Exclusively breastfed" **Denominator**: 0-5 months row	31.7
Exclusive breastfeeding at 4-5 months of age	**Numerator:** column 2 "Exclusively breastfed" **Denominator:** 4-5 months row	22.5
Continued breastfeeding at 1 year	**Numerator**: column 8 "Percentage currently breastfeeding" **Denominator**: 12-15 months row	86.4
Introduction of solid, semi-solid or soft foods (6-8 months)	**Numerator**: Infants 6-8 months (breastfed and non-breastfed) who received any solid, semi-solid or soft foods during the previous day **Denominator**: Youngest children 6-8 months of age living with the mother	73.5
Continued breastfeeding at 2 years	**Numerator**: column 8 "Percentage currently breastfeeding" **Denominator**: 20-23 months row	24.2
Age-appropriate breastfeeding (0-23 months)	**Numerator**: Children age 0-5 months who are exclusively breastfed (column 2) + number of children age 6-23 months who receive breastmilk (column 8) and complementary foods (column 6) **Denominator**: Youngest children 0-23 months of age living with the mother	18.0
Predominant breastfeeding (0-5 months)	**Numerator**: Children exclusively breastfed (column 2) + number of children given plain water (column 3) + number of children given non-milk liquids/juice (column 4) **Denominator**: 0-5 months row	93.9
Bottle feeding (0-23 months)	**Numerator**: Column 10 "Percentage using a bottle with a nipple" **Denominator**: All children 0-23 months	8.7

Figure 11.4 IYCF Indicators on Breastfeeding Status

Percentage of children
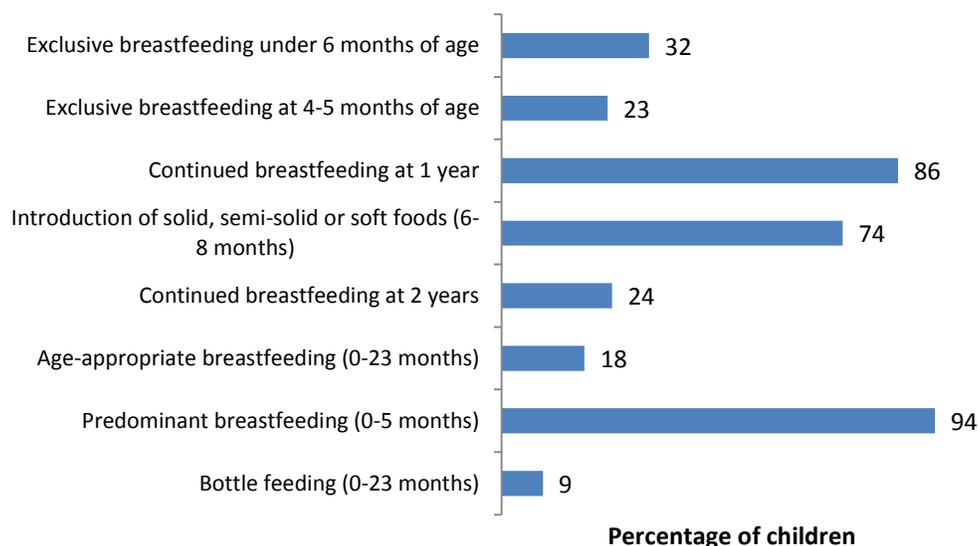
Table 11.4 Median duration of breastfeeding

Median duration of any breastfeeding, exclusive breastfeeding, and predominant breastfeeding among children born in the three years preceding the survey, by background characteristics, [country, year]

Background characteristic	Median duration (months) of breastfeeding among children born in the past three years[1]		
	Any breast-feeding	Exclusive breast-feeding	Predominant breast-feeding[2]
Sex			
Male			
Female			
Residence			
Urban			
Rural			
Region			
Region 1			
Region 2			
Region 3			
Region 4			
Mother's education			
No education			
Primary			
Secondary			
More than secondary			
Wealth quintile			
Lowest			
Second			
Middle			
Fourth			
Highest			
Total			
Mean for all children			

Note: Median and mean durations are based on the distributions at the time of the survey of the proportion of births by months since birth. Includes children living and deceased at the time of the survey.
[1] It is assumed that non-last-born children and last-born children not currently living with the mother are not currently breastfeeding
[2] Either exclusively breastfed or received breast milk and plain water, and/or non-milk liquids only

Estimates of means and medians are based on the current status proportions at each time since birth (duration) group. Non-surviving children are included. The distributions of the proportion of births by the month of birth of the child are analogous to the lx column of the synthetic life table. For purposes of providing some stability to the proportions, the birth data should be grouped in two or three month intervals. The lx values should decline with duration but small sample sizes may cause some irregularity. Data on predominant and exclusive breastfeeding is not collected for all children age 24-35 months. For all children in this age group, if they are breastfeeding, we assume that they are not exclusively breastfed and not predominantly breastfed.

Before estimating the median, the distribution is smoothed by a moving average of three age groups. The first age (duration) for which the proportion falls below 0.50 is used for the calculation of the median by linear interpolation between that age group and the next youngest group. The width of the first interval will be taken to be 1.50 months (using 0.50 months for children born in the month of interview).

Estimation of the mean durations will be done using the current status proportions by summing the

product of the proportion (not in percents) and width of the age (duration) interval. To this sum will be added one half the width of the lowest duration interval (i.e., 0.75).

To check n's for median duration of breastfeeding in Table 11.4, follow the same procedures outlined in the text accompanying Table 5.7. Use the weighted working table T1104W and the unweighted working table T1104S.

Data column 1 corresponds to IYCF Indicator 13 and MICS4 Indicator 2.10, "Duration of breastfeeding."

Table 11.5 Foods and liquids consumed by children in the day or night preceding the interview

Percentage of youngest children under two years of age who are living with the mother by type of foods consumed in the day or night preceding the interview, according to breastfeeding status and age, [country, year]

| Age in months | Liquids | | | Solid or semi-solid foods | | | | | | | | | | Number of children |
	Infant formula	Other milk[1]	Other liquids[2]	Fortified baby foods	Foods made from grains[3]	Fruits and vegetables rich in vitamin A[4]	Other fruits and vege-tables	Food made from roots and tubers	Food made from legumes and nuts	Meat, fish, poultry	Eggs	Cheese, yogurt, other milk product	Any solid or semi-solid food	
BREASTFEEDING CHILDREN														
0-1														
2-3														
4-5														
6-8														
9-11														
12-17														
18-23														
24-35														
6-23														
Total														
NONBREASTFEEDING CHILDREN														
0-1														
2-3														
4-5														
6-8														
9-11														
12-17														
18-23														
24-35														
6-23														
Total														

Note: Breastfeeding status and food consumed refer to a "24-hour" period (yesterday and last night).
[1] Other milk includes fresh, tinned and powdered animal milk
[2] Does not include plain water. Includes juice, juice drinks, clear broth, or other non-milk liquids.
[3] Includes fortified baby food
[4] Includes [list fruits and vegetables included in the questionnaire such as pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, dark green leafy vegetables, mangoes, papayas, and other locally grown fruits and vegetables that are rich in vitamin A]

The percentages of children consuming indicated liquids and food are not exclusive. If age categories are to be collapsed due to small numbers of cases, it is recommended that they be aggregated into age groups such as < 6, 6-11, 12-23, and 24-35.

Table 11.6 Infant and young child feeding (IYCF) practices

Percentage of youngest children age 6-23 months living with their mother who are fed according to three IYCF practices based on breastfeeding status, number of food groups, and times they are fed during the day or night preceding the survey, by background characteristics, [country, year]

Background characteristic	Among breastfed children 6-23 months, percentage fed:			Number of breast-fed children 6-23 months	Among non-breastfed children 6-23 months, percentage fed:				Number of non-breastfed children 6-23 months	Among all children 6-23 months, percentage fed:				Number of all children 6-23 months
	4+ food groups[1]	Minimum meal frequency[2]	Both 4+ food groups and mini-mum meal frequency		Milk or milk products[3]	4+ food groups[1]	Minimum meal frequency[4]	With 3 IYCF prac-tices[5]		Breast milk, milk, or milk products[6]	4+ food groups[1]	Minimum meal frequency[7]	With 3 IYCF prac-tices	
Age in months														
6-8														
9-11														
12-17														
18-23														
Sex														
Male														
Female														
Residence														
Urban														
Rural														
Region														
Region 1														
Region 2														
Region 3														
Region 4														
Mother's education														
No education														
Primary														
Secondary														
More than secondary														
Wealth quintile														
Lowest														
Second														
Middle														
Fourth														
Highest														
Total														

[1] Food groups: a. infant formula, milk other than breast milk, cheese or yogurt or other milk products; b. foods made from grains, roots, and tubers, including porridge and fortified baby food from grains; c. vitamin A-rich fruits and vegetables (and red palm oil); d. other fruits and vegetables; e. eggs; f. meat, poultry, fish, and shellfish (and organ meats); g. legumes and nuts.
[2] For breastfed children, minimum meal frequency is receiving solid or semi-solid food at least twice a day for infants 6-8 months and at least three times a day for children 9-23 months
[3] Includes two or more feedings of commercial infant formula, fresh, tinned and powdered animal milk, and yogurt
[4] For non-breastfed children age 6-23 months, minimum meal frequency is receiving solid or semi-solid food or milk feeds at least four times a day
[5] Non-breastfed children age 6-23 months are considered to be fed with a minimum standard of three Infant and Young Child Feeding Practices if they receive other milk or milk products at least twice a day, receive the minimum meal frequency, and receive solid or semi-solid foods from at least four food groups not including the milk or milk products food group
[6] Breastfeeding, or not breastfeeding and receiving two or more feedings of commercial infant formula, fresh, tinned, and powdered animal milk, and yogurt
[7] Children are fed the minimum recommended number of times per day according to their age and breastfeeding status as described in footnotes 2 and 4

Column 5 corresponds to IYCF Indicator 15 and MICS4 Indicator 2.15, "Milk feeding for non-breastfed children."
Column 11 corresponds to IYCF Indicator 5, "Minimum dietary diversity"
Column 12 corresponds to IYCF Indicator 6 and MICS4 Indicator 2.13, "Minimum meal frequency"
Column 13 corresponds to IYCF Indicator 7, "Minimum acceptable diet"

Appropriate Infant and Young Child Feeding (IYCF) practices include timely initiation of feeding solid/semi-solid foods from age 6 months and improving the quality of foods consumed as the child gets older, while maintaining breastfeeding *(World Health Organization (WHO). 2008. Indicators for assessing infant and young child feeding practices. Part I: Definitions. Conclusions of a consensus meeting held 6-8 November 2007 in Washington DC, USA. Available at: http://whqlibdoc.who.int/publications/2008/9789241596664_eng.pdf)*.

Appropriate nutrition includes feeding 6-23 months old children a variety of foods at desired number of times to ensure that their nutrient and caloric requirements are met. Studies have shown that just plant-based complementary foods by themselves are insufficient to meet the needs of young children for certain micronutrients (*WHO/UNICEF. 1998. Complementary feeding of young children in developing countries: a review of current scientific knowledge. Geneva: World Health Organization, WHO/NUT98.1.*) . Therefore it has been advised that meat, poultry, fish or eggs should be eaten daily, or as often as possible. Vegetarian diets may not meet children's nutrient requirements unless supplements or fortified products are used. Vitamin-A rich fruits and vegetables should be consumed daily to achieve the proven health benefits associated with vitamin-A (*Allen, L. H., and S. R. Gillespie. 2001. "What Works? A Review of the Efficacy and Effectiveness of Nutrition Interventions." ACC/SCN Nutrition Policy Paper 19; Asian Development Bank (ADB) Nutrition and Development Series 5, United Nations Administrative Committee on Coordination/Sub-Committee on Nutrition, Geneva; ADB, Manila*). Tea and coffee contain compounds that inhibit iron absorption and are not recommended for children. Sugary drinks and excessive juice consumption should be avoided because other than energy, they contribute little to the diet and as a result decrease the child's appetite for more nutritious foods (*PAHO/WHO. 2003. Guiding Principles for Complementary Feeding of the Breastfed Child. Washington, D.C./Geneva, Switzerland: PAHO/WHO, 2003*).

Although it is internationally recommended that infants should be breastfed for up to two years, there are a number of infants who will not have the benefits of breastfeeding or who will have stopped breastfeeding before two years. Guidelines have been developed for this group of children who may not be breastfed because of mothers' known HIV positive status, or whose mothers have died or for some other reason do not breastfeed (*Guiding Principles for Feeding Nonbreastfed Children 6 to 24 Months of Age*, Geneva, Switzerland: WHO, 2005. Available at: http://www.helid.desastres.net/pdf/s13445e/s13445e.pdf). The **non-breastfed child** is recommended to be fed milk or milk product at least twice a day in addition to the solid/semi-solid foods 4-5 times per day between the ages of 6 and 23 months (WHO, 2008).

In summary,

- **Breastfed children** 6-23 months should receive animal source foods and vitamin A-rich fruits and vegetables daily (PAHO/WHO, 2003). Since first foods almost universally include a grain- or tuber-based staple, it is unlikely that young children who eat two or fewer food groups will receive both an animal-source food and a vitamin A-rich fruit or vegetable. Therefore, four food groups are considered as the minimum acceptable number of food groups for breastfed infants (*Arimond, M. and Marie T. Ruel. 2003. Generating Indicators of Appropriate Feeding of Children 6 through 23 Months from the KPC 2000+. Report- Food and Nutrition Technical Assistance Project (FANTA), AED, Washington DC*. Available at: http://pdf.usaid.gov/pdf_docs/PNACW465.pdf). Breastfed infants 6-8 months should be fed meals of complementary foods two to three times per day, with one to two snacks as desired; breastfed children 9-23 months should be fed meals three to four times per day, with one to two snacks. The table shows the percentage of breastfed children who were fed at least the minimum number of times for their age (i.e., at least twice for infants 6-8 months and at least three times for children 9-23 months) (WHO, 2008).

- **Non-breastfed children** 6-23 months should receive milk products at least twice a day to ensure their calcium needs are met. In addition, they need animal-source foods and vitamin A-rich fruits

and vegetables. Therefore, four food groups are considered as a minimum acceptable number of food groups for non-breastfed young children. Non-breastfed children should be fed meals four to five times per day, with one to two snacks as desired (WHO, 2005). Meal frequency is considered a proxy for energy intake from foods other than breast milk, therefore, feeding frequency indicator for non-breastfed children includes both milk feeds and solid/semi-solid feeds (WHO, 2008). The table shows the percentage of non-breastfed children ages 6-23 who were fed at least the minimum number of times including milk-feeds (i.e., at least four per day).

Working Table. Infant and young child feeding (IYCF) practices according to DHS-V calculation

Percentage of youngest children age 6-23 months living with their mother who are fed according to three IYCF practices based on breastfeeding status, number of food groups, and times they are fed during the day or night preceding the survey, by background characteristics, [country, year]

| Background characteristic | Among breastfed children 6-23 months, percentage fed: | | | Number of breast-fed children 6-23 months | Among non-breastfed children 6-23 months, percentage fed: | | | | Number of non-breastfed children 6-23 months | Among all children 6-23 months, percentage fed: | | | | Number of all children 6-23 months |
	3+ food groups[1]	Minimum meal frequency[2]	Both 3+ food groups and minimum meal frequency		Milk or milk products[3]	4+ food groups[1]	Minimum meal frequency[4]	With all 3 IYCF prac-tices[5]		Breast milk, milk, or milk products[6]	3+ or 4+ food groups[7]	Minimum meal frequency[8]	With all 3 IYCF prac-tices	
Total														

[1] Food groups: a. infant formula, milk other than breast milk, cheese or yogurt or other milk products; b. foods made from grains, roots, and tubers, including porridge and fortified baby food from grains; c. vitamin A-rich fruits and vegetables (and red palm oil); d. other fruits and vegetables; e. eggs; f. meat, poultry, fish, and shellfish (and organ meats); g. legumes and nuts; h. foods made with oil, fat, or butter.
[2] For breastfed children, minimum meal frequency is receiving solid or semi-solid food at least twice a day for infants 6-8 months and at least three times a day for children 9-23 months
[3] Includes at least one feeding of commercial infant formula, fresh, tinned and powdered animal milk, yogurt, cheese and other milk products
[4] For non-breastfed children age 6-23 months, minimum meal frequency is receiving solid or semi-solid food at least four times a day
[5] Non-breastfed children age 6-23 months are considered to be fed with a minimum standard of three Infant and Young Child Feeding Practices if they receive other milk or milk products at least once a day, receive solid or semi-solid foods at least four times a day, and receive solid or semi-solid foods from at least four food groups (including the milk or milk products food group)
[6] Breastfeeding or not breastfeeding and receiving two or more feedings of commercial infant formula, fresh, tinned, and powdered animal milk, and yogurt
[7] At least 3 food groups for breastfed children and at least 4 food groups for non-breastfed children
[8] Fed solid or semi-solid food at least twice a day for infants 6-8 months, at least 3 times for other breastfed children, and at least 4 times for non-breastfed children

Changes in the definitions of the standard IYCF indicators (such as the removal of 'foods made with fats' as a food group, the requirement that breastfed children receive 4 instead of 3 food groups, the requirement that non-breastfed children receive 2+ servings of milk or milk products, and the removal of cheese from the milk or milk products group) create a problem for comparison of trends in IYCF practices between round 5 and round 6 DHS surveys. The new definitions are more restrictive, resulting in a decrease in the percentage fed with an adequate diet. The working table above provides data for the current survey according to the old definitions. These numbers can be discussed in the text for comparison with the previous survey (if any).

Checking Figure 11.5: These numbers should match numbers from the total row of Table 11.6.

- IYCF 5 is equal to the column "4+ food groups"
- IYCF 6 is equal to "Minimum times or more"
- IYCF 7 is equal to "Both 4+ food groups and minimum times or more" for breastfed children and "With all 3 IYCF practices" for non-breastfeed children and all children.

Figure 11.5 IYCF Indicators on Minimum Acceptable Diet
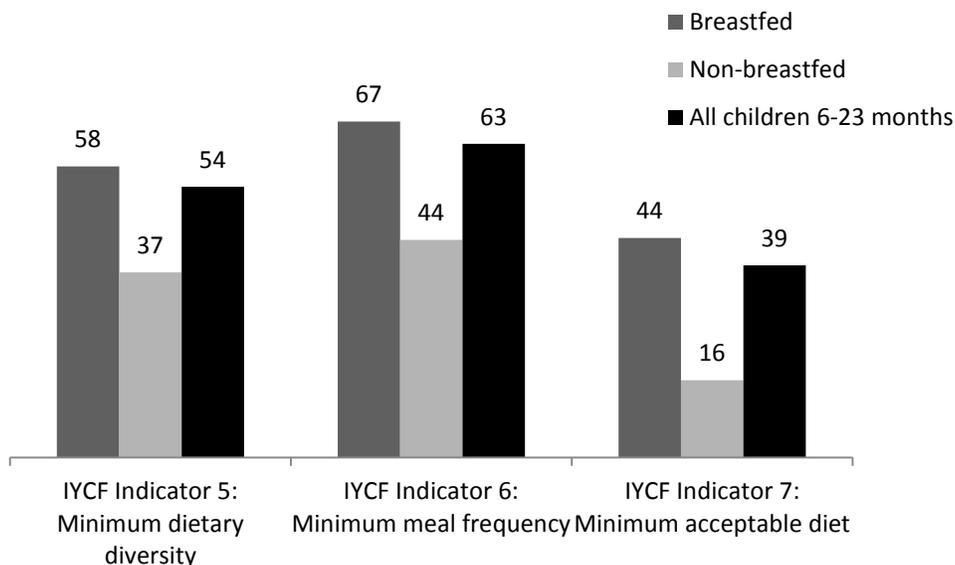
Figure 11.5 shows the percentage of youngest children age 6-23 months living with the mother fed according to a minimum standard of acceptable feeding practices. The minimum standard of infant and young child feeding (IYCF) practices for children 6-23 months are defined as follows: continued breastfeeding, and feeding at least the minimum number of times per day (according to age), and the minimum number of food groups per day. Results are presented for all children based on these criteria. However, not all infants and young children are breastfed, and it is important to assess quality of feeding separately for non-breastfed infants and young children. For non-breastfed children, the criteria reflected under "With all IYCF practices" are: receiving other milk or milk products (i.e., commercially produced infant formula, tinned, powdered, and fresh animal milk, cheese, yogurt and other milk products) the minimum number of times recommended, having been fed at least the minimum number of times and minimum number of food groups appropriate for non-breastfed infants and young children. (See notes following Table 11.6)

Table 11.7 Prevalence of anemia in children

Percentage of children age 6-59 months classified as having anemia, by background characteristics, [country, year]

| Background characteristic | Anemia status by hemoglobin level | | | | Number of children |
	Any anemia (<11.0 g/dl)	Mild anemia (10.0-10.9 g/dl)	Moderate anemia (7.0-9.9 g/dl)	Severe anemia (<7.0 g/dl)	
Age in months					
6-8					
9-11					
12-17					
18-23					
24-35					
36-47					
48-59					
Sex					
Male					
Female					
Mother's interview status					
Interviewed					
Not interviewed, but in household					
Not interviewed, and not in the household[1]					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Mother's education[2]					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

Note: Table is based on children who stayed in the household on the night before the interview and who were tested for anemia. Prevalence of anemia, based on hemoglobin levels, is adjusted for altitude using formulas in CDC, 1998. Hemoglobin in grams per deciliter (g/dl).
[1] Includes children whose mothers are deceased
[2] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

Table 11.7 presents anemia prevalence among children 6 to 59 months of age, according to selected background characteristics. Unadjusted (i.e., measured) values of hemoglobin are obtained using the HemoCue instrument. Given that hemoglobin requirements differ substantially depending on altitude, an adjustment to sea-level equivalents is made before classifying children by level of anemia.

Children <6 months are not included in the results because they have higher levels of hemoglobin at birth and just after birth, and including them may distort prevalence of anemia. However if anemia rates are high in the 6-8 months age group then it is likely that some children <6 months also may be anemic. The percentage of children not measured should be mentioned in the text. A working table will be prepared to show missing information as in the nutritional status tables. The complete reference for CDC, 1998 is *Centers for Disease Control and Prevention. 1998. Recommendations to prevent and control iron deficiency in the United States. Morbidity and Mortality Weekly Report 47 (RR-3): 1-29.* A working table with unadjusted anemia estimates will be produced. A discussion of the impact of the adjustment should be included in the text.

Micronutrient deficiencies are serious contributors to morbidity and mortality. The survey collects data concerning anemia status, consumption of vitamin A-rich and iron-rich foods, micronutrient supplementation (vitamin A and iron), and presence of iodized salt in households.

Iron deficiency is one of the most prevalent nutrient deficiencies in the world affecting an estimated two billion people. Young children and pregnant and postpartum women are the most severely affected because of the high iron demands of infant growth and pregnancy. Anemia is the condition of low levels of hemoglobin in the blood. This results in a reduced amount of oxygen being transported in the body. Iron is a main component of hemoglobin, and iron deficiency is estimated to be responsible for half of all anemia globally. Other causes of anemia include malaria, hookworm and other helminthes, other nutritional deficiencies, chronic infections, genetic conditions which vary by region (such as sickle cell and thalassemia), HIV/AIDS, and high fertility. Anemia is a serious concern for children because it can impair cognitive development, stunt growth and increase morbidity from infectious diseases. Information on the prevalence of anemia can be useful for the development of health-intervention programs designed to prevent anemia, such as promoting consumption of iron rich foods, iron supplementation, food fortification and deworming programs as appropriate.

Prevalence (%) range proposed by WHO to categorize public health significance of anemia:

Classification	Public health significance	Prevalence range
Normal	(Acceptable)	<5.0%
Medium	(Poor)	5.0-19.9%
High	(Serious)	20.0-39.9%
Very high	(Critical)	40.0% or more

(Iron Deficiency Anemia, Assessment, Prevention, and Control, A guide for programme managers WHO 2001)

Figure 11.6

Trends in Anemia Status among Children 6-59 Months
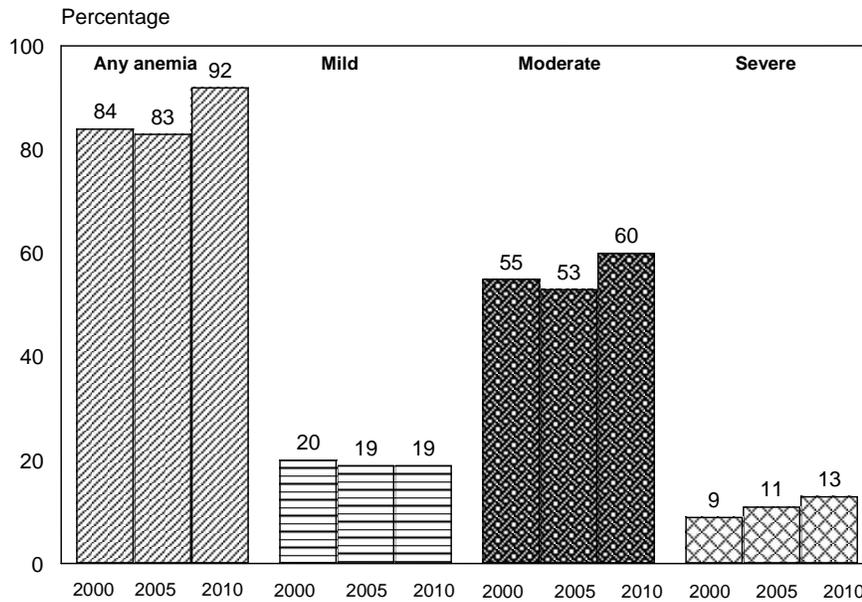
Because data from prior surveys may be based only on children whose mothers were interviewed, only years in which data are comparable should be included, i.e., either most recent survey years in which all children were included. If all survey years are included, a footnote should be added noting that the chart is based only on children whose mothers were interviewed.

Table 11.8 Micronutrient intake among children

Among youngest children age 6-23 months who are living with their mother, the percentages who consumed vitamin A-rich and iron-rich foods in the day or night preceding the survey, and among all children 6-59 months, the percentages who were given vitamin A supplements in the six months preceding the survey, who were given iron supplements in the past seven days, and who were given deworming medication in the six months preceding the survey, and among all children age 6-59 months who live in households that were tested for iodized salt, the percentage who live in households with iodized salt, by background characteristics, [country, year]

Background characteristic	Among youngest children age 6-23 months living with the mother:			Among all children age 6-59 months:				Among children age 6-59 months living in households tested for iodized salt:	
	Percentage who consumed foods rich in vitamin A in past 24 hours[1]	Percentage who consumed foods rich in iron in past 24 hours[2]	Number of children	Percentage given vitamin A supplements in past 6 months	Percentage given iron supplements in past 7 days	Percentage given deworming medication in past 6 months[3]	Number of children	Percentage living in house holds with iodized salt[4]	Number of children
Age in months									
6-8									
9-11									
12-17									
18-23									
24-35	na	na	na						
36-47	na	na	na						
48-59	na	na	na						
Sex									
Male									
Female									
Breastfeeding status									
Breastfeeding									
Not breastfeeding									
Mother's age									
15-19									
20-29									
30-39									
40-49									
Residence									
Urban									
Rural									
Region									
Region 1									
Region 2									
Region 3									
Region 4									
Mother's education									
No education									
Primary									
Secondary									
More than secondary									
Wealth quintile									
Lowest									
Second									
Middle									
Fourth									
Highest									
Total									

Note: Information on vitamin A is based on both mother's recall and the immunization card (where available). Information on iron supplements and deworming medication is based on the mother's recall.

na = Not applicable

[1] Includes meat (and organ meat), fish, poultry, eggs, pumpkin, red or yellow yams or squash, carrots, red sweet potatoes, dark green leafy vegetables, mango, papaya, and other locally grown fruits and vegetables that are rich in vitamin A, and red palm oil [if data are collected]

[2] Includes meat (including organ meat), fish, poultry, and eggs

[3] Deworming for intestinal parasites is commonly done for helminths and for schistosomiasis.

[4] Excludes children in households in which salt was not tested.

178

Vitamin A is an essential micronutrient for the immune system and plays an important role in maintaining the epithelial tissue in the body. Severe vitamin A deficiency (VAD) can cause eye damage (xerophthalmia) leading to blindness and can increase the severity of infections and cause slow recovery from illness. Globally, VAD is the leading cause of childhood blindness. Children who have VAD have reduced immunity and are less likely to recuperate from common childhood illnesses, such as diarrhea, ARI, and measles, and are twice a likely to die as children who do not have VAD. VAD is common in dry environments where fresh fruits and vegetables are not readily available. Children can obtain vitamin A from foods such as breast milk, liver, eggs, fish, butter, red palm oil, mangos, papayas, carrots, pumpkins, and dark green leafy vegetables and fortified foods. Since vitamin A is a fat-soluble vitamin, consumption of oil or fat is necessary for its absorption into the body. The liver can store an adequate amount of the vitamin for four to six months. Periodic dosing (every 6 months) with vitamin A supplements is a rapid, low-cost method of ensuring that children at risk do not develop VAD.

Dietary deficiency of iodine constitutes a major, global, public health concern. A lack of sufficient iodine is known to cause goiter, cretinism (a severe form of neurological defect), spontaneous abortion, premature birth, infertility, stillbirth, and increased child mortality. Iodine deficiency disorder (IDD) is the single most common cause of preventable mental retardation and brain damage. Since iodine cannot be stored for long periods by the body, tiny amounts are needed regularly. Where soil and therefore crops and grazing animals do not provide sufficient dietary iodine to the population, and where seafood is not regularly consumed, food fortification has proven to be a highly successful and sustainable intervention. The fortification of salt with iodine is the most common method of preventing IDD. Fortified salt that contains 15 parts per million (ppm) of iodine is considered adequate for the prevention of IDD; however, field test kits are not considered precise enough to quantify the amount of iodine in salt. The DHS reports only whether the salt is iodized (with potassium iodide or potassium iodate) or not. When vulnerable populations do not have access to fortified foods such as iodized salt, a short-term solution is supplementation with capsules containing iodized oil.

Data column 4 corresponds to MICS4 Indicator 2.17, "Vitamin A supplementation (children under age 5)."

Table 11.9 Presence of iodized salt in household

Among all households, the percentage with salt tested for iodine content and the percentage with no salt in the household; and among households with salt tested, the percentage with iodized salt, according to background characteristics, [country, year]

	Among all households, the percentage:			Among households with tested salt:	
Background characteristic	With salt tested	With no salt in the household	Number of households	Percentage with iodized salt	Number of households
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total					

If the percentage of households with no salt is very low, the column should be deleted and a footnote added to state that the table excludes 'x' number of households with no salt.

Table 11.10.1 Nutritional status of women

Among women age 15-49, the percentage with height under 145 cm, mean Body Mass Index (BMI), and the percentage with specific BMI levels, by background characteristics, [country, year]

Background characteristic	Height		Mean Body Mass Index (BMI)	Body Mass Index[1]							
				Normal	Thin			Overweight/obese			
	Percent-age below 145 cm	Number of women		18.5-24.9 (total normal)	<18.5 (total thin)	17.0-18.4 (mildly thin)	<17 (moder-ately and severely thin)	≥25.0 (total over-weight or obese)	25.0-29.9 (over-weight)	≥30.0 (obese)	Number of women
Age											
15-19											
20-29											
30-39											
40-49											
Residence											
Urban											
Rural											
Region											
Region 1											
Region 2											
Region 3											
Region 4											
Education											
No education											
Primary											
Secondary											
More than secondary											
Wealth quintile											
Lowest											
Second											
Middle											
Fourth											
Highest											
Total											

Note: The Body Mass Index (BMI) is expressed as the ratio of weight in kilograms to the square of height in meters (kg/m^2).
[1] Excludes pregnant women and women with a birth in the preceding 2 months

Low pre-pregnancy BMI and short stature of women are risk factors for poor birth outcomes and delivery complications. In developing countries maternal underweight is the leading risk factor for preventable death and diseases (The World Health Report, WHO 2002). The prevalence of overweight women and men is a growing concern in developing countries, predisposing them to a wide range of health problems such as diabetes and heart disease as well as poor birth outcomes for women. In many countries, though, chronic energy deficiency of adults is still a problem which leads to low work productivity and reduced resistance to illness.

Table 11.10.2 Nutritional status of men

Among men age 15-49, mean Body Mass Index (BMI), and the percentage with specific BMI levels, by background characteristics, [country, year]

| | | Body Mass Index | | | | | | | |
| | | Normal | Thin | | | Overweight/obese | | | |
Background characteristic	Mean Body Mass Index (BMI)	18.5-24.9 (total normal)	<18.5 (total thin)	17.0-18.4 (mildly thin)	<17 (moder-ately and severely thin)	≥25.0 (total over-weight or obese)	25.0-29.9 (over-weight)	≥30.0 (obese)	Number of men
Age									
15-19									
20-29									
30-39									
40-49									
Residence									
Urban									
Rural									
Region									
Region 1									
Region 2									
Region 3									
Region 4									
Education									
No education									
Primary									
Secondary									
More than secondary									
Wealth quintile									
Lowest									
Second									
Middle									
Fourth									
Highest									
Total 15-49									
50-54[59]									
Total 15-54[59]									

Note: The Body Mass Index (BMI) is expressed as the ratio of weight in kilograms to the square of height in meters (kg/m^2).

Figure 11.7

Trends in Nutritional Status among Women 15–49 Years

Percentage

Undernutrition
(Chronic Energy Deficiency)

Overnutrition
(Overweight/obese)

	2000	2005	2010
Undernutrition	15	13	19
Overnutrition	5	5	8
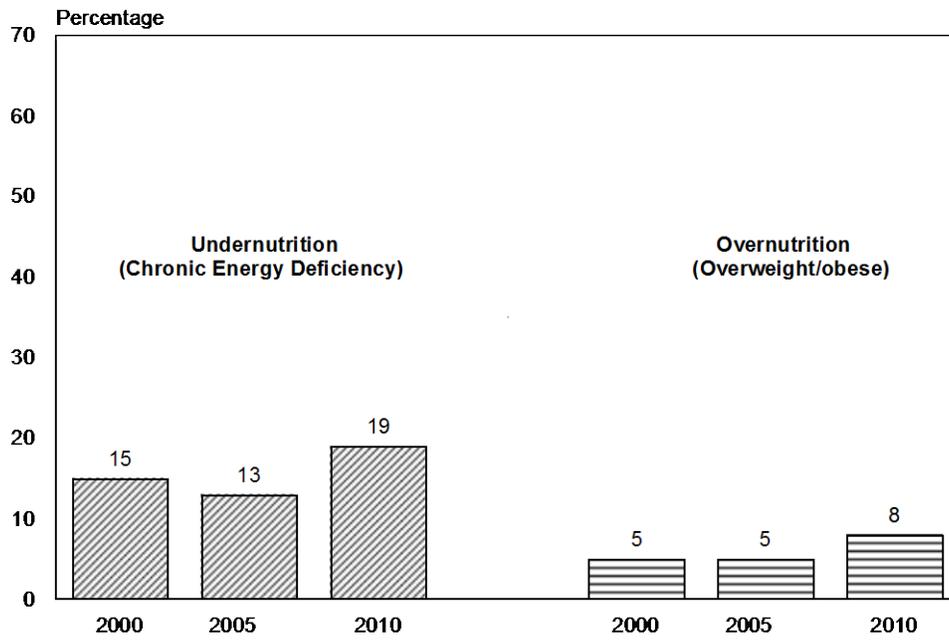
Note: Undernutrition BMI <18.5 and overnutrition BMI $\geq$ 25.0

Table 11.11.1 Prevalence of anemia in women

Percentage of women age 15-49 with anemia, by background characteristics, [country, year]

Background characteristic		Anemia status by hemoglobin level				Number of women
		Any	Mild	Moderate	Severe	
	Not 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	
Age						
15-19						
20-29						
30-39						
40-49						
Number of children ever born						
0						
1						
2-3						
4-5						
6+						
Maternity status						
Pregnant						
Breastfeeding						
Neither						
Using IUD						
Yes						
No						
Smoking status						
Smokes cigarettes/tobacco						
Does not smoke						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

Note: Prevalence is adjusted for altitude and for smoking status, if known, using formulas in CDC, 1998.

The complete reference for CDC, 1998 is *Centers for Disease Control and Prevention. 1998. Recommendations to prevent and control iron deficiency in the United States. Morbidity and Mortality Weekly Report 47 (RR-3): 1-29.*

Table 11.11.2 Prevalence of anemia in men

Percentage of men age 15-49 with anemia, by background characteristics, [country, year]

Background characteristic	Any anemia <13.0 g/dl	Number of men
Age		
15-19		
20-29		
30-39		
40-49		
Smoking status		
Smokes cigarettes/tobacco		
Does not smoke		
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Education		
No education		
Primary		
Secondary		
More than secondary		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total 15-49		
50-54[59]		
Total 15-54[59]		

Note: Prevalence is adjusted for altitude and for smoking status, if known, using formulas in CDC, 1998.

Tables 11.11.1 and 11.11.2 present anemia prevalence among women and men age 15-49, based on hemoglobin levels, according to selected background characteristics. The raw measured values of hemoglobin were obtained using the HemoCue instrument. Given that hemoglobin requirements differ substantially depending on altitude and smoking status, an adjustment is made before classifying women and men by level of anemia.

[Note: Working tables identical to Table 11.11.1 and 11.11.2 but with unadjusted anemia estimates will be produced. Authors should include a discussion of the impact of the adjustment in the text.]

Working table. Prevalence of anemia in women, unadjusted for smoking status

Percentage of women age 15-49 with anemia, by background characteristics, [country, year]

Background characteristic		Anemia status by hemoglobin level				Number of women
		Mild	Moderate	Severe	Any	
	Not pregnant	10.0-11.9 g/dl	7.0-9.9 g/dl	<7.0 g/dl	<12.0 g/dl	
	Pregnant	10.0-10.9 g/dl	7.0-9.9 g/dl	< 7.0 g/dl	<11.0 g/dl	
Age						
15-19						
20-29						
30-39						
40-49						
.						
.						
.						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

Note: Prevalence is adjusted for altitude using formulas in CDC, 1998. .

Working table. Prevalence of anemia in men, unadjusted for smoking status		
Percentage of men age 15-49 with anemia, by background characteristics, [country, year]		
Background characteristic	Any anemia <13.0 g/dl	Number of men
Age		
15-19		
20-29		
30-39		
40-49		
.		
.		
.		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total 15-49		
50-54[59]		
Total 15-54[59]		
Note: Prevalence is adjusted for altitude using formulas in CDC, 1998.		

Figure 11.8

Trends in Anemia Status among Women 15-49 Years
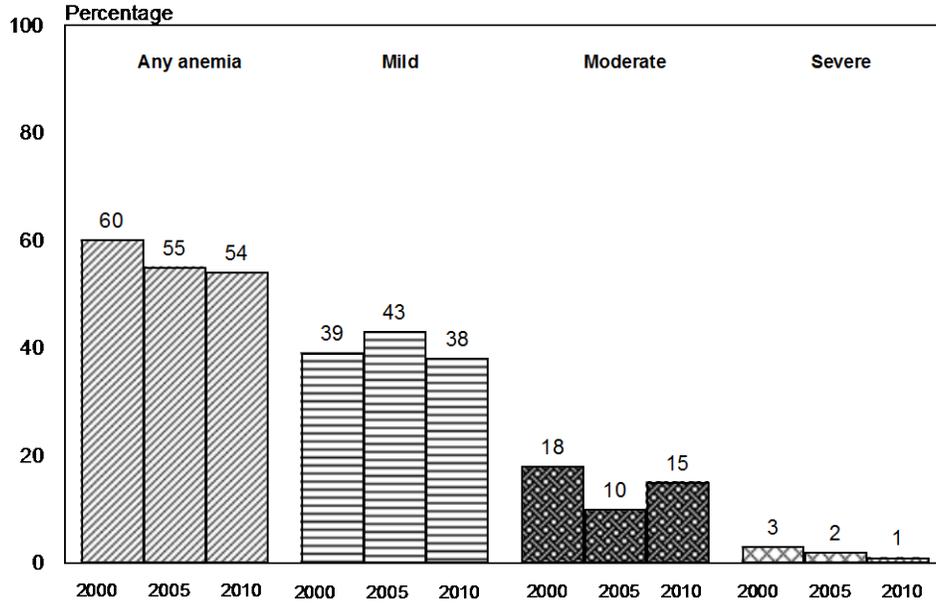
Table 11.12 Micronutrient intake among mothers

Among women age 15-49 with a child born in the past five years, the percentage who received a vitamin A dose in the first two months after the birth of the last child, the percent distribution by number of days they took iron tablets or syrup during the pregnancy of the last child, and the percentage who took deworming medication during the pregnancy of the last child; and among women age 15-49 with a child born in the past five years and who live in households that were tested for iodized salt, the percentage who live in households with iodized salt, by background characteristics, [country, year]

Background characteristic	Among women with a child born in the past five years:								Among women with a child born in the past five years, who live in households that were tested for iodized salt:	
	Percentage who received vitamin A dose post-partum[1]	Number of days women took iron tablets or syrup during pregnancy of last birth					Percentage of women who took deworming medication during pregnancy of last birth	Number of women	Percentage living in households with iodized salt[2]	Number of women
		None	<60	60-89	90+	Total				
Age										
15-19						100.0				
20-29						100.0				
30-39						100.0				
40-49						100.0				
Residence										
Urban						100.0				
Rural						100.0				
Region										
Region 1						100.0				
Region 2						100.0				
Region 3						100.0				
Region 4						100.0				
Education										
No education						100.0				
Primary						100.0				
Secondary						100.0				
More than secondary						100.0				
Wealth quintile										
Lowest						100.0				
Second						100.0				
Middle						100.0				
Fourth						100.0				
Highest						100.0				
Total						100.0				

[1] In the first two months after delivery of last birth
[2] Excludes women in households where salt was not tested.

Breastfeeding children benefit from micronutrient supplementation that the mother receives, especially vitamin A. VAD can be prevented through the provision of a high dose (200,000 IU) vitamin A capsule in the first six to eight weeks after delivery (when women are considered not at risk of being pregnant). Due to possible adverse effects (birth defects) resulting from high doses of vitamin A, a high dose vitamin A supplement should not be given to pregnant women.

Anemia is a key health status indicator for maternal nutrition. It is estimated that one-fifth of perinatal mortality and one–tenth of maternal mortality are attributable to iron deficiency anemia. Anemia also results in an increased risk of premature delivery and low birth weight. Iron deficiency, a major cause of anemia, is one for the top 10 risk factors in the developing countries for "lost years of healthy life" (The World Health Report, WHO, 2002). Information on the prevalence of anemia can be useful for the development of health intervention programs designed to prevent and control anemia, such as iron supplementation and fortification programs. Iron supplementation of women during pregnancy protects mother and infant. Deworming for intestinal parasites is commonly done for helminthes and for schistosomiasis (see notes following Table 11.7).

CHAPTER 12

MALARIA

This chapter is used when the malaria module questions are included in the questionnaires. The chapter presents data that are useful for assessing the implementation of malaria control strategies, including indoor residual spraying of dwellings with insecticides, the availability and use of mosquito nets, the prophylactic and therapeutic use of antimalarial drugs, and the collection of blood for diagnostic tests for children with fever.

Data are presented which show the percentage of households reporting having the interior walls of their dwelling sprayed with residual insecticide during the past twelve months. In addition, information on the percentage of households possessing mosquito nets by category (any nets, insecticide treated nets (ITNs), and long-lasting insecticidal nets (LLINs)) and the percentages of household members, of pregnant women, and of children who slept under a net the night before the survey is provided. Data are also presented showing, for women who gave birth in the two years preceding the survey, the percentage who took SP/Fansidar during pregnancy by number of doses (two doses is referred to as Intermittent Preventive Treatment for pregnancy (IPTp), and the percentage who obtained IPTp as part of antenatal care. Additionally, among children under age five, information is provided on the percentage of children who experienced an episode of fever in the two weeks preceding the survey, whether they had blood taken from a finger or heel for testing at any time during the fever, whether they were treated with antimalarial drugs, the specific drug(s) they received and the timeliness with which they received drug treatment. Finally, the percentage of children under age five with hemoglobin levels less than 8.0 g/dl are shown. Note that the cutoff value for malaria-related anemia (8.0 g/dl) is different from the cutoff value used for severe anemia in the nutrition chapter (7.0 g/dl).

Table 12.1 Household possession of mosquito nets

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

| Background characteristic | Percentage of households with at least one mosquito net | | | Average number of nets per household | | | Number of households | Percentage of households with at least one net for every two persons who stayed in the household last night[1] | | | Number of households with a least one person who stayed in the household last night |
	Any mosquito net	Insecticide-treated mosquito net (ITN)[2]	Long-lasting insecticidal net (LLIN)	Any mosquito net	Insecticide-treated mosquito net (ITN)[2]	Long-lasting insecticidal net (LLIN)		Any mosquito net	Insecticide-treated mosquito net (ITN)[2]	Long-lasting insecticidal net (LLIN)	
Residence											
Urban											
Rural											
Region											
Region 1											
Region 2											
Region 3											
Region 4											
Wealth quintile											
Lowest											
Second											
Middle											
Fourth											
Highest											
Total											

[1] De facto household members
[2] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment (LLIN) or (2) a pretreated net obtained within the past 12 months or (3) a net that has been soaked with insecticide within the past 12 months

ITNs have been shown to reduce malaria transmission by as much as 90% under trial conditions. ITNs also reduce malaria morbidity and mortality.

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 net must retain its effective biological activity without re-treatment for repeated washes and three years of use under field conditions (WHO/Global Malaria Program. *Insecticide-treated mosquito nets: a WHO position statement*. August 2007). The current generation of LLINs lasts 3-5 years, after which point the net should be replaced.

Pretreated nets are no longer available in most countries and should be removed from the definition of ITN in footnote 1 if they were removed from the country's questionnaire during the adaptation process.

Window screens and curtains are not included in the DHS core questionnaire because although they offer some protection against mosquitoes and other insects, they are often ill-fitting or torn which reduces their effectiveness as a physical barrier. These defects can be largely overcome by treatment with a fast-acting insecticide that will repel or kill mosquitoes.

Table 12.1 shows the possession by households of mosquito nets of various degrees of effectiveness.

Data column 2 corresponds to MICS4 Indicator 3.12, "Household availability of insecticide-treated nets (ITNs)."

Table 12.2 Indoor residual spraying against mosquitoes

Percentage of households in which someone has come into the dwelling to spray the interior walls against mosquitoes (IRS) in the past 12 months, the percentage of households with at least one ITN and/or IRS in the past 12 months, and the percentage of households with at least one ITN for every two persons and/or IRS in the past 12 months, by background characteristics, [country, year]

Background characteristic	Percentage of households with IRS[1] in the past 12 months	Percentage of households with at least one ITN[2] and/or IRS in the past 12 months	Percentage of households with at least one ITN[2] for every two persons and/or IRS in the past 12 months	Number of households
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total				

[1] Indoor residual spraying (IRS) is limited to spraying conducted by a government, private or non-governmental organization

[2] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment (LLIN), or (2) a pretreated net obtained within the past 12 months, or (3) a net that has been soaked with insecticide within the past 12 months

IRS is the spraying of the interior walls of a dwelling with insecticide. It reduces the transmission of malaria by killing adult female mosquitoes when they rest on the walls of the dwelling after feeding. Households are considered to be covered by vector control if they own at least one ITN and/or they have been sprayed by IRS at any time in the past 12 months. In order to distinguish between IRS and common aerosol bug sprays (e.g. "Doom"), this table only includes in IRS those households in which the spraying was conducted by a government agency, an NGO, or a private company (contractor).

Pretreated nets are no longer available in most countries and should be removed from the definition of ITN in footnote 1 if they were removed from the country's questionnaire during the adaptation process.

Some countries may be interested in information about the organizations conducting IRS. If so, the following working table can be produced and included in the text of the report, or as a figure.

Data column 2 corresponds to MICS4 Indicator 3.13, "Households protected by a vector control method."

	Government worker/ program	Private company	Non-governmental organization (NGO)	Other	Don't know	Number of households sprayed in past 12 months
Total						

Working table: Among households in which someone has come into the dwelling to spray interior walls against mosquitoes in the past 12 months, percentage who received the spraying from various organizations, [country, year]

Table 12.3 Access to an insecticide-treated net (ITN)

Percent distribution of the de facto household population by number of ITNs the household owns, according to number of persons who stayed in the household the night before the survey, [country, year]

Number of ITNs	Number of persons who stayed in the household the night before the survey								Total
	1	2	3	4	5	6	7	8+	
0									
1									
2									
3									
4									
5									
6									
7									
8+									
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number									
Percent with access to an ITN[1]									

[1] Percentage of the de facto household population who could sleep under an ITN if each ITN in the household were used by up to two people

Working table for Figure 12.1

Percentage of the de facto population with access to an ITN in the household, by background characteristics, [country, year]

Background characteristic	Percent with access to an ITN[1]
Residence	
Urban	
Rural	
Region	
Region 1	
Region 2	
Region 3	
Region 4	
Wealth quintile	
Lowest	
Second	
Middle	
Fourth	
Highest	
Total	

[1] Percentage of de facto household population who could sleep under an ITN if each ITN in the household were used by up to two people

Figure 12.1 Percentage of the De Facto Population with Access to an ITN in the Household
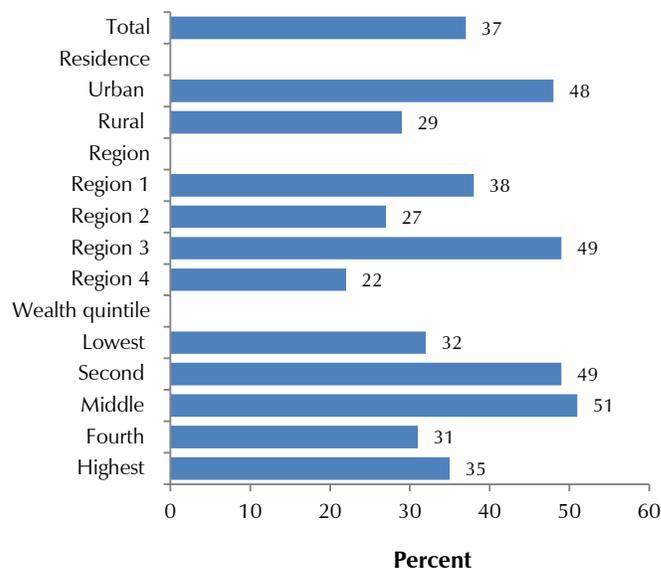
Table 12.3 and Figure 12.1 present the results for the Roll Back Malaria ITN indicator "Proportion of population with access to an ITN in their household." The indicator is calculated by creating an intermediate variable measuring the proportion of de facto residents in each household who have access to an ITN. This intermediate variable is

calculated at the household level by multiplying the number of ITNs in the household by two and then dividing by the number of de facto household members. If this number is greater than 1 (in the event that a household has more than one ITN for every two people), the variable is set to 1. Through this process, each household is assigned a value between 0 and 1. The access indicator is a population-level indicator, so the value for the household is then assigned to each de facto member of the household. To calculate the indicator, take the mean of this variable across the entire de facto household population.

Note that the information on the net access indicator by background characteristics contained in Figure 12.1 and the working table does not appear in any of the other Chapter 12 tables.

Table 12.4 Use of mosquito nets by persons in the household

Percentage of the de facto household population who slept the night before the survey under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among the de facto household population in households with at least one ITN, the percentage who slept under an ITN the night before the survey, by background characteristics, [country, year]

Background characteristic	Household population					Household population in households with at least one ITN[1]	
	Percentage who slept under any net last night	Percentage who slept under an ITN[1] last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number	Percentage who slept under an ITN[1] last night	Number
Age							
<5							
5-14							
15-34							
35-49							
50+							
Sex							
Male							
Female							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment (LLIN), or (2) a pretreated net obtained within the past 12 months, or (3) 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

Community level protection against malaria is of interest because it helps to reduce the spread of the disease and offers an additional level of protection for the most vulnerable groups, children and pregnant women.

Pretreated nets are no longer available in most countries and should be removed from the definition of ITN in footnote 1 if they were removed from the country's questionnaire during the adaptation process.

Figure 12.2 Ownership of, Access to, and Use of ITNs
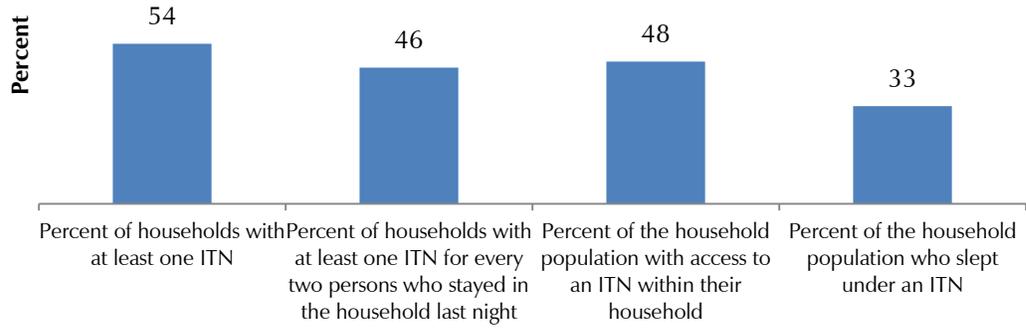
The first data point comes from Column 4 in Table 12.1. The second data point comes from Column 9 in Table 12.1. The third data point comes from the last row in the last column of Table 12.3. The third data point comes from Column 2 of Table 12.4.

Table 12.5 Use of existing ITNs

Percentage of insecticide-treated nets (ITNs) that were used by anyone the night before the survey, by background characteristics, [country, year]

Background characteristic	Percentage of existing ITNs[1] used last night	Number of ITNs[1]
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		

[1] An insecticide-treated net (ITN) is (1) a factory-treated net that does not require any further treatment (LLIN), or (2) a pretreated net obtained within the past 12 months, or (3) a net that has been soaked with insecticide within the past 12 months

Note that the unit of analysis in Table 12.5 is nets, as opposed to households or individuals as in the other net use tables.

Pretreated nets are no longer available in most countries and should be removed from the definition of ITN in footnote 1 if they were removed from the country's questionnaire during the adaptation process.

Table 12.6 Use of mosquito nets by children

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

| Background characteristic | Children under age five in all households | | | | | Children under age five in households with at least one ITN[1] | |
	Percentage who slept under any net last night	Percentage who slept under an ITN[1] last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number of children	Percentage who slept under an ITN[1] last night	Number
Age (in months)							
<12							
12-23							
24-35							
36-47							
48-59							
Sex							
Male							
Female							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

Note: Table is based on children 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 (LLIN), or (2) a pretreated net obtained within the past 12 months, or (3) 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

Age is an important factor in determining levels of acquired immunity to malaria. For about six months following birth, antibodies acquired from the mother during pregnancy protect children born in areas of endemic malaria. This immunity is gradually lost and children start to develop their own immunity to malaria. The pace at which immunity is developed depends on their exposure to malaria infection, and in high malaria-endemic areas, children are thought to have attained a high level of immunity by their fifth birthday. Such children may experience episodes of malaria illness but usually do not suffer from severe, life-threatening malaria. Immunity in areas of low malaria transmission is acquired more slowly and malaria illness affects all age groups of the population.

Table 12.6 shows the percentage of children less than five years of age who slept under various categories of mosquito nets the night before the survey. For the child's age in this table, the Household Listing in the Household Questionnaire is used if the child is not listed in the birth history of any woman with a completed Women's Questionnaire; otherwise, the age is calculated from the birth history in the mother's questionnaire.

Pretreated nets are no longer available in most countries and should be removed from the definition of ITN in footnote 1 if they were removed from the country's questionnaire during the adaptation process.

Data column 2 corresponds to MDG Indicator 6.7 "Percentage of children under five sleeping under an ITN," and MICS4 Indicator 3.15, "Children under age five sleeping under insecticide-treated nets (ITNs)."

Data column 1 corresponds to MICS4 Indicator 3.14, "Children under age 5 sleeping under any type of mosquito net."

Table 12.7 Use of mosquito nets by pregnant women

Percentages of pregnant women age 15-49 who, the night before the survey, slept under a mosquito net (treated or untreated), under an insecticide-treated net (ITN), under a long-lasting insecticidal net (LLIN), and under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among pregnant women age 15-49 in households with at least one ITN, the percentage who slept under an ITN the night before the survey, by background characteristics, [country, year]

| Background characteristic | Among pregnant women age 15-49 in all households | | | | | Among pregnant women age 15-49 in households with at least one ITN[1] | |
	Percentage who slept under any net last night	Percentage who slept under an ITN[1] last night	Percentage who slept under an LLIN last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number of women	Percentage who slept under an ITN[1] last night	Number of women
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

Note: Table is based on 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 (LLIN), or (2) a pretreated net obtained within the past 12 months, or (3) 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

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

Data column 2 corresponds to MICS Indicator 3.19, "Pregnant women sleeping under insecticide-treated nets (ITNs)."

For MIS the "note" will be removed. MIS table is based on interviewed women. MIS has no data on pregnancy status of household members not interviewed.

Pretreated nets are no longer available in most countries and should be removed from the definition of ITN in footnote 1 if they were removed from the country's questionnaire during the adaptation process.

Table 12.8 Use of intermittent preventive treatment (IPTp) by women during pregnancy

Percentage of women age 15-49 with a live birth in the two years preceding the survey who, during the pregnancy preceding the last birth, received any SP/Fansidar during an ANC visit, and who took at least two doses of SP/Fansidar and received at least one dose during an ANC visit, by background characteristics, [country, year]

Background characteristic	Percentage who received any SP/Fansidar during an ANC visit	Percentage who took 2+ doses of SP/Fansidar and received at least one during an ANC visit	Number of women with a live birth in the two years preceding the survey
Residence			
Urban			
Rural			
Region			
Region 1			
Region 2			
Region 3			
Region 4			
Education			
No education			
Primary			
Secondary			
More than secondary			
Wealth quintile			
Lowest			
Second			
Middle			
Fourth			
Highest			
Total			

In high malaria-endemic areas, it is often health policy that pregnant women receive prophylactic treatment with the antimalarial drug SP/Fansidar once at the beginning of the second trimester of pregnancy and once at the beginning of the third trimester, preferably during routine antenatal care. Pregnant women who take malaria medicine only to treat an existing case of malaria are not considered to have received IPTp. Countries with fieldwork occurring after November 2012 may have updated their policy to increase the number of IPTp doses in accordance with the revised WHO recommendations. For further information, look here:
http://www.who.int/malaria/iptp_sp_updated_policy_recommendation_en_102012.pdf

The text should emphasize findings in the second column.

Data column 2 corresponds to the Roll Back Malaria indicator "Proportion of Women who Received Intermittent Preventive Treatment during Antenatal Care Visits during Their Last Pregnancy" and MICS4 Indicator 3.20, "Intermittent preventive treatment for malaria."

Table 12.9 Prevalence, diagnosis, and prompt treatment of children with fever

Percentage of children under age five with fever in the two weeks preceding the survey; and among children under age five with fever, the percentage for whom advice or treatment was sought, the percentage who had blood taken from a finger or heel, the percentage who took any artemisinin-based combination therapy (ACT), the percentage who took any ACT the same or next day following the onset of fever, the percentage who took antimalarial drugs, and the percentage who took the drugs the same or next day following the onset of fever, by background characteristics, [country, year]

| Background characteristic | Among children under age five: | | Among children under age five with fever: | | | | | | |
	Percentage with fever in the two 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	Percentage who took any ACT	Percentage who took any ACT same or next day	Percentage who took antimalarial drugs	Percentage who took antimalarial drugs same or next day	Number of children
Age (in months)									
<12									
12-23									
24-35									
36-47									
48-59									
Sex									
Male									
Female									
Residence									
Urban									
Rural									
Region									
Region 1									
Region 2									
Region 3									
Region 4									
Mother's education									
No education									
Primary									
Secondary									
More than secondary									
Wealth quintile									
Lowest									
Second									
Middle									
Fourth									
Highest									
Total									

[1] Excludes advice or treatment from a traditional practitioner

Data column 3 in Table 12.9 is slightly different from data column 3 in DHS Table 10.6 in that it includes pharmacy, market or shop as these are a major source of antimalarial drugs in many countries. There may be country-specific sources for ACTs. If so, then these should also be included in the numerator of Column 3. NOTE: In the previous version of the tabulation plan, children who received advice or treatment from a market and shop were excluded from this column. Trends will not be strictly comparable, and this must be noted in the discussion of the table.

Fever is the symptom that most frequently presages the onset of an episode of malaria illness. Especially in malaria-endemic areas, it is important that children experiencing fever receive prompt testing for malaria parasites, either by rapid diagnostic tests (RDT) or by microscopy. Children testing positive for infection should be given an effective antimalarial medication according to national recommendations. The main objective of this protocol for rapid diagnosis and treatment of malaria in children is to reduce

morbidity and mortality; however, a secondary benefit should be a reduction in the rate of antimalarial drug resistance development as treatment becomes more specific.

The table shows the percentage of children experiencing an episode of fever during the two weeks preceding the survey, the percentage having a finger or heel stick, presumably for diagnostic purposes, the percentage having fever who received antimalarial drugs, and the percentage treated with antimalarial drugs the same or next day following the onset of fever.

Column 4 in Table 12.9 shows the percentage of children experiencing an episode of fever during the two weeks preceding the survey who receive a finger or heel stick, presumably for diagnostic purposes, Discussion of the results for this column should mention that the question does not ask what test the blood was taken for. Although blood could have been taken for malaria testing, it could also have been taken for anemia or other tests. The mother may or may not know the reason for which blood was taken from her child, so it is not advisable to ask her to provide this information. For program purposes, the proper interpretation of these data is that the percentage of children with fever who are tested for malaria could be no higher than the percentage in Column 4, but it may be lower.

Table 12.9 also shows the percentage of children who had fever at any time during the two weeks preceding the survey who received antimalarial drugs and the percentage who were treated with antimalarial drugs the same or next day following the onset of fever. These estimates represent older indicators that were designed at a time when national malaria policies called for presumptive treatment with antimalarials of all children with fever. With the change in recommended first line treatment for malaria to artemisinin-based combination therapy (ACT), national policies are now changing to recommend that a child with fever receive a confirmed diagnosis of malaria before receiving antimalarial medication. (Some children may still be treated presumptively if no diagnostic test is available.)

As a result, the percent of children with fever who receive any antimalarial medication is expected to decrease over time. This indicator is of limited use in tracking trends in appropriate management of fever, though it is still reported for the MDGs (see below).

Data column 4 corresponds to MICS4 Indicator 3.16, "Malaria diagnostics usage."
Data column 7 corresponds to MDG Indicator 6.8, "Percentage of children under five with fever who are treated with appropriate anti-malarial drugs," and MICS4 Indicator 3.18, "Anti-malarial treatment of children under age five."
Data column 8 corresponds to MICS4 Indicator 3.17, "Anti-malarial treatment of children under five the same or next day."

Table 12.10 Source of advice or treatment for children with fever

Percentage of children under age five with fever in the two weeks preceding the survey for whom advice or treatment was sought from specific sources; and among children under age five with fever in the two weeks preceding the survey for whom advice or treatment was sought, the percentage for whom advice or treatment was sought from specific sources, [country, year]

Source	Percentage for whom advice or treatment was sought from each source:	
	Among children with fever	Among children with fever for whom advice or treatment was sought
Any public sector source		
Government Hospital		
Government Health Center		
Government Health Post		
Mobile Clinic		
Fieldworker		
Other		
Any private sector source		
Private Hospital/Clinic		
Pharmacy		
Private Doctor		
Mobile Clinic		
Fieldworker		
Other Private Medical Sector		
Any other source		
Shop		
Traditional Practitioner		
Market		
Other		
Number of children		

Table 12.10 presents information on sources from which advice or treatment for fever was sought. The numerators in both columns are the same, but the denominators differ. The denominator for the first column is all children with fever in the two weeks preceding the survey. This column will give a sense of the overall coverage of the various sources of advice and treatment for children with fever. The denominator for the second column is children with fever for whom advice or treatment was sought. From this column, the relative strength of each of the sources will be easier to see. However, keep in mind that advice or treatment can be sought from multiple sources, so this column will not contain a percent distribution.

Total percentages should appear on the rows with bold text.

Table 12.11 Type of antimalarial drugs used

Among children under age five with fever in the two weeks preceding the survey who took any antimalarial medication, the percentage who took specific antimalarial drugs, by background characteristics, [country, year]

Background characteristic	Percentage of children who took drug:						Number of children with fever who took any anti-malarial drug
	Any ACT	Quinine	SP/ Fansidar	Chloro-quine	Amodia-quine	Other anti-malarial	
Age (in months)							
<12							
12-23							
24-35							
36-47							
48-59							
Sex							
Male							
Female							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Mother's education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

ACT = Artemisinin-based combination therapy

Most countries in sub-Saharan Africa have adopted ACT as the first-line treatment for uncomplicated malaria in children to ACT. This table will show how widely this policy is being implemented. Over time, ACTs should make up an increasing percentage of the antimalarial drugs given. Note that the table is not a percent distribution, because children may receive more than one type of antimalarial drug. Columns must be adapted to include the antimalarials commonly used in the country. In countries using more than one kind of ACT, all of them should be included in the ACT column.

Guidance on antimalarial drug categories for children with fever:

Most malaria-endemic countries recommend use of artemisinin-based combination therapy (ACT) as first-line treatment for malaria. ACTs are defined as antimalarials that contain an artemisinin component as well as a second antimalarial drug component.

The World Health Organization currently recommends 5 types of ACTs:

- Artemether - Lumefantrine (AL)
- Artesunate + Amodiaquine (AS + AQ)
- Artesunate + Mefloquine (AS + MQ)
- Artesunate + Sulfadoxine – Pyrimethamine (AS + SP)
- Dihydroartemisinin + Piperaquine (DHA + PPQ)

This list contains the generic names of these ACTs. Many brand names are also used for each generic drug which can be confusing. One resource that can help correctly classify ACTs is the "malaria drug database" maintained by an organization called ACTwatch. This database contains lists of brand names and associated generic drugs of all antimalarials, whether or not they are ACTs. The database can be found at http://www.actwatch.info/resources/.

Please note that we are interested in capturing use of any ACT whether or not it is recommended by the WHO. This means that we would identify a drug as an ACT if it contains any of the three Artemisinins (Artesunate, Artemether, or Dihydroartemisinin) in combination with any other antimalarial drug.

Table 12.12 Hemoglobin <8.0 g/dl in children

Percentage of children age 6-59 months with hemoglobin lower than 8.0 g/dl, by background characteristics, [country, year]

Background characteristic	Hemoglobin <8.0 g/dl	Number of children
Age (in months)		
6-8		
9-11		
12-17		
18-23		
24-35		
36-47		
48-59		
Sex		
Male		
Female		
Mother's interview status		
Interviewed		
Not interviewed, but in household		
Not interviewed, and not in household[1]		
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Mother's education[2]		
No education		
Primary		
Secondary		
More than secondary		
Wealth quintile		
Lowest		
Second		
Middle		
Fourth		
Highest		
Total		

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] Includes children whose mothers are deceased
[2] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

A hemoglobin level below 8.0 g/dl is often associated with malaria infection. Levels of anemia reported in this table are not comparable to those reported in Table 11.7 in the nutrition chapter because the cutoff used is different. Malaria as measured by a hemoglobin level below 8.0 g/dl should not be used as an indicator of nutritional status. For nutrition programs, all children with hemoglobin below 11.0 g/dl are considered anemic and those with a hemoglobin level below 7.0 g/dl are considered severely anemic.

CHAPTER 13

HIV/AIDS-RELATED KNOWLEDGE, ATTITUDES, AND BEHAVIOR

This chapter covers a number of HIV/AIDS-related issues and presents indicators for monitoring and evaluating HIV/AIDS prevention programs. The tables included in this chapter were jointly developed by UNAIDS, the President's Emergency Plan for AIDS Relief, and UNGASS. In order to achieve comparability of indicators across data collected by different agencies, the tables in this chapter should not be modified except where necessary to take into account insufficient numbers of cases for presenting results or in the case where a survey did not collect the relevant information: e.g., in cases where the survey did not include the complete DHS HIV/AIDS module.

The tables in this chapter present information reported by both female and male respondents and can be grouped into four broad categories.

● HIV/AIDS KNOWLEDGE (Tables 13.1 – 13.4)

These tables show indicators concerning knowledge of AIDS, knowledge of HIV prevention methods, detailed or comprehensive knowledge about AIDS including knowledge of prevention of mother-to-child transmission of HIV.

● ATTITUDES CONCERNING HIV/AIDS (Tables 13.5 – 13.7)

This set of tables provides information about the willingness to provide care for a family member with AIDS and willingness to interact with people living with AIDS, women's attitudes toward negotiating sexual relation with their husbands and support for education about condom use to prevent AIDS.

● HIV/AIDS-RELATED BEHAVIOR (Tables 13.8 – 13.15)

This set of tables reports indicators such as having multiple sexual partners in the past 12 months, commercial sexual relations and condom use in those circumstances, testing for HIV, self-reported prevalence of sexually-transmitted infections (STI) and the receipt of injections from health workers in the past 12 months.

● YOUNG PEOPLE AND HIV/AIDS (Tables 13.16 – 13.21)

These tables are for specific respondents age 15-24. They present detailed information about age at first sexual intercourse, multiple sexual partners and condom use at last intercourse in the past 12 months, age-mixing in sexual relationships, and testing for HIV in the past 12 months.

Table 13.1 Knowledge of AIDS   4.1 AIS

Percentage of women and men age 15-49 who have heard of AIDS by background characteristics, [country, year]

Background characteristic	Women		Men	
	Have heard of AIDS	Number of women	Have heard of AIDS	Number of men
Age				
15-24				
15-19				
20-24				
25-29				
30-39				
40-49				
Marital status				
Never married				
Ever had sex				
Never had sex				
Married/living together				
Divorced/separated/widowed				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total 15-49				
50-54[59]	na	na		
Total 15-54[59]	na	na		

na = Not applicable

212

Table 13.2 Knowledge of HIV prevention methods   4.2 AIS

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

Background characteristic	Women				Men			
	Percentage who say HIV can be prevented by:				Percentage who say HIV can be prevented by:			
	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								
15-19								
20-24								
25-29								
30-39								
40-49								
Marital status								
Never married								
Ever had sex								
Never had sex								
Married/living together								
Divorced/separated/widowed								
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total 15-49								
50-54[59]	na	na	na	na				
Total 15-54[59]	na	na	na	na				

na = Not applicable
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners

Most HIV/AIDS programs that target the general population promote monogamy and condom use as the primary ways of avoiding HIV infection among sexually active men and women, who make up the majority of all adults in virtually every population.

Table 13.3.1 Comprehensive knowledge about AIDS: Women

Percentage of women age 15-49 who say that a healthy-looking person can have the AIDS virus and who, in response to prompted questions, correctly reject local misconceptions about transmission or prevention of the AIDS virus, and the percentage with a comprehensive knowledge about AIDS by background characteristics, [country, year]

Background characteristic	Percentage of women who say that:				Percentage who say that a healthy-looking person can have the AIDS virus and who reject the two most common local misconceptions[1]	Percentage with a compre-hensive knowledge about AIDS[2]	Number of women
	A healthy-looking person can have the AIDS virus	The AIDS virus cannot be transmitted by mosquito bites [COUNTRY SPECIFIC]	The AIDS virus cannot be transmitted by supernatural means [COUNTRY SPECIFIC]	A person cannot become infected by sharing food with a person who has AIDS [COUNTRY SPECIFIC]			
Age							
15-24							
15-19							
20-24							
25-29							
30-39							
40-49							
Marital status							
Never married							
Ever had sex							
Never had sex							
Married/living together							
Divorced/separated/widowed							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

[1] Two most common local misconceptions: [DEFINE FOR EACH COUNTRY BASED ON THE WORKING TABLE]
[2] Comprehensive knowledge means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus.

Tables 13.3.1 and 13.3.2 provide indicators of the level of knowledge that certain popular ideas about AIDS transmission are incorrect. Add extra columns to the right of data column 4 (sharing food) for country specific misconceptions, if applicable.

Data in column 6 correspond to MICS4 Indicator 9.1, "Comprehensive knowledge about HIV prevention."

	Percentage of men who say that:						
Background characteristic	A healthy-looking person can have the AIDS virus	The AIDS virus cannot be transmitted by mosquito bites [COUNTRY SPECIFIC]	The AIDS virus cannot be transmitted by supernatural means [COUNTRY SPECIFIC]	A person cannot become infected by sharing food with a person who has AIDS [COUNTRY SPECIFIC]	Percentage who say that a healthy-looking person can have the AIDS virus and who reject the two most common local misconceptions[1]	Percentage with a compre-hensive knowledge about AIDS[2]	Number of men

Table 13.3.2 Comprehensive knowledge about AIDS: Men   4.3.2 AIS

Percentage of men age 15-49 who say that a healthy-looking person can have the AIDS virus and who, in response to prompted questions, correctly reject local misconceptions about transmission or prevention of the AIDS virus, and the percentage with a comprehensive knowledge about AIDS by background characteristics, [country, year]

Age
 15-24
  15-19
  20-24
 25-29
 30-39
 40-49

Marital status
 Never married
  Ever had sex
  Never had sex
 Married/living together
 Divorced/separated/widowed

Residence
 Urban
 Rural

Region
 Region 1
 Region 2
 Region 3
 Region 4

Education
 No education
 Primary
 Secondary
 More than secondary

Wealth quintile
 Lowest
 Second
 Middle
 Fourth
 Highest

Total 15-49

50-54[59]
Total 15-54[59]

[1] Two most common local misconceptions: [DEFINE FOR EACH COUNTRY BASED ON THE WORKING TABLE]
[2] Comprehensive knowledge means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus.

The working table below is produced to determine which misconceptions about the transmission of HIV are most common. Numbers in this table should be weighted. The most common and second-most-common misconceptions should be the same for females and males. The most common misconception is the one with the highest percentage of both men and women answering "YES" to the question. The

second most common misconception is the one with the next highest percentage of both men and women answering "YES."

If a subsample of households was used for the male sample, then the number of male respondents should be multiplied by the inverse of the proportion of households selected for the male subsample in order to generate the percentages for the total population.

The two most common misconceptions from this table are used in data columns 5 and 6 in Tables 13.3.1 and 13.3.2.

Working table: Most common local misconceptions			
Percentage of women and men who believe in misconceptions			
	% of women age 15-49 who answered YES	% of men age 15-49 who answered YES	% of women and men age 15-49 who answered YES
The AIDS virus **CAN** be transmitted by mosquito bites			
The AIDS virus **CAN** be transmitted by supernatural means			
A person **CAN** become infected by sharing food with a person who has the AIDS virus			
Country-specific misconception 1			
Country-specific misconception 2			
Number of respondents			

Those answering "YES" to each misconception are used to identify the most common misconceptions. However, those answering "NO" to each misconception are tallied in Tables 13.3.1 and 13.3.2.

Table 13.4 Knowledge of prevention of mother-to-child transmission of HIV									4.4 AIS

Percentage of women and men age 15-49 who know that HIV can be transmitted from mother to child by breastfeeding and that the risk of mother to child transmission (MTCT) of HIV can be reduced by mother taking special drugs during pregnancy, by background characteristics, [country, year]

	Women				Men			
	Percentage who know that:				Percentage who know that:			
Background characteristic	HIV can be transmitted by breast-feeding	Risk of MTCT can be reduced by mother taking special drugs during pregnancy	HIV can be transmitted by breastfeeding and risk of MTCT can be reduced by mother taking special drugs during pregnancy	Number of women	HIV can be transmitted by breast-feeding	Risk of MTCT can be reduced by mother taking special drugs during pregnancy	HIV can be transmitted by breastfeeding and risk of MTCT can be reduced by mother taking special drugs during pregnancy	Number of men
Age								
15-24								
15-19								
20-24								
25-29								
30-39								
40-49								
Marital status								
Never married								
Ever had sex								
Never had sex								
Married/living together								
Divorced/separated/ widowed								
Pregnancy status								
Currently pregnant					na	na	na	na
Not pregnant/not sure					na	na	na	na
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Highest								
Total 15-49								
50-54[59]	na	na	na	na				
Total 15-54[59]	na	na	na	na				

na = Not applicable

The denominators for the percentages include all women and men 15-49.

Table 13.5.1 Accepting attitudes toward those living with HIV/AIDS: Women   5.1.1 AIS

Among women age 15-49 who have heard of AIDS, percentage expressing specific accepting attitudes toward people with HIV/AIDS, by background characteristics, [country, year]

| | Percentage of women who: | | | | | |
Background characteristic	Are willing to care for a family member with AIDS in the respondent's home	Would buy fresh vegetables from shopkeeper who has the AIDS virus	Say that a female teacher who has the AIDS virus but is not sick should be allowed to continue teaching	Would not want to keep secret that a family member got infected with the AIDS virus	Percentage expressing accepting attitudes on all four indicators	Number of women who have heard of AIDS
Age						
15-24						
15-19						
20-24						
25-29						
30-39						
40-49						
Marital status						
Never married						
Ever had sex						
Never had sex						
Married/living together						
Divorced/separated/widowed						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

Tables 13.5.1 and 13.5.2 indicate what people say about how they feel or what they would do when confronted with various situations involving people living with AIDS and are meant to detect social stigma associated with AIDS. The data are based on answers to a series of hypothetical questions about men and women with AIDS.

A low score on the indicator indicates high levels of stigma. However, a high score does not necessarily indicate low levels of stigma. While a high score could mean there is little real stigma attached to AIDS, it could also mean that people know they should not discriminate and thus report accepting attitudes

which do not reflect their true feelings. Thus, changes in this indicator between surveys could reflect a reduction in stigma or an increased awareness that it is not acceptable to express prejudices.

Data column 5 corresponds to MICS Indicator 9.4, "Accepting attitudes towards people living with HIV" and PEPFAR Indicator P8.22.N "STIGMA: Percentage of the general population with accepting attitudes toward PLHA."

Table 13.5.2 Accepting attitudes toward those living with HIV/AIDS: Men   5.1.2 AIS

Among men age 15-49 who have heard of AIDS, percentage expressing specific accepting attitudes toward people with HIV/AIDS, by background characteristics, [country, year]

Background characteristic	Percentage of men who:					
	Are willing to care for a family member with AIDS in the respondent's home	Would buy fresh vegetables from shopkeeper who has the AIDS virus	Say that a female teacher who has the AIDS virus but is not sick should be allowed to continue teaching	Would not want to keep secret that a family member got infected with the AIDS virus	Percentage expressing accepting attitudes on all four indicators	Number of men who have heard of AIDS
Age						
15-24						
15-19						
20-24						
25-29						
30-39						
40-49						
Marital status						
Never married						
Ever had sex						
Never had sex						
Married/living together						
Divorced/separated/widowed						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49						
50-54[59]						
Total 15-54[59]						

| Background characteristic | Table 13.6 Attitudes toward negotiating safer sexual relations with husband | | | | | 5.2 AIS |

Table 13.6 Attitudes toward negotiating safer sexual relations with husband   5.2 AIS

Percentage of women and men age 15-49 who believe that a woman is justified in refusing to have sexual intercourse with her husband if she knows that he has sexual intercourse with other women, and percentage who believe that a woman is justified in asking that they use a condom if she knows that her husband has a sexually transmitted infection (STI), by background characteristics, [country, year]

| Background characteristic | Women | | | Men | | |
| | Woman is justified in: | | | Woman is justified in: | | |
	Refusing to have sexual intercourse with her husband if she knows he has sex with other women	Asking that they use a condom if she knows that her husband has an STI	Number of women	Refusing to have sexual intercourse with her husband if she knows he has sex with other women	Asking that they use a condom if she knows that her husband has an STI	Number of men
Age						
15-24						
15-19						
20-24						
25-29						
30-39						
40-49						
Marital status						
Never married						
Ever had sex						
Never had sex						
Married/living together						
Divorced/separated/widowed						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49						
50-54[59]	na	na	na			
Total 15-54[59]	na	na	na			

.na = Not applicable

This table measures a woman's ability to negotiate sex with her husband. Transmission of HIV within marriage is one of the leading sources of new HIV infections in countries where the HIV epidemic is well established. Due to gender norms, women are often unable to negotiate whether or not they have sex with their husband, and whether or not he uses a condom. Thus, women are often unable to protect themselves from possible exposure to HIV and other STIs when they suspect their husband may be infected.

Data columns 2 and 5 are only shown if the optional HIV/AIDS questions are used.

Table 13.7 Adult support of education about condom use to prevent AIDS				5.3 AIS

Percentage of women and men age 18-49 who agree that children age 12-14 years should be taught about using a condom to avoid AIDS, by background characteristics [country, year]

Background characteristic	Women		Men	
	Percentage who agree	Number of women	Percentage who agree	Number of men
Age				
18-24				
18-19				
20-24				
25-29				
30-39				
40-49				
Marital status				
Never married				
Married/living together				
Divorced/separated/widowed				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
No education				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total 18-49				
50-54[59]	na	na		
Total 18-54[59]	na	na		

na = Not applicable

Table 13.7 concerning adult support of education about condom use to prevent AIDS is shown only where the optional HIV/AIDS questions has been included in the survey questionnaire. The table is limited to adult opinion, so the minimum age for the table is 18 years (not 15 years).

Data columns 1 and 3 correspond to the President's Emergency Plan for AIDS Relieve Indicator P8.21.N, "Percentage of adults who are in favor of young people being educated about the use of condoms in order to prevent HIV/AIDS."

Table 13.8.1 Multiple sexual partners: Women   6.2.1 AIS

Among all women age 15-49, the percentage who had sexual intercourse with more than one sexual partner in the past 12 months; among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse; and the mean number of sexual partners during their lifetime for women who ever had sexual intercourse, by background characteristics, [country, year]

Background characteristic	All women		Among women who had 2+ partners in the past 12 months:		Among women who ever had sexual intercourse[1]:	
	Percentage who had 2+ partners in the past 12 months	Number of women	Percentage who reported using a condom during last sexual intercourse	Number of women	Mean number of sexual partners in lifetime	Number of women
Age						
15-24						
15-19						
20-24						
25-29						
30-39						
40-49						
Marital status						
Never married						
Married/living together						
Divorced/separated/ widowed						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

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

Tables 13.8.1 and 13.8.2 pertain to potentially risky sexual activity in the 12 months preceding the survey For the main survey report, an introductory paragraph to these tables should summarize some of the information presented in Table 6.7 "Recent Sexual Activity." Tables 13.8.1 and 13.8.2 consider first the extent to which women and men report having had sexual intercourse with more than one partner during the 12 months prior to the survey interview. The tables also include indicators to assess condom use at last sex among individuals reporting more than one sexual partner in the past 12 months and mean lifetime number of sexual partners among those respondents who ever had sex.

The following indicators are included in Tables 13.8.1 and 13.8.2:

Data column 1 corresponds to:

1) The President's Emergency Plan for AIDS Relief Indicator P8.11.N, "Percentage of women and men aged 15-49 who had sex with more than one partner in the last 12 months"
2) UNGASS *Knowledge and Behaviour Indicator 16* "Percentage of adults aged 15–49 who have had sexual intercourse with more than one partner in the last 12 months"
3) MICS4 Indicator 9.13, "Sex with multiple partners."

Data column 3 corresponds to:
1) The President's Emergency Plan for AIDS Relief Indicator P8.12.N "Percent of women and men aged 15–49 who have had more than one sexual partner in the last 12 months reporting the use of a condom their last sexual intercourse"
2) UNGASS *Knowledge and Behaviour Indicator* 17 "Percentage of adults aged 15–49 who had more than one partner in the past 12 months reporting the use of a condom during their last intercourse"
3) MICS4 Indicator 9.14, "Condom use during sex with multiple partners"

Table 13.8.2 Multiple sexual partners: Men						6.2.2 AIS

Among all men age 15-49, the percentage who had sexual intercourse with more than one sexual partner in the past 12 months; among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse; and the mean number of sexual partners during their lifetime for men who ever had sexual intercourse, by background characteristics, [country, year]

Background characteristic	All men		Among men who had 2+ partners in the past 12 months:		Among men who ever had sexual intercourse[1]:	
	Percentage who had 2+ partners in the past 12 months	Number of men	Percentage who reported using a condom during last sexual intercourse	Number of men	Mean number of sexual partners in lifetime	Number of men
Age						
15-24						
15-19						
20-24						
25-29						
30-39						
40-49						
Marital status						
Never married						
Married/living together						
Divorced/separated/ widowed						
Type of union						
In polygynous union						
In non-polygynous union						
Not currently in union						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49						
50-54[59]						
Total 15-54[59]						

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

226

Table 13.9 Point prevalence and cumulative prevalence of concurrent sexual partners

Percentage of all women and men age 15-49 who had concurrent sexual partners six months before the survey (point prevalence[1]), and percentage of all women and men age 15-49 who had any concurrent sexual partners during the 12 months before the survey (cumulative prevalence[2]), and among women and men age 15-49 who had multiple sexual partners during the 12 months before the survey, percentage who had concurrent sexual partners, [country, year]

Background characteristic	Among all respondents:			Among respondents who had multiple partners during the 12 months before the survey:	
	Point prevalence of concurrent sexual partners[1]	Cumulative prevalence of concurrent sexual partners[2]	Number of respondents	Percentage who had concurrent sexual partners[2]	Number of respondents
WOMEN					
Age					
15-24					
15-19					
20-24					
25-29					
30-39					
40-49					
Marital status					
Never married					
Married/living together					
Divorced/separated/ widowed					
Residence					
Urban					
Rural					
Total 15-49					
MEN					
Age					
15-24					
15-19					
20-24					
25-29					
30-39					
40-49					
Marital status					
Never married					
Married/living together					
Divorced/separated/ widowed					
Type of union					
In polygynous union					
In non-polygynous union					
Not currently in union					
Residence					
Urban					
Rural					
Total 15-49					
50-54[59]					
Total 15-54[59]					

Note: Two sexual partners are considered to be concurrent if the date of the most recent sexual intercourse with the earlier partner is after the date of the first sexual intercourse with the later partner.
[1] The percentage of respondents who had two (or more) sexual partners that were concurrent at the point in time six months before the survey
[2] The percentage of respondents who had two (or more) sexual partners that were concurrent anytime during the 12 months preceding the survey

"Concurrent partnerships potentially increase the spread of HIV by creating more connected sexual networks" (*UNAIDS. 2009. Consultation on Concurrent Sexual Partnerships: Recommendations from a meeting of the UNAIDS Reference Group on Estimates, Modelling and Projections held in Nairobi, Kenya, April 20-21st 2009. UNAIDS: London.*) Compared to serial monogamous partnerships, concurrent partnerships can reduce the time between acquiring HIV and passing it along to an uninfected individual. Modeling suggests that even small levels of concurrency can greatly increase the connectivity of sexual networks and thus the speed at which HIV can spread. It is important to note that in these indicators, polygynous men are counted in the prevalence of concurrency even if they have no sexual partners other than their wives.

'Type of union' to be included only in countries where polygyny is practiced.

Data column 1 corresponds to the President's Emergency Plan for AIDS Relief Indicator P8.13.N, "The percentage of women and men aged 15-49 with more than one ongoing sexual partnership at the point in time six months before the interview."

Data column 2 corresponds to the President's Emergency Plan for AIDS Relief Indicator P8.14.N, "Percent of men and women aged 15-49, who have two or more concurrent partners within the past twelve months."

Table 13.10 Payment for sexual intercourse and condom use at last paid sexual intercourse   6.3 AIS

Percentage of men age 15-49 who ever paid for sexual intercourse and percentage reporting payment for sexual intercourse in the past 12 months, and among them, the percentage reporting that a condom was used the last time they paid for sexual intercourse, by background characteristics, [country, year]

Background characteristic	Among all men:			Among men who paid for sex in the past 12 months:	
	Percentage who ever paid for sexual intercourse	Percentage who paid for sexual intercourse in the past 12 months	Number of men	Percentage reporting condom use at last paid sexual intercourse	Number of men
Age					
15-24					
15-19					
20-24					
25-29					
30-39					
40-49					
Marital status					
Never married					
Married/living together					
Divorced/separated/ widowed					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total 15-49					
50-54[59]					
Total 15-54[59]					

Data column 2 corresponds to the President's Emergency Plan for AIDS Relief Indicator P9.7.N, "Percentage of male respondents aged 15-49 reporting sex with a sex worker."

Table 13.11.1 Coverage of prior HIV testing: Women

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

| 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					100.0			
15-19					100.0			
20-24					100.0			
25-29					100.0			
30-39					100.0			
40-49					100.0			
Marital status								
Never married					100.0			
Ever had sex					100.0			
Never had sex					100.0			
Married/living together					100.0			
Divorced/separated/widowed					100.0			
Residence								
Urban					100.0			
Rural					100.0			
Region								
Region 1					100.0			
Region 2					100.0			
Region 3					100.0			
Region 4					100.0			
Education								
No education					100.0			
Primary					100.0			
Secondary					100.0			
More than secondary					100.0			
Wealth quintile								
Lowest					100.0			
Second					100.0			
Middle					100.0			
Fourth					100.0			
Highest					100.0			
Total					100.0			

[1] Includes 'don't know/missing'

Tables 13.11.1 and 13.11.2, which pertain to coverage of prior HIV testing, are used only where the DHS HIV/AIDS module has been included in the survey questionnaire.

The following indicators are included in the tables:
1) Data column 1 in Table 13.11.1 corresponds to MICS4 Indicator 9.5, "Women who know where to be tested for HIV."
2) Data column 7 in Tables 13.11.1 and 13.11.2 corresponds to the President's Emergency Plan for AIDS Relief Indicator P11.2.N, "Percentage of women and men age 15-49 who have received an HIV test in the past 12 months and who know their test results," UNGASS *National* Indicator 7, "Percentage of women and men aged 15-49 who received an HIV test in the past 12 months and who know their results," and MICS4 Indicator 9.6, "Women who have been tested for HIV and know the results."

Table 13.11.2 Coverage of prior HIV testing: Men   6.4.2 AIS

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

| | | Percent distribution of men by testing status and by whether they received the results of the last test | | | | | Percentage who have been tested for HIV in the past 12 months and received the results of | |
Background characteristic	Percentage who know where to get an HIV test	Ever tested and received results	Ever tested, did not receive results	Never tested[1]	Total	Percentage ever tested	the last test	Number of men
Age								
15-24					100.0			
15-19					100.0			
20-24					100.0			
25-29					100.0			
30-39					100.0			
40-49					100.0			
Marital status								
Never married					100.0			
Ever had sex					100.0			
Never had sex					100.0			
Married/living together					100.0			
Divorced/separated/widowed					100.0			
Residence								
Urban					100.0			
Rural					100.0			
Region								
Region 1					100.0			
Region 2					100.0			
Region 3					100.0			
Region 4					100.0			
Education								
No education					100.0			
Primary					100.0			
Secondary					100.0			
More than secondary					100.0			
Wealth quintile								
Lowest					100.0			
Second					100.0			
Middle					100.0			
Fourth					100.0			
Highest					100.0			
Total 15-49					100.0			
50-54[59]					100.0			
Total 15-54[59]					100.0			

[1] Includes 'don't know/missing'

Table 13.12 Pregnant women counseled and tested for HIV

Among all women age 15-49 who gave birth in the two years preceding the survey, the percentage who received HIV pretest counseling, the percentage who received an HIV test during antenatal care for their most recent birth by whether they received their results and post-test counseling, and percentage who received an HIV test during ANC or labor for their most recent birth by whether they received their test results, according to background characteristics, [country, year]

Background characteristic	Percentage who received counseling on HIV during antenatal care[1]	Percentage who were tested for HIV during antenatal care and who:			Percentage who received counseling on HIV and an HIV test during ANC, and the results	Percentage who had an HIV test during ANC or labor and who:[2]		Number of women who gave birth in the past two years[3]
		Received results and:		Did not receive results				
		Received post-test counseling	Did not receive post-test counseling			Received results	Did not receive results	
Age								
15-24								
15-19								
20-24								
25-29								
30-39								
40-49								
Marital status								
Never married								
Married/living together								
Divorced/separated/widowed								
Residence								
Urban								
Rural								
Region								
Region 1								
Region 2								
Region 3								
Region 4								
Education								
No education								
Primary								
Secondary								
More than secondary								
Wealth quintile								
Lowest								
Second								
Middle								
Fourth								
Total								

[1] In this context, "pretest counseling" means that someone talked with the respondent about all three of the following topics: 1) babies getting the AIDS virus from their mother, 2) preventing the virus, and 3) getting tested for the virus
[2] Women are asked whether they received an HIV test during labor only if they were not tested for HIV during ANC
[3] Denominator for percentages includes women who did not receive antenatal care for their last birth in the past two years

Table 13.12 on pregnant women counseled and tested for HIV is used only where the DHS HIV/AIDS module has been included in the questionnaire.

Data column 1 corresponds to MICS4 Indicator 9.8, "HIV counselling during antenatal care."
The sum of data columns 2 and 3 corresponds to MICS4 Indicator 9.9, "HIV testing during antenatal care," and the President's Emergency Plan for AIDS Relief Indicator P1.1.N, "Percentage of pregnant women who were tested for HIV and know their results."

Table 13.13 Male circumcision

Percentage of men age 15-49 who report having been circumcised, by background characteristics, [country, year]

Background characteristic	Percentage circumcised	Number of men
Age		
15-24		
15-19		
20-24		
25-29		
30-39		
40-49		
Residence		
Urban		
Rural		
Region		
Region 1		
Region 2		
Region 3		
Region 4		
Religion		

Ethnic group		
Group 1		
Group 2		
Group 3		
Total 15-49		
50-54[59]		
Total 15-54[59]		

Male circumcision has been shown to lower the risk to men of contracting sexually transmitted infections, including HIV. This table shows the percentage of men who report that they have been circumcised. Men who declared that they were unsure whether they had been circumcised are considered as not having been circumcised.

Data in this table correspond to the President's Emergency Plan for AIDS Relief Indicator P5.5.N, "Proportion of males circumcised in the intended population."

Table 13.14 Self-reported prevalence of sexually transmitted infections (STIs) and STI symptoms										6.6 AIS

Among women and men age 15-49 who ever had sexual intercourse, the percentage reporting having an STI and/or symptoms of an STI in the past 12 months, by background characteristics, [country, year]

	Women					Men				
	Percentage of women who reported having in the past 12 months:					Percentage of men who reported having in the past 12 months:				
Background characteristic	STI	Bad-smelling/ abnormal genital discharge	Genital sore or ulcer	STI/ genital discharge/ sore or ulcer	Number of women who ever had sexual intercourse	STI	Abnormal discharge from penis	Genital sore or ulcer	STI/ abnormal discharge from penis/ sore or ulcer	Number of men who ever had sexual intercourse
Age										
15-24										
15-19										
20-24										
25-29										
30-39										
40-49										
Marital status										
Never married										
Married/living together										
Divorced/separated/widowed										
Circumcised										
Yes	na	na	na	na	na					
No	na	na	na	na	na					
Residence										
Urban										
Rural										
Region										
Region 1										
Region 2										
Region 3										
Region 4										
Education										
No education										
Primary										
Secondary										
More than secondary										
Wealth quintile										
Lowest										
Second										
Middle										
Fourth										
Total 15-49										
50-54[59]	na	na	na	na	na					
Total 15-54[59]	na	na	na	na	na					

na = Not applicable

Table 13.14 presents information on self-reported prevalence of sexually-transmitted infections (STIs) and STI symptoms.

The following table is used to produce Figure 13.1 and should not be shown in the report.

Women and men seeking treatment for STIs (Working table for Figure 13.1)		
Percentage of women and men age 15-49 reporting an STI or symptoms of an STI in the past 12 months who sought advice or treatment, [country, year]		
Source of advice or treatment	Percentage of WOMEN	Percentage of MEN
Clinic/hospital/private doctor/other health professional	30	45
Advice or medicine from shop/pharmacy	25	20
Advice or treatment from any other source	10	8
No advice or treatment	50	55
Number with STD or symptoms of STD		
Note: The categories are not mutually exclusive and the sum of percentages may exceed 100 percent.		

Figure 13.1 Women and Men Seeking Advice or Treatment for STIs

235

Table 13.15 Prevalence of medical injections
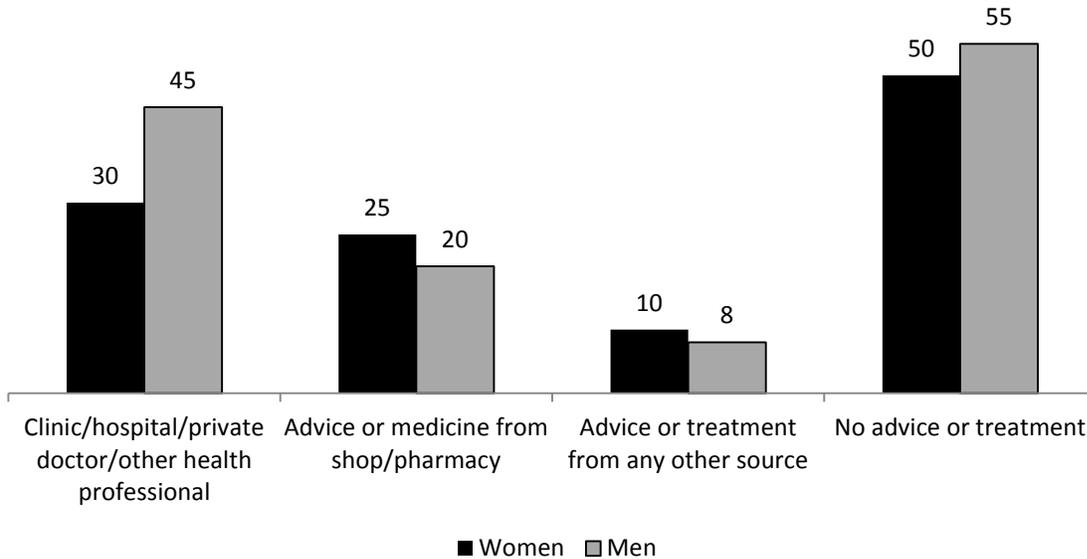
Table 13.15 Prevalence of medical injections   6.7 AIS

Percentage of women and men age 15-49 who received at least one medical injection in the past 12 months, the average number of medical injections per person in the past 12 months, and among those who received a medical injection, the percentage of last medical injections for which the syringe and needle were taken from a new, unopened package, by background characteristics, [country, year]

	Women					Men				
Background characteristic	Percentage who received a medical injection in the past 12 months	Average number of medical injections per person in the past 12 months	Number of women	For last injection, syringe and needle taken from a new, unopened package	Number of women receiving medical injections in the past 12 months	Percentage who received a medical injection in the past 12 months	Average number of medical injections per person in the past 12 months	Number of men	For last injection, syringe and needle taken from a new, unopened package	Number of men receiving medical injections in the past 12 months
Age										
15-24										
15-19										
20-24										
25-29										
30-39										
40-49										
Marital status										
Never married										
Ever had sex										
Never had sex										
Married/living together										
Divorced/separated/ widowed										
Residence										
Urban										
Rural										
Region										
Region 1										
Region 2										
Region 3										
Region 4										
Education										
No education										
Primary										
Secondary										
More than secondary										
Wealth quintile										
Lowest										
Second										
Middle										
Fourth										
Total 15-49										
50-54[59]	na	na	na	na	na					
Total 15-54[59]	na	na	na	na	na					

Note: Medical injections are those given by a doctor, nurse, pharmacist, dentist or any other health worker.
na = Not applicable

Table 13.15 provides information on the receipt of medical injections in the 12 months preceding the survey.

The following indicators are included in the table:
1) Data columns 2 and 7 correspond to the President's Emergency Plan for AIDS Relief Indicator P3.4.N "Average number of medical injections per person per year."
2) Data columns 4 and 9 correspond to President's Emergency Plan for AIDS Relief Indicator P3.5.N "Proportion of women and men reporting that the last health care injection was given with a syringe and needle set from a new, unopened package."

Table 13.16 Comprehensive knowledge about AIDS and of a source of condoms among young people   7.1 AIS

Percentage of young women and young men age 15-24 with comprehensive knowledge about AIDS and percentage with knowledge of a source of condoms, by background characteristics, [country, year]

Background characteristic	Women age 15-24			Men age 15-24		
	Percentage with comprehensive knowledge of AIDS[1]	Percentage who know a condom source[2]	Number of women	Percentage with comprehensive knowledge of AIDS[1]	Percentage who know a condom source[2]	Number of men
Age						
15-19						
15-17						
18-19						
20-24						
20-22						
23-24						
Marital status						
Never married						
Ever had sex						
Never had sex						
Ever married						
Residence						
Urban						
Rural						
Education						
No education						
Primary						
Secondary						
More than secondary						
Total 15-24						

[1] Comprehensive knowledge means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting the AIDS virus, knowing that a healthy-looking person can have the AIDS virus, and rejecting the two most common local misconceptions about transmission or prevention of the AIDS virus. The components of comprehensive knowledge are presented in Tables 13.2, 13.3.1, and 13.3.2.
[2] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Table 13.16 pertains to comprehensive knowledge about AIDS and of a condom source among the population age 15-24.

Data columns 1 and 4 in Table 13.15 correspond to the following indicators:

1) President's Emergency Plan for AIDS Relief Indicator P8.8.N, "Percentage of young people age 15-24 who both correctly identify ways of preventing the sexual transmission of HIV and reject major misconceptions about HIV transmission." Major misconceptions are determined on a country specific basis.
2) UNGASS *Knowledge and Behaviour* Indicator 13 "Percentage of young women and men aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission."
3) MDG Indicator 6.3, "Percentage of population aged 15-24 years with comprehensive knowledge of HIV/AIDS."
4) MICS4 Indicator 9.2, "Comprehensive knowledge about HIV prevention among young people."

Table 13.17 Age at first sexual intercourse among young people

Percentage of young women and young men age 15-24 who had sexual intercourse before age 15 and percentage of young women and young men age 18-24 who had sexual intercourse before age 18, by background characteristics, [country, year]

Background characteristic	Women age 15-24		Women age 18-24		Men age 15-24		Men age 18-24	
	Percentage who had sexual intercourse before age 15	Number of women	Percentage who had sexual intercourse before age 18	Number of women	Percentage who had sexual intercourse before age 15	Number of men	Percentage who had sexual intercourse before age 18	Number of men
Age								
15-19			na	na			na	na
15-17			na	na			na	na
18-19								
20-24								
20-22								
23-24								
Marital status								
Never married								
Ever married								
Knows condom source[1]								
Yes								
No								
Residence								
Urban								
Rural								
Education								
No education								
Primary								
Secondary								
More than secondary								
Total								

na = Not applicable
[1] For this table, the following responses are not considered a source for condoms: friends, family members and home.

Table 13.17 pertains to the age at first sexual intercourse among the population age 15-24.

Data columns 1 and 5 in Table 13.17 correspond to:

1) UNGASS *Knowledge and Behaviour* Indicator 15 "Percentage of young women and men 15-24 who have had sexual intercourse before the age of 15"
2) The President's Emergency Plan for AIDS Relief Indicator P8.10.N, "Percentage of young women and men aged 15-24 who have had sexual intercourse before the age of 15"
3) MICS4 Indicator 9.11, "Sex before age 15 among young women"

The following table is for production of Figure 13.2 and should not be shown in the report. This figure is designed to present trends and therefore is only to be presented when the same type of data are available from earlier surveys. Data from the current survey can be taken from Table 13.17.

Trend in age at first sexual intercourse (Working table for Figure 13.2) Percentage of respondents 15-19 who have had sexual intercourse before exact age 15 and percentage of respondents 18-19 who have had sexual intercourse before exact age 18, [country, year]		
	Survey X	Survey X+n
Percentage of WOMEN 15-19 who had sexual intercourse before exact age 15	20	15
Percentage of MEN 15-19 who had sexual intercourse before exact age 15	25	20
Percentage of WOMEN 18-19 who had sexual intercourse before exact age 18	60	55
Percentage of MEN 18-19 who had sexual intercourse before exact age 18	70	65

Figure 13.2
Trends in Age at First Sexual Intercourse

239
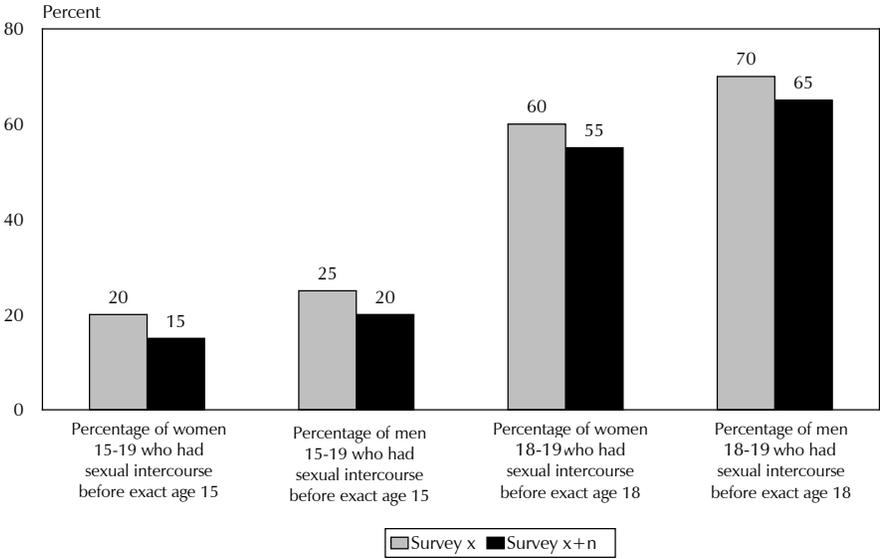
Table 13.18 Premarital sexual intercourse and condom use during premarital sexual intercourse among young people   7.4 AIS

Among never-married women and men age 15-24, the percentage who have never had sexual intercourse, the percentage who had sexual intercourse in the past 12 months, and, among those who had premarital sexual intercourse in the past 12 months, the percentage who used a condom at the last sexual intercourse, by background characteristics, [country, year]

| | Never-married women age 15-24 | | | | | Never-married men age 15-24 | | | | |
| | | | | Women who had sexual intercourse in the past 12 months | | | | | Men who had sexual intercourse in the past 12 months | |
Background characteristic	Percentage who have never had sexual intercourse	Percentage who had sexual intercourse in the past 12 months	Number of never-married women	Percentage who used a condom at last sexual intercourse	Number of women	Percentage who have never had sexual intercourse	Percentage who had sexual intercourse in the past 12 months	Number of never-married men	Percentage who used a condom at last sexual inter-course	Number of men
Age										
15-19										
15-17										
18-19										
20-24										
20-22										
23-24										
Knows condom source[1]										
Yes										
No										
Residence										
Urban										
Rural										
Education										
No education										
Primary										
Secondary										
More than secondary										
Total 15-24										

[1] For this table, the following responses are not considered a source for condoms: friends, family members and home.

Table 13.18 pertains to premarital sexual intercourse and condom use among the population age 15-24.

The following indicators are presented in Table 13.18:
1) Data columns 1 and 6 correspond to the President's Emergency Plan for AIDS Relief Indicator P8.9.N, "Percent of never-married young people age 15-24 who have never had sex," and MICS4 Indicator 9.10, "Young women who have never had sex."
2) Data columns 2 and 7 correspond to the President's Emergency Plan for AIDS Relief Indicator P8.16.N, "Percent of young never-married people (age 15-24) who had sex in the past 12 months."
3) Data columns 4 and 9 correspond to the President's Emergency Plan for AIDS Relief Indicator P8.20.N, "Condom use at last premarital sex, last sex."

Table 13.19.1 Multiple sexual partners in the past 12 months among young people: Women

Among all young women age 15-24, the percentage who had sexual intercourse with more than one sexual partner in the past 12 months, and among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse, by background characteristics, [country, year]

Background characteristic	Women age 15-24		Women age 15-24 who had 2+ partners in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Number of women	Percentage who reported using a condom at last intercourse	Number of women
Age				
15-19				
15-17				
18-19				
20-24				
20-22				
23-24				
Marital status				
Never married				
Ever married				
Knows condom source[1]				
Yes				
No				
Residence				
Urban				
Rural				
Education				
No education				
Primary				
Secondary				
More than secondary				
Total 15-24				

[1] For this table, the following responses are not considered a source for condoms: friends, family members and home.

Tables 13.19.1 and 13.19.2 pertain to multiple sexual partners and condom use among the population age 15-24.

Among all young men age 15-24, the percentage who had sexual intercourse with more than one sexual partner in the past 12 months, and among those having more than one partner in the past 12 months, the percentage reporting that a condom was used at last intercourse, by background characteristics, [country, year]

Background characteristic	Men age 15-24		Men age 15-24 who had 2+ partners in the past 12 months	
	Percentage who had 2+ partners in the past 12 months	Number of men	Percentage who reported using a condom at last intercourse	Number of men
Age				
15-19				
15-17				
18-19				
20-24				
20-22				
23-24				
Marital status				
Never married				
Ever married				
Knows condom source[1]				
Yes				
No				
Residence				
Urban				
Rural				
Education				
No education				
Primary				
Secondary				
More than secondary				
Total 15-24				

[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Table 13.20 Age-mixing in sexual relationships among women and men age 15-19   7.6 AIS

Among women and men age 15-19 who had sexual intercourse in the past 12 months, percentage who had sexual intercourse with a partner who was 10 or more years older than themselves, by background characteristics, [country, year]

| Background characteristic | Women age 15-19 who had sexual intercourse in the past 12 months | | Men age 15-19 who had sexual intercourse in the past 12 months | |
	Percentage who had sexual intercourse with a man 10+ years older	Number of women	Percentage who had sexual intercourse with a woman 10+ years older	Number of men
Age				
15-17				
18-19				
Marital status				
Never married				
Ever married				
Knows condom source[1]				
Yes				
No				
Residence				
Urban				
Rural				
Education				
No education				
Primary				
Secondary				
More than secondary				
Total				

[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Table 13.20 pertains to age-mixing in sexual relations among women and men age 15-19.

Table 13.21 Recent HIV tests among young people   7.8 AIS

Among young women and young men age 15-24 who have had sexual intercourse in the past 12 months, the percentage who were tested for HIV in the past 12 months and received the results of the last test, by background characteristics, [country, year]

Background characteristic	Women age 15-24 who have had sexual intercourse in the past 12 months		Men age 15-24 who have had sexual intercourse in the past 12 months	
	Percentage who have been tested for HIV in the past 12 months and received results of the last test	Number of women	Percentage who have been tested for HIV in the past 12 months and received results of the last test	Number of men
Age				
15-19				
15-17				
18-19				
20-24				
20-22				
23-24				
Marital status				
Never married				
Ever married				
Knows condom source[1]				
Yes				
No				
Residence				
Urban				
Rural				
Education				
No education				
Primary				
Secondary				
More than secondary				
Total				

[1] For this table, the following responses are not considered a source for condoms: friends, family members, and home.

Table 13.21 pertains to HIV testing among the population age 15-24 that had sexual intercourse in the 12 months preceding the survey.

Data column 1 corresponds to MICS4 Indicator 9.7, "Sexually active young women who have been tested for HIV and know the results."

CHAPTER 14

HIV PREVALENCE

This chapter is for surveys where HIV testing has been performed and is primarily based on respondents who received the test. The first two tables report the response rate of testing by background characteristics. It is important to highlight any large differentials in response, which may hint at biases in the estimation of HIV prevalence. If large differentials are present, further tabulations should be made to confirm that the HIV prevalence rates are unbiased or to correct for bias. The remaining tables in the chapter present the HIV prevalence rates by social, economic, demographic, and behavioral characteristics of the tested respondents. Separate tables are also presented for persons aged 15 to 24 years, according to circumcision of men and to ascertain concordance in HIV status among couples.

Four tables to be included in Appendix A (A.3-A.6) with the coverage rates for HIV testing must be produced and analyzed at the same time substantive results are presented in the prevalence chapter.

Table 14.1 Coverage of HIV testing by residence and region

Percent distribution of women age 15-49 and men age 15-54[59] eligible for HIV testing by testing status, according to residence and region (unweighted), [country, year]

| Residence and region | Testing status | | | | | | | | Total | Number |
| | DBS tested[1] | | Refused to provide blood | | Absent at the time of blood collection | | Other/missing[2] | | | |
	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed		
WOMEN 15-49										
Residence										
Urban									100..0	
Rural									100.0	
Region										
Region 1									100..0	
Region 2									100.0	
Region 3									100..0	
Region 4									100.0	
Total									100.0	
MEN 15-54[59]										
Residence										
Urban									100..0	
Rural									100.0	
Region										
Region 1									100..0	
Region 2									100.0	
Region 3									100..0	
Region 4									100.0	
Total 15-49									100.0	
Total 15-54[59]									100.0	
TOTAL (WOMEN 15-49 and MEN 15-54[59])										
Residence										
Urban									100..0	
Rural									100.0	
Region										
Region 1									100..0	
Region 2									100.0	
Region 3									100..0	
Region 4									100.0	
Total									100.0	

[1] Includes all Dried Blood Samples (DBS) tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) the lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.

Table 14.2 Coverage of HIV testing by selected background characteristics

Percent distribution of women age 15-49 and men age 15-54[59] eligible for HIV testing by testing status, according to selected background characteristics (unweighted), [country, year]

| Background characteristic | Testing status | | | | | | | | Total | Number |
| | DBS tested[1] | | Refused to provide blood | | Absent at the time of blood collection | | Other/missing[2] | | | |
	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed	Inter-viewed	Not inter-viewed		
WOMEN 15-49										
Age										
15-19									100.0	
20-24									100.0	
25-29									100.0	
30-34									100.0	
35-39									100.0	
40-44									100.0	
45-49									100.0	
Education										
No education									100.0	
Primary									100.0	
Secondary									100.0	
More than secondary									100.0	
Wealth quintile										
Lowest									100.0	
Second									100.0	
Middle									100.0	
Fourth									100.0	
Highest									100.0	
Total									100.0	
MEN 15-54[59]										
Age										
15-19									100.0	
20-24									100.0	
25-29									100.0	
30-34									100.0	
35-39									100.0	
40-44									100.0	
45-49									100.0	
50-54[59]									100.0	
Education										
No education									100.0	
Primary									100.0	
Secondary									100.0	
More than secondary									100.0	
Wealth quintile										
Lowest									100.0	
Second									100.0	
Middle									100.0	
Fourth									100.0	
Highest									100.0	
Total									100.0	

[1] Includes all Dried Blood Samples (IDBS) tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.

WORKING TABLE Outcome of the lab work				
		Column 1	Column 2	Col. 3=Col. 1/Col.2
		Number of all DBS HIV-1 positive	Number of all DBS with a test result	Prevalence
Row 1	De facto population with interview			
Row 2	De facto population WITHOUT interview			
Row 3	NON DE FACTO population			
Row 4	Total population with a test result	= Row 1+Row 2+Row3	= Row 1+Row 2+Row3	

All DBS samples collected in the field are tested in the lab. However, calculation of prevalence excludes several categories of population: 1) the de facto population WITHOUT an interview (row 2) and 2) the NON DE FACTO population (row 3). The purpose of this table is to assess the potential impact on the prevalence level of excluding these categories. For this purpose, prevalence in Row 1 ("De facto population with interview", i.e. the population subsequently used to estimate the prevalence) should be compared with the prevalence in Row 4.

Columns 1 (Number of HIV-1 positive) and 3 (Prevalence) include cases that are HIV-1 positive AND both HIV-1 and HIV-2 positive. Cases that are ONLY HIV-2 positive are not included in the prevalence estimate.

Table 14.3 HIV prevalence by age

Among the de facto women age 15-49 and men age 15-54[59] who were interviewed and tested, the percentage HIV-positive, by age, [country, year]

	Women				Men				Total			
Age	Percentage HIV-1 positive	Percentage HIV-2 positive	Percentage HIV-1 or HIV-2 positive	Number	Percentage HIV-1 positive	Percentage HIV-2 positive	Percentage HIV-1 or HIV-2 positive	Number	Percentage HIV-1 positive	Percentage HIV-2 positive	Percentage HIV-1 or HIV-2 positive	Number
15-19												
20-24												
25-29												
30-34												
35-39												
40-44												
45-49												
50-54[59]	na	na	na	na					na	na	na	na
Total age 15-49												
Total age 15-54[59]	na	na	na	na					na	na	na	na

na = Not applicable

For each major category of respondents (Women, Men, and Total), the first column (Percentage HIV-1 positive) includes cases that are HIV-1 positive AND both HIV-1 and HIV-2 positive. This is the indicator of prevalence to be used in the DHS (or AIS) reports. The column "Percentage HIV-2 positive" includes cases that are ONLY HIV-2 positive.

If men 50+ are interviewed, they are included in this table. All subsequent tables (excluding Table 14.11 and 14.12) are based on women and men age 15-49. In countries where only men age 15-49 are tested, the lines for "50-54[59]" and for "Total men age 15-54[59]" should be omitted.

In countries where HIV-2 is low or was not measured, the corresponding columns are omitted. In countries where only men 15-49 are tested and where HIV-2 is low or not measured, Table 14.3 may be combined with Table 14.4.

WORKING TABLE Detailed results of the testing algorithm																			
	Total number of DBS with a test result and with an interview (de facto population)																		
ELISA 1	N HIV+									N HIV-									
											5 or 10 per cent								
ELISA 2	N HIV+	N HIV-								N HIV-	N HIV+								
Repeat ELISA 1		N HIV+	N HIV-	N HIV+			N HIV-				N HIV-	N HIV+	N HIV-			N HIV+		
Repeat ELISA 1		N HIV+	N HIV-	N HIV-			N HIV+				N HIV-	N HIV+	N HIV+			N HIV-		
Western Blot				N HIV+	N HIV-	N HIV?	N HIV+	N HIV-	N HIV?				N HIV-	N HIV+	N HIV?	N HIV-	N HIV+	N HIV?

This table should be adapted to correspond to the country algorithm. The table is based on the total number of Dried Blood Samples (DBS) with a test result and with an interview (de facto population), i.e. the denominator used to calculate the prevalence.

Table 14.4 HIV prevalence by socioeconomic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, by socioeconomic characteristics, [country, year]

Background characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Ethnicity						

Religion						

No religion						
Employment (past 12 months)						
Not employed						
Employed						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-49						
50-54[59]	na	na			na	na
Total 15-54[59]	na	na			na	na

na = not applicable
[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.

The footnote should be deleted in countries where HIV-2 is not measured.
Categories for "Ethnicity" and "Religion" are to be determined by the response categories of the survey.

Table 14.5 HIV prevalence by demographic characteristics

Percentage HIV positive among women and men age 15-49 who were tested, by demographic characteristics, [country, year]

Demographic characteristic	Women Percentage HIV positive[1]	Women Number	Men Percentage HIV positive[1]	Men Number	Total Percentage HIV positive[1]	Total Number
Marital status						
Never married						
Ever had sexual intercourse						
Never had sexual intercourse						
Married/living together						
Divorced or separated						
Widowed						
Type of union						
In polygynous union						
In non-polygynous union						
Not currently in union						
Times slept away from home in past 12 months						
None						
1-2						
3-4						
5+						
Time away in past 12 months						
Away for more than 1 month						
Away only for less than 1 month						
Not away						
Currently pregnant						
Pregnant			na	na	na	na
Not pregnant or not sure			na	na	na	na
ANC for last birth in past 3 years						
ANC provided by the public sector			na	na	na	na
ANC provided by other than the public sector			na	na	na	na
No ANC/No birth in past 3 years			na	na	na	na
Male circumcision						
Circumcised	na	na			na	na
Not circumcised	na	na			na	na
Total 15-49						
50-59	na	na			na	na
Total men 15-59	na	na			na	na

na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.

'Type of union' to be included only in countries where polygny is practiced.

The footnote should be deleted in countries where HIV-2 is not measured.

The percentage HIV positive for pregnant women corresponds to UNAIDS Health and Social Impact Indicator 1 "HIV prevalence among pregnant women."

Table 14.6 HIV prevalence by sexual behavior

Percentage HIV positive among women and men age 15-49 who ever had sex and were tested for HIV, by sexual behavior characteristics, [country, year]

Sexual behavior characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Age at first sexual intercourse						
<16						
16-17						
18-19						
20+						
Multiple sexual partners and partner concurrency in the past 12 months						
0						
1						
2 +						
Had concurrent partners[2]						
None of the partners were concurrent						
Condom use at last sexual intercourse in past 12 months						
Used condom						
Did not use condom						
No sexual intercourse in past 12 months						
Number of lifetime partners						
1						
2						
3-4						
5-9						
10+						
Paid for sexual intercourse in past 12 months						
Yes	na	na			na	na
Used condom	na	na			na	na
Did not use condom	na	na			na	na
No/no sexual intercourse in past 12 months	na	na			na	na
Total 15-49						
50-54[59]	na	na			na	na
Total 15-54[59]	na	na			na	na

na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.
[2] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygynous men who had overlapping sexual partnerships with two or more wives).

Categories for the variable 'Number of lifetime partners' should be defined on a country-specific basis after reviewing the frequency distribution of this variable; however, categories 1 and 2 must be maintained.

Footnote 1 should be deleted in countries where HIV-2 is not measured.

The variable on paid sex should be 'na' for women. For men, this variable combines information from the directed question about whether or not they paid someone for sex in the past 12 months, and whether they reported any of their last 3 sexual partners were sex workers.

Table 14.7 HIV prevalence among young people by background characteristics

Percentage HIV positive among women and men age 15-24 who were tested for HIV, by background characteristics, [country, year]

Background characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Age						
15-19						
15-17						
18-19						
20-24						
20-22						
23-24						
Marital status						
Never married						
Ever had sex						
Never had sex						
Married/living together						
Widowed/divorced/separated						
Currently pregnant						
Pregnant			na	na	na	na
Not pregnant or not sure			na	na	na	na
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
None						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total 15-24						

na = Not applicable
[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.

The footnote should be deleted in countries where HIV-2 is not measured.

Table 14.7 is based on all young people, while
Table 14.8 is based on young people who have ever had sex.

This table provides data for and UNGASS *Impact* Indicator 22 and the President's Emergency Plan for

AIDS Relief Indicator P8.23.N, "Percentage of young women and men aged 15–24 who are HIV infected," and MDG Indicator 6.1, "HIV prevalence among population aged 15-24 years."

Table 14.8 HIV prevalence among young people by sexual behavior

Percentage HIV positive among women and men age 15-24 who have ever had sex and were tested for HIV, by sexual behavior, [country, year]

Sexual behavior characteristic	Women Percentage HIV positive[1]	Number	Men Percentage HIV positive[1]	Number	Total Percentage HIV positive[1]	Number
Multiple sexual partners and partner concurrency in the past 12 months						
0						
1						
2 +						
Had concurrent partners[2]						
None of the partners were concurrent						
Condom use at last sex in past 12 months						
Used condom at last sex						
Did not use condom						
No sexual intercourse in past 12 months						
Total 15-24						

[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.
[2] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygynous men who had overlapping sexual partnerships with two or more wives).

The footnote should be deleted in countries where HIV-2 is not measured.

Table 14.8 is based on young people who have ever had sex. The sexual behavior characteristics are the same as in earlier version of Table 14.7; however, the order of the characteristics has been changed.

Table 14.9 HIV prevalence by other characteristics

Percentage HIV positive among women and men age 15-49 who have ever had sex and were tested for HIV, by whether had an STI in the past 12 months and by prior testing for HIV, [country, year]

Characteristic	Women		Men		Total	
	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number	Percentage HIV positive[1]	Number
Sexually transmitted infection in past 12 months						
Had STI or STI symptoms						
No STI, no symptoms						
Prior HIV testing						
Ever tested						
Received results						
Did not receive results						
Never tested						
Total 15-49						

na = Not applicable

[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.

The footnote should be deleted in countries where HIV-2 is not measured.

Table 14.10 Prior HIV testing by current HIV status

Percent distribution of women and men age 15-49 who tested HIV positive and who tested HIV negative by HIV testing status prior to the survey, [country, year]

HIV testing prior to the survey	Women		Men		Total	
	HIV positive[1]	HIV negative	HIV positive[1]	HIV negative	HIV positive[1]	HIV negative
Previously tested						
Received result of last test						
Did not receive result of last test						
Not previously tested						
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number						

[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.

The footnote should be deleted in countries where HIV-2 is not measured.

Table 14.11 HIV prevalence by male circumcision

Among men age 15-49 who were tested for HIV, the percentage HIV positive by whether circumcised, according to background characteristics, [country, year]

Background characteristic	Circumcised		Uncircumcised	
	Percentage HIV positive[1]	Number of men	Percentage HIV positive[1]	Number of men
Age				
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
Ethnicity				

Religion				

No religion				
Residence				
Urban				
Rural				
Region				
Region 1				
Region 2				
Region 3				
Region 4				
Education				
None				
Primary				
Secondary				
More than secondary				
Wealth quintile				
Lowest				
Second				
Middle				
Fourth				
Highest				
Total 15-49				
50-54[59]				
Total 15-54[59]				

[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.

Prevalence of circumcision—which is based on all men interviewed rather than those tested for HIV—appears in Chapter 13 of the DHS tabulation plan (Table 13.12). Table 14.11 should only appear in the survey report if the unweighted number in the categories circumcised and uncircumcised men are both sufficient (i.e., > 200 each).

Categories for "Ethnicity" and "Religion" are to be determined by the response categories of the survey. The footnote should be deleted in countries where HIV-2 is not measured.

Table 14.12 HIV prevalence among couples

Percent distribution of couples living in the same household, both of whom were tested for HIV, by HIV status, according to background characteristics, [country, year]

Background characteristic	Both HIV positive[1]	Man HIV positive, woman HIV negative[1]	Woman HIV positive, man HIV negative[1]	Both HIV negative[1]	Total	Number
Woman's age						
15-19					100.0	
20-29					100.0	
30-39					100.0	
40-49					100.0	
Man's age						
15-19					100.0	
20-29					100.0	
30-39					100.0	
40-49					100.0	
50-54 [50-59]					100.0	
Age difference between partners						
Woman older					100.0	
Same age/man older by 0-4 years					100.0	
Man older by 5-9 years					100.0	
Man older by 10-14 years					100.0	
Man older by 15+ years					100.0	
Type of union						
Non-polygynous					100.0	
Polygynous					100.0	
Multiple partners in past 12 months[2]						
Both no					100.0	
Man yes, woman no					100.0	
Woman yes, man no					100.0	
Both yes					100.0	
Concurrent sexual partners in past 12 months[3]						
Both no					100.0	
Man yes, woman no					100.0	
Woman yes, man no					100.0	
Both yes					100.0	
Residence						
Urban					100.0	
Rural					100.0	
Region						
Region 1					100.0	
Region 2					100.0	
Region 3					100.0	
Region 4					100.0	
Woman's education						
None					100.0	
Primary					100.0	
Secondary					100.0	
More than secondary					100.0	
Man's education						
None					100.0	
Primary					100.0	
Secondary					100.0	
More than secondary					100.0	
Wealth quintile						
Lowest					100.0	
Second					100.0	
Middle					100.0	
Fourth					100.0	
Highest					100.0	
Total couples					100.0	

Note: The table is based on couples for which a valid test result (positive or negative) is available for both partners.
[1] HIV positive refers only to individuals infected with HIV-1, including those infected with both HIV-1 and HIV-2. Individuals infected with HIV-2 only are not counted as HIV positive when calculating the numerator of the percentages.
[2] A respondent is considered to have had multiple sexual partners in the past 12 months if he or she had sexual intercourse with two or more people during this time period. (Respondents with multiple partners include polygynous men who had sexual intercourse with two or more wives.)
[3] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygynous men who had overlapping sexual partnerships with two or more wives).

Couples include women 15-49 and men 15-54[59]. The text referring to this table should explain how

couples are defined, especially in the case of polygynous unions.

Footnote 1 should be deleted in countries where HIV-2 is not measured.
Footnote 2 should be deleted in countries where polygyny is not practiced.

CHAPTER 15

WOMEN'S EMPOWERMENT
AND DEMOGRAPHIC AND HEALTH OUTCOMES

This chapter shows information on indicators of women's empowerment, develops two empowerment indices, and relates those indices to select demographic and health outcomes.

The DHS Woman's Questionnaire collects data on the general background characteristics of female respondents (e.g., age, education, wealth quintile and employment status) and also data more specific to women's empowerment such as receipt of cash earnings, the magnitude of a woman's earnings relative to those of her husband, control over the use of a her own earnings and those of her husband. The chapter tabulates these indicators of woman's empowerment according to the general background characteristics of female respondents.

The Woman's Questionnaire also collects data on a woman's participation in household decision making and on her attitude toward wife beating. Two separate indices of empowerment are developed based on the number of household decisions in which the respondent participates and her opinion on the number of reasons that justify wife beating. The ranking of women on these two indices is then related to selected demographic and health outcomes including contraceptive use, ideal family size and unmet need for contraception as well as the receipt of health care services during pregnancy, at delivery and in the postnatal period. In addition, survivorship of children is tabulated by the ranking of their mothers on the indices.

Table 15.1 Employment and cash earnings of currently married women and men

Percentage of currently married women and men age 15-49 who were employed at any time in the past 12 months and the percent distribution of currently married women and men employed in the past 12 months by type of earnings, according to age, [country, year]

| | Among currently married respondents: | | Percent distribution of currently married respondents employed in past 12 months, by type of earnings | | | | | | |
Age	Percentage employed in past 12 months	Number of respondents	Cash only	Cash and in-kind	In-kind only	Not paid	Missing/ don't know	Total	Number of respondents
WOMEN									
15-19								100.0	
20-24								100.0	
25-29								100.0	
30-34								100.0	
35-39								100.0	
40-44								100.0	
45-49								100.0	
Total								100.0	
MEN									
15-19								100.0	
20-24								100.0	
25-29								100.0	
30-34								100.0	
35-39								100.0	
40-44								100.0	
45-49								100.0	
Total 15-49								100.0	
50-54[59]								100.0	
Total 15-54[59]								100.0	

The table shows the percent of currently married women and men who were employed at any time during the 12 months preceding the survey and the percent distribution of those employed in the 12 months preceding the survey by the type of earnings they received (cash, in-kind, or both).

Table 15.2.1 Control over women's cash earnings and relative magnitude of women's cash earnings

Percent distribution of currently married women age 15-49 who received cash earnings for employment in the 12 months preceding the survey by person who decides how wife's cash earnings are used and by whether she earned more or less than her husband, according to background characteristics, [country, year]

| Background characteristic | Person who decides how wife's cash earnings are used: | | | | | Wife's cash earnings compared with husband's cash earnings: | | | | | | Number of women |
	Mainly wife	Wife and husband jointly	Mainly husband	Other	Total	More	Less	About the same	Husband has no earnings	Don't know	Total	
Age												
15-19					100.0						100.0	
20-24					100.0						100.0	
25-29					100.0						100.0	
30-34					100.0						100.0	
35-39					100.0						100.0	
40-44					100.0						100.0	
45-49					100.0						100.0	
Number of living children												
0					100.0						100.0	
1-2					100.0						100.0	
3-4					100.0						100.0	
5+					100.0						100.0	
Residence												
Urban					100.0						100.0	
Rural					100.0						100.0	
Region												
Region 1					100.0						100.0	
Region 2					100.0						100.0	
Region 3					100.0						100.0	
Region 4					100.0						100.0	
Education					100.0						100.0	
No education					100.0						100.0	
Primary												
Secondary					100.0						100.0	
More than secondary					100.0						100.0	
Wealth quintile												
Lowest					100.0						100.0	
Second					100.0						100.0	
Middle					100.0						100.0	
Fourth					100.0						100.0	
Highest					100.0						100.0	
Total					100.0						100.0	

Employed women who earned cash for their work were asked the relative magnitude of their earnings in comparison to their husband's earnings. In addition, they were asked who the main decision maker is with regard to the use of their earnings. This information has implications for the empowerment of women. It is expected that employment and earnings are more likely to empower women if women themselves control their own earnings and perceive their earnings as significant relative to those of their husband.

Table 15.2.1 shows, for currently married women who had cash earnings in the past 12 months, their control over their own earnings and their perception of the magnitude of their earnings relative to those of their husband.
Only married women are asked about cash earnings (Q817-Q819).

Table 15.2.2 Control over men's cash earnings

Percent distributions of currently married men age 15-49 who receive cash earnings and of currently married women age 15-49 whose husbands receive cash earnings, by person who decides how husband's cash earnings are used, according to background characteristics, [country, year]

| Background characteristic | Men | | | | | | Women | | | | | |
| | Person who decides how husband's cash earnings are used: | | | | | Number of men | Person who decides how husband's cash earnings are used: | | | | | Number of women |
	Mainly wife	Husband and wife jointly	Mainly husband	Other	Total		Mainly wife	Wife and husband jointly	Mainly husband	Other	Total	
Age												
15-19					100.0						100.0	
20-24					100.0						100.0	
25-29					100.0						100.0	
30-34					100.0						100.0	
35-39					100.0						100.0	
40-44					100.0						100.0	
45-49					100.0						100.0	
Number of living children												
0					100.0						100.0	
1-2					100.0						100.0	
3-4					100.0						100.0	
5+					100.0						100.0	
Residence												
Urban					100.0						100.0	
Rural					100.0						100.0	
Region												
Region 1					100.0						100.0	
Region 2					100.0						100.0	
Region 3					100.0						100.0	
Region 4					100.0						100.0	
Education												
No education					100.0						100.0	
Primary					100.0						100.0	
Secondary					100.0						100.0	
More than secondary					100.0						100.0	
Wealth quintile												
Lowest					100.0						100.0	
Second					100.0						100.0	
Middle					100.0						100.0	
Fourth					100.0						100.0	
Highest					100.0						100.0	
Total 15-49					100.0						100.0	
50-54[59]					100.0		na	na	na	na	na	na
Total 15-54[59]					100.0		na	na	na	na	na	na

na = Not applicable

Table 15.3   Women's control over their earnings and over those of their husbands

Percent distribution of currently married women age 15-49 with cash earnings in the last 12 months by person who decides how the wife's cash earnings are used and percent distribution of currently married women age 15-49 whose husbands have cash earnings by person who decides how the husband's cash earnings are used, according to the relation between wife's and husband's cash earnings, [country, year]

Women's earnings relative to husband's earnings	Person who decides how the wife's cash earnings are used:				Total	Number of women	Person who decides how husband's cash earnings are used:				Total	Number of women
	Mainly wife	Wife and husband jointly	Mainly husband	Other			Mainly wife	Wife and husband jointly	Mainly husband	Other		
More than husband					100.0						100.0	
Less than husband					100.0						100.0	
Same as husband					100.0						100.0	
Husband has no cash earnings or did not work					100.0		na	na	na	na	na	
Woman worked but has no cash earnings	na	na	na	na	na						100.0	
Woman did not work	na	na	na	na	na						100.0	
Total¹					100.0						100.0	

na =not applicable
¹ Includes cases where a woman does not know whether she earned more or less than her husband

This table shows, for currently married women who earned cash in the past 12 months, the person who decides how their cash earnings are used and for currently married women whose husbands earn cash, the person who decides how their husband's cash earnings are used according to the relative magnitude of the earnings of women and their husband. In particular, it shows whether the person who decides how women's own earnings are used and the person who decides how her husband's earnings are used are each affected and vary by whether the woman works and by the magnitude of women's earnings relative to those of her husband.

Table 15.4.1 Ownership of assets: Women

Percent distribution of women age 15-49 by ownership of housing and land, according to background characteristics, [country, year]

Background characteristic	Percentage who own a house:			Percentage who do not own a house	Total	Percentage who own land:			Percentage who do not own land	Total	Number of women
	Alone	Jointly	Alone and jointly			Alone	Jointly	Alone and jointly			
Age											
15-19					100.0					100.0	
20-24					100.0					100.0	
25-29					100.0					100.0	
30-34					100.0					100.0	
35-39					100.0					100.0	
40-44					100.0					100.0	
45-49					100.0					100.0	
Residence											
Urban					100.0					100.0	
Rural					100.0					100.0	
Region											
Region 1					100.0					100.0	
Region 2					100.0					100.0	
Region 3					100.0					100.0	
Region 4					100.0					100.0	
Education											
No education					100.0					100.0	
Primary					100.0					100.0	
Secondary					100.0					100.0	
More than secondary					100.0					100.0	
Wealth quintile											
Lowest					100.0					100.0	
Second					100.0					100.0	
Middle					100.0					100.0	
Fourth					100.0					100.0	
Highest					100.0					100.0	
Total					100.0					100.0	

Asset ownership, particularly of land and housing, has many beneficial effects for households including protection against financial ruin. For women asset ownership is a source of financial empowerment and can provide protection in the case of marital dissolution or abandonment. However, the limited information available suggests that women are much less likely than men to own productive assets. Information on women's asset ownership can provide important insights into women's status and demographic and health outcomes. Accordingly, DHS asks women (and men) about their ownership, alone or jointly, of two of the most important assets, land and house.

Table 15.4.2 Ownership of assets: Men

Percent distribution of men age 15-49 by ownership of housing and land, according to background characteristics, [country, year]

Background characteristic	Percentage who own a house:			Percentage who do not own a house	Total	Percentage who own land			Percentage who do not own land	Total	Number of men
	Alone	Jointly	Alone and jointly			Alone	Jointly	Alone and jointly			
Age											
15-19					100.0					100.0	
20-24					100.0					100.0	
25-29					100.0					100.0	
30-34					100.0					100.0	
35-39					100.0					100.0	
40-44					100.0					100.0	
45-49					100.0					100.0	
Residence											
Urban					100.0					100.0	
Rural					100.0					100.0	
Region											
Region 1					100.0					100.0	
Region 2					100.0					100.0	
Region 3					100.0					100.0	
Region 4					100.0					100.0	
Education											
No education					100.0					100.0	
Primary					100.0					100.0	
Secondary					100.0					100.0	
More than secondary					100.0					100.0	
Wealth quintile											
Lowest					100.0					100.0	
Second					100.0					100.0	
Middle					100.0					100.0	
Fourth					100.0					100.0	
Highest					100.0					100.0	
Total 15-49					100.0					100.0	
50-54[59]					100.0					100.0	
Total 15-54[59]					100.0					100.0	

Table 15.5 Participation in decision making

Percent distribution of currently married women and currently married men age 15-49 by person who usually makes decisions about various issues, [country, year]

Decision	Mainly wife	Wife and husband jointly	Mainly husband	Someone else	Other	Total	Number
			WOMEN				
Own health care						100.0	
Major household purchases						100.0	
Visits to her family or relatives						100.0	
			MEN				
Man's own health care						100.0	
Major household purchases						100.0	

To assess women's decision making autonomy, information was collected on women's participation in four different types of decisions: on the respondent's own health care, on making large household purchases, on making household purchases for daily needs, and on visits to family friends or relatives. The table shows the percent distribution of women according to the person in the household who usually makes decisions concerning these matters. The ability of women to make decisions that affect the circumstances of their own lives is an essential aspect of empowerment.

In previous DHS, men were asked their opinion about who in the household should make certain decisions. Currently, men are asked questions parallel to the questions in the woman's questionnaire about who actually makes decisions in their household.

Table 15.6.1 Women's participation in decision making by background characteristics

Percentage of currently married women age 15-49 who usually make specific decisions either by themselves or jointly with their husband, by background characteristics, [country, year]

Background characteristic	Specific decisions			All three decisions	None of the three decisions	Number of women
	Woman's own health care	Making major household purchases	Visits to her family or relatives			
Age						
15-19						
20-24						
25-29						
30-34						
35-39						
40-44						
45-49						
Employment (past 12 months)						
Not employed						
Employed for cash						
Employed, not for cash						
Number of living children						
0						
1-2						
3-4						
5+						
Residence						
Urban						
Rural						
Region						
Region 1						
Region 2						
Region 3						
Region 4						
Education						
No education						
Primary						
Secondary						
More than secondary						
Wealth quintile						
Lowest						
Second						
Middle						
Fourth						
Highest						
Total						

The table shows how participation in household decision making varies by background characteristics. Women are considered to participate in a decision if they alone or jointly with their husband have the final say in that decision.

**Figure 15.1
Number of Decisions in which Currently
Married Women Participate**
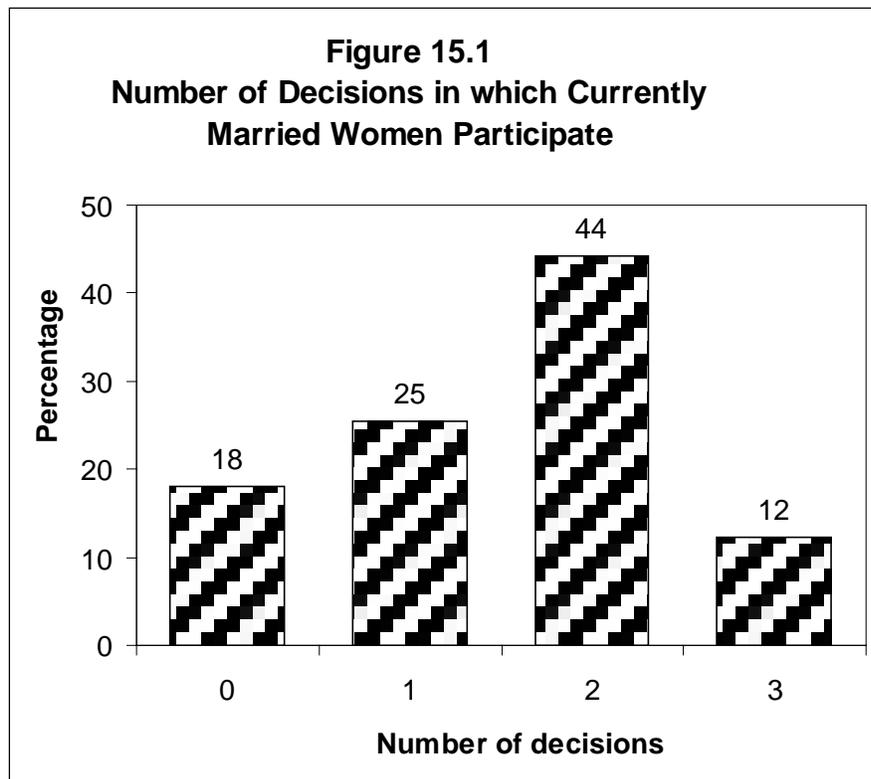
Women may have a say in some and not in other decisions. To assess a woman's overall decision-making autonomy, the decisions in which she participates (i.e., she alone has the final say or does so jointly with her husband) are added together. The total number of decisions a woman participates in is one simple measure of her empowerment. Figure 15.1 gives the percentage of currently married women according to the number of decisions in which they participate.

Table 15.6.2 Men's participation in decision making by background characteristics					
Percentage of currently married men age 15-49 who usually make specific decisions either alone or jointly with their wife, by background characteristics, [country, year]					
	Specific decisions			Neither of	
Background characteristic	Man's own health care	Making major household purchases	Both decisions	the two decisions	Number of men
Age					
15-19					
20-24					
25-29					
30-34					
35-39					
40-44					
45-49					
Employment (past 12 months)					
Not employed					
Employed for cash					
Employed, not for cash					
Number of living children					
0					
1-2					
3-4					
5+					
Residence					
Urban					
Rural					
Region					
Region 1					
Region 2					
Region 3					
Region 4					
Education					
No education					
Primary					
Secondary					
More than secondary					
Wealth quintile					
Lowest					
Second					
Middle					
Fourth					
Highest					
Total 15-49					
50-54[59]					
Total 15-54[59]					

The DHS used to collect information about men's attitudes towards a woman's participation in decision making. The questionnaire currently asks men about their own participation in decision making.

Table 15.7.1 Attitude toward wife beating: Women

Percentage of all women age 15-49 who agree that a husband is justified in hitting or beating his wife for specific reasons, by background characteristics, [country, year]

Background characteristic	Husband is justified in hitting or beating his wife if she:					Percentage who agree with at least one specified reason	Number of women
	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sexual intercourse with him		
Age							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							
Employment (past 12 months)							
Not employed							
Employed for cash							
Employed, not for cash							
Number of living children							
0							
1-2							
3-4							
5+							
Marital status							
Never married							
Married or living together							
Divorced/separated/widowed							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total							

The table shows women's attitudes toward wife beating in five specific circumstances. Women who believe that a husband is justified in hitting or beating his wife for any of the specified reasons may believe themselves to be low in status both absolutely and relative to men. Such a perception could act as a barrier to accessing health care for themselves and their children, could affect their attitude toward contraceptive use and impact their general well being.

Data column 6 corresponds to MICS4 Indicator 8.14, "Attitude towards domestic violence."

Table 15.7.2 Attitude toward wife beating: Men

Percentage of all men age 15-49 who agree that a husband is justified in hitting or beating his wife for specific reasons, by background characteristics, [country, year]

Background characteristic	Husband is justified in hitting or beating his wife if she:					Percentage who agree with at least one specified reason	Number of men
	Burns the food	Argues with him	Goes out without telling him	Neglects the children	Refuses to have sexual intercourse with him		
Age							
15-19							
20-24							
25-29							
30-34							
35-39							
40-44							
45-49							
Employment (past 12 months)							
Not employed							
Employed for cash							
Employed, not for cash							
Number of living children							
0							
1-2							
3-4							
5+							
Marital status							
Never married							
Married or living together							
Divorced/separated/widowed							
Residence							
Urban							
Rural							
Region							
Region 1							
Region 2							
Region 3							
Region 4							
Education							
No education							
Primary							
Secondary							
More than secondary							
Wealth quintile							
Lowest							
Second							
Middle							
Fourth							
Highest							
Total 15-49							
50-54[59]							
Total 15-54[59]							

Table 15.8 Indicators of women's empowerment

Percentage of currently married women age 15-49 who participate in all decision making and the percentage who disagree with all of the reasons justifying wife-beating, by value on each of the indicators of women's empowerment, [country, year]

Empowerment indicator	Percentage who participate in all decision making	Percentage who disagree with all the reasons justifying wife beating	Number of women
Number of decisions in which women participate[1]			
0	na		
1-2	na		
3	na		
Number of reasons for which wife beating is justified[2]			
0		na	
1-2		na	
3-4		na	
5		na	

na = Not applicable
[1] See Table 15.6.1 for the list of decisions.
[2] See Table 15.7.1 for the list of reasons.

The two sets of empowerment indicators, namely women's participation in making household decisions and their attitude toward wife beating can be summarized into two separate indices. The first index shows the number of decisions (see Table 15.5.1 for the list of decisions) in which women participate alone or jointly with their husband. This index ranges in value from 0 to 3 and is positively related to women's empowerment. It reflects the degree of decision-making control that women are able to exercise in areas that affect their own lives and environments.

The second indicator, which ranges in value from 0 to 5, is the total number of reasons (see Table 15.7 for the list of reasons) for which the respondent feels that a husband is justified in beating his wife. A lower score on this indicator is interpreted as reflecting a greater sense of entitlement and self-esteem and a higher status of women.

Table 15.8 shows how these two indicators relate to each other. In general, the expectation is that women who participate in making household decisions are also more likely to have gender-egalitarian beliefs.

Table 15.9 Current use of contraception by women's empowerment

Percent distribution of currently married women age 15-49 by current contraceptive method, according to selected indicators of women's status, [country, year]

| Empowerment indicator | Any method | Modern methods | | | | | Any traditional method | Not currently using | Total | Number of women |
		Any modern method[1]	Female sterili- zation	Male sterili- zation	Temporary modern female methods[1]	Male condom				
Number of decisions in which women participate[2]										
0									100.0	
1-2									100.0	
3									100.0	
Number of reasons for which wife beating is justified[3]										
0									100.0	
1-2									100.0	
3-4									100.0	
5									100.0	
Total									100.0	

Note: If more than one method is used, only the most effective method is considered in this tabulation.
[1] Pill, IUD, injectables, implants, female condom, diaphragm, foam/jelly and lactational amenorrhea method
[2] See Table 15.6.1 for the list of decisions.
[3] See Table 15.7.1 for the list of reasons.

A woman's ability to control her fertility and the contraceptive method she chooses are likely to be affected by her status, self-image, and sense of empowerment. A woman who feels that she is unable to control other aspects of her life may be less likely to feel she can make and carry out decisions on her fertility. She may also feel the need to choose methods that are less likely to be evident or which do not depend on her husband's cooperation.

Table 15.10 Ideal number of children and unmet need for family planning by women's empowerment

Mean ideal number of children for women 15-49 and the percentage of currently married women age 15-49 with an unmet need for family planning, by indicators of women's empowerment, [country, year]

| Empowerment indicator | Mean ideal number of children[1] | Number of women | Percentage of currently married women with an unmet need for family planning[2] | | | Number of currently married women |
			For spacing	For limiting	Total	
Number of decisions in which women participate[3]						
0						
1-2						
3						
Number of reasons for which wife beating is justified[4]						
0						
1-2						
3-4						
5						
Total						

[1] Mean excludes respondents who gave non-numeric responses.
[2] See Table 7.12.1 for the definition of unmet need for family planning
[3] Restricted to currently married women. See Table 15.6.1 for the list of decisions.
[4] See Table 15.7.1 for the list of reasons.

The number of decisions in which a woman has the final say is indicative of women's empowerment and reflects the degree of decision-making control women are able to exercise in areas that affect their lives. The indicator "Number of reasons for which wife beating is justified" has an inverse association with a woman's greater sense of entitlement, self-esteem, and status and therefore her level of empowerment.

An increase in women's status and empowerment is recognized as important for efforts to reduce fertility through at least two main pathways: 1) desired family size decreases as women become more empowered and 2) empowerment increases a woman's ability to meet family-size goals through the effective use of contraception. The table shows how women's ideal family size and their unmet need for family planning vary by the two indicators of women's empowerment—number of decisions in which the respondent has the final say and number of reasons for which the respondent feels a husband is justified in beating his wife.

Table 15.11 Reproductive health care by women's empowerment

Percentage of women age 15-49 with a live birth in the five years preceding the survey who received antenatal care, delivery assistance and postnatal care from health personnel for the most recent birth, by indicators of women's empowerment, [country, year]

Empowerment indicator	Percentage receiving antenatal care from a skilled provider[1]	Percentage receiving delivery care from a skilled provider[1]	Percentage of women with a postnatal checkup in the first two days after birth[2]	Number of women with a child born in the past five years
Number of decisions in which women participate[3]				
0				
1-2				
3				
Number of reasons for which wife beating is justified[4]				
0				
1-2				
3-4				
5				
Total				

[1] 'Skilled provider' includes doctor, nurse, midwife, or auxiliary nurse/midwife
[2] Includes women who received a postnatal checkup from a doctor, nurse, midwife, community health worker or traditional birth attendant (TBA) in the first two days after the birth. Includes women who gave birth in a health facility and those who did not give birth in a health facility.
[3] Restricted to currently married women. See Table 15.6.1 for the list of decisions.
[4] See Table 15.7.1 for the list of reasons.

This table examines whether women's use of antenatal, delivery, and postnatal care services from health workers varies by their level of empowerment as measured by the two indicators of empowerment. In societies where health care is widespread, women's empowerment may not affect their access to reproductive health services; in other societies; however, increased empowerment of women is likely to increase in their ability to seek out and use health services to better meet their own reproductive health goals, including the goal of safe motherhood.

Column 1 should match the column "Percentage receiving antenatal care from a skilled provider" in Table 9.1. The providers included in column 2 should match those included in the column "Percentage delivered by a skilled provider" in Table 9.6. The numerator for Column 3 is defined the same way as the numerator for the column "Percentage of women with a postnatal checkup in the first two days after birth" in Table 9.8; however, the percentages will differ slightly between the two tables because Table 9.8 includes a reference period of only two years. In many countries, the cadres of providers considered qualified to perform ANC, delivery care and postpartum care are not all the same. The providers may therefore differ from column to column in this table. According to a joint statement issued by WHO, the International Confederation of Midwives (ICM) and the International Federation of Gynecologists and Obstetricians (FIGO) in 2004, traditional birth attendants (TBAs) are not regarded as qualified to attend births.[1] However, there is some evidence that TBAs and community health workers may be able to provide live-saving interventions for the mother, and especially for the baby, during the postpartum

---

[1] Making pregnancy safer: the critical role of the skilled attendant. A joint statement by WHO, ICM and FIGO. Geneva, World Health Organization, 2004.

period. As of January 2011, there was no consensus among technical experts about which cadres of providers should be considered qualified to provide postnatal checkups for women. On an interim basis, all cadres of healthcare providers in the formal healthcare system as well as TBAs and community health workers (but not traditional healers, friends or relatives) are considered qualified providers of postpartum care. These providers should be included in column 3 of Table 15.11 <u>unless</u> the country has a more restrictive policy specifying who the providers of postpartum care for mothers should be. The standard coding for the table and the footnotes must be revised to match the country's policies.

Table 15.12 Early childhood mortality rates by indicators of women's empowerment

Infant, child, and under-five mortality rates for the 10-year period preceding the survey, by indicators of women's empowerment, [country, year]

Empowerment indicator	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Number of decisions in which women participate[1]			
0			
1-2			
3			
Number of reasons for which wife beating is justified[2]			
0			
1-2			
3-4			
5			

[1] Restricted to currently married women. See Table 15.6.1 for the list of decisions.
[2] See Table 15.7.1 for the list of reasons.

The ability to access information, take decisions, and act effectively in their own interest or in the interests of those who depend on them are essential aspects of empowerment of women. It follows that if women, who are the primary caretakers of children, are empowered, the health and survival of their children would be enhanced. In fact, mother's empowerment fits into the Mosley-Chen framework on child survival as an intervening individual-level variable that affects child survival through proximate determinants. This table shows information on the impact on infant and child mortality of women's empowerment, as measured by two specific indicators—participation in household decision making and agreement with reasons justifying wife beating.

APPENDIX A

SAMPLE DESIGN

A.1   Introduction

This section will include a description of the objectives of the survey, the overall sample size, survey domains and a description of any sub-samples used.

A.2   Sample frame

This section will describe the sample frame, its size and structure, and any weaknesses in coverage. Table A.1 will provide a distribution of clusters and households in the sample frame by region and residence. Table A.2 shows the distribution of the population in the sample frame by region and residence. Some domains may not have both urban and rural strata. For example, a capital city may have no rural clusters. In this case, "na" should appear in the corresponding cell, and this should be explained in the text. Additional tables may be used as needed.

Table A.1 Enumeration areas and households

Distribution of the enumeration areas and households in the sampling frame by region and residence, [Country, xyear]

	Number of enumeration areas in frame			Number of households in frame		
Region	Urban	Rural	Total	Urban	Rural	Total
Region 1						
Region 2						
.						
.						
.						

[Country]

Table A.2 Population

Distribution of the population in the sampling frame by region and residence, [Country, xyear]

	Population in frame			Percent of total population	Percent urban
Region	Urban	Rural	Total		
Region 1					
Region 2					
.					
.					
.					

[Country]

A.3   Sample design and implementation

This section will include the sampling strata for the survey, and the procedure for selecting clusters and households by strata. The allocation of clusters and households in the survey is shown in Table A.3. Sampling issues such as the segmentation of large clusters and selection of households by sampling interval or runs should be addressed. The number of interviews with women and men that are expected to be completed based on the sample design are shown in Table A.4. If the survey includes HIV testing, a table on the number of HIV tests that are expected to be completed will also be included. The listing process and any problems encountered should be explained. Details about response rates and actual number of completed interviews are shown in Tables A.5 and A.6. When HIV testing is included in the survey, Tables A.7-A.10 on HIV response rates are also included. If there are any major differences between the expected and completed numbers of interviews in any stratum, the reasons should be given.

Table A.3 Sample allocation of clusters and households

Sample allocation of clusters and households by region, according to residence, [country, year]

	Allocation of clusters			Allocation of households		
Region	Urban	Rural	Total	Urban	Rural	Total
Region 1						
Region 2						
.						
.						
.						
[Country]						

Table A.4 Sample allocation of completed interviews with women and men

Sample allocation of expected number of completed interviews with women and men by region, according to residence, [country, year]

	Women 15-49			Men 15-49[54]		
Region	Urban	Rural	Total	Urban	Rural	Total
Region 1						
Region 2						
.						
.						
.						
[Country]						

A.4   Sample probabilities and sample weights

Due to the non-proportional allocation of the sample across domains and urban/rural areas, and differential response rates, any analysis of [XDHS] data requires the data to be weighted. Weights are applied to the data to ensure that survey results are representative at both the national and domain level. Since the XDHS sample is a two-stage stratified cluster sample, sampling weights are calculated based on sampling probabilities for each sampling stage and for each cluster. We use the following notations:

P_{1hi}:   first-stage sampling probability of the ith cluster in stratum h

P_{2hi}:   second -stage sampling probability within the ith cluster (households)

Let a_h be the number of clusters selected in stratum h, M_{hi} the number of households according to the sampling frame in the ith cluster, and $\sum M_{hi}$ the total number of households in the stratum. The probability of selecting the ith cluster is calculated as follows:

$$\frac{a_h M_{hi}}{\sum M_{hi}}$$

Let b_{hi} be the proportion of households in the selected cluster compared to the total number of households in cluster i in stratum h if the cluster is segmented, otherwise $b_{hi} = 1$. Then the probability of selecting cluster i in the sample is:

$$P_{1hi} = \frac{a_h M_{hi}}{\sum M_{hi}} \times b_{hi}$$

Let L_{hi} be the number of households listed in the household listing operation in cluster i in stratum h, let g_{hi} be the number of households selected in the cluster. The second stage's selection probability for each household in the cluster is calculated as follows:

$$P_{2hi} = \frac{g_{hi}}{L_{hi}}$$

The overall selection probability of each household in cluster i of stratum h is therefore the product of the two stages selection probabilities:

$$P_{hi} = P_{1hi} \times P_{2hi}$$

The design weight for each household in cluster i of stratum h is the inverse of its overall selection probability:

$$W_{hi} = 1 / P_{hi}$$

Next, the design weight is adjusted for household non-response and individual non-response to get the sampling weights for households and for women and men, respectively. Non-response is adjusted at the sampling stratum level. For the household sampling weight, the household design weight is multiplied by the inverse of the household response rate, by stratum. For the women's individual sampling weight, the household sampling weight is multiplied by the inverse of the women's individual response rate, by stratum. For the men's individual sampling weight, the household sampling weight is multiplied by the inverse of the men's individual response rate, by stratum. After adjusting for non-response, the sampling weights are normalized to get the final standard weights that appear in the data files. The normalization process is done to obtain a total

number of un-weighted cases equal to the total number of weighted cases at the national level, for the total number of households, women, and men. Normalization is done by multiplying the sampling weight by the estimated sampling fraction obtained from the survey for the household weight, the individual woman's weight, and the individual man's weight. The normalized weights are relative weights which are valid for estimating means, proportions, ratios, and rates, but are not valid for estimating population totals or for pooled data. [IF HIV TESTING IS CONDUCTED INCLUDE: The sampling weights for HIV testing are calculated in a similar way, but the normalization of the HIV weights is different. The individual HIV testing weights are normalized at the national level for women and men together so that HIV prevalence estimates calculated for women and men together are valid.]

Table A.5 Sample implementation: Women

Percent distribution of households and eligible women by results of the household and individual interviews, and household, eligible women and overall women response rates, according to urban-rural residence and region (unweighted), [country and year]

| Result | Residence | | Region | | | | Total |
	Urban	Rural	Region 1	Region 2	Region 3	Region 4	
Selected households							
Completed (C)							
Household present but no competent respondent at home HP)							
Postponed (P)							
Refused (R)							
Dwelling not found (DNF)							
Household absent (HA)							
Dwelling vacant/address not a dwelling (DV)							
Dwelling destroyed (DD)							
Other (O)							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households							
Household response rate (HRR)[1]							
Eligible women							
Completed (EWC)							
Not at home (EWNH)							
Postponed (EWP)							
Refused (EWR)							
Partly completed (EWPC)							
Incapacitated (EWI)							
Other (EWO)							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women							
Eligible women response rate (EWRR)[2]							
Overall women response rate (OWRR)[3]							

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + P + R + DNF}$$

[2] The eligible women response rate (EWRR) is equivalent to the percentage of interviews completed (EWC).

[3] The overall women response rate (OWRR) is calculated as:

$$OWRR = HRR * EWRR/100$$

Table A.6 Sample implementation: Men

Percent distribution of households and eligible men by results of the household and individual interviews, and household, eligible men and overall men response rates, according to urban-rural residence and region (unweighted), [country and year]

Result	Residence		Region				Total
	Urban	Rural	Region 1	Region 2	Region 3	Region 4	
Selected households							
Completed (C)							
Household present but no competent respondent at home (HP)							
Postponed (P)							
Refused (R)							
Dwelling not found (DNF)							
Household absent (HA)							
Dwelling vacant/address not a dwelling (DV)							
Dwelling destroyed (DD)							
Other (O)							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of sampled households							
Household response rate (HRR)[1]							
Eligible men							
Completed (EMC)							
Not at home (EMNH)							
Postponed (EMP)							
Refused (EMR)							
Partly completed (EMPC)							
Incapacitated (EMI)							
Other (EMO)							
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of men							
Eligible men response rate (EMRR)[2]							
Overall men response rate (OMRR)[3]							

[1] Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\frac{100 * C}{C + HP + P + R + DNF}$$

[2] The eligible men response rate (EMRR) is equivalent to the percentage of interviews completed (EMC)

[3] The overall men response rate (OMRR) is calculated as:

$$OMRR = HRR * EMRR/100$$

Table A.7 Coverage of HIV testing by social and demographic characteristics: Women

Percent distribution of interviewed women age 15-49 by HIV testing status, according to social and demographic characteristics (unweighted), [country and year]

| | HIV test status | | | | | Number |
Characteristic	DBS tested[1]	Refused to provide blood	Absent at the time of blood collection	Other/ missing[2]	Total	of women
Marital status						
Never married					100.0	
Ever had sex					100.0	
Never had sex					100.0	
Married/living together					100.0	
Divorced/separated					100.0	
Widowed					100.0	
Type of union						
In polygynous union					100.0	
In non-polygynous union					100.0	
Not currently in union					100.0	
Ever had sexual intercourse						
Yes					100.0	
No					100.0	
Currently pregnant						
Pregnant					100.0	
Not pregnant/not sure					100.0	
Times slept away from home in the past 12 months						
None					100.0	
1-2					100.0	
3-5					100.0	
5+					100.0	
Time away in past 12 months						
Away more than 1 month					100.0	
Away less than 1 month					100.0	
Not away					100.0	
Ethnicity						
----					100.0	
----					100.0	
----					100.0	
Religion						
----					100.0	
----					100.0	
----					100.0	
No religion					100.0	
Total 15-49					100.0	

[1] Includes all Dried Blood Samples (DBS) tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.

As is the case with the survey response rates in Tables A.3 and A.4, Tables A.5-A.8 on coverage of HIV testing present (when applicable) unweighted data.

Categories for "Ethnicity" and "Religion" are to be determined by the response categories of the survey.

Table A.8 Coverage of HIV testing by social and demographic characteristics: Men

Percent distribution of interviewed men age 15-54 [59] by HIV testing status, according to social and demographic characteristics (unweighted), [country and year]

| Characteristic | HIV test status | | | | Total | Number of men |
	DBS tested[1]	Refused to provide blood	Absent at the time of blood collection	Other/ missing[2]		
Marital status						
Never married					100.0	
Ever had sex					100.0	
Never had sex					100.0	
Married/living together					100.0	
Divorced/separated					100.0	
Widowed					100.0	
Type of union						
In polygynous union					100.0	
In non-polygynous union					100.0	
Not currently in union					100.0	
Ever had sexual intercourse						
Yes					100.0	
No					100.0	
Circumcision status						
Circumcised					100.0	
Not circumcised					100.0	
Times slept away from home in the past 12 months						
None					100.0	
1-2					100.0	
3-5					100.0	
5+					100.0	
Time away in past 12 months						
Away more than 1 month					100.0	
Away less than 1 month					100.0	
Not away					100.0	
Ethnicity						
----					100.0	
----					100.0	
----					100.0	
Religion						
----					100.0	
----					100.0	
----					100.0	
No religion					100.0	
Total 15-54[59]					100.0	

[1] Includes all Dried Blood Samples (DBS) tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.

Categories for "Ethnicity" and "Religion" are to be determined by the response categories of the survey.

Table A.9 Coverage of HIV testing by sexual behavior characteristics: Women

Percent distribution of interviewed women age 15-49who ever had sexual intercourse by HIV test status, according to sexual behavior characteristics (unweighted), [country and year]

Sexual behavior characteristic	HIV test status				Total	Number of women
	DBS tested[1]	Refused to provide blood	Absent at the time of blood collection	Other/ missing[2]		
Age at first sexual intercourse						
< 16					100.0	
16-17					100.0	
18-19					100.0	
20+					100.0	
Multiple sexual partners and partner concurrency in past 12 months						
0					100.0	
1					100.0	
2+					100.0	
Had concurrent partners[3]					100.0	
None of the partners were concurrent					100.0	
Condom use at last sexual intercourse in past 12 months						
Used condom					100.0	
Did not use condom at last sex in past 12 months					100.0	
No sexual intercourse in past 12 months					100.0	
Number of sexual partners in lifetime						
1					100.0	
2					100.0	
3-4					100.0	
5-9					100.0	
10+					100.0	
Prior HIV testing						
Ever tested					100.0	
Received results					100.0	
Did not receive results					100.0	
Never tested					100.0	
Total 15-49					100.0	

[1] Includes all Dried Blood Samples (DBS) tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.
[3] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey

Number of lifetime partners to be defined based on the frequency distribution; however, categories 1 and 2 must be maintained.

Table A.10 Coverage of HIV testing by sexual behavior characteristics: Men

Percent distribution of interviewed men age 15-54[59] who ever had sexual intercourse by HIV test status, according to sexual behavior characteristics (unweighted), [country and year]

Sexual behavior characteristic	HIV test status				Total	Number of men
	DBS tested[1]	Refused to provide blood	Absent at the time of blood collection	Other/ missing[2]		
Age at first sexual intercourse						
< 16					100.0	
16-17					100.0	
18-19					100.0	
20+					100.0	
Multiple sexual partners and partner concurrency in past 12 months						
0					100.0	
1					100.0	
2+					100.0	
Had concurrent partners[3]					100.0	
None of the partners were concurrent					100.0	
Condom use at last sexual intercourse in past 12 months						
Used condom					100.0	
Did not use condom at last sex in past 12 months					100.0	
No sexual intercourse in past 12 months					100.0	
Paid for sexual intercourse in past 12 months						
Yes					100.0	
Used condom					100.0	
Did not use condom					100.0	
No/no sexual intercourse in past 12 months					100.0	
Number of sexual partners in lifetime						
1					100.0	
2					100.0	
3-4					100.0	
5-9					100.0	
10+					100.0	
Prior HIV testing						
Ever tested					100.0	
Received results					100.0	
Did not receive results					100.0	
Never tested					100.0	
Total 15-54[59]					100.0	

[1] Includes all Dried Blood Samples (DBS) tested at the lab and for which there is a result, i.e. positive, negative, or indeterminate. Indeterminate means that the sample went through the entire algorithm, but the final result was inconclusive.
[2] Includes: 1) other results of blood collection (e.g. technical problem in the field), 2) lost specimens, 3) non corresponding bar codes, and 4) other lab results such as blood not tested for technical reason, not enough blood to complete the algorithm, etc.
[3] A respondent is considered to have had concurrent partners if he or she had overlapping sexual partnerships with two or more people during the 12 months before the survey. (Respondents with concurrent partners include polygynous men who had overlapping sexual partnerships with two or more wives).

Number of lifetime partners to be defined based on the frequency distribution; however, categories 1 and 2 must be maintained.

APPENDIX B

ESTIMATES OF SAMPLING ERRORS

The estimates from a sample survey are affected by two types of errors: non-sampling errors and sampling errors. Non-sampling errors are the results of mistakes made in implementing data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of the [YYYY COUNTRY] Demographic and Health Survey [YYYY XDHS] to minimize this type of error, non-sampling errors are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of respondents selected in the [YYYY XDHS] is only one of many samples that could have been selected from the same population, using the same design and expected size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. Sampling errors are a measure of the variability between all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

Sampling error is usually measured in terms of the *standard error* for a particular statistic (mean, percentage, etc.), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range of plus or minus two times the standard error of that statistic in 95 percent of all possible samples of identical size and design.

If the sample of respondents had been selected as a simple random sample, it would have been possible to use straightforward formulas for calculating sampling errors. However, the [YYYY XDHS] sample is the result of a multi-stage stratified design, and, consequently, it was necessary to use more complex formulae. Sampling errors are computed in either ISSA or SAS, using programs developed by ICF Macro. These programs use the Taylor linearization method of variance estimation for survey estimates that are means, proportions or ratios. The Jackknife repeated replication method is used for variance estimation of more complex statistics such as fertility and mortality rates.

The Taylor linearization method treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the total sample value for variable y, and x represents the total number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$SE^2(r) = var(r) = \frac{1-f}{x^2} \sum_{h=1}^{H} \left[\frac{m_h}{m_h - 1} \left(\sum_{i=1}^{m_h} z_{hi}^2 - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - r x_{hi} \text{, and } z_h = y_h - r x_h$$

where h represents the stratum which varies from 1 to H,

          m_h is the total number of clusters selected in the hth stratum,

          y_{hi} is the sum of the weighted values of variable y in the ith cluster in the hth stratum,

x_{hi} is the sum of the weighted number of cases in the ith cluster in the hth stratum, and

f is the overall sampling fraction, which is so small that it is ignored.

The Jackknife repeated replication method derives estimates of complex rates from each of several replications of the parent sample, and calculates standard errors for these estimates using simple formulae. Each replication considers *all but one* cluster in the calculation of the estimates. Pseudo-independent replications are thus created. In the [YYYY XDHS], there were [XXX] non-empty clusters. Hence, [XXX] replications were created. The variance of a rate r is calculated as follows:

$$SE^2(r) = var(r) = \frac{1}{k(k-1)} \sum_{i=1}^{k} (r_i - r)^2$$

in which

$$r_i = kr - (k-1)r_{(i)}$$

where r is the estimate computed from the full sample of [XXX] clusters,

$r_{(i)}$ is the estimate computed from the reduced sample of [XXX] clusters (i^{th} cluster excluded), and

k is the total number of clusters.

In addition to the standard error, the design effect (DEFT) for each estimate is also calculated The design effect is defined as the ratio between the standard error using the given sample design and the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. Relative standard errors and confidence limits for the estimates are also calculated.

Sampling errors for the [YYYY XDHS] are calculated for selected variables considered to be of primary interest. The results are presented in this appendix for the country as a whole, for urban and rural areas, and for [INSERT COUNTRY SPECIFIC INFORMATION ON REGIONS]. For each variable, the type of statistic (mean, proportion, or rate) and the base population are given in Table B.1. Tables B.2 through B.XX present the value of the statistic (R), its standard error (SE), the number of un-weighted (N) and weighted (WN) cases, the design effect (DEFT), the relative standard error (SE/R), and the 95 percent confidence limits (R±2SE), for each variable. The sampling errors for mortality rates are presented for the five year period preceding the survey for the whole country and for the ten year period preceding the survey by residence and region. The DEFT is considered undefined when the standard error considering a simple random sample is zero (when the estimate is close to 0 or 1). In the case of the total fertility rate, the number of un-weighted cases is not relevant, as there is no known un-weighted value for woman-years of exposure to childbearing.

The confidence interval (e.g., as calculated for *children ever born to women age 40-49*) can be interpreted as follows: the overall average from the national sample is [XXXX] and its standard error is [XXXX]. Therefore, to obtain the 95 percent confidence limits, one adds and subtracts twice the standard error to the sample estimate, i.e., [XXXX]±2×[XXXX]. There is a high probability (95 percent) that the *true* average number of children ever born to all women aged 40 to 49 is between [XXXX and XXXX].

For the total sample, the value of the DEFT, averaged over all variables, is [XXXX]. This means that, due to multi-stage clustering of the sample, the average standard error is increased by a factor of [XXXX] over that in an equivalent simple random sample.

FOR COUNTRY MANAGERS :

Table B.1 includes a list of the variables for which confidence intervals are shown. This list should be customized to the country. Additional variables of interest may be added and variables that are not relevant to the country should be deleted. In Table B.1, the primary school ages for the net attendance ratio need to be adapted to the country. In addition, indicators with very low percentages in the country (for example, less than around 5 percent) should be considered for deletion.

If the country measured the maternal mortality ratio (MMR), please remember to request the calculation of the confidence interval. This information must be included in the report and should be included in the text of the maternal mortality chapter itself rather than in Appendix B. The confidence interval for MMR is much wider than for other indicators reported in the survey, so it is important to present the confidence interval along side the estimate itself.

Table B.1 List of selected variables for sampling errors, [country, year]

Variable	Estimate	Base population
WOMEN		
Urban residence	Proportion	All women 15-49
Literacy	Proportion	All women 15-49
No education	Proportion	All women 15-49
Secondary education or higher	Proportion	All women 15-49
Net attendance ratio	Ratio	Household population [7-12] years
Never married/in union	Proportion	All women 15-49
Currently married/in union	Proportion	All women 15-49
Married before age 20	Proportion	All women 20-49
Had sexual intercourse before age 18	Proportion	All women 20-49
Currently pregnant	Proportion	All women 15-49
Children ever born	Mean	All women 15-49
Children surviving	Mean	All women 15-49
Children ever born to women age 40-49	Mean	All women 40-49
Know any contraceptive method	Proportion	Currently married women 15-49
Know a modern method	Proportion	Currently married women 15-49
Currently using any method	Proportion	Currently married women 15-49
Currently using a modern method	Proportion	Currently married women 15-49
Currently using a traditional method	Proportion	Currently married women 15-49
Currently using pill	Proportion	Currently married women 15-49
Currently using condoms	Proportion	Currently married women 15-49
Currently using injectables	Proportion	Currently married women 15-49
Currently using female sterilization	Proportion	Currently married women 15-49
Currently using withdrawal	Proportion	Currently married women 15-49
Currently using rhythm	Proportion	Currently married women 15-49
Used public sector source	Proportion	Current users of modern method
Want no more children	Proportion	Currently married women 15-49
Want to delay next birth at least 2 years	Proportion	Currently married women 15-49
Ideal number of children	Mean	All women 15-49
Mothers protected against tetanus for last birth	Proportion	Women with a live birth in last five years
Births with skilled attendant at delivery	Proportion	Births occurring 1-59 months before survey
Had diarrhea in the past 2 weeks	Proportion	Children under 5
Treated with ORS	Proportion	Children under 5 with diarrhea in past 2 weeks
Sought medical treatment	Proportion	Children under 5 with diarrhea in past 2 weeks
Vaccination card seen	Proportion	Children 12-23 months
Received BCG vaccination	Proportion	Children 12-23 months
Received DPT vaccination (3 doses)	Proportion	Children 12-23 months
Received polio vaccination (3 doses)	Proportion	Children 12-23 months
Received measles vaccination	Proportion	Children 12-23 months
Received all vaccinations	Proportion	Children 12-23 months
Height-for-age (-2SD)	Proportion	Children under 5 who are measured
Weight-for-height (-2SD)	Proportion	Children under 5 who are measured
Weight-for-age (-2SD)	Proportion	Children under 5 who are measured
Body Mass Index (BMI) <18.5	Proportion	All women 15-49 who were measured
Prevalence of anemia (children 6-59 months)	Proportion	All children 6-59 months who were tested
Prevalence of anemia (women 15-49)	Proportion	All women 15-49 who were tested
Had 2+ sexual partners in past 12 months	Proportion	All women 15-49
Condom use at last sex	Proportion	Women 15-49 with 2+ partners in past 12 months
Abstinence among youth (never had sex)	Proportion	Never-married women 15-24
Sexually active in past 12 months among never-married youth	Proportion	Never-married women 15-24
Had an HIV test and received results in past 12 months	Proportion	All women 15-49
Accepting attitudes towards people with HIV	Proportion	All women who have heard of HIV/AIDS
HIV prevalence among all women 15-49	Proportion	All interviewed women with Dried Blood Sample (DBS) tested at the lab
HIV prevalence among pregnant women 15-49	Proportion	All interviewed pregnant women 15-49 with DBS tested at the lab
HIV prevalence among young women 15-24	Proportion	All interviewed women 15-24 with DBS tested at the lab
HIV prevalence all respondents	Proportion	All interviewed women and men 15-49 with DBS tested at the lab
Total fertility rate (3 years)	Rate	Women-years of exposure to childbearing
Neonatal mortality rate[1]	Rate	Children exposed to the risk of mortality
Post-neonatal mortality rate[1]	Rate	Children exposed to the risk of mortality
Infant mortality rate[1]	Rate	Children exposed to the risk of mortality
Child mortality rate[1]	Rate	Children exposed to the risk of mortality
Under-five mortality rate[1]	Rate	Children exposed to the risk of mortality
MEN		
Urban residence	Proportion	All men 15-49
Literacy	Proportion	All men 15-49
No education	Proportion	All men 15-49
Secondary education or higher	Proportion	All men 15-49
Net attendance ratio	Ratio	Household population [7-12] years
Never married/in union	Proportion	All men 15-49
Currently married/in union	Proportion	All men 15-49
Had sexual intercourse before age 18	Proportion	All men 20-49
Know any contraceptive method	Proportion	Currently married men 15-49
Know a modern method	Proportion	Currently married men 15-49
Ever used any contraceptive method	Proportion	Currently married men 15-49
Want no more children	Proportion	Currently married men 15-49
Want to delay next birth at least 2 years	Proportion	Currently married men 15-49
Ideal number of children	Mean	All men 15-49
Had 2+ sexual partners in past 12 months	Proportion	All men 15-49
Condom use at last sex	Proportion	Men 15-49 with 2+ partners in past 12 months
Abstinence among youth (never had sex)	Proportion	Never-married men 15-24
Sexually active in past 12 months among never-married youth	Proportion	Never-married men 15-24
Paid for sexual intercourse in past 12 months	Proportion	All men 15-49
Had an HIV test and received results in past 12 months	Proportion	All men 15-49
Accepting attitudes towards people with HIV	Proportion	All men who have heard of HIV/AIDS
HIV prevalence among all men 15-49	Proportion	All interviewed men with Dried Blood Sample (DBS) tested at the lab
HIV prevalence among all men 15-54[59]	Proportion	All interviewed men 15-54[59] with (DBS) tested at the lab
HIV prevalence among young men 15-24	Proportion	All interviewed men 15-24 with DBS tested at the lab

[1] The mortality rates are calculated for 5 years and 10 years before the survey for the national sample and regional samples, respectively

Table B.2 Sampling errors for national sample, [country, year]

| Variable | Value (R) | Stand-ard error (SE) | Number of cases | | Design effect (DEFT) | Rela-tive error (SE/R) | Confidence limits | |
			Un-weighted (N)	Weight-ed (WN)			R-2SE	R+2SE
WOMEN								
Urban residence								
Literacy								
No education								
Secondary education or higher								
Net attendance ratio								
Never married/in union								
Currently married/in union								
Married before age 20								
Had sexual intercourse before age 18								
Currently pregnant								
Children ever born								
Children surviving								
Children ever born to women age 40-49								
Know any contraceptive method								
Know a modern method								
Ever used any contraceptive method								
Currently using any method								
Currently using a modern method								
Currently using a traditional method								
Currently using pill								
Currently using condoms								
Currently using injectables								
Currently using female sterilization								
Currently using withdrawal								
Currently using periodic abstinence								
Used public sector source								
Want no more children								
Want to delay nest birth at least 2 years								
Ideal number of children								
Mothers protected against tetanus for last birth								
Births with skilled attendant at delivery								
Had diarrhea in the past 2 weeks								
Treated with ORS								
Sought medical treatment								
Vaccination card seen								
Received BCG vaccination								
Received DPT vaccination (3 doses)								
Received polio vaccination (3 doses)								
Received measles vaccination								
Received all vaccinations								
Height-for-age (-2SD)								
Weight-for-height (-2SD)								
Weight-for-age (-2SD)								
Body Mass Index (BMI) <18.5								
Prevalence of anemia (children 6-59 months)								
Prevalence of anemia (women 15-49)								
Had 2+ sexual partners in past 12 months								
Condom use at last sex								
Abstinence among youth (never had sex)								
Sexually active in past 12 months among never-married youth								
Had an HIV test and received results in past 12 months								
Accepting attitudes towards people with HIV								
HIV prevalence among all women 15-49								
HIV prevalence among pregnant women 15-49								
HIV prevalence among young women 15-24								
HIV prevalence all respondents								
Total fertility rate (3 years)								
Neonatal mortality rate (0-4 years)								
Post-neonatal mortality rate (0-4 years)								
Infant mortality rate (0-4 years)								
Child mortality rate (0-4 years)								
Under-five mortality rate (0-4 years)								
MEN								
Urban residence								
Literacy								
No education								
Secondary education or higher								
Never married/in union								
Currently married/in union								
Had sexual intercourse before age 18								
Know any contraceptive method								
Know a modern method								
Ever used any contraceptive method								
Want no more children								
Want to delay next birth at least 2 years								
Ideal number of children								
Had 2+ sexual partners in past 12 months								
Condom use at last sex								
Abstinence among youth (never had sex)								
Sexually active in past 12 months among never-married youth								
Paid for sexual intercourse in past 12 months								
Had an HIV test and received results in past 12 months								
Accepting attitudes towards people with HIV								
HIV prevalence among all men 15-49								
HIV prevalence among all men 15-54[59]								
HIV prevalence among young men 15-24								

na = Not applicable

297

APPENDIX C

DATA QUALITY TABLES

Three types of tables are included in this appendix to examine the quality of the data collected in the DHS:

- Table C.1 contains the single-year age distribution of the de facto household population by sex. The purpose of Table C.1 is to examine the age structure obtained in the [year, survey] for evidence of heaping, especially ages ending in 0 and 5, and to examine the age limits of eligibility for interview, comparing women with men.

- Tables C.2.1 and C.2.2 contain the age distribution of the eligible respondents. The purpose of these tables is to detect both displacement of respondents out of the eligible age range and differential response rates by age.

- Table C.3 on completeness of reporting of basic indicators. The purpose of this table is to examine the amount of missing information for certain key indicators. High levels of missing data may indicate that the non-missing data are biased or of poor quality.

- Table C.4 shows the distribution of births by calendar years. The purpose of Table C.4 is to examine the impact of omission of births in the five years preceding the survey and the transference of births out of the dates of eligibility for the health, calendar and anthropometry sections of the questionnaire. If large amounts of omission are suspected, then care should be used in interpreting current fertility and mortality levels and trends. Both omission and transference are indicative of poor fieldwork and the quality of the data from other parts of the questionnaire may be affected.

- Table C.5 contains information on the reporting of age at death in days and Table C.6 on the reporting of age at death in months. The purposes of these tables are to examine the possible omission of neonatal and early neonatal deaths and to examine the effects of age at death heaping.

Table C.7 contains nutritional status indicators for children under five years of age, based on the 1977 NCHS/CDC/WHO reference population and can be used for comparisons where the 2006 WHO Child Growth Standards have not been used.

Table C.1 Household age distribution

Single-year age distribution of the de facto household population by sex (weighted), [country, year]

Age	Male		Female		Age	Male		Female	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
0					36				
1					37				
2					38				
3					39				
4					40				
5					41				
6					42				
7					43				
8					44				
9					45				
10					46				
11					47				
12					48				
13					49				
14					50				
15					51				
16					52				
17					53				
18					54				
19					55				
20					56				
21					57				
22					58				
23					59				
24					60				
25					61				
26					62				
27					63				
28					64				
29					65				
30					66				
31					67				
32					68				
33					69				
34					70+				
35					Don't know/ missing				
					Total				

Note: The de facto population includes all residents and nonresidents who stayed in the household the night before the interview.

The purpose of Table C.1 is to examine the age structure for evidence of heaping, especially ages ending in 0 and 5, and to examine the age limits of eligibility for interview, comparing women with men.

Table C.2.1 Age distribution of eligible and interviewed women

De facto household population of women age 10-54, number and percent distribution of interviewed women age 15-49, and percentage of eligible women who were interviewed (weighted), by five-year age groups, [country, year]

Age group	Household population of women age 10-54	Interviewed women age 15-49		Percentage of eligible women interviewed
		Number	Percentage	
10-14		na	na	na
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54		na	na	na
15-49			100.0	

Note: The de facto population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of women and interviewed women are household weights. Age is based on the Household Questionnaire.
na = Not applicable

Table C.2.2 Age distribution of eligible and interviewed men

De facto household population of men age 10-59, number and percent distribution of interviewed men age 15-54; and percentage of eligible men who were interviewed (weighted), by five-year age groups, [country, year]

Age group	Household population of men age 10-59	Interviewed men age 15-54		Percentage of eligible men interviewed
		Number	Percentage	
10-14		na	na	na
15-19				
20-24				
25-29				
30-34				
35-39				
40-44				
45-49				
50-54				
55-59		na	na	na
15-54			100.0	

Note: The de facto population includes all residents and nonresidents who stayed in the household the night before the interview. Weights for both household population of men and interviewed men are household weights. Age is based on the Household Questionnaire.
na = Not applicable

The purpose of these tables is to detect both displacement of respondents out of the eligible age range and differential response rates by age. For ever-married samples, there should be an additional column (between the household population and the interviewed respondent columns) with the number of ever-married respondents age 10-54 (women) and 10-59 (men) tabulated from the Household Questionnaire. The household population should remain, but should refer to all de facto persons regardless of marital status.

Table C.3 Completeness of reporting

Percentage of observations missing information for selected demographic and health questions (weighted), [country, year]

Subject	Reference group	Percentage with information missing	Number of cases
Birth date	Births in the 15 years preceding the survey		
Month only			
Month and year			
Age at death	Deceased children born in the 15 years preceding the survey		
Age/date at first union[1]	Ever-married women age 15-49		
	Ever-married men age 15-54		
Respondent's education	All women age 15-49		
	All men age 15-54		
Diarrhea in past 2 weeks	Living children age 0-59 months		
Anthropometry of children	Living children age 0-59 months (from the Household Questionnaire)		
Height			
Weight			
Height or weight			
Anthropometry of women	Women age 15-49 (from the Household Questionnaire)		
Height			
Weight			
Height or weight			
Anthropometry of men	Men age 15-49 (from the Household Questionnaire)		
Height			
Weight			
Height or weight			
Anemia	Living children age 6-59 months (from the		
Children	Household Questionnaire)		
Women	All women (from the Household Questionnaire)		
Men	All men (from the Household Questionnaire)		

[1] Both year and age missing

The purpose of Table C.3 is to examine the amount of missing information for certain key indicators. High levels of missing data may indicate that the non-missing data are biased or of poor quality.

Table C.4 Births by calendar years

Number of births, percentage with complete birth date, sex ratio at birth, and calendar year ratio by calendar year, according to living (L), dead (D), and total (T) children (weighted), [country, year]

Calendar year	Number of births			Percentage with complete birth date[1]			Sex ratio at birth[2]			Calendar year ratio[3]		
	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total	Living	Dead	Total
0										na	na	na
1										na	na	na
2												
3												
4												
5												
6												
7												
8												
9										na	na	na
0-4										na	na	na
5-9										na	na	na
10-14										na	na	na
15-19										na	na	na
20+										na	na	na
All										na	na	na

na = Not applicable
[1] Both year and month of birth given
[2] $(B_m/B_f)\times100$, where B_m and B_f are the numbers of male and female births, respectively
[3] $[2B_x/(B_{x-1}+B_{x+1})]\times100$, where B_x is the number of births in calendar year x

The purpose of Table C.4 is to examine the impact of omission of births in the five years preceding the survey and the transference of births out of the dates of eligibility for the health, calendar and anthropometry sections of the questionnaire. The analyst may wish to graph these data to get a better visual appreciation of omission and transference. If large amounts of omission are suspected, then care should be used in interpreting current fertility and mortality levels and trends. Both omission and transference are indicative of poor fieldwork and the quality of the data from other parts of the questionnaire may be affected.

In the report, actual calendar years should be shown in the stub. For example, if fieldwork takes place in 2006, 0 becomes 2006, 1 becomes 2005, etc.

Table C.5 Reporting of age at death in days

Distribution of reported deaths under one month of age by age at death in days and the percentage of neonatal deaths reported to occur at ages 0-6 days, for five-year periods of birth preceding the survey (weighted), [country, year]

Age at death (days)	Number of years preceding the survey				Total 0-19
	0-4	5-9	10-14	15-19	
<1					
1					
2					
30					
Percentage early neonatal[1]					

[1] ≤6 days / ≤30 days

Table C.6 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and the percentage of infant deaths reported to occur at age under one month, for five year periods of birth preceding the survey (weighted), [country, year]

| Age at death (months) | Number of years preceding the survey | | | | Total |
	0-4	5-9	10-14	15-19	0-19
<1[a]					
1					
2					
23					
Percentage neonatal[1]					

[a] Includes deaths under one month reported in days
[1] Under one month / under one year

The purposes of Tables C.5 and C.6 are to examine the possible omission of neonatal and early neonatal deaths; and the effects of age at death heaping.

Table C.7 Nutritional status of children based on NCHS/CDC/WHO International Reference Population

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, based on the NCHS/CDC/WHO International Reference Population [country, year]

Background characteristic	Height-for-age[1]			Weight-for-height				Weight-for-age				Number of children
	Per-centage below -3 SD	Per-centage below -2 SD[2]	Mean Z-score (SD)	Per-centage below -3 SD	Per-centage below -2 SD[2]	Per-centage above +2 SD	Mean Z-score (SD)	Per-centage below -3 SD	Per-centage below -2 SD[2]	Per-centage above +2 SD	Mean Z-score (SD)	
Age in months												
<6												
6-8												
9-11												
12-17												
18-23												
24-35												
36-47												
48-59												
Sex												
Male												
Female												
Birth interval in months[3]												
First birth[4]												
<24												
24-47												
48+												
Size at birth[3]												
Very small												
Small												
Average or larger												
Mother's interview status												
Interviewed												
Not interviewed, but in household												
Not interviewed, and not in the household[5]												
Mother's nutritional status[6]												
Thin (BMI<18.5)												
Normal (BMI 18.5-24.9)												
Overweight/ obese (BMI ≥25)												
Residence												
Urban												
Rural												
Region												
Region 1												
Region 2												
Region 3												
Region 4												
Mother's education[7]												
No education												
Primary												
Secondary												
More than secondary												
Wealth quintile												
Lowest												
Second												
Middle												
Fourth												
Highest												
Total												

Note: Table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the NCHS/CDC/WHO International Reference Population. Table is based on children with valid dates of birth (month and year) and valid measurement of both height and weight.
[1] Recumbent length is measured for children under age 2, or in the few cases when the age of the child is unknown and the child is less than 85 cm; standing height is measured for all other children.
[2] Includes children who are below –3 standard deviations (SD) from the International Reference Population median
[3] Excludes children whose mothers were not interviewed
[4] First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.
[5] Includes children whose mothers are deceased
[6] Excludes children whose mothers were not weighed and measured, children whose mothers were not interviewed, and children whose mothers are pregnant or gave birth within the preceding 2 months. Mother's nutritional status in terms of BMI (Body Mass Index) is presented in Table 11.10.1.
[7] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire

Appendix Table C.7 is included to provide trend comparison with earlier DHS surveys and other data on children's nutritional status that was determined using the NCHS/CDC/WHO International Reference Standard. The results in this table should be similar to those in Table 11.1 except for children under six months of age, for whom lower levels of malnutrition are expected in this table.

In presenting the anthropometric results, the nutritional status of children in the survey population is compared with an international reference population defined by the U.S. National Center for Health Statistics (NCHS) and accepted by the U.S. Centers for Disease Control (CDC) and the World Health Organization (WHO). The data from the International Reference Population have been normalized to produce a distribution in which the mean coincides with the median.

APPENDIX D

INDICATORS

During the last decade there has been an increased effort to track the progress in the areas of health and sustainable development in the less developed regions of the world. A number of international agencies and organizations have developed indicators designed to aid in this process. This appendix presents the table numbers where values for the following lists of indicators are shown:

- Millennium Development Goal Indicators (MDG)
- United Nations General Assembly Special Session (UNGASS)
- Presidents' Emergency Plan for AIDS Relief (PEPFAR)
- Multiple Indicator Cluster Surveys, 4th Round (MICS4)

When specific indicators have been identified by more than one international agency, the indicator value is included in the indicator list for each agency. For example, the infant and under-five mortality rates are listed as indicators for Goal 4 of the MDG list and indicators 1.1 and 1.2 on the MICS4 list.

These lists of indicators are provided for the reference of MEASURE DHS and USAID staff only. **DO NOT INCLUDE THIS APPENDIX IN THE FINAL REPORT.**

Millennium Development Goal Indicators

Goal	Indicator	Table
1. Eradicate extreme poverty and hunger		
	1.8. Prevalence of underweight children under five years of age	11.1
2. Achieve universal primary education		
	2.1 Net enrolment ratio in primary education	2.13
	2.3 Literacy rate of 15-24 year-olds	3.3.1-2
3. Promote gender equality and empower women		
	3.1 Ratios of girls to boys in primary, secondary and tertiary education	2.13
4. Reduce child mortality		
	4.1 Under-five mortality rate	8.1
	4.2 Infant mortality rate	8.1
	4.3 Percentage of 1 year-old children immunized against measles	10.2
5. Improve maternal health		
	5.1 Maternal mortality ratio	
	5.2 Percentage of births attended by skilled health personnel	9.6
	5.3 Contraceptive prevalence rate	7.3
	5.4 Adolescent birth rate	5.1
	5.5 Antenatal care coverage (at least one visit and at least four visits)	9.2
	5.6 Unmet need for family planning	7.12.1
6. Combat HIV/AIDS, malaria and other diseases		
	6.1 HIV prevalence among population aged 15-24 years	14.7
	6.2 Condom use at last high-risk sex	na
	6.3 Proportion of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS	13.16
	6.4 Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years	2.11
	6.7 Percentage of children under five sleeping under insecticide-treated bednets	12.6
	6.8 Percentage of children under five with fever who are treated with appropriate anti-malarial drugs	12.9
7. Ensure environmental sustainability		
	7.8 Proportion of population using an improved drinking water source	2.1
	7.9 Proportion of population using an improved sanitation facility	2.2

na = not applicable

Please note that Indicator 6.2, "Condom use at last high-risk sex," can be calculated using DHS data, but it is no longer shown in the final reports. The denominator for this MDG indicator still uses a definition of "non-cohabiting, non-marital partner" for high-risk sex. This is an older definition, and is no longer employed by DHS.

UNGASS Indicators

Indicator	Table
National Programs	
7. Percentage of women and men aged 15-49 who received an HIV test in the last 12 months and who know the results	13.11.1/ 13.11.2
Knowledge and Behavior	
12. Current school attendance among orphans and among non-orphans aged 10-14	2.11
13. Percentage of young women and men aged 15-24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission	13.16
15. Percentage of young women and men who have had sexual intercourse before the age of 15	13.17
16. Percentage of adults aged 15-49 who have had sexual intercourse with more than one partner in the last 12 months	13.8.1/ 13.8.2
17. Percentage of adults aged 15-49 who had more than one sexual partner in the past 12 months who report the use of a condom during their last intercourse	13.8.1/ 13.8.2
Impact	
22. Percentage of young women and men aged 15-24 who are HIV infected	14.7

President's Emergency Plan for AIDS Relief (PEPFAR)

Indicator		Table
Prevention Sub Area 1: PMTCT		
P1.6.D	Percentage of infants by feeding type	11.3
P1.1.N	Percentage of pregnant women who were tested for HIV and know their results	13.12
Prevention Sub Area 3: Injection Safety and Waste Disposal		
P3.4.N	Average number of medical injections per person per year	13.15
P3.5.N	Proportion of women and men age 15-49 reporting that the last health care injection was given with a syringe and needle set from a new, unopened package	13.15
Prevention Sub Area 5: Male Circumcision		
P5.5.N	Proportion of males circumcised in the intended population	13.13
Prevention Sub Area 8: Sexual and Other Behavioral Risk Prevention		
P8.8.N	Percentage of young women and men aged 15–24 who both correctly identify ways of preventing the sexual transmission of HIV and who reject major misconceptions about HIV transmission	13.16
P8.9.N	Percent of never-married young people aged 15–24 who have never had sex	13.18
P8.10.N	Percentage of young women and men aged 15-24 who have had sexual intercourse before the age of 15.	13.17
P8.11.N	Percentage of women and men aged 15–49 who have had sexual intercourse with more than one partner in the last 12 months	13.8.1/ 13.8.2
P8.12.N	Percent of women and men aged 15–49 who have had more than one sexual partner in the last 12 months reporting the use of a condom their last sexual intercourse.	13.8.1/ 13.8.2
P8.13.N	The percentage of women and men aged 15–49 with more than one ongoing sexual partnership at the point in time six months before the interview	13.9
P8.14.N	Percent of men and women aged 15-49, who have two or more concurrent partners within the past twelve months	13.9
P8.16.N	Sexually active in past year: Percentage of young never married people (aged 15-24) who have had sex in the last 12 months	13.18
P8.20.N	Condom use at last premarital sex, last sex: Percentage of young never married people (aged 15-24) who used a condom at last sex, of all young single sexually active people surveyed	13.18
P8.21.N	Percentage of adults who are in favor of young people being educated about the use of condoms in order to prevent HIV/AIDS	13.7
P8.22.N	STIGMA: Percentage of the general population with accepting attitudes toward PLHA (UNAIDS)	13.5.1/ 13.5.2
P8.23.N	Percentage of young women and men aged 15–24 who are HIV infected	14.7
Prevention Sub Area 9: Concentrated Epidemics		
P9.7.N	Percentage of male respondents aged 15-49 reporting sex with a sex worker	13.10
Prevention Sub Area 11: Testing and Counseling		
P11.2.N	Percentage of women and men aged 15-49 who received an HIV test in the last 12 months and who know their results	13.11.1/ 13.11.2

MICS4 Indicators

Indicator		Table
1. Mortality		
1.1	Under-five mortality rate	8.1
1.2	Infant mortality rate	8.1
2. Nutrition		
2.1a 2.1b	Underweight prevalence	11.1
2.2a 2.2b	Stunting prevalence	11.1
2.3a 2.3b	Wasting prevalence	11.1
2.4	Children ever breastfed	11.2
2.6	Exclusive breastfeeding under 6 months	11.3
2.7	Continued breastfeeding at 1 year	11.3
2.8	Continued breastfeeding at 2 years	11.3
2.9	Predominant breastfeeding under 6 months	11.3
2.10	Duration of breastfeeding	11.4
2.12	Introduction of solid, semi-solid or soft foods	11.3
2.13	Minimum meal frequency	11.6
2.15	Milk feeding frequency for non-breastfed children	11.6
2.17	Vitamin A supplementation (children under age 5)	11.8
3. Child Health		
3.1	Tuberculosis immunization coverage	10.2
3.2	Polio immunization coverage	10.2
3.3	Immunization coverage for diphtheria, pertussis and tetanus (DPT)	10.2
3.4	Measles immunization coverage	10.2
3.7	Neonatal tetanus protection	9.4
3.8	Oral rehydration therapy with continued feeding	10.9
3.9	Care-seeking for suspected pneumonia	10.5
3.10	Antibiotic treatment of suspected pneumonia	10.5
3.12	Household availability of insecticide-treated nets (ITNs)	12.1
3.13	Households protected by a vector control method	12.2
3.14	Children under age 5 sleeping under any type of mosquito net	12.5
3.15	Children under age 5 sleeping under insecticide-treated nets (ITNs)	12.5
3.16	Malaria diagnostics usage	12.8
3.17	Anti-malarial treatment of children under 5 the same or next day	12.8
3.18	Anti-malarial treatment of children under age 5	12.8
3.19	Pregnant women sleeping under insecticide-treated nets (ITNs)	12.6
3.20	Intermittent preventive treatment for malaria	12.7

Indicator		Table
4. Water and Sanitation		
4.1	Use of improved drinking water sources	2.1
4.2	Water treatment	2.1
4.3	Use of improved sanitation facilities	2.2
4.4	Safe disposal of child's faeces	10.11
5. Reproductive Health		
5.1	Adolescent birth rate	5.1
5.2	Early childbearing	5.9
5.3	Contraceptive prevalence rate	7.3
5.4	Unmet need	7.12.1
5.5a	Antenatal care coverage: At least once by a skilled provider	9.1
5.5b	Antenatal care coverage: At least four times by any provider	9.2
5.7	Skilled attendant at delivery	9.6
5.8	Institutional deliveries	9.5
5.9	Caesarean section	9.6
7. Literacy and Education		
7.1	Literacy rate among young women	3.3.1
7.4	Primary school net attendance ratio	2.13
7.5	Secondary school net attendance ratio	2.13
7.9	Gender parity index (primary school)	2.13
7.10	Gender parity index (secondary school)	2.13
8. Child Protection		
8.1	Birth registration	2.9
8.6	Marriage before age 15	4.3
8.7	Marriage before age 18	4.3
8.8	Young women age 15-19 years currently married or in union	4.1
8.9	Polygyny	4.2.1
8.14	Attitudes towards domestic violence	15.7.1
9. HIV/AIDS, Sexual Behavior, and Orphans		
9.1	Comprehensive knowledge about HIV prevention	13.3.1
9.2	Comprehensive knowledge about HIV prevention among young people	13.16
9.3	Knowledge of mother-to-child transmission of HIV	13.4
9.4	Accepting attitudes towards people living with HIV	13.5.1
9.5	Women who know where to be tested for HIV	13.11.1
9.6	Women who have been tested for HIV and know the results	13.11.1
9.7	Sexually active young women who have been tested for HIV and know the	13.21
9.8	HIV counselling during antenatal care	13.12
9.9	HIV testing during antenatal care	13.12
9.10	Young women who have never had sex	13.18
9.11	Sex before age 15 among young women	13.17
9.13	Sex with multiple partners	13.8.1
9.14	Condom use during sex with multiple partners	13.8.1
9.17	Children's living arrangements	2.10
9.18	Prevalence of children with at least one parent dead	2.10
9.19	School attendance of orphans	2.11
9.20	School attendance of non-orphans	2.11