Malawi

Demographic and Health Survey 2015-2016

Key Indicators

GOVERNMENT OF MALAWI

Malawi

Demographic and Health Survey 2015-16

Key Indicators Report

National Statistical Office
Zomba, Malawi

The DHS Program
ICF International
Rockville, Maryland, USA

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THE WORLD BANK

The 2015-16 Malawi Demographic and Health Survey (2015-16 MDHS) was implemented by the National Statistical Office from 19 October 2015 to 18 February 2016. The funding for the 2015-16 MDHS was provided by the government of Malawi, the United States Agency for International Development (USAID), the United Nations Children's Fund (UNICEF), the Malawi National AIDS Commission (NAC), the United Nations Population Fund (UNFPA), UN WOMEN, Irish Aid, and the World Bank. ICF International provided technical assistance through The DHS Program, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide.

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FOREWORD

The 2015-16 Malawi Demographic and Health Survey (MDHS) was carried out between October 2015 and February 2016 by the National Statistical Office (NSO) in collaboration with the Community Health Services Unit (CHSU) of the Ministry of Health. The Demographic and Health Surveys (DHS) Program is a global programme coordinated by ICF International, based in Rockville, Maryland, USA. Technical and financial support for the 2015-16 MDHS was provided by the Malawi government, the United States Agency for International Development (USAID), the National AIDS Commission (NAC), the United Nations Children's Fund (UNICEF), the United Nations Population Fund (UNFPA), UN WOMEN, Irish Aid, and the World Bank. The 2015-16 MDHS was conducted jointly with the Micronutrient Survey (MNS), which was implemented by NSO in collaboration with the Department of Nutrition, HIV and AIDS (DNHA).

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

The 2015-16 MDHS covers topics ranging from household and respondent characteristics, fertility and family planning, infant and child health and mortality, maternal health and maternal and adult mortality, child and adult nutrition, malaria, HIV/AIDS, domestic violence, and orphans and vulnerable children. The survey also included HIV testing that will provide data for analysis of HIV prevalence in the country.

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

Mercy Kanyuka (Mrs)
Commissioner of Statistics

1 INTRODUCTION

The National Statistical Office (NSO) implemented the 2015-16 Malawi Demographic and Health Survey (2015-16 MDHS) at the request of the Ministry of Health. ICF International provided technical assistance through The DHS Program, which is funded by the United States Agency for International Development (USAID), and offers support and technical assistance for the implementation of population and health surveys in countries worldwide.

Other agencies and organisations facilitated the successful implementation of the survey through technical or financial support. The Centers for Disease Control and Prevention (CDC) and Emory University, in collaboration with the Department of Nutrition, HIV and AIDS (DNHA) and the Community Health Sciences Unit (CHSU), provided technical assistance for the implementation of the micronutrient component. HIV testing, urinary iodine testing, and food sample analyses will be performed by the laboratory at CHSU in Lilongwe. Financial support for the 2015-16 MDHS was provided by the government of Malawi, USAID, the United Nations Children's Fund (UNICEF), the Malawi National AIDS Commission (NAC), the United Nations Population Fund (UNFPA), UN WOMEN, Irish Aid, and the World Bank.

This Key Indicators Report presents selected findings of the 2015-16 MDHS. A comprehensive analysis of the data will be presented in a final report to be published in early 2017.

1.1 Survey Objectives

The primary objective of the 2015-16 MDHS project is to provide up-to-date estimates of basic demographic and health indicators. More specifically, the 2015-16 MDHS:

- Collected data at the national level, which allows the calculation of key demographic indicators, particularly fertility and under-5 and adult mortality rates
- Provided data to explore the direct and indirect factors that determine the levels and trends of fertility and child mortality
- Measured the levels of contraceptive knowledge and practice
- Obtained data on key aspects of family health, including immunisation coverage among children, prevalence and treatment of diarrhoea and other diseases among children under age 5, and maternity care indicators, including antenatal visits and assistance at delivery.
- Obtained data on child feeding practices, including breastfeeding, collected anthropometric measures to assess nutritional status, and conducted anaemia testing for all eligible children under 5 and women age 15-49.
- Collected data on knowledge and attitudes of women and men about sexually-transmitted diseases and HIV/AIDS, potential exposure to the risk of HIV infection (e.g., risk behaviours and condom use), and on coverage of HIV Testing and Counselling (HTC) and other key HIV/AIDS programmes.
- Collected dried blood spot (DBS) samples for HIV testing from women age 15-49 and men age 15-54 to provide information on the prevalence of HIV among the adult population in the prime reproductive ages.

The 2015-16 MDHS is a follow-up to DHS surveys previously conducted in Malawi in 1992, 2000, 2004, and 2010. The information collected through the 2015-16 MDHS is intended to assist policy makers and programme managers in evaluating and designing programmes and strategies for improving the health of the country's population.

Additionally, the 2015-16 MDHS included a micronutrient component. This component was implemented in a subsample of the 2015-16 MDHS. The goal of the micronutrient component was to conduct a nationally- and regionally-representative survey of Malawi's micronutrient (vitamin and mineral) status. Specifically, the micronutrient component collected data to be used to (1) evaluate the effectiveness of micronutrient interventions, mainly vitamin A supplementation and fortification; (2) measure the prevalence of iron, vitamin A, zinc, and iodine deficiency, as well as anaemia, inflammation, and poor growth among high-risk groups; (3) measure coverage of nutrition and other nutrition-related interventions (e.g., iodised salt, vitamin A supplementation, and deworming); (4) evaluate the determinants of anaemia, including inherited blood disorders, and the association between inflammation and nutrient biomarkers; and (5) plan for future nutrition interventions in Malawi, for example, micronutrient powders, maize flour fortification, and zinc supplementation.

2 SURVEY IMPLEMENTATION

2.1 Sample Design

The sampling frame used for the 2015-16 MDHS is the frame of the Malawi Population and Housing Census (MPHC), conducted in Malawi in 2008, and provided by the Malawi National Statistical Office (NSO). The census frame is a complete list of all census *standard enumeration areas* (SEAs) created for the 2008 MPHC. A SEA is a geographic area covering on average 235 households. The sampling frame contains information about the SEA location, type of residence (urban or rural), and estimated number of residential households.

Administratively, Malawi is divided into 28 districts. The sample for the 2015-16 MDHS was designed to provide estimates of key indicators for the country as a whole, for urban and rural areas separately, and for each of the 28 districts in Malawi. Indicators will also be shown for the Northern, Central, and Southern regions of the country.

The 2015-16 MDHS sample was stratified and selected in two stages. Each district was stratified into urban and rural areas, yielding 56 sampling strata. Samples of SEAs were selected independently in each stratum in two stages. Implicit stratification and proportional allocation were achieved at each of the lower administrative levels by sorting the sampling frame within each sampling stratum before sample selection, according to administrative units in different levels, and by using a probability proportional to size selection at the first stage of sampling.

In the first stage, 850 SEAs, including 173 SEAs in urban areas and 677 SEAs in rural areas, were selected with probability proportional to the SEA size and with independent selection in each sampling stratum. The SEA size is the number of residential households residing in the SEA censured in the 2008 MPHC. A household listing operation was carried out in all the selected SEAs in August-October 2016, and the resulting lists of households served as a sampling frame for the selection of households in the second stage. Some of the selected SEAs were large. To minimise the task of household listing, each large SEA (i.e., more than 250 households) selected for the 2015-16 MDHS was segmented. Only one segment was selected for the survey with probability proportional to the segment size. Household listing was conducted only in the selected segment. So a 2015-16 MDHS cluster is either an SEA or a segment of an SEA.

In the second stage of selection, a fixed number of 30 households per urban cluster and 33 households per rural cluster were selected with an equal probability systematic selection from the newly created household listing. All women age 15-49 who were either permanent residents of the selected households or visitors who stayed in the household the night before the survey were eligible to be interviewed. In one-third of all sampled households, all men age 15-54, including both usual residents and other persons who stayed in the household the night before the interview, were eligible for individual interview. In the subsample of households selected for the male survey, anaemia testing was performed among eligible women who consented to being tested. With the parent's or guardian's consent, children age 6-59 months were also tested for anaemia. In the same subsample, blood samples were collected for laboratory testing of HIV from eligible women and men who consented; height and weight information was collected from eligible women, and from children age 0-59 months.

For the micronutrient component, a sample of 105 clusters was randomly selected from the 850 clusters of the 2015-16 MDHS. A total of 35 clusters were randomly selected from each of the 3 regions. After selecting the 2015-16 MDHS male subsample (10 households in each urban cluster and 11 households in each rural cluster), the remaining households (20 households in each urban cluster and 22 households in each rural cluster) were automatically eligible for the micronutrient component. All children age 6-59 months who were usual members of the selected households or who spent the night before the survey in the selected households were eligible for enrolment in the micronutrient component. In 9 households randomly selected from the micronutrient component households, all women age 15-49 who were usual members of the selected households or who spent the night before the survey in the selected households were eligible for enrolment

in the micronutrient survey. Out of the 9 households selected for women's enrolment, 6 households were randomly selected where all children age 5-14 who were usual members of the selected households or who spent the night before the survey in the selected households were eligible for enrolment in the micronutrient survey. Finally, 4 households were randomly selected from the 6 households selected for children age 5-14 enrolment, where all men age 20-54 who were usual members of the selected households or who spent the night before the survey in the selected households were eligible for enrolment in the micronutrient survey. One randomly selected household per cluster was also enrolled for additional testing for vitamin A status. All children age 6 months to 14 years and women age 15-49 from this household were eligible for enrolment. Further information on the implementation of the micronutrient component and its findings will be presented in a separate report.

2.2 Questionnaires

Four questionnaires were used for the 2015-16 MDHS: the Household Questionnaire, the Woman's Questionnaire, the Man's Questionnaire, and the Biomarker Questionnaire. These questionnaires, based on The DHS Program's standard Demographic and Health Survey questionnaires, were adapted to reflect the population and health issues relevant to Malawi. Input was solicited from various stakeholders representing government ministries and agencies, nongovernmental organisations, and international donors. After the preparation of the questionnaires in English, the questionnaires were translated into Chichewa and Tumbuka.

The Household Questionnaire was used to list all of the members of and visitors to selected households. Basic demographic information was collected on the characteristics of each person listed, including his or her age, sex, marital status, education, and relationship to the head of the household. For children under age 18, parents' survival status was determined. The data on age and sex of household members obtained in the Household Questionnaire were used to identify women and men who were eligible for individual interviews. The Household Questionnaire also collected information on characteristics of the household's dwelling unit, such as source of water, type of toilet facilities, materials used for the floor of the dwelling unit, and ownership of various durable goods. The Household Questionnaire further collected information on the ownership and use of bed nets. An additional module developed by UNICEF to estimate the prevalence of disabilities among children age 5-17 was also included in the Household Questionnaire.

The Woman's Questionnaire was used to collect information from all eligible women age 15-49. These women were asked questions on the following topics:

- Background characteristics: age, education, media exposure, and so on
- Reproduction: children ever born, birth history, current pregnancy
- Family planning: knowledge and use of contraception, sources of contraceptive methods, information on family planning
- Maternal and child health, breastfeeding, and nutrition: prenatal care, delivery, postnatal care, breastfeeding and complementary feeding practices, vaccination coverage, prevalence and treatment of diarrhoea, acute respiratory infection (ARI), fever, knowledge and use of oral rehydration therapy (ORT), breastfeeding, and feeding practices
- Marriage and sexual activity: marital status, age at first marriage, number of unions, age at first sexual intercourse, recent sexual activity, number and type of sexual partners, use of condoms
- Fertility preferences: desire for more children, ideal number of children, gender preferences, intention to use family planning

- Husband's background and woman's work: husband's age, level of education, and occupation, and woman's occupation and sources of earning
- STDs and AIDS: knowledge of STDs and AIDS, methods of transmission, sources of information, behaviours to avoid STDs and AIDS, stigma, etc.;
- Knowledge, attitudes, and behaviours related to other health issues (e.g., injections, smoking, fistula, tuberculosis)
- Adult and maternal mortality
- Domestic violence

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

The Biomarker Questionnaire was used to record biomarker data collected from respondents by health technicians.

In this survey, interviewers used tablet computers to record responses during interviews. The tablets were equipped with Bluetooth technology to enable remote electronic transfer of files (transfer of assignment sheets from team supervisors to interviewers and transfer of completed questionnaires from interviewers to supervisors). The computer-assisted personal interviewing (CAPI) data collection system employed in the 2015-16 MDHS was developed by The DHS Program using the mobile version of CSPro. The CSPro software was developed jointly by the U.S. Census Bureau, The DHS Program, and Serpro S.A.

2.3 Anthropometry, Anaemia Testing, and HIV Testing

In the subsample of households selected for the male survey, the 2015-16 MDHS incorporated the following biomarkers: anthropometry, anaemia testing, and HIV testing. In contrast with the data collection procedure for the household and individual interviews, data related to all biomarkers were initially recorded on the Biomarker Questionnaire and subsequently entered into interviewers' tablet computers. The survey protocol, including biomarker collection, was reviewed and approved by the National Health Sciences Research Committee in Malawi and the Institutional Review Board of ICF International.

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

Anaemia testing. Blood specimens for anaemia testing were collected from women age 15-49 who voluntarily consented to be tested and from all children age 6-59 months for whom consent was obtained from their parents or the adult responsible for the children. Blood samples were drawn from a drop of blood taken from a finger prick (or a heel prick in the case of children age 6-11 months) and collected in a microcuvette. Haemoglobin analysis was carried out on-site using a battery-operated portable HemoCue analyser. Results were provided verbally and in writing. Parents of children with a haemoglobin level below 7 g/dl were instructed to take the child to a health facility for follow-up care. Likewise, nonpregnant women and pregnant women were referred for follow-up care if their haemoglobin levels were below 7 g/dl and 9 g/dl, respectively. All households in which anaemia testingwas conducted were given a brochure explaining the causes and prevention of anaemia.

HIV testing. Interviewers collected finger-prick blood specimens from women age 15-49 and men age 15-54 who consented to laboratory HIV testing. The protocol for blood specimen collection and analysis was based on the anonymous linked protocol developed for The DHS Program. This protocol allows for

merging of HIV test results with the sociodemographic data collected in the individual questionnaires after removal of all information that could potentially identify an individual.

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

Respondents were asked whether they would consent to having the laboratory store their blood sample for future unspecified testing. If respondents did not consent to additional testing using their sample, it was indicated on the Biomarker Data Collection Form that they refused additional tests using their specimen, and the words "no additional testing" were written on the filter paper card. Each respondent, whether providing consent or not, was given an informational brochure on HIV and a list of nearby sites providing HIV counselling and testing (HCT) services.

Blood samples were dried overnight and packaged for storage the following morning. Samples were periodically collected from the field and transported to the laboratory at the Community Health Sciences Unit (CHSU) in Lilongwe. Upon arrival at CHSU, each blood sample was logged into the CSPro HIV Test Tracking System database, given a laboratory number, and stored at -20˚C until tested.

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

2.4 Pretest

The pretest for the 2015-16 MDHS was conducted from 28 July 2015 to 21 August 2015 in Malosa at the Chilema Training Centre. It consisted of in-class training, a visit to a health clinic to practice collecting biomarker data on children, and field practice days. The field practice was conducted in clusters surrounding the Chilema Training Centre that were not included in the 2015-16 MDHS sample. A total of 38 trainees attended the pretest. All trainees had some experience with household surveys, either involvement in previous Malawi DHS surveys or in other similar surveys. Following field practice, a debriefing session was held with the pretest field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise.

2.5 Training of Field Staff

NSO recruited and trained 268 people for the main fieldwork to serve as team leaders, field editors, interviewers, secondary editors, and reserve interviewers. The training took place from 21 September 2015 to 10 October 2015 at St. Luke's Nursing School in Malosa. The training course consisted of instruction regarding interviewing techniques and field procedures, a detailed review of questionnaire content, instruction on how to administer the paper and electronic questionnaires, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the survey sample.

In addition, 90 people were recruited and trained on how to collect biomarker data, including taking height and weight measurements, testing for anaemia by measuring haemoglobin level, and preparing dried blood spots (DBS) for subsequent HIV testing and estimation of HIV prevalence. The biomarker training was held from 28 September 2015 to 10 October 2015 in Malosa at the Chilema Training Centre and consisted of lectures, demonstrations of biomarker measurement or testing procedures, field practice with children at a health clinic, and standardisation of height and weight measurements.

To help put the importance of the 2015-16 MDHS into context for the trainees, the training also included presentations given by various Ministry of Health staff covering Malawi-specific policies and programmes on malaria, HIV/AIDS, child immunisations, child nutrition, and childhood diseases.

A four-day field practice was organised, from 12 October 2015 to 16 October 2015, to provide trainees with additional hands-on practice before the actual fieldwork. A total of 39 teams were formed for field practice. Each team consisted of a team leader, a field editor, three female interviewers, one male interviewer, and two biomarker technicians.

Training participants were evaluated through homework, in-class exercises, quizzes, and observations made during field practice. Ultimately, 148 were selected to serve as interviewers, 74 as biomarker technicians, 37 as field editors, and 37 as team leaders. The selection of team leaders and field editors was based on their experience in leading survey teams and their performance during the pretest and the main training. Team leaders and field editors received additional instructions and practice using the CAPI system to perform supervisory activities. Supervisory activities included assigning households and receiving completed interviews from interviewers, recognising and dealing with error messages, receiving a system update and distributing updates to interviewers, completing biomarker questionnaires and DBS transmittal sheets, preparing a micronutrient questionnaire for eligible households, dealing with duplicated cases, closing clusters, and transferring interviews to the central office via a secure Internet file streaming system (IFSS). In addition to the CAPI material, team leaders and field editors received additional training on their roles and responsibilities and how to fulfil them.

2.6 Fieldwork

Data collection was carried out by 37 field teams, each consisting of one team leader, one field editor, three female interviewers, one male interviewer, two biomarker technicians, and one driver. Electronic data files were transferred to the NSO central office in Zomba every few days via the secured IFSS. Senior staff from the University of Malawi-Chancellor College, the Ministry of Health, the Ministry of Finance, Economic Planning & Development, NSO, and a survey technical specialist from The DHS Program coordinated and supervised fieldwork activities. Data collection took place over a 4-month period, from 19 October 2015 through 18 February 2016.

2.7 Data Processing

All electronic data files for the 2015-16 MDHS were transferred via IFSS to the NSO central office in Zomba, where they were stored on a password-protected computer. The data processing operation included secondary editing, which required resolution of computer-identified inconsistencies and coding of open-ended questions. The data were processed by four people who took part in the main fieldwork training, and they were supervised by two senior staff from NSO. Data editing was accomplished using CSPro software. Secondary editing and data processing were initiated in October 2015 and completed in March 2016.

3 KEY FINDINGS

3.1 Response Rates

Table 3.1 shows response rates for the 2015-16 MDHS. A total of 27,516 households were selected for the sample, of which 26,564 were occupied. Of the occupied households, 26,361 were successfully interviewed, yielding a response rate of 99 percent.

In the interviewed households, 25,146 eligible women were identified for individual interviews; interviews were completed with 24,562 women, yielding a response rate of 98 percent. In the subsample of households selected for the male survey, 7,903 eligible men were identified and 7,478 were successfully interviewed, yielding a response rate of 95 percent. There is little variation in response rates according to residence.

Table 3.1 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Malawi 2015-16

	Residence		
Result	Urban	Rural	Total
Household interviews			
Households selected	5,181	22,335	27,516
Households occupied	5,029	21,535	26,564
Households interviewed	4,991	21,370	26,361
Household response rate[1]	99.2	99.2	99.2
Interviews with women age 15-49			
Number of eligible women	5,363	19,783	25,146
Number of eligible women interviewed	5,247	19,315	24,562
Eligible women response rate[2]	97.8	97.6	97.7
Interviews with men age 15-54			
Number of eligible men	1,774	6,129	7,903
Number of eligible men interviewed	1,661	5,817	7,478
Eligible men response rate[2]	93.6	94.9	94.6

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

3.2 Household Drinking Water and Sanitation Facilities

Increasing household access to safe drinking water and sanitation facilities is a long-standing development goal that Malawi and other countries have adopted. Table 3.2 includes a number of indicators that are useful in monitoring household access to improved drinking water sources. The source of drinking water is an indicator of whether it is suitable for drinking. Sources that are likely to provide water suitable for drinking are identified as improved sources in Table 3.2. They include a piped source, public tap or standpipe, tube well or borehole, and protected well or spring. Lack of ready access to a water source may limit the quantity of suitable drinking water that is available to a household. Even if the water is obtained from an improved source, moreover, water that must be fetched from a source that is not immediately accessible to the household may be contaminated during transport or storage. Another factor in considering the accessibility of water sources is that the burden of going for water often falls disproportionately on female members of the household. Finally, home water treatment can be effective in improving the quality of household drinking water.

Table 3.2 indicates that the majority of households in Malawi (87 percent) obtain drinking water from an improved source. This is an improvement since the 2010 MDHS, when 80 percent of households obtained drinking water from an improved source. Use of improved drinking water sources is more common among households in urban areas (98 percent) than among those in rural areas (85 percent). The most common source of drinking water in urban areas is water piped into the dwelling/yard/plot, to a neighbour

or to a public tap, with more than 8 in 10 urban households (86 percent) using this source. In rural areas, the most common source of drinking water is a tube well or borehole (72 percent).

Overall, 15 percent of households have the source for their drinking water on their premises, but 43 percent of households spend 30 minutes or longer to obtain their drinking water. In rural areas, nearly half of households (47 percent) spend 30 minutes or more to obtain their drinking water, as compared with only 2 in 10 urban households (19 percent).

Nearly 7 in 10 households (69 percent) do not treat their drinking water, and this is more common in urban (78 percent) than in rural (67 percent) areas. The most commonly used method of water treatment is adding bleach/chlorine (20 percent). Overall, 26 percent of households use an appropriate treatment method.

Table 3.2 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, Malawi 2015-16

	Households			Population		
Characteristic	Urban	Rural	Total	Urban	Rural	Total
Source of drinking water						
Improved source	**98.0**	**85.2**	**87.2**	**98.2**	**85.1**	**87.0**
Piped into dwelling	13.5	0.4	2.4	14.4	0.4	2.4
Piped to yard/plot	27.9	1.8	5.8	28.2	1.9	5.7
Piped to neighbour	11.7	1.0	2.7	11.1	0.9	2.4
Public tap/standpipe	32.7	5.9	10.0	32.1	5.9	9.7
Tube well or borehole	9.6	71.6	62.1	9.6	71.7	62.7
Protected well	2.3	4.1	3.8	2.6	4.1	3.9
Protected spring	0.1	0.2	0.2	0.2	0.3	0.2
Non-improved source	**2.0**	**14.6**	**12.7**	**1.7**	**14.7**	**12.8**
Unprotected well	1.6	9.2	8.0	1.3	9.3	8.2
Unprotected spring	0.1	1.1	0.9	0.0	1.1	1.0
Surface water	0.4	4.3	3.7	0.4	4.2	3.7
Other source	0.0	0.2	0.2	0.1	0.1	0.1
Total	100.0	100.0	100.0	100.0	100.0	100.0
Time to obtain drinking water (round trip)						
Water on premises	55.8	8.1	15.4	56.3	8.1	15.1
Less than 30 minutes	25.6	43.5	40.7	25.2	43.1	40.5
30 minutes or longer	18.6	47.2	42.9	18.4	47.7	43.5
Don't know/missing	0.0	1.2	1.0	0.0	1.1	1.0
Total	100.0	100.0	100.0	100.0	100.0	100.0
Water treatment prior to drinking[1]						
Boiled	6.7	8.6	8.3	6.6	9.1	8.7
Bleach/chlorine added	14.5	20.4	19.5	14.6	20.5	19.6
Strained through cloth	1.0	2.1	1.9	1.1	2.2	2.1
Ceramic, sand, or other filter	0.2	0.5	0.5	0.3	0.6	0.6
Other	1.7	6.5	5.8	1.8	6.8	6.1
No treatment	78.4	67.0	68.7	78.4	66.3	68.0
Percentage using an appropriate treatment method[2]	19.9	27.3	26.2	19.8	27.8	26.6
Number	4,042	22,319	26,361	17,230	101,536	118,766

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

Table 3.3 presents the percent distribution of households and the de jure population by the type of toilet/latrine facilities usually used by household members. About half of households in Malawi (52 percent) usually use an improved and not shared toilet/latrine facility whereas a third of households (31 percent) use facilities that would be considered improved if they were not shared by two or more households. The most common type of toilet facility in rural areas is a pit latrine with a slab that is not shared with other households (52 percent of rural households). While pit latrines with a slab are also the toilet facilities most commonly used by urban households, they are usually shared with other households (50 percent of urban households). Overall, 6 percent of households have no toilet facility at all; they are almost exclusively rural, accounting for 7 percent of rural households.

Table 3.3 Household sanitation facilities

Percent distribution of households and de jure population by type of toilet/latrine facilities, according to residence, Malawi 2015-16

	Households			Population		
Type of toilet/latrine facility	Urban	Rural	Total	Urban	Rural	Total
Improved, not shared facility						
Flush/pour flush to piped sewer system	2.7	0.1	0.5	2.8	0.1	0.5
Flush/pour flush to septic tank	10.8	0.3	1.9	11.2	0.3	1.9
Flush/pour flush to pit latrine	1.0	0.1	0.3	1.2	0.2	0.3
Ventilated improved pit (VIP) latrine	0.4	0.7	0.6	0.5	0.7	0.7
Pit latrine with slab	29.7	51.6	48.3	33.5	54.6	51.6
Composting toilet	0.0	0.2	0.2	0.0	0.2	0.2
Total	44.7	53.0	51.8	49.1	56.1	55.1
Shared facility[1]						
Flush/pour flush to septic tank	0.3	0.1	0.1	0.2	0.1	0.1
Flush/pour flush to pit latrine	0.2	0.1	0.1	0.2	0.1	0.1
Ventilated improved pit (VIP) latrine	0.3	0.2	0.2	0.2	0.2	0.2
Pit latrine with slab	50.2	27.0	30.6	46.2	24.9	28.0
Composting toilet	0.1	0.1	0.1	0.1	0.1	0.1
Total	51.1	27.6	31.2	46.9	25.4	28.6
Non-improved facility						
Pit latrine without slab/open pit	3.5	12.0	10.7	3.5	12.1	10.8
Bucket	0.0	0.1	0.1	0.0	0.1	0.1
No facility/bush/field	0.6	7.2	6.2	0.5	6.2	5.3
Total	4.2	19.4	17.1	4.1	18.4	16.4
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number	4,042	22,319	26,361	17,230	101,536	118,766

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

3.3 Characteristics of Respondents

Table 3.4 shows the weighted and unweighted numbers and the weighted percent distributions of women and men age 15-49 interviewed in the 2015-16 MDHS, by background characteristics. About 6 respondents in 10 were under age 30, reflecting the young age structure of the population. The vast majority of respondents are Christian (87 percent of women and 86 percent of men), while 13 percent of women and 11 percent of men are Muslims. Regarding ethnic self-identification, Chewa is the largest ethnic group, making up 35 percent of female and 36 of male respondents, followed by Lomwe who constitute 19 percent of women and 18 percent of men. The Yao (13 percent of women and 12 percent of men) and Ngoni (12 percent of women and 13 percent of men) constitute the third largest ethnic group.

One-fifth of women (21 percent) and two-fifths of men (40 percent) have never been married. Women are more often married or living together with a partner (i.e., in union) than men (66 percent and 57 percent, respectively). Women are also more likely than men to report that they are divorced or separated (10 percent and 3 percent, respectively). Three percent of women report that they are widowed, as compared with less than 1 percent of men.

A majority of respondents live in rural areas (82 percent of women and 81 percent of men). By region, the majority of women and men live in Central and Southern regions; 12 percent of women and 13 percent of men live in the Northern region. Table 3.4 shows that 12 percent of women have no education compared with 5 percent of their male counterparts. Thirty-six percent of the men reported attending at least some secondary school, compared with 26 percent of the women.

Table 3.4 Background characteristics of respondents

Percent distribution of women and men age 15-49 by selected background characteristics, Malawi 2015-16

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	21.4	5,263	5,273	25.5	1,818	1,846
20-24	21.0	5,159	5,094	19.8	1,408	1,380
25-29	16.1	3,953	3,976	14.3	1,022	1,030
30-34	14.9	3,668	3,648	13.0	925	945
35-39	11.9	2,924	2,988	12.4	882	866
40-44	8.3	2,029	2,022	8.7	624	619
45-49	6.4	1,567	1,561	6.3	450	452
Religion						
Catholic	18.1	4,442	4,320	19.4	1,384	1,321
CCAP	17.4	4,268	3,878	18.9	1,345	1,205
Anglican	2.6	639	1,258	2.5	179	373
Seventh Day Adventist/ Baptist	6.9	1,704	1,839	6.8	488	520
Other Christian	41.9	10,281	10,390	38.6	2,751	2,853
Muslim	12.5	3,069	2,726	10.7	766	685
No religion	0.5	123	113	2.9	208	171
Other	0.1	36	38	0.1	7	10
Ethnic group						
Chewa	34.7	8,529	7,317	36.3	2,585	2,223
Tumbuka	9.4	2,298	2,612	9.4	668	783
Lomwe	19.1	4,692	4,453	18.3	1,302	1,257
Tonga	1.8	446	942	1.6	115	273
Yao	13.4	3,289	2,782	12.2	870	732
Sena	3.6	889	1,153	3.3	233	305
Nkhonde	0.8	207	335	1.1	77	118
Ngoni	11.8	2,895	3,085	12.9	920	918
Mang'anja	2.5	621	569	2.5	175	174
Nyanga	1.1	264	547	0.7	51	125
Other	1.8	433	767	1.8	132	230
Marital status						
Never married	21.0	5,170	5,326	40.2	2,863	2,929
Married	61.7	15,149	14,912	52.5	3,742	3,734
Living together	4.0	981	1,040	4.0	288	238
Divorced/separated	10.4	2,558	2,542	2.9	206	210
Widowed	2.9	704	742	0.4	29	27
Residence						
Urban	18.3	4,496	5,247	18.8	1,340	1,602
Rural	81.7	20,066	19,315	81.2	5,788	5,536
Region						
Northern region	11.6	2,838	4,803	12.9	922	1,508
Central region	42.9	10,529	8,417	44.6	3,176	2,548
Southern region	45.6	11,194	11,342	42.5	3,030	3,082
Education						
No education	12.1	2,977	2,779	5.3	375	339
Primary	62.1	15,245	15,028	58.3	4,153	4,034
Secondary	22.8	5,598	6,061	31.5	2,249	2,432
More than secondary	3.0	742	694	4.9	351	333
Wealth quintile						
Lowest	19.3	4,745	4,279	15.9	1,134	992
Second	19.1	4,692	4,429	18.6	1,325	1,266
Middle	18.9	4,635	4,508	19.8	1,409	1,373
Fourth	19.1	4,680	4,897	20.5	1,462	1,494
Highest	23.7	5,810	6,449	25.2	1,798	2,013
Total 15-49	100.0	24,562	24,562	100.0	7,128	7,138
Men 50-54	na	na	na	na	350	340
Total 15-54	na	na	na	na	7,478	7,478

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

3.4 Fertility

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

Table 3.5 shows age-specific fertility rates among women by five-year age groups for the three-year period preceding the survey. Age-specific and total fertility rates were calculated directly from the birth history data. The sum of age-specific fertility rates (known as the total fertility rate, or TFR) is a summary measure of the level of fertility. It can be interpreted as the number of children a woman would have by the end of her childbearing years if she were to pass through those years bearing children at the current observed age-specific rates. If fertility were to remain constant at current levels, a woman from Malawi would bear an average of 4.4 children in her lifetime. Trends in fertility in Malawi since the early 1990s can be examined by observing a time series of estimates produced from demographic surveys conducted in Malawi over the last 24 years, beginning with the 1992 Demographic and Health Survey (1992 MDHS). The TFRs for the five MDHS surveys since 1992 are presented in Figure 3.1. The data indicate that fertility in Malawi has been declining since the 1990s. The TFR has declined from 6.7 children per woman in 1992 to 6.3 children per woman in 2000, to 6.0 children per women in 2004 and to 5.7 children per women in 2010. Following a two-decade-long steady decline in fertility since the 1990s, the TFR declined sharply in the last three years and reached 4.4 children per woman in current survey.

Table 3.5 Current fertility

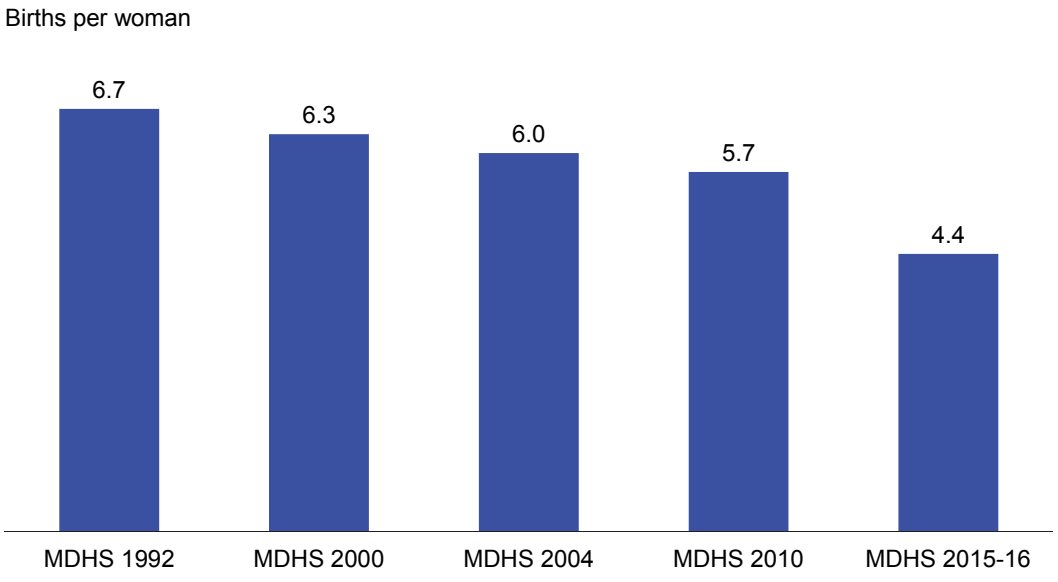
Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the 3 years preceding the survey, by residence, Malawi 2015-16

	Residence		
Age group	Urban	Rural	Total
15-19	92	145	136
20-24	150	233	216
25-29	150	204	193
30-34	120	166	157
35-39	71	123	114
40-44	22	58	53
45-49	0	21	18
TFR (15-49)	3.0	4.8	4.4
GFR	116	168	158
CBR	29.5	32.7	32.2

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

Data presented in Table 3.5 also indicate that fertility is notably higher among rural women than among urban women; on average, rural women will give birth to nearly two more children during their reproductive years than urban women (4.8 and 3.0, respectively).

Figure 3.1 **Trends in total fertility rate, 1992-2016**



3.5 Teenage Pregnancy and Motherhood

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

Table 3.6 shows that 29 percent of adolescents age 15-19 in Malawi have begun childbearing: 22 percent of women age 15-19 have given birth, and another 7 percent were pregnant with their first child at the time of interview. As expected, the proportion of women age 15-19 who have begun childbearing rises rapidly with age, from 5 percent among women age 15 to 27 percent among women age 17 and 59 percent at 19. Early childbearing among teenagers is more common in rural than in urban areas (31 versus 21 percent, respectively) and among women in the Northern and Southern regions (32 percent each) compared with Central region (25 percent). The proportion of teenagers who have started childbearing decreases with increasing level of education: more than half of teenagers age 15-19 with no education (54 percent) have begun childbearing compared with 32 percent of teenagers who have attained primary education and 19 percent of those who have attained the secondary education (19 percent). Teenagers in the lowest wealth quintile tend to start childbearing earlier than those in the highest quintile (44 versus 15 percent, respectively).

Table 3.6 Teenage pregnancy and motherhood

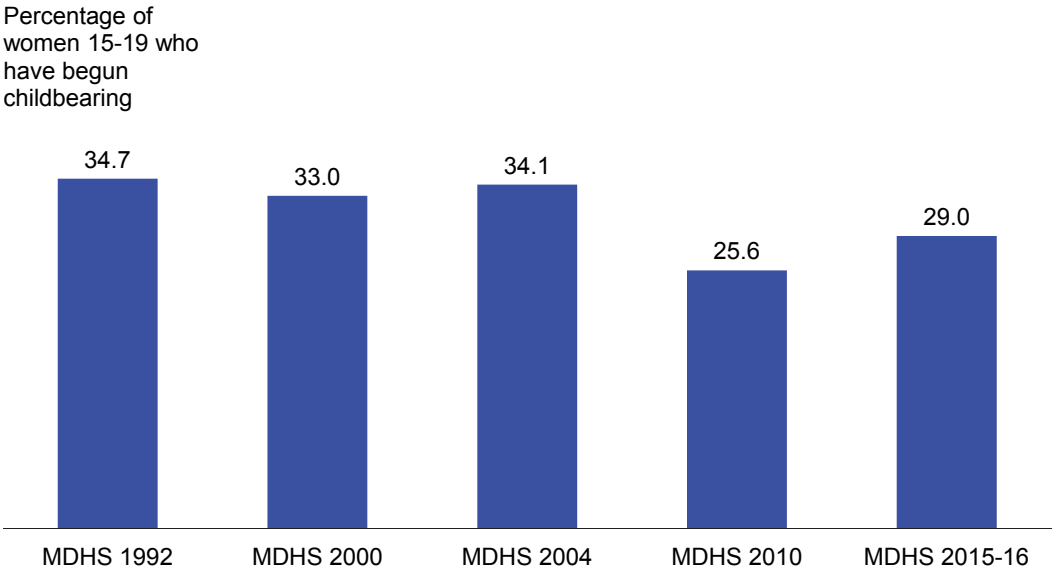
Percentage of women age 15-19 who have had a live birth or who are pregnant with their first child, and percentage who have begun childbearing, by background characteristics, Malawi 2015-16

Background characteristic	Percentage of women age 15-19 who: Have had a live birth	Are pregnant with first child	Percentage who have begun childbearing	Number of women
Age				
15	3.1	1.5	4.5	1,250
16	8.3	3.8	12.2	940
17	18.2	8.4	26.6	967
18	34.6	11.0	45.6	1,073
19	49.1	10.0	59.2	1,033
Residence				
Urban	16.2	5.0	21.3	918
Rural	23.5	7.2	30.7	4,345
Region				
Northern region	23.3	8.8	32.1	590
Central region	19.1	6.4	25.4	2,260
Southern region	25.0	6.7	31.6	2,413
Education				
No education	46.7	7.4	54.1	137
Primary	24.8	7.5	32.2	3,704
Secondary	13.6	5.0	18.6	1,401
More than secondary	*	*	*	21
Wealth quintile				
Lowest	34.3	9.3	43.6	962
Second	27.9	6.9	34.8	1,004
Middle	22.8	7.6	30.5	1,047
Fourth	17.7	7.0	24.7	1,017
Highest	11.5	3.8	15.3	1,233
Total	22.2	6.8	29.0	5,263

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

Figure 3.2 indicates that the proportion of adolescents age 15-19 who have begun childbearing remained virtually the same in the 1992, 2000, and 2004 MDHS surveys (35, 33, and 34 percent, respectively). However, early childbearing among teenage women declined in the 2010 MDHS to reach 26 percent, a proportion only slightly lower than the estimate from the 2015-16 MDHS (29 percent).

Figure 3.2 **Trends in teenage childbearing, 1992-2016**



3.6 Fertility Preferences

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

Overall, nearly half of married women age 15-49 (49 percent), including 11 percent who have been sterilised or whose partners are sterilised, do not want any more children. The proportion of women who want to stop childbearing or are sterilised increases rapidly with the number of living children, from 10 percent of women with one child to 29 percent of women with two living children, and over 50 percent of women with three or more children. On the other hand, the proportion of women who want to have another child soon decreases sharply with the number of living children, from 74 percent among women with no living children to 17 percent among women with one living child, and to 10 percent or less among those with two or fewer living children. Thus, the vast majority of married women want to either space their next birth or cease childbearing altogether.

Table 3.7 Fertility preferences by number of living children

Percent distribution of currently married women age 15-49 by desire for children, according to number of living children, Malawi 2015-16

	Number of living children[1]							
Desire for children	0	1	2	3	4	5	6+	Total
Have another soon[2]	73.9	17.0	10.4	7.0	4.5	2.2	1.0	10.3
Have another later[3]	6.4	66.9	51.5	33.5	15.1	8.2	3.4	32.9
Have another, undecided when	4.0	2.0	1.9	1.0	1.7	0.4	0.1	1.4
Undecided	2.0	3.3	6.7	6.0	6.0	3.0	2.6	4.7
Want no more	3.9	9.0	25.5	43.4	56.7	62.1	60.4	38.2
Sterilised[4]	0.5	0.8	3.1	8.1	14.8	22.9	30.5	11.0
Declare infecund	9.3	1.0	1.0	1.0	1.2	1.3	2.0	1.5
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	593	3,090	3,181	2,879	2,441	1,837	2,109	16,130

[1] The number of living children includes 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 sterilisation

3.7 Family Planning

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

Table 3.8 shows the percent distribution of currently married women and sexually active unmarried women by the contraceptive method they currently use. Overall, 59 percent of currently married women are using a method of family planning; 58 percent of currently married women are using a modern method while 1 percent of currently married women are using a traditional method. Among currently married women, the most popular methods are injectables (30 percent), implants (12 percent), and female sterilisation (11 percent). The contraceptive prevalence rate (CPR) among married women increases with age, peaking at age 35-39 (67 percent) before declining to 52 percent among women age 45-49. Women with no education are less likely than women who have attained a primary or higher education level to use contraceptives. Contraceptive use tends to increase with increasing wealth and with increasing number of living children.

Among sexually active unmarried women, 44 percent are currently using a contraceptive method; 43 percent are using a modern method. The most commonly used methods among sexually active unmarried women are injectables (15 percent) and male condoms (14 percent).

Table 3.8 Current use of contraception by background characteristics

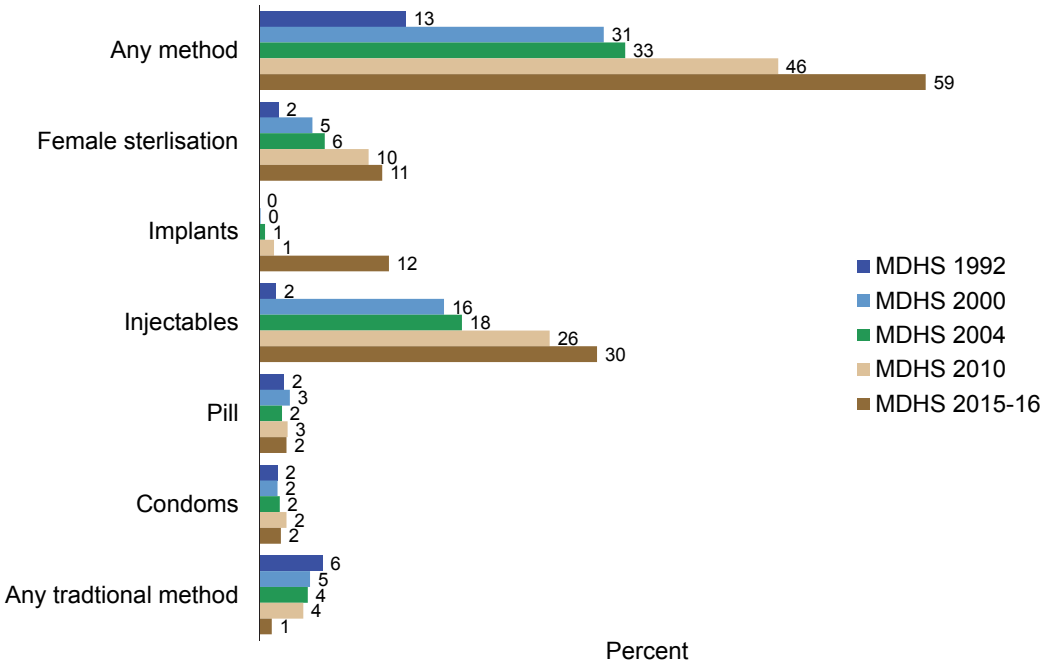
Percent distribution of currently married women age 15-49, by contraceptive method currently used, according to background characteristics, Malawi 2015-16

Background characteristic	Any method	Any modern method	Modern method										Any traditional method	Traditional method			Not currently using	Total	Number of women
			Female sterilisation	Male sterilisation	IUD	Implants	Injectables	Pill	Male condoms	Female condoms	Emergency contraception	Other		Rhythm	Withdrawal	Other			
CURRENTLY MARRIED WOMEN																			
Age																			
15-19	38.1	37.5	0.0	0.0	0.8	5.1	28.2	1.2	2.2	0.0	0.1	0.0	0.6	0.0	0.3	0.3	61.9	100.0	1,235
20-24	55.6	54.8	0.2	0.0	0.9	12.3	37.5	2.0	1.7	0.0	0.0	0.2	0.8	0.2	0.4	0.1	44.4	100.0	3,653
25-29	62.1	61.6	2.2	0.1	1.4	17.2	36.4	2.3	1.9	0.0	0.0	0.1	0.6	0.1	0.4	0.1	37.9	100.0	3,216
30-34	65.1	64.0	8.7	0.1	1.2	15.2	32.8	4.0	1.9	0.1	0.0	0.1	1.1	0.3	0.7	0.1	34.9	100.0	2,990
35-39	66.7	64.5	22.7	0.1	1.6	10.0	25.4	2.5	2.1	0.0	0.0	0.1	2.2	0.7	0.9	0.6	33.3	100.0	2,321
40-44	61.7	60.1	31.6	0.1	0.8	4.9	17.8	2.4	2.3	0.0	0.0	0.1	1.6	0.4	0.3	0.9	38.3	100.0	1,556
45-49	51.6	50.3	35.1	0.7	0.5	2.7	8.6	0.9	1.6	0.1	0.0	0.2	1.3	0.1	0.3	0.9	48.4	100.0	1,160
Residence																			
Urban	63.1	61.4	10.5	0.1	2.3	12.8	28.8	4.1	2.8	0.0	0.0	0.1	1.7	0.6	0.8	0.4	36.9	100.0	2,612
Rural	58.5	57.5	11.0	0.1	0.9	11.3	30.2	2.1	1.8	0.0	0.0	0.2	1.0	0.2	0.5	0.3	41.5	100.0	13,518
Region																			
Northern region	56.3	54.0	9.3	0.0	1.8	13.6	22.5	2.8	3.8	0.0	0.0	0.2	2.3	0.4	1.5	0.5	43.7	100.0	1,999
Central region	63.9	63.1	15.1	0.2	1.0	12.5	30.5	2.4	1.2	0.0	0.0	0.0	0.8	0.2	0.4	0.3	36.1	100.0	6,966
Southern region	55.5	54.4	7.4	0.1	1.0	10.0	31.5	2.2	2.1	0.0	0.0	0.2	1.0	0.3	0.4	0.3	44.5	100.0	7,165
Education																			
No education	54.6	53.7	18.3	0.3	0.8	7.3	23.3	2.1	1.5	0.0	0.0	0.2	1.0	0.1	0.4	0.5	45.4	100.0	2,291
Primary	60.1	59.0	11.0	0.1	0.9	11.3	31.8	2.1	1.8	0.0	0.0	0.1	1.0	0.2	0.4	0.4	39.9	100.0	10,368
Secondary	59.9	58.7	5.3	0.0	1.4	15.4	30.4	3.4	2.7	0.0	0.0	0.1	1.2	0.3	0.8	0.0	40.1	100.0	3,082
More than secondary	58.6	55.3	10.7	0.0	5.4	12.7	18.2	5.0	2.7	0.0	0.0	0.6	3.2	2.3	1.0	0.0	41.4	100.0	390
Wealth quintile																			
Lowest	54.0	53.2	7.3	0.2	0.8	10.4	30.5	1.7	2.0	0.0	0.0	0.3	0.8	0.2	0.3	0.3	46.0	100.0	3,009
Second	58.9	58.0	9.3	0.2	0.6	10.5	34.0	1.8	1.6	0.0	0.0	0.0	0.9	0.0	0.4	0.4	41.1	100.0	3,374
Middle	59.7	58.8	11.4	0.1	1.1	11.7	30.5	2.2	1.7	0.1	0.0	0.1	0.9	0.2	0.4	0.4	40.3	100.0	3,191
Fourth	60.6	59.6	14.5	0.1	0.8	11.4	28.9	2.0	1.7	0.0	0.0	0.1	1.0	0.2	0.6	0.3	39.4	100.0	3,153
Highest	62.4	60.6	12.1	0.0	2.0	13.5	26.1	4.1	2.6	0.0	0.0	0.1	1.8	0.7	0.8	0.2	37.6	100.0	3,404
Number of living children																			
0	4.8	4.2	0.3	0.0	0.0	0.6	1.4	0.2	1.5	0.0	0.0	0.2	0.6	0.3	0.3	0.0	95.2	100.0	1,072
1-2	58.7	57.8	2.0	0.0	1.4	13.3	36.1	2.6	2.4	0.0	0.0	0.1	0.8	0.2	0.4	0.2	41.3	100.0	6,070
3-4	65.2	64.1	11.3	0.2	1.2	13.1	33.4	3.0	1.7	0.0	0.0	0.1	1.1	0.3	0.6	0.2	34.8	100.0	5,187
5+	67.3	65.7	27.8	0.2	0.8	9.7	23.5	1.9	1.6	0.0	0.0	0.1	1.7	0.3	0.6	0.8	32.7	100.0	3,800
Total	59.2	58.1	10.9	0.1	1.1	11.5	30.0	2.4	1.9	0.0	0.0	0.2	1.1	0.3	0.5	0.3	40.8	100.0	16,130
SEXUALLY ACTIVE UNMARRIED WOMEN																			
Residence																			
Urban	45.6	44.6	4.4	0.0	0.2	5.0	12.7	2.6	17.4	0.0	2.3	0.0	1.0	0.0	1.0	0.0	54.4	100.0	240
Rural	44.0	42.6	5.3	0.0	1.0	6.2	15.9	1.6	12.5	0.1	0.0	0.0	1.4	0.0	1.0	0.3	56.0	100.0	609
Total	44.4	43.2	5.1	0.0	0.8	5.8	15.0	1.9	13.9	0.1	0.6	0.0	1.2	0.0	1.0	0.2	55.6	100.0	849

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

A comparison of results from the past MDHS surveys reveals that the CPR among married women in Malawi has steadily increased from 13 percent in 1992 to 59 percent in 2015-2016 (Figure 3.3). The largest increase is the use of injectables, which increased from 2 percent in 1992 to 30 percent in 2015-2016. The use of implants has also sharply increased in the recent past, from 1 percent in 2010 to 12 percent in 2015-2016.

Figure 3.3 **Trends in the use of family planning, 1992-2016**



3.8 Need and Demand for Family Planning

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

Table 3.9 presents data on unmet need, met need, and total demand for family planning among currently married women and sexually active unmarried women. Figure 3.4 presents trends in unmet need, modern contraceptive use, and percentage of total demand satisfied with modern methods among currently married women. These indicators help evaluate the extent to which family planning programmes in Malawi meet the demand for services. The definition of unmet need for family planning has been revised so that data on levels of unmet need are comparable over time and across surveys. The unmet need estimates in Figure 3.4 for the previous MDHS surveys have been recalculated using the revised definition of unmet need.

Table 3.9 shows that 19 percent of currently married women have an unmet need for family planning services, while 59 percent of married women are currently using a contraceptive method. Therefore, nearly eight in ten currently married women in Malawi (78 percent) have a demand for family planning. At present, 78 percent of the potential demand for family planning is being met, and almost entirely met by modern

methods. Thus, if all married women who said they want to space or limit their children were to use family planning methods, the CPR would increase from the current level of 59 percent to 78 percent.

Among unmarried sexually active women, 40 percent have an unmet need for family planning, and 44 percent are currently using a contraceptive method. The total demand for family planning among unmarried sexually active women is 84 percent, and at present 53 percent of the potential demand for family planning is being met. If all of the unmarried sexually active women who said they want to space or limit their births were to use family planning methods, the CPR would increase from 44 percent to 53 percent.

Table 3.9 Need and demand for family planning among currently married women

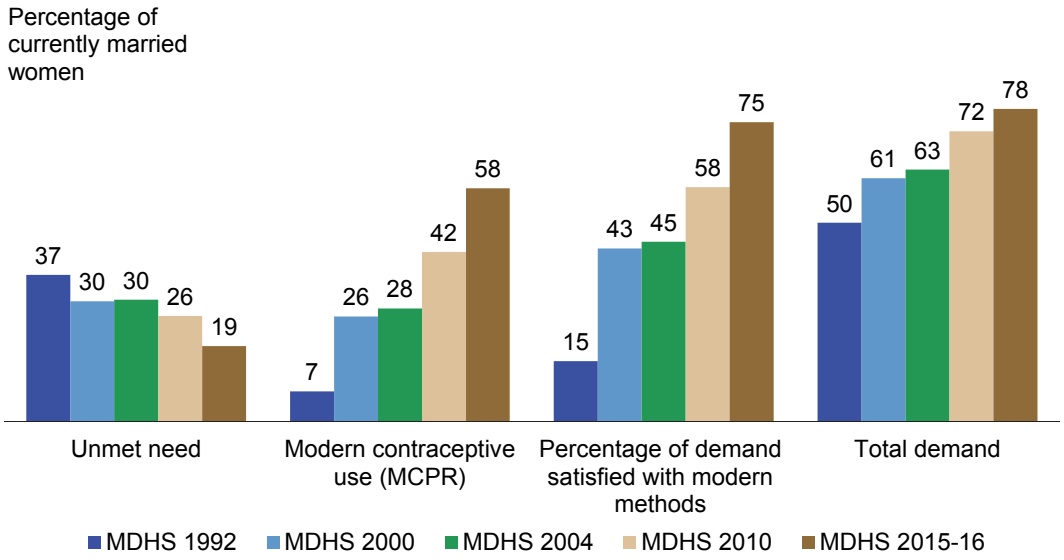
Percentage of currently married women age 15-49 with unmet need for family planning, percentage with met need for family planning, percentage with met need for family planning who are using modern methods, percentage with demand for family planning, percentage of the demand for family planning that is satisfied, and percentage of the demand for family planning that is satisfied with modern methods, by background characteristics, Malawi 2015-16

Background characteristic	Unmet need	Met need for family planning (currently using)		Total demand for family planning[3]	Percentage of demand satisfied[1]		Number of women
		All methods	Modern methods[2]		All methods	Modern methods[2]	
CURRENTLY MARRIED WOMEN							
Age							
15-19	22.2	38.1	37.5	60.3	63.1	62.2	1,235
20-24	18.4	55.6	54.8	74.0	75.1	74.1	3,653
25-29	17.5	62.1	61.6	79.6	78.1	77.3	3,216
30-34	19.2	65.1	64.0	84.3	77.3	75.9	2,990
35-39	19.0	66.7	64.5	85.7	77.8	75.3	2,321
40-44	19.7	61.7	60.1	81.4	75.8	73.8	1,556
45-49	15.7	51.6	50.3	67.3	76.6	74.7	1,160
Residence							
Urban	16.1	63.1	61.4	79.2	79.7	77.5	2,612
Rural	19.2	58.5	57.5	77.6	75.3	74.0	13,518
Region							
Northern region	22.5	56.3	54.0	78.7	71.5	68.6	1,999
Central region	16.0	63.9	63.1	79.9	80.0	79.0	6,966
Southern region	20.3	55.5	54.4	75.7	73.3	71.9	7,165
Education							
No education	19.2	54.6	53.7	73.9	74.0	72.7	2,291
Primary	18.8	60.1	59.0	78.9	76.1	74.8	10,368
Secondary	18.0	59.9	58.7	77.9	76.9	75.4	3,082
More than secondary	16.0	58.6	55.3	74.5	78.6	74.2	390
Wealth quintile							
Lowest	20.8	54.0	53.2	74.9	72.2	71.1	3,009
Second	19.7	58.9	58.0	78.6	75.0	73.8	3,374
Middle	18.6	59.7	58.8	78.3	76.3	75.1	3,191
Fourth	18.3	60.6	59.6	79.0	76.8	75.5	3,153
Highest	16.1	62.4	60.6	78.5	79.5	77.2	3,404
Total	18.7	59.2	58.1	77.9	76.0	74.6	16,130
SEXUALLY ACTIVE UNMARRIED WOMEN							
Residence							
Urban	40.5	45.6	44.6	86.0	52.9	51.8	240
Rural	39.5	44.0	42.6	83.5	52.7	51.1	609
Total	39.8	44.4	43.2	84.2	52.8	51.3	849

Note: Numbers in this table correspond to the revised definition of unmet need described in Bradley et al. 2012.
[1] Percentage of demand satisfied is met need divided by total demand.
[2] Modern methods include female sterilisation, male sterilisation, IUD, implants, injectables, pill, male condoms, female condoms, emergency contraception, standard days method (SDM), and lactational amenorrhoea method (LAM).
[3] Total demand is the sum of unmet need and met need (with all methods).

Figure 3.4 shows that the proportion of married women with unmet need for family planning have been declining over years, from 37 percent in 1992 to 19 percent in 2015-2016. At the same time, the proportion of married women using modern contraceptive methods has increased: from 7 percent in 1992 to 58 percent in 2015-2016. The resulting total demand for modern contraceptive methods among married women has increased from 50 percent in 1992 to 78 percent in 2015-2016. The percentage of the demand for family planning that is satisfied with modern contraceptive methods has also increased from 15 percent in 1992 to 75 percent currently.

Figure 3.4 **Trends in unmet need, modern contraceptive use, and percentage of demand satisfied with modern methods, 1992-2016**



3.9 Early Childhood Mortality

Infant and child mortality rates are basic indicators of a country's socioeconomic situation and quality of life (UNDP 2007). Estimates of childhood mortality are based on information collected in the birth history section of the questionnaire administered to women, which includes questions about women's aggregate childbearing experience (i.e., the number of sons and daughters who live with their mother, the number who live elsewhere, and the number who have died). Table 3.10 presents estimates for three successive five-year periods prior to the 2015-16 MDHS. The rates are estimated directly from the information in the birth history on a child's birth date, survivorship status, and age at death for children who died. This information is used to directly estimate the following five mortality rates:

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

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

As shown in Table 3.10, during the 5 years immediately preceding the survey, the infant mortality rate was 42 deaths per 1,000 live births. The child mortality rate was 23 deaths per 1,000 children surviving to age 12 months, while the overall under-5 mortality rate was 64 deaths per 1,000 live births. The neonatal mortality rate was 27 deaths per 1,000 live births. The postneonatal mortality rate was 15 deaths per 1,000 live births. The 2015-16 MDHS indicates that under-5 mortality rates have declined from 112 deaths per 1,000 live births in 2001-2005 to 64 deaths per 1,000 live births in the 5 years prior to the 2015-16 MDHS survey.

Table 3.10 Early childhood mortality rates

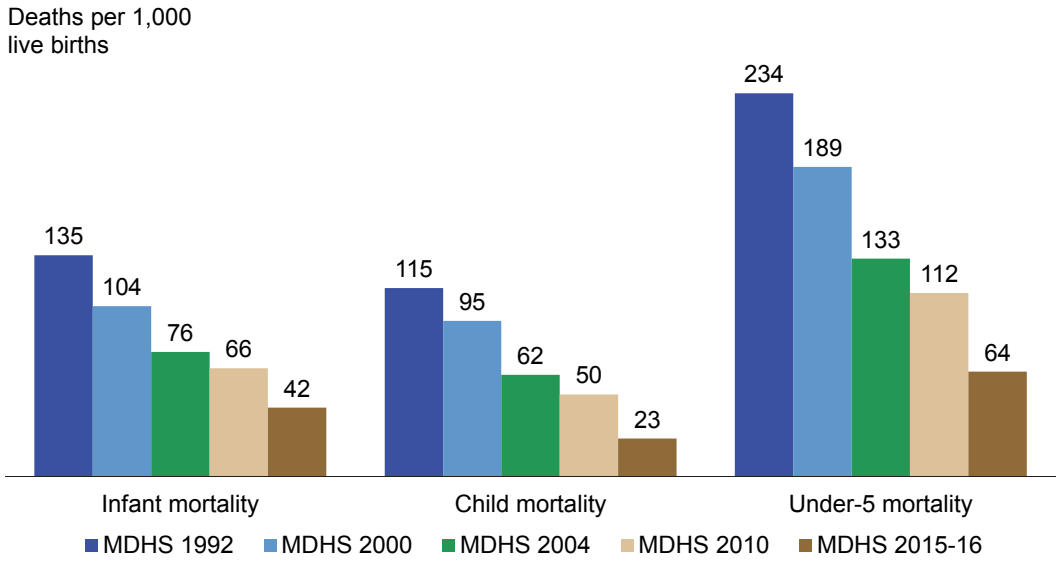
Neonatal, postneonatal, infant, child, and under-5 mortality rates for 5-year periods preceding the survey, Malawi 2015-16

Period preceding survey (years)	Mortality rates				
	Neonatal mortality (NN)	Post-neonatal mortality (PNN)[1]	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-5 mortality ($_5q_0$)
0-4	27	15	42	23	64
5-9	26	24	51	37	86
10-14	27	35	62	53	112

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

Figure 3.5 presents trends in childhood mortality, as assessed through the 1992, 2000, 2004, 2010, and 2015-16 MDHS surveys. The data presented in Figure 3.5 documents a steady decline in under-5 mortality rates from 234 deaths per 1,000 live births during the 5 years immediately preceding the 1992 MDHS, to 133 deaths per 1,000 live births in the 5 years prior to the 2004 MDHS, to reach 64 deaths per 1,000 live births in the most recent 5-year period. Infant mortality decreased from 135 deaths per 1,000 live births, to 76 deaths per 1,000 live births, and to 42 deaths per 1,000 live births in the same period.

Figure 3.5 **Trends in childhood mortality, 1992-2016**



3.10 Maternal Care

In the 2015-16 MDHS, women who had given birth in the five years preceding the survey were asked a number of questions about maternal care. Mothers were asked whether they had obtained antenatal care during the pregnancy for their most recent live birth in the 5 years preceding the survey and whether they had received tetanus toxoid injections while pregnant. For each live birth over the same period, mothers were also asked what type of assistance they received at the time of delivery. Finally, women who had a live birth in the 2 years before the survey were asked if they received a postnatal checkup within 2 days of delivery. Table 3.11 summarises information on the coverage of these maternal health services.

Table 3.11 Maternal care indicators

Among women age 15-49 who had a live birth in the 5 years preceding the survey, percentage who received antenatal care from a skilled provider for the last live birth, percentage with four or more ANC visits for the last live birth, and percentage whose last live birth was protected against neonatal tetanus; among all live births in the 5 years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility; and among women age 15-49 who had a live birth in the 2 years preceding the survey, percentage who received a postnatal checkup in the first two days after the last live birth, by background characteristics, Malawi 2015-16

	Women who had a live birth in the 5 years preceding the survey				Live births in the 5 years preceding the survey			Women who had a live birth in the 2 years preceding the survey	
Background characteristic	Percentage with antenatal care from a skilled provider[1]	Percentage with 4+ ANC visits	Percentage whose last live birth was protected against neonatal tetanus[2]	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births	Percentage of women who had a postnatal checkup in the first 2 days after birth	Number of women
Mother's age at birth									
<20	94.4	46.4	83.4	2,643	90.8	93.1	3,669	35.6	1,430
20-34	95.1	51.7	92.1	9,162	90.3	91.6	11,723	40.2	4,631
35-49	93.9	51.3	90.6	1,710	85.2	87.1	2,004	40.4	833
Residence									
Urban	97.4	58.9	91.9	1,940	95.4	96.4	2,318	45.6	940
Rural	94.4	49.2	89.9	11,576	88.9	90.7	15,077	38.2	5,954
Region									
Northern region	96.2	51.6	88.5	1,580	90.6	92.0	1,972	51.9	784
Central region	97.1	52.9	91.7	5,711	89.1	91.0	7,403	39.4	2,917
Southern region	92.3	48.2	89.2	6,224	90.2	91.7	8,021	36.0	3,193
Mother's education									
No education	92.7	46.3	87.6	1,690	84.4	86.4	2,331	34.6	819
Primary	94.3	49.2	90.0	8,863	89.3	90.9	11,549	38.0	4,624
Secondary	97.4	55.1	91.9	2,700	94.8	96.3	3,211	45.3	1,318
More than secondary	99.4	78.3	97.5	262	98.2	99.3	304	49.9	133
Wealth quintile									
Lowest	93.2	47.7	88.5	3,188	87.0	88.6	4,293	36.5	1,751
Second	94.7	48.6	91.0	2,929	88.9	90.7	3,918	36.4	1,563
Middle	94.2	48.8	90.2	2,599	88.4	90.1	3,364	40.0	1,325
Fourth	95.8	49.9	88.6	2,430	91.6	93.4	3,025	43.8	1,161
Highest	96.8	59.5	93.2	2,369	95.2	96.4	2,795	42.0	1,094
Total	94.8	50.6	90.2	13,515	89.8	91.4	17,395	39.2	6,894

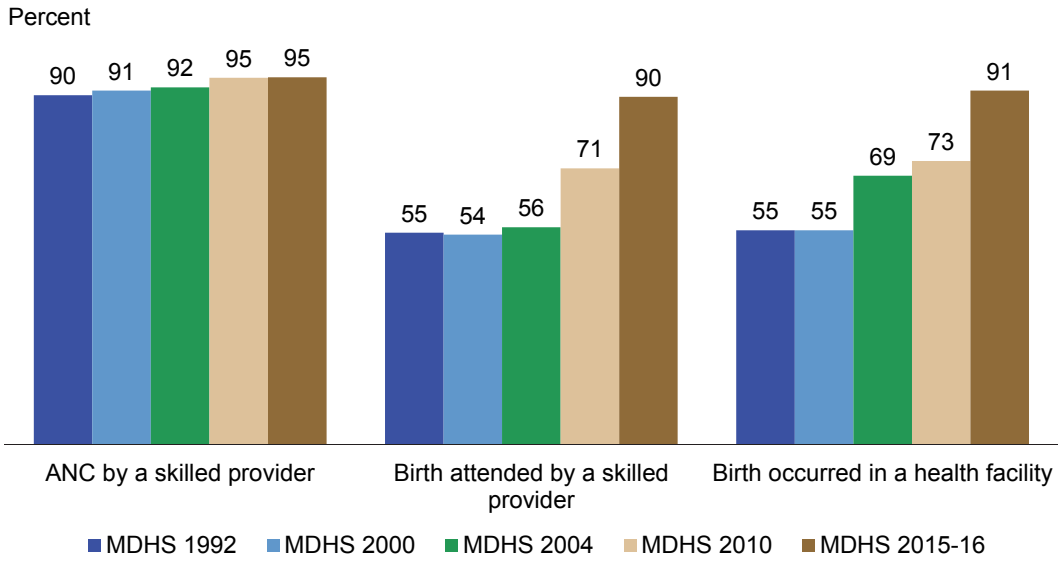
[1] Skilled provider includes doctor, clinical officer, medical assistant, nurse, or midwife
[2] Includes mothers with two injections during the pregnancy of her last live birth, or two or more injections (the last within 3 years of the last live birth), or three or more injections (the last within 5 years of the last live 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 live birth

3.10.1 Antenatal Care

Antenatal care (ANC) from a skilled provider is important to monitor pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy, delivery, and the postnatal period (within 42 days after delivery). The 2015-16 MDHS results show that 95 percent of women who gave birth in the 5 years preceding the survey received antenatal care from a skilled provider at least once for their last birth. Half of women had four or more ANC visits (51 percent). Urban women were more likely than rural women to have received ANC from a skilled provider (97 percent and 94 percent, respectively) and to have had four or more ANC visits (59 percent and 49 percent, respectively). Although more than 9 in 10 women received ANC from a skilled provider regardless of their education, the use of a skilled provider for ANC services tends to increase with increasing education: 93 percent of women with no education obtained ANC services from a skilled attendant compared with 99 percent of women who had attained more than secondary education. Similarly, women with no education are less likely than who have secondary or more education to have had four or more ANC visits. The use of ANC services tends also to increase with an increase in wealth quintile.

As shown in Figure 3.6, the percentage of women receiving antenatal care from a skilled provider has increased from 90 percent in 1992 to 95 percent in 2015-16.

***Figure 3.6* Trends in maternal health care, 1992-2016**



3.10.2 Tetanus Toxoid

Tetanus toxoid injections are given during pregnancy to prevent neonatal tetanus, a major cause of early infant death in many developing countries, often due to failure to observe hygienic procedures during delivery. Table 3.11 shows that 90 percent of women received sufficient doses of tetanus toxoid to protect their last birth against neonatal tetanus. The percentage of women whose last birth was protected from tetanus increases with education; from 88 percent among women with no education to 98 percent among those with more than secondary education. The proportion of women whose last live birth was protected against tetanus was similar to that reported in the 2010 MDHS (89 percent).

3.10.3 Delivery Care

Access to proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may lead to death or serious illness for the mother, baby, or both (Van Lerberghe and De Brouwere 2001; WHO 2006). Nine in 10 live births in the 5 years preceding the survey were delivered by a skilled provider and most of them (91 percent of live births) were delivered in a health facility. Figure 3.6 shows that the proportion of live births delivered by a skilled provider remained virtually unchanged for a period of 12 years after 1992, but it increased substantially after 2004; from 56 percent in the 2004 MDHS, to 71 percent in 2010 MDHS, and reached 90 percent in 2015-16 MDHS. Figure 3.6 documents a similar trend in the proportion of live births that occurred in a health facility, but it also shows that the increase in the proportion of births occurring in health facilities was recorded earlier than the increase in the proportion of live births delivered by a skilled provider. The proportion of live births that occurred in a health facility increased from 55 percent in the 2000 MDHS, to 69 percent in the 2004 MDHS, to 73 percent in the 2010 MDHS, and to 92 percent in the 2015-16 MDHS.

Ninety-five percent of births to urban mothers were assisted by a skilled provider and 96 percent were delivered in a health facility, as compared with 89 percent and 91 percent, respectively, of births to rural women. Mothers' educational status is highly correlated with whether their delivery is assisted by a skilled provider and whether the birth is delivered in a health facility. For example, 84 percent of births to mothers with no education were assisted by a skilled provider and 86 percent were delivered in a health facility, as compared with 98 percent and 99 percent, respectively, of births to mothers with more than a secondary education. A similar relationship was observed with wealth.

3.10.4 Postnatal Care for the Mother

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

To assess the extent of postnatal care utilisation, respondents were asked, for their last birth in the 2 years preceding the survey, whether they had received a checkup after delivery and the timing of the first checkup. As shown in Table 3.11, 39 percent of women reported having received a PNC checkup in the first 2 days after birth.

The proportion of women receiving a postnatal checkup within 2 days of delivery is higher in urban areas than rural areas and increases with increasing education.

3.11 Child Health and Nutrition

The 2015-16 MDHS collected data on a number of key child health indicators, including vaccinations of young children, nutritional status as assessed by anthropometry, infant feeding practices, and treatment practices when a child is ill.

3.11.1 Vaccination of Children

Universal immunisation of children against six common vaccine-preventable diseases, namely tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles, is crucial to reducing infant and child mortality. Other childhood vaccines given in Malawi protect against hepatitis B and *Haemophilus influenzae* type b (Hib). The government of Malawi introduced the pneumococcal conjugate vaccine (PCV 13) and monovalent human rotavirus vaccine (RV1) into the national's infant immunisation programme in November 2011 and October 2012, respectively. The pneumococcal vaccine protects against Streptococcus pneumoniae bacteria, which cause severe pneumonia, meningitis, and other illnesses. Rotavirus is a virus that causes gastroenteritis; an inflammation of the stomach and intestines. If left untreated, it can lead to severe dehydration and death. The 2015-16 MDHS collected information on the coverage of all of these vaccines among children born in the 3 years preceding the survey. The information obtained in the survey on differences in vaccination coverage among subgroups of children is useful for programme planning and targeting resources towards areas most in need.

According to the guidelines developed by the World Health Organization, children are considered to have received all basic vaccinations when they have received a vaccination against tuberculosis (also known as BCG), three doses each of the DPT-HepB-Hib (also called pentavalent) and polio vaccines, and a vaccination against measles. The BCG vaccine is usually given at birth or at first clinical contact, while the DPT-HepB-Hib and polio vaccines are given at approximately age 6, 10, and 14 weeks. Measles vaccinations should be given at or soon after age 9 months. The Malawi immunisation programme considers a child to be fully vaccinated if the child has received all basic vaccinations, three doses of the PCV vaccine (also given at age 6, 10, and 14 weeks), and two doses of the rotavirus vaccine (given at age 6 and 10 weeks).

Information on vaccination coverage was obtained in two ways in the 2015-16 MDHS: from written vaccination records, including the Child Health Passport and other health cards, and from mothers' verbal reports. In the MDHS, for each child born in the 3 years before the survey, mothers were asked to show the interviewer the Child Health Passport or health card used for recording the child's immunisations. If the Child Health Passport or other health card was available, the interviewer copied the dates of each vaccination received. If a vaccination was not recorded in the Child Health Passport or on the card as being given, the mother was asked to recall whether that particular vaccination had been given. If the mother was not able to present the Child Health Passport or card for a child, she was asked to recall whether the child had received

BCG, polio, DPTHepB-Hib, measles, pneumococcal, and rotavirus vaccine. If she indicated that the child had received the polio, DPT-HepB-Hib, pneumococcal, or rotavirus vaccine, she was asked the number of doses that the child received.

Table 3.12 presents data on vaccination coverage among children age 12-23 months by background information. Children age 12-23 months are the youngest cohort to have reached the age by which a child should be fully immunised. Table 3.12 shows that 76 percent of children age 12-23 months received all basic vaccinations, and 71 percent are fully vaccinated. Only 2 percent of children had not received any vaccinations. Ninety-eight percent of children received the BCG vaccination, 98 percent the first dose of DPT-HepB-Hib, 97 percent the first dose of polio, 96 percent the first dose of the pneumococcal vaccine, and 96 percent the first dose of rotavirus vaccine. Ninety-one percent of children have received a measles vaccination. Coverage rates decline for subsequent doses, with 93 percent of children receiving the recommended three doses of DPT-HepB-Hib, 81 percent the three doses of polio, 89 percent the three doses of the pneumococcal vaccine, and 91 percent the two doses of the rotavirus vaccine.

There is little difference in the coverage rates between male and female children. Immunisation coverage increases with increasing mother's education; three-quarters of children whose mothers have a secondary education are fully immunised (76 percent), as compared with 67 percent of children whose mothers have no education. Coverage is higher in rural than urban areas (72 and 66 percent, respectively).

Table 3.12 Vaccinations by background characteristics

Percentage of children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card seen, by background characteristics, Malawi 2015-16

Background characteristic	BCG	Pentavalent[1]			Polio[2]				Measles	All basic vaccinations[3]	Pneumococcal			Rotavirus		Fully vaccinated[4]	No vaccinations	Percentage with a vaccination card	Number of children
		1	2	3	0	1	2	3			1	2	3	1	2				
Sex																			
Male	97.8	97.6	96.5	92.9	73.5	96.8	94.0	80.3	91.5	74.9	96.5	94.7	89.9	95.3	92.1	71.5	1.4	85.6	1,589
Female	97.5	97.2	96.4	93.0	70.7	97.1	94.4	82.2	90.8	76.4	96.3	93.7	88.4	94.3	90.7	71.0	1.7	84.9	1,642
Residence																			
Urban	98.2	96.6	96.2	90.1	87.9	96.5	93.6	75.3	88.5	69.6	96.5	92.8	85.7	95.0	93.1	66.0	1.5	84.3	439
Rural	97.5	97.5	96.5	93.4	69.6	97.0	94.3	82.2	91.6	76.6	96.4	94.5	89.7	94.7	91.1	72.1	1.6	85.4	2,792
Region																			
Northern region	97.9	97.9	96.0	93.6	79.2	96.8	94.8	84.0	91.5	78.4	95.9	93.3	91.4	96.2	90.9	75.7	1.5	92.9	379
Central region	99.1	98.5	97.8	94.7	75.7	98.5	95.8	82.5	92.3	76.8	97.0	94.8	89.3	95.3	92.4	71.7	0.5	85.2	1,384
Southern region	96.2	96.2	95.3	91.2	66.9	95.5	92.7	79.3	90.0	73.9	95.9	93.9	88.5	93.9	90.5	69.7	2.6	83.2	1,468
Education																			
No education	95.4	94.9	94.1	89.4	60.0	95.5	90.8	79.8	86.2	72.1	92.9	91.7	82.2	91.1	89.0	66.6	2.9	82.8	378
Primary	97.6	97.6	96.5	93.1	69.6	96.9	94.0	81.3	91.1	75.4	96.8	94.4	89.6	94.8	90.7	70.7	1.7	84.9	2,181
Secondary	99.4	98.4	97.9	94.2	86.8	97.9	96.9	81.9	94.2	78.5	97.9	95.8	91.7	96.8	95.2	76.1	0.2	86.6	609
More than secondary	96.0	96.0	96.0	96.0	90.0	96.0	96.0	82.0	91.9	77.9	89.5	89.5	89.5	96.0	92.2	72.0	4.0	99.2	63
Wealth quintile																			
Lowest	96.9	96.5	95.1	92.2	65.7	95.5	92.0	77.5	89.9	71.5	94.7	92.8	87.2	92.7	88.5	65.9	1.8	81.9	841
Second	97.4	97.7	96.9	92.8	66.9	97.1	94.1	84.1	92.4	78.1	96.9	95.0	90.9	95.9	91.6	73.8	1.5	87.5	705
Middle	98.0	98.1	97.2	93.8	70.8	97.9	95.5	81.8	89.6	74.4	97.3	94.0	88.7	93.7	90.6	69.6	1.2	86.1	648
Fourth	97.8	97.4	96.5	93.8	77.0	97.8	95.4	83.1	91.1	79.0	97.2	95.7	91.7	96.8	93.9	77.1	2.0	86.1	518
Highest	98.4	97.5	97.1	92.5	86.2	96.9	95.3	80.9	93.5	77.4	96.4	94.4	87.9	96.1	94.2	72.7	1.3	85.5	517
Total	97.6	97.4	96.4	93.0	72.1	96.9	94.2	81.2	91.2	75.7	96.4	94.2	89.2	94.8	91.4	71.3	1.6	85.2	3,230

[1] Pentavalent is DPT-HepB-Hib.
[2] Polio 0 is the polio vaccination given at birth.
[3] BCG, measles, and three doses each of pentavalent and polio vaccine excluding polio vaccine given at birth
[4] BCG, measles, and three doses each of pentavalent and polio vaccine (excluding polio vaccine given at birth), and pneumococcal vaccine, and two doses of rotavirus vaccine

3.11.2 Childhood Acute Respiratory Infection, Fever, and Diarrhoea

Acute respiratory infection (ARI), fever, and dehydration from diarrhoea are important contributing causes of childhood morbidity and mortality in developing countries (WHO 2003). Prompt medical attention when a child has the symptoms of these illnesses is, therefore, crucial in reducing child deaths. In the 2015-16 MDHS, for each child under age 5, mothers were asked if the child had experienced an episode of diarrhoea; a cough accompanied by short, rapid breathing or difficulty breathing as a result of a chest-related problem (symptoms of ARI); or a fever in the 2 weeks preceding the survey. Respondents were also asked if treatment was sought when the child was ill. Overall, 5 percent of children under age 5 showed symptoms of ARI, 29 percent had a fever, and 22 percent experienced diarrhoea in the 2 weeks preceding the survey (data not shown). It should be noted that the morbidity data collected are subjective because they are based on a mother's perception of illnesses without validation by medical personnel.

Table 3.13 shows that treatment from a health facility or provider was sought for 71 percent of children with ARI symptoms and 59 percent of those with a fever. Treatment was sought from a health facility or health provider for 58 percent of children with diarrhoea. Sixty-five percent of children with diarrhoea received a rehydration solution from an oral rehydration salt (ORS) packet; 28 percent of children with diarrhoea were given zinc supplements, while 24 percent received both zinc supplements and ORS.

Table 3.13 Treatment for acute respiratory infection, fever, and diarrhoea

Among children under age 5 who had symptoms of acute respiratory infection (ARI) or had fever in the 2 weeks preceding the survey, percentage for whom advice or treatment was sought from a health facility or provider, and among children under age 5 who had diarrhoea during the 2 weeks preceding the survey, percentage for whom advice or treatment was sought from a health facility or provider, percentage given a fluid made from oral rehydration salt (ORS) packets or given pre-packaged ORS fluid, percentage given zinc, and percentage given ORS and zinc, by background characteristics, Malawi 2015-16

	Children with symptoms of ARI[1]		Children with fever		Children with diarrhoea				
Background characteristic	Percentage for whom treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom treatment was sought from a health facility/ provider[2]	Number of children	Percentage for whom treatment was sought from a health facility/ provider[2]	Percentage given fluid from ORS packet or pre-packaged ORS fluid	Percentage given zinc	Percentage given any ORS and zinc	Number of children
Age in months									
<6	63.5	77	54.2	407	46.8	38.8	13.5	10.7	213
6-11	75.5	110	56.3	581	59.5	61.3	26.2	22.5	699
12-23	73.2	201	56.9	1,161	61.5	69.7	30.9	27.0	1,200
24-35	74.4	197	64.5	1,020	58.8	68.1	32.4	28.8	688
36-47	61.3	158	57.7	903	56.9	65.1	27.3	23.9	488
48-59	72.4	150	57.4	701	50.1	62.7	23.8	18.9	297
Sex									
Male	70.0	467	59.1	2,387	58.8	64.5	27.3	23.7	1,918
Female	71.5	426	57.8	2,387	57.4	65.0	29.1	25.1	1,665
Residence									
Urban	78.0	80	55.6	489	54.1	59.8	31.3	26.6	563
Rural	70.0	814	58.8	4,285	58.9	65.7	27.6	24.0	3,020
Region									
Northern region	64.8	109	49.5	510	62.2	61.2	28.7	24.1	339
Central region	71.7	414	59.4	2,097	57.9	63.7	27.8	24.0	1,683
Southern region	71.3	370	59.7	2,167	57.5	66.6	28.4	24.9	1,562
Mother's education									
No education	71.4	102	54.1	623	50.0	60.7	22.0	15.8	403
Primary	70.3	625	58.9	3,269	59.3	65.5	27.5	24.0	2,472
Secondary	71.9	163	59.6	821	58.9	64.8	33.2	30.8	662
More than secondary	*	3	61.2	60	(54.1)	(59.6)	(44.5)	(27.2)	47
Wealth quintile									
Lowest	73.0	240	57.9	1,276	58.6	62.9	28.0	24.3	914
Second	68.7	183	59.8	1,079	55.4	64.2	25.0	21.6	840
Middle	69.0	197	59.0	976	61.2	66.0	26.8	23.1	646
Fourth	74.5	167	58.0	847	61.4	70.1	30.6	26.4	623
Highest	66.1	107	57.0	597	54.3	61.0	31.9	28.0	561
Total	70.7	894	58.5	4,774	58.1	64.7	28.1	24.4	3,584

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Symptoms of ARI (cough accompanied by short, rapid breathing, which was chest-related, and/or by difficult breathing, which was chest-related)
[2] Excludes pharmacy, shop, and traditional practitioner

3.11.3 Nutritional Status of Children

Anthropometric indicators for young children were collected in the 2015-16 MDHS to provide outcome measures of nutritional status. As recommended by WHO, evaluation of nutritional status in this report is based on a comparison of three indices for the children in this survey with indices reported for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group 2006). The three indices (height-for-age, weight-for-height, and weight-for-age) are expressed as standard deviation units from the median for the reference group. Children who fall below minus two standard deviations (-2 SD) from the median of the reference population are regarded as moderately malnourished, while those who fall below minus three standard deviations (-3 SD) from the reference population median are considered severely malnourished. Marked differences, especially with regard to height-for-age and weight-for-age, are often seen between different subgroups of children within a country.

A total of 6,033 children under age 5 were eligible for weight and height measurements. For some of the eligible children, however, complete and credible data on height, weight and/or age were not obtained. In this report, height-for-age is based on 94 percent of eligible children, weight-for-height is based on 95 percent of eligible children and weight-for-age is based on 96 percent of eligible children.

Table 3.14 shows nutritional status for children under age 5, according to the three anthropometric indices, by background characteristics. Height-for-age is a measure of linear growth. A child who is below minus two standard deviations from the reference median for height-for-age is considered short for his or her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition.

The data show that 37 percent of children under 5 are considered to be short for their age or stunted (below -2 SD), and 11 percent are severely stunted (below -3 SD). As shown in Figure 3.7, after being fairly stable in the first 6 months of life, the prevalence of stunting increases steadily with age from 7 months through the first 2 years of life before declining slightly in the first and fourth year. Children age 36-47 months have the highest proportion of severe stunting (16 percent). Stunting is slightly higher among male children (39 percent) than among female children (35 percent).

Stunting is greater among children in rural areas (39 percent) than urban areas (25 percent) whereas there is little regional variation. Mother's education and wealth quintile are both inversely related to stunting levels. The prevalence of stunting decreases with increasing levels of the mother's education: more than 4 in 10 children born to mothers with no education (43 percent) are stunted compared with 38 percent of children born to mothers with primary education, 30 percent of children whose mothers have a secondary education and 12 percent of children born to mothers with more than a secondary education. Similarly, stunting decreases with increasing wealth quintiles, from 46 percent among children in the lowest wealth quintile, to 37 percent among those in the middle wealth quintile, to 24 percent of children in the highest wealth quintile.

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference median for weight-for-height is considered too thin for his or her height, or wasted, a condition reflecting acute or recent nutritional deficits. Overall, 3 percent of children are wasted. There are small variations according to background characteristics.

Weight-for-age is a composite index of weight-for-height and height-for-age and thus does not distinguish between acute malnutrition (wasting) and chronic malnutrition (stunting). Children can be underweight for their age because they are stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. The results show that 12 percent of all children are underweight, and 3 percent are severely underweight. Children in rural areas are more likely than those in urban areas to be underweight (12 percent and 8 percent, respectively). The proportion of children who are underweight decreases with increasing levels of the mother's education and with increasing wealth quintiles.

Table 3.14 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Malawi 2015-16

	Height-for-age				Weight-for-height					Weight-for-age				
Background characteristic	Percentage below -3 SD	Percentage below -2 SD	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD	Percentage above +2 SD	Mean Z-score (SD)	Number of children	Percentage below -3 SD	Percentage below -2 SD	Percentage above +2 SD	Mean Z-Score (SD)	Number of children
Age in months														
<6	7.7	23.7	-1.0	515	1.1	3.7	18.0	0.7	513	3.9	8.0	4.1	-0.2	526
6-8	7.6	19.0	-0.9	273	0.8	2.9	6.7	0.2	275	0.9	8.6	1.3	-0.4	277
9-11	3.9	26.5	-1.1	299	0.2	4.8	4.1	-0.0	301	1.7	10.2	1.2	-0.7	305
12-17	9.0	35.1	-1.4	589	0.5	3.5	4.2	0.1	596	1.5	9.5	3.3	-0.6	602
18-23	10.9	43.0	-1.6	503	0.2	3.0	3.5	0.1	506	3.1	11.4	2.4	-0.8	512
24-35	11.9	42.3	-1.7	1,153	1.0	2.2	2.5	0.1	1,155	2.2	11.8	0.7	-0.9	1,168
36-47	15.6	44.8	-1.8	1,222	0.1	1.9	3.1	0.2	1,245	3.0	13.8	0.2	-1.0	1,238
48-59	10.5	35.4	-1.6	1,153	0.5	2.6	2.4	-0.0	1,172	2.4	13.5	0.5	-1.0	1,159
Sex														
Male	12.1	39.0	-1.6	2,771	0.9	3.3	5.8	0.2	2,801	3.0	13.0	1.7	-0.8	2,820
Female	10.0	35.4	-1.5	2,936	0.2	2.2	3.3	0.1	2,963	2.0	10.5	1.0	-0.8	2,966
Mother's interview status														
Interviewed	10.5	36.5	-1.5	5,165	0.6	2.8	4.5	0.1	5,189	2.4	11.4	1.3	-0.8	5,240
Not interviewed, but in household	18.6	45.5	-1.7	122	0.2	1.5	4.5	0.3	124	5.4	16.6	4.3	-0.7	124
Not interviewed, not in household[3]	15.5	42.4	-1.6	420	0.3	2.2	4.7	0.1	450	2.4	14.5	0.6	-0.9	421
Residence														
Urban	4.9	25.0	-1.2	720	0.8	3.3	4.6	0.2	723	1.6	7.9	1.6	-0.5	726
Rural	11.9	38.9	-1.6	4,986	0.5	2.6	4.5	0.1	5,041	2.6	12.3	1.3	-0.8	5,060
Region														
Northern region	10.2	35.1	-1.6	633	0.3	2.1	6.0	0.2	639	1.8	10.7	0.9	-0.7	637
Central region	9.8	38.2	-1.6	2,413	0.3	2.0	4.3	0.2	2,444	2.1	10.5	1.5	-0.8	2,445
Southern region	12.4	36.6	-1.5	2,661	0.8	3.5	4.5	0.1	2,681	3.0	13.0	1.3	-0.8	2,704
Mother's education														
No education	15.5	42.7	-1.7	707	0.5	2.3	3.8	0.1	720	3.3	14.4	1.0	-0.9	725
Primary	11.3	38.3	-1.6	3,480	0.6	2.7	4.6	0.1	3,487	2.6	11.9	1.4	-0.8	3,527
Secondary	6.1	29.6	-1.3	996	0.7	3.0	4.2	0.1	1,002	1.9	9.0	1.0	-0.7	1,009
More than secondary	1.5	12.1	-0.3	104	0.0	5.1	10.2	0.5	104	0.3	2.7	8.9	0.1	104
Wealth quintile														
Lowest	15.3	45.7	-1.8	1,372	0.5	2.7	4.1	0.1	1,390	3.6	14.6	1.7	-0.9	1,406
Second	12.4	40.4	-1.6	1,305	0.5	2.4	4.8	0.2	1,321	2.9	12.2	0.8	-0.8	1,318
Middle	9.5	36.8	-1.5	1,105	0.7	3.1	4.8	0.1	1,113	2.5	11.9	1.2	-0.8	1,126
Fourth	9.6	33.1	-1.5	1,032	0.5	2.3	4.3	0.1	1,046	1.8	10.8	1.8	-0.7	1,039
Highest	6.0	24.3	-1.2	893	0.7	3.3	4.9	0.2	894	1.1	7.2	1.2	-0.5	897
Total	11.0	37.1	-1.5	5,707	0.6	2.7	4.5	0.1	5,764	2.5	11.7	1.3	-0.8	5,786

Note: Table is based on children who stayed in the household 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.

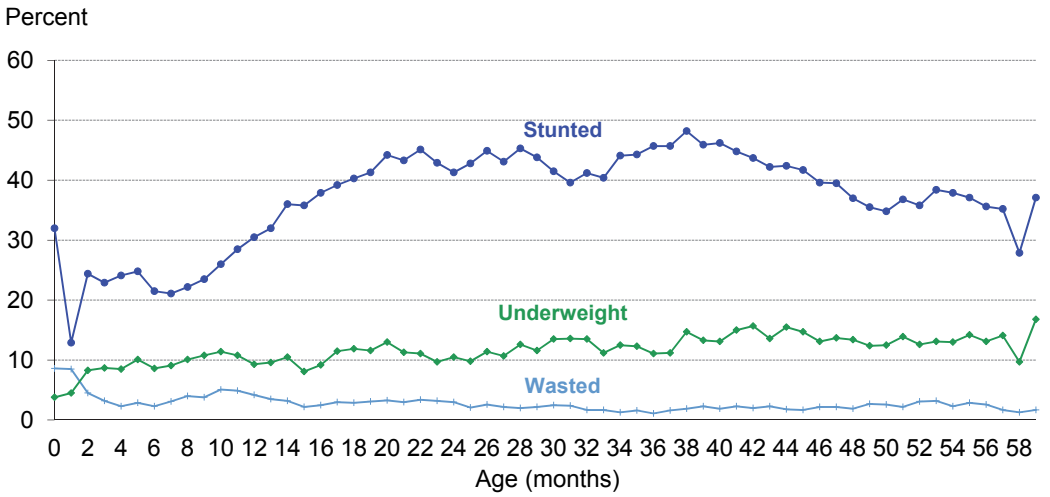
[1] Recumbent length is measured for children under age 2 or in the few cases when the age of the child is unknown and the child is less than 85 cm; standing height is measured for all other children

[2] Includes children who are below û3 standard deviations (SD) from the WHO Growth Standards population median

[3] Includes children whose mothers are deceased

[4] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

Figure 3.7 **Nutritional status of children by age**



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

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3.11.4 Infant and Young Child Feeding Practices

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

The 2015-16 MDHS collected data on infant and young child feeding (IYCF) practices for all children born in the 2 years preceding the survey. Table 3.15 shows breastfeeding practices by child's age. Sixty-one percent of infants under age 6 months are exclusively breastfed. Contrary to the recommendation that children under age 6 months be exclusively breastfed, 9 percent of infants consume plain water, 3 percent consume nonmilk liquids, 2 percent consume other milk, and 18 percent consume complementary foods in addition to breast milk; 7 percent of infants under age 6 months are not breastfed at all. The percentage of children exclusively breastfed decreases sharply with age from 81 percent of infants age 0-1 month to 69 percent of infants age 2-3 months and, further, to 34 percent of infants age 4-5 months. Three percent of infants under age 6 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

It is recommended to continue breastfeeding a child until age 2. The proportion of children who are currently breastfeeding decreases with increasing child age from 91 percent among children age 12-17 months to 77 percent among children age 18-23 months.

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

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

2. Fed with foods from four or more of the following groups: a. infant formula, milk other than breast milk, and 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); and g. legumes and nuts.

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

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

   b. For nonbreastfed children age 6-23 months, minimum meal frequency is receiving solid or semisolid food or milk feeds at least four times a day.

Table 3.15 Breastfeeding status by age

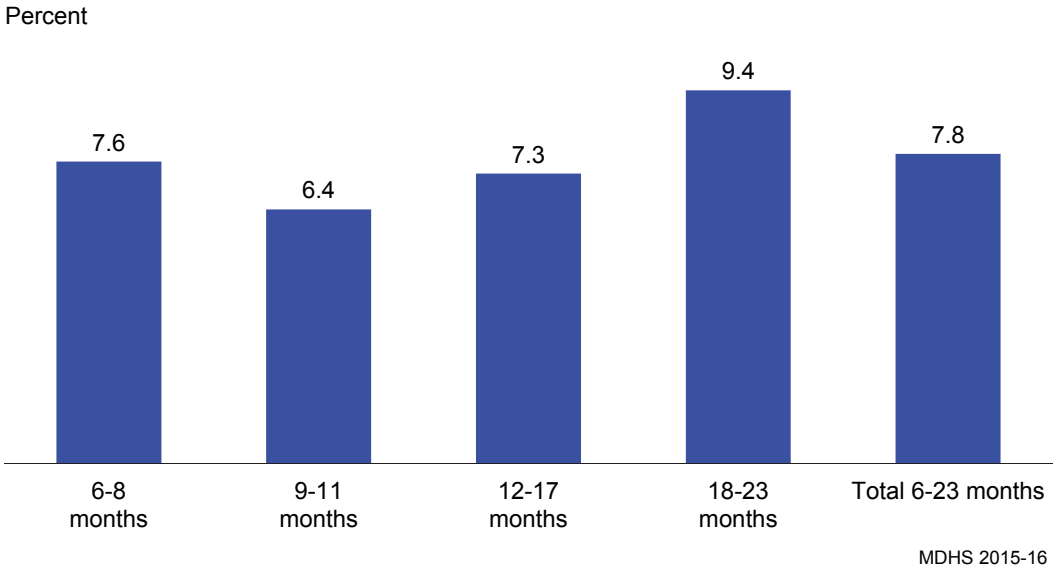
Percent distribution of youngest children under age 2 who are living with their mother, by breastfeeding status, and the percentage currently breastfeeding; and the percentage of all children under age 2 using a bottle with a nipple, according to age in months, Malawi 2015-16

	Breastfeeding status										
Age in months	Not breast-feeding	Exclusively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming nonmilk liquids[1]	Breast-feeding and consuming other milk	Breast-feeding and consuming comple-mentary foods	Total	Percentage currently breast-feeding	Number of youngest children under 2 living with the mother	Percentage using a bottle with a nipple	Number of all children under 2
0-1	8.5	81.0	1.9	3.0	2.3	3.3	100.0	91.5	526	2.3	542
2-3	8.4	68.8	9.5	2.0	2.4	9.0	100.0	91.6	552	2.1	567
4-5	4.5	34.3	14.6	3.9	0.9	41.8	100.0	95.5	544	5.5	561
6-8	6.8	4.6	6.4	2.5	1.0	78.8	100.0	93.2	780	4.3	797
9-11	6.7	0.8	4.1	3.0	0.2	85.1	100.0	93.3	876	4.9	895
12-17	9.5	0.5	2.6	1.1	0.0	86.2	100.0	90.5	1,609	5.6	1,663
18-23	23.4	0.1	1.3	0.8	0.1	74.3	100.0	76.6	1,492	6.8	1,567
0-3	8.5	74.7	5.8	2.5	2.4	6.2	100.0	91.5	1,079	2.2	1,109
0-5	7.1	61.2	8.7	3.0	1.9	18.2	100.0	92.9	1,623	3.3	1,670
6-9	7.4	3.5	5.3	3.3	0.9	79.5	100.0	92.6	1,075	5.2	1,099
12-15	8.4	0.4	2.5	0.7	0.1	87.8	100.0	91.6	1,099	5.1	1,134
12-23	16.2	0.3	2.0	0.9	0.1	80.5	100.0	83.8	3,102	6.2	3,230
20-23	28.5	0.0	1.4	0.7	0.2	69.1	100.0	71.5	1,013	7.0	1,066

Note: Breastfeeding status refers to a 24-hour period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfeeding, breastfeeding and consuming plain water, nonmilk 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 nonmilk liquids and who do not receive other milk and who do not receive complementary foods are classified in the nonmilk 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] Nonmilk liquids include juice, juice drinks, clear broth, or other liquids.

Figure 3.8 shows the percentage of children being fed the minimum acceptable diet, by age. In total, only 8 percent of children age 6-23 months have met the criteria for a minimum acceptable diet.

Figure 3.8 **Minimum acceptable diet by age, in months**



3.12 Anaemia Prevalence in Children and Women

Anaemia is a condition that is marked by low levels of haemoglobin in the blood. Iron is a key component of haemoglobin, and iron deficiency is estimated to be responsible for half of all anaemia globally. Other causes of anaemia include hookworm and other helminths, other nutritional deficiencies, chronic infections, and genetic conditions. Anaemia is a serious concern for children because it can impair cognitive development, stunt growth, and increase morbidity from infectious diseases. As a part of 2015-16 MDHS, haemoglobin levels were successfully measured for 95 percent of the children age 6-59 months eligible for testing and 96 percent of the women age 15-49 eligible for testing (data not shown).

Table 3.16 presents anaemia prevalence for children age 6-59 months and women age 15-49, by background characteristics. Haemoglobin levels for children and women were adjusted for altitude and, for women only, smoking status. Children and pregnant women with haemoglobin levels below 11.0 g/dl and nonpregnant women with haemoglobin levels below 12.0 g/dl were defined as anaemic.

Overall, more than 6 in 10 children (63 percent) suffered from some degree of anaemia: 27 percent were classified as mildly anaemic, 34 percent were moderately anaemic, and 2 percent were severely anaemic. The prevalence of anaemia decreases with age from a high of 87 percent among children age 6-11 months to a low of 48 percent among children age 48-59 months. Children in rural areas are more likely to be anaemic than those in urban areas (64 percent and 56 percent, respectively). Anaemia prevalence generally decreases with increasing level of wealth quintile, from a high of 68 percent among children from households in the lowest wealth quintile to a low of 54 percent among children from households with the highest wealth quintile.

One in three women age 15-49 (33 percent) is anaemic. The majority of these women are mildly anaemic (25 percent of all women); 7 percent are moderately anaemic, and 1 percent are severely anaemic. The proportion of women with any anaemia is slightly higher in urban areas than rural areas (36 percent and 32 percent, respectively).

Table 3.16 Anaemia among children and women

Percentage of children age 6-59 months and women age 15-49 years classified as having anaemia, by background characteristics, Malawi 2015-16

Background characteristic	Any anaemia	Percentage with anaemia: Mild anaemia	Moderate anaemia	Severe anaemia	Number
		CHILDREN			
Sex					
Male	62.9	25.1	35.2	2.6	2,555
Female	62.3	27.7	33.1	1.5	2,690
Age in months					
6-11	86.5	24.5	58.0	3.9	567
12-23	77.0	27.3	45.8	4.0	1,105
24-35	61.2	28.3	31.9	1.1	1,164
36-47	54.1	26.3	26.2	1.6	1,245
48-59	47.7	24.9	22.1	0.7	1,165
Residence					
Urban	56.1	26.5	28.9	0.7	641
Rural	63.5	26.5	34.8	2.2	4,604
Region					
Northern region	60.1	27.8	30.7	1.7	577
Central region	61.7	24.7	35.0	2.0	2,219
Southern region	64.0	27.7	34.1	2.2	2,449
Wealth quintile					
Lowest	68.2	27.0	38.2	3.0	1,267
Second	65.8	26.4	36.5	3.0	1,209
Middle	59.9	25.1	32.7	2.1	1,009
Fourth	61.1	27.4	33.2	0.4	952
Highest	54.2	26.3	26.9	1.0	808
Total	62.6	26.5	34.1	2.0	5,245
		WOMEN			
Residence					
Urban	35.5	25.7	9.3	0.5	1,410
Rural	32.1	25.0	6.5	0.6	6,523
Region					
Northern region	31.6	23.7	7.1	0.8	904
Central region	29.8	22.5	6.6	0.7	3,361
Southern region	35.7	27.8	7.4	0.5	3,669
Wealth quintile					
Lowest	31.9	23.9	7.1	0.9	1,520
Second	30.9	25.1	5.0	0.8	1,575
Middle	33.4	26.5	6.5	0.4	1,497
Fourth	32.9	25.0	7.1	0.8	1,502
Highest	34.4	25.1	9.0	0.3	1,839
Total	32.7	25.1	7.0	0.6	7,933

Note: Table is based on children and women who stayed in the household the night before the interview. Prevalence of anaemia, based on haemoglobin levels, is adjusted for altitude (for children and women) and smoking (for women) using CDC formulas (CDC 1998). Women and children with <7.0 g/dl of haemoglobin have severe anaemia, women and children with 7.0-9.9 g/dl have moderate anaemia, and nonpregnant women with 10.0-11.9 g/dl and children and pregnant women with 10.0-10.9 g/dl have mild anaemia.

3.13 Ownership and Use of Mosquito Nets

3.13.1 Ownership of Mosquito Nets

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

All households in the 2015-16 MDHS were asked whether they owned mosquito nets and if so, how many. Table 3.17 presents the percentage of households with at least one mosquito net of any type, the percentage of households with at least one ITN, the average number of nets per household, and the

percentage of households with at least one ITN for each two persons who stayed in the household the previous night, by background characteristics. Among all households in Malawi, 63 percent possess at least one mosquito net and 59 percent possess at least one ITN. On average, there is one ITN per household.

Ownership of an ITN is more common in urban households than in rural ones: 66 percent of urban households own at least one ITN, as compared with 58 percent of rural households. The percentage of households that own at least one ITN increases substantially with increasing wealth, from 47 percent of households in the lowest quintile to 72 percent of households in the highest quintile.

Universal coverage of ITNs can be assumed if every household has at least one ITN for every two household members. Table 3.17 shows that only one in four households in Malawi had at least one ITN for every two persons who stayed in the household the night before the survey. The percentage of households with at least one ITN for every two persons who stayed in the household the night before the survey is higher among urban households than in rural households (35 percent and 23 percent, respectively). This percentage increases with increasing wealth, from as low as 16 percent in the lowest wealth quintile to a high of 41 percent in the highest quintile.

Table 3.17 Household possession of insecticide-treated nets

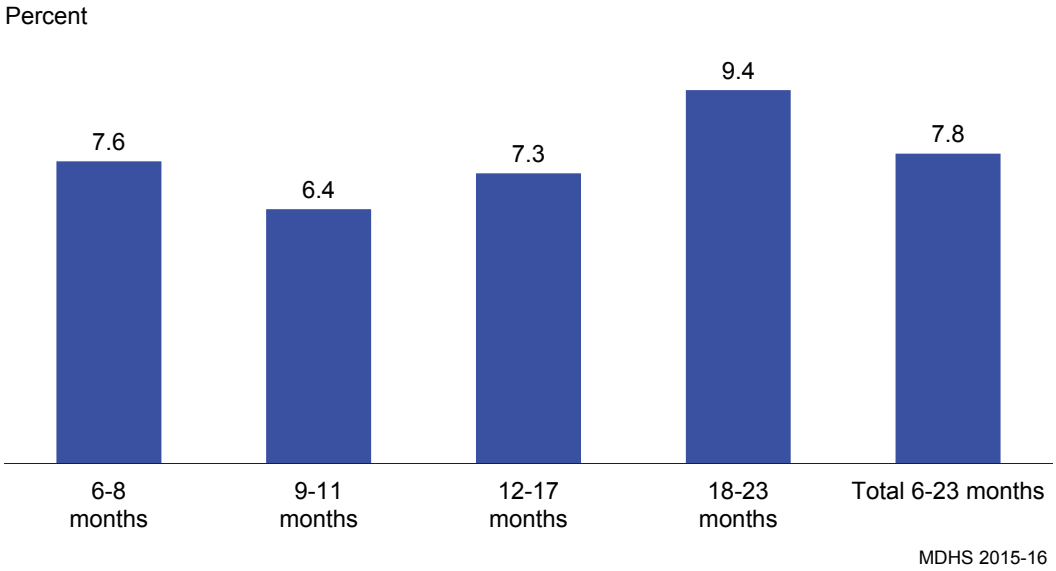
Percentage of households with at least one insecticide-treated net (ITN); average number of ITNs per household; and percentage of households with at least one ITN per two persons who stayed in the household last night, by background characteristics, Malawi 2015-16

Background characteristic	Percentage of households with at least one mosquito net (any type of net)	Percentage of households with at least one insecticide-treated net (ITN)[1]	Average number of insecticide-treated nets (ITN)[1] per household	Number of households	Percentage of households with at least one insecticide-treated net (ITN)[1] for every two persons who stayed in the household last night (Universal Coverage)[2]	Number of households with at least one person who stayed in the household last night
Residence						
Urban	69.6	65.5	1.3	4,042	35.4	4,024
Rural	61.4	57.8	1.0	22,319	22.5	22,286
Region						
Northern region	64.2	59.8	1.1	2,960	25.2	2,955
Central region	64.4	60.0	1.1	10,952	26.4	10,923
Southern region	60.7	57.8	1.0	12,449	22.7	12,432
Wealth quintile						
Lowest	50.2	46.7	0.7	5,676	15.9	5,665
Second	60.0	55.6	0.9	5,446	20.5	5,439
Middle	63.3	60.5	1.0	5,141	22.2	5,134
Fourth	64.9	61.5	1.1	4,978	24.8	4,969
Highest	76.5	72.1	1.6	5,120	40.5	5,103
Total	62.7	58.9	1.0	26,361	24.5	26,310

[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 3.9 shows the percentage of the de facto population with access to an ITN. Overall, 40 percent of the household population has access to an ITN. Those living in urban areas (50 percent), and those in the highest wealth quintile (55 percent) are most likely to use an ITN.

Figure 3.9 **Percentage of the de facto population with access to an ITN in the household**



3.13.2 Use of ITNs by Children and Pregnant Women

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

As shown in Table 3.18, 45 percent of children under age 5 slept under an ITN the night before the survey, and 47 percent either slept under an ITN the night before the survey or slept within a dwelling that had been sprayed in the past 12 months. Children living in urban areas are more likely than children in rural areas to sleep under an ITN (55 percent and 43 percent, respectively). The proportion of children who slept under an ITN the night before the survey increases with increasing wealth quintile from 35 percent of children in the lowest quintile to 57 percent among children in the highest wealth quintile. Among households with at least one ITN, about 7 in 10 children (69 percent) slept under an ITN the night before the survey.

Table 3.18 also shows that 47 percent of pregnant women slept under an ITN the night before the survey. Moreover, about half of pregnant women (49 percent) either slept under an ITN the night before the survey or slept in a dwelling that had been sprayed in the past 12 months. Among households with at least one ITN, 7 in 10 pregnant women slept under an ITN the night before the survey.

Table 3.18 Use of insecticide-treated nets by children and pregnant women

Percentage of children under age 5 who, the night before the survey, slept under an insecticide-treated net (ITN), and slept under an ITN or in a dwelling in which the interior walls have been sprayed against mosquitoes (IRS) in the past 12 months; and among children under 5 in households with at least one ITN, percentage who slept under an ITN the night before the survey; percentage of pregnant women age 15-49 who, the night before the survey, slept under an ITN, and slept under an ITN or in a dwelling in which the interior walls have been sprayed with IRS in the past 12 months; and among pregnant women age 15-49 in households with at least one ITN, percentage who slept under an ITN the night before the survey, by background characteristics, Malawi 2015-16

	Children under age 5 in all households			Children under age five in households with at least one ITN[1]		Pregnant women age 15-49 in all households			Pregnant women age 15-49 in households with at least one ITN[1]	
Background characteristic	Percentage who slept under an ITN[1] last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number of children	Percentage who slept under an ITN[1] last night	Number of children	Percentage who slept under an ITN[1] last night	Percentage who slept under an ITN[1] last night or in a dwelling sprayed with IRS[2] in the past 12 months	Number of pregnant women	Percentage who slept under an ITN[1] last night	Number of pregnant women
Residence										
Urban	55.2	57.0	2,292	78.5	1,612	55.5	56.9	278	72.5	213
Rural	43.1	45.8	15,399	67.6	9,815	45.1	47.8	1,607	69.0	1,051
Region										
Northern region	46.3	49.1	2,064	69.6	1,373	47.6	49.4	230	68.9	159
Central region	44.3	47.4	7,352	68.9	4,732	45.9	50.0	828	68.0	559
Southern region	44.6	46.8	8,274	69.3	5,321	47.1	48.3	827	71.5	545
Wealth quintile										
Lowest	34.9	37.7	4,342	65.8	2,302	39.0	40.6	433	67.8	249
Second	43.1	45.7	3,931	68.1	2,490	44.4	46.4	442	71.9	273
Middle	45.8	48.6	3,497	68.0	2,355	48.2	50.2	351	64.6	262
Fourth	47.7	50.1	3,115	69.4	2,139	48.2	53.0	329	70.4	225
Highest	57.1	59.6	2,806	74.9	2,141	56.6	59.2	329	73.4	254
Total	44.7	47.3	17,691	69.2	11,427	46.7	49.2	1,885	69.6	1,263

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, or (2) a net that has been soaked with insecticide within the past 12 months
[2] Indoor residual spraying (IRS) is limited to spraying conducted by a government, private, or nongovernmental organisation

3.13.3 Intermittent Preventive Treatment of Malaria in Pregnancy

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

In the 2015-16 MDHS, women who had a live birth in the 2 years preceding the survey were asked whether they took any antimalarial medications during the pregnancy leading to their most recent birth and, if so, which ones. Women were also asked whether the drugs they took were received during a prenatal care visit. It should be noted that obtaining information about drugs can be difficult because some respondents may not know or remember the name or the type of drug that they received.

Table 3.19 shows that 89 percent of women with a live birth in the 2 years preceding the survey reported taking at least one dose of SP/Fansidar during an ANC visit; 63 percent reported taking two or more doses of SP/Fansidar, at least one of which was received during an ANC visit, and 30 percent reported taking three or more doses of SP/Fansidar, at least one of which was received during an ANC visit. A slightly higher proportion of women in rural than urban areas received three or more doses of SP/Fansidar, with at least one dose received during an ANC visit (30 percent and 27 percent, respectively).

Table 3.19 Use of intermittent preventive treatment (IPTp) by women during pregnancy

Percentage of women age 15-49 with a live birth in the 2 years preceding the survey who, during the pregnancy preceding the last birth, received one or more doses of SP/Fansidar at least one of which was received during an ANC visit, received two or more doses of SP/Fansidar at least one of which was received during an ANC visit, and received three or more doses of SP/Fansidar at least one of which was received during an ANC visit, by background characteristics, Malawi 2015-16

Background characteristic	Percentage who received 1 or more doses of SP/Fansidar[1]	Percentage who received 2 or more doses of SP/Fansidar[1]	Percentage who received 3 or more doses of SP/Fansidar[1]	Number of women with a live birth in the 2 years preceding the survey
Residence				
Urban	89.4	62.8	27.3	897
Rural	89.4	63.6	30.3	5,652
Region				
Northern region	89.1	60.6	26.0	748
Central region	92.7	67.1	31.8	2,757
Southern region	86.5	60.8	29.0	3,045
Wealth quintile				
Lowest	87.6	61.3	30.1	1,670
Second	89.4	65.2	29.2	1,477
Middle	88.9	61.1	29.4	1,262
Fourth	91.6	65.6	32.9	1,101
Highest	90.7	65.0	27.7	1,040
Total	89.4	63.4	29.9	6,549

[1] Received the specified number of doses of SP/Fansidar, at least one of which was received during an ANC visit

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

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

In the 2015-16 MDHS, for each child under age 5, mothers were asked if the child had experienced an episode of fever in the 2 weeks preceding the survey and, if so, whether treatment and advice were sought. Information was also collected about the type and timing of the treatment given.

Table 3.20 shows the percentage of children under age 5 who had a fever in the 2 weeks preceding the survey. Also shown, among those children with a fever, are the percentage for whom advice or treatment was sought from a health facility, provider, or pharmacy; the percentage of such children who had a drop of blood taken from a finger or heel prick (presumably for a malaria test); the percentage who took ACT; and the percentage who took drugs on the same or next day.

About 3 in 10 children under age 5 (29 percent) had a fever during the 2 weeks preceding the survey. The prevalence of fever is higher among children in rural areas than children in urban areas (30 percent and 22 percent, respectively). Advice or treatment was sought for 67 percent of children with a fever, and 52 percent had blood taken from a finger or heel for testing. Advice or treatment for fever is more likely to be sought for children in rural areas than for children in urban areas (68 percent and 59 percent, respectively). More than 1 in 3 children (35 percent) took ACT, and 28 percent of children with fever took ACT the same day. The majority of children with a fever who took any antimalarial drug took ACT (92 percent). Children in urban areas (15 percent), those in the Northern region (26 percent) and those living in the households in the highest wealth quintile (22 percent) are least likely to have taken any ACT.

Table 3.20 Prevalence, diagnosis, and prompt treatment of children with fever

Percentage of children under age 5 with fever in the 2 weeks preceding the survey; among children under age 5 with fever, percentage for whom advice or treatment was sought, percentage who had blood taken from a finger or heel, percentage who took any artemisinin-based combination therapy (ACT), and percentage who took any ACT the same or next day following the onset of fever; and among children under age 5 with fever who took any antimalarial drug, percentage who took any ACT, by background characteristics, Malawi 2015-16

	Children under age 5		Children under age 5 with fever					Children under age 5 with fever who took any antimalarial drug	
Background characteristic	Percentage with fever in the 2 weeks preceding the survey	Number of children	Percentage for whom advice or treatment was sought[1]	Percentage who had blood taken from a finger or heel for testing	Percentage who took any ACT	Percentage who took any ACT same or next day	Number of children	Percentage who took any ACT	Number of children
Residence									
Urban	22.2	2,198	59.1	52.2	14.9	13.0	488	73.9	98
Rural	30.0	14,212	67.7	52.0	36.7	30.0	4,263	92.9	1,686
Region									
Northern region	27.0	1,876	57.0	55.8	25.8	21.3	506	93.4	140
Central region	30.1	6,935	68.6	52.1	37.9	31.4	2,085	93.0	851
Southern region	28.4	7,599	67.3	51.0	33.2	26.9	2,159	90.3	794
Wealth quintile									
Lowest	31.4	4,044	66.5	49.3	38.5	30.5	1,272	94.8	516
Second	29.2	3,669	69.0	50.7	36.5	30.8	1,071	92.5	423
Middle	30.5	3,179	67.6	52.9	37.0	30.4	969	91.5	391
Fourth	29.3	2,878	66.1	55.3	32.3	26.5	844	89.0	306
Highest	22.5	2,640	63.0	54.2	21.6	18.2	595	86.6	148
Total	28.9	16,410	66.8	52.0	34.5	28.3	4,750	91.8	1,785

[1] Excludes advice or treatment from a traditional practitioner

3.13.5 Prevalence of Low Haemoglobin in Children

One of the objectives of the 2015-16 MDHS was to assess the prevalence of anaemia among children age 6-59 months. Poor dietary intake of iron is only one of numerous causes of anaemia; malaria infection can also result in a person becoming anaemic. A haemoglobin concentration of less than 8.0 g/dl is considered low and may be an indication that an individual has malaria (Korenromp et al. 2004).

Overall, only 6 percent of children age 6-59 months have a haemoglobin level less than 8.0 g/dl (Table 3.21). Children in the two highest wealth quintiles (4 percent) are most likely to have low haemoglobin levels.

Table 3.21 Haemoglobin <8.0 g/dl in children

Percentage of children age 6-59 months with haemoglobin lower than 8.0 g/dl, by background characteristics, Malawi 2015-16

Background characteristic	Haemoglobin <8.0 g/dl	Number of children
Residence		
Urban	5.4	638
Rural	6.6	4,574
Region		
Northern region	6.2	570
Central region	7.1	2,203
Southern region	5.9	2,440
Wealth quintile		
Lowest	8.1	1,265
Second	8.0	1,196
Middle	6.5	1,000
Fourth	4.2	947
Highest	4.0	804
Total	6.4	5,213

3.14 HIV/AIDS Awareness, Knowledge, and Behaviour

The 2015-16 MDHS included a series of questions that addressed respondents' knowledge of HIV prevention, their awareness of modes of HIV transmission, and behaviours that can prevent the spread of HIV.

Table 3.22 shows that 75 percent of women and 75 percent of men age 15-49 know that consistent use of condoms is a means of preventing the spread of HIV. Eighty-six percent of women and 89 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. Seven in 10 women and 7 in 10 men know that both using condoms and limiting sexual intercourse to one uninfected partner are means of preventing HIV.

By marital status, women and men who have never been married and never had sex are least likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduces the risk of HIV transmission (58 percent and 62 percent, respectively). Respondents with no education are the least knowledgeable of HIV prevention methods compared with other respondents.

Table 3.22 Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting HIV by using condoms every time they have sexual intercourse and by having one sex partner who is not infected and has no other partners, by background characteristics, Malawi 2015-16

	Percentage of women who say HIV can be prevented by:				Percentage of men who say HIV can be prevented by:			
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[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[2]	Number of men
Age								
15-24	72.5	83.3	65.8	10,422	72.7	86.0	66.8	3,226
15-19	69.3	80.7	62.3	5,263	73.1	83.7	66.3	1,818
20-24	75.7	86.1	69.5	5,159	72.2	89.0	67.5	1,408
25-29	76.8	88.0	72.0	3,953	77.3	92.9	73.6	1,022
30-39	78.6	88.7	73.6	6,592	77.2	89.6	72.3	1,807
40-49	75.3	86.2	69.6	3,596	77.9	92.2	73.6	1,073
Marital status								
Never married	69.8	81.4	62.8	5,170	72.3	85.5	66.1	2,863
Ever had sex	74.5	85.7	68.8	2,294	73.9	87.4	68.5	1,846
Never had sex	66.0	77.9	58.1	2,877	69.5	81.9	61.7	1,018
Married or living together	76.5	87.3	71.2	16,130	77.2	91.2	73.0	4,030
Divorced/separated/ widowed	77.6	86.5	71.4	3,262	77.4	88.8	72.9	235
Residence								
Urban	74.3	87.5	68.6	4,496	74.5	91.6	71.5	1,340
Rural	75.5	85.6	69.6	20,066	75.5	88.2	69.9	5,788
Region								
Northern region	77.1	88.2	71.1	2,838	71.8	88.3	66.2	922
Central region	74.7	86.1	68.7	10,529	73.6	89.4	68.9	3,176
Southern region	75.3	85.2	69.8	11,194	78.1	88.4	72.8	3,030
Education								
No education	70.7	81.4	64.3	2,977	68.9	84.2	63.6	375
Primary	75.1	85.0	68.9	15,245	75.7	87.6	69.6	4,153
Secondary	77.8	90.0	73.0	5,598	74.4	91.4	71.0	2,249
More than secondary	77.0	93.0	73.7	742	82.9	92.2	78.4	351
Wealth quintile								
Lowest	73.5	83.1	66.7	4,745	72.9	86.5	67.1	1,134
Second	75.3	85.5	69.7	4,692	75.1	88.3	69.5	1,325
Middle	75.0	85.3	69.2	4,635	75.2	88.8	70.1	1,409
Fourth	76.5	87.1	71.0	4,680	75.3	88.9	70.3	1,462
Highest	75.7	88.2	70.5	5,810	76.9	90.5	72.6	1,798
Total 15-49	75.2	86.0	69.5	24,562	75.3	88.8	70.2	7,128
Men 50-54	na	na	na	na	76.2	91.7	72.9	350
Total 15-54	na	na	na	na	75.3	88.9	70.3	7,478

na = Not applicable
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners

Table 3.23 shows knowledge of HIV prevention among young people age 15-24. Knowledge of HIV prevention is defined as knowing that both condom use and limiting sexual intercourse to one uninfected partner are HIV prevention methods, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about HIV transmission: that HIV can be transmitted by mosquito bites or by supernatural means. Knowledge of how HIV is transmitted is crucial to enabling people to avoid HIV infection, and this is especially true for young people, who are often at greater risk because they may have shorter relationships with more partners or engage in other risky behaviours.

Table 3.23 shows that 41 percent of young women and 44 percent of young men have knowledge of HIV prevention. Among both sexes, the proportion with comprehensive knowledge generally increases with age, educational attainment, and wealth. Urban young people are more likely than rural young people to have knowledge of HIV prevention.

Table 3.23 Knowledge about HIV prevention among young people

Percentage of young women and young men age 15-24 with knowledge about HIV prevention, by background characteristics, Malawi 2015-16

Background characteristic	Women age 15-24		Men age 15-24	
	Percentage with knowledge about HIV prevention[1]	Number of women	Percentage with knowledge about HIV prevention[1]	Number of men
Age				
15-19	38.9	5,263	43.1	1,818
15-17	37.3	3,158	40.3	1,153
18-19	41.2	2,105	48.0	665
20-24	43.3	5,159	45.8	1,408
20-22	42.6	3,269	44.8	947
23-24	44.5	1,889	48.1	461
Marital status				
Never married	42.2	4,827	44.3	2,586
Ever had sex	49.6	2,005	44.8	1,601
Never had sex	36.9	2,823	43.4	984
Ever married	40.1	5,594	44.4	640
Residence				
Urban	46.9	1,892	54.0	571
Rural	39.8	8,529	42.2	2,655
Region				
Northern region	35.6	1,159	36.9	419
Central region	41.4	4,536	43.0	1,396
Southern region	42.1	4,727	47.8	1,411
Education				
No education	26.6	455	17.5	70
Primary	35.5	6,740	38.0	2,022
Secondary	53.8	2,993	56.3	1,066
More than secondary	67.8	234	72.4	68
Wealth quintile				
Lowest	33.8	2,084	32.0	514
Second	37.3	2,117	44.0	571
Middle	39.6	1,945	40.4	646
Fourth	45.7	1,907	47.0	672
Highest	48.4	2,368	53.1	823
Total 15-24	41.1	10,422	44.3	3,226

[1] Knowledge about HIV prevention means knowing that consistent use of condoms during sexual intercourse and having just one uninfected faithful partner can reduce the chance of getting HIV, knowing that a healthy-looking person can have HIV, and rejecting the two most common local misconceptions about transmission or prevention of HIV.

Information on sexual behaviour is important in designing and monitoring intervention programmes to control the spread of HIV. The 2015-16 MDHS included questions on respondents' sexual partners during the 12 months preceding the survey and during their lifetime. Information was also collected on use of condoms at respondents' last sexual intercourse. These questions are sensitive, and it is recognised that some respondents may have been reluctant to provide information on recent sexual behaviour. Results are shown in Table 3.24.1 for women and Table 3.24.2 for men.

Overall, 1 percent of women reported that they had two or more partners in the past 12 months. Among women who had two or more partners in the past 12 months, 27 percent reported using a condom during their last sexual intercourse. The mean number of lifetime partners among all women who have ever had sexual intercourse is 2.1.

Thirteen percent of men age 15-49 reported that they had two or more partners in the past 12 months, and 30 percent of them reported using a condom during their last sexual intercourse. The mean number of lifetime partners among all men who have ever had sexual intercourse is 4.5.

Table 3.24.1 Multiple sexual partners in the past 12 months: Women

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 her lifetime for women who ever had sexual intercourse, by background characteristics, Malawi 2015-16

	All women		Women who had 2+ partners in the past 12 months		Women who ever had sexual intercourse[1]	
Background characteristic	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	1.3	10,422	36.1	132	1.9	7,581
15-19	1.3	5,263	44.0	68	1.8	2,729
20-24	1.2	5,159	27.7	64	2.0	4,852
25-29	1.2	3,953	(10.9)	49	2.0	3,907
30-39	1.5	6,592	22.6	98	2.2	6,572
40-49	0.8	3,596	(29.0)	30	2.3	3,592
Marital status						
Never married	1.3	5,170	52.7	68	2.0	2,287
Married/living together	1.0	16,130	7.7	156	2.0	16,113
Divorced/separated/ widowed	2.6	3,262	42.4	84	2.9	3,252
Residence						
Urban	1.9	4,496	26.9	86	2.4	3,839
Rural	1.1	20,066	27.3	222	2.0	17,813
Region						
Northern region	1.1	2,838	40.4	32	1.9	2,481
Central region	1.2	10,529	27.5	122	1.9	9,162
Southern region	1.4	11,194	24.1	154	2.3	10,009
Education						
No education	1.1	2,977	(10.7)	33	2.2	2,931
Primary	1.4	15,245	27.5	212	2.1	13,447
Secondary	1.0	5,598	31.6	54	2.0	4,615
More than secondary	1.1	742	*	8	2.4	658
Wealth quintile						
Lowest	1.3	4,745	23.0	60	2.1	4,348
Second	1.2	4,692	14.1	58	2.0	4,246
Middle	1.0	4,635	(39.0)	49	2.0	4,096
Fourth	1.1	4,680	24.5	52	2.2	4,102
Highest	1.5	5,810	33.6	90	2.1	4,860
Total	1.3	24,562	27.2	308	2.1	21,652

Note: Figures in parentheses are based on 25-49 unweighted cases. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[1] Means are calculated excluding respondents who gave nonnumeric responses.

Table 3.24.2 Multiple sexual partners in the past 12 months: Men

Among all men age 15-49, the percentage who had sexual intercourse with more than one sexual partner; 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 his lifetime for men who ever had sexual intercourse, by background characteristics, Malawi 2015-16

	All men		Men who had 2+ partners in the past 12 months		Men who ever had sexual intercourse[1]	
Background characteristic	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	9.5	3,226	52.2	306	3.9	2,230
15-19	6.6	1,818	59.1	120	3.2	964
20-24	13.2	1,408	47.7	186	4.5	1,266
25-29	14.5	1,022	29.4	148	4.7	1,000
30-39	17.1	1,807	14.7	310	4.7	1,776
40-49	14.3	1,073	15.3	154	5.5	1,055
Marital status						
Never married	7.9	2,863	69.8	226	3.9	1,838
Married/living together	16.4	4,030	14.1	659	4.7	3,990
Divorced/separated/ widowed	14.0	235	(65.8)	33	7.7	234
Type of union						
In polygynous union	65.0	329	6.5	214	5.9	327
Not in polygynous union	12.0	3,700	17.8	445	4.6	3,662
Not currently in union	8.3	3,098	69.3	259	4.3	2,072
Residence						
Urban	10.9	1,340	40.8	147	4.9	1,109
Rural	13.3	5,788	27.6	771	4.5	4,952
Region						
Northern region	14.5	922	42.2	134	4.7	754
Central region	11.7	3,176	24.6	371	4.2	2,728
Southern region	13.6	3,030	30.2	413	4.9	2,580
Education						
No education	13.4	375	(8.2)	50	4.6	348
Primary	13.7	4,153	29.1	568	4.4	3,453
Secondary	12.0	2,249	36.4	271	4.8	1,932
More than secondary	8.1	351	(15.7)	29	4.5	327
Wealth quintile						
Lowest	12.0	1,134	25.1	136	4.3	998
Second	12.7	1,325	21.9	169	4.2	1,160
Middle	14.0	1,409	28.6	198	4.1	1,205
Fourth	13.5	1,462	27.8	197	5.0	1,240
Highest	12.1	1,798	41.2	218	5.0	1,458
Total 15-49	12.9	7,128	29.7	918	4.5	6,061
Men 50-54	11.5	350	(6.8)	40	8.3	346
Total 15-54	12.8	7,478	28.7	958	4.7	6,408

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Means are calculated excluding respondents who gave nonnumeric responses.

3.15 Coverage of HIV Testing Services

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

To assess awareness and coverage of HIV testing services, MDHS respondents were asked whether they had ever been tested for HIV. If they said that they had, they were asked whether they had received the results of their last test and where they had been tested. If they had never been tested, they were asked whether they knew a place where they could go to be tested.

Tables 3.25.1 and 3.25.2 show that the majority of respondents age 15-49 (95 percent of women and 96 percent of men) knew of a place where they could get an HIV test. Younger respondents (age 15-19) were less likely than those age 20-49 to know a place where they could go to be tested. Never-married respondents who had never had sex were less likely than others to know a place to get an HIV test. Knowledge of a place to get an HIV test generally increases with education.

Tables 3.25.1 and 3.25.2 also show coverage of HIV testing services. Among respondents age 15-49, a larger proportion of men (31 percent) than women (17 percent) had never been tested. Most of those who had been tested said that they had received the results of the last test they took. Overall, 82 percent of women and 68 percent of men had ever been tested and had received the results of their last test. The likelihood of having ever had an HIV test and receiving the results was lowest in the 15-19 age group (48 percent of women and 33 percent of men), in respondents who had never married and had never had sex (29 percent of women and 27 percent of men), and among respondents in rural areas (81 percent of women and 67 percent of men). Forty-four percent of women and 42 percent of men age 15-49 had been tested in the 12-month period preceding the survey and had been told the results of the last test they took.

Table 3.25.1 Coverage of prior HIV testing: Women

Percentage of women age 15-49 who know where to get an HIV test, percent distribution of women age 15-49 by testing status and by whether they received the results of the last test, percentage ever tested, and percentage who were tested in the past 12 months and received the results of the last test, according to background characteristics, Malawi 2015-16

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women/men 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	92.1	68.2	1.4	30.5	100.0	69.5	42.0	10,422
15-19	87.1	47.7	1.2	51.1	100.0	48.9	31.9	5,263
20-24	97.2	89.0	1.6	9.4	100.0	90.6	52.3	5,159
25-29	97.7	94.6	0.9	4.5	100.0	95.5	52.2	3,953
30-39	97.8	94.0	1.0	5.0	100.0	95.0	46.3	6,592
40-49	96.8	86.2	2.2	11.6	100.0	88.4	34.9	3,596
Marital status								
Never married	87.3	45.0	0.8	54.2	100.0	45.8	27.6	5,170
Ever had sex	92.6	65.4	1.1	33.5	100.0	66.5	41.9	2,294
Never had sex	83.2	28.8	0.5	70.7	100.0	29.3	16.1	2,877
Married or living together	97.4	92.0	1.5	6.5	100.0	93.5	49.0	16,130
Divorced/separated/ widowed	97.1	90.9	1.5	7.6	100.0	92.4	43.4	3,262
Residence								
Urban	98.5	86.1	0.9	13.0	100.0	87.0	49.0	4,496
Rural	94.5	81.1	1.4	17.5	100.0	82.5	42.6	20,066
Region								
Northern region	96.3	85.4	1.2	13.4	100.0	86.6	50.0	2,838
Central region	96.0	80.5	1.2	18.2	100.0	81.8	41.6	10,529
Southern region	94.2	82.5	1.5	16.1	100.0	83.9	44.1	11,194
Education								
No education	92.5	82.4	2.1	15.5	100.0	84.5	38.0	2,977
Primary	94.4	80.6	1.5	18.0	100.0	82.0	42.7	15,245
Secondary	98.3	84.0	0.7	15.3	100.0	84.7	48.5	5,598
More than secondary	100.0	94.4	0.4	5.2	100.0	94.8	52.0	742
Wealth quintile								
Lowest	93.9	81.9	1.6	16.5	100.0	83.5	41.9	4,745
Second	94.7	80.8	1.9	17.3	100.0	82.7	42.9	4,692
Middle	93.9	80.6	1.0	18.4	100.0	81.6	41.7	4,635
Fourth	96.0	82.2	1.4	16.3	100.0	83.7	44.7	4,680
Highest	97.2	83.9	0.9	15.3	100.0	84.7	46.8	5,810
Total	95.2	82.0	1.3	16.7	100.0	83.3	43.7	24,562

[1] Includes 'don't know/missing'

Table 3.25.2 Coverage of prior HIV testing: Men

Percentage of men age 15-49 who know where to get an HIV test, percent distribution of men age 15-49 by testing status and by whether they received the results of the last test, percentage ever tested, and percentage who were tested in the past 12 months and received the results of the last test, according to background characteristics, Malawi 2015-16

Background characteristic	Percentage who know where to get an HIV test	Percent distribution of women/men 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 men
		Ever tested and received results	Ever tested, did not receive results	Never tested[1]				
Age								
15-24	92.3	50.2	1.0	48.8	100.0	51.2	33.8	3,226
15-19	88.4	33.3	1.3	65.4	100.0	34.6	22.0	1,818
20-24	97.4	71.9	0.7	27.3	100.0	72.7	49.2	1,408
25-29	98.8	84.2	1.2	14.5	100.0	85.5	54.4	1,022
30-39	98.9	85.1	1.6	13.3	100.0	86.7	48.2	1,807
40-49	99.2	79.4	1.1	19.5	100.0	80.5	44.2	1,073
Marital status								
Never married	91.3	45.7	1.2	53.1	100.0	46.9	28.7	2,863
Ever had sex	94.3	55.9	1.1	43.1	100.0	56.9	35.8	1,846
Never had sex	85.8	27.3	1.3	71.4	100.0	28.6	15.8	1,018
Married or living together	99.2	83.7	1.2	15.1	100.0	84.9	51.0	4,030
Divorced/separated/ widowed	97.8	79.4	2.6	18.0	100.0	82.0	48.1	235
Residence								
Urban	97.3	73.2	1.0	25.8	100.0	74.2	44.3	1,340
Rural	95.7	67.2	1.3	31.5	100.0	68.5	41.5	5,788
Region								
Northern region	97.3	73.7	1.4	24.8	100.0	75.2	45.6	922
Central region	95.1	66.9	1.4	31.7	100.0	68.3	41.6	3,176
Southern region	96.4	68.2	1.0	30.8	100.0	69.2	41.3	3,030
Education								
No education	94.6	67.7	1.2	31.0	100.0	69.0	39.4	375
Primary	94.3	61.8	1.6	36.6	100.0	63.4	38.8	4,153
Secondary	98.8	77.4	0.6	22.0	100.0	78.0	46.2	2,249
More than secondary	99.4	88.6	0.3	11.1	100.0	88.9	55.1	351
Wealth quintile								
Lowest	95.2	66.7	1.8	31.6	100.0	68.4	39.5	1,134
Second	95.6	66.8	2.0	31.2	100.0	68.8	42.6	1,325
Middle	95.8	65.9	1.1	33.0	100.0	67.0	40.3	1,409
Fourth	95.7	69.0	0.9	30.1	100.0	69.9	43.7	1,462
Highest	97.1	71.9	0.6	27.5	100.0	72.5	43.0	1,798
Total 15-49	96.0	68.3	1.2	30.5	100.0	69.5	42.0	7,128
Men 50-54	98.0	76.1	1.3	22.6	100.0	77.4	34.3	350
Total 15-54	96.1	68.7	1.2	30.1	100.0	69.9	41.6	7,478

[1] Includes 'don't know/missing'

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