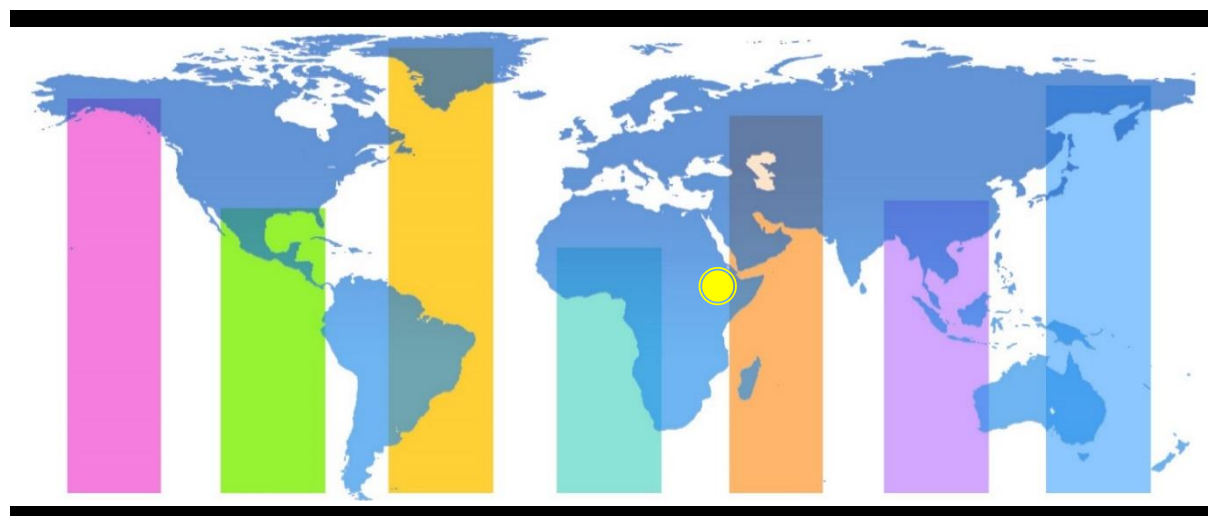# Ethiopia

Mini Demographic and Health Survey

2019

Key Indicators

FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA

Ethiopia

Mini Demographic and Health Survey 2019

Key Indicators

Ethiopian Public Health Institute
Addis Ababa

Federal Ministry of Health
Addis Ababa

The DHS Program
ICF
Rockville, Maryland, USA

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TABLES AND FIGURES

ACRONYMS AND ABBREVIATIONS

ANC   antenatal care

BCG   Bacille Calmette-Guérin (vaccine)

CAPI   computer-assisted personal interview
CPR   contraceptive prevalence rate
CSA   Central Statistical Agency
CSPro   Census and Survey Processing System

DPT   diphtheria, pertussis, tetanus vaccine

EA   enumeration area
EDHS   Ethiopia Demographic and Health Survey
EMDHS   Ethiopia Mini Demographic and Health Survey
EPHC   Ethiopian Population and Housing Census
EPHI   Ethiopia Public Health Institute

FMoH   Federal Ministry of Health

hepB   hepatitis B (vaccine)
HF   health facility
Hib   *Haemophilus influenzae* type B (vaccine)

IFSS   internet file streaming system
IUD   intrauterine device

LAM   lactational amenorrhoea method

PCV   pneumococcal conjugate vaccine
PMTCT   prevention of mother-to-child transmission
PNC   postnatal care

RV1   rotavirus vaccine

SDM   standard days method
SNNPR   southern nations, nationalities, and people's region
STD   sexually transmitted disease

UN Women   United Nations Entity on Gender Equality and the Empowerment of Women
UNDP   United Nations Development Programme
UNFPA   United Nations Population Fund
UNICEF   United Nations Children's Fund
USAID   United States Agency for International Development

VAD   Vitamin A deficiency

WHO   World Health Organization

1   INTRODUCTION AND SURVEY OBJECTIVES

The 2019 Ethiopia Mini Demographic and Health Survey (EMDHS) is the second Mini Demographic and Health Survey conducted in Ethiopia. The Ethiopian Public Health Institute (EPHI) implemented the survey at the request of the Ministry of Health (MoH). Data collection took place from March 21, 2019, to June 28, 2019.

Financial support for the 2019 EMDHS was provided by the government of Ethiopia, the World Bank via MOFEC - Enhancing Shared Prosperity through Equitable Services (ESPES) and Promoting Basic Services Projects, the United Nations Children's Fund (UNICEF), and the United States Agency for International Development (USAID). ICF provided technical assistance through the DHS Program, which is funded by the United States Agency for International Development (USAID), and offers support and technical assistance for the implementation of population and health surveys in countries worldwide.

This Key Indicators report presents selected findings of the 2019 EMDHS. A comprehensive analysis of the data will be published in a final report in 2019.

The primary objective of the 2019 EMDHS project is to provide up-to-date estimates of key demographic and health indicators. Specifically, the main objectives of the survey are:

- To collect high-quality data on contraceptive use; maternal and child health; infant, child, and neonatal mortality levels; child nutrition, and other health issues relevant to the achievement of the Sustainable Development Goals (SDGs)

- To measure maternal and neonatal morbidity and mortality and its associated factors (i.e., antenatal and delivery care, pregnancy care, and so on)

- To collect information on health-related matters such as breastfeeding, maternal and child care (antenatal, delivery, and postnatal), children's immunisations, and childhood diseases

- To assess the nutritional status of children under age 5 by measuring weight and height

Four full-scale DHS surveys were conducted in 2000, 2005, 2011, and 2016. The first Ethiopia Mini DHS, or EMDHS, was conducted in 2014. The 2019 EMDHS provides valuable information on trends in key demographic and health indicators over time. The information collected through the 2019 EMDHS 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. The current survey included a health facility component that recorded data on children's vaccinations, which were then combined with the household data on children's vaccinations.

2 SURVEY IMPLEMENTATION

2.1 SAMPLE DESIGN

The sampling frame used for the 2019 EMDHS is a frame of all census enumeration areas (EAs) created for the upcoming 2019 Ethiopia Population and Housing Census (PHC), which will be conducted by the Central Statistical Agency (CSA). The census frame is a complete list of 149,093 EAs created for the 2019 PHC. An EA is a geographic area covering an average of 131 households. The sampling frame contains information about the EA location, type of residence (urban or rural), and estimated number of residential households.

Administratively, Ethiopia is divided into nine geographical regions and two administrative cities. The sample for the 2019 EMDHS 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 nine regions and the two administrative cities.

The 2019 EMDHS sample was stratified and selected in two stages. Each region was stratified into urban and rural areas, yielding 21 sampling strata. Samples of EAs 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.

To ensure that survey precision is comparable across regions, the sample allocation has been done through an equal allocation where 25 EAs are selected from eight regions. However, from the three larger regions—Amhara, Oromia, and SNNP—35 EAs for each were selected.

In the first stage, a total of 305 EAs (93 in urban areas and 212 in rural areas) were selected with probability proportional to EA size (based on the 2019 PHC frame) and with independent selection in each sampling stratum. A household listing operation was carried out in all selected EAs from January through April, 2019. The resulting lists of households served as a sampling frame for the selection of households in the second stage. Some of the selected EAs for the 2019 EMDHS were large, with more than 300 households. To minimise the task of household listing, each large EA selected for the 2019 EMDHS 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, that is, a 2019 EMDHS cluster is either an EA or a segment of an EA.

In the second stage of selection, a fixed number of 30 households per 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 slept in the household the night before the survey, were eligible to be interviewed. In all selected households, height and weight measurements were collected from children 0-59 months, and women age 15-49 were interviewed using the Woman's Questionnaire.

2.2 QUESTIONNAIRES

Five questionnaires were used for the 2019 EMDHS: (1) the Household Questionnaire, (2) the Woman's Questionnaire, (3) the Anthropometry Questionnaire, (4) the Health Facility Questionnaire, and (5) the Fieldworker's Questionnaire. These questionnaires, based on the DHS Program's standard questionnaires were adapted to reflect the population and health issues relevant to Ethiopia. They were shortened substantially to collect data on indicators of particular relevance to the nation and the donors to child health programmes.

Input was solicited from various stakeholders representing government ministries and agencies, non-governmental organisations, and international donors. After the questionnaires were finalised in English, they were translated into Amarigna, Tigrigna, and Afaan Oromo.

The Household Questionnaire was used to list all the usual 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, education, and relationship to the head of the household. The data on age and sex of household members obtained in the Household Questionnaire were used to identify women who were eligible for individual interviews. The Household Questionnaire was also used to collect 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 Woman's Questionnaire was used to collect information from all eligible women age 15-49. These women were asked questions on the following main topics: respondent's background characteristics, reproduction, contraception, pregnancy and postnatal care, child nutrition, childhood immunisations, and health facility information.

In the Anthropometry Questionnaire, height and weight measurements were recorded for eligible children age 0-59 months in all interviewed households. A Health Facility Questionnaire was used to record vaccination information for all children without a vaccination card seen during the mother's interview. The Fieldworker's Questionnaire collected background information about interviewers and other fieldworkers who participated in the 2019 EMDHS data collection.

The 2019 EMDHS interviewers used tablet computers to record responses during the interviews. The tablets were equipped with Bluetooth technology to enable remote electronic transfer of files (transfer of assignment sheets using computer-assisted personal interviewing (CAPI) from CAPI supervisors to interviewers and transfer of completed questionnaires from interviewers to CAPI supervisors). The electronic data collection system employed in the 2019 EMDHS was developed by the DHS Program using the mobile version of the Census and Survey Processing (CSPro) System. The CSPro System software was developed jointly by the U.S. Census Bureau, the DHS Program, and CSpro.

2.3 ANTHROPOMETRY

In all households, height and weight measurements were recorded for children age 0-59 months. Weight measurements were obtained using lightweight, electronic SECA 874 scales with a digital screen and the mother and child function. Height measurements were carried out with measuring boards donated by UNICEF. Children younger than age 24 months were measured while lying down (recumbent) on the board, while standing height was measured for older children. In contrast with the data collection procedures for the household and individual interviews, anthropometry data were initially recorded on the paper-based Biomarker Questionnaire and subsequently entered into interviewers' tablet computers.

2.4 HEALTH FACILITY VISITS

The Health Facility component of the survey was a separate activity conducted immediately after the data collection in the clusters was completed. When all interviews in a cluster were finalised, a program generated a file for the cluster with a list of all children with incomplete vaccination data or for whom a vaccination card was not seen by the interviewers. For these children, vaccination records had to be checked at the health facilities.

For each identified child, the list included all identification information: cluster and household number, mother's full name and line number, child's line number in the mother's birth history, name and age of the child, and name and location of the heath facility where vaccinations were administered. If the mother gave consent, the field supervisor went to the health facility mentioned by the mother during the survey. He/she searched for the identified child in the registration book, family folder, or any other records

available at the health facility. When the children's records were found, the immunisation information was recorded for each child in the Health Facility Questionnaire.

As a result, there were two sources of immunisation information available for some children; the vaccinations recorded in the Woman's Questionnaire (obtained from vaccination card or mother's recall) and those recorded from the health facility. The household survey data were complemented by the health facility data to provide a more complete estimate of the vaccination coverage.

2.5   TRAINING OF TRAINERS

The training of trainers for the 2019 EMDHS was conducted from February 11-20, 2019, in Adama at Dire International Hotel. It consisted of the paper and CAPI-based in-class training, anthropometry training including standardisation, and field practice. The field practice was conducted in Adama town in clusters that were not included in the 2019 EMDHS sample. A total of 17 trainees attended the training of trainers. Trainees all had some experience with household surveys, either involvement in previous Ethiopian DHS/SPA surveys or in surveys with similar procedures. Following field practice, a debriefing session was held with the trainee field staff, and lessons learned from the exercise were incorporated into the questionnaires for the main training.

2.6   TRAINING OF FIELD STAFF

The EMDHS main training was conducted from February 27 to March 19, 2019, at Central Hotel, in Hawassa. EPHI recruited and trained 151 field staff for the main fieldwork to serve as female interviewers, female anthropometrists, female CAPI supervisors, field supervisors, regional coordinators, and their respective reserves. The objective of the training was to enable participants to administer both paper and CAPI-based questionnaires, and to take anthropometric measurements. The training course consisted of instructions regarding interviewing techniques and field procedures, a detailed review of questionnaire content, instructions on how to administer the paper and CAPI questionnaires, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the survey sample. During the main training all anthropometrists underwent a rigorous standardisation process to ensure the accuracy and precision of their anthropometric measurements. Practice standardisation exercises were conducted on children 0-59 months.

The paper-based field practice was conducted for 3 days and included the anthropometry component. Debriefing sessions were held with the field staff, and modifications to the paper questionnaires were made based on lessons drawn from the exercise. Teams carried out CAPI field practice over 4 days, also including the anthropometry component. Furthermore, regional coordinators, field supervisors, and CAPI supervisors were trained in data quality control procedures and fieldwork coordination. In addition, field supervisors were trained to administer the Health Facility Questionnaire and to perform as assistants to the anthropometrists. Both the anthropometrists and the field supervisors learned how to calibrate the digital scales and height boards and how to monitor the technical aspects of the anthropometry data collection using a system of checklists.

2.7   FIELDWORK

Twenty-five interviewing teams carried out data collection for the 2019 EMDHS. Each team consisted of one field supervisor, one female CAPI supervisor, two female interviewers, and one female anthropometrist. In addition to the field teams, 11 regional coordinators were assigned, one for each region. The regional coordinator regularly visited, and remained with respective teams throughout the fieldwork period to supervise and monitor their work and progress. Moreover, 10 staff members from EPHI coordinated and supervised fieldwork activities. EPHI researchers, an ICF technical specialist and consultant, and representatives from other organisations, including CSA, the FMOH, the World Bank, and USAID, supported the fieldwork monitoring. Data collection took place over a 3-month period, from March 21, 2019, to June 28, 2019.

2.8   DATA PROCESSING

All electronic data files were transferred via the secure internet file streaming system (IFSS) to the EPHI central office in Addis Ababa, 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 a data manager and an ICF consultant, who took part in the main fieldwork training. They were supervised remotely by The DHS Program staff. Data editing was accomplished using CSPro System software. During the fieldwork, field-check tables were generated to check various data quality parameters, and specific feedback was given to the teams to improve performance. Secondary editing, double data entry from both the biomarker and health facility questionnaires, and data processing were initiated in April 2019 and completed in July 2019.

3   KEY FINDINGS

3.1   RESPONSE RATES

T**able 1** shows response rates for the 2019 EMDHS. A total of 9,150 households were selected for the sample, of which 8,794 were occupied. Of the occupied households, 8,663 were successfully interviewed, yielding a response rate of 99%.

Table 1 Results of the household and individual interviews

Number of households, number of interviews, and response rates, according to residence (unweighted), Ethiopia Mini DHS 2019

	Residence		
Result	Urban	Rural	Total
Household interviews			
Households selected	2,790	6,360	9,150
Households occupied	2,698	6,096	8,794
Households interviewed	2,645	6,018	8,663
Household response rate[1]	98.0	98.7	98.5
Interviews with women age 15-49			
Number of eligible women	2,999	6,013	9,012
Number of eligible women interviewed	2,951	5,934	8,885
Eligible women response rate[2]	98.4	98.7	98.6

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

In the interviewed households, 9,012 eligible women were identified for individual interviews; interviews were completed with 8,885 women, yielding a response rate of 99%. In general, response rates were higher in rural than in urban areas.

3.2   CHARACTERISTICS OF RESPONDENTS

Table 2 shows the weighted and unweighted numbers and the weighted percent distributions of women age 15-49 interviewed in the 2019 EMDHS, by background characteristics. About 6 respondents in 10 (60%) were under age 30, reflecting the young age structure of the population. The majority of respondents were Orthodox (42%), followed by Muslims (30%) and Protestants (27%). More than one-fourth of women (26%) have never been married. Sixty-six percent of women are married or living together with a partner (i.e., in a union). About 6% of women report they are divorced or separated. Two percent of women are widowed.

Table 2 Background characteristics of respondents

Percent distribution of women age 15-49 by selected background characteristics, Ethiopia Mini DHS 2019

Background characteristic	Women		
	Weighted percent	Weighted number	Unweighted number
Age			
15-19	24.9	2,209	2,098
20-24	16.6	1,473	1,578
25-29	18.8	1,674	1,752
30-34	13.1	1,162	1,167
35-39	12.0	1,065	1,038
40-44	8.3	738	713
45-49	6.4	565	539
Religion			
Orthodox	41.5	3,685	3,374
Catholic	0.5	47	78
Protestant	27.4	2,435	1,711
Muslim	29.5	2,619	3,635
Traditional	0.9	83	60
Other	0.2	15	27
Marital status			
Never married	26.2	2,325	2,300
Married	64.6	5,743	5,613
Living together	1.4	121	129
Divorced/separated	5.7	510	616
Widowed	2.1	185	227
Residence			
Urban	32.2	2,861	2,951
Rural	67.8	6,024	5,934
Region			
Tigray	7.1	629	733
Afar	1.0	85	641
Amhara	22.8	2,026	948
Oromia	37.7	3,347	1,052
Ethiopia Somali	4.7	420	640
Benishangul Gumuz	1.1	98	747
Snnp	19.2	1,705	1,008
Gambela	0.5	40	723
Harari	0.3	27	763
Addis Ababa	5.0	442	818
Dire Dawa	0.7	64	812
Education			
No education	40.4	3,589	3,640
Primary	41.7	3,701	3,345
Secondary	12.2	1,088	1,149
More than secondary	5.7	507	751
Wealth quintile			
Lowest	16.2	1,438	1,941
Second	17.9	1,592	1,377
Middle	18.9	1,676	1,253
Fourth	21.1	1,872	1,370
Highest	26.0	2,307	2,944
Total 15-49	100.0	8,885	8,885

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

The large majority of respondents (68%) live in rural areas. By region, the highest number of female respondents reside in Oromia (38%), followed by Amhara (23%), and SNNP (19%).

About 40% of women have no formal education, while 42% attended primary school, 12% have some secondary education, and 6% have more than a secondary level of education.

3.3 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. Modern methods include female sterilisation, male sterilisation, the intrauterine contraceptive device (IUD), implants, injectables, the pill, male condoms, female condoms, emergency contraception, standard

days method (SDM), and lactational amenorrhoea method (LAM). Methods such as rhythm, withdrawal, and other folk methods are grouped as traditional.

Table 3 shows the percent distribution of currently married women age 15-49, by contraceptive method they currently use, according to background characteristics. Overall, 41% of currently married women are using modern methods of family planning, and 1% are using traditional methods. The most popular contraceptive methods are injectables (27%), followed by implants (9%), and the pill and the IUD (2% each). The contraceptive prevalence rate (CPR) among married women increases from 37% among women age 15-19to 52% among women age 20-24, and then declines steadily to 18% among women age 45-49. Urban women are much more likely than their rural counterparts to use any method of contraception (50% versus 38%).

Table 3 Current use of contraception according to background characteristics

Percent distribution of currently married women age 15-49, by contraceptive method currently used, according to background characteristics, Ethiopia Mini DHS 2019

Background characteristic	Any method	Modern method											Traditional method				Not currently using	Total	Number of women
		Any modern method	Female sterilisation	Pill	IUD	Inject-ables	Im-plants	Male condom	Emer-gency contra-ception	SDM	LAM	Other	Any tradi-tional method	Rhythm	With-drawal	Other			
Number of living children																			
0	28.2	25.6	0.0	2.8	0.7	18.2	3.5	0.4	0.0	0.1	0.0	0.0	2.6	2.6	0.0	0.0	71.8	100.0	694
1-2	53.7	52.9	0.1	3.4	1.3	35.5	11.5	0.1	0.1	0.1	0.7	0.0	0.9	0.5	0.3	0.0	46.3	100.0	1,857
3-4	43.7	43.5	0.3	1.3	1.4	30.2	9.1	0.0	0.0	0.3	1.0	0.0	0.2	0.1	0.1	0.0	56.3	100.0	1,463
5+	32.2	31.1	0.8	1.0	2.0	19.9	6.8	0.0	0.0	0.2	0.4	0.1	1.0	0.5	0.5	0.0	67.8	100.0	1,850
Age																			
15-19	36.5	36.5	0.0	1.7	0.0	27.5	5.9	0.4	0.0	0.2	0.7	0.0	0.0	0.0	0.0	0.0	63.5	100.0	474
20-24	52.2	50.2	0.0	2.2	0.4	37.4	9.2	0.1	0.2	0.0	0.9	0.0	1.9	1.9	0.0	0.0	47.8	100.0	951
25-29	48.4	47.4	0.0	2.2	2.4	31.7	10.2	0.0	0.0	0.2	0.7	0.0	1.0	0.5	0.4	0.0	51.6	100.0	1,397
30-34	43.8	42.9	0.1	2.4	1.8	28.9	9.3	0.0	0.0	0.5	0.2	0.0	0.9	0.6	0.3	0.0	56.2	100.0	1,028
35-39	39.3	38.8	0.9	2.5	2.3	23.4	8.9	0.2	0.0	0.0	0.1	0.0	0.5	0.1	0.4	0.0	60.7	100.0	919
40-44	30.1	29.2	1.0	2.1	1.2	16.8	6.8	0.2	0.0	0.0	0.8	0.3	0.9	0.1	0.7	0.0	69.9	100.0	637
45-49	17.5	16.6	0.9	0.0	0.3	10.3	4.2	0.0	0.0	0.1	0.8	0.0	0.9	0.9	0.0	0.0	82.5	100.0	458
Residence																			
Urban	49.7	47.7	0.3	5.2	1.5	30.7	9.2	0.2	0.0	0.2	0.5	0.0	2.0	1.9	0.1	0.0	50.3	100.0	1,627
Rural	38.2	37.7	0.4	0.8	1.5	25.8	8.2	0.1	0.0	0.2	0.6	0.0	0.6	0.2	0.4	0.0	61.8	100.0	4,237
Region																			
Tigray	37.3	36.3	0.0	3.8	1.0	15.0	15.4	0.4	0.0	0.0	0.7	0.0	0.9	0.6	0.4	0.0	62.7	100.0	370
Afar	12.7	12.7	0.0	2.5	0.9	7.0	1.6	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	87.3	100.0	64
Amhara	49.5	49.5	0.2	1.7	1.2	36.1	10.1	0.0	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	50.5	100.0	1,313
Oromia	40.7	38.9	0.7	2.0	1.6	26.1	7.4	0.0	0.0	0.2	0.9	0.1	1.8	1.2	0.5	0.0	59.3	100.0	2,306
Ethiopia Somali	3.4	3.4	0.0	0.3	0.0	2.0	0.4	0.0	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	96.6	100.0	284
Benishangul Gumuz	38.5	36.7	0.0	1.0	2.2	16.8	15.8	0.0	0.0	0.8	0.0	0.0	1.8	1.5	0.2	0.1	61.5	100.0	67
Snnp	45.0	44.6	0.2	1.3	1.5	33.5	7.7	0.2	0.1	0.1	0.0	0.0	0.4	0.1	0.3	0.0	55.0	100.0	1,177
Gambela	33.8	33.2	0.0	2.2	0.4	29.5	1.0	0.2	0.0	0.0	0.0	0.0	0.6	0.6	0.0	0.0	66.2	100.0	25
Harari	32.4	30.3	0.2	3.5	1.4	10.4	11.0	0.8	0.2	0.0	2.8	0.0	2.1	2.1	0.0	0.0	67.6	100.0	16
Addis Ababa	49.9	47.6	0.0	8.6	5.2	17.0	13.3	1.1	0.2	1.2	1.2	0.0	2.4	2.4	0.0	0.0	50.1	100.0	206
Dire Dawa	30.5	30.3	0.4	4.9	0.9	8.2	12.6	0.5	0.0	0.3	2.5	0.0	0.1	0.1	0.0	0.0	69.5	100.0	36
Education																			
No education	32.3	32.0	0.4	0.9	0.9	22.1	6.7	0.0	0.0	0.1	0.9	0.0	0.3	0.1	0.2	0.0	67.7	100.0	3,025
Primary	49.0	47.5	0.4	1.7	1.4	33.8	9.7	0.2	0.0	0.1	0.2	0.1	1.5	0.9	0.6	0.0	51.0	100.0	2,119
Secondary	57.2	55.8	0.0	7.1	3.5	32.7	11.5	0.1	0.3	0.5	0.1	0.0	1.5	1.5	0.0	0.0	42.8	100.0	470
More than secondary	57.5	53.8	0.0	9.7	6.0	22.3	14.1	0.6	0.0	0.8	0.4	0.0	3.8	3.7	0.0	0.0	42.5	100.0	250
Wealth quintile																			
Lowest	27.5	27.2	0.1	0.4	0.3	19.5	5.3	0.3	0.0	0.3	0.8	0.0	0.4	0.0	0.3	0.0	72.5	100.0	1,050
Second	34.1	33.9	0.2	0.9	0.7	23.3	7.9	0.0	0.0	0.0	0.7	0.2	0.2	0.1	0.1	0.0	65.9	100.0	1,147
Middle	44.5	43.7	0.3	0.2	1.8	30.5	10.0	0.1	0.1	0.3	0.4	0.0	0.8	0.1	0.7	0.0	55.5	100.0	1,137
Fourth	44.4	43.6	0.6	1.3	2.0	30.7	8.4	0.0	0.0	0.2	0.6	0.0	0.8	0.7	0.1	0.0	55.6	100.0	1,213
Highest	53.4	51.1	0.5	6.6	2.3	30.7	10.1	0.2	0.0	0.2	0.4	0.0	2.4	2.0	0.3	0.0	46.6	100.0	1,317
Total	41.4	40.5	0.3	2.0	1.5	27.2	8.5	0.1	0.0	0.2	0.6	0.0	1.0	0.7	0.3	0.0	58.6	100.0	5,864

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

By region, the CPR ranges from 3% in Somali up to 50% in both the Amhara Region and Addis Ababa. Contraceptive use increases with women's education and household wealth. Fifty-eight percent of women with more than secondary education are using any contraceptive method compared with 32% of women with no education. Likewise, 28% of women in the lowest wealth quintile are using any contraceptive method compared to 53% of women in the highest quintile. Women with no living children (28%) and those with five or more children (32%) are the least likely to use any method of contraception compared with those who have 1-2 children (54%) or 3-4 children (44%).

Figure 1 shows an increase in the use of any modern contraceptive method from 14% in 2005 to 41% in 2019.

Figure 1 **Trends in contraceptive use**

Percentage of currently married women using contraceptive methods
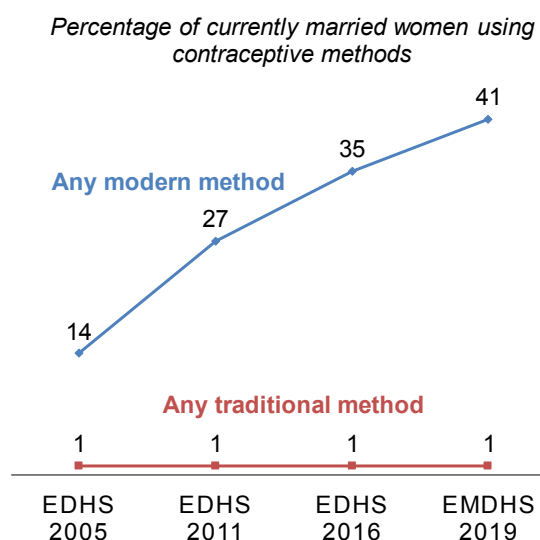
3.4 EARLY CHILDHOOD MORTALITY

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 Woman's Questionnaire, which includes questions about women's childbearing experience, including the number of sons and daughters who live with their mother, the number who live elsewhere, and the number who have died. For each live birth reported in the birth history, information was collected on the name, date of birth (month and year), sex, whether the birth was single or multiple, and survivorship. For living children, information was also collected on age at last birthday and whether the child resides with the mother. For children who had died, the respondent was asked to provide the age at death. Mortality rates for specific periods preceding the survey were calculated using direct estimation procedures and are shown in **Table 4**.

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 4**, during the 5 years preceding the survey, the infant mortality rate was 43 deaths per 1,000 live births. The child mortality rate was 12 deaths per 1,000 children surviving to age 12 months, while the overall under-5 mortality rate was 55 deaths per 1,000 live births. The neonatal mortality rate was 30 deaths per 1,000 live births, and the postneonatal mortality rate was 13 deaths per 1,000 live births. The 2019 EMDHS results further indicate that almost all childhood mortality rates have decreased over

time. For example, the under-5 mortality rate has declined from 87 deaths per 1,000 live births 10-14 years prior to the survey (2005-2009) to 55 deaths per 1,000 live births in the 0-4 years prior to the survey (2015-2019).

Table 4 Early childhood mortality rates

Neonatal, postneonatal, infant, child, and under-5 mortality rates for 5-year periods preceding the survey, Ethiopia Mini DHS 2019

	Neonatal mortality (NN)	Postneonatal mortality (PNN)[1]	Infant mortality (1q0)	Child mortality (4q1)	Under-5 mortality (5q0)
Years preceding the survey					
0-4	30	13	43	12	55
5-9	41	23	64	16	79
10-14	38	24	63	26	87

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

Another way to look at trends in mortality levels involves the comparison of estimates from surveys conducted at different points in time. Results from the 2019 EMDHS and the previous three EDHS surveys are presented in **Figure 2**. Trends from the previous surveys show a continuous decline in infant and under-5 mortality within the range of 0-4 years preceding each respective survey. For example, under-5 mortality rates for the 5 years preceding the survey declined from 123 deaths per 1,000 live births in the 2005 EDHS to 55 deaths per 1,000 live births in the 2019 EMDHS. Similarly, infant mortality decreased from 77 deaths per 1,000 live births in the 2005 EDHS to 43 deaths per 1,000 live births in the 2019 EMDHS. Neonatal mortality decreased from 39 to 29 between the 2005 and 2016 EDHS, but has remained stable since the 2016 EDHS.

Figure 2 **Trends in early childhood mortality rates**

Deaths per 1,000 live births in the 5-year period before the survey
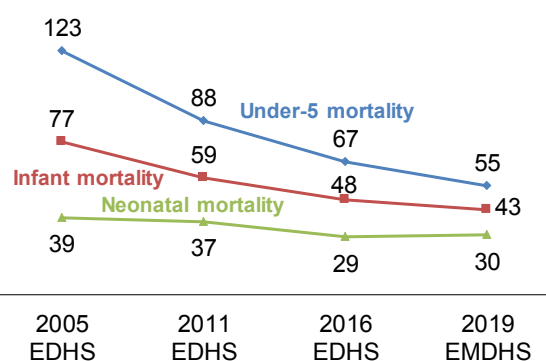
3.5 MATERNAL CARE

Proper care during pregnancy and delivery is important for the health of both the mother and the baby. Skilled care during pregnancy, childbirth, and the postpartum period are important interventions in reducing maternal and neonatal morbidity and mortality. In the 2019 EMDHS, women who had given birth in the 5 years preceding the survey were asked 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. For each live birth over the same period, mothers were also asked what type of assistance they received at the time of delivery. Finally, women who had a live birth in the 2 years before the survey were asked if they received a postnatal check-up within 2 days of delivery. **Table 5** summarises information on the coverage of these maternal health services.

Table 5 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 most recent live birth, percentage with four or more ANC visits for the most recent live birth, and among all live births in the 5 years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility; and among women age 15-49 who had a live birth in the 2 years preceding the survey, percentage who received a postnatal check during the first 2 days after giving birth, according to background characteristics, Ethiopia Mini DHS 2019

Background characteristic	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	
	Percentage receiving antenatal care from a skilled provider[1]	Percentage with 4+ ANC visits	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births	Percentage of women with a postnatal check during the first 2 days after birth[2]	Number of women
Mother's age at birth								
<20	72.5	36.1	530	55.1	53.0	753	34.2	316
20-34	76.4	45.7	2,841	50.0	47.9	4,071	34.0	1,507
35-49	59.9	35.5	555	42.8	39.5	704	31.9	281
Residence								
Urban	84.5	58.7	1,026	72.1	70.4	1,367	47.6	553
Rural	69.7	37.4	2,900	42.5	40.0	4,161	28.8	1,552
Region								
Tigray	94.0	63.9	287	73.3	72.4	371	62.9	155
Afar	62.6	31.1	51	30.6	28.3	86	23.1	31
Amhara	82.6	50.8	839	55.7	54.2	1,050	39.8	433
Oromia	70.8	40.6	1,519	43.7	40.9	2,214	26.1	825
Ethiopia Somali	30.2	11.1	218	26.0	23.3	409	10.3	132
Benishangul Gumuz	83.3	55.9	47	64.9	63.6	67	45.3	24
Snnp	69.4	34.1	787	50.2	47.6	1,104	32.0	411
Gambela	85.7	31.8	19	69.9	70.3	25	54.8	10
Harari	80.7	38.8	11	64.9	64.0	16	45.2	6
Addis Ababa	96.9	81.8	127	95.7	94.8	156	73.5	64
Dire Dawa	83.8	61.7	21	70.7	69.2	30	48.5	12
Mother's education								
No education	62.0	32.4	2,014	35.2	32.7	2,963	21.8	977
Primary	81.4	47.0	1,415	60.5	57.8	1,956	36.9	840
Secondary	97.1	72.5	345	83.6	83.8	415	62.4	182
More than secondary	99.8	78.9	153	93.1	93.1	194	70.5	105
Wealth quintile								
Lowest	46.3	20.6	812	22.0	19.6	1,295	13.3	459
Second	71.6	35.9	809	38.7	36.3	1,192	19.7	419
Middle	77.1	41.0	749	49.4	45.3	1,009	29.9	378
Fourth	77.6	46.9	708	60.7	59.2	985	43.2	398
Highest	95.1	69.7	848	86.9	86.1	1,047	62.5	450
Total	73.6	43.0	3,927	49.8	47.5	5,528	33.8	2,104

Note: If more than one source of assistance was mentioned, only the provider with the highest qualifications is considered in this tabulation.
[1] Skilled provider includes doctor, nurse, midwife, health officer, and health extension worker.
[2] Includes women who received a check from a doctor, nurse, midwife, health officer, health extension worker, or traditional birth attendant.

3.5.1 Antenatal care

Antenatal care (ANC) from a skilled provider is important to monitor pregnancy. It also reduces morbidity and mortality risks for the mother and child during pregnancy, delivery, and the postnatal period (within 42 days after delivery). The 2019 EMDHS results show that 74% 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 pregnancy. Four in 10 women (43%) had four or more ANC visits for their most recent live birth. Urban women were more likely than rural women to have received ANC from a skilled provider (85% and 70%, respectively) and to have had four or more ANC visits (59% and 37%, respectively). The percentage of women who used a skilled provider for ANC services and who had four or more ANC visits for their most recent birth in the five years preceding the survey increases greatly with women's education. Among women with no education, 62% obtained ANC services from a skilled provider and 32% received four or more ANC visits compared with 100% and 79%, respectively, of women with more than a secondary education. The use of ANC services by a skilled provider and proper number of ANC visits also increases steadily with household wealth.

As shown in **Figure 3**, the percentage of women receiving antenatal care from a skilled provider has increased from 28% in 2005 to 74% in 2019, an increase of 46 percentage points over the 14-year period.

3.5.2 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). Among the total live

Figure 3 **Trends in antenatal and delivery care coverage**

Percentage of women age 15-49 who had a live birth in the 5 years before the survey (for the most recent birth)

Received any ANC from skilled provider: 28 (2005), 34 (2011), 62 (2016), 74 (2019)
Births attended in a health facility: 5 (2005), 10 (2011), 26 (2016), 48 (2019)
Had 4+ ANC visits: 12 (2005), 19 (2011), 32 (2016), 43 (2019)

2005 EDHS, 2011 EDHS, 2016 EDHS, 2019 EMDHS

births in the 5 years preceding the survey, 50% were delivered by a skilled provider and 48% were delivered in a health facility. The percentage of live births delivered by a skilled provider increased from 6% in the 2005 EDHS, to 11% in the 2011 EDHS, to 28% in the 2016 EDHS, and up to 50% in the 2019 EMDHS. A similar trend was observed for the percentage of live births that occurred in a health facility, which increased from 5% in 2005 to 48% in the 2019 EMDHS (**Figure 3**).

By residence, 72% of urban births were assisted by a skilled provider, compared with 43% of births in rural areas (**Table 5**). Similarly, 70% of urban births were delivered in a health facility, compared with 40% in rural areas. Somali Region has the lowest percentage of births delivered by a skilled provider or delivered in a health facility (26% and 23%, respectively), while Addis Ababa has the highest percentages for both indicators (96% and 95%, respectively). The percentage for both of these indicators increases along with the mother's education. For example, 35% of births to mothers with no education were assisted by a skilled provider and 33% were delivered in a health facility. Among mothers with more than secondary education, 93% of births were assisted by a skilled provider and 93% were delivered in a health facility.

3.5.3 Postnatal care for the mother

A large proportion of maternal and neonatal deaths occur during the first 48 hours after birth. 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 check-up after delivery, and the timing of the first check-up. As shown in **Table 5**, 34% of women reported receiving a PNC check-up in the first 2 days after birth. The proportion of women receiving a postnatal check-up within 2 days of delivery is higher in urban areas (48%) than in rural areas (29%), lowest in Somali (10%), and highest (74%) in Addis Ababa. It increases with women's education and household wealth.

3.6 CHILD HEALTH AND NUTRITION

The 2019 EMDHS collected data on a number of key child health indicators, including vaccinations of young children, nutritional status as assessed by anthropometry, and infant feeding practices.
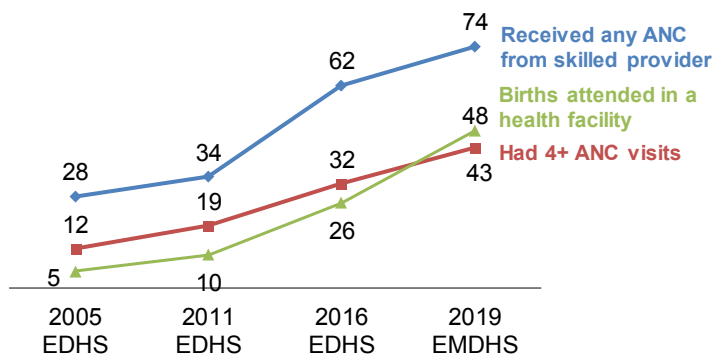
3.6.1 Child immunisation

Universal immunisation of children against six common vaccine-preventable diseases, namely tuberculosis, diphtheria, whooping cough (pertussis), tetanus, polio, and measles, is crucial in reducing infant and child mortality. Other childhood vaccines given in Ethiopia protect against hepatitis B, and *Haemophilus influenzae* type b (Hib). The government of Ethiopia introduced the pneumococcal conjugate vaccine (PCV 13) and monovalent human rotavirus vaccine (RV1) into the nation'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 causes gastroenteritis, an inflammation of the stomach and intestines. If left untreated, it can lead to severe dehydration and death. Unlike the previous EDHS surveys, this study has also captured information related to the second dose of measles vaccine (MCV 2), an effort recently launched in early 2019.

According to the guidelines developed by WHO, children are considered to have received all basic vaccinations when they have received a vaccination against tuberculosis (also known as BCG), three doses each of the DPT-HepB-Hib (also called pentavalent) vaccine, vaccines against polio, 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 Ethiopia immunisation programme considers a child to have all basic vaccinations if the child has received three doses of the pneumococcal conjugate vaccine (PCV, also given at age 6, 10, and 14 weeks), and two doses of the rotavirus vaccine (at age 6 and 10 weeks).

Information on vaccination coverage was obtained in three ways in the 2019 EMDHS: from written vaccination records, including the Infant Immunisation Card and other health cards, from mothers' verbal reports, and from health facility records. In the 2019 EMDHS, for each child born in the 3 years before the survey, mothers were asked to show the interviewer the Infant Immunisation Card or health card used to record the child's immunisations. If the Infant Immunisation Card or other health card was available, the interviewer copied the dates of each vaccination received in the respective section of the Woman's Questionnaire. If a vaccination was not recorded in the Infant Immunisation Card or on the health card, the mother was asked to recall whether that particular vaccination had been given. If the mother was not able to present the Infant Immunisation Card or a child, she was asked to recall whether the child had received BCG, polio, DPT-HepB-Hib, measles, pneumococcal, and rotavirus vaccines. If she indicated that the child had received the polio, DPT-HepB-Hib, pneumococcal, measles, or rotavirus vaccine, she was asked the number of doses that the child received.

In addition, for any children missing vaccination data who also visited a health facility, the field supervisor visited the health facility to collect complementary vaccination records. The purpose of obtaining information at the health facility was to complement the information collected about vaccinations based on the mother's recall.

Data on vaccination coverage among children age 12-23 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's recall), showed that only 4 out of 10 children (43%) have received all basic vaccinations (**Figure 4** and **Table 6**). Close to 2 in 10 children (19%) in this age group have not received any vaccinations at all. Seventy-three percent of children received BCG, 76% received the first dose of pentavalent, 78% received the first dose of polio, 74% received the first

Figure 4 Childhood vaccinations

Percentage of children age 12-23 months vaccinated at any time before the survey

dose of PCV, and 73% received the first dose of rotavirus vaccine. Fifty-nine percent of children received a measles vaccination (MCV1). Coverage rates decline for subsequent doses of these vaccines, with 61% of children receiving the recommended three doses of the pentavalent, 60% all three doses of polio, 60% all three doses of PCV, and 67% the two doses of the rotavirus vaccine. Nine percent of children age 24-35 months received the second dose of the measles vaccine (MCV2).

Coverage of all basic vaccines and/or any vaccination coverage has been strongly associated with better wealth status, better education of care givers, and living in urban areas. Fifty-seven percent of children living in urban areas have received all basic vaccinations compared with only 37% of children in rural areas (**Table 6**). Children in the highest wealth quintile (65%) are more than twice as likely to have received all basic vaccinations as children in the lowest quintile (25%). Sixty-five percent of children whose mothers have more than secondary education were received all basic vaccinations compared with 34% of children whose mothers have no education. Coverage of all basic vaccinations is highest in Addis Ababa (83%) and lowest in Afar (20%).

Table 6 Vaccinations by background characteristics

Percentage of children age 12-23 months and children age 24-35 months who received specific vaccines at any time before the survey (according to a vaccination card, the mother's report, and health facility records), percentage with all basic vaccinations, and percentage with all ag- appropriate vaccinations, according to background characteristics, Ethiopia Mini DHS 2019

Background characteristic	BCG	DPT-HepB-Hib			Polio[1]				Pneumococcal			Rotavirus		Measles 1	All basic vacci-nations[2]	No vacci-nations	Number of children	Children age 24-35 months: Measles 2	Number of children
		1	2	3	0 (birth dose)	1	2	3	1	2	3	1	2						
Sex																			
Male	74.2	78.9	72.0	61.9	25.5	79.9	72.8	62.5	75.2	70.5	62.9	73.1	67.5	57.8	43.3	17.8	494	7.8	514
Female	71.9	73.8	70.4	60.0	26.6	76.0	69.8	56.8	72.0	66.3	57.1	71.9	65.9	59.3	43.0	20.6	532	10.5	514
Birth order																			
1	79.7	80.5	74.8	58.9	26.5	78.9	73.4	59.7	74.0	69.5	56.0	74.2	69.0	66.3	45.5	16.1	248	7.5	221
2-3	75.2	77.6	72.1	62.0	31.0	78.8	71.7	60.3	75.5	72.0	63.8	73.9	68.2	62.3	46.5	17.7	374	9.5	281
4-5	68.9	77.9	72.5	63.7	18.6	78.8	74.8	61.5	76.8	68.1	61.9	74.6	66.2	53.5	39.5	20.0	219	12.9	244
6+	64.4	65.7	62.9	58.2	24.5	73.4	63.1	55.5	64.9	59.4	54.7	64.8	61.1	46.6	37.5	25.7	184	6.8	282
Vaccination card																			
Seen	90.2	96.9	92.4	86.3	39.3	96.1	91.8	83.6	96.5	91.1	84.2	95.1	89.1	70.4	63.4	0.0	424	7.4	271
Not seen/no card	60.9	61.7	56.3	43.1	16.8	65.0	56.8	42.6	57.3	52.3	42.8	56.5	50.9	50.2	28.9	32.8	602	9.8	757
Residence																			
Urban	88.8	90.0	85.2	71.9	38.2	87.9	82.5	72.9	87.4	85.2	77.9	85.7	80.7	78.1	57.3	9.8	313	10.3	248
Rural	66.0	70.2	65.0	56.1	20.8	73.4	66.3	53.7	67.4	60.9	52.0	66.7	60.5	50.0	36.9	23.4	713	8.8	780
Region																			
Tigray	91.7	95.4	90.1	84.4	50.1	94.6	88.0	83.6	88.6	84.3	78.4	81.6	78.0	82.9	73.0	4.6	77	17.2	61
Afar	45.4	45.5	34.6	25.9	19.5	45.6	32.2	25.2	41.7	31.1	22.5	42.1	33.3	28.5	19.8	44.9	15	8.5	17
Amhara	79.2	84.4	83.1	80.2	34.1	83.5	81.4	75.4	81.8	80.5	77.8	82.8	77.9	71.3	62.1	14.8	218	13.3	192
Oromia	69.7	73.4	66.8	53.6	12.5	77.4	70.5	52.8	72.6	65.5	52.6	72.1	67.4	48.7	29.9	18.9	405	5.2	429
Ethiopia Somali	39.0	42.2	32.6	26.2	12.1	50.2	39.4	26.8	39.6	31.4	22.8	44.2	33.6	31.1	18.2	48.8	54	1.4	74
Benishangul Gumuz	86.4	89.2	87.4	81.2	56.5	90.2	88.4	74.5	83.1	81.4	75.3	86.0	80.7	77.4	66.7	9.8	11	1.6	13
Snnp	71.4	72.7	67.3	50.8	27.8	72.4	61.9	53.0	67.3	61.4	54.0	63.7	54.4	58.2	38.0	24.2	199	15.3	196
Gambela	81.8	76.3	72.6	65.0	61.4	85.0	72.4	55.7	74.8	72.7	60.8	68.9	65.8	57.6	38.3	14.2	4	21.2	4
Harari	70.4	65.3	58.1	52.8	44.3	77.2	64.9	50.7	66.1	59.4	55.1	64.8	49.3	58.7	45.8	20.4	2	7.0	4
Addis Ababa	96.3	96.3	96.3	93.1	74.9	91.6	90.5	85.8	96.3	96.3	93.1	94.4	94.4	90.6	83.3	3.7	34	3.3	32
Dire Dawa	95.4	95.2	90.2	74.2	64.1	95.2	85.9	65.7	88.5	80.8	67.8	86.1	79.0	74.2	53.0	2.6	6	17.7	5
Education																			
No education	63.3	66.4	62.2	55.8	21.6	70.2	61.9	53.6	65.0	58.8	52.6	63.9	56.7	43.6	33.8	26.7	463	8.4	576
Primary	76.3	80.6	76.2	61.5	20.9	81.6	77.8	62.8	76.9	73.1	63.2	75.9	71.5	65.2	46.5	16.7	417	9.0	338
Secondary	94.0	93.7	84.3	78.1	60.0	93.2	85.7	69.2	86.2	81.7	75.8	84.7	81.2	84.6	62.0	2.5	85	15.8	85
More than secondary	94.5	97.0	86.6	72.1	48.3	89.1	76.7	69.0	97.0	89.0	70.1	96.9	88.9	90.3	65.1	3.0	62	(5.5)	29

Continued…

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Table 6—Continued

Background characteristic	BCG	DPT-HepB-Hib			Polio[1]				Pneumococcal			Rotavirus		Measles 1	All basic vaccinations[2]	No vaccinations	Number of children	Children age 24-35 months: Measles 2	Number of children
		1	2	3	0 (birth dose)	1	2	3	1	2	3	1	2						
Wealth quintile																			
Lowest	51.7	59.3	54.5	46.2	14.0	64.8	58.3	41.9	56.2	53.4	45.5	55.8	52.5	42.3	24.7	33.6	208	5.6	232
Second	67.2	73.7	64.9	51.0	29.4	75.8	66.1	53.0	71.1	57.7	47.0	69.1	59.3	47.0	34.6	23.2	186	9.7	237
Middle	69.8	69.2	65.6	54.6	15.1	71.4	64.6	57.8	66.4	62.3	55.2	66.3	61.4	51.4	39.9	24.4	189	10.5	207
Fourth	75.3	77.8	74.5	65.6	24.7	75.7	67.1	56.2	75.0	67.0	58.2	70.7	61.5	60.1	44.3	16.2	173	14.5	145
Highest	94.0	94.9	90.1	80.6	41.6	95.3	91.9	81.0	92.6	92.1	84.1	93.1	89.7	83.0	64.7	3.8	271	7.4	207
Total	73.0	76.3	71.2	60.9	26.1	77.9	71.2	59.6	73.5	68.3	59.9	72.5	66.7	58.6	43.1	19.2	1,026	9.1	1,028

Note: Children are considered to have received the vaccine if it was either written on the child's vaccination card, child's information found in the health facility, or reported by the mother. For children whose vaccination information is based on the mother's report, date of vaccination is not collected. The proportions of vaccinations given during the first and second years of life are assumed to be the same as for children with a written record of vaccination.
BCG = Bacille Calmette-Guérin.
DPT = Diphtheria-pertussis-tetanus.
HepB = hepatitis B.
Hib = *Haemophilus influenzae* type b.
[1] Polio 0 is the polio vaccination given at birth.
[2] BCG, three doses of [DPT-HepB-Hib], three doses of oral polio vaccine (excluding polio vaccine given at birth), and one dose of measles.

3.6.2 Vitamin A supplements and iron folic acid tablets

Vitamin A and iron deficiency are major contributors to childhood morbidity and mortality. Unborn children benefit from supplements given to the mother during pregnancy, and infants and young children benefit from Vitamin A supplements given in a health care setting.

Vitamin A is an essential micronutrient for the immune system and plays a key role in maintaining the epithelial tissue in the body. Severe vitamin A deficiency (VAD) can cause eye damage and is the leading cause of childhood blindness. VAD also increases the severity of infections such as measles and diarrhoeal disease in children and slows recovery from illness. Forty-seven percent of children age 6-35 months have received Vitamin A supplements (**Table 7.1**). Vitamin A uptake increases with the mother's age, from 31% among children of women age 15-19 to 58% among children of women age 40-49. At the regional level, Somali Region has the lowest uptake of Vitamin A (20%), compared with the highest uptake in Tigray (65%).

Iron deficiency is one of the primary causes of anaemia, which has serious health consequences for both women and children. Among women with a live birth in the past 5 years, 60% took iron folic acid (IFA) tablets during pregnancy, and 11% took them for the recommended period of 90 or more days (**Table 7.2**). This percentage generally increases according to education and wealth quintile. Women with no education (7%) were less likely to consume IFA tablets for 90+ days than women with more than secondary education (27%), while women in the lowest wealth quintile (6%) were less likely to take iron for more than 90+ days than women in the highest wealth quintile (17%). There was regional disparity among women who take IFA tablets for 90+ days, ranging from a low 2% in Somali Ethiopia to 22% in Dire Dawa.

Table 7.1 Vitamin A supplements among children

Percentage of children 6-35 months who received vitamin A supplements in the 6 months preceding the survey, by background characteristics, Ethiopia Mini DHS 2019

Background characteristic	Percentage given vitamin A supplements in past 6 months[1]	Number of children
Age in months		
6-8	19.3	257
9-11	48.8	229
12-17	52.5	561
18-23	52.4	466
24-35	48.4	1,028
Sex		
Male	46.6	1,298
Female	47.6	1,243
Breastfeeding status		
Breastfeeding	48.1	1,854
Not breastfeeding	44.5	686
Vaccination card		
Seen	54.4	1,436
Seen (from mother)	53.8	923
Seen (from health facility)	55.6	514
Not seen/no card	37.6	1,104
Mother's age		
15-19	31.4	145
20-29	44.3	1,383
30-39	52.1	824
40-49	58.4	188
Residence		
Urban	52.9	677
Rural	45.0	1,863
Region		
Tigray	64.7	167
Afar	32.4	39
Amhara	58.4	518
Oromia	45.6	1,001
Ethiopia Somali	20.1	167
Benishangul Gumuz	63.1	31
Snnp	39.7	503
Gambela	63.7	11
Hareri	48.8	8
Addis Ababa	55.8	82
Dire Dawa	62.1	14
Mother's education		
No education	44.2	1,249
Primary	48.1	968
Secondary	52.3	211
More than secondary	61.1	113
Wealth quintile		
Lowest	35.6	525
Second	43.5	535
Middle	57.1	493
Fourth	44.0	432
Highest	55.1	557
Total	47.1	2,540

[1] Based on mother's recall, health facility information (where available), and the vaccination card (where available).

Table 7.2 Iron tablets during mother's pregnancy

Among women age 15-49 with a child born in the 5 years before the survey, percent distribution by number of days they took iron tablets during the pregnancy of the last child, according to background characteristics, Ethiopia Mini DHS 2019

Background characteristic	Number of days women took iron tablets during pregnancy of last birth						Percentage of women who took iron tablets during pregnancy for their most recent live birth	Number of women with a live birth in the last 5 years
	None	<60	60-89	90+	Don't know	Total		
Mother's age								
15-19	49.9	33.1	5.9	11.0	0.1	100.0	51.3	227
20-29	35.0	37.4	14.0	12.0	1.6	100.0	65.3	1,961
30-39	42.7	36.1	10.4	9.4	1.3	100.0	57.1	1,390
40-49	53.6	26.8	12.6	6.9	0.0	100.0	47.4	348
Residence								
Urban	30.1	40.1	14.4	14.1	1.3	100.0	69.7	1,026
Rural	43.8	34.2	11.3	9.4	1.3	100.0	56.5	2,900
Region								
Tigray	17.1	54.0	18.3	9.0	1.6	100.0	84.5	287
Afar	49.8	28.3	11.9	8.6	1.4	100.0	51.4	51
Amhara	26.2	43.8	13.4	15.4	1.2	100.0	74.4	839
Oromia	44.9	27.6	13.9	11.8	1.7	100.0	54.8	1,519
Ethiopia Somali	81.2	14.7	1.9	1.8	0.5	100.0	18.6	218
Benishangul Gumuz	40.7	34.2	11.6	12.0	1.5	100.0	60.5	47
Snnp	44.9	43.2	7.1	4.3	0.6	100.0	55.2	787
Gambela	40.0	34.2	10.6	15.3	0.0	100.0	60.2	19
Hareri	35.3	32.7	15.2	16.8	0.0	100.0	66.2	11
Addis Ababa	28.5	34.5	16.1	19.4	1.5	100.0	73.3	127
Dire Dawa	31.5	25.4	19.0	21.8	2.4	100.0	69.5	21
Mother's education								
No education	50.9	31.8	8.9	6.9	1.5	100.0	49.0	2,014
Primary	32.9	39.8	13.3	13.3	0.8	100.0	67.6	1,415
Secondary	16.0	45.1	22.7	13.9	2.2	100.0	83.7	345
More than secondary	22.6	29.5	20.3	27.0	0.6	100.0	80.7	153
Wealth quintile								
Lowest	62.2	23.2	7.9	5.6	1.0	100.0	38.2	812
Second	45.7	36.6	8.1	7.7	1.9	100.0	53.7	809
Middle	36.5	37.2	12.1	13.6	0.6	100.0	64.7	749
Fourth	36.5	40.8	13.6	8.8	0.4	100.0	63.3	708
Highest	20.4	41.4	18.9	17.1	2.2	100.0	79.9	848
Total	40.2	35.7	12.1	10.6	1.3	100.0	60.0	3,927

3.6.3 Nutritional status of children

Anthropometric indicators for young children were collected in the 2019 EMDHS 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 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 (WHO 2006).

Table 8 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, and children whose height-for-age is less than two standard deviations below the median (-2 SD) of the reference population are considered short for their age or stunted, a condition reflecting the cumulative effect of chronic malnutrition (WHO 2006).

Table 8 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, according to background characteristics, Ethiopia Mini DHS 2019

Background characteristic	Height-for-age[1]				Weight-for-height					Weight-for-age				
	Percent-age below -3 SD	Percent-age below -2 SD[2]	Mean Z-score (SD)	Number of children	Percent-age below -3 SD	Percent-age below -2 SD[2]	Percent-age above +2 SD	Mean Z-score (SD)	Number of children	Percent-age below -3 SD	Percent-age below -2 SD[2]	Percent-age above +2 SD	Mean Z-Score (SD)	Number of children
Age in months														
<6	4.6	17.1	-0.6	522	1.3	9.6	6.6	0.0	519	2.1	9.8	2.2	-0.4	535
6-8	5.6	22.2	-0.9	251	1.4	4.8	5.7	-0.1	254	3.2	17.0	0.4	-0.7	252
9-11	12.1	34.1	-1.2	220	0.2	8.2	4.3	-0.4	222	8.3	18.9	2.0	-0.9	221
12-17	9.3	29.6	-1.3	546	1.6	8.9	0.7	-0.6	548	5.1	21.0	0.6	-1.1	549
18-23	8.7	37.1	-1.5	447	1.1	6.5	2.0	-0.2	453	5.7	18.1	0.7	-0.9	449
24-35	16.2	45.1	-1.8	973	1.2	7.9	1.4	-0.4	996	6.3	24.5	0.1	-1.3	979
36-47	13.2	40.7	-1.7	1,046	0.9	4.4	1.3	-0.2	1,074	5.5	19.3	0.6	-1.1	1,048
48-59	15.5	43.7	-1.8	931	1.6	7.9	0.8	-0.5	992	8.2	28.8	0.1	-1.5	956
Sex														
Male	14.7	40.2	-1.6	2,503	1.7	8.8	2.0	-0.4	2,567	6.8	23.0	0.9	-1.1	2,527
Female	9.3	33.4	-1.4	2,434	0.8	5.5	2.2	-0.3	2,491	4.7	19.0	0.4	-1.0	2,463
Mother's interview status														
Interviewed	12.0	36.9	-1.5	4,897	1.2	7.2	2.1	-0.3	4,953	5.8	21.0	0.6	-1.1	4,950
Not interviewed, not in household[3]	(18.8)	(29.6)	1.5	40	2.9	6.6	0.0	-0.3	104	(6.2)	(26.0)	(0.0)	0.9	40
Residence														
Urban	5.8	25.6	-1.1	1,245	1.1	5.7	1.7	-0.2	1,256	3.5	14.3	0.8	-0.8	1,254
Rural	14.1	40.6	-1.6	3,692	1.3	7.7	2.2	-0.3	3,801	6.6	23.3	0.6	-1.2	3,736
Region														
Tigray	14.3	48.7	-1.9	349	0.7	9.2	1.9	-0.5	350	7.5	30.4	0.4	-1.4	350
Afar	20.8	43.0	-1.6	75	2.9	13.9	1.6	-0.8	77	12.1	31.7	1.4	-1.5	76
Amhara	13.5	41.3	-1.7	941	1.7	7.6	0.8	-0.5	950	6.1	26.7	0.0	-1.4	947
Oromia	11.1	35.6	-1.5	1,974	0.4	4.7	3.2	-0.1	2,023	4.9	16.1	0.3	-0.9	1,998
Ethiopia Somali	11.3	30.5	-1.1	346	6.0	21.1	0.8	-1.1	367	9.8	31.7	1.2	-1.4	349
Benishangul Gumuz	19.2	40.8	-1.7	59	0.5	6.1	1.6	-0.5	60	9.9	31.4	1.4	-1.4	60
Snnp	12.4	36.3	-1.4	996	1.0	6.3	1.4	-0.3	1,031	5.4	19.7	1.5	-1.0	1,007
Gambela	4.0	17.6	-0.7	20	2.7	12.5	0.5	-0.8	21	4.3	18.1	0.4	-0.9	21
Harari	13.1	34.7	-1.5	14	0.9	4.2	2.5	-0.1	15	6.1	18.9	0.5	-1.0	14
Addis Ababa	3.8	13.9	-0.7	137	0.0	2.3	4.5	0.2	138	0.6	4.7	2.5	-0.2	142
Dire Dawa	5.2	25.4	-1.0	26	0.7	5.8	1.6	-0.4	26	3.6	15.2	0.6	-0.9	26
Mother's education[4]														
No education	15.5	41.7	-1.7	2,626	1.7	9.2	2.2	-0.4	2,672	8.4	26.0	0.5	-1.3	2,660
Primary	9.3	35.4	-1.4	1,732	0.6	4.9	2.2	-0.2	1,742	3.2	17.3	0.9	-1.0	1,747
Secondary	4.2	19.0	-1.0	360	0.6	5.7	1.9	-0.2	361	1.6	9.4	0.5	-0.7	362
More than secondary	1.3	17.0	-0.9	179	0.1	1.3	1.4	-0.1	179	0.1	6.3	1.0	-0.6	181
Wealth quintile														
Lowest	15.5	41.9	-1.6	1,132	2.4	11.7	2.5	-0.5	1,207	8.8	28.0	0.5	-1.3	1,154
Second	14.9	41.9	-1.7	1,063	1.3	7.7	2.3	-0.4	1,076	7.8	24.1	0.4	-1.3	1,074
Middle	13.8	39.7	-1.5	904	0.7	4.8	1.8	-0.3	917	4.5	23.5	1.2	-1.1	912
Fourth	10.5	34.9	-1.5	897	0.7	6.2	2.4	-0.2	901	4.9	16.0	0.6	-1.0	901
Highest	4.4	24.1	-1.1	942	0.6	4.0	1.3	-0.1	955	1.9	11.6	0.6	-0.7	950
Total	12.0	36.8	-1.5	4,937	1.2	7.2	2.1	-0.3	5,057	5.8	21.1	0.6	-1.1	4,990

Note: Each of the indices is expressed in standard deviation units (SD) from the median of the WHO Child Growth Standards.
[1] Recumbent length is measured for children under age 2; standing height is measured for all other children.
[2] Includes children who are below -3 standard deviations (SD) from the WHO Growth Standards population median
[3] Includes children whose mothers are deceased
[4] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.

Results from the 2019 EMDHS show that 37% of children under 5 are short for their age or stunted (below -2 SD), and 12% are severely stunted (below -3 SD). The prevalence of stunting generally increases steadily with age, from 22% among children 6-8 months up to 44% of children 48-59 months. Notably, the highest proportion of stunting of children (45%) was observed at age 24-35 months, and it is also slightly higher among male than female children (40% versus 33%).

In addition, stunting among children is greater in rural areas (41%) than in urban areas (26%). There are some regional variations in stunting, which ranges from a high of 49% in Tigray to a low of 14% in Addis

Ababa. Stunting decreases according to the mother's education and wealth quintile. Forty-two percent of children born to mothers with no education are stunted compared with 17% of children whose mothers have more than secondary education. Stunting decreases from 42% among children in the lowest wealth quintile to 24 % of those in the highest wealth quintile.

Weight-for-height describes current nutritional status. A child who is below -2 SD from the reference median for weight-for-height is considered too thin for his or her height, or wasted, a condition reflecting acute or recent nutritional deficits (WHO 2006). Overall, 7% of children in Ethiopia are wasted, and 1% are severely wasted (below -3 SD). Regional variations exist, with the highest percentages of children who are wasted in Somali (21%), Afar (14%), and Gambela (13%), and the lowest percentages of wasted children in Addis Ababa (2%) and Harari (4%).

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 2019 EMDHS results show that 21% of all children are underweight (below-2 SD), and 6% are severely underweight (below -3 SD). Children in rural areas are more likely than those in urban areas to be underweight (23% versus 14%). The highest percentages of underweight children are observed in Somali and Afar regions (both at 32%), while the lowest percentage is observed in Addis Ababa (5%). The percentage of underweight children decreases as mother's education and wealth quintile increase.

Figure 5 shows a reduction of child undernutrition between 2005 and 2019. The prevalence of stunting has decreased considerably, from 51% in 2005 to 37% in 2019. Moreover, the prevalence of wasting decreased over the same time period, from 12% to 7%. The percentage of underweight children has consistently decreased from 33% to 21% over this 14-year period.

3.6.4 Breastfeeding 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, reducing the mother's postpartum blood loss. Supplementing breast milk with other liquids before

Figure 5 **Trends in nutritional status of children**

Percentage of children under age 5 who are malnourished

the child reaches 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.

The 2019 EMDHS collected data on infant and young child feeding (IYCF) practices for all children born in the 2 years preceding the survey. **Table 9** shows breastfeeding practices by child's age. In Ethiopia, 59% of infants under 6 months are exclusively breastfed. Contrary to the WHO recommendation that children under age 6 months should be exclusively breastfed, 14% of infants 0-5 months also consume plain water, 1% of them consume non-milk liquids, 8% consume other milk, and 13% consume complementary foods in addition to breast milk. Notably, 6% of infants under age 6 months are not breastfed at all. The percentage exclusively breastfed decreases sharply with age from 73% of infants age 0-1 months to 68% of those age 2-3 months and further, to 40% of infants age 4-5 months. Nine percent of infants under 6 months use a bottle with a nipple, a practice that is discouraged because of the risk of exposing the child to illness.
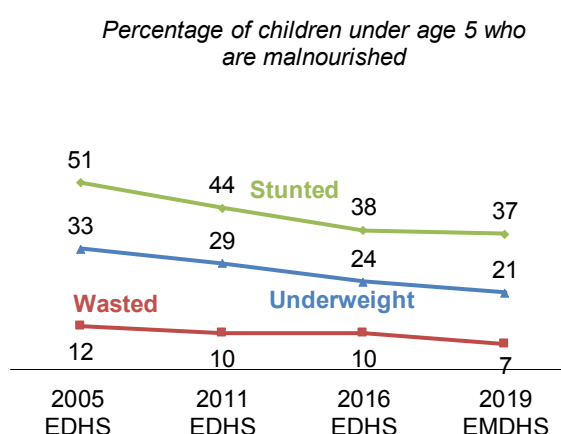
Percent distribution of youngest children under age 2 who are living with their mother, by breastfeeding status, and the percentage currently breastfeeding; and percentage of all children under age 2 using a bottle with a nipple, according to age in months, Ethiopia Mini DHS 2019

	Breastfeeding status										
Age in months	Not breast-feeding	Exclu-sively breast-feeding	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids[1]	Breast-feeding and consuming other milk	Breast-feeding and consuming comple-mentary foods	Total	Percent-age currently breast-feeding	Number of youngest children under age 2 living with the mother	Percent-age using a bottle with a nipple	Number of all children under age 2
0-1	7.6	73.2	9.2	1.5	1.7	6.8	100.0	92.4	176	1.9	178
2-3	5.4	68.2	11.8	0.1	9.9	4.6	100.0	94.6	157	9.4	157
4-5	3.8	40.4	19.7	1.7	10.8	23.5	100.0	96.2	217	15.4	220
6-8	5.7	8.3	8.8	7.6	3.2	66.6	100.0	94.3	255	28.6	257
9-11	7.1	7.1	4.5	4.0	2.3	75.0	100.0	92.9	223	26.2	229
12-17	14.7	2.8	4.1	3.5	0.9	74.0	100.0	85.3	551	25.2	561
18-23	24.3	2.7	3.0	0.4	0.5	69.1	100.0	75.7	434	25.4	466
0-3	6.6	70.8	10.4	0.8	5.6	5.7	100.0	93.4	333	5.4	334
0-5	5.5	58.8	14.1	1.2	7.6	12.8	100.0	94.5	550	9.3	554
6-9	5.3	7.5	7.0	5.9	3.1	71.2	100.0	94.7	328	30.4	331
12-15	13.3	2.7	3.8	2.3	1.0	77.0	100.0	86.7	390	26.9	399
12-23	18.9	2.8	3.6	2.1	0.7	71.8	100.0	81.1	984	25.3	1,026
20-23	27.9	2.2	3.7	0.7	0.2	65.4	100.0	72.1	269	26.7	295

It is recommended that a child continue to breastfeed until age 2. However, in Ethiopia, the percentage of children who are currently breastfed decreases from 85% among children age 12-17 months to 76% among children age 18-23 months.

Figure 6 shows that exclusive breastfeeding among children under age 6 months has consistently increased from 49% in 2005 to 59% in EMDHS 2019.

Figure 6 Trends in exclusive breastfeeding

Percentage of children who are exclusively breastfed

2005 EDHS	2011 EDHS	2016 EDHS	2019 EMDHS
49	52	58	59
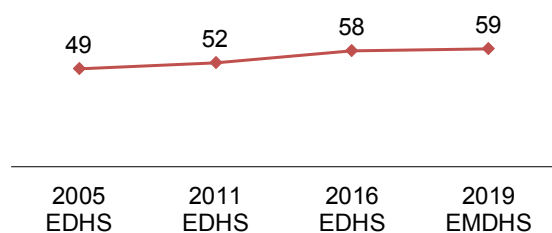
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