REPUBLIQUE DU CAMEROUN

Paix – Travail – Patrie

REPUBLIC OF CAMEROON

Peace – Work – Fatherland

Demographic and Health survey and Multiple Indicators Cluster Survey DHS-MICS 2011

Preliminary Report

Survey realized by National Institute of Statistics

With technical assistance of MEASURE DHS
ICF International

February 2012

CONTENTS

LIST OF TABLES AND FIGURES

List of tables

List of figures

LIST OF ACRONYMS

ACT	Artemisinin-based Combination Therapy
AIDS	Acquired Immunodeficiency Syndrome
ANC	Antenatal Care
ARI	Acute Respiratory Infections
BCG	Bacille Calmette-Guerin (vaccine)
CDC	Centers for Disease Control and Prevention
CHTTS	CSPro HIV Test Tracking System
CPC	Centre Pasteur du Cameroun (Pasteur Center in Cameroon)
CPR	Contraceptive Prevalence Rate
DBS	Dried Blood Spots
DPT	Diphtheria Pertussis Tetanus (vaccine)
DHS	Demographic and Health Surveys
CSPro	Census and Survey Processing
HepB	Hepatitis B (vaccine)
Hib	Haemophilus influenza type B (vaccine)
HIV	Human Immunodeficiency Virus
IPT	Intermittent Preventive Treatment
IUD	Intrauterine device
IYCF	Infant and Young Child Feeding
LAM	Lactational Amenorrhoea Method
MDG	Millennium Development Goal
MICS	Multiple Indicator Cluster Surveys
MOH	Ministry of Health
NIS	National Institute of Statistics
ORS	Oral Rehydration Salts
ORT	Oral Rehydration Therapy
RDT	Rapid Malaria Diagnostic Test
SP	sulfadoxine-pyrimethamine
TFR	Total Fertility Rate
UNAIDS	Joint United Nations Programmes on HIV and AIDS
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation
YGH	Yaoundé General Hospital

FOREWORD

The 2011 Cameroon Demographic and Health Survey combined with the Multiple Indicators Cluster Survey (DHS-MICS) had been implemented successfully due to collaborative efforts from various government ministries, organizations, departments and individuals. The National Institute of Statistics wishes to extend its sincere gratitude to the Ministry of Public Health, the Ministry of Economics, Planning and Regional Development for partly financing the local costs of the survey. Also we would wish to thank the MEASURE Demographic and Health Surveys programme of ICF Macro in Maryland, U.S.A., for the provision of technical assistance in all aspects of the survey, with funding from USAID. Our sincere gratitude is also extended to all organizations which contributed to the questionnaire contents and/or the field staff training,

We wish to express our sincere appreciation for the financial support provided by the development partners, in particular USAID, UNICEF, UNFPA, who contributed towards the successful implementation of the survey. Likewise, a considerable number of individuals contributed significantly to the successful completion of this survey.

We are even more grateful to the interviewers and supervisors who worked tirelessly to ensure that the data collected was of good quality, without forgetting the survey respondents who generously contributed part of their time to enable the survey teams gather crucial information for our country.

I. BACKGROUND

1.1 Introduction

The 2011 Demographic and Health Survey combined with Multiple Indicators Clusters Survey (2011 DHS-MICS) was implemented by the National Institute of Statistics (NIS) in collaboration with the Centre Pasteur du Cameroon (CPC). A nationwide data collection took place from 22 January to 15 August 2011. ICF Macro provided technical assistance to the survey through the MEASURE DHS programme, a USAID-funded project providing support and technical assistance in the implementation of population and health surveys in countries worldwide. Other agencies and organizations facilitating the successful implementation of the survey through technical or financial support include the Ministry of Public Health, the Ministry of Economics, Planning and Regional Development, UNICEF, UNFPA, USAID and the World Bank.

The 2011 DHS-MICS is a follow-up to the 1991, 1998 and 2004 DHS surveys and 2000 and 2006 MICS surveys which provides updated estimates of basic demographic and health indicators and children situation in Cameroon.

This preliminary report represents a first look at selected findings of the 2011 DSH-MICS where appropriate, results are compared to findings from the previous DHS or MICS Surveys. A comprehensive analysis of the data will be presented in a final report to be published in 2012. While considered provisional, the results presented here are not expected to differ significantly from those in the final report.

1.2 Survey objectives

The primary objective of the 2011 DHS-MICS project is to provide high-quality data on fertility levels and preferences; family planning use; reproductive, child and maternal health; nutritional status of young children and women; childhood mortality levels; ownership and use of mosquito bednets, prevalence of malaria; prevalence and treatment of childhood illness; fistula, domestic violence, knowledge, behavior and regarding HIV/AIDS and prevalence of HIV/AIDS; and maternal mortality.

II.   SURVEY IMPLEMENTATION

2.1 Sample design

The sampling frame used for the 2011 DHS-MICS is the 2005 Population and Housing Census. The sample excluded nomadic and institutional populations, such as persons staying in hotels, barracks, and prisons. The sample was designed to allow estimates of key indicators for each of Cameroon's 10 regions, the main towns Douala and Yaoundé due to their population were considered as separates regions. To achieve this objective, the sample was selected in two stages. In the first stage, 580 sample points (or clusters) were randomized selected. In the second stage, 24 household in each urban cluster and 28 household in each rural area were selected from each sample point in all regions
Because of the approximately equal sample sizes in each region, the sample is not self-weighting at the national level and weighting factors have been added to the data file so that the results are proportional at the national level.

The sample design resulted in a total of 15,060 households selected. In all households, women age 15-49 were eligible for interview. Every second household was selected for the men's survey. In these households, all men age 15-59 were also eligible for interview. A household listing operation was undertaken in all the selected areas in June and September 2009. From these lists, households to be included in the survey were selected.

2.2 Questionnaires

The 2011 DHS-MICS used three questionnaires: Household Questionnaire, Woman's Questionnaire and Man's Questionnaire. These questionnaires were based on the standard DHS and MICS surveys questionnaires, adapted to reflect the population and health issues relevant to Cameroon. Inputs were solicited from various stakeholders representing government ministries and agencies, non-governmental organizations, and international donors. After the preparation of the definitive questionnaires in French, questionnaires were translated into English.

The Household Questionnaire was used to list all the usual members and visitors of selected households. Some basic 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. For children under age 18, survival status of the parents was determined. The Household Questionnaire was also used to identify women and men who were eligible for the individual interview. In households with more than one woman age 15-49, only one was randomly selected for the interview on domestic violence. Additionally, the Household Questionnaire collected information on characteristics of the household's dwelling unit, such as the source of water, type of toilet facilities, materials used for the floor of the house, ownership of various durable goods, and ownership and use of mosquito nets. The Household Questionnaire was also used to record the weight, height, haemoglobin results, and the response status for the blood sampling for malaria testing for children.

Figure 1. 2011 DHS-MICS CHART

Tanzania Demographic and He

Figure 1. 2011 DHS-MICS CHART

HOUSEHOLD SURVEY
100% OF THE HOSEHOLDS
1- household members charactheristics
2- lodging characteristics
3- Durability of lodging
4- Mortality

50% of the households
8- Protection against mousquitoes
9- child labor
Weight and and height: women and children
anaemia testing: *women and children*
Malaria testing : children

50% of the households
10- Disabilities
11-Health expenses
HIV testing: women and men

Woman survey
100% of the fouseholds
1- Woman's background
2- Reproduction
3- Family planning
4- maternal health
4+- Fistula
5- Childhood health - Nutrition
6- Marriage et sexual activity
7- fertility preferences
8- husband's background and woman 's work status
9- maternal mortality

WOMAN SURVEY
50% of the households
10- child development
11- Domestic violence

WOMAN SURVEY
50% of the households
12- HIV/aids
13- other health issues
14- Woman participation

MAN SURVEY
1- Man background
2- Reproduction
3- Family Palnning
4- Marriage and sexual activity
5- fertility Preferences
6- work statusi
7- HIV/aids
8- other health issues
9- Domestic violence

alth Survey 2010

Preliminary Report

The Woman's Questionnaire was used to collect information from all women age 15-49 listed in the household schedule. These respondents were asked questions on the following topics:
  ➢ Background characteristics (age, education, religion, etc.),
  ➢ Reproductive history (to arrive at fertility and childhood mortality rates),
  ➢ Knowledge and use of family planning methods,
  ➢ Pregnancy, delivery, and postnatal care,
  ➢ Childhood vaccinations,

- ➤ Infant feeding practices including patterns of breastfeeding,
- ➤ Episodes of childhood illness and responses to illness, with a focus on treatment of fevers in the two weeks prior to the survey,
- ➤ Marriage and sexual activity,
- ➤ Fertility preferences,
- ➤ Husband's background and the woman's work status,
- ➤ HIV/AIDS-related knowledge, attitudes, and behavior
- ➤ Other health issues including medical injections and smoking
- ➤ Adult mortality, including maternal mortality,,
- ➤ Domestic violence,
- ➤ Woman participation in social life

The Man's Questionnaire is much shorter than the Woman's Questionnaire, but covers many of the same topics, excluding the reproductive history and sections dealing with maternal and child health. Men were also asked about their attitudes on gender role. In each household selected for men's survey, one man randomized domestic violence and.

2.3 Biomarker testing

2.3.1 Height and Weight Measurement

In addition to interviews, the survey included height and weight measurements of women age 15-49 and children under five. Weight measurements were obtained using lightweight, bathroom-type scales with a digital screen designed and manufactured under the guidance of UNICEF. Height measurements were carried out using a measuring board produced by Shorr Productions. Children younger than 24 months were measured lying down (recumbent length) on the board, while standing height was measured for older children.

2.3.2 Anaemia Testing

Children age 6-59 months and women age 15-49 were also eligible for anaemia testing. Individuals eligible for anaemia testing and parents/guardians of eligible children were advised about the objectives, potential risks, voluntary nature of and confidentiality of the anaemia testing procedures as part of the informed consent process. Parents or guardians of adolescents age 15-17 were asked for permission to test the adolescent before consent of the adolescent was sought.

After obtaining informed consent, blood samples were collected with a microcuvette from a drop of blood taken from a finger-prick (or a heel prick in the case of very young children or those with small fingers). Haemoglobin analysis was carried out on site using a battery operated portable HemoCue analyzer which produces a result in less than one minute. Results were given to the woman and the child's parent or guardian verbally and in written form. The parents or guardians of children who had anaemia requiring treatment (under 7 g/dl) were provided with a written referral to a health facility for treatment. Women with severe anaemia (haemoglobin less than 7g/dl for non-pregnant women or less than 9 g/dl for pregnant women) were also provided with a written referral form. All households were given a brochure explaining the causes and treatment of anaemia, including suggestions as to the steps (e.g., changes in diet) that could be taken in the event that a child was found to have some degree of anaemia. Results of the anaemia test were recorded on the Household Questionnaire.

2.3.3 Rapid Malaria Testing

Another major objective of the 2011 DHS-MCS was to provide information about the extent of malaria infection among children age 6-59 months. Using the same finger or heel prick used for anaemia testing, a drop of blood was tested immediately using the *SD BIOLINE Malaria Antigen P.f/Pan* kits for rapid malaria diagnostic test (RDT), which tests for *P. falciparum* and discriminates for other malaria vectors. The test includes a loop applicator that comes in a sterile packet. A tiny portion of blood is captured on the applicator and placed on the well of the device. Results are available in 15 minutes. The results were provided orally to the respondent or the child's parent/guardian and recorded in the Household Questionnaire. Children who tested positive for malaria were offered a full course of medicine according to standard procedures for treating malaria in Cameroon (PNLP, see Table A), along with instructions on how to take the medication. In order to ascertain the correct dose, the surveyor asked about any medications the child may currently be taking. She then weighed the child using the SECA portable scales and provided the appropriate dose of artemisinin-based combination therapy (ACT) along with instructions on how to administer the medicines to the child. The parents/guardians of all children tested were informed about how to prevent malaria. All drugs for malaria treatment were provided by the Ministry of Public Health.

Treatment for Children with Positive Malaria Test Results on RDTs		
Weight	**Age**	**Artemether-Lumefantrine****
Less than 5 kg	Refer*	Refer*
5-14 kg	6 months – 3 years	1 tablet twice a day for 3 days
15-25 kg	4 – 8 years	2 tablets twice daily for 3 days
*IF CHILD WEIGHS LESS THAN 5 KGS, DO NOT LEAVE DRUGS. TELL PARENT TO TAKE CHILD TO HEALTH FACILITY.		
**The second dose should be given eight hours after the first dose on the day of commencement of treatment.		

2.3.4 HIV Testing

Blood specimens were collected by the 2011 DHS-MICS biomarker technicians for laboratory testing of HIV from all women age 15-49 and men age 15-59 who consented to the test. The protocol for the blood specimen collection and analysis was based on the anonymous linked protocol developed for MEASURE DHS. This protocol allows for the merging of the HIV test results with the socio-demographic data collected in the individual questionnaires, after all information that could potentially identify an individual is destroyed.

Interviewers explained the procedure, the confidentiality of the data, and the fact that the test results would not be made available to the respondent. If a respondent consented to the 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. Respondents were asked whether they consented to having the laboratory store their blood sample for future unspecified testing. If the respondent did not consent to additional testing using their sample the words 'no additional testing' were written on the filter paper card. Each household, whether individuals consented to HIV testing or not, was given an informational brochure on HIV/AIDS and a list of fixed sites providing voluntary counselling and testing (VCT) services in surrounding waredas within the region..

Each blood sample was given a barcode label, with a duplicate label attached to the Biomarker Data Collection Form. A third copy of the same barcode was affixed to the Blood

Sample Transmittal Form to track the blood samples from the field to the laboratory. Blood samples were dried overnight and packaged for storage the following morning. Samples were periodically collected in the field, along with the completed questionnaires, and transported to NIS in Yaoundé to be logged in, and checked; blood samples were then transported to the Centre Pasteur du Cameroon (CPC) in Yaoundé.

Upon arrival at CPC, each blood sample was logged into the CSPro HIV Test Tracking System (CHTTS) database, given a laboratory number, and stored at -20°C until tested. The HIV testing protocol stipulates that testing of blood can only be conducted after the questionnaire data entry is completed, verified, and cleaned, and all unique identifiers are removed from the questionnaire file except the anonymous barcode number. As of this preliminary report, HIV testing had just begun.

The testing algorithm will be detailed in the appropriated report. Upon finalizing HIV testing, the HIV test results for the 2011 DHS-MICS will be entered into the CHTTS database with a barcode as the unique identifier to the result. The barcode will be used to link the HIV test results with the data from the individual interviews. Data from the HIV results and linked demographic and health data will be published in the 2011 DHS-MICS Final Report.

2.3.5 Iodine or iodate Testing

The 2011 DHS-MICS included two tests related to iodine. First, in all households, interviewers asked for a teaspoon of salt which was tested for iodine level using a simple rapid test kit. Salt that turned any shade of purple after being diluted with a drop of the test solution was considered to be iodized. If the salt tested did not turned, another kit (iodate solution) was used to diluted the salt. And, salt that turned any shade of purple after being diluted with a drop of this test solution was considered iodated.

2.4 Training of field staff

NIS staff and a variety of experts from government ministries, NGOs, and donor organizations participated in a four-week pretest training and fieldwork conducted from 20 September–8 October 2009. Thirty participants were trained to administer paper questionnaires, take anthropometric measurements, and collect blood samples for anaemia and HIV testing. Representatives from the Ministry of Public Health, particularly and expert from the Yaoundé General Hospital (YGH) assisted in training participants on the finger prick for blood collection, and proper handling and storage of the dried blood spots (DBS) for HIV testing. The pretest fieldwork was conducted over five days, covering approximately 150 households. Debriefing sessions were held with the pretest field staff, and modifications to the questionnaires were made based on lessons drawn from the exercise.

NIS recruited and trained 132 people for the main fieldwork to serve as supervisors, editors, male and female interviewers, and reserve interviewers. Training of field staff for the main survey was conducted during a five-week period from December 2010 up to January 2011. The training course consisted of instruction regarding interviewing techniques and field procedures, a detailed review of the questionnaire content, instruction and practice in weighing and measuring children and women, mock interviews between participants in the classroom, and practice interviews with real respondents in areas outside the 2011 DHS-MICS sample points. Field practice in anthropometry, anaemia testing and blood sample collection was also carried out for interviewers who were assigned as team biomarker

technicians. The two days special practice sessions were conducted in health care facilities to strengthen or to reinforce biomarker skills. Team supervisors and editors were trained in data quality control procedures and fieldwork coordination.

2.5 Fieldwork

Twenty interviewing teams carried out data collection for the 2011 DHS-MICS. Each team consisted of one team supervisor, one field editor, three female interviewers, one male interviewer, and one driver. Eighteen staff members from NIS coordinated and supervised fieldwork activities. An ICF Macro technical specialist, an ICF Macro consultant, and representatives from Ministry of Public Health and other organizations supporting the survey including UNICEF, UNFPA, and USAID participated in fieldwork monitoring. Data collection took place over a seven months period, from 24 January 2011 through 15 August 2011.

2.6 Data processing

All questionnaires for the 2011 DHS-MICS were returned to NIS headquarters office in Yaoundé for data processing, which consisted of office editing, coding of open-ended questions, data entry, and editing computer-identified errors. The data were processed by two teams of 12 data entry operators each, 6 office editors, and 3 data entry supervisors. Data entry and editing were accomplished using the CSPro software. The processing of data was initiated in February 2011 and completed in September 2011.

III.   RESULTS

3.1 Response rates

For the 2011 DHS-MICS, a sample of 580 clusters was selected and 578 of them were effectively visited by the field teams. The non visited clusters are located in the islands in the Atlantic sea (Manoka island and Bamusso island). The evaluation of the access cost to reach and work in these two clusters was particularly expensive. The household and individual response rates for the 2011 DHS-MICS are shown in Table 1.

A total of 15,050 households were selected for inclusion in the 2011 DHS-MICS, and of these, 14,354 were found to be occupied. Of the 14,354 occupied households, 14,214 were successfully interviewed, yielding a household response rate of 99 percent. In the interviewed households, a total of 15,852 women were identified to be eligible for the individual interview, and 97 percent of them were successfully interviewed. For men, 7,525 were identified as eligible for interview, and 96 percent of them were successfully interviewed. Contrary to the pattern in previous DHS, the response rates were almost the same for rural and for the urban areas.

Table 1. Results of the household and individual interviews					
Number of households, number of interviews, and response rates ,according to residence (unweighted), Cameroon, 2011					
	Residence				
	Yaounde/	Other			
Results	Douala	cities	Urban	Rural	Total
Household interviews					
Households selected	2 554	4 572	7 126	7 924	15 050
Households occupied	2 448	4 355	6 803	7 551	14 354
Households interviewed	2 394	4 317	6 711	7 503	14 214
Households response rate[1]	97.8	99.1	98.6	99.4	99.0
Interviews with women age 15-49					
Number of eligible women	2 963	5 066	8 029	7 823	15 852
Number of eligible women interviewed	2 811	4 961	7 772	7 654	15 426
Eligible women response rate[2]	94.9	97.9	96.8	97.8	97.3
Interviews with men 15-59 ans					
Number of eligible men	1 420	2 410	3 830	3 695	7 525
Number of eligible men interviewed	1 291	2 335	3 626	3 565	7 191
Eligible men response rate [2]	90.9	96.9	94.7	96.5	95.6

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

3.2 Characteristics of the respondents

 The women age 15-49 and the men age 15-59 are the targets of the 2011 DHS-MICS. For comparison needs, Table 2 shows the distribution of women and men age 15-49 years in the 2011 DHS-MICS sample, by background characteristics such as age, marital status, residence, region and education level.

The age distribution shows the steadily declines with increasing age and reveals the large proportion of young people. Respectively, forty four and forty two percent of women and men are 15 to 24 years old. This pattern is the illustration of the magnitude of the weight of young people among the population with high level of fertility.

Table 2. Background characteristics of respondents						

Percent distribution of women and men age 15-49 by selected background characteristics, Cameroon 2011

background characteristics	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
ages						
15-19	23.3	3 589	3 590	24.7	1 591	1 612
20-24	20.3	3 127	3 118	19.0	1 227	1 191
25-29	17.4	2 689	2 661	16.6	1 074	1 017
30-34	12.6	1 942	1 908	12.8	828	836
35-39	10.9	1 679	1 688	10.8	697	714
40-44	8.1	1 244	1 274	8.9	577	601
45-49	7.5	1 156	1 187	7.1	460	481
Religion						
Catholic	36.6	5 642	5 735	38.5	2 484	2 471
Protestant	33.8	5 221	5 415	30.3	1 953	2 104
Muslim	20.4	3 146	2 996	20.6	1 328	1 259
Animist	2.8	433	310	2.0	128	103
Other christian	2.5	390	398	2.3	151	147
Other	1.2	186	185	1.4	89	84
None	2.4	369	341	4.8	308	271
Missing	0.3	40	46	0.2	14	13
Marital status						
Never married	27.9	4 307	4 282	50.0	3 227	3 179
Married	49.2	7 584	7 301	34.5	2 226	2 183
Living together	14.3	2 208	2 504	11.3	732	806
Divorced/separated	5.7	881	865	3.7	237	250
Widowed	2.9	446	474	0.5	33	34
Residence						
Yaounde/Douala	22.5	3 467	2 811	23.3	1 501	1 174
Other Cities	31.4	4 842	4 961	32.6	2 106	2 146
Urbain	53.9	8 309	7 772	55.9	3 607	3 320
Rural	46.1	7 117	7 654	44.1	2 847	3 132
Region						
Adamaoua	4.8	746	1 279	4.1	262	469
Centre (Sans Yaounde)	7.1	1 092	1 233	8.3	534	566
Douala	11.1	1 712	1 459	11.0	707	604
Est	3.9	604	974	4.2	270	447
Extrême-Nord	16.1	2 490	1 666	14.8	956	625
Littoral (Sans Douala)	4.0	615	896	4.4	287	418
Nord	10.9	1 676	1 576	11.3	729	701
Nord-Ouest	9.9	1 521	1 601	8.2	529	563
Ouest	10.6	1 634	1 320	10.2	659	519
Sud	2.6	402	940	2.9	185	440
Sud-Ouest	7.6	1 180	1 130	8.4	543	530
Yaounde	11.4	1 755	1 352	12.3	794	570
Education						
No education	20.0	3 086	2 796	8.3	533	501
Primary	33.8	5 214	5 480	32.1	2 073	2 101
Secondary 1st level	27.1	4 185	4 399	31.1	2 005	2 080
Secondary 2nd level	13.6	2 099	2 027	19.1	1 234	1 243
High	5.5	842	724	9.4	610	527
Total 15-49	100.0	15 426	15 426	100.0	6 455	6 452
Men 50-59	Na	Na	na	Na	736	739
Total 15-59	Na	Na	na	na	7 191	7 191

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

Women who are in union (i.e., currently married or living with a man) constitute over three-fifths of all interviewed women (63 percent), and less half of men age 15-49 are currently in union (46 percent). The proportion of men age 15-49 who have never been married is higher than that of women who have never been married, 50 percent compared with 28 percent.

Table 2 also shows that over half of women (54 percent) and men (56 percent) live in urban areas. The three most populous regions are Far-North, West, and North where the majority of women and men live.

Educational attainment in Cameroon varies by sex. More women have never attended formal education than men (20 percent of women and 8 percent of men). More than one third of women and men have attended primary school only, compared to 41 percent of women and 50 percent of men who have attended secondary school. Smaller percentages of women and men have attended high school. Almost 6 percent of women and 9 percent of men have attended more than a secondary education.

The distribution of respondents by religion shows that almost seven-tenth of all respondents are Christians (70 percent of both women and men), while one fifth are Muslims (20 percent of women and 21 percent of men)

3.3 Fertility

To generate data on fertility, all women who were interviewed were asked to report the total number of sons and daughters to whom they had ever given birth in their lifetime. To ensure 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 sex, date of birth, and survival status of each child; age at death for dead children was also recorded.

Table 3. Current Fertility			
Age-specific rates and total fertility rate, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence,, Cameroon 2011			
	Residence		
Age group	Urban	Rural	Total
15-19	89	175	127
20-24	188	296	232
25-29	206	302	250
30-34	164	254	207
35-39	101	157	129
40-44	37	75	57
45-49	11	20	16
TFR (15-49)	4.0	6.4	5.1
GFR	141	223	178
CBR	34.6	41.3	38.1

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

Table 3 shows age-specific fertility rates of 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 in Cameroon would bear an average of 5.1 children in her lifetime. Fertility is substantially higher among rural women than among urban women; rural women will give birth to two more children during their reproductive years than urban women (6.4 and 4.0, respectively).

Figure 3 shows the trends in age-specific fertility rates between the 2004 CDHS and 2011 DHS-MICS surveys. This level of fertility is almost the same as reported in 2004.

Figure 2. Age-specific fertility rates by residence
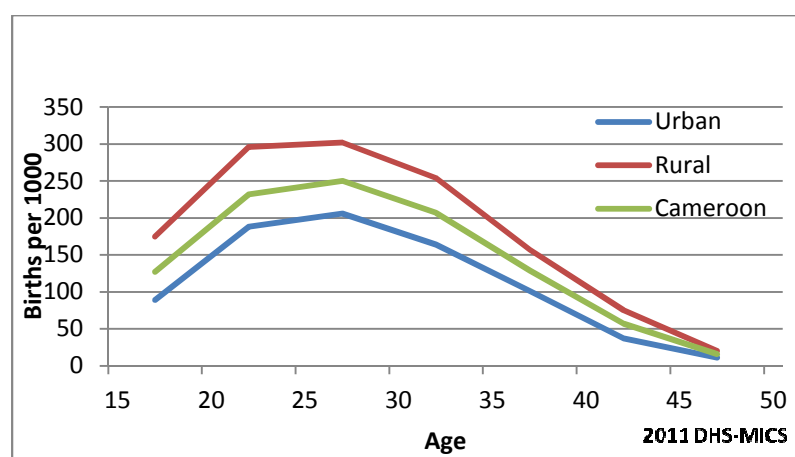
Figure 3. Trends in age-specific fertility rates
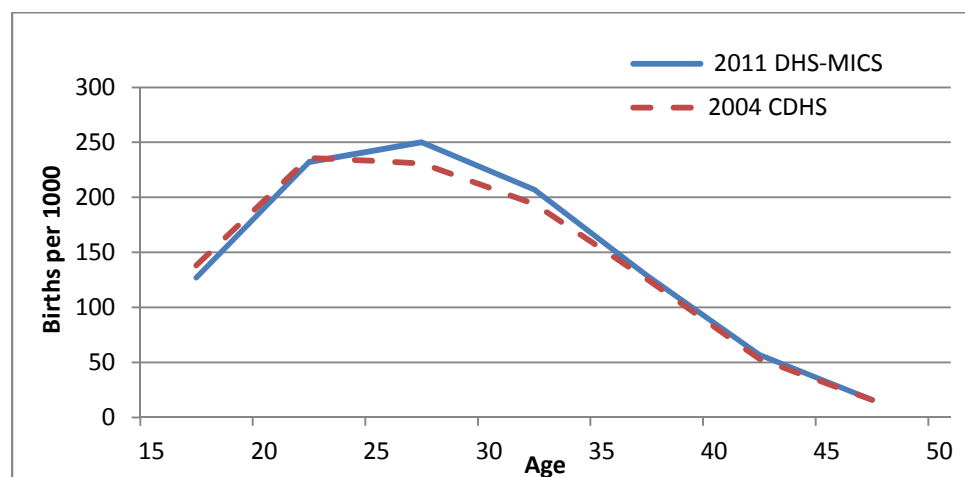
3.4 Fertility preferences

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 women (pregnant or not) on whether they want to have another child, and if so, how soon.

Table 4 shows that among women currently in union, 26 percent want no more children, so they expressed the child limitation need. On opposite side, globally, 66 percent want another child: 27 percent of women want to have another child soon (within the next two years) and 35 percent want to have another child later (in two or more years), that means they have expressed the need of child spacing. At last, four percent of women want to have another child, but do not know when.

Fertility preference is closely related to the number of living children. More than two-third of women with no living children (62 percent) want a child soon, compared with only 8 percent of women with six or more children. The more children a woman has, the higher the likelihood that she does not want another child.

11

Table 4. 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,, Cameroon 2011								
	Number of living children[1]							
Desire for children	0	1	2	3	4	5	6+	Ensemble
Have another soont[2]	61.7	39.1	32.4	27.0	19.2	12.3	8.5	27.0
Have another later[3]	18.6	46.7	50.2	43.3	35.5	25.9	14.1	35.0
Have another, undecided when	10.8	7.1	5.6	3.2	3.0	2.3	1.0	4.4
Undecided	0.8	1.6	1.6	4.1	5.6	4.5	4.6	3.3
Want no more	0.8	2.7	8.5	19.8	32.4	49.3	64.9	26.2
Sterilized[4]	0.1	0.1	0.2	0.5	1.1	1.0	0.9	0.5
Declare infecund	6.9	2.2	1.6	2.0	2.7	4.1	5.0	3.2
Missing	0.2	0.4	0.0	0.2	0.6	0.7	1.0	0.4
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	822	1 620	1 756	1 512	1 300	1 053	1 730	9 792

[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 sterilization

3.5 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. Information about the knowledge of family planning methods was collected from female and male respondents by asking them if they had heard of various specific methods by which a couple can delay or avoid a pregnancy. Respondents were also asked if they were currently using a method, and if so, which method they were using, and where they had obtained the method they were using.

Contraceptive methods are classified as modern or traditional methods. Modern methods include female sterilization, male sterilization, the pill, the intrauterine device (IUD), injectables, implants, male condom, female condom, diaphragm/foam/jelly, standard days method and lactational amenorrhoea method (LAM). Methods such as rhythm (periodic abstinence), withdrawal, and folk methods are grouped as traditional.

Table 5 shows the percent distribution of currently married women by the contraceptive method currently being used. Overall, 23 percent of currently married women are currently using a method of family planning (14 percent use is a modern method and 9 percent of currently married women are using a traditional method). Although the use modern contraceptive is still low, it has realized the slight increase from 12 percent to 14 percent. The most popular modern methods are male condoms (used by 7 percent of currently married women) and injectables (3 percent). Nearly two percent of married women reported using pills (1,9 percent). Less than 1 percent of married women reported using IUD and implants, and less than 1 percent reported having been sterilized. However, the use of traditional contraceptive is low and has dropped from 13 percent in 2004 to 9 percent in 2011. This drop down may be attributed to the fall-off a use of a rhythm method (10 percent in 2004 versus 7 percent in 2011).

The contraceptive prevalence rate (CPR) increases from age 15-19 to 20-24, and then declines to 13 percent among women 45-49 years. The CPR in Cameroon observed in the 2011 DHS-MICS has dropped slightly from that reported in the 2004 DHS-MICS (26 percent compared to 23 percent). The way CPR among urban women has slightly dropped in the last five years (36 to 33 percent), CPR has also failed from 16 percent in 2005 to 14 percent in 2011 among rural women. There are large differences in levels of contraceptive use by region. Douala and the South-west have the highest CPR at 40 percent. While about around one-tenth of married women in Adamaoua and East are using a method, the corresponding rate in both North and Far-North is below 5 percent.

Table 5. Current use of contraception by background characteristics

Percent distribution of currently married women age 15-49 by contraceptive method currently used, according to background characteristics, Cameroon 2011

Background characteristic	Any method	Any modern method	Modern method										Any tradi-tional method	Traditional method			Not currently using	Total	Number of women
			Female sterili-zation	Pill	IUD	Injec-tables	Implants	Male condom	Female condom	LAM	Other		Rhythm	With-drawal	Other			
Ages																		
15-19	16.1	12.2	0.0	4	.1	1.1	0.2	9.6	0.4	0.4	0.0	3.9	2.9	0.9	0.1	83.9	00.0	868
20-24	22.1	16.0	0.0	6	.1	1.8	0.7	11.5	0.1	0.3	0.1	6.1	4.1	1.3	0.7	77.9	00.0	1 935
25-29	24.8	15.6	0.3	1	.1	3.3	0.6	8.5	0.1	0.5	0.1	9.2	6.6	2.3	0.3	75.2	00.0	2 122
30-34	25.2	14.7	0.3	1	.2	4.0	0.6	7.4	0.0	0.1	0.0	10.4	7.9	2.3	0.2	74.8	00.0	1 617
35-39	27.4	15.6	1.1	9	.3	3.3	0.9	6.4	0.2	0.4	0.0	11.8	8.9	2.1	0.9	72.6	00.0	1 393
40-44	25.2	13.4	0.8	0	.0	4.7	1.3	3.3	0.1	0.2	0.0	11.8	9.7	1.6	0.5	74.8	00.0	998
45-49	17.9	8.8	2.1	6	.2	2.5	0.5	1.7	0.0	0.1	0.0	9.1	7.6	1.2	0.4	82.1	00.0	860
Residence																		
Yaounde :/Douala	39.0	22.9	0.3	4	.2	3.2	1.0	15.2	0.1	0.4	0.1	16.1	11.6	3.6	0.9	61.0	00.0	1 884
Other Cities	29.5	19.4	0.9	8	.4	3.8	0.9	10.0	0.1	0.4	0.0	10.1	8.0	1.8	0.4	70.5	00.0	2 750
Urban	33.4	20.8	0.7	7	.3	3.5	0.9	12.2	0.1	0.4	0.0	12.6	9.4	2.5	0.6	66.6	00.0	4 633
Rural	14.4	8.7	0.4	3	.2	2.5	0.5	3.5	0.1	0.3	0.0	5.7	4.3	1.1	0.3	85.6	00.0	5 158
Region																		
Adamaoua	11.1	10.6	1.1	2	.4	2.7	0.6	3.4	0.0	1.3	0.0	0.5	0.5	0.0	0.0	88.9	00.0	524
Centre (sans Yaounde)	33.6	24.6	0.3	2	.8	6.4	1.5	11.9	0.3	0.3	0.0	8.9	6.2	2.3	0.5	66.4	00.0	744
Douala	40.7	21.4	0.3	7	.2	2.3	0.8	15.5	0.1	0.4	0.1	19.3	13.2	4.9	1.2	59.3	00.0	936
Est	12.5	9.1	0.1	3	.0	1.6	0.5	5.6	0.0	0.0	0.0	3.4	3.2	0.1	0.1	87.5	00.0	433
Extrême-Nord	3.7	3.3	0.1	8	.0	1.6	0.0	0.5	0.0	0.3	0.0	0.3	0.2	0.0	0.1	96.3	00.0	1 986
Littoral (sans Douala)	29.7	16.4	0.7	0	.0	3.8	0.2	8.8	0.0	0.0	0.0	13.2	10.0	2.9	0.4	70.3	00.0	370
Nord	4.9	4.7	0.6	1	.1	2.0	0.4	0.4	0.1	0.0	0.0	0.2	0.2	0.0	0.0	95.1	00.0	1 245
Nord-Ouest	38.1	20.9	1.3	4	.0	3.4	1.0	11.5	0.0	0.3	0.0	17.2	12.9	3.7	0.6	61.9	00.0	704
Ouest	33.7	16.4	0.4	0	.2	2.2	1.1	11.0	0.2	0.3	0.0	17.3	13.4	3.2	0.7	66.3	00.0	994
Sud	32.4	22.9	0.5	7	.0	5.5	2.2	10.7	0.0	0.2	0.1	9.5	7.4	1.3	0.8	67.6	00.0	255
Sud-Ouest	40.0	22.5	1.8	3	.2	5.4	0.6	9.1	0.4	0.7	0.0	17.4	14.1	2.5	0.9	60.0	00.0	652
Yaounde	37.3	24.3	0.2	2	.2	4.0	1.1	15.0	0.1	0.4	0.1	13.0	10.0	2.3	0.6	62.7	00.0	948
Education																		
No education	4.1	3.3	0.5	7	.0	1.2	0.2	0.3	0.0	0.4	0.0	0.8	0.5	0.2	0.1	95.9	00.0	2 673
Primary	21.6	12.5	0.7	1	.3	3.7	0.6	4.8	0.1	0.3	0.0	9.1	6.9	1.8	0.4	78.4	00.0	3 677
Secondary	38.7	23.9	0.4	7	.3	3.9	1.2	14.8	0.2	0.3	0.0	14.8	11.1	2.9	0.8	61.3	00.0	3 037
Higher	51.7	34.3	0.4	4	.5	1.9	0.6	26.5	0.2	0.5	0.3	17.4	13.9	3.2	0.3	48.3	00.0	405
Number of living children																		
0	21.8	17.4	0.1	5	.0	0.2	0.4	16.0	0.1	0.0	0.1	4.4	3.5	0.6	0.3	78.2	00.0	1 064
1-2	21.7	14.5	0.1	7	.0	2.4	0.4	9.3	0.2	0.3	0.0	7.3	5.4	1.5	0.4	78.3	00.0	3 381
3-4	26.0	14.4	0.8	4	.3	3.6	0.8	6.1	0.1	0.4	0.0	11.6	8.7	2.3	0.5	74.0	00.0	2 723
5+	23.4	13.2	1.0	3	.5	4.3	1.1	3.5	0.1	0.3	0.0	10.2	7.7	2.1	0.4	76.6	00.0	2 624
Ensemble	23.4	14.4	0.5	9	.2	3.0	0.7	7.6	0.1	0.3	0.0	8.9	6.7	1.8	0.4	76.6	00.0	9 792

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

Figure 4. Trends in use of contraception (currently married women)
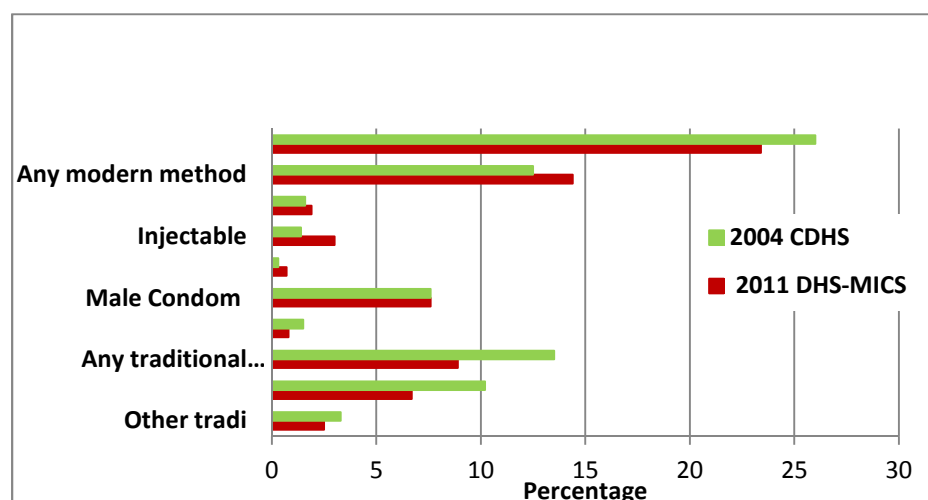
3.6 Maternal care and delivery

Proper care during pregnancy and delivery is important for the health of both the mother and the baby, and is the fifth Millennium Development Goal (MDG). In the 2011 DHS-MICS, 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 received tetanus toxoid injections while pregnant and whether they had obtained antenatal care during the pregnancy for their most recent live birth in the last five years. For each live birth over the same period, the mothers were also asked what type of assistance they received at the time of delivery. Table 8 summarizes information on the coverage of these maternal health services.

3.6.1 Antenatal Care

Antenatal care (ANC) from a trained provider is important to monitor the pregnancy and reduce morbidity and mortality risks for the mother and child during pregnancy and delivery. The 2011 DHS-MICS results show that 85 percent of women who gave birth in the five years preceding the survey received antenatal care from a trained health professional at least once for their last birth.

Antenatal care from a trained health professional reached high level since the 2004 CDHS estimate (83 percent). Urban women are more likely to have received ANC from a health professional than rural women (96 percent vs. 76 percent). Antenatal care is most common among women with more than secondary education (99 percent) but the women with no education (60 percent), those living in Far-north (59 percent) and North (72 percent) are the less likely beneficiaries of the antenatal care from a health professional.

3.6.2 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 8 indicates that 73 percent of pregnant women have their last births protected against neonatal tetanus. Births to mothers in North-west, West and Douala with a rate of more than 80 percent are most likely to be protected against neonatal tetanus compared with births to mothers in North (64 percent) and Far-north (55 percent).

3.6.3 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 and/or baby (Van Lerberghe, W., and V. De Brouwere, 2001; WHO, 2006). Table 8 shows that 64 percent of women reported that their most recent live birth in the last five years was delivered by a health professional.

Sixty-one percent of births were delivered in a health facility, the same level was reported in the 2004 CDHS (60 percent).

Table 6. Maternal care indicators						
Among women age 15-49 who had a live birth in the five years preceding the survey, percentage who received antenatal care from a skilled provider for the last live birth, percentage with antenatal care from a health extension worker for the last live birth, and percentage whose last live birth was protected against neonatal tetanus, and among all live births in the five years before the survey, percentage delivered by a skilled provider, percentage delivered by a health extension worker, and percentage delivered in a health facility, by background characteristics,, Cameroon 2011						
Background characteristic	Percentage with antenatal care from a skilled provider[1]	Percentage whose last live birth was protected against neonatal tetanus [2]	Number of women	Percentage delivered by a skilled provider	Percentage delivered in a health facility	Number of births
Mother's age at birth						
<20	84.9	68.2	1 367	60.6	57.7	2 295
20-34	85.5	74.8	5 212	64.7	62.6	8 106
35+	80.5	72.7	1 069	61.9	58.4	1 347
Residence						
Yaounde :/Douala	98.4	79.3	1 367	95.8	94.3	1 854
Other Cities	93.8	81.3	2 106	81.3	78.8	3 106
Urban	95.6	80.5	3 473	86.7	84.6	4 960
Rural	75.6	67.4	4 175	46.7	44.1	6 788
Region						
Adamaoua	87.8	71.7	387	47.4	45.8	596
Centre (sans Yaounde)	92.8	77.3	568	78.5	71.8	876
Douala	99.2	81.3	648	98.8	97.8	906
Est	85.4	75.8	327	48.9	46.2	500
Extrême-Nord	59.0	55.1	1 592	25.1	22.7	2 682
Littoral (sans Douala)	97.4	81.5	283	94.2	92.1	404
Nord	71.7	64.1	971	32.9	30.2	1 662
Nord-Ouest	97.6	88.5	649	93.6	93.7	905
Ouest	98.9	87.7	820	95.8	93.9	1 314
Sud	94.2	78.3	198	82.2	77.2	283
Sud-Ouest	91.3	78.2	485	80.1	78.1	672
Yaounde	97.6	77.5	719	92.9	90.9	948
education[3]						
No education	60.2	54.1	2 020	22.9	20.7	3 359
Primary	89.1	77.6	2 910	69.2	66.3	4 639
Secondary	98.1	82.7	2 454	92.5	90.2	3 398
Higher	99.1	85.8	263	99.2	99.8	353
Total	84.7	73.3	7 647	63.6	61.2	11 748

[1] Skilled provider includes doctor, nurse, midwife, or other health personnel
[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 5the last within ten years of the last live birth), or five or more injections at any time prior the last live birth

Eighty-seven percent of births to urban mothers were attended by a health professional and 85 percent were delivered in a health facility, compared with 47 percent and 44 percent, respectively, of births to rural women. Mothers residing in Far-North (25 percent), North (33 percent), Adamaoua (47 percent) and East (49 percent) are the less likely to be attended to at delivery by a health professional and the less likely to deliver in a health facility (23 percent, 30 percent, 46 percent and 46 percent, respectively) compared with mothers of other regions.

Mothers' educational status is highly correlated with whether delivery is assisted by a health professional and whether the birth is delivered in a health facility. For example, 23 percent of births to mothers with no education were attended by a health professional and 21 percent delivered in a health facility compared with between 93 and 90 percent of births to mothers with some secondary education.

Figure 5. Trends in maternal care Indicators
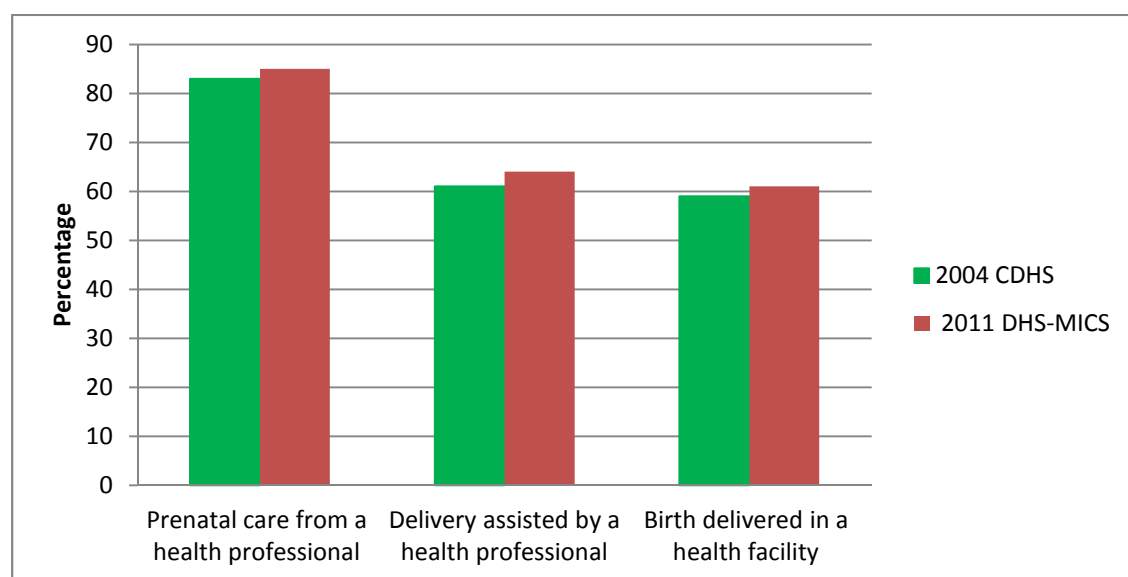
3.7 Child health and nutrition

The 2011 DHS-MICS collected data on a number of key child health indicators, including immunization of young children, infant feeding practices, and treatment practices when a child is ill.

3.7.1 Vaccination of Children

According to the World Health Organization (WHO), a child is considered fully vaccinated if he or she has received a BCG vaccination against tuberculosis; three doses of DPT vaccine to prevent diphtheria, pertussis, and tetanus (DPT); at least three doses of polio vaccine; and one dose of measles vaccine. These vaccinations should be received during the first year of life. The 2011 DHS-MICS collected information on the coverage for these vaccinations among all children born in the five years preceding the survey. In Cameroon, since 2007, three doses of pentavalent vaccine (DPT-HepB-Hib) are given in place of the three doses of DPT vaccine. BCG vaccine should be given at birth, and pentavalent or polio vaccines should be given at approximately 3, 4, and 5 months of age. Measles vaccine should be given at or soon after the child reaches nine months of age. It is also recommended that children receive the complete schedule of vaccinations before their first birthday, and that the vaccinations be recorded on a vaccination card that is given to the parents or guardians.

In the 2011 DHS-MICS, information on vaccination coverage was obtained in two ways: from health cards and from mothers' verbal reports. All mothers were asked to show the interviewer the health cards for all children born since January 2005 where immunization dates are recorded. If the card was available, the interviewer then recorded from the cards the dates of each vaccination received onto the questionnaire. If a child never received a health card, or if the mother was unable to show the card to the interviewer, the child's vaccination information was based on the mother's recall. The mother was asked to recall whether the child had received BCG, polio, DPT and measles vaccines. If she indicated that the child had received the polio or DPT vaccines, she was asked about the number of doses that the child received. The mother was then asked whether the child had received other vaccinations that were not recorded on the card, and if so, they too were recorded. The results presented here are based on both health card information and, for those children without a card, information provided by the mother.

Table 7 pertains to children age 12-23 months, the age by which they should have received all vaccinations. Mothers were able to produce health cards for 57 percent of these children. Overall, 53 percent of children aged 12-23 months are fully vaccinated and 5 percent of children were reported to have not received any vaccinations. The others (42 percent) were partially vaccinated. Over 87 percent of children received BCG, 93 percent of children received the first dose of polio vaccine, and 86 percent of children received the first dose of DPT. Coverage rates for all three of these vaccines have lightly

increased since the 2004 CDHS estimates. Sixty-eight percent of children completed the required three doses of the DPT and 70 percent completed the required polio vaccines. Coverage of vaccination against measles is 71 percent.

Children in urban areas are more likely than rural children to be fully vaccinated (63 percent compared with 46 percent, respectively). Regionally, children with full vaccination coverage range from a high of 83 percent in North-west and 75 percent in South-west to a low of 31 percent in Far-north.

Table 7. Vaccinations by background characteristics												
Percentage of children age 12-23 months who received specific vaccines at any time before the survey by source of information (vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics,, Cameroon 2011												
Caracteristique sociodemographique	BCG	DPT 1	DPT 2	DPT 3	Polio 0[1]	Polio 1	Polio 2	Polio 3	Measles	All basic vacci-nations[2]	No Vaccina-Tions	Percentage with a vaccination card	Number of children
Sex												
Male	86.6	84.6	78.4	68.1	70.0	93.6	86.7	70.4	70.0	52.2	4.4	54.3	1 113
Female	87.5	86.4	78.3	68.6	73.3	93.0	84.3	69.2	71.1	54.1	4.8	59.6	1 152
Residence												
Yaounde/Douala	95.6	92.8	87.2	81.4	89.2	95.0	89.5	73.1	81.3	63.1	3.4	68.6	385
Other Cities	94.5	92.4	87.6	78.7	86.0	94.5	89.0	73.8	79.0	62.9	3.4	61.3	564
Urban	94.9	92.5	87.4	79.8	87.3	94.7	89.2	73.5	79.9	63.0	3.4	64.3	950
Rural	81.4	80.5	71.8	60.1	60.4	92.3	82.8	67.1	63.8	46.1	5.5	51.7	1 315
Region												
Adamaoua	89.4	91.6	84.1	69.0	74.3	95.7	89.0	76.1	64.0	53.7	2.9	73.1	111
Centre (sans Yaounde)	92.6	87.9	84.6	75.5	73.7	91.3	82.8	66.9	73.0	51.6	4.8	46.7	168
Douala	98.1	96.7	91.1	84.1	92.5	97.5	92.1	74.7	84.8	67.3	1.9	73.2	168
Est	91.0	91.4	82.0	65.9	65.4	92.5	77.0	57.4	74.4	47.3	4.3	48.0	93
Extrême-Nord	69.6	69.4	58.9	45.2	40.4	91.6	80.8	61.0	52.4	30.9	7.6	39.5	476
Littoral (sans Douala)	98.3	96.9	88.3	80.9	90.7	95.7	88.2	75.7	85.6	66.3	0.8	66.0	90
Nord	74.8	71.8	60.9	48.9	55.1	89.7	78.1	61.4	51.7	38.1	7.5	46.9	286
Nord-Ouest	98.3	97.8	97.8	95.4	96.7	98.3	98.3	86.7	93.1	82.5	1.7	83.9	199
Ouest	95.9	94.4	87.0	75.5	84.4	92.5	87.5	76.6	79.8	63.7	2.3	52.2	272
Sud	91.1	85.6	70.5	56.7	65.0	96.0	76.5	50.6	69.5	35.2	4.0	40.8	53
Sud-Ouest	95.4	95.1	93.9	88.7	95.0	94.8	91.8	81.1	82.6	75.2	4.6	83.5	132
Yaounde	93.6	89.7	84.1	79.3	86.6	93.0	87.4	71.9	78.6	59.9	4.5	65.1	217
Education												
No education	71.1	70.9	59.1	45.1	43.9	92.2	79.0	58.3	51.3	32.2	6.2	43.1	565
Primary	87.6	85.9	79.6	69.4	72.7	92.2	86.3	72.1	70.1	54.3	6.0	59.0	888
Secondary	97.5	95.3	90.3	82.7	89.9	94.9	88.3	74.1	84.4	65.9	2.1	63.0	740
Higher	98.9	95.6	90.9	89.8	90.4	98.9	98.2	87.7	84.6	73.9	1.1	79.7	73
Total	87.1	85.5	78.3	68.4	71.7	93.3	85.5	69.8	70.6	53.2	4.6	57.0	2 265

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

Figure 6. Trends in immunization coverage (children age 12-23 months)

17
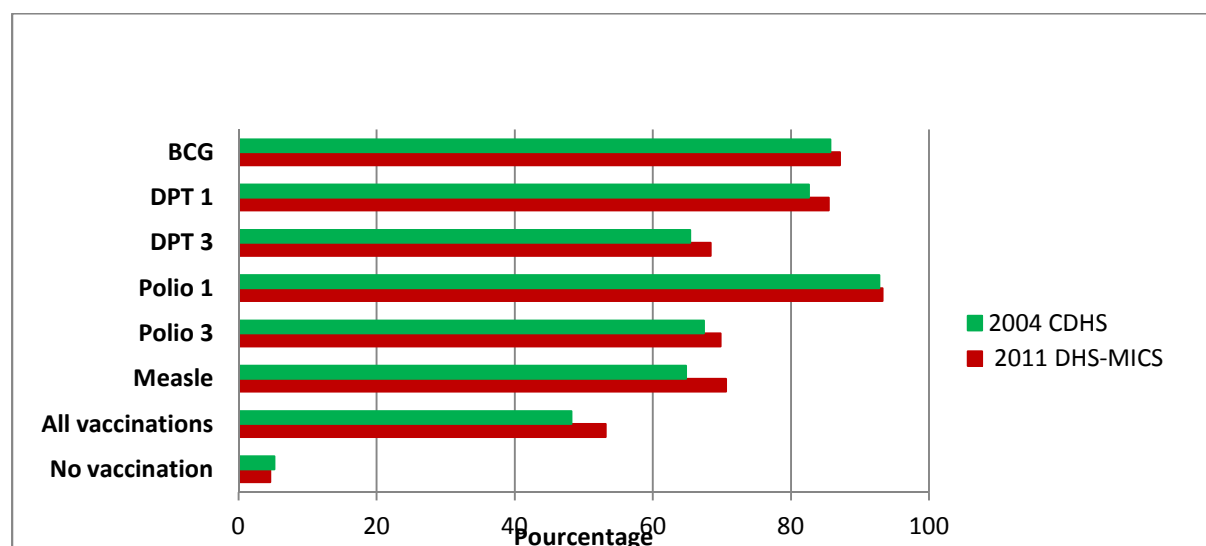
3.7.2 Childhood Acute Respiratory Infection, Fever, and Diarrhoea

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 2011 DHS-MICS, 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 (symptoms of ARI), or fever in the two 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, 26 percent exhibited fever, and 21 percent experienced diarrhoea in the two 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.

Figure 7. Childhood illness (under 5) and treatment/advice sought
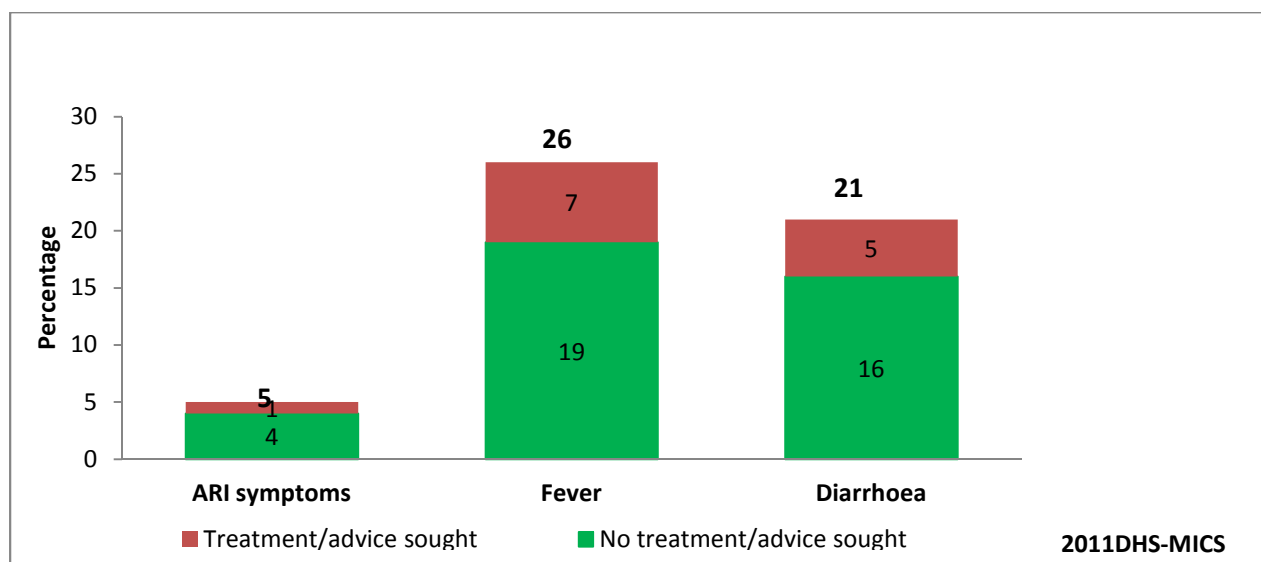
Table 8 shows that treatment from a health facility or provider was sought for 30 percent of the children with ARI symptoms and 27 percent of the children with fever symptoms. Treatment was sought from a health facility or health provider for 23 percent of children with diarrhoea, and 22 percent of children with diarrhoea received a rehydration solution from an ORS packet or a recommended home fluid. Children of urban mothers were more likely than children of rural mothers to receive treatment from a health facility or health provider when they were sick with symptoms of ARI, fever, or diarrhoea.

| Table 8. Treatment for acute respiratory infection, fever, and diarrhea | | | | | | | |

Among children under five years who had symptoms of acute respiratory infection (ARI) or were sick with fever in the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, and among children under five years who were sick with diarrhoea during the two weeks preceding the survey, percentage for whom treatment was sought from a health facility or provider, percentage given a solution made from oral rehydration salt (ORS) packets or given prepackaged ORS liquids, and percentage given any oral rehydration therapy (ORT) by background characteristics,, Cameroon 2011

| Background characteristic | Children with symptoms of ARI[1] | | Children with fever | | Children with diarrhoea | | | |
	Percentage for whom treatment was sought from a health facility/ provider[2]	Number with ARI	Percentage for whom treatment was sought from a health facility/ provider[2]	Number with fever	whom treatment was sought from a health facility/ provider[2]	Percentage given solution from ORS packet	Percentage given any ORT[3]	Number with diarrhoea
Age in months								
< 6	16.2	60	23.2	181	14.0	9.7	10.1	123
6-11	33.8	88	32.1	404	25.7	18.3	25.9	349
12-23	31.2	155	28.8	709	27.9	24.2	28.9	778
24-35	33.6	112	26.7	560	19.4	12.1	16.1	462
36-47	31.4	86	22.9	505	21.0	12.0	17.6	316
48-59	26.8	77	25.5	419	14.7	13.1	17.8	215
Sex								
Male	31.6	293	27.8	1 429	24.5	16.6	21.6	1 141
Female	28.3	285	26.0	1 348	21.1	17.8	22.6	1 102
Residence								
Yaounde/Douala	31.9	123	36.7	403	30.5	28.8	40.4	283
Other Cities	39.7	111	33.5	722	27.9	25.3	31.1	536
Urban	35.6	233	34.6	1 125	28.8	26.5	34.3	819
Rural	26.1	345	21.7	1 653	19.3	11.8	15.1	1 424
Region								
Adamaoua	(42.6)	24	31.8	98	31.4	19.5	20.7	73
Centre (Yaounde excluded)	(28.8)	41	28.5	261	21.7	14.4	27.3	130
Douala	21.0	58	31.0	163	25.6	25.6	31.3	97
Est	*	14	30.0	91	32.5	24.4	29.6	84
Extrême-Nord	20.6	142	12.9	679	15.7	8.1	9.9	733
Littoral (Douala excluded)	*	7	49.5	87	37.9	31.1	34.9	60
Nord	13.0	81	15.0	509	15.3	12.7	15.0	521
Nord-Ouest	62.2	63	50.5	135	39.9	42.0	47.2	74
Ouest	(22.4)	46	39.2	241	36.0	24.9	33.3	174
Sud	*	8	37.0	72	37.1	24.5	29.6	39
Sud-Ouest	(37.9)	30	35.0	203	31.3	30.8	42.4	73
Yaounde	(41.8)	64	40.6	241	33.1	30.6	45.1	186
Mother's education[3]								
No education	16.0	166	11.9	856	14.4	10.8	12.2	862
Primary	33.7	217	28.5	1 078	23.6	15.4	21.1	872
Secondary	39.3	168	38.5	762	35.4	30.2	39.2	476
Higher	*	28	55.0	83	39.9	41.5	(62.1)	33
Ensemble	29.9	578	26.9	2 778	22.8	17.2	22.1	2 243

Note: 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) is considered a proxy for pneumonia
[2] Excludes pharmacy, shop, and traditional practitioner.
[3] Includes ORS from packets, prepackaged ORS liquids, and recommended home fluid.

3.8 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 retract, hence reducing the mother's postpartum blood loss. Supplementing breast milk before the child is 6 months of age is discouraged because it may inhibit breastfeeding and expose the newborn 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 (PAHO, 2002).

The 2011 DHS-MICS collected data on infant and young child feeding (IYCF) practices for all children born in the two years preceding the survey. As shown in Table 9, 20 percent of children under 6 months (age 0-5 months) are exclusively breastfed. In addition to breast milk, 37 percent of infants under 6 months are given plain water only, while 9 percent are given milk other than breast milk and 6 percent are given non-milk liquids and juice. Furthermore, 26 percent of infants under 6 months are given complementary foods. By age 6-9 months, 76 percent of infants are given complementary foods. Fifteen percent of infants under 6 months are fed using a bottle with a nipple, a practice that is discouraged because of the risk of illness to the child.

				Breast-feeding status							
Table 9. Breastfeeding status by age											
Percent distribution of youngest children under two years who are living with their mother, by breastfeeding status and the percentage currently breastfeeding; and the percentage of all children under two years using a bottle with a nipple, according to age in months,, Cameroon 2011											
	Percent distribution of youngest children under two living with their mother by breastfeeding status										
Age in months	Not Breast-feeding	Exclu-sively Breastfed	Breast-feeding and consuming plain water only	Breast-feeding and consuming non-milk liquids/ juice	Breast-feeding and consuming other milk	Breast-feeding and comple-mentary foods	Total	Percentage currently breastf-eeding	Number of youngest children under two years	Percentage using a bottle with a nipple	Number of all children under two years
0-1	2.6	31.4	43.2	5.9	11.6	5.3	100.0	97.4	307	12.0	316
2-3	1.1	21.8	38.0	8.3	10.6	20.3	100.0	98.9	431	15.1	440
4-5	4.0	9.9	31.1	3.6	4.8	46.6	100.0	96.0	401	18.0	414
6-8	4.1	1.8	14.4	3.3	3.0	73.4	100.0	95.9	602	15.1	619
9-11	9.5	0.6	4.8	1.3	0.8	83.0	100.0	90.5	586	13.1	603
12-17	29.9	0.5	2.5	0.1	0.2	66.8	100.0	70.1	1 194	7.0	1 256
18-23	70.6	0.0	0.4	0.0	0.3	28.7	100.0	29.4	897	3.9	1 009
0-3	1.7	25.8	40.1	7.3	11.0	14.1	100.0	98.3	738	13.8	756
0-5	2.5	20.2	37.0	6.0	8.8	25.5	100.0	97.5	1 138	15.3	1 170
6-9	4.7	1.4	12.5	2.5	2.6	76.3	100.0	95.3	814	14.7	838
12-15	22.3	0.5	2.9	0.1	0.1	74.1	100.0	77.7	789	8.3	826
12-23	47.4	0.3	1.6	0.1	0.2	50.4	100.0	52.6	2 091	5.6	2 265
20-23	75.7	0.0	0.3	0.0	0.5	23.5	100.0	24.3	563	3.1	650

Note: Breastfeeding status refers to a "24-hour" period (yesterday and last night). Children who are classified as breastfeeding and consuming plain water only consumed no liquid or solid supplements. The categories of not breastfeeding, exclusively breastfed, breastfeeding and consuming plain water, non-milk liquids/juice, other milk, and complementary foods (solids and semi-solids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and non-milk liquids and who do not receive other milk and who do not receive complementary foods are classified in the non-milk liquid category even though they may also get plain water. Any children who get complementary food are classified in that category as long as they are breastfeeding as well.

Figure 8 : Trends in breastfeeding and consuming (children under 6 months)
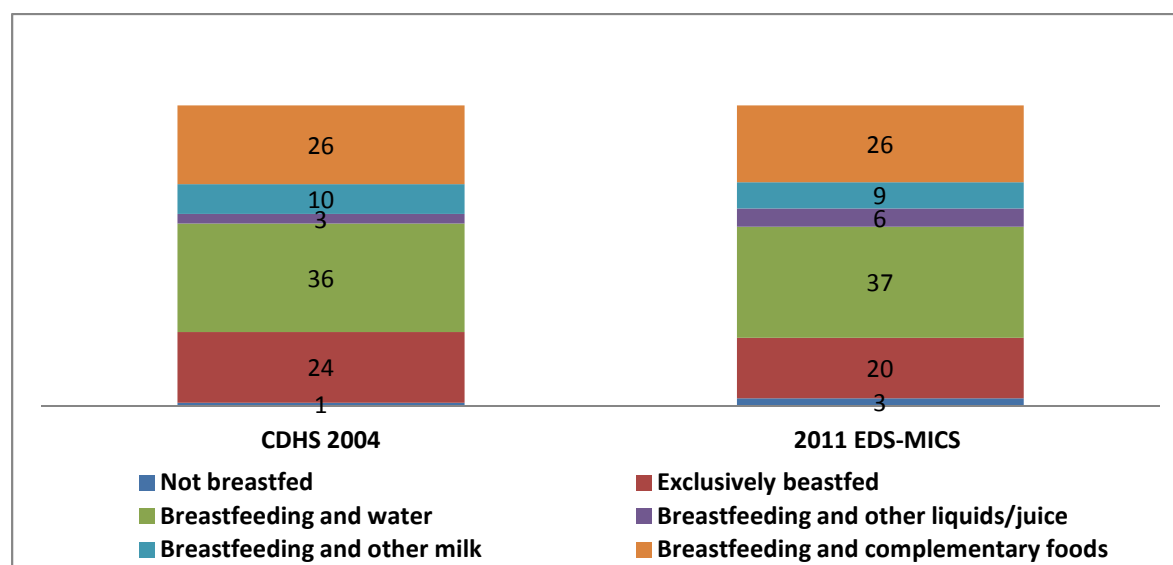
3.9 Nutritional status of children

Anthropometric indicators were collected in the 2011 DHS-MICS for young children to provide measures of nutritional status. As recommended by the WHO, evaluation of nutritional status in this report is based on a comparison of height and weight for the children in this survey with data for a reference population of well-nourished children (WHO Multicentre Growth Reference Study Group, 2006).

Importantly, however, the WHO Child Growth Standards reference population used for the 2011 DHS-MICS differs from that used in past DHS and MICS surveys, and thus the measures from the 2011 DHS-MICS are not directly comparable to previous DHS or MICS results.

The three indices 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 median of the reference population are considered severely malnourished.

Table 10 shows nutritional status for children under age 5 years, according to the three anthropometric indices, by background characteristics. Height-for-age is the measure of linear growth. A child who is below minus two standard deviations from the reference mean for height-for-age is considered short for his/her age, or stunted, a condition reflecting the cumulative effect of chronic malnutrition. The percentage of children who are stunted (below -2 SD) is 33 percent; of which nearly half (14 percent) are severely stunted. In the 2011 DHS-MICS, results show small differences by sex. In rural areas, 41 percent of children are stunted, versus 22 percent of children in urban areas. Twenty percent or more of children are stunted in all regions except Yaoundé (13 percent) and Douala (13 percent). Stunting steadily decreases as level of mother's education increases, from a high of 46 percent among children of mothers with no education to a low of 7 percent among children of mothers with more than secondary education.

Table 10. Nutritional status of children

Percentage of children under five years classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height,and weight-for-age, by background characteristics, Cameroon 2011

	Height-for-age[1]		Weight-for-height			Weight-for-age			
Background characteristic	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Number of children
Age in moonths									
<6	4,0	12,1	2,6	9,8	12,3	1,8	7,1	5,0	546
6-8	4,8	11,8	3,9	10,4	6,5	4,9	15,6	5,7	339
9-11	7,9	16,5	1,9	9,2	7,1	3,7	14,6	3,9	340
12-17	10,4	27,4	3,8	10,5	4,8	6,7	15,6	3,5	694
18-23	17,3	42,4	2,3	6,5	5,4	6,0	18,1	2,4	565
24-35	20,0	42,3	1,6	3,6	6,5	4,6	15,4	0,7	1 134
36-47	16,8	38,7	0,8	2,8	5,2	4,5	14,8	0,4	1 135
48-59	15,9	35,5	0,8	2,6	4,7	3,9	14,6	0,7	1 107
Sex									
Male	16,4	35,1	2,5	6,5	7,3	5,0	15,1	2,3	2 862
Female	11,9	30,0	1,3	4,8	5,1	4,1	14,2	1,7	2 998
Residence									
Yaounde/Douala	3,9	12,8	1,2	2,4	8,2	0,8	3,4	2,6	918
Autres villes	9,7	27,0	0,7	3,3	6,4	1,7	9,4	2,6	1 603
Ensemble urbain	7,6	21,9	0,9	3,0	7,0	1,4	7,2	2,6	2 521
Rural	19,1	40,5	2,6	7,6	5,5	6,9	20,2	1,5	3 339
Region									
Adamaoua	18,2	39,8	0,8	6,4	6,2	4,4	20,8	1,0	316
Centre (sans Yaounde)	8,5	23,4	0,6	4,3	5,1	1,9	8,3	3,0	414
Douala	4,3	12,9	1,2	2,5	8,5	0,5	3,2	1,7	477
Est	16,5	37,3	2,2	5,9	6,2	5,3	15,4	0,6	263
Extrême-Nord	25,5	44,9	4,1	11,8	2,4	11,3	31,6	1,4	1 195
Littoral (sans Douala)	7,3	24,4	0,0	1,2	11,1	1,2	4,7	5,2	226
Nord	17,9	40,2	3,4	10,2	1,8	7,9	23,6	0,5	759
Nord-Ouest	14,4	35,6	0,7	2,1	11,2	1,5	7,1	3,2	542
Ouest	10,1	32,0	0,4	0,7	10,7	1,0	4,9	2,6	702
Sud	12,8	33,1	2,9	4,5	4,9	3,3	10,1	0,8	158
Sud-Ouest	8,1	27,0	0,4	2,8	4,8	1,3	8,0	2,1	367
Yaounde	3,5	12,8	1,3	2,3	7,8	1,2	3,6	3,6	441
Mother's education[3]									
No education	24,7	45,5	4,2	11,6	2,4	11,6	31,2	1,0	1 383
Primary	12,7	33,5	1,2	4,7	6,6	3,0	11,4	1,9	2 200
Secondary	5,7	19,9	1,1	3,1	8,8	1,2	5,4	2,6	1 482
Higher	3,2	7,1	0,0	1,7	8,4	0,0	1,5	2,5	175
Mother's interview status									
Mother interviewed	13,5	32,0	1,9	5,9	6,2	4,6	14,6	1,9	5 114
Mother not interviewed, but in household	14,4	30,3	2,6	6,9	3,5	7,1	14,9	2,0	127
Mother not interviewed, not in household[4]	19,1	37,5	1,6	2,9	6,1	3,8	14,8	3,0	615
Total	14,1	32,5	1,9	5,6	6,2	4,5	14,6	2,0	5 860

Note: Table is based on children who spent the night before the interview in the household. 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. Figures in parentheses are based on 25-49 unweighted cases. Total includes 7 children missing information on mother's interview status.
[1] Recumbent length is measured for children under age 2 and less than 85 cm; standing height is measured for all other children.
[2] Includes children who are below -3 standard deviations (SD) from the WHO Child Growth Standards population median
[3] For women who are not interviewed, information is taken from the Household Questionnaire. Excludes children whose mothers are not listed in the Household Questionnaire.
[4] Includes children whose mothers are deceased

Weight-for-height describes current nutritional status. A child who is below minus two standard deviations from the reference mean for weight-for-height is considered too thin for his/her height, or wasted, a condition reflecting acute or recent nutritional deficit. Overall, 6 percent of children are wasted and one-third (2 percent) are severely wasted. The results show that the children under age 18 months are highly wasted (9 percent) Differences are observed by urban-rural residence, with 3 percent of urban children being wasted compared with 8 percent of rural children. A higher percentage of children were found to be wasted in the Far-north region (12 percent) and in the North region (10 percent) than any other region. Wasting is highest among children of mothers with no education (12 percent) and lowest among children of mothers with more than secondary education (2 percent).

More and more children in developing countries are concerned by the overweight or the obesity. This phenomenon would constitute in the near future a serious forthcoming public health problem. A child who is over plus two standard deviations from the reference mean for weight-for-height is considered too fat for his/her height. He/she is concerned by overweight or by obesity. While 6 percent of children are wasted, in opposite, the same percentage (6 percent) of children is affected by the overweight or by the obesity. As expected, the regions with higher wasting rate have lowest rate of children affected by the overweight or the obesity.

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). A child can be underweight for his/her age because he or she is stunted, wasted, or both. Weight-for-age is an overall indicator of a population's nutritional health. Overall, 15 percent of all children are underweight, and 5 percent of children are severely underweight. A higher percentage of rural children are underweight compared with urban children (20 and 7 percent, respectively). Far-north region (32 percent) has the greatest percentage of children who are underweight and West region has the lowest rate. The percentage of children who are underweight is fifty times higher for those born to uneducated mothers as for those whose mothers have more than secondary education (31 percent versus 2 percent).

3.10 Anaemia prevalence

The 2011 DHS-MICS measured haemoglobin levels to identify anaemia in women and children. Anaemia tests were conducted on 98 percent of the 5432 eligible children, and on 95 percent of the 7811 eligible women.

3.10.1 Anaemia prevalence in children

Anaemia is a serious concern for young children because it can result in impaired cognitive performance, behavioural and motor development, coordination, language development, and scholastic achievement, as well as increased morbidity from infectious diseases. Information on anaemia prevalence can be useful for developing health intervention programmes designed to prevent anaemia, such as iron fortification programmes.

Table 11 shows that 60 percent of children age 6-59 months are anaemic; 27 percent have mild anaemia, 31 percent have moderate anaemia, and 2 percent have severe anaemia. Children in rural areas (63 percent) have a higher anaemia prevalence compared with children in urban areas (57 percent). Among the regions, anaemia prevalence ranges from a high of 74 percent in South to a low of 46 percent in West.

3.10.2 Anaemia prevalence in women

A woman's nutritional status has important implications for the health status of herself and her children. A woman who has poor nutritional status has a greater risk of adverse pregnancy outcomes as well as underweight babies. Table 11 shows that 40 percent of women age 15-49 are anaemic; 30 percent have mild anaemia, 9 percent have moderate anaemia, and 1 percent has severe anaemia.
Although there is moderate variation by urban-rural residence, differences vary greatly by region, ranging from a high of 54 percent having anaemia in South-west to a low of 23 percent in west region.

Table 11. 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, Cameroon 2011					
		Percentage with anaemia			
Background characteristic	Any anaemia	Mild anaemia	Moderate anaemia	Severe anaemia	Number
CHILDREN					
Residence					
Yaounde/Douala	55.2	31.4	23.5	0.3	840
Other cities	57.2	26.4	29.5	1.3	1 504
urban	56.5	28.2	27.3	0.9	2 344
Rural	63.2	26.9	33.9	2.4	3 088
Region					
Adamaoua	61.9	26.2	33.1	2.6	289
Centre (sans Yaounde)	65.8	23.5	38.7	3.6	375
Douala	62.5	34.2	27.9	0.3	447
Est	66.8	26.6	38.4	1.9	238
Extrême-Nord	63.5	29.4	32.8	1.2	1 132
Littoral (sans Douala)	56.8	28.2	27.8	0.8	210
Nord	68.2	26.9	38.8	2.5	703
Nord-Ouest	52.4	28.4	22.3	1.8	515
Ouest	45.5	22.7	21.4	1.4	643
Sud	73.6	28.1	41.2	4.4	148
Sud-Ouest	69.9	25.1	42.2	2.7	340
Yaounde	46.9	28.2	18.5	0.2	394
Total	60.3	27.4	31.1	1.7	5 432
WOMEN					
Residence					
Yaounde/Douala	44.8	36.7	7.6	0.5	1 777
Other cities	38.9	29.2	9.3	0.4	2 423
urban	41.4	32.4	8.6	0.5	4 200
Rural	37.3	27.6	8.9	0.8	3 611
Region					
Adamaoua	35.9	25.1	9.6	1.1	378
Centre (sans Yaounde)	48.0	36.5	10.6	1.0	518
Douala	53.2	42.2	10.1	0.9	930
Est	43.4	34.9	8.2	0.2	312
Extrême-Nord	36.5	27.3	8.1	1.1	1 276
Littoral (sans Douala)	37.6	29.6	7.4	0.6	316
Nord	40.7	27.4	12.5	0.7	802
Nord-Ouest	30.3	25.1	5.2	0.1	792
Ouest	23.1	17.8	5.1	0.1	848
Sud	52.6	36.0	15.6	1.0	205
Sud-Ouest	53.5	38.6	14.4	0.6	586
Yaounde	35.6	30.6	4.9	0.1	846
Total	39.5	30.2	8.7	0.6	7 811

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 non-pregnant women with 10.0-11.9 g/dl and children and pregnant women with 10.0-10.9 g/dl have mild anaemia.

Anaemia levels have decreased by almost 8 percentage points among children and 5 percentage points among women in the last seven years. In the 2004 CDHS, 68 percent of children and 45 percent of women had anaemia, compared to 60 percent of children and 40 percent of women in 2011. This decrease is mostly seen among those with moderate anaemia which has decreased from 40 percent to 31 percent among children, and from 12 percent to 9 percent among women.

Figure 9. Trends in anaemia prevalence among children age 6-59 months and women age 15-49.
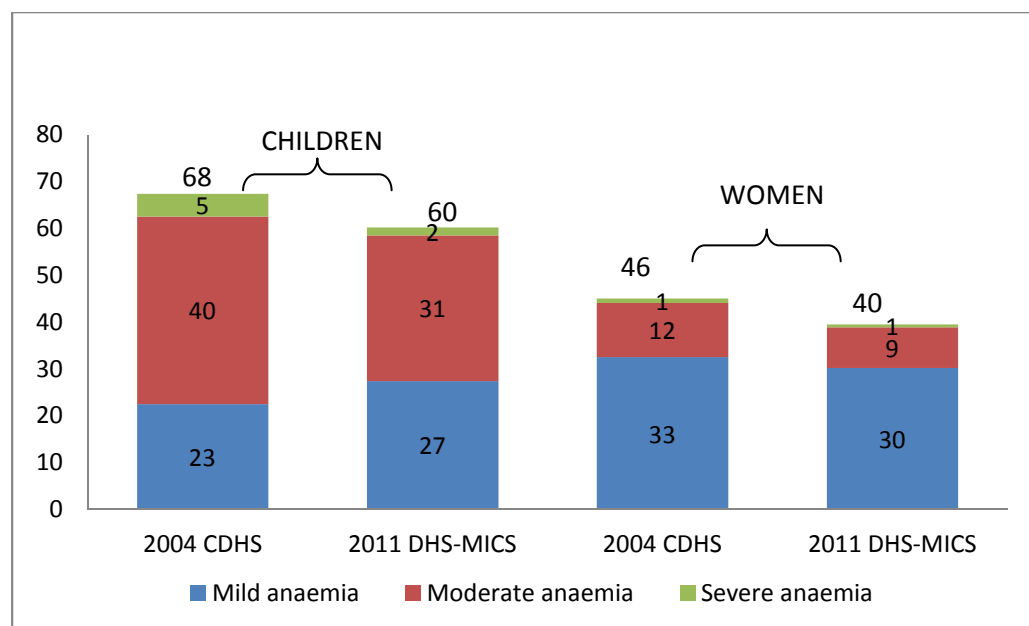
3.11 Malaria indicators

Malaria is one of the leading causes of death in developing countries (WHO, 2008). The 2011 DHS MICS collected data on measures to prevent malaria, including the use of mosquito nets among women and children and the prophylactic use of antimalarial drugs.

3.11.1 Ownership of Mosquito Nets

Table 12 shows that 52 percent of households nationwide own at least one mosquito net of any type, and 36 percent own more than one. Forty-two percent of households own at least one insecticide-treated net (ITN). More rural (54 percent) than urban (50 percent) households own at least one net. Ownership of ITNs also differs by urban-rural residence (38 percent for rural households and 35 percent for urban households).

The 2011 DHS-MICS shows that Cameroon has made great progress in net ownership between 2004 and 2011. In the 2004 DHS, only 20 percent of households owned at least one mosquito net, and 2 percent owned at least one ITN.

3.11.2 Use of Mosquito Nets

Table 12 also shows that a total of 28 percent of children under age 5 slept under a mosquito net the night before the survey. Thirty-four percent of children under age 5 in urban areas slept under a mosquito net the night before the survey compared with 24 percent in rural areas. The data are similar for children under age 5 sleeping under an ITN the night before the survey: 21 percent total in Cameroon, 24 percent in urban areas, and 19 percent in rural areas. Among households with an ITN, 50 percent of children under age 5 in urban areas were reported to have slept under an ITN the night before the survey compared with 39 percent in rural areas. Overall, 28 percent of pregnant women age 15-49 slept under a mosquito net the night before the survey, 32 percent in urban areas versus 24 percent in rural areas. Among households with an ITN, 53 percent of pregnant women in urban areas and 42 percent of women in rural areas slept under an ITN the night before the survey.

3.11.3 Indoor Residual Spraying

Table 12 shows that less than one percent of households reported that the walls of their homes were sprayed.

Table 12. Malaria indicators						

Possession and use of mosquito nets, indoor residual spraying, preventive malaria treatment during pregnancy, and treatment of children with fever using antimalarial drugs, by urban-rural residence, Cameroon 2011

	Residence				Total	
	Urban		Rural			
Malaria indicators	Percentage	Number	Percentage	Number	Percentage	Number
Mosquito nets						
Percentage of households with at least one mosquito net (treated or untreated)	50.1	3 628	53.5	3 505	51.8	7 133
Percentage of households with at least one insecticide-treated net (ITN)[1]	35.3	3 628	37.5	3 505	36.4	7 133
Percentage of children under 5 who slept under a mosquito net (treated or untreated) the night before the survey	33.6	2 726	24.2	3 553	28.3	6 279
Percentage of children under 5 who slept under an ITN the night before the interview	24.2	2 726	18.7	3 553	21.1	6 279
Percentage of children under 5 who slept under an ITN the night before the interview in a HH with ITNs1[1]	49.7	1 324	38.7	1 716	43.5	3 040
Percentage of pregnant women age 15-49 who slept under a mosquito net (treated or untreated) the night before the interview	31.9	353	24.3	429	27.8	782
Percentage of pregnant women age 15-49 who slept under an ITN the night before the interview[1]	21.2	353	18.6	429	19.8	782
Percentage of pregnant women age 15-49 who slept under an ITN the night before the interview in the HH with ITNs [1]	53.1	141	41.7	191	46.5	333
Indoor Residual Spraying (IRS)						
Proportion of surveyed households sprayed with a residual insecticide in the last 12 months	4.3	3 628	0.8	3 505	2.6	7 133
Proportion of children under 5 who slept under an ITN or in household sprayed with IRS in last 12 months	26.9	2 726	19.1	3 553	22.5	6 279
Proportion of pregnant women who slept under an ITN the previous night or in a household sprayed with IRS in the last 12 months	23.1	353	19.2	429	21.0	782
Preventive malaria treatment during pregnancy						
Percentage of last births in the two years preceding the survey for which the mother took antimalarial drugs for prevention during the pregnancy	80.2	2 001	61.2	2 703	69.2	4 705
Percentage of last births in the two years preceding the survey for which the mother got Intermittent Preventive Treatment (IPT) during an antenatal visit [2]	30.7	2 001	21.7	2 703	25.6	4 705
Treatment of fever						
Proportion of children under age 5 with fever in the two weeks preceding the survey	24.4	4 614	27.1	6 102	25.9	10 718
Among children under age 5 with fever in the two weeks preceding the survey, percentage who took antimalarial drugs						
Any antimalarial drug	27.3	1 124	17.2	1 653	21.3	2 778
SP/Fansidar	0.3	1 124	0.3	1 653	0.3	2 778
Chloroquine	0.5	1 124	1.0	1 653	0.8	2 778
Amodiaquine	2.5	1 124	2.4	1 653	2.4	2 778
Quinine	14.1	1 124	9.5	1 653	11.3	2 778
ACT	9.0	1 124	4.1	1 653	6.1	2 778
Other antimalarial	5.0	1 124	2.1	1 653	3.2	2 778
Among children under age 5 with fever in the two weeks preceding the survey, percentage who took antimalarial drugs the same day/next day after developing fever:						
Any antimalarial drug	18.7	1 124	10.3	1 653	13.7	2 778
SP/Fansidar	0.3	1 124	0.1	1 653	0.2	2 778
Chloroquine	0.3	1 124	0.9	1 653	0.6	2 778
Amodiaquine	0.9	1 124	1.4	1 653	1.2	2 778
Quinine	8.8	1 124	5.3	1 653	6.7	2 778
ACT	4.5	1 124	1.6	1 653	2.8	2 778
Other antimalarial	4.3	1 124	1.4	1 653	2.6	2 778

[1] An ITN is a permanent net that does not require any treatment, a pretreated net obtained within the past 12 months, or a net that has been soaked with insecticide within the past 12 months.
[2] Intermittent preventive treatment is preventive treatment with at least two doses of SP/Fansidar during an antenatal visit.

3.11.4 Malaria Treatment during Pregnancy

The 2011 DHS-MICS also collected data on malaria prevention during pregnancy. WHO recommendations to prevent malaria during pregnancy include intermittent preventive treatment (IPT) with at least two doses of an effective antimalarial drug, such as sulfadoxine-pyrimethamine (SP), during routine antenatal clinic visits (WHO, 2010).

Table 12 shows that for 69 percent of last births in the two years preceding the surveys, the mother took antimalarial drugs for malaria prevention during their last pregnancy in the two years preceding the survey. This percentage is 80 percent in urban areas compared with 61 percent of last births in rural areas. Nationally, for 26 percent of last births, the mothers received IPT during their most recent pregnancy via antenatal care visits. For 31 percent of last births in urban areas, the mother received IPT during an antenatal visit compared with 22 percent of last births in rural areas.

3.11.5 Childhood Fever

Fever is an important contributing cause of childhood morbidity and mortality in developing countries. Prompt medical attention when a child has symptoms is, therefore, crucial in reducing child deaths. In the 2011DHS-MICS, for each child under age 5, mothers were asked if the child had experienced an episode of fever in the two weeks preceding the survey. Information was also collected on the percentage of episodes in which mothers sought treatment for their children. It should be noted that the morbidity data collected are subjective in the sense that they are based on a mother's perception of illness without validation by medical personnel. Twenty-six percent of children under age 5 were reported to have had a fever in the two weeks preceding the survey.

3.11.6 Treatment of Children with Fever

Table 12 shows that among children under age 5 with fever in the two weeks preceding the survey, more children in urban areas took antimalarial drugs than children in rural areas (27 and 17 percent, respectively). Among children with fever, 19 percent in urban areas and 10 percent in rural areas took antimalarial drugs the same or next day after developing a fever.

3.11.7 Malaria Prevalence among Children

Malaria prevalence among children age 6-59 months was measured in the 2011 DHS-MICS. In the field, *SD BIOLINE Malaria Antigen P.f/Pan* kit was used to diagnose malaria from finger-prick blood samples; those children who tested positive for the presence of *P.falciparum* by the RDT were offered treatment with the antimalarial artemisinin-based combination therapy (ACT).

Table 13 shows the results of the tests. Ninety-six percent of 5619 eligible children were successfully tested using the RDT, 30 percent of children age 6-59 months in Cameroon tested positive for malaria. The results show that malaria prevalence increases with age, is independent of gender, and decreases with mother's education level.

Malaria prevalence is higher in rural areas (37 percent) than urban areas (21 percent). By region, malaria prevalence is highest in the regions mostly located in the tropical rain forest area (Center, East, South-west and Adamaoua, and South) with 40 percent or more, and lowest in the region located in high heights altitude (North-west) and big cities (Douala and Yaoundé) with 15 percent or less.

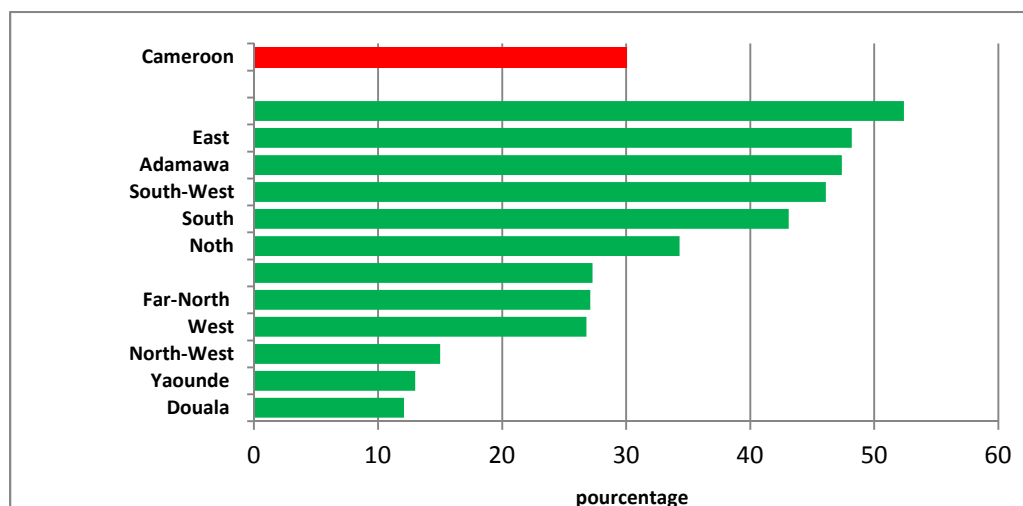# Figure 10. Malaria prevalence among children age 6-59 months

Table 13 Malaria prevalence in children				
Percentage of eligible children age 6-59 months who were tested for malaria and percentage of children age 6-59 months having malaria, by characteristics, Cameroon 2011				
	RDT coverage			
Background characteristic	Percentage of children tested	Number of children	Percentage of RTD positive	Number of children tested
Age in months				
6-8	88.5	351	17.9	310
9-11	96.7	353	19.9	341
12-17	95.3	733	23.5	698
18-23	97.6	591	28.9	576
24-35	96.5	1 206	30.5	1 164
36-47	97.4	1 210	33.9	1 178
48-59	97.5	1 176	36.1	1 147
Sex				
Male	96.1	2 748	30.0	2 640
Female	96.7	2 871	29.9	2 776
Residence				
Yaounde/Douala	95.4	879	12.5	839
Other cities	95.7	1 567	25.1	1 500
Urban	95.6	2 446	20.6	2 339
Rural	97.0	3 173	37.1	3 077
Region				
Adamaoua	99.4	291	47.4	289
Centre (Yaounde excluded)	95.9	390	52.4	374
Douala	97.6	457	12.1	447
Est	98.6	241	48.2	238
Extrême-Nord	95.6	1 179	27.1	1 128
Littoral Douala excluded)	98.7	213	27.3	210
Nord	94.2	741	34.3	698
Nord-Ouest	97.0	527	15.0	511
Ouest	97.0	663	26.8	643
Sud	96.8	152	43.1	148
Sud-Ouest	99.1	342	46.1	339
Yaounde	93.0	422	13.0	392
Mother's education[1]				
No education	96.3	1 358	32.5	1 308
Primary	96.6	2 046	32.7	1 976
Secondary	96.6	1 374	22.0	1 327
Higher	93.1	160	13.1	149
Mother's interview status				
Mother interviewed	96.8	4 778	28.9	4 625
Mother not interviewed, but in household	84.3	160	32.1	135
Mother not interviewed, not in household [2]	96.4	676	37.0	652
Total	96.4	5 619	30.0	5 416

Note: Table able is based on children who spent the night before the interview in the household..
[1] For mothers not interviewed, informations are retrieved from Household Questionnaire. Children whose mother not listed in the Household Questionnaire are excluded
[2] Includes children whose mother is dead

3.12 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 individual women. The section begins with questions about the aggregate childbearing experience of respondents (i.e., the number of sons and daughters who live with the mother, the number who live elsewhere, and the number who have died).

Table 14 presents estimates for three successive five-year periods prior to the 2011 DHS-MICS. 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
  - **Post-neonatal mortality:** 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 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 12 months of age.

For the five years immediately preceding the survey (corresponding roughly to 2006–2011); the infant mortality rate was 62 deaths per 1,000 live births. The estimate of child mortality is 63 deaths per 1,000 children surviving to 12 months of age, while the overall under-5 mortality rate for the same period is 122 deaths per 1,000 live births. Fifty-one percent of all deaths to children under-five in Cameroon take place before a child's first birthday.

The 2011 DHS-MICS shows a rapid decrease in infant and under-five mortality during the five years prior to the survey compared to the period 5-9 years prior. Further investigation of this pattern will be discussed in the 2011 DHS-MICS Final Report.

Table 14 Early childhood mortality rates						
Neonatal, post-neonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey, Cameroon 2011						
Years preceding the survey	Five-year periods	Neonatal mortality (NN)	Post-neonatal mortality (PNN)[1]	Infant mortality (1q0)	Child mortality (4q1)	Under-five mortality (5q0)
0-4	2006-2011	31	31	62	63	122
5-9	2001-2006	34	43	77	64	136
10-14	1996-2001	36	44	80	72	146

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

Figure 11. Trends in childhood mortality rates for five-year periods prior to 2011DHS-MICS
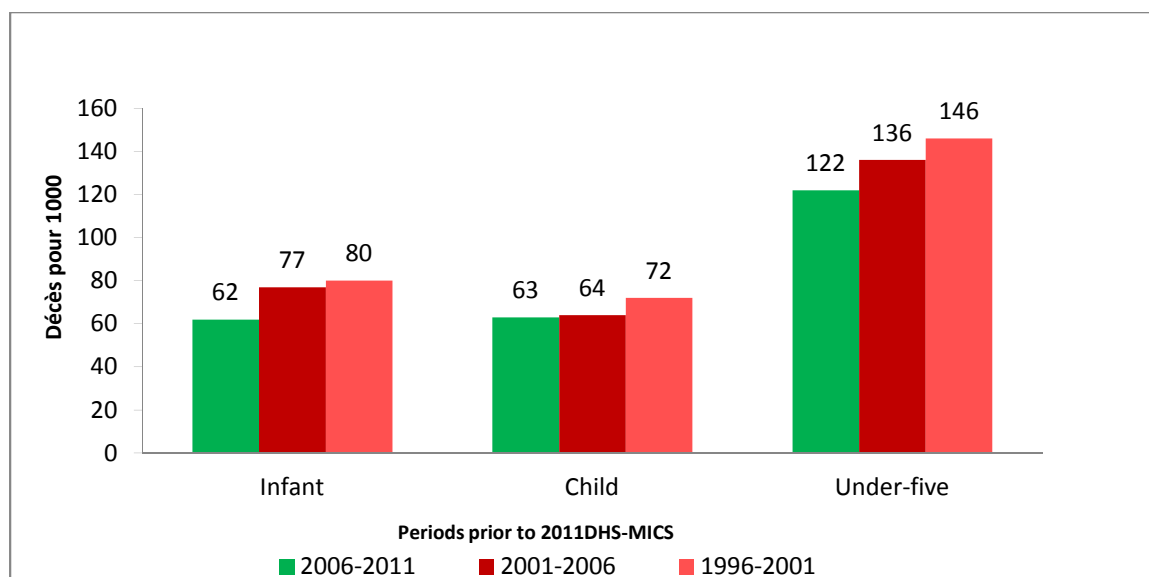
3.13 HIV/AIDS awareness, knowledge, and behavior

The 2011 DHS-MICS included a series of questions that addressed respondents' knowledge about HIV and AIDS, their awareness of modes of HIV transmission, and behaviors that can prevent the spread of HIV.

Table 15 shows that HIV/AIDS awareness is universal in Cameroon where 96 percent of women and 98 percent of men have heard of AIDS. Awareness does not vary much by background characteristics except by education, those with no education being less likely to have heard of HIV/AIDS. Women in the Far-north region are also less likely to have heard of AIDS (82 percent).

Table 15. Knowledge of AIDS				
Percentage of women and men who have heard of AIDS, by background characteristics, Cameroon 2011				
	Women		Men	
Background Characteristic	Have heard of AIDS	Number of women	Have heard of AIDS	Number of men
Age				
15-24	95.7	3 225	97.3	2 818
..15-19	94.9	1 715	96.3	1 591
..20-24	96.7	1 509	98.7	1 227
25-29	96.7	1 276	99.3	1 074
30-39	96.1	1 770	99.2	1 526
40-49	95.4	1 186	99.0	1 037
Marital status				
Never married	96.8	2 109	97.6	3 227
..Ever had sex	99.3	1 098	99.4	1 985
..Never had sex	94.0	1 012	94.7	1 241
Married or living together	95.4	4 692	99.1	2 958
Divorced/separated/widowed	97.2	655	99.3	270
Residence				
Yaounde/Douala	99.5	1 618	99.7	1 501
Other cities	98.6	2 374	99.4	2 106
Urban	98.9	3 992	99.5	3 607
Rural	92.4	3 465	96.8	2 847
Region				
Adamaoua	97.2	366	98.8	262
Centre (Yaounde excluded))	99.1	560	99.2	534
Douala	99.9	765	99.6	707
Est	95.0	290	98.2	270
Extrême-Nord	82.4	1 183	95.4	956
Littoral (Douala excluded)	97.0	296	99.8	287
Nord	96.9	858	98.1	729
Nord-Ouest	99.3	726	97.8	529
Ouest	99.2	779	99.7	659
Sud	98.7	191	99.5	185
Sud-Ouest	98.4	589	96.9	543
Yaounde	99.2	853	99.8	794
Education				
No education	85.9	1 559	93.6	533
Primary	97.2	2 457	96.8	2 073
Secondary	99.5	3 056	99.8	3 240
Higher	99.7	385	99.8	610
Total 15-49	95.9	7 457	98.3	6 455
Men 50-59	na	na	98.4	736
Total 15-59	na	na	98.4	7 191
na: Not applicable				

Table 16 shows that 67 percent of women and 75 percent of men age 15-49 years know that consistent use of condoms is a means of preventing the spread of HIV. Seventy-eight percent of women and 85 percent of men know that limiting sexual intercourse to one faithful and uninfected partner can reduce the chances of contracting HIV. The proportion knowing both that using condoms and limiting sexual intercourse to one uninfected partner is 60 percent among women and 68 percent among men.

Women and men who have never been married and who never had sex are least likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduce the risk of HIV transmission (56 percent and 76 percent, respectively). Women and men who have never been married but who have ever had sex are most likely to know that using condoms and limiting sexual intercourse to one uninfected partner reduces the risk of HIV transmission (76 percent and 88 percent, respectively).

Table 16. Knowledge of HIV prevention methods

Percentage of women and men age 15-49 who, in response to prompted questions, say that people can reduce the risk of getting the AIDS virus by using condoms every time they have sexual intercourse and by having one partner who is not infected and has no other partners, by background characteristics, Cameroon 2011

Background Characteristic	Percentage of women who say HIV can be prevented by:				Percentage of men who say HIV can be prevented by:			
	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting intercourse to one uninfected partner[1,2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting intercourse to one uninfected partner[1,2]	Number of men
Age								
15-24	67.7	77.3	60.0	3 225	75.1	81.4	66.8	2 818
..15-19	63.8	74.1	56.5	1 715	72.8	78.5	63.7	1 591
..20-24	72.1	81.1	64.0	1 509	78.1	85.3	70.7	1 227
25-29	72.1	79.7	65.2	1 276	79.6	87.5	72.1	1 074
30-39	68.6	78.5	61.2	1 770	77.5	87.1	70.9	1 526
40-49	60.7	77.3	54.9	1 186	69.0	87.1	63.4	1 037
Marital status								
Never married	73.2	80.8	66.3	2 109	77.2	83.5	69.6	3 227
..Ever had sex	83.7	87.4	76.1	1 098	84.6	88.3	77.6	1 985
..Never had sex	61.8	73.7	55.7	1 012	65.3	75.9	56.8	1 241
Married or living together	64.4	76.8	57.3	4 692	73.1	86.2	66.2	2 958
Divorced/separated/widowed	72.1	77.9	63.0	655	80.2	82.6	71.1	270
Residence								
Yaounde/Douala	81.4	85.7	72.7	1 618	81.6	87.9	74.5	1 501
Other cities	75.8	83.5	68.5	2 374	79.7	88.7	73.8	2 106
Urban	78.1	84.4	70.2	3 992	80.5	88.4	74.1	3 607
Rural	55.4	70.7	49.0	3 465	69.0	80.0	60.5	2 847
Region								
Adamaoua	65.1	69.0	52.9	366	66.7	81.6	61.6	262
Centre (Yaounde excluded)	73.1	83.8	65.6	560	79.1	73.8	62.4	534
Douala	85.2	88.4	78.7	765	86.2	91.1	81.3	707
Est	60.4	74.1	53.0	290	87.2	91.8	84.1	270
Extrême-Nord	41.4	67.7	38.2	1 183	51.9	72.4	41.9	956
Littoral (Douala excluded)	79.6	80.0	67.9	296	87.2	92.5	82.0	287
Nord	39.0	50.5	28.8	858	64.7	88.0	60.7	729
Nord-Ouest	80.7	94.5	79.0	726	78.0	88.5	74.3	529
Ouest	80.4	84.7	71.9	779	86.7	92.4	81.3	659
Sud	83.1	87.3	76.4	191	84.6	86.0	76.6	185
Sud-Ouest	79.1	86.7	72.9	589	83.2	84.1	74.9	543
Yaounde	78.0	83.2	67.4	853	77.6	85.1	68.4	794
Education								
No education	35.7	55.4	29.1	1 559	38.5	73.1	32.6	533
Primary	66.7	77.5	58.2	2 457	69.1	80.5	60.7	2 073
Secondary	81.9	88.2	75.3	3 056	83.2	88.1	75.9	3 240
Higher	88.1	92.3	82.4	385	88.0	91.0	82.8	610
Total 15-49	67.5	78.0	60.4	7 457	75.4	84.7	68.1	6 455
Men 50-59	na	na	na	na	63.1	84.2	58.4	736
Total 15-59	na	na	na	na	74.2	84.6	67.1	7 191

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

Overall, women residing in urban areas are more likely to be knowledgeable about HIV prevention methods than their counterparts residing in rural areas. The same pattern is true for men. Knowledge generally varies across regions, with the lowest in Far-north. Higher educational attainment is positively associated with increased awareness of HIV prevention methods for both women and men.

Knowledge of HIV prevention methods tends to remain the same among women and seems to decrease especially among men since 2004. According to the 2004 DHS-MICS, 62 percent of women knew that HIV could be prevented by using a condom and by limiting sexual partners; this compares with 60 percent in 2011. Among men age 15-49, this percentage decreased from 75 percent in 2004 to 68 percent in 2011.

3.14 Multiple sexual partners and condom use

To obtain information on risk factors, respondents were also asked detailed questions about their sexual behavior, including the number of partners they had in the 12 months preceding the survey. Women and men were also asked about condom use in the 12 months preceding the survey. The results are shown in Table 17.1 for women and Table 17.2 for men.

Overall, 6 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, 37 percent reported using a condom at the last sexual intercourse. Among all female respondents who have ever had sexual intercourse, the mean number of partners in their lifetime is 3.1

Table 17.1 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, Cameroun 2011						
	Among all women :		Among women who had 2+ partners in the past 12 months:		Among 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	6.3	6 716	46.5	422	2.4	4 657
..15-19	4.0	3 589	52.0	142	2.0	1 790
..20-24	9.0	3 127	43.7	280	2.7	2 867
25-29	8.2	2 689	36.8	221	3.3	2 627
30-39	5.6	3 621	26.2	201	3.7	3 538
40-49	3.4	2 400	18.6	81	3.5	2 333
Marital status						
Never Married	7.4	4 307	59.4	319	3.3	2 231
Married/ living together	4.7	9 792	20.2	457	2.9	9 634
Divorced/separated/widowed	11.3	1 327	42.4	150	4.7	1 291
Résidence						
Yaoundé/Douala	11.2	3 467	40.4	389	4.1	2 912
Autres villes	5.6	4 842	46.9	270	3.1	3 978
Ensemble urbain	7.9	8 309	43.0	659	3.5	6 889
Rural	3.7	7 117	23.2	267	2.7	6 266
Region						
Adamaoua	2.7	746	(56.6)	20	2.2	631
Centre (Yaounde excluded)	12.3	1 092	35.7	135	4.5	963
Douala	11.1	1 712	38.5	190	3.9	1 446
Est	5.0	604	(31.2)	30	3.8	550
Extrême-Nord	2.6	2 490	(17.2)	66	1.6	2 145
Littoral (Douala excluded)	6.4	615	31.6	39	3.8	540
Nord	1.5	1 676	*	26	1.8	1 430
Nord-Ouest	2.5	1 521	(41.0)	37	2.9	1 242
Ouest	3.8	1 634	54.7	63	3.0	1 366
Sud	10.0	402	34.4	40	5.9	370
Sud-Ouest	6.9	1 180	29.9	81	3.6	1 007
Yaounde	11.3	1 755	42.1	199	4.3	1 466
Education						
No education	1.8	3 086	(7.3)	54	1.8	2 913
Primary	4.9	5 214	22.6	254	3.2	4 660
Secondary	8.0	6 284	44.2	503	3.7	4 844
Higher	13.6	842	54.1	114	4.2	738
Total	6.0	15 426	37.3	926	3.1	13 155

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 non-numeric responses.

Overall, 29 percent of men age 15-49 reported that they had two or more partners in the past 12 months. Among men who had two or more partners in the past 12 months, 40 percent reported using a condom at the last sexual intercourse. Among all male respondents age 15-49 who have ever had sexual intercourse, the mean number of partners in their lifetime is 13.

Men age from 20-24 are most likely than their younger counterparts ages 15-24 to have had two or more partners in the past 12 months (range from 30 percent or more compare 10 percent, respectively).

Formerly married men are more likely to have had two or more partners in the past 12 months (40 percent) than their never-married (21 percent) and married or living together counterparts (36 percent). Almost three-quarters of never married men (73 percent) who have had two or more partners in the past 12 months reported using a condom during the last sexual intercourse, compared with only 23 percent of currently married men.

Table 17.2 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 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, Cameroun 2011						
	Among all men :		Among men who had 2+ partners in the past 12 months::		Among 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	18.6	2 818	66.5	524	6.3	1 620
..15-19	9.5	1 591	69.6	152	3.9	617
..20-24	30.4	1 227	65.2	373	7.8	1 003
25-29	38.2	1 074	52.2	410	11.9	997
30-39	39.5	1 526	31.0	602	15.2	1 462
40-49	32.0	1 037	16.4	332	17.3	965
Marital status						
Never married	21.2	3 227	73.2	685	7.8	1 943
Married/living together	36.4	2 958	23.0	1 076	14.3	2 841
Divorced/separated /widowed	40.1	270	51.0	108	20.9	260
Residence						
Yaoundé/Douala	39.0	1 501	54.1	585	16.5	1 227
Other cities	26.9	2 106	50.6	567	10.7	1 587
Urban	32.0	3 607	52.4	1 152	13.2	2 814
Rural	25.2	2 847	28.0	717	10.7	2 230
Region						
Adamaoua	9.1	262	(25.4)	24	7.4	196
Centre (Yaounde excluded)	39.8	534	48.0	213	19.2	462
Douala	38.3	707	60.1	271	14.1	553
Est	40.5	270	33.6	110	16.0	237
Extrême-Nord	18.5	956	10.1	177	5.7	655
Littoral (Douala excluded)	33.2	287	47.2	95	11.9	220
Nord	11.5	729	14.8	84	5.0	511
Nord-Ouest	20.9	529	47.0	110	10.6	381
Ouest	33.2	659	52.8	219	8.5	537
Sud	46.0	185	35.5	85	20.9	171
Sud-Ouest	30.9	543	41.6	168	12.8	446
Yaounde	39.6	794	48.9	314	18.4	674
Education						
No education	19.6	533	4.7	104	4.9	416
Primary	25.8	2 073	32.5	535	11.3	1 632
Secondary	30.4	3 240	47.9	986	13.4	2 445
higher	40.0	610	62.6	244	14.2	550
Total 15-49	29.0	6 455	43.0	1 869	12.1	5 044
Men 50-59	31.3	736	12.0	231	19.2	691
Total 15-59	29.2	7 191	39.6	2 100	13.0	5 735

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

Different proportions are reported for urban men and for rural men have had two or more partners in the past 12 months (32 percent versus 25 percent). Fifty-two percent of urban men and 28 percent of rural men who had two or more partners in the past 12 months reported using a condom at their last sexual intercourse.

As education levels increase, men are more likely to have had two or more partners in the past 12 months (20 percent of those with no education compared to 40 percent of those with more than secondary education). Among men who had two or more partners in the past 12 months, condom use during last sexual intercourse increases with education level; 63 percent of men with some higher education used a condom compared with 5 percent of men with no education.

TECHNICAL AND FINANCIAL PARTNERS OF THE 2011 DEMOGRAPHIC AND HEALTH SURVEY AND MULTPLE INDICATORS CLOSTERS SURVEY (2011 DHS-MICS)

Ministry of Economy, Planning and Regional Development

MINISTRY OF PUBLIC HEALTH

United Nations Fund for Population Activities

United Nations Children's Fund

World Bank

United States Agency for International Development