Armenia Demographic and Health Survey 2010

Preliminary Report

National Statistical Service
Republic of Armenia

Ministry of Health
Republic of Armenia

MEASURE DHS
ICF Macro
Calverton, Maryland
United States
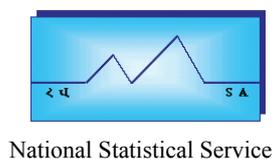
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DEMOGRAPHIC AND HEALTH SURVEY
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I. INTRODUCTION

The 2010 Armenia Demographic and Health Survey (ADHS) is a nationally representative sample survey designed to provide information on population and health issues in Armenia. The ADHS was conducted by the National Statistical Service (NSS) and the Ministry of Health (MOH) of the Republic of Armenia from October 2010 through December 2010. ICF Macro provided technical support for the survey through the MEASURE DHS project. The MEASURE DHS project is sponsored by the United States Agency for International Development (USAID) to assist countries worldwide in obtaining information on key population and health indicators. USAID/Armenia provided funding for the survey. The United Nations Children's Fund (UNICEF)/Armenia, United Nations Population Fund (UNFPA)/Armenia, and the Joint United Nations Programme on HIV/AIDS (UNAIDS)/Armenia supported the survey through in-kind contributions.

The purpose of the 2010 ADHS was to collect national and regional data on fertility and contraceptive use, maternal and child health, adult health, and AIDS and other sexually-transmitted diseases. Thus, much of the information collected in the survey represents updated estimates of basic health and demographic indicators first reported in the 2000 ADHS (NSS, MOH, and ORC Macro, 2001) and the 2005 ADHS (NSS, MOH, and ORC Macro, 2006). The survey obtained detailed information on these issues from women of reproductive ages and, on certain topics, from men as well. Data are presented by region (*marz*) when sample size permits. When possible, the 2010 ADHS data are compared with the 2005 and 2000 ADHS data.

The survey findings provide estimates for a variety of demographic indicators. The 2010 ADHS results are intended to provide the information needed to evaluate existing social programs and to design new strategies for improving health and health services for the people of Armenia. The 2010 ADHS also contributes to the growing international database on demographic and health-related indicators.

This preliminary report presents initial findings relating to the principal topics in the survey. The final report will be issued in early 2012. The figures in this preliminary report are not expected to differ markedly from the findings presented in the final report; nevertheless, the results presented here are considered provisional and are subject to modification.

II. SURVEY IMPLEMENTATION

A. Sample Design and Implementation

The sample was designed to permit detailed analysis, including the estimation of rates of fertility, infant/child mortality, and abortion at the national level, for Yerevan and for total urban and total rural areas separately. Many indicators can also be estimated at the regional (marz) level.

A representative probability sample of 7,580 households was selected for the 2010 ADHS sample. The sample was selected in two stages. In the first stage, 308 clusters were selected from a list of enumeration areas. These enumeration areas were a subsample of a master sample that was designed from the 2001 Population Census. In the second stage, a complete listing of households was made for each selected cluster. Households were then systematically selected for participation in the survey.

All women age 15-49 who were either permanent residents of the households in the 2010 ADHS sample or visitors present in the household on the night before the survey were eligible to be interviewed. Interviews were completed with 5,922 women. In addition, in a subsample of one-third of all of the households selected for the survey, all men age 15-49 were eligible to be interviewed if they were either permanent residents or visitors present in the household on the night before the survey. Interviews were completed with 1,584 men.

B. Questionnaires

Three questionnaires were used in the ADHS: a Household Questionnaire, a Woman's Questionnaire, and a Man's Questionnaire. The Household Questionnaire and the individual questionnaires were based on model survey instruments developed in the MEASURE DHS program and questionnaires used in the previous 2005 ADHS. The model questionnaires were adapted for use by experts from the National Statistical Service (NSS) and the Ministry of Health (MOH). Suggestions were also sought from a number of nongovernmental organizations (NGOs). The questionnaires were developed in English and translated into Armenian. The Household Questionnaire and the individual questionnaires were pretested in July 2010.

The Household Questionnaire was used to list all usual members of and visitors to the selected households and to collect information on the socioeconomic status of the household. The first part of the Household Questionnaire collected from each household member or visitor information on their age, sex, educational attainment, and relationship to the head of household. This information provided basic demographic data for Armenian households. It also was used to identify the women and men who were eligible for the individual interview (i.e., women and men age 15-49). In the second part of the Household Questionnaire, there were questions on housing characteristics (e.g., the flooring material, the source of water, and the type of toilet facilities), on ownership of a variety of consumer goods, and on other aspects of the socioeconomic status of the household. In addition, the Household Questionnaire was used to obtain information on each child's birth registration, ask questions about child discipline and child labor, and record height and weight measurements of children under age 5.

The Woman's Questionnaire obtained information from women age 15-49 on the following topics:

- Background characteristics
- Pregnancy history
- Antenatal, delivery, and postnatal care
- Knowledge, attitudes, and use of contraception
- Reproductive and adult health

- Childhood mortality
- Health and health care utilization
- Vaccinations of children under age 5
- Episodes of diarrhea and respiratory illness of children under age 5
- Breastfeeding and weaning practices
- Marriage and recent sexual activity
- Fertility preferences
- Knowledge of and attitudes toward AIDS and other sexually transmitted diseases
- Woman's work and husband's background characteristics

The Man's Questionnaire, administered to men age 15-49, focused on the following topics:

- Background characteristics
- Health and health care utilization
- Marriage and recent sexual activity
- Attitudes toward and use of condoms
- Knowledge of and attitudes toward AIDS and other sexually transmitted diseases
- Attitudes toward women's status

C.   Training of Field Staff

The main survey training, which was conducted by the NSS, MOH, and ICF Macro staff, was held during a three-week period in September and was attended by all supervisors, field editors, interviewers, and quality control personnel, a total of 104 people (83 females and 21 males). The training included lectures, demonstrations, practice interviews in small groups, and examinations. All field staff received training in anthropometric measurement and participated in two days of field practice.

D.   Fieldwork and Data Processing

Thirteen teams collected the survey data; each team consisted of four female interviewers, a male interviewer, a field editor, and a team supervisor. Fieldwork began in early October 2010 and was completed in late December 2010. Senior ADHS technical staff visited teams regularly to review the work and monitor data quality. MOH, UNICEF/Armenia, UNFPA/Armenia, and USAID/Armenia representatives also visited teams to monitor data collection on child discipline and child labor modules and to observe the height and weight measurements of children under age 5.

The processing of the ADHS results began shortly after fieldwork commenced. Completed questionnaires were returned regularly from the field to NSS headquarters in Yerevan, where they were entered and edited by data processing personnel who were specially trained for this task. The data processing personnel included a supervisor, a questionnaire administrator (who ensured that the expected number of questionnaires from all clusters was received), several office editors, 12 data entry operators, and a secondary editor. The concurrent processing of the data was an advantage because the senior DHS technical staff were able to advise field teams of problems detected during the data entry. In particular, tables were generated to check various data quality parameters. As a result, specific feedback was given to the teams to improve performance. The data entry and editing phase of the survey was completed in March 2011.

E.   Coverage of the Sample

Table 1 presents household and individual response rates for the survey. A total of 7,580 households were selected for the sample, of which 7,043 were occupied at the time of fieldwork. The main reason for the difference is that some of the dwelling units that were occupied during the household listing operation were either vacant or members of the households were away for an

extended period at the time of interviewing. Of the occupied households, 95 percent were successfully interviewed.

In these households, 6,059 women were identified as eligible for the individual interview. Interviews were completed with 98 percent of the women. Of the 1,641 eligible men identified, 97 percent were successfully interviewed.

Table 1 Results of the household and individual interviews			
Number of households, number of interviews, and response rates, according to residence (unweighted), Armenia 2010			
	Residence		
Result	Urban	Rural	Total
Household interviews			
Households selected	5,461	2,119	7,580
Households occupied	5,033	2,010	7,043
Households interviewed	4,753	1,947	6,700
Household response rate[1]	94.4	96.9	95.1
Interviews with women age 15-49			
Number of eligible women	4,073	1,986	6,059
Number of eligible women interviewed	3,966	1,956	5,922
Eligible women response rate[2]	97.4	98.5	97.7
Interviews with men age 15-49			
Number of eligible men	1,105	536	1,641
Number of eligible men interviewed	1,063	521	1,584
Eligible men response rate[2]	96.2	97.2	96.5
[1] Households interviewed/households occupied			
[2] Respondents interviewed/eligible respondents			

III. PRELIMINARY FINDINGS FROM THE 2010 ADHS

A. Characteristics of Respondents

Table 2 shows the distribution by selected background characteristics of women and men age 15-49 who were interviewed in the 2010 ADHS. For the most part, the female and male populations represented in the sample are evenly distributed by age, but there are some noticeable exceptions. For example, there are higher proportions of women and men in their twenties, and lower proportions of women and men in their late thirties and early forties, compared with older and younger age groups. This likely reflects higher rates of emigration among the working age population in Armenia.

Table 2 Background characteristics of respondents

Percent distribution of women and men age 15-49, by selected background characteristics, Armenia 2010

Background characteristic	Women			Men		
	Weighted percent	Weighted number	Unweighted number	Weighted percent	Weighted number	Unweighted number
Age						
15-19	14.5	861	844	14.4	229	237
20-24	17.4	1,032	1,054	18.8	298	299
25-29	16.0	950	927	18.0	285	279
30-34	14.1	838	801	14.5	229	226
35-39	10.9	643	662	10.2	162	164
40-44	12.5	742	739	10.3	164	170
45-49	14.5	857	895	13.7	217	209
Marital status						
Never married	32.3	1,911	1,831	44.7	707	701
Married	60.7	3,597	3,679	51.1	809	811
Living together	0.5	28	27	2.9	46	47
Divorced/separated	4.0	236	221	1.2	19	22
Widowed	2.5	149	164	0.2	3	3
Residence						
Urban	61.5	3,641	3,966	62.1	984	1,063
Rural	38.5	2,281	1,956	37.9	600	521
Region						
Yerevan	34.9	2,069	987	37.5	593	283
Aragatsotn	4.4	260	485	4.4	70	148
Ararat	6.4	379	476	7.9	125	136
Armavir	9.0	535	504	9.3	148	145
Gegharkunik	7.7	459	564	5.3	83	134
Lori	8.7	513	453	8.2	130	107
Kotayk	9.2	543	584	9.4	148	158
Shirak	10.1	598	632	8.3	131	135
Syunik	3.3	198	379	4.0	63	123
Vayots Dzor	2.2	131	397	1.5	24	87
Tavush	4.0	238	461	4.3	68	128
Education						
Basic	5.9	347	346	11.9	188	179
Secondary[1]	36.1	2,137	2,228	39.0	619	660
Secondary special	28.4	1,681	1,749	19.0	301	300
Higher	29.7	1,757	1,599	30.1	477	445
Total	100.0	5,922	5,922	100.0	1,584	1,584

Note: Education categories refer to the highest level of education attended, whether or not that level was completed. Total may not add to 100 due to rounding.
[1] Includes 18 women and 3 men age 18 and older who completed grade 9 of the old educational system

Nearly two-thirds of women (61 percent) and more than half of men (54 percent) are married or living together. Because men tend to marry later in life than women, 45 percent of the surveyed men age 15-49 have never married, compared with 32 percent of women age 15-49. Seven percent of women are divorced, separated, or widowed as opposed to 1 percent of men. Compared with the results of the 2000 ADHS, the proportion of married women has changed little over the last 10 years (64 percent in 2000 and 61 percent in 2010), while the proportion of married men has declined considerably (68 percent in 2000 and 54 percent in 2010). There are few, if any, differences among surveys over the past five years.

Three-fifths of the population lives in urban areas, with the majority of people in Yerevan. There is considerable variation by region.

Women and men in Armenia are universally well educated, with 94 percent of women and 88 percent of men having at least some secondary education. Thirty percent each of women and men have some higher education.

It should be noted that Armenia's educational system has undergone several stages of restructuring over the past five years. The current system of formal education was introduced in 2007. In the new system, basic education consists of grades 1-9 instead of grades 1-8 as in the previous system; high school consists of grades 10-12 instead of grades 9-10 as in the previous system. The two levels together (basic education and high school) are referred to as secondary education (grades 1 through 12 in the new system versus grades 1 through 10 in the old system). All other categories are similar to those in the 2005 ADHS. In the 2010 ADHS, 110 women and 33 men reported at the time of interview that they already had completed grade 9. The majority (92 women and 30 men) were age 15-17 and were included in the basic education category, in accordance with the new system. There are 21 respondents age 18 and older (18 women and 3 men) who were included in the secondary education category because they had completed grade 9 before the current educational system change took effect.

B.   Reproduction

All women who were interviewed in the 2010 ADHS were asked to give a complete reproductive history. In collecting these histories, each woman first was asked about the total number of pregnancies that had ended in live births, induced abortions, miscarriages, and stillbirths. After obtaining these aggregate data, an event-by-event pregnancy history was collected. For each pregnancy, the duration, the month and year of termination, and the result of the pregnancy were recorded. Information was collected first about the most recently completed pregnancy, then about the preceding pregnancy, and so on. For each live birth, information was collected on the child's sex, survival status, and current age (for surviving children) or age at death (for deceased children).

Current fertility

The data collected in the reproductive history were used to calculate two of the most widely used measures of current fertility: the total fertility rate (TFR) and its component age-specific fertility rates. The TFR is interpreted as the number of children the average woman would bear in her lifetime if she experienced the currently observed age-specific rates throughout her reproductive years. The fertility rates refer to the three-year period before the survey (i.e., approximately from November 2007 to November 2010).

According to the results of the 2010 ADHS, the TFR is 1.7 children per woman. This is below replacement level fertility (which is slightly more than 2.0). The 2010 ADHS rate of 1.7 is the same as the rate estimated by the 2000 ADHS and also the 2005 ADHS. Thus, there is no evidence of change in overall levels of fertility in Armenia over the last decade.

Table 3 Current fertility

Age-specific and total fertility rates, the general fertility rate, and the crude birth rate for the three years preceding the survey, by residence, Armenia 2010

Age group	Residence		Total
	Urban	Rural	
15-19	18	42	28
20-24	124	163	140
25-29	99	108	102
30-34	43	40	42
35-39	31	12	24
40-44	6	3	5
45-49	0	0	0
TFR (15-49)	1.6	1.8	1.7
GFR	57	68	61
CBR	12.8	16.2	14.0

Notes: Age-specific fertility rates are per 1,000 women. Rates for age group 45-49 may be slightly biased due to truncation. Rates are for the period 1-36 months prior to interview.
TFR: Total fertility rate expressed per woman
GFR: General fertility rate expressed per 1,000 women age 15-44
CBR: Crude birth rate expressed per 1,000 population

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The data suggest, however, some change in terms of urban-rural differentials. While urban fertility is statistically the same (1.5 in 2000 versus 1.6 in 2005 and in 2010) there is some evidence of decline in rural areas (from 2.1 in 2000 to 1.8 in 2005 and in 2010). Overall, the pattern of age-specific fertility rates is the same, although there has been a shift away from childbearing at the youngest ages (15-19) to higher levels of fertility in older ages, particularly the late twenties (Figure 1).

Figure 1 **Trends in Age-Specific Fertility Rates, Armenia 2000, 2005, and 2010**
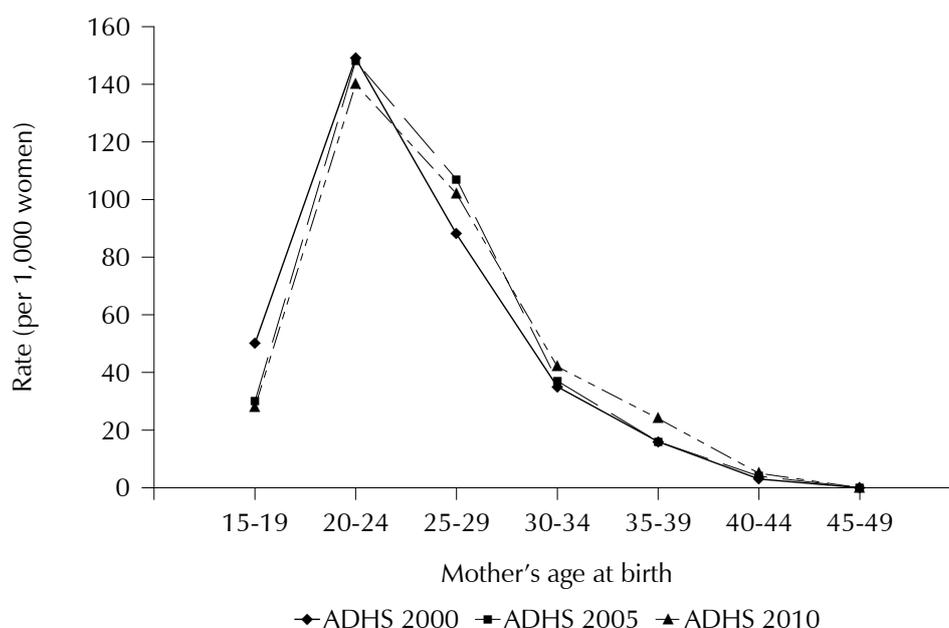
At the national level, the 2010 ADHS rate of 1.7 is slightly higher than the official government rates of 1.55 published for 2009 and of 1.4 for 2008 (National Statistical Service, 2010). An important difference in the computing of these rates should be noted: whereas the ADHS rate for the three years preceding the survey is based on pregnancy history of the de facto population (persons who stayed the night before the interview in the household), the official government annual rates are based on registration statistics of the de jure population (persons who usually live in the household).

Rates of induced abortion

Table 4 shows age-specific abortion rates and total abortion rates (TAR) from the 2010 ADHS. These rates are calculated in a manner analogous to the calculation of fertility rates. The reported rates refer to the three-year period prior to the survey (i.e., approximately November 2007 to November 2010). The TAR is interpreted as the number of abortions a woman would have in her lifetime if she experienced the currently observed age-specific abortion rates during her childbearing years.

The total abortion rate for Armenia is 0.8 abortions per woman. This means that the average number of abortions an Armenian woman will have according to current abortion rates is approximately half of the number of births she will have (1.7). The age-specific rates of induced abortion peak among women age 25-29 and decline among women in older age groups.

Table 4 Current abortion rates

Age-specific and total abortion rates and the general abortion rate for the three years preceding the survey, by residence, Armenia 2010

Age group	Residence		Total
	Urban	Rural	
15-19	1	5	3
20-24	34	31	33
25-29	55	64	59
30-34	42	48	44
35-39	15	25	19
40-44	7	10	8
45-49	2	2	2
TAR	0.8	0.9	0.8
GAR	27	29	28

TAR: Total abortion rate for ages 15-49, expressed per woman
GAR: General abortion rate (births divided by the number of women age 15-44, expressed per 1,000 women)

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The 2010 ADHS TAR of 0.8 is lower than the 2005 ADHS rate of 1.8 and is considerably lower than the 2000 ADHS rate of 2.6. The reason for such a considerable difference is not clear; however, it is notable that more married women reported use of modern methods of family planning in 2010 than in 2005 and in 2000 (27 percent in 2010 versus 20 percent in 2005 and 22 percent in 2000). Particularly noticeable is the doubling of the use of male condoms by married women over the past 10 years (15 percent in 2010 versus 8 percent in 2005 and 7 percent in 2000). It is likely that an increase in the use of modern methods of contraception could have contributed to a lower TAR. This issue will be explored in further detail in the final report.

C.   Contraception

The 2010 ADHS collected information on knowledge and use of contraception. To obtain these data, a description of each contraceptive method was read aloud, and respondents were asked if they had heard of the method. Women were then asked if they (or their partner) was currently using a method. Nonusers were asked whether they had ever used a method of contraception. For analytical purposes, contraceptive methods are grouped into two types in the table: modern and traditional. Modern methods include female sterilization, male sterilization, the pill, IUD, male condom, foam/jelly, fertility wheel calculator, and lactational amenorrhea method (LAM). Traditional methods include periodic abstinence, withdrawal, and folk methods.

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, Armenia 2010

Background characteristic	Any method	Any modern method	Pill	IUD	Male condom	LAM	Other/ female steriliza- tion, foam/ jelly, fertility wheel calcula- tor	Any tradi- tional method	Periodic absti- nence	With- drawal	Folk method	Not cur- rently using	Total	Number of women
Age														
15-19	19.1	3.1	0.0	0.0	0.0	3.1	0.0	16.0	2.7	13.3	0.0	80.9	100.0	68
20-24	39.8	18.2	0.3	4.6	10.0	2.4	0.8	21.6	1.1	20.3	0.2	60.2	100.0	450
25-29	62.1	32.0	3.1	9.9	16.9	2.0	0.2	30.1	2.3	26.9	0.9	37.9	100.0	641
30-34	70.1	38.1	2.1	12.9	21.9	0.5	0.7	32.1	4.5	25.9	1.6	29.9	100.0	650
35-39	66.5	34.4	2.2	12.3	18.7	0.0	1.2	32.1	3.1	29.0	0.1	33.5	100.0	517
40-44	56.7	27.8	1.4	10.5	14.3	0.0	1.6	29.0	1.8	26.6	0.5	43.3	100.0	613
45-49	36.8	15.0	0.0	7.5	7.0	0.0	0.5	21.8	1.5	19.3	1.0	63.2	100.0	687
Residence														
Urban	58.0	32.8	1.7	10.1	19.2	0.9	1.0	25.2	2.3	22.0	0.9	42.0	100.0	2,111
Rural	50.5	19.4	1.3	8.9	8.1	0.7	0.5	31.1	2.6	27.9	0.5	49.5	100.0	1,515
Region														
Yerevan	66.2	41.7	1.8	10.8	26.5	1.4	1.0	24.5	1.5	21.8	1.1	33.8	100.0	1,126
Aragatsotn	66.7	21.6	1.0	10.4	8.1	2.1	0.0	45.2	0.1	45.1	0.0	33.3	100.0	164
Ararat	57.8	23.0	0.7	11.3	10.8	0.0	0.2	34.8	2.9	31.7	0.1	42.2	100.0	228
Armavir	63.2	22.5	0.8	9.9	10.5	0.0	1.3	40.7	2.1	38.3	0.4	36.8	100.0	373
Gegharkunik	27.3	18.6	0.6	8.3	9.1	0.0	0.5	8.7	1.5	6.7	0.5	72.7	100.0	300
Lori	53.4	35.8	1.6	19.2	11.8	1.5	1.8	17.6	0.8	15.9	1.0	46.6	100.0	325
Kotayk	51.3	14.2	0.8	7.2	5.8	0.0	0.3	37.2	10.4	26.2	0.6	48.7	100.0	344
Shirak	35.6	18.3	4.4	3.5	9.3	0.8	0.2	17.3	2.8	14.5	0.0	64.4	100.0	384
Syunik	48.3	21.4	0.0	5.6	13.6	0.8	1.4	26.8	0.0	22.1	4.8	51.7	100.0	136
Vayots Dzor	62.1	11.2	0.0	3.5	7.4	0.1	0.2	50.9	0.5	50.3	0.0	37.9	100.0	90
Tavush	49.9	10.4	0.9	5.5	3.6	0.0	0.3	39.5	1.4	37.8	0.3	50.1	100.0	156
Education														
Basic	48.4	21.4	0.7	6.7	11.8	0.0	2.3	26.9	3.9	22.7	0.3	51.6	100.0	147
Secondary	50.6	20.2	1.3	8.3	9.2	1.0	0.4	30.4	1.4	28.3	0.7	49.4	100.0	1,524
Secondary special	55.8	28.9	2.1	9.5	15.7	0.4	1.2	26.9	2.8	23.9	0.2	44.2	100.0	1,139
Higher	62.8	39.1	1.2	12.5	23.6	1.1	0.7	23.7	3.7	18.3	1.7	37.2	100.0	816
Number of living children														
0	3.0	1.1	0.0	0.0	1.1	0.0	0.0	1.8	0.0	1.8	0.0	97.0	100.0	269
1-2	60.6	31.6	1.6	11.4	16.9	0.9	0.8	29.0	2.7	25.5	0.8	39.4	100.0	2,434
3-4	56.0	24.0	1.8	7.7	12.7	0.9	0.9	32.0	2.5	28.5	1.0	44.0	100.0	887
5+	(27.4)	(3.5)	(0.0)	(2.1)	(1.4)	(0.0)	(0.0)	(23.9)	(0.0)	(22.8)	(1.1)	(72.6)	100.0	36
Total	54.9	27.2	1.5	9.6	14.6	0.8	0.8	27.7	2.4	24.5	0.8	45.1	100.0	3,626

Note: If more than one method is used, only the most effective method is considered in this tabulation. Figures in parentheses are based on 25 to 49 unweighted cases.
LAM = Lactational amenorrhea method.

Table 5 shows the level and key differentials in the current use of contraception by method as reported by currently married women. The 2010 ADHS found that over half (55 percent) of currently married women are using some method of contraception. Approximately half of contraceptive users rely on a traditional method (28 percent) and another half on a modern method (27 percent). The most commonly used method is withdrawal (25 percent), followed by the male condom (15 percent), and the IUD (10 percent).

Contraceptive use levels rise rapidly with age, peaking at 70 percent among currently married women age 30-34 and then declining to 37 percent among those women age 45-49.

The difference in the overall use of contraception among married women in urban and rural areas is not large (58 percent and 51 percent, respectively). However, urban women are markedly more likely to be using a modern method than rural women (33 percent and 19 percent, respectively). There is considerable variation in contraceptive use by region. Women from Tavush and Vayots Dzor are the least likely to use any modern methods of contraception and are among the most likely to rely on withdrawal, as do women from Aragatsotn and Armavir. Yerevan and Lori have the highest rates of use of modern methods (42 percent and 36 percent, respectively). As expected, contraceptive use, particularly the use of modern methods, increases with educational attainment. Women with higher levels of education are twice as likely to use a modern method as women with secondary or basic education (39 percent compared with 20 to 21 percent). In general, women in Armenia do not begin to use contraception until they have had at least one child.

Overall, use of contraception has decreased, from 61 percent of married women in the 2000 ADHS to 53 percent of married women in the 2005 ADHS, and then has slightly increased to 55 percent in the 2010 ADHS. However, the proportion of married women who use modern contraceptive methods increased from 20 to 22 percent in previous surveys to 27 percent in the 2010 survey. In particular, the percentage of male condom users increased from 7 percent in 2000 to 8 percent in 2005 to 15 percent in 2010. The 2010 ADHS results also indicate a steady decrease in the use of traditional methods (from 37 percent in 2000 to 34 percent in 2005 and 28 percent in 2010), particularly for withdrawal (32 percent in 2000, 28 percent in 2005, and 25 percent in 2010).

D.   Fertility Preferences

Insight into the childbearing intentions of Armenian women was obtained by asking respondents whether they wanted to have another child and, if so, how soon. Table 6 shows that the majority of married Armenian women express a desire to control their future fertility. Over half of respondents (58 percent) do not want to have any more children. The desire to limit fertility markedly increases by number of living children. For example, most married women with no children want to have a child; more than half (55 percent) say that they want to have a child soon. On the other hand, almost seven in ten women with two children say they want no more, as do eight in ten women with three or more children.

Table 6 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, Armenia 2010

Desire for children	Number of living children[1]					Total
	0	1	2	3	4+	
Have another soon[2]	54.6	22.5	4.9	1.0	0.0	9.6
Have another later[3]	3.3	41.7	8.5	2.0	0.0	12.6
Have another, undecided when	6.5	5.8	2.1	0.8	0.0	2.6
Undecided	5.6	6.0	12.1	4.7	5.3	8.7
Want no more	0.6	14.0	66.2	81.8	87.8	57.6
Sterilized[4]	0.0	0.0	0.2	0.8	0.0	0.2
Declare infecund	29.4	9.5	5.9	8.7	6.9	8.3
Missing	0.0	0.5	0.2	0.3	0.0	0.2
Total	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	177	676	1,826	781	166	3,626

[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 male and female sterilization

Compared with the previous surveys the proportion of women who say that they do not want to have any more children has decreased, particularly during the past five years (58 percent in 2010 compared with 70 percent in the 2005 ADHS and 72 percent in the 2000 ADHS). On the other hand, there are more women in 2010 who say that they cannot conceive (8 percent in 2010 and 4 percent in 2005) or who are undecided about whether they want to have another child (9 percent in 2010 and 3 percent in 2005).

E.   Maternal Care

Proper care during pregnancy and childbirth is important for the health of both the mother and her child. The 2010 ADHS included questions on maternal health care for births that occurred during the five years preceding the survey.

Antenatal care

Antenatal care from a trained provider is important to monitor the pregnancy and reduce risks for the mother and infant during pregnancy and at delivery. In Armenia, skilled providers trained to assist during delivery include doctors, nurses, midwives, and feldshers[1].

Table 7 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, and among all live births in the five years before the survey, percentage delivered by a skilled provider and percentage delivered in a health facility, by background characteristics, Armenia, 2010

Background characteristic	Percentage with antenatal care from a skilled provider[1]	Number of women	Percentage delivered by a skilled provider[1]	Percentage delivered in a health facility	Number of births
Mother's age at birth					
<20	99.6	83	99.0	99.0	136
20-34	99.0	1,004	99.5	99.4	1,241
35-49	99.1	64	100.0	100.0	72
Residence					
Urban	98.4	680	99.8	99.5	846
Rural	100.0	471	99.0	99.2	603
Region					
Yerevan	98.5	376	99.7	99.2	459
Aragatsotn	99.6	47	99.7	99.7	63
Ararat	100.0	83	100.0	100.0	104
Armavir	100.0	112	99.0	98.7	140
Gegharkunik	100.0	82	96.8	97.9	109
Lori	97.1	91	100.0	100.0	111
Kotayk	99.0	121	100.0	100.0	150
Shirak	99.5	115	99.2	99.2	155
Syunik	100.0	41	100.0	100.0	52
Vayots Dzor	100.0	32	100.0	100.0	40
Tavush	99.4	51	100.0	100.0	65
Mother's education					
Basic	97.9	51	100.0	100.0	71
Secondary	98.7	446	99.2	99.3	572
Secondary special	99.2	354	99.3	99.3	442
Higher	99.7	299	100.0	99.5	363
Total	99.1	1,151	99.5	99.4	1,448

[1] Skilled provider includes doctor, nurse, midwife, or feldsher.

Table 7 shows that 99 percent of mothers reported seeing a health professional at least once for antenatal care for the most recent birth in the five-year period before the survey. Coverage is almost uniformly high among mothers regardless of background characteristics.

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[1] A feldsher is a health professional trained in nursing and midwifery with extended training in clinical diagnosis and pharmacology. Feldshers are authorized to provide basic treatment and to prescribe a restricted number of drugs at feldsher-accoucher posts (FAPs) with no assigned doctor.

The overall antenatal coverage has increased over the past five years between the surveys (99 percent in 2010 versus 93 percent in 2005). The specific regions show greater improvements.

Delivery care

Proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that can cause the death or serious illness of the mother, infant, or both. Table 7 shows that virtually all births in Armenia are delivered by a health professional; similarly, almost all deliveries take place in health facilities. Differentials in delivery care vary little by background characteristics of the mother.

Overall, the data suggest a slight increase in facility deliveries, from 97 percent in the 2005 ADHS to 99 percent in the 2010 ADHS. In particular, Gegharkunik shows great improvement, increasing from 84 percent in 2005 to 98 percent in 2010, followed by the Aragatsotn marz, increasing from 88 percent in 2005 to 100 percent in 2010.

F. Child Health

Infant and child mortality

One important objective of the 2010 ADHS was to measure the level of and trends in mortality among infants and children because mortality rates of these groups are basic indicators of a country's socioeconomic situation and quality of life.

The 2010 ADHS questionnaire included a reproductive history in which questions were asked and responses were recorded for each of a woman's pregnancies. Respondents were asked to report the outcome of each pregnancy in terms of standard international definitions. Live birth was defined as any birth, irrespective of the duration of pregnancy, that, after separation from the mother, showed any sign of life (for example, breathing, beating of the heart, or movement of voluntary muscles) (WHO, 1993).

For each live birth reported in the pregnancy history, information was collected on the date of birth (month and year), sex, survivorship, and current age (for surviving children) or age at death (for deceased children). Thus, respondents were asked to report about events occurring throughout their reproductive lives. For older respondents, women age forty and older, this means they were asked about events occurring as long as 25 to 30 years ago. The information on live births was then used to estimate the following five mortality rates:

Neonatal mortality (NN): the probability of dying within the first month of life;
Postneonatal mortality (PNN): the difference between infant and neonatal mortality;
Infant mortality ($_1q_0$): the probability of dying between birth and exact age 1;
Child mortality ($_4q_1$): the probability of dying between exact ages 1 and 5;
Under-5 mortality ($_5q_0$): the probability of dying between birth and exact age 5.

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

Table 8 shows infant and child mortality estimates based on data from the 2010 ADHS. For the five years preceding the survey (approximate calendar years of 2006 through 2010), the infant mortality estimate is 13 per 1,000 live births. The estimates of neonatal and postneonatal mortality are 8 and 6 per 1,000, respectively. The estimate of child mortality (age 1 to age 4) is much lower: 3 per 1,000. The overall under-5 mortality rate for the period is 16 per 1,000.

Table 8 Early childhood mortality rates					
Neonatal, postneonatal, infant, child, and under-5 mortality rates for five-year periods preceding the survey, Armenia 2010					
Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality $(_1q_0)$	Child mortality $(_4q_1)$	Under-five mortality $(_5q_0)$
0-4	8	6	13	3	16
5-9	11	13	24	3	27
10-14	17	9	26	1	27
[1] Computed as the difference between the infant and neonatal mortality rates					

Trends in mortality over the 15-year period prior to the survey can also be examined from Table 8. The data suggest that mortality has substantially decreased over the last 15 years. For example, the infant mortality rate was 26 per 1,000 during the late 1990s (the period 10 to 14 years before the survey) and 24 per 1,000 during the early 2000s (the period 5 to 9 years before the survey) compared with the estimate for the five years before the survey of 13 per 1,000.

Comparison of the results of the 2010 ADHS with those of the 2005 ADHS and 2000 ADHS also suggests a substantial decline. For example, infant mortality for the five years preceding the survey declined from 26 in the 2005 ADHS to 13 in the 2010 ADHS. The 2010 ADHS infant mortality estimate of 24 for the 2001 through 2005 period is nearly the same as the 2005 ADHS estimate of 26 for the same period. It should be noted however, that the 2010 ADHS infant mortality estimate of 26 for the 1995-1999 period is lower than the 2005 and 2000 ADHS estimates for the same period (41 and 36, respectively). This is expected, though, as it is well established that underreporting of deceased children by survey respondents is most likely for time periods more remote from the survey date. This issue will be explored in further detail in the final report when the confidence intervals and data quality tables will become available. Infant mortality is a difficult indicator to measure in a low-fertility country such as Armenia because of the large number of births required to calculate an accurate estimate.

Vaccinations

Armenia's Ministry of Health has adopted the World Health Organization (WHO) guidelines for childhood immunizations that call for all children to receive the following: a BCG vaccination against tuberculosis; three doses of DPT to prevent diphtheria, pertussis, and tetanus; three doses of polio vaccine; and a measles vaccine during the first year of life. In Armenia, measles is given in the form of an MMR vaccination at 12 months of age to protect against measles, mumps, and rubella. In addition to these standard recommendations, since late 1999 the Ministry of Health recommends that children receive three doses of the hepatitis B vaccine, with the first dose given at birth or at first clinical contact (MOH, 2005). The pentavalent vaccine "DPT/Hep-B/HiB", introduced in September 2009, has replaced the DPT vaccine and is supposed to be given according to the same schedule as DPT. The pentavalent vaccine contains in addition to DPT, the hepatitis B vaccine and a vaccine against *Haemophilus* influenza type B (MOH, 2008).

Information on vaccination coverage was collected in the 2010 ADHS for all children under age 5. In Armenia, child health cards are maintained in the local health care facilities. Immunization passports (cards kept by the guardian) were made available in 1995 (MOH and UNICEF, 1999). In this survey, data were collected from both sources, when available. In the event that the mother did not have an immunization passport, she was asked to recall her child's immunizations. After all the interviews in a cluster were completed, the supervisor was in charge of going to the local clinic to record information from the health cards of the children in the sample. Health facility cards were found for 92 percent of children age 18-29 months. Among those children for whom immunization information was not found at a health facility, very few had immunization passports that were seen at home. Thus, while most of the data in Table 9 are based on health facility cards, in the case of children for whom a facility card was not located, the data are based on the mother's recall.

Table 9 Vaccinations by background characteristics

Percentage of children age 18-29 months who received specific vaccines at any time before the survey by source of information (facility vaccination card or the mother's report), and percentage with a facility vaccination card, by selected background characteristics, Armenia, 2010

Background characteristic	BCG	DPT			Polio			MMR	All basic[1]	No vacci-nations	Hepatitis			All[1] + Hep	Percentage with a facility vacci-nation card seen	Number of children
		1	2	3	1	2	3				1	2	3			
Sex																
Male	99.2	98.1	96.5	94.8	99.0	97.5	96.0	94.8	91.3	0.8	98.2	96.5	88.4	85.2	90.6	174
Female	100.0	100.0	95.7	95.3	99.8	97.0	94.5	96.2	91.7	0.0	98.4	96.9	90.9	89.0	94.4	132
Residence																
Urban	100.0	99.5	96.9	95.9	99.7	97.1	95.9	94.9	90.9	0.0	97.8	97.1	90.9	87.9	89.8	181
Rural	98.9	98.1	95.1	93.7	98.9	97.5	94.5	96.1	92.3	1.1	98.9	96.1	87.5	85.3	95.9	124
Mother's education																
Basic	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	14
Secondary	98.7	98.2	92.3	92.3	98.7	94.6	92.8	94.6	90.7	1.3	98.7	96.0	88.6	87.0	96.0	107
Secondary special	100.0	100.0	100.0	98.2	99.8	99.8	97.7	94.1	91.2	0.0	98.1	96.6	87.5	83.9	87.9	105
Higher	100.0	98.3	98.3	98.3	99.5	99.5	99.5	97.4	96.1	0.0	100.0	99.5	96.3	92.9	96.3	79
Total	99.5	98.9	96.2	95.0	99.4	97.3	95.3	95.4	91.5	0.5	98.3	96.7	89.5	86.8	92.3	306

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been supressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] BCG, MMR (measles, mumps, and rubella), and three doses each of DPT/ DPT/Hep-B/HiB and polio vaccine

Table 9 shows rates of vaccination coverage for children 18-29 months of age (i.e., the age by which children should be fully vaccinated). Almost all children (at least 98 percent) in the sample had received vaccinations for BCG and the first doses of polio, DPT, and hepatitis. The proportions of children receiving the second and third doses of polio, DPT, and hepatitis are slightly lower, as is the proportion receiving MMR. For example, 99 percent of children received the first dose of DPT, compared with 95 percent who received the third dose. Thus, the dropout rate[2] between the first and third doses of DPT is just 4 percent. The corresponding dropout rates for polio and hepatitis are 4 percent and 9 percent, respectively.

Overall, the data show that 92 percent of the children 18-29 months of age had received all basic WHO-recommended vaccinations by the date of the interview. A slightly lower proportion of children (87 percent) received the entire course of MOH-recommended vaccinations, which includes hepatitis. Children born to mothers with higher levels of education are slightly more likely than children born to mothers with other levels of education to be fully immunized.

In the 2005 ADHS, rates of vaccination coverage were calculated for children age 12-23 months. For comparison purposes, data from the 2010 ADHS survey were re-calculated for the same age group as in the 2005 ADHS. The 2010 ADHS rates of vaccination coverage for children age 12-23 months (80 percent) suggest a substantial increase from the 2005 ADHS estimate of 60 percent. Health facility cards were found for 96 percent of children age 12-23 months in the 2010 ADHS, compared with 92 percent in the 2005 ADHS (data not shown).

Treatment of childhood diseases

Acute respiratory illness, fever, and dehydration from severe diarrhea are major causes of childhood morbidity and mortality. Prompt treatment for children experiencing the symptoms of these illnesses is, therefore, crucial in increasing child well-being and reducing child deaths. To obtain information on how childhood illnesses are treated, mothers were asked (for each child under age 5) whether in the two weeks before the survey the child had experienced cough with short, rapid breathing (symptoms of an acute respiratory infection), fever, or diarrhea.

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[2] Dropout rate = (Dose 1 – Dose 3) * 100 / Dose 1

Among all children under age 5, 12 percent were reported to have fever, 5 percent had a cough with short, rapid breathing, and 9 percent had diarrhea within the two-week period preceding the survey (data not shown). Table 10 shows treatment sought for children with these illnesses. Among children with ARI symptoms or fever, more than half were taken to a health facility or health care provider. Urban children are more likely than rural children to be taken to a health facility for treatment of fever.

Table 10 Treatment for acute respiratory infection, fever, and diarrhea

Among children under age 5 who had symptoms of acute respiratory infection (ARI) or were sick with fever in the two weeks preceding the survey, the percentage for whom treatment was sought from a health facility or provider, and among children under age 5 who were sick with diarrhea during the two weeks preceding the survey, the percentage for whom treatment was sought from a health facility or provider, the percentage given a solution made from oral rehydration salt (ORS) packets, and the percentage given any oral rehydration therapy (ORT), by background characteristics, Armenia, 2010

Background characteristic	Children with symptoms of ARI[1]		Children with fever		Children with diarrhea			
	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	Percentage for whom treatment was sought from a health facility/ provider[2]	Percentage given solution from ORS packet[3]	Percentage given any ORT[4]	Number with diarrhea
Sex								
Male	(53.8)	36	52.5	93	50.0	38.2	73.7	61
Female	(59.7)	37	56.0	78	34.6	28.0	75.3	64
Residence								
Urban	56.7	61	58.5	123	40.8	30.4	68.9	89
Rural	*	12	(42.9)	48	(45.7)	(39.5)	(88.6)	36
Total	56.8	73	54.1	171	42.2	33.0	74.5	125

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] Symptoms of ARI (cough accompanied by short, rapid breathing, which is chest-related, and/or by difficulty breathing, which is chest-related) are considered a proxy for pneumonia.
[2] Excludes pharmacy, shop, and traditional practitioner
[3] Includes ORS from packets
[4] Includes ORS from packets and recommended home fluid

Among children with diarrhea, 42 percent were taken to a health facility but just 33 percent were given oral rehydration salts (ORS). However, approximately three-quarters of children with diarrhea (75 percent) were at least treated with oral rehydration therapy (ORT), whether it was a solution prepared from ORS packets, a home-prepared solution, or simply extra fluids (Figure 2).

Figure 2 **Treatment for Acute Respiratory Infection, Fever, and Diarrhea**

Children with ARI taken for treatment	57
Children with fever taken for treatment	54
Children with diarrhea taken for treatment	42
Children given ORS	33
Children given ORT	75

Percentage of children under age 5 with illness in the 2 weeks before the survey
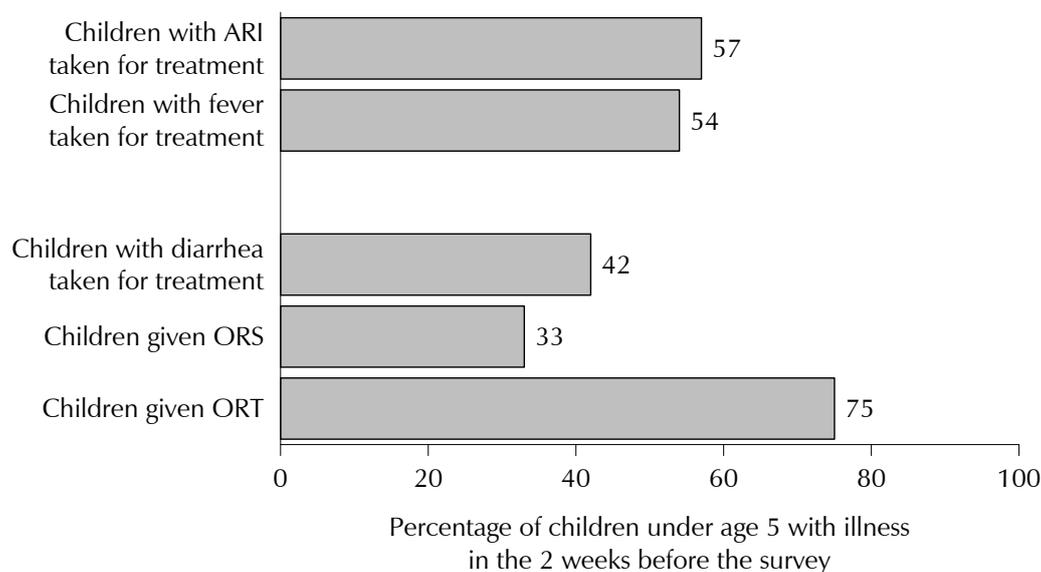
ADHS 2010

G. Child Nutrition

Infant feeding practices

Breast milk is the optimal source of nutrients for infants. Children who are exclusively breastfed receive only breast milk. Exclusive breastfeeding is recommended during the first 6 months of a child's life because it limits exposure to disease agents as well as provides all of the nutrients that are required for a baby. As an infant grows, breast milk alone no longer provides sufficient nourishment, and other liquids and foods need to be added to a child's diet.

Table 11 describes the infant feeding practices of Armenian mothers. Among children under age 6 months, most are breastfed (89 percent). However, just one-third (35 percent) are exclusively breastfed, as recommended. In addition to breast milk, 10 percent are given non-breast milk, 27 percent are given water or other liquids, and 17 percent are given solid or mushy food. Although the majority of Armenian children continue to breastfeed through 9 months, almost all receive supplements in addition to breast milk.

There was little change in the proportion of children under age 6 months who were exclusively breastfed over the last five years between the surveys (35 percent in 2010 and 33 percent in 2005).

When comparing the results of the 2010 ADHS to the previous surveys, it should be noted that in 2010 the table on breastfeeding status by age is restricted to the youngest children under age 2 living with their mothers, instead of the youngest children under age 3 living with their mothers (as in the 2005 ADHS report) and instead of all children under age 3 (as in the 2000 ADHS reports). In addition, the 2010 and 2005 surveys asked mothers about more kinds of complementary food that could have been given to the child than were asked about in 2000.

Table 11 Breastfeeding status by age

Percent distribution of youngest children under age 2 who are living with their mother, by breastfeeding status; the percentage currently breastfeeding; and the percentage of all children under age 2 using a bottle with a nipple, according to age in months, Armenia, 2010

Age in months	Not breast-feeding	Breastfeeding and consuming: Exclusively breastfed	Plain water only	Nonmilk liquids/ juice	Other milk	Comple-mentary food	Total	Percentage currently breast-feeding	Number of youngest children under age 2	Percentage using a bottle with a nipple	Number of all children under age 2
0-1	(0.0)	(72.7)	(10.1)	(6.3)	(10.9)	(0.0)	100.0	(100.0)	26	(2.8)	26
2-3	0.0	36.2	21.3	21.7	14.1	6.7	100.0	100.0	54	36.8	54
4-5	27.1	15.5	11.5	4.3	6.0	35.7	100.0	72.9	56	54.0	56
6-8	29.1	6.0	6.5	4.7	5.2	48.4	100.0	70.9	71	44.8	73
9-11	53.5	1.6	0.0	1.7	0.0	43.3	100.0	46.5	84	76.1	84
12-17	61.4	0.7	0.0	0.0	0.0	37.9	100.0	38.6	164	56.7	171
18-23	82.6	0.0	0.0	0.0	0.0	17.4	100.0	17.4	138	47.5	152
0-3	0.0	47.9	17.7	16.8	13.1	4.6	100.0	100.0	80	25.9	80
0-5	11.2	34.6	15.1	11.6	10.1	17.4	100.0	88.8	136	37.5	136
6-9	37.6	4.4	4.8	3.4	3.8	46.0	100.0	62.4	97	54.8	99
12-15	55.8	1.1	0.0	0.0	0.0	43.1	100.0	44.2	101	54.1	105
12-23	71.1	0.4	0.0	0.0	0.0	28.5	100.0	28.9	303	52.4	322
20-23	77.2	0.0	0.0	0.0	0.0	22.8	100.0	22.8	83	44.8	96

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, nonmilk liquids/juice, other milk, and complementary foods (solids and semisolids) are hierarchical and mutually exclusive, and their percentages add to 100 percent. Thus children who receive breast milk and nonmilk liquids and who do not receive other milk or 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. Figures in parentheses are based on 25-49 unweighted cases.

It should be noted that following the change in WHO recommendations, the MOH changed breastfeeding policy in 2005, recommending that mothers breastfeed exclusively for six months, instead of the four months that had been previously recommended by WHO. Comparison of the 2010 ADHS rates of exclusive breastfeeding among children under 4 months of age (48 percent) suggests an apparent increase from the 2005 ADHS estimate of 37 percent, reaching a level similar to that in the 2000 ADHS (45 percent).

Nutritional status of children

Anthropometry provides one of the most important indicators of children's nutritional status. Height and weight measurements were obtained for children under age 5 in the household[3]. The data on height and weight were used to compute three summary indices of nutritional status: height-for-age, weight-for-height, and weight-for-age. These three indices indicate children's susceptibility to diseases and their chances of survival.

The nutritional indices are expressed as percentages that fall between standard deviation units from the median for the international reference population recommended by the World Health Organization. Children who fall more than two standard deviations below the reference median are regarded as undernourished, while those who fall more than three standard deviations below the reference median are considered severely undernourished.

In the survey, children under age 5 in the household were eligible for height and weight measurements. Of the 1,474 children eligible for measurement (i.e., age 0-59 months at the time of the survey), over 90 percent were measured, and almost all of these children had valid measurements recorded (i.e., not implausibly high or low). Table 12 shows the nutritional status for all children with valid measurements by selected demographic and background characteristics.

Children whose height-for-age is below minus two standard deviations from the median of the reference population are considered stunted or short for their age. Stunting is the outcome of failure to

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[3] Height was measured standing up for children age 2 and older and lying down for children under age 2 using Shorr Boards. Weight was measured using electronic Seca scales.

receive adequate nutrition over an extended period and is also affected by recurrent or chronic illness. Overall, 19 percent of children under age 5 are stunted; 8 percent are severely stunted. For the most part, stunting is fairly evenly distributed by age, but there are some noticeable exceptions. Stunting is slightly less at the time of weaning (13 percent among children age 9-11 months) and rises rapidly after the child's second birthday, peaking at 26 percent among children age 36-47 months and then declining to 17 percent among those age 4 and older (48-59 months). In general, rural children and children born to mothers with less education are more likely to be stunted. There is large regional variation in the prevalence of stunted children, ranging from 11 percent in Yerevan to 37 percent in Syunik. Approximately three in ten children are stunted in Aragatsotn (32 percent) and Ararat (29 percent). Prevalence of severe stunting is especially high among children in Ararat, Gegharkunik, and Syunik (16 percent each).

Children whose weight-for-height is below minus two standard deviations from the median of the reference population are considered wasted (or thin). Wasting represents the failure to receive adequate nutrition in the period immediately before the survey, and often is a result of recent illness, especially diarrhea, or of a rapid deterioration in food supplies. In Armenia, only 4 percent of children were wasted at the time of the survey and less than 2 percent were severely wasted. Although low at the national level, the prevalence of wasting is high among children born to mothers with little education (14 percent), children under age 6 months, and children living in Ararat (12 percent each).

Children whose weight-for-height is above two standard deviations from the median of the reference population are considered overweight (or obese). Table 12 highlights another major problem among young children in Armenia: 15 percent are overweight. The highest proportions of overweight children are in age groups 12-17 months and 48-59 months—every fifth child in these age groups is overweight. Looking at regional patterns, the prevalence of overweight children ranges from 9 percent in Aragatsotn to 35 percent in Lori. Children born to mothers with higher education are twice as likely as children born to mothers with basic education to be overweight (17 percent and 8 percent, respectively).

Children whose weight-for-age is below minus two standard deviations from the median of the reference population are considered underweight. This measure reflects the effects of both acute and chronic undernutrition. Overall, 5 percent of children are underweight, signifying that Armenian children are exceeding the expected percentage (2.3 percent) of underweight in a well nourished population, indicating some level of malnutrition in the population.

Although the overall public health significance of undernutrition among children in Armenia is low, there are some groups that require special attention when looking at different measures of nutritional status. In particular, those children born to mothers with the least education, those under age 6 months, and those living in Ararat have a high prevalence of wasting and underweight. Also, there is a high prevalence of stunting among children age 36-47 months and among children who live in Syunik, Aragatsotn, and Ararat, which signifies a medium to high level of malnutrition that requires special action to change the status quo.

Table 12 Nutritional status of children

Percentage of children under age 5 classified as malnourished according to three anthropometric indices of nutritional status: height-for-age, weight-for-height, and weight-for-age, by background characteristics, Armenia, 2010

Background characteristic	Height-for-age[1]			Weight-for-height				Weight-for-age				Number of children
	Percentage below -3 SD	Percentage below -2 SD[2]	Mean Z-score -SD	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score -SD	Percentage below -3 SD	Percentage below -2 SD[2]	Percentage above +2 SD	Mean Z-score -SD	
Age in months												
<6	5.1	16.1	-0.6	7.2	12.3	8.7	0.2	3.5	13.5	1.1	-0.4	128
6-8	6.2	18.1	-0.5	2.4	3.0	9.3	0.4	5.9	12.3	2.7	-0.1	67
9-11	1.0	13.0	-0.2	0.0	3.6	10.3	0.5	0.0	0.0	1.6	0.2	68
12-17	10.2	18.7	-0.7	0.1	2.0	20.1	0.9	0.9	3.3	5.3	0.3	163
18-23	6.1	15.3	-0.7	0.9	2.2	13.8	0.9	0.0	1.9	1.1	0.3	135
24-35	8.9	21.0	-0.8	0.3	2.5	13.5	0.8	0.9	2.9	4.1	0.1	290
36-47	10.9	25.5	-0.9	1.3	3.4	15.1	0.7	0.8	4.6	2.9	-0.1	247
48-59	8.7	17.4	-0.9	3.5	4.9	22.7	0.7	0.7	3.8	1.9	-0.1	235
Sex												
Male	7.9	20.2	-0.8	2.1	4.7	17.0	0.8	1.4	4.3	3.3	0.1	694
Female	8.5	18.3	-0.7	1.5	3.3	13.7	0.6	1.0	5.1	2.4	0.0	639
Residence												
Urban	6.9	17.3	-0.7	1.6	3.2	15.0	0.7	0.8	2.8	2.3	0.1	777
Rural	10.0	22.0	-0.8	2.2	5.1	16.0	0.6	1.8	7.4	3.6	-0.0	556
Region												
Yerevan	4.7	11.3	-0.6	1.2	2.5	11.4	0.6	0.8	2.1	1.7	0.1	423
Aragatsotn	8.8	32.3	-1.1	3.8	6.0	8.9	0.6	2.5	6.2	0.3	-0.2	56
Ararat	16.2	29.2	-0.5	5.4	11.8	16.8	0.0	3.2	16.8	1.3	-0.3	86
Armavir	8.3	21.5	-0.8	1.6	4.1	9.9	0.5	0.4	8.3	0.5	-0.2	121
Gegharkunik	15.8	25.3	-1.1	5.1	7.4	23.1	0.8	4.6	7.0	1.4	-0.1	104
Lori	11.6	23.4	-0.5	2.6	2.6	35.3	1.3	1.3	5.3	15.9	0.5	90
Kotayk	3.6	17.3	-0.6	0.0	1.4	10.7	0.7	0.0	1.7	2.3	0.2	146
Shirak	10.2	21.4	-1.0	1.7	6.6	17.5	0.8	0.4	2.6	1.4	-0.0	153
Syunik	15.8	36.5	-1.5	0.0	2.3	22.2	0.8	1.1	5.6	0.0	-0.3	49
Vayots Dzor	4.9	16.0	-0.8	0.0	1.8	18.4	0.9	0.0	3.0	6.2	0.2	39
Tavush	4.5	16.1	-0.6	1.0	1.0	14.7	0.8	1.8	4.6	7.8	0.2	67
Mother's education[3]												
Basic	9.8	20.8	-0.7	3.0	13.6	7.9	0.1	0.9	11.2	1.7	-0.3	70
Secondary	9.6	22.2	-0.9	3.2	5.6	15.0	0.6	2.6	8.3	3.3	-0.1	523
Secondary special	8.9	18.2	-0.8	0.6	1.0	15.7	0.9	0.5	1.9	3.3	0.2	405
Higher	4.5	15.2	-0.5	0.9	3.2	16.9	0.7	0.1	1.0	1.9	0.2	328
Mother not in the household	*	*	*	*	*	*	*	*	*	*	*	7
Total	8.2	19.3	-0.7	1.8	4.0	15.4	0.7	1.2	4.7	2.9	0.0	1,333

Note: The table is based on children who slept in the household the night before the interview. Each of the indices is expressed in standard deviation units (SD) from the median of the 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. The table is based on children with valid dates of birth month and year and valid measurement of both height and weight. An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed.
[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 Growth Standards population median
[3] For women who are not interviewed, information is taken from the Household Questionnaire. Children whose mothers are not listed in the Household Questionnaire are excluded.

The data on children's nutritional status from the 2010 ADHS can be compared with data from two previous DHS surveys conducted in Armenia in 2000 and 2005. However, several factors impede comparisons. The 2010 and 2005 ADHS surveys tabulated nutritional status for all children under age 5 who slept in the household the night before the interview, regardless of their mother's interview status, but the 2000 ADHS tabulated only children whose mothers were interviewed. Second, the 2010 ADHS analysis is based on the new WHO child growth reference standards, while the 2005 and 2000 ADHS surveys used the older National Center for Health Statistics (NCHS) version of the reference standard.

For comparison purposes, data from the 2000, 2005, and 2010 ADHS surveys were all re-calculated according to the new reference population but restricted to children born to women interviewed with the Women's Questionnaire and living with an interviewed mother.

Figure 3 shows that the proportion of children under age 5 who are stunted increased just slightly from 17 percent in 2000 to 18 percent in 2005, and then peaked at 19 percent in 2010. The proportion of children who are wasted has also increased over the past 10 years, from 2 percent in 2000 to 4 percent in 2010, with no marked change over the past five years. The proportion of underweight children increased from 2 percent in 2000 to 5 percent in 2010.

Regarding overweight, the proportion of children whose weight-for-height is above plus two standard deviations (+2 SD) has not changed in the past ten years. However, the percentage of children who are overweight has increased over the past 5 years, from 11 percent in 2005 to 15 percent in 2010.

Overall, the nutritional status of children has changed little during the past ten years between the surveys.

Figure 3 Trends in Nutritional Status of Children under Age 5
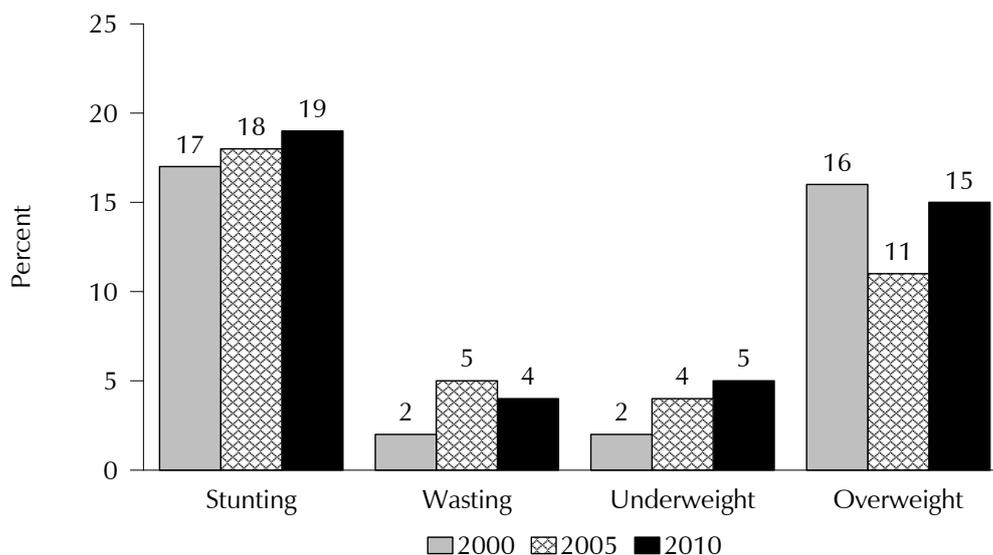
Note: Data are based only on children whose mothers were interviewed according to the new WHO Child Growth Standards adopted in 2006.

H.   HIV/AIDS

Knowledge of HIV/AIDS

The 2010 ADHS included a series of questions that addressed women's and men's awareness of the human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS). Respondents who had heard of HIV/AIDS were asked about ways to avoid the disease. Table 13 and Table 14 present the answers to these questions.

Percentage of women and men age 15-49 who have heard of AIDS, by background characteristics, Armenia, 2010

Background characteristic	Women		Men	
	Have heard of AIDS	Number of women	Have heard of AIDS	Number of men
Age				
15-24	91.9	1,893	91.1	527
15-19	86.7	861	82.8	229
20-24	96.3	1,032	97.4	298
25-29	97.6	950	97.8	285
30-39	98.2	1,481	99.1	391
40-49	97.1	1,598	98.1	381
Marital status				
Never married	92.0	1,911	92.6	707
Ever had sex	*	9	99.8	414
Never had sex	92.0	1,903	82.4	293
Married/living together	97.6	3,626	98.7	855
Divorced/separated/ widowed	97.5	385	(100.0)	22
Residence				
Urban	97.9	3,641	98.3	984
Rural	92.5	2,281	92.1	600
Region				
Yerevan	98.8	2,069	99.4	593
Aragatsotn	81.3	260	83.1	70
Ararat	84.5	379	91.7	125
Armavir	99.0	535	98.3	148
Gegharkunik	90.5	459	92.9	83
Lori	98.4	513	86.8	130
Kotayk	98.6	543	99.2	148
Shirak	96.5	598	98.7	131
Syunik	97.9	198	90.7	63
Vayots Dzor	88.5	131	86.1	24
Tavush	95.1	238	99.6	68
Education				
Basic	81.7	347	86.8	188
Secondary	93.7	2,137	94.9	619
Secondary special	98.3	1,681	98.0	301
Higher	98.8	1,757	99.7	477
Total	95.8	5,922	96.0	1,584

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

Overall, more than nine in ten respondents say that they have heard of AIDS. Awareness of AIDS is somewhat lower among the youngest and least educated respondents, and among men who never have had sex. Additionally, a lower proportion of women and men living in Aragatsotn and Vayots Dzor have heard of AIDS.

Table 14 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 sex partner who is not infected and has no other partners, by background characteristics, Armenia, 2010

	Women				Men			
	Percentage who say HIV can be prevented by:				Percentage who say HIV can be prevented by:			
Background characteristic	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of women	Using condoms[1]	Limiting sexual intercourse to one uninfected partner[2]	Using condoms and limiting sexual intercourse to one uninfected partner[1,2]	Number of men
Age								
15-24	66.4	74.3	60.9	1,893	70.3	74.0	63.9	527
15-19	56.1	66.8	50.0	861	60.0	61.9	50.7	229
20-24	75.0	80.5	70.1	1,032	78.2	83.3	74.1	298
25-29	76.5	82.0	70.4	950	88.0	91.6	86.2	285
30-39	78.1	87.8	75.4	1,481	89.6	94.5	88.6	391
40-49	75.9	82.4	71.1	1,598	91.2	93.5	89.3	381
Marital status								
Never married	66.8	75.0	61.9	1,911	75.5	78.4	70.4	707
Ever had sex	*	*	*	9	90.0	89.4	85.3	414
Never had sex	66.7	75.0	61.8	1,903	54.9	62.9	49.5	293
Married/living together	76.6	83.7	71.9	3,626	89.5	93.7	87.8	855
Divorced/separated/ widowed	78.1	86.1	74.2	385	(95.0)	(97.4)	(95.0)	22
Residence								
Urban	77.9	85.5	73.8	3,641	85.6	88.9	82.1	984
Rural	66.4	74.0	60.9	2,281	79.4	83.7	76.8	600
Education								
Basic	50.3	60.4	45.1	347	76.2	81.2	74.6	188
Secondary	67.4	76.3	61.8	2,137	80.4	83.3	76.7	619
Secondary special	76.7	83.8	72.0	1,681	85.2	89.6	82.4	301
Higher	82.5	88.3	78.9	1,757	88.6	92.1	85.3	477
Total	73.5	81.1	68.8	5,922	83.3	86.9	80.1	1,584

Note: An asterisk indicates that a figure is based on fewer than 25 unweighted cases and has been suppressed. Figures in parentheses are based on 25-49 unweighted cases.
[1] Using condoms every time they have sexual intercourse
[2] Partner who has no other partners

Knowledge of HIV remains high among women (96 percent in 2010 ADHS and 95 percent in 2005 ADHS) and has slightly improved during the last five years among men (from 92 percent in 2005 to 96 percent in the 2010 ADHS).

Table 14 shows the percentages of women and men who in response to prompted questions give positive responses to specific ways to avoid AIDS: condom use and limiting the number of sexual partners or staying faithful to one partner who has no other partners. Overall, the most often mentioned way of avoiding AIDS is by limiting sex to one partner who has not been infected with AIDS (81 percent of women and 87 percent of men). The use of condoms is cited by 74 percent of women and 83 percent of men. Approximately seven in ten women (69 percent) and eight in ten men (80 percent) mentioned using condoms *and* limiting sex to one uninfected partner.

Younger and never-married respondents (especially men who never had sex) are less likely than older respondents and ever-married respondents to know ways to avoid getting the AIDS virus. Urban women are more likely to be aware of safe sexual practices than rural women. There is a strong positive relationship between the respondent's educational background and his or her knowledge of ways to prevent getting HIV. For example, 45 percent of women and 75 percent of men with basic education say that the risk of getting the AIDS virus can be reduced by using condoms *and* limiting sex to one uninfected partner, compared with 79 percent of women and 85 percent of men with higher than secondary education.

Overall, knowledge of HIV prevention methods at the national level has changed little during the last five years among both women and men but has improved substantially when compared with the results of the 2000 ADHS.

Multiple sexual partnerships and condom use

Given that most HIV infections are contracted through heterosexual contact, information on sexual behavior is important in designing and monitoring intervention programs to control the spread of the epidemic. In the context of HIV/AIDS prevention, limiting the number of sexual partners and having protected sex are crucial to combating the epidemic.

The 2010 ADHS included questions on respondents' sexual partners during the 12 months preceding the survey. Information on the use of condoms at the last sexual encounter was collected from both women and men. Finally, sexually active women and men were asked about the total number of partners they had during their lifetime. These questions are of course sensitive, and in interpreting the results in this section, it is important to remember that respondents' answers are likely subject to at least some reporting bias.

Table 15 shows that 15 percent of all men reported having more than one sexual partner in the 12 months preceding the survey. Youngest and oldest men, currently married men, rural men, and those with less than secondary education are less likely than other men to be engaged in sex with multiple sexual partners. At least one-fifth of men living in the Kotayk (26 percent), Yerevan (22 percent), and Gegharkunik (21 percent) marzs reported having more than one sex partner in the past year, compared with only 2 percent or less of men living in each of the Aragatsotn, Ararat, Shirak, and Vayots Dzor marzs. Almost no women reported having more than one sexual partner in the reference period (data not shown).

Table 15 Multiple sexual partners in the past 12 months among 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 a lifetime for men who ever had sexual intercourse, by background characteristics, Armenia, 2010

	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	16.1	527	85.9	85	4.7	247
15-19	5.9	229	*	14	2.6	42
20-24	23.9	298	85.6	71	5.2	205
25-29	22.9	285	77.0	65	6.1	239
30-39	16.2	391	70.7	63	6.4	342
40-49	7.2	381	(22.9)	28	5.6	345
Marital status						
Never married	22.0	707	91.3	156	7.4	374
Married/living together	9.6	855	37.8	82	4.8	780
Divorced/separated/ widowed	(16.8)	22	*	4	(10.6)	20
Residence						
Urban	18.3	984	80.0	180	6.5	780
Rural	10.1	600	49.4	61	4.4	394
Region						
Yerevan	22.1	593	84.1	131	7.0	492
Aragatsotn	0.0	70	*	0	1.4	35
Ararat	1.8	125	*	2	1.9	67
Armavir	14.0	148	*	21	9.4	94
Gegharkunik	20.7	83	(73.4)	17	3.7	53
Lori	6.7	130	*	9	8.7	112
Kotayk	25.9	148	(53.0)	38	4.7	126
Shirak	1.0	131	*	1	2.2	82
Syunik	15.6	63	*	10	3.7	47
Vayots Dzor	0.0	24	*	0	1.7	16
Tavush	16.9	68	*	11	2.6	50
Education						
Basic	7.4	188	*	14	5.4	115
Secondary	14.1	619	67.0	87	5.4	427
Secondary special	16.1	301	(58.2)	48	5.5	252
Higher	19.2	477	85.2	91	6.4	381
Total	15.2	1,584	72.3	241	5.8	1,174

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

Seventy-two percent of men who had more than one sexual partner in the 12 months preceding the survey reported using a condom at the last sexual intercourse. Protected sex in the last 12 months was least likely among men age 40-49 (23 percent), currently married men (38 percent) and rural men (49 percent). As mentioned above, men from these categories also are less likely to report having more than one sexual partner in the 12 months preceding the survey.

Among those who ever had sexual intercourse, the mean number of lifetime sexual partners is 1.0 for women (data not shown) and 5.8 for men (5.6 in the 2005 ADHS). Even teenage men report that they have had 2.6 sexual partners in their life. The mean number of lifetime sexual partners increases with education, from 5.4 partners for men with lower levels of education to 6.4 partners for those with higher education. Across regions, men in Yerevan, Armavir, and Lori report having the most lifetime sexual partners (7 to 9 partners), while men in Aragatsotn, Vayots Dzor, Ararat, and Shirak report having the fewest (1 to 2 partners).

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