MATERNAL AND CHILD HEALTH 10

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This chapter presents findings on several areas of importance to maternal and child health: antenatal, delivery, and postnatal care; vaccination coverage; and common childhood illnesses and their treatment. This information, in combination with data on mortality, is useful in formulating programs and policies to improve maternal and child health services.

Maternal and child health care in Armenia is implemented through an extensive system of ambulatory polyclinics and hospitals. The network of ambulatory health care is organized around geographical regions and is offered through children's and women's consultation polyclinics and rural health facilities. Obstetric care is offered at hospital obstetric-gynecological departments, regional delivery hospitals located in urban areas, and at republican centers for specialized (tertiary) care.

10.1 Antenatal Care

The health care that a mother receives during pregnancy and at the time of delivery is important for the survival and well-being of both the mother and the child. Antenatal care (ANC) is described according to the type of provider, number of ANC visits, stage of pregnancy at the time of the first and last visits, and number of visits, as well as the services and information provided during ANC.

Antenatal care provider

Table 10.1 presents data on the utilization of different types of antenatal care providers. Overall, the ADHS found that 92 percent of women receive antenatal care from a trained provider (doctor, nurse, or trained midwife) at least once (Figure 10.1). In urban areas, 92 percent of care is provided by doctors and 3 percent is provided by nurses or trained midwives. In rural areas, doctors provide 74 percent of care and nurses and midwives provide 15 percent. In almost all regions, more than 90 percent of mothers receive antenatal care from a trained professional. However, antenatal care is received from a health professional by only 86 percent of mothers in Vayots Dzor, 80 percent in Aragatsotn, and 70 percent in Gegharkunik.

Number and timing of antenatal care visits

The prevention of complications of pregnancy and delivery complications and the successful outcome of the pregnancy for both mother and child is associated with the quality of antenatal care, the number of visits, and the timing of the first visit. In terms of timing, the Ministry of Health recommends the first visit by 12 weeks of gestation. The Ministry of Health has adopted the World Health Organization guideline of at least four antenatal care visits for a normal pregnancy.

Almost two-thirds of all respondents make four or more antenatal care visits. There is a significant urban-rural differential, however. The median number of antenatal care visits among rural women is half that of urban women (three visits versus six visits). Although only 18 percent

Table 10.1 Antenatal care

Percent distribution of women who had a live birth in the five years preceding the survey by antenatal care (ANC) provider during pregnancy, according to background characteristics, Armenia 2000

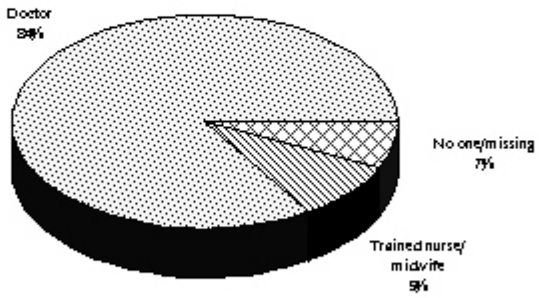
Background characteristic	Antenatal care provider[1]					Number of births
	Doctor	Nurse/ midwife	Traditional birth attendant/ other[2]	No one	Total	
Mother's age at birth						
<20	79.4	10.6	0.0	10.0	100.0	172
20-34	85.0	8.6	0.2	6.2	100.0	999
35-49	78.2	4.5	0.0	17.3	100.0	77
Birth order						
1	89.2	7.8	0.0	3.0	100.0	384
2-3	83.4	8.5	0.2	8.0	100.0	723
4+	71.3	12.0	0.8	15.9	100.0	141
Residence						
Urban	92.3	3.3	0.3	4.1	100.0	664
Rural	74.1	14.8	0.0	11.1	100.0	583
Region						
Yerevan	96.3	1.1	0.0	2.6	100.0	374
Aragatsotn	77.8	1.7	0.0	20.5	100.0	68
Ararat	93.2	3.8	0.0	3.0	100.0	150
Armavir	81.7	12.2	0.0	6.1	100.0	129
Gegharkunik	49.6	20.7	0.0	29.8	100.0	120
Lori	88.4	3.5	0.0	8.1	100.0	103
Kotayk	69.1	22.1	2.9	5.9	100.0	77
Shirak	75.7	21.4	0.0	2.9	100.0	87
Syunik	96.7	2.2	0.0	1.1	100.0	49
Vayots Dzor	82.2	4.0	0.0	13.9	100.0	25
Tavush	75.6	22.7	0.0	1.7	100.0	67
Education						
Primary/middle	65.1	15.5	0.0	19.3	100.0	106
Secondary	81.2	10.8	0.0	7.9	100.0	490
Secondary-special	86.4	7.1	0.3	6.2	100.0	430
Higher	93.4	3.4	0.5	2.7	100.0	222
Total	83.8	8.6	0.2	7.4	100.0	1,248

Note: For women with two or more live births in the five-year period, data refer to the most recent birth.

[1] If the respondent mentioned more than one provider, only the most qualified provider is considered.

[2] Includes women who don't know the type of provider

Figure 10.1 Antenatal Care Provider



Armenia DHS 2000

of women overall have an antenatal care visit by 3 months of gestation, the median number of months pregnant at time of first visit is 3.8, and there is virtually no difference between women residing in urban and rural areas.

Antenatal care content

Determining the extent of care given during antenatal visits is important in judging the value of antenatal care services. In Armenia, antenatal care should include the testing of blood and urine samples; a vaginal examination; a bacterioscopic vaginal examination; and height, weight, and blood pressure measurement. Pregnant women who are ill or at higher risk of complications undergo additional examinations. Finally, antenatal care includes the health education of pregnant women, which informs them about pregnancy complications. Table 10.3 presents information on the percentage of women who were informed about the signs of pregnancy complications and who received routine antenatal care procedures during their last pregnancy in

Table 10.2 Number of antenatal care visits and timing of first visit

Percent distribution of women who had a live birth in the five years preceding the survey by number of antenatal care (ANC) visits, and by the timing of the first visit, according to residence, Armenia 2000

Number and timing of ANC visits	Residence		Total
	Urban	Rural	
Number of ANC visits			
None	4.1	11.1	7.4
1 visit	2.1	12.0	6.8
2-3 visits	8.3	28.2	17.6
4+ visits	81.7	45.4	64.7
Don't know/missing	3.8	3.3	3.6
Total	100.0	100.0	100.0
Median number of visits (for those with ANC)	6.3	3.2	4.9
Number of months pregnant at the time of the first ANC visit			
No antenatal care	4.1	11.1	7.4
<3	21.6	13.4	17.8
3-4	58.6	54.8	56.8
5-6	11.6	12.9	12.2
7+	3.5	4.6	4.0
Don't know/missing	0.6	3.1	1.8
Total	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	3.7	3.9	3.8
Total	664	583	1,248

Note: For women with two or more live births in the five-year period, data refer to the most recent birth.

Table 10.3 Antenatal care content

Percentage of women with a live birth in the five years preceding the survey who received antenatal care, by content of antenatal care and background characteristics, Armenia 2000

Background characteristic	Informed of signs of pregnancy complications	Blood pressure measured	Urine sample taken	Blood sample taken	Received vaginal exam	Weight measured	Height measured	Number of women
Age at birth								
<20	46.1	92.8	91.6	92.9	79.7	87.4	80.6	155
20-34	58.5	96.7	94.4	96.1	88.6	92.3	88.7	937
35-49	54.5	98.0	97.2	98.0	92.2	88.8	84.6	63
Birth order								
1	61.5	95.3	95.7	96.7	88.4	93.9	87.3	372
2-3	55.9	96.6	94.2	95.6	88.7	91.6	88.9	665
4+	45.9	97.4	89.3	93.6	79.1	82.4	79.2	118
Residence								
Urban	61.9	98.2	98.3	98.5	96.1	97.4	93.7	637
Rural	50.3	93.9	89.1	92.3	77.2	84.1	79.6	518
Region								
Yerevan	66.4	98.9	99.6	99.6	98.5	99.6	97.0	364
Aragatsotn	54.8	92.5	96.8	97.8	89.2	75.3	71.0	54
Ararat	51.6	93.0	92.2	96.1	82.0	89.8	79.7	146
Armavir	48.1	96.3	94.4	96.3	82.4	79.6	76.9	121
Gegharkunik	48.2	88.2	68.2	69.4	49.4	75.3	70.6	84
Lori	48.1	98.7	94.9	98.7	97.5	91.1	87.3	94
Kotayk	57.8	96.9	96.9	98.4	92.2	98.4	92.2	73
Shirak	61.8	97.1	91.2	92.6	89.7	92.6	91.2	85
Syunik	51.7	97.8	95.5	100.0	91.0	91.0	89.9	49
Vayots Dzor	57.5	95.4	94.3	95.4	78.2	90.8	92.0	21
Tavush	49.6	96.6	98.3	98.3	75.2	96.6	92.3	65
Education								
Primary/middle	37.2	91.8	90.5	94.1	71.1	74.3	70.8	86
Secondary	51.3	95.5	91.2	92.7	86.6	89.5	85.0	451
Secondary-special	59.4	97.4	96.4	98.4	89.2	94.4	90.5	403
Higher	70.4	97.6	97.7	98.0	93.4	96.8	93.3	216
Total	56.7	96.3	94.2	95.8	87.6	91.4	87.4	1,156

Note: For women with two or more live births in the five-year period, data refer to the most recent birth.

the five years years preceding the survey by background characteristics. These procedures are helpful in the early diagnosis of pregnancy complications, which are important sources of maternal and child mortality and morbidity.

Overall, approximately 90 percent of pregnant women received all of the specified care with the exception of information about pregnancy complications (57 percent). In particular, less than half of the mothers in Armavir, Gegharkunik, Lori, and Tavush report that they were informed of the signs of pregnancy complications. Urban women are more likely than rural women to have received all seven specified antenatal care procedures. Similarly, better educated women are more likely to receive all of the specified antenatal care services than woman with less education. The data show that overall, women in Gegharkunik are significantly less likely to receive high-quality antenatal care than women residing in other regions.

10.2 Assistance and Medical Care at Delivery

Hygienic conditions during delivery and supervision of delivery by trained medical staff reduce the risk of infections and ensure that complications of delivery are effectively handled. The ADHS collected information on the place of delivery for all children born in the five years preceding the survey and the type of medical staff assisting during delivery.

Table 10.4 indicates that most births (91 percent) occur at a health facility. Nine percent of births overall occur in the respondent's home, but the likelihood of this occurrence varies greatly by background characteristics. Whereas health facility deliveries are almost universal in urban areas (99 percent), in rural areas, 16 percent of deliveries occur at home. There is considerable variation

Table 10.4 Place of delivery

Percent distribution of live births in the five years preceding the survey by place of delivery, according to background characteristics, Armenia 2000

Background characteristic	Place of delivery				Number of births
	Health facility	At home	Don't know/ missing	Total	
Mother's age at birth					
<20	86.4	13.6	0.0	100.0	311
20-34	92.7	7.1	0.2	100.0	1,261
35-49	88.8	11.2	0.0	100.0	84
Birth order					
1	95.0	5.0	0.0	100.0	650
2-3	91.1	8.6	0.3	100.0	849
4+	77.8	22.2	0.0	100.0	158
Residence					
Urban	98.6	1.3	0.1	100.0	838
Rural	83.9	15.9	0.1	100.0	819
Region					
Yerevan	98.5	1.5	0.0	100.0	459
Aragatsotn	86.1	13.9	0.0	100.0	96
Ararat	91.8	7.7	0.5	100.0	207
Armavir	93.2	6.8	0.0	100.0	164
Gegharkunik	59.2	40.8	0.0	100.0	182
Lori	97.5	2.5	0.0	100.0	142
Kotayk	95.7	3.2	1.1	100.0	106
Shirak	91.5	8.5	0.0	100.0	117
Syunik	99.1	0.9	0.0	100.0	63
Vayots Dzor	97.8	1.5	0.0	100.0	33
Tavush	98.1	1.9	0.0	100.0	88
Mother's education					
Primary/middle	76.4	23.6	0.0	100.0	155
Secondary	88.8	11.0	0.2	100.0	669
Secondary-special	95.3	4.5	0.2	100.0	550
Higher	97.9	2.1	0.0	100.0	283
Antenatal care visits					
None	66.4	33.4	0.0	100.0	151
1-3	86.7	13.3	0.0	100.0	434
4+	97.0	2.8	0.2	100.0	1,019
Total	91.3	8.5	0.1	100.0	1,657

Note: Total includes 54 cases with missing data on antenatal care visits.

by region. Most striking are the data for Gegharkunik, where 41 percent of all births occur outside a health facility. This could be due to a variety of factors, including greater distances to health facilities and lack of money among the population, a significant percentage of whom are refugees from Azerbaijan. Aragatsotn also has more home deliveries than other regions (14 percent). It is important to note that 14 percent of women under age 20 have delivered what is probably their first birth at home.

As expected, one-third of women who had received no antenatal care delivered at home. The likelihood of a home delivery also increases with increasing birth order (from 5 percent of first births to 22 percent of births of fourth or higher order). There is also a strong positive correlation between education and place of delivery. Whereas only 2 percent of women with higher education delivered at home, almost one-quarter (24 percent) of women with a primary/middle school education delivered at home.

Assistance at delivery from a health professional is nearly universal in Armenia (Table 10.5). Ninety-seven percent of live births during the five years preceding the survey were attended by a doctor, nurse, or trained midwife. There are some significant variations by region. In Gegharkunik, for example, only half of births were assisted by a doctor. It is important to note that although more than nine in ten deliveries in Shirak and Tavush occurred in a health facility, the data show that a doctor did not always attend the delivery (65 percent and 75 percent, respectively).

10.3 Characteristics of Delivery

Table 10.6 presents information on the characteristics of the delivery. Seven percent of babies are delivered by caesarean section. Caesarean deliveries increase among older women and women with more education but decrease among higher birth orders. Delivery by caesarean section ranges from a low of less than 1 percent in Gegharkunik to a high of 11 percent in Shirak.

Information on birth weight was obtained for 96 percent of all births. Of those babies weighed, 94 percent were reported to have a weight of at least 2.5 kilograms. Given the high percentage of births occurring outside health facilities in Gegharkunik, it is not surprising that almost a quarter (23 percent) of newborns were not weighed. Among newborns in Gegharkunik for whom a weight was recorded, however, 15 percent weighed less than 2.5 kilograms, which is considered to be low birth weight. Newborns in rural areas, at higher birth orders, and with less educated mothers are more likely than other newborns to weigh less than 2.5 kilograms.

Table 10.5 Assistance during delivery

Percent distribution of live births in the five years preceding the survey by person providing assistance during delivery, according to background characteristics, Armenia 2000

Background characteristic	Doctor	Trained nurse/ midwife	Traditional birth attendant	Relative/ other	No one	Total	Number of births
Mother's age at birth							
<20	81.1	16.2	0.5	2.1	0.0	100.0	311
20-34	83.4	13.5	0.9	1.7	0.3	100.0	1,261
35-49	83.9	9.0	3.8	1.9	1.4	100.0	84
Birth order							
1	87.4	11.4	0.3	0.8	0.0	100.0	650
2-3	82.7	14.1	1.1	1.6	0.3	100.0	849
4+	66.6	21.6	2.7	7.4	1.7	100.0	158
Residence							
Urban	92.1	7.0	0.1	0.7	0.0	100.0	838
Rural	73.7	20.8	1.8	3.0	0.6	100.0	819
Region							
Yerevan	95.2	3.6	0.0	1.2	0.0	100.0	459
Aragatsotn	86.1	6.6	2.4	4.8	0.0	100.0	96
Ararat	80.8	18.7	0.0	0.0	0.0	100.0	207
Armavir	93.2	4.1	1.4	0.7	0.7	100.0	164
Gegharkunik	50.0	34.8	4.3	9.8	1.1	100.0	182
Lori	84.0	15.1	0.0	0.0	0.8	100.0	142
Kotayk	88.2	9.7	1.1	0.0	0.0	100.0	106
Shirak	64.9	33.0	1.1	1.1	0.0	100.0	117
Syunik	95.6	3.5	0.0	0.0	0.9	100.0	63
Vayots Dzor	89.7	9.6	0.7	0.0	0.0	100.0	33
Tavush	75.2	24.2	0.6	0.0	0.0	100.0	88
Mother's education							
Primary/middle	69.8	20.1	2.3	7.5	0.4	100.0	155
Secondary	82.9	13.8	1.0	1.8	0.3	100.0	669
Secondary-special	83.4	14.4	0.8	0.8	0.4	100.0	550
Higher	89.6	9.2	0.2	0.9	0.0	100.0	283
Antenatal care visits							
None	59.2	23.1	4.6	11.6	1.5	100.0	151
1-3	76.1	19.9	1.9	1.6	0.6	100.0	434
4+	90.4	8.7	0.1	0.6	0.0	100.0	1,019
Total	83.0	13.8	0.9	1.8	0.3	100.0	1,657

Note: If the respondent mentioned more than one person, only the most qualified person is considered in this tabulation. Missing responses not shown (0.1 percent). Total includes 54 cases with missing data on antenatal care visits.

Table 10.6 Delivery characteristics

Percentage of live births in the five years preceding the survey delivered by caesarean section, and percent distribution by birth weight, according to background characteristics, Armenia 2000

Background characteristic	Delivery by caesarean section	Birth weight					Number of births
		Not weighed	Less than 2.5 kg	2.5 kg or more	Don't know/ missing	Total	
Mother's age at birth							
<20	3.6	6.3	7.8	85.1	0.8	100.0	311
20-34	6.7	3.1	5.3	91.1	0.4	100.0	1,261
35-49	16.9	3.0	8.4	87.0	1.6	100.0	84
Birth order							
1	7.9	1.5	5.6	92.6	0.3	100.0	650
2-3	6.2	3.5	5.7	90.1	0.7	100.0	849
4+	3.6	13.9	9.0	76.4	0.7	100.0	158
Residence							
Urban	7.8	0.1	4.0	95.4	0.5	100.0	838
Rural	5.4	7.3	8.0	84.0	0.7	100.0	819
Region							
Yerevan	8.4	0.0	3.3	96.1	0.6	100.0	459
Aragatsotn	6.6	6.6	7.2	84.3	1.8	100.0	96
Ararat	6.0	2.7	8.2	87.9	1.1	100.0	207
Armavir	8.8	2.0	6.8	91.2	0.0	100.0	164
Gegharkunik	0.5	23.4	11.4	64.7	0.5	100.0	182
Lori	5.0	0.0	4.2	95.8	0.0	100.0	142
Kotayk	3.2	0.0	2.2	96.8	1.1	100.0	106
Shirak	10.6	2.1	7.4	90.4	0.0	100.0	117
Syunik	5.3	0.9	6.1	93.0	0.0	100.0	63
Vayots Dzor	8.8	0.0	5.9	94.1	0.0	100.0	33
Tavush	8.3	0.0	5.7	93.6	0.6	100.0	88
Mother's education							
Primary/middle	4.2	9.7	10.9	77.0	2.4	100.0	155
Secondary	5.2	5.4	6.3	88.0	0.3	100.0	669
Secondary-special	7.4	1.7	5.8	91.8	0.6	100.0	550
Higher	9.7	0.2	2.7	97.1	0.0	100.0	283
Total	6.6	3.7	6.0	89.8	0.6	100.0	1,657

10.4 POSTNATAL CARE

The postnatal period is defined as the time between the delivery of the placenta and 42 days after delivery. Postnatal care is important both for the mother and for the child to treat complications arising from the delivery as well as to provide the mother with important information on how to care for herself and her child. Because most maternal and neonatal deaths occur during the first few days after delivery, the timing of postnatal care is important.

Table 10.7 presents information on postnatal care after the most recent birth for women who gave birth in the five years preceding the survey. Since it was assumed that women who delivered in health facilities would receive a routine postnatal examination, only women who delivered at home were asked about postnatal care. The data show that of the approximately

Table 10.7 Postnatal care by background characteristics

Among women who had a live birth during the five years preceding the survey, percentage who delivered in a health facility, and cumulative percentage who delivered ouside a health facility and had a postnatal checkup, by timing of checkup, according to background characteristics, Armenia 2000

Background characteristic	Delivered in a health facility	Timing of first postnatal checkup for mothers who delivered outside a health facility					
		Within 2 days of birth	Within 7 days of birth	Within 42 days of birth	Don't know/ missing	Did not receive postnatal care [1]	Number of births
Mother's age at birth							
<20	86.6	6.9	7.5	8.1	0.7	4.6	172
20-34	93.7	3.3	3.6	4.2	0.4	1.7	999
35+	88.9	4.4	5.1	5.1	0.0	5.9	77
Birth order							
1	96.5	2.3	2.6	2.6	0.3	0.6	384
2-3	92.9	3.2	3.3	4.0	0.5	2.6	723
4+	79.1	12.0	13.5	14.9	0.0	6.0	141
Residence							
Urban	98.8	0.7	0.7	0.7	0.1	0.4	664
Rural	85.3	7.5	8.2	9.4	0.7	4.7	583
Region							
Yerevan	98.5	0.7	0.7	0.7	0.0	0.7	374
Aragatsotn	84.6	5.1	6.8	7.7	1.7	6.0	68
Ararat	93.2	3.0	3.0	3.0	0.8	3.0	150
Armavir	93.9	1.7	1.7	3.5	0.9	1.7	129
Gegharkunik	63.6	23.1	25.6	28.9	0.0	7.4	120
Lori	97.7	1.2	1.2	1.2	0.0	1.2	103
Kotayk	95.6	1.5	1.5	1.5	0.0	2.9	77
Shirak	90.0	4.3	4.3	4.3	1.4	4.3	87
Syunik	98.9	1.1	1.1	1.1	0.0	0.0	49
Vayots Dzor	98.0	1.0	1.0	1.0	0.0	1.0	25
Tavush	98.3	1.7	1.7	1.7	0.0	0.0	67
Education							
Primary/middle	76.6	13.6	13.6	16.6	0.0	6.8	106
Secondary	90.3	4.6	5.3	5.8	0.8	3.1	490
Secondary-special	96.3	1.5	1.7	1.9	0.1	1.7	430
Higher	97.3	2.4	2.4	2.4	0.0	0.3	222
Total	92.5	3.9	4.2	4.8	0.4	2.4	1,248

Note: For women with two or more live births in the five-year period, data refer only to the most recent birth. Mothers who delivered in a health facility are assumed to have received a postnatal checkup.
[1] Includes women who received "postnatal care" more than 6 weeks after delivery

8 percent of deliveries that occurred outside of a health facility, postnatal care was received by half within the recommended two days. Approximately one-third of those deliveries occurring outside a health facility, however, received no postnatal care. As expected, deliveries of higher birth orders occurring to women with lower levels of educational attainment and occurring to rural dwellers are less likely to have received postnatal care than other deliveries. Of all the regions, women residing in Gegharkunik are the least likely to have received postnatal care.

10.5 Women's Status and Reproductive Health Care

A woman's status and level of self-respect can be major determinants of a woman's ability to obtain adequate health care for herself. The data in Table 10.8 indicate that there is a relationship between each of the selected indicators of women's status and women's utilization of

Table 10.8 Women's status and reproductive health care

Percentage of women who had a live birth in the five years preceding the survey, by antenatal care received, and percentage of births in the five years preceding the survey for which mothers received delivery care, according to indicators of women's status, Armenia 2000

Women's status indicator	Percentage of women with antenatal care from a health professional[1]	Number of women	Percentage of births assisted by a health professional[1]	Number of births
Number of decisions in which woman has final say[2]				
0	81.3	92	94.4	134
1-2	91.4	349	96.6	473
3-4	93.8	397	96.8	517
5	94.6	410	97.5	532
Number of reasons to refuse sex with husband				
0	85.7	54	90.3	79
1-2	91.2	117	95.5	151
3-4	92.9	1,077	97.3	1,427
Number of reasons wife beating justified				
0	96.2	791	99.0	1,019
1-2	89.6	266	96.3	359
3-4	80.8	158	89.8	226
5	(82.2)	33	87.5	52
Total	92.4	1,248	96.8	1,657

Note: Figures in parentheses are based on 25-49 unweighted cases.
[1] Doctor, nurse, or midwife
[2] Either by herself or jointly with others

antenatal care and delivery care, suggesting that in Armenia, as women's status increases, so do their access to reproductive health care from a professional. For example, among women who have (or participate) in the final say in all of the five specified household decisions, 95 percent received antenatal care from a trained health professional, as opposed to 81 percent of women who had a final say in no decisions. Similarly, the percentage of women with antenatal care from a health professional increases with the number of reasons women feel justified in refusing sex with their husband. The last index operates in reverse so that the fewer reasons given to justify wife beating the higher the woman's status. As expected, the percentage of women with professional antenatal care declines as the number of reasons justifying wife beating increases.

Virtually all Armenian women receive delivery care from a health professional (97 percent), so there is less variation by women's status. It is particularly striking then that there is a strong relationship between delivery care from a health professional and the number of reasons to justify wife beating. Among the most empowered women (those who disagreed with all the specified circumstances under which a husband is justified in beating his wife), 99 percent received delivery care from a health professional. As the agreement with reasons to justify wife beating increases, the percentage of women with professional delivery care steadily decreases to 88 percent among those

women who agree with all of the specified reasons for a husband beating his wife. In summary, the data suggest that a woman's status and empowerment has a positive relationship with access to quality health care.

10.6 Vaccination Coverage

According to the vaccination schedule of the Ministry of Health, a child should have received a BCG vaccination to protect against tuberculosis; three doses of DPT to protect against diphtheria, pertussis, and tetanus; and three doses of the polio vaccine starting at 3 months and before 12 months of age, as well as a measles vaccination starting at 12 months and before 24 months of age.

Information on vaccination coverage was collected in the ADHS for all children under five years of age. 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 not 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.

Table 10.9 shows that immunization passports were found for approximately one-quarter of children under five years, as opposed to 92 percent of health clinic cards. The data indicate that immunization passports have become increasingly widespread during the last five years: 33 percent of children age 12-23 months have an immunization passport, as opposed to 17 percent of children age 48-59 months. More mothers in rural areas were able to show the interviewer an immunization passport than urban mothers (27 percent versus 22 percent). Furthermore, slightly more facility

Table 10.9 Availability of health card

Percentage of children age 12-59 months with a health card available at a health facility or at home, by age and urban-rural residence, Armenia 2000

Residence and child's age in months	Health card available: At health facility	At home and at health facility	At home only	Either at home or at health facility	No health card	Number of births
Urban	90.6	20.7	1.6	92.2	7.8	676
12-23	91.6	30.6	1.4	93.0	7.0	169
24-35	92.3	22.7	0.0	92.3	7.7	142
36-47	91.8	16.3	2.5	94.3	5.7	172
48-59	87.3	14.6	2.1	89.5	10.5	193
Rural	93.4	25.5	1.1	94.4	5.6	620
12-23	94.5	33.0	1.5	96.0	4.0	131
24-35	94.3	32.6	1.7	95.9	4.1	139
36-47	94.4	23.1	0.7	95.1	4.9	168
48-59	90.9	17.0	0.6	91.5	8.5	182
Total	91.9	23.0	1.3	93.3	6.7	1,296
12-23	92.9	31.7	1.5	94.3	5.7	300
24-35	93.3	27.6	0.8	94.1	5.9	281
36-47	93.1	19.6	1.6	94.7	5.3	340
48-59	89.1	15.8	1.4	90.5	9.5	375

health cards were found for rural children than for urban children (93 percent versus 91 percent). This is probably due to the fact that in urban areas where there are more health facilities, it was more difficult to locate a child's health card. Overall, health cards were found at a health facility or at home for 93 percent of all children under age five. The data in the following tables are based on the health facility cards, except in cases where no health facility card was located, but the mother was able to show the interviewer an immunization passport.

Table 10.10 shows rates of vaccination coverage for children 12-23 months of age (i.e., children who should be fully vaccinated). This table is based on vaccinations received at any time before the survey. According to the health cards, almost all children in the sample had received vaccinations for BCG, DPT 1, and polio 1 (96 percent, 99 percent, and 100 percent, respectively). Coverage was also high for the second and third doses of DPT (97 percent and 95 percent) and the second and third doses of polio (99 percent and 98 percent). Regarding measles, 79 percent of children had received the vaccination. According to the data gathered in the ADHS, measles coverage does vary by certain background characteristics: more females than males (85 percent versus 75 percent) and more urban than rural residents (82 percent versus 75 percent) had received the measles vaccination. Overall, the health card data show that 76 percent of children 12-23 months of age had received all WHO-recommended vaccinations by the date of the interview.

Table 10.10 Vaccinations by background characteristics

Percentage of children age 12-23 months who had received specific vaccinations at any time before the survey (based on health card at health facility or health card at home), by background characteristics, Armenia 2000

Background characteristic	Percentage of children who had received:									Number of children
		DPT			Polio					
	BCG	1	2	3+	1	2	3+	Measles	All[1]	
Sex of child										
Male	95.2	98.9	96.2	94.8	99.3	98.0	96.6	74.8	71.5	169
Female	97.3	98.8	98.8	95.6	100.0	100.0	99.0	84.6	81.9	114
Residence										
Urban	97.4	98.4	96.1	93.6	99.6	98.8	98.0	81.7	78.7	157
Rural	94.4	99.4	98.7	96.9	99.6	98.9	97.1	75.1	71.9	126
Education										
Primary/middle	(97.0)	(100.0)	(98.7)	(98.7)	(100.0)	(100.0)	(100.0)	(90.8)	(87.8)	20
Secondary	96.6	99.0	96.8	93.4	99.5	98.2	97.1	81.6	78.9	107
Secondary-special	95.7	98.5	96.8	94.5	99.5	98.7	96.5	71.2	69.1	109
Higher	(95.1)	(98.8)	(98.8)	(98.8)	(100.0)	(100.0)	(100.0)	(84.8)	(78.7)	47
Total	96.0	98.8	97.3	95.1	99.6	98.8	97.6	78.8	75.7	283

Note: The data in this table are based on the 93 percent of children for whom an immunization card was available; 98 percent of the information was obtained from health facilities. Figures in parentheses are based on 25-49 unweighted cases.

[1] Children who are fully vaccinated, i.e., those who have received BCG, measles, and three doses of DPT and polio vaccine (excluding polio vaccine at birth).

Table 10.11 shows the percentage of children age 12-59 months who received specific vaccinations during the first year of life, as recommended by the Ministry of Health. More than nine out of ten children had received BCG, DPT 1, and polio 1 and 2 by their first birthday. Coverage was lower for DPT 2 and 3 (88 percent and 76 percent, respectively) and polio 3 (83 percent). It should be noted that for each vaccine, rates among the youngest cohort (age 12-23 months) are significantly higher than among the oldest cohort (age 48-59 months). Furthermore, coverage for all of the specified vaccines was 79 percent among the youngest children, compared with 68 percent among the oldest children. The data indicate that there has been significant progress in timely vaccination coverage over the last five years.

Table 10.11 Vaccinations in first year of life

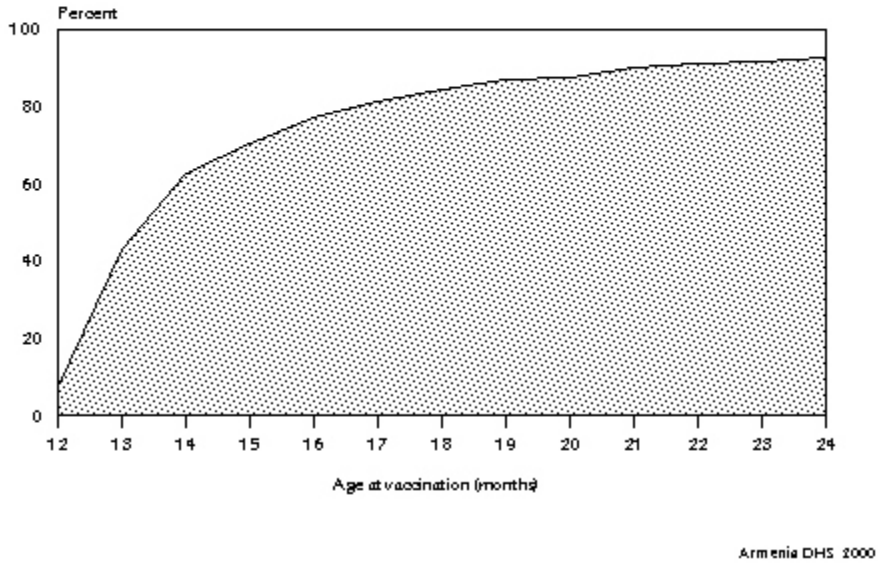
Among children age 12-59 months with a vaccination card, the percentage who had received specific vaccinations during the first year of life, by current age of child, Armenia 2000

	Percentage of children who had received:									
		DPT			Polio					
Child's age in months	BCG	1	2	3+	1	2	3+	All[1]	No vacci-nations	Number of children
12-23	94.9	97.8	93.4	83.6	99.2	96.2	90.9	78.9	0.0	283
24-35	92.4	94.4	91.3	77.6	96.5	95.2	85.4	72.4	1.3	264
36-47	90.3	90.8	84.4	68.2	94.3	91.9	76.9	62.0	2.7	322
48-59	91.2	91.7	85.5	73.9	95.2	92.2	79.8	67.6	1.4	340
Total	92.1	93.5	88.3	75.5	96.2	93.7	82.8	69.8	1.4	1,209

Note: The data in this table are based on the 93 percent of children for whom an immunization card was available; 98 percent of the information was obtained from health facilities.
[1] Children who are fully vaccinated, i.e., those who have received BCG and three doses of DPT and polio vaccine (excluding polio vaccine at birth). Measles is excluded since it is usually given after 12 months of age.

Figure 10.2 shows measles vaccination coverage among children age 24-35 months by timing of the vaccine. The data show that at 14 months of age, almost two-thirds of children had received the measles vaccine. At age 17 months, 82 percent of children had been immunized; more than nine in ten children had received the vaccine at age 21 months.

Figure 10.2 Measles Vaccination Coverage among Children 24-35 Months



10.7 ACUTE RESPIRATORY INFECTION AND FEVER

In Armenia, one-quarter of all infant deaths are attributed to acute respiratory infection (MOHRA, 2000). Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths caused by ARI. In the ADHS, the prevalence of ARI was estimated by asking mothers whether their children under age five had been ill with a cough accompanied by short, rapid breathing in the two weeks preceding the survey. These symptoms are consistent with ARI. 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. Furthermore, prevalence of ARI is subject to seasonality; the fieldwork for the ADHS took place in October through December when rates tend to be high.

Table 10.12 shows that in the two weeks preceding the survey, 11 percent of children experienced symptoms of ARI and 17 percent had a fever. There is little significant variation by background characteristics, although the youngest children were the least likely to have these

Table 10.12 Prevalence and treatment of symptoms of ARI and fever

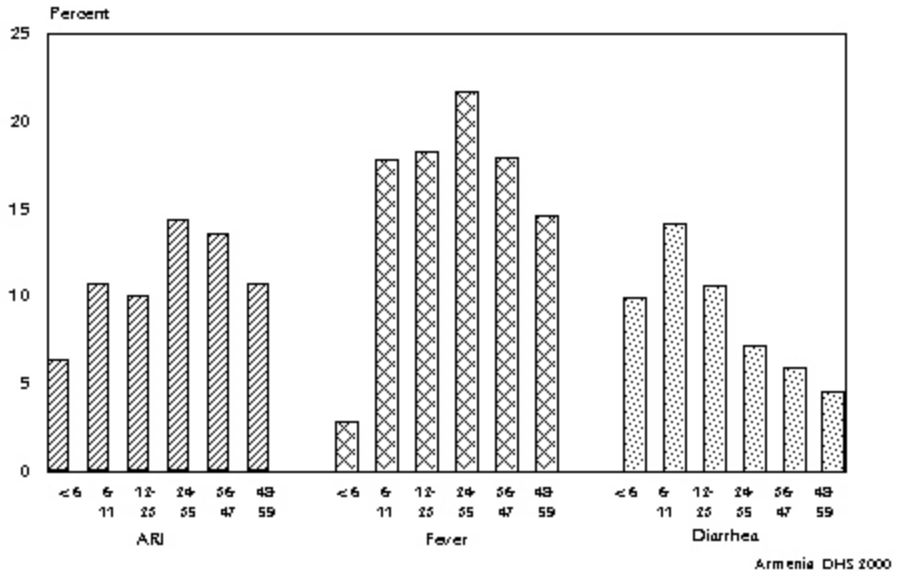
Percentage of children under five years who had a cough accompanied by short, rapid breathing (symptoms of ARI) and percentage of children who had fever in the two weeks preceding the survey, and percentage of children with symptoms of ARI and/or fever for whom treatment was sought from a health facility or provider, by background characteristics, Armenia 2000

Background characteristic	Prevalence of ARI and fever in past two weeks: Percentage of children with symptoms of ARI	Prevalence of ARI and fever in past two weeks: Percentage of children with fever	Prevalence of ARI and fever in past two weeks: Number	Among children with symptoms of ARI and/or fever: Percentage for whom treatment was sought from a health facility or provider[1]	Among children with symptoms of ARI and/or fever: Number
Child's age in months					
<6	6.4	2.8	149	*	12
6-11	10.7	17.8	151	(41.1)	34
12-23	10.0	18.3	300	22.9	75
24-35	14.4	21.7	281	23.4	81
36-47	13.6	17.9	340	18.2	81
48-59	10.7	14.6	375	26.2	76
Sex of child					
Male	11.2	16.0	910	20.6	200
Female	11.8	17.0	685	29.7	158
Residence					
Urban	11.5	18.6	819	29.0	195
Rural	11.4	14.2	777	19.4	164
Mother's education					
Primary/middle	13.1	15.1	146	(7.0)	32
Secondary	11.2	16.4	639	27.1	141
Secondary-special	12.9	16.4	530	23.6	128
Higher	8.3	17.4	280	31.0	57
Total	11.4	16.5	1,596	24.6	358

ARI = Acute respiratory infection
[1] Excludes pharmacy, shop, and traditional practitioner
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.

symptoms (Figure 10.3). Among those children who experienced symptoms of ARI or fever, treatment was sought from a health facility or health care provider for one-quarter. Female children, children living in urban areas, and children of mothers with higher education were the more likely than other children to be taken to a health facility.

Figure 10.3 Prevalence of ARI Symptoms, Fever, and Diarrhea in the Two Weeks Preceding the Survey



10.8 Hand-Washing Materials in the Household

The connection between hand-washing and diarrhea is well established. Increasing the frequency of hand-washing and improving the quality of necessary materials, such as running water, soap/cleanser, and a basin, substantially decreases the occurrence of diarrhea in young children. Table 10.13 shows the percentage of households by the type of hand-washing facilities available in the house as seen by the interviewer. Overall, 62 percent of dwellings have all three hand-washing materials. Households with piped water and water in the dwelling are the most likely to have all three hand-washing materials. The availability of these materials ranges from a high in Yerevan (87 percent) to a low in Gegharkunik (25 percent). There is also a large difference between urban and rural areas (81 percent versus 32 percent). Overall, most households have water (88 percent) and a cleansing agent such as soap (90 percent), but less than two-thirds of all households have a basin.

Table 10.13 Hand-washing materials in the household

Percentage of households with hand-washing materials in the dwelling/yard/plot, by residence, region, source of water supply, time to water source, and presence in the household of a child with diarrhea in the two weeks preceding the survey, Armenia 2000

Background characteristic	Water	Soap or other cleansing agent	Basin	All three hand-washing materials[1]	Number of house-holds
Residence					
Urban	95.9	95.2	82.8	80.9	3,633
Rural	74.5	81.7	33.2	31.6	2,347
Region					
Yerevan	98.4	96.9	88.1	87.0	1,946
Aragatsotn	61.9	95.7	29.1	27.2	248
Ararat	84.7	96.9	56.9	56.1	580
Armavir	81.3	90.4	49.8	47.9	496
Gegharkunik	69.2	66.7	26.2	24.5	507
Lori	81.4	74.3	39.4	38.7	519
Kotayk	96.4	82.3	86.7	77.1	413
Shirak	79.7	89.8	57.4	56.5	602
Syunik	98.2	99.1	79.3	78.9	258
Vayots Dzor	82.7	83.4	49.5	46.8	111
Tavush	90.8	96.5	41.1	39.3	300
Source of water					
Piped	90.6	91.6	67.3	65.5	5,488
Surface	49.4	71.3	18.3	16.4	347
Tanker truck	63.5	87.2	24.5	22.8	68
Other	58.8	53.6	16.0	14.7	77
Time to water source					
In dwelling	91.4	92.5	69.2	67.3	5,262
<10 minutes	67.2	85.0	25.8	24.1	70
10+ minutes	57.6	69.0	19.8	18.9	643
Child with diarrhea					
Yes	85.9	92.8	64.9	62.7	116
No	87.5	89.8	63.3	61.5	5,864
Total	87.5	89.9	63.3	61.5	5,980

Note: Total includes five cases with missing information on time to water source.

[1] Water, soap, or ash or other cleansing agent, and basin

10.9 DIARRHEA

Dehydration caused by severe diarrhea is a major cause of morbidity among young children and an important cause of infant and child death. In Armenia, one-fifth of all infant deaths are attributed to diarrheal diseases (MOH, 2000). Table 10.14 indicates that 8 percent of children under five had diarrhea in the two weeks preceding the survey. The age pattern of diarrhea shows a peak at 6-11 months of age (i.e., around the time when a child begins to crawl and experience more exposure to the environment). Children of mothers with a primary/middle school education are more likely to have suffered from diarrhea than other children. Morbidity by region ranges from a high of 13 percent in Ararat to a low of 4 percent in Yerevan and Tavush.

Table 10.14 Prevalence of diarrhea

Percentage of children under five years with diarrhea in the two weeks preceding the survey, by background characteristics, Armenia 2000

Background characteristic	Diarrhea in the two weeks preceding the survey	Number of children
Child's age in months		
<6	9.9	149
6-11	14.1	151
12-23	10.6	300
24-35	7.1	281
36-47	5.9	340
48-59	4.5	375
Child's sex		
Male	8.6	910
Female	6.8	685
Residence		
Urban	7.8	819
Rural	7.8	777
Region		
Yerevan	4.3	451
Aragatsotn	10.3	90
Ararat	12.5	200
Armavir	9.9	159
Gegharkunik	9.4	168
Lori	10.7	134
Kotayk	7.9	101
Shirak	7.6	114
Syunik	5.4	61
Vayots Dzor	6.9	32
Tavush	3.9	85
Mother's education		
Primary/middle	11.7	146
Secondary	7.3	639
Secondary-special	8.4	530
Higher	5.8	280
Total	7.8	1,596

A prompt increase in a child's fluid intake is a simple and effective procedure to prevent diarrhea from developing into a life-threatening illness. Oral rehydration therapy may include the use of a solution prepared from packets of oral rehydration salts (ORS). In addition, it is recommended that food intake should not be decreased for children suffering from diarrhea.

To ascertain how widespread knowledge of ORS is in Armenia, respondents were asked if they knew about ORS packets. Table 10.15 shows that the majority of mothers know about ORS packets. The youngest mothers and mothers living in rural areas are the least likely to know about ORS. Knowledge ranges from a high of 82 percent in Yerevan to a low of 52 percent in Syunik and 55 percent in Vayots Dzor. Knowledge of ORS packets increases as the educational level of the mother increases.

Table 10.15 Knowledge of ORS packets

Percentage of mothers with births in the five years preceding the survey who know about ORS packets for treatment of diarrhea in children, by background characteristics, Armenia 2000

Background characteristic	Percentage of mothers who know about ORS packets	Number of mothers
Age		
15-19	56.5	51
20-24	70.2	433
25-29	78.2	413
30-34	75.0	204
35-49	73.4	147
Residence		
Urban	78.8	664
Rural	67.2	583
Region		
Yerevan	81.6	374
Aragatsotn	65.8	68
Ararat	75.8	150
Armavir	73.9	129
Gegharkunik	71.1	120
Lori	69.8	103
Kotayk	63.2	77
Shirak	71.4	87
Syunik	52.2	49
Vayots Dzor	55.4	25
Tavush	75.6	67
Education		
Primary/middle	55.9	106
Secondary	69.9	490
Secondary-special	75.9	430
Higher	84.9	222
Total	73.4	1,248

ORS = Oral rehydration salts

Table 10.16 provides insight into the use of ORS packets, as well as other kinds of treatment for diarrhea. Overall, 33 percent of mothers gave ORS packages to their children who were suffering from diarrhea. It is interesting to note that rural mothers were one-third more likely than urban mothers to give ORS packets to their sick children. On the other hand, urban mothers were two-thirds more likely to give increased fluids. Overall 60 percent of mothers gave either increased fluids or ORS to their sick children (oral rehydration therapy). Twenty-six percent of children suffering from diarrhea were taken to a health provider. Other treatments were given to sick children, with the most common being pills or syrup (30 percent). It is disturbing to note that 25 percent of all children suffering from diarrhea were neither taken to a provider, treated with oral rehydration therapy, or given any other kind of treatment.

Table 10.16 Diarrhea treatment

Percentage of children under five years of age who had diarrhea in the two weeks preceding the survey taken for treatment to a health provider, percentage who received oral rehydration therapy (ORT), and percentage given other treatments, according to residence, Armenia 2000

Residence	Percentage taken to a health provider[1]	Oral rehydration therapy (ORT)			Other treatments					Number of children with diarrhea
		ORS packets	Increased fluids	ORS or increased fluids	Pill or syrup	Injection	Intravenous solution	Home remedy/ other	None	
Urban	25.2	28.2	63.7	65.3	29.5	1.9	1.9	19.0	20.1	64
Rural	27.0	38.0	38.5	53.9	29.8	2.3	1.9	10.1	29.1	61
Total	26.1	33.0	51.5	59.7	29.6	2.1	1.9	14.7	24.5	125

Note: Oral rehydration therapy (ORT) includes solution prepared from oral rehydration salt (ORS) packets or increased fluids.
[1] Excludes pharmacy, shop, and traditional practitioner

Besides being asked about what was done to treat children with diarrhea, mothers were specifically asked whether they gave the child more or less fluids and foods than usual. Table 10.17 provides information on feeding practices among children under five who had diarrhea in the two weeks before the survey. The data indicate that half of all sick children (52 percent) were given more liquids than usual. There is a significant difference between the prevalence of this practice by residence: 64 percent of urban mothers offered more liquids, as opposed to 39 percent of rural mothers. More important, almost one-quarter of rural mothers engaged in the dangerous practice of curtailing fluid intake when their children have diarrhea. Forty-six percent of all children were offered less than the usual amount to eat, which could exacerbate the child's illness. This practice was more common in urban areas (54 percent) than in rural areas (37 percent).

Table 10.17 Feeding practices during diarrhea

Percent distribution of children under five years who had diarrhea in the two weeks preceding the survey, by amount of liquids and food offered compared with normal practice, according to residence, Armenia 2000

Liquid/food offered	Residence		Total
	Urban	Rural	
Amount of liquid offered			
Same as usual	19.5	18.9	19.2
More	63.7	38.5	51.5
Somewhat less	2.1	14.9	8.3
Much less	7.6	5.5	6.6
None	0.9	3.9	2.3
Don't know/missing	6.2	18.2	12.0
Amount of food offered			
Same as usual	34.2	39.5	36.7
More	1.2	7.8	4.4
Somewhat less	34.1	30.8	32.5
Much less	19.7	6.6	13.4
Don't know/missing	10.8	15.3	13.0
Total	100.0	100.0	100.0
Number	64	61	125