

## MATERNAL AND CHILD HEALTH

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Health conditions in Jordan are among the best in the Middle East. This is due in large part to the Kingdom's stability and to a range of effective development plans and projects that have included health as a major component. This chapter presents findings on important areas of maternal and child health: antenatal, delivery, and postnatal care; vaccination coverage; and common childhood illnesses (fever, acute respiratory tract infections and diarrhea) and their treatment. In addition, problems in accessing health care, breast self-examination and smoking in women are also discussed. This information, in combination with data on mortality, is useful in formulating programs and policies to improve maternal and child health services.

### 9.1 MATERNAL HEALTH

A mother's well-being has a direct impact on her children's well-being. Conversely, when mothers fare poorly, so do children. For newborns, survival is directly linked to a mother's health during pregnancy.

#### 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) coverage 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 services and information provided during ANC. It is also recommended that women receive two doses of tetanus toxoid vaccine, adequate amounts of iron and folic acid tablets, and iron/syrup to prevent and treat anemia. Blood pressure checks and procedures to detect pregnancy complications are also part of ANC coverage. A well-designed and implemented ANC program facilitates detection and treatment of problems during pregnancy, such as anemia and infections, and provides an opportunity to disseminate health messages to women and their households.

Information on ANC coverage was obtained from women who had a birth in the five years preceding the survey. For women with two or more live births during the five-year period, data refer to the most recent birth only. Table 9.1 shows the percent distribution of mothers in the five years preceding the survey by source of antenatal care received during pregnancy. Almost all women (99 percent) received ANC from medically-trained personnel (doctors, nurses and midwives): the majority of women (93 percent) received care during pregnancy from a doctor, and 5 percent received care from a nurse or a midwife. Only 1 percent of women did not receive antenatal care for births in the preceding five years, and almost none of the women sought assistance from a traditional birth attendant. These findings are similar to those found in the 1997 JPFHS.

Women less than 20 years of age are more likely to receive antenatal care from midwives compared with older women. Mothers are more likely to receive care from a health professional for first births (97 percent) than for births of order six and higher (91 percent). There are small differences in the use of antenatal care services between urban and rural women. Health professionals provided antenatal care for 99 percent of mothers in urban areas and 97 percent of mothers in rural areas. Compared with the 1997 JPFHS, ANC from a trained health professional among rural women has increased by 5 percent in this survey.

Table 9.1 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 for the most recent birth, according to background characteristics, Jordan 2002

Background characteristic	Antenatal care provider				Total	Number of women
	Doctor	Nurse/midwife	Traditional birth attendant/other	No one		
<b>Age at birth</b>						
<20	89.6	8.0	0.0	2.4	100.0	171
20-34	93.7	5.1	0.0	1.1	100.0	2,906
35-49	92.9	4.8	0.0	2.2	100.0	667
<b>Birth order</b>						
1	96.9	2.8	0.0	0.3	100.0	555
2-3	93.3	5.5	0.0	1.2	100.0	1,338
4-5	93.7	5.3	0.0	1.0	100.0	1,011
6+	91.0	6.2	0.0	2.8	100.0	839
<b>Residence</b>						
Urban	94.1	4.9	0.0	1.0	100.0	2,931
Rural	90.9	6.5	0.0	2.7	100.0	812
<b>Region</b>						
Central	95.0	4.2	0.0	0.9	100.0	2,378
North	89.9	8.1	0.0	1.9	100.0	1,001
South	92.6	4.1	0.1	3.2	100.0	364
<b>Educational level attended</b>						
No education	84.6	6.2	0.2	9.0	100.0	149
Elementary	86.1	11.1	0.0	2.8	100.0	306
Preparatory	92.9	5.0	0.0	2.0	100.0	741
Secondary	93.6	5.6	0.0	0.7	100.0	1,539
Higher	96.9	2.8	0.0	0.3	100.0	1,008
<i>Preparatory + secondary</i>	<i>93.4</i>	<i>5.4</i>	<i>0.0</i>	<i>1.1</i>	<i>100.0</i>	<i>2,280</i>
Total	93.4	5.2	0.0	1.4	100.0	3,743

Note: If more than one source of ANC was mentioned, only the provider with the highest qualifications is considered in this tabulation.

Regional differences in the source of antenatal care are significant: 95 percent of mothers in the Central region received antenatal care from a doctor, compared with 90 percent and 93 percent in the North and South regions, respectively. In the North, more women (8 percent) sought care from a nurse/midwife, compared with 4 percent in both the Central and South regions. Also, the percentage of mothers who did not receive antenatal care is the highest in the South (3 percent) and lowest in the Central region (1 percent).

The use of antenatal care services is strongly associated with the mother's level of education. Women with a secondary education or higher are more likely to receive antenatal care from any trained personnel (99 and 100 percent) than women with elementary education (97 percent) and women with no education (91 percent). Similarly, 9 percent of uneducated women receive no antenatal care, whereas the proportion of women who receive no care decreases to 3 percent and less than 1 percent for women with secondary or higher education, respectively.

Antenatal care can be more effective in avoiding adverse pregnancy outcomes when it is sought early in the pregnancy and continues through to delivery. Obstetricians generally recommend that antenatal visits be made on a monthly basis to the 28th week (seventh month), fortnightly to the 36th week, and then weekly until the 40th week (until birth). If the first antenatal visit is made at the third month of pregnancy, this optimum schedule translates to a total of at least 12-13 visits during the pregnancy. Table 9.2 shows that 81 percent of women make six or more antenatal care visits during their entire pregnancy. The percentage of women who make six or more antenatal care visits is higher in urban areas (83 percent) than rural areas (74 percent).

Eighty-five percent of women make their first antenatal care visit before the fourth month of pregnancy, and the proportion of women seeking antenatal care increases to almost 96 percent before six months of pregnancy. The median duration of pregnancy for the first antenatal care visit is 2.1 months. This indicates that in Jordan, women start antenatal care at a relatively early stage of their pregnancy.

### Components of Antenatal Care

The effectiveness of antenatal checkups in ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the checkups. The 2002 JPFHS survey collected information on this important aspect of antenatal care by asking mothers who received antenatal checkups whether they received each of several components of ANC during their last pregnancy in the five years preceding the survey. Table 9.3 shows that 43 percent of mothers who received antenatal care reported that they were informed about pregnancy-related complications during their visits. Blood pressure was part of antenatal care for 96 percent of mothers. Urine and blood samples were taken from 89 and 90 percent of women, respectively. In addition, less than three-fourths (72 percent) of women either received or purchased iron tablets or syrup during pregnancy.

Table 9.3

Urban-rural differences are noticed for various components of antenatal care. Urban women were more likely to get each component of antenatal care than rural women. Regional variations in antenatal care are also seen. For example, women in the Central region, which includes the capital city Amman, are more likely to receive each antenatal care component, especially getting urine and blood tests, compared to women in the North or South regions. Antenatal care content is also greatly affected by the level of mother's education. Women with secondary or higher education were more likely to have received all routine tests than less-educated women. Similarly, women with elementary education were more likely to get each ANC component than women with no education. Women who were pregnant with their first child were more likely to receive all components of ANC.

Table 9.2 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 for the most recent birth, and by the timing of the first visit, according to residence, Jordan 2002

Number and timing of ANC visits	Residence		Total
	Urban	Rural	
<b>Number of ANC visits</b>			
None	1.0	2.7	1.4
1	1.2	2.2	1.4
2	1.7	3.7	2.1
3	3.8	5.1	4.1
4	3.8	4.6	4.0
5	5.5	7.8	6.0
6+	82.9	74.0	80.9
Don't know/missing	0.1	0.0	0.1
Total	100.0	100.0	100.0
<b>Number of months pregnant at time of first ANC visit</b>			
No antenatal care	1.0	2.7	1.4
<4	85.6	83.5	85.1
4-5	10.7	10.5	10.6
6-7	1.8	2.1	1.9
8+	0.9	1.2	1.0
Total	100.0	100.0	100.0
Median months pregnant at first visit (for those with ANC)	2.0	2.3	2.1
Number of women	2,931	812	3,743

**Table 9.3 Components of antenatal care**

Percentage of women with a live birth in the five years preceding the survey who received antenatal care for the most recent birth, by content of antenatal care, and percentage of women with a live birth in the five years preceding the survey who were given or purchased iron tablets or syrup for the most recent birth, according to background characteristics, Jordan 2002

Background characteristic	Among women who received antenatal care								
	Informed of signs of pregnancy complications	Weight measured	Height measured	Blood pressure measured	Urine sample taken	Blood sample taken	Number of women	Received/purchased iron tablets or syrup	Number of women
<b>Age at birth</b>									
<20	46.1	95.9	65.1	96.7	88.7	94.1	167	69.4	171
20-34	43.5	93.8	62.9	95.6	88.8	89.5	2,873	72.7	2,906
35-49	37.5	92.6	60.7	95.3	89.0	90.0	652	70.3	667
<b>Birth order</b>									
1	50.7	96.9	66.5	97.1	92.1	95.2	553	81.2	555
2-3	43.3	95.1	63.6	97.1	89.6	90.6	1,322	74.8	1,338
4-5	38.7	92.1	61.8	95.1	88.0	87.7	1,001	70.2	1,011
6+	40.6	91.0	59.5	92.9	86.5	87.5	815	64.0	839
<b>Residence</b>									
Urban	42.8	94.7	63.8	96.6	90.3	91.3	2,902	74.7	2,931
Rural	41.8	90.0	58.5	91.9	83.5	84.2	790	62.9	812
<b>Region</b>									
Central	43.6	95.3	65.6	96.8	90.4	90.9	2,358	77.0	2,378
North	40.4	90.2	54.0	93.7	86.3	88.5	982	64.9	1,001
South	41.9	92.8	67.0	92.9	85.7	86.1	353	60.0	364
<b>Educational level attended</b>									
No education	37.9	81.3	44.8	79.7	74.4	71.8	136	50.3	149
Elementary	40.6	90.8	61.5	90.5	86.8	85.2	298	57.5	306
Preparatory	40.9	91.6	62.6	94.9	87.1	88.3	726	63.2	741
Secondary	42.9	94.9	63.9	96.8	89.9	91.3	1,529	74.4	1,539
Higher	44.5	95.9	63.5	98.0	91.1	92.3	1,004	82.8	1,008
Preparatory + secondary	42.2	93.8	63.5	96.2	89.0	90.4	2,254	70.8	2,280
<b>Total</b>	<b>42.6</b>	<b>93.7</b>	<b>62.6</b>	<b>95.6</b>	<b>88.8</b>	<b>89.8</b>	<b>3,692</b>	<b>72.1</b>	<b>3,743</b>

## Coverage of Tetanus Toxoid Vaccinations

Tetanus toxoid injections are given during pregnancy for the prevention of neonatal tetanus, an important cause of death among infants. Neonatal tetanus is most common among children who are delivered in unhygienic environments and when unsterilized instruments are used to cut the umbilical cord. Tetanus usually develops during the first or second week of life and is fatal in 70-90 percent of cases. Neonatal tetanus, however, is a preventable disease. Two doses of tetanus vaccine given one month apart during early pregnancy are nearly 100 percent effective in preventing tetanus among both newborn infants and mothers. If a woman has been vaccinated during a previous pregnancy, she may require only one dose for the current pregnancy. When the mother is vaccinated, immunity against tetanus is transferred to the fetus through the placenta.

In the 2002 JPFHS, information was collected on the number of doses of tetanus toxoid the mother received. The results are presented in Table 9.4. Less than one-fourth (24 percent) of women received one dose of the vaccine, an observation similar to the 1997 JPFHS. Two or more doses of tetanus toxoid were received by only 9 percent of women, a significant drop from the previous JPFHS survey where 16 percent of women received two or more doses. In general, women less than twenty years of age and pregnant with their first child were more likely to get one and two or more doses of tetanus toxoid

injections. However, women who are not as educated or with no education and living in rural areas are slightly more likely to receive two or more injections of tetanus toxoid. The low prevalence of tetanus vaccination in Jordan may be explained by the fact that many women have already received vaccinations against tetanus in school or during a previous pregnancy.

**Table 9.4 Tetanus toxoid injections**

Percent distribution of women who had a live birth in the five years preceding the survey by number of tetanus toxoid injections received during pregnancy for the most recent birth, according to background characteristics, Jordan 2002

Background characteristic	Number of injections				Total	Number of women
	None	One injection	Two or more injections	Don't know/missing		
<b>Age at birth</b>						
<20	47.4	31.8	20.2	0.6	100.0	171
20-34	66.0	24.3	8.8	0.9	100.0	2,906
35-49	69.1	22.5	6.9	1.4	100.0	667
<b>Birth order</b>						
1	44.9	34.7	20.2	0.2	100.0	555
2-3	67.7	24.2	7.3	0.9	100.0	1,338
4-5	68.7	23.1	7.3	1.0	100.0	1,011
6+	72.9	19.2	6.4	1.5	100.0	839
<b>Residence</b>						
Urban	65.0	25.4	8.6	1.0	100.0	2,931
Rural	68.5	20.4	10.4	0.6	100.0	812
<b>Region</b>						
Central	63.7	26.1	9.3	0.9	100.0	2,378
North	68.0	22.0	8.7	1.2	100.0	1,001
South	72.3	19.4	7.7	0.6	100.0	364
<b>Educational level attended</b>						
No education	71.3	17.9	10.2	0.6	100.0	149
Elementary	58.7	27.7	10.9	2.7	100.0	306
Preparatory	64.8	25.8	8.8	0.6	100.0	741
Secondary	63.4	26.6	9.3	0.7	100.0	1,539
Higher	71.3	19.7	7.9	1.1	100.0	1,008
<i>Preparatory + secondary</i>	63.8	26.4	9.1	0.7	100.0	2,280
Total	65.7	24.3	9.0	1.0	100.0	3,743

## 9.2 DELIVERY

### Place of Delivery

The objective of providing safe delivery services is to protect the life and health of the mother and her child by ensuring the safe delivery of the child. An important component of efforts to reduce the health risks to mother and child is to increase the proportion of infants delivered under the supervision of health professionals. Proper medical attention and hygienic conditions during delivery can reduce the risk of complications and infections that may cause death or serious illness for the mother, the child, or both. Data on delivery care was obtained for all births that occurred in the five years preceding the survey.

**Table 9.5 Place of delivery**

Percent distribution of live births in the five years preceding the survey by place of delivery, according to background characteristics, Jordan 2002

Background characteristic	Place of delivery						Total	Number of births
	Government hospital	Royal Medical Services	Other public sector	Any public sector	Private sector	Home		
<b>Mother's age at birth</b>								
<20	54.1	12.5	0.1	<b>66.8</b>	29.7	3.5	100.0	358
20-34	45.6	16.1	1.8	<b>63.5</b>	33.2	3.3	100.0	4,654
35-49	45.3	14.8	2.2	<b>62.3</b>	36.1	1.7	100.0	808
<b>Birth order</b>								
1	43.7	13.6	1.7	<b>59.1</b>	39.1	1.8	100.0	1,186
2-3	43.9	16.3	1.5	<b>61.7</b>	35.2	3.0	100.0	2,131
4-5	47.7	15.7	1.6	<b>65.0</b>	31.3	3.7	100.0	1,396
6+	50.8	16.7	2.4	<b>69.8</b>	26.4	3.8	100.0	1,106
<b>Residence</b>								
Urban	43.5	13.0	1.5	<b>58.0</b>	39.1	2.9	100.0	4,487
Rural	54.7	24.7	2.5	<b>82.0</b>	14.1	3.9	100.0	1,333
<b>Region</b>								
Central	40.2	11.3	2.6	<b>54.1</b>	43.6	2.3	100.0	3,635
North	61.4	18.6	0.5	<b>80.5</b>	15.1	4.4	100.0	1,596
South	40.7	35.0	0.1	<b>75.7</b>	19.9	4.3	100.0	589
<b>Mother's education</b>								
No education	60.2	16.9	1.4	<b>78.4</b>	11.4	10.1	100.0	237
Elementary	60.5	14.9	0.8	<b>76.2</b>	18.7	5.2	100.0	484
Preparatory	53.1	17.8	0.7	<b>71.6</b>	24.0	4.4	100.0	1,154
Secondary	46.8	16.2	1.3	<b>64.3</b>	33.1	2.6	100.0	2,440
Higher	32.7	13.3	3.6	<b>49.7</b>	49.2	1.1	100.0	1,504
Preparatory + secondary	48.8	16.7	1.1	<b>66.6</b>	30.2	3.2	100.0	3,594
<b>Antenatal care visits</b>								
None	69.0	15.3	0.0	<b>84.3</b>	2.5	13.2	100.0	51
1-3	55.8	14.9	1.0	<b>71.7</b>	19.5	8.8	100.0	287
4+	45.1	14.8	1.8	<b>61.7</b>	36.2	2.0	100.0	3,402
Total <sup>1</sup>	46.1	15.7	1.7	<b>63.5</b>	33.4	3.1	100.0	5,820

Note: Includes only the most recent birth in the five years preceding the survey

<sup>1</sup>Total includes 3 missing cases for antenatal visit.

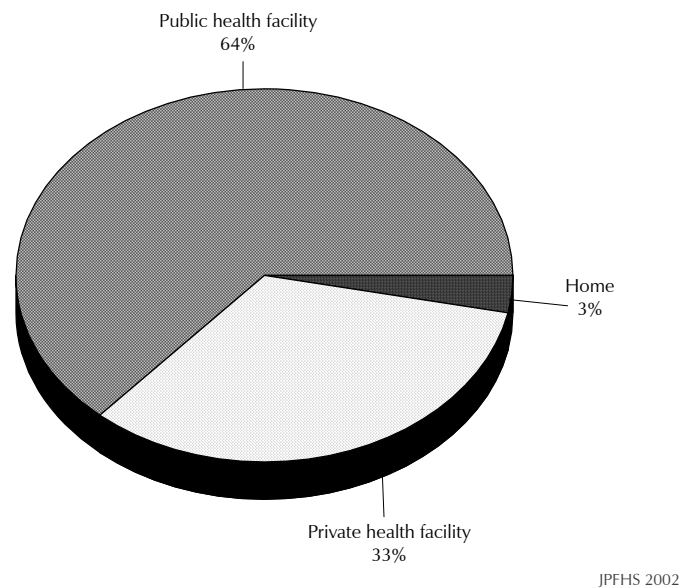
The main providers of health services in Jordan are the Ministry of Health (government hospitals) and the Jordan Armed Forces (Royal Medical Services), both under the public health sector, and the private sector. Royal Medical Services has several centers providing medical services for all acting and retired military personnel.

An overwhelming majority of births (97 percent) in the five years before the survey were delivered in a medical facility (Table 9.5 and Figure 9.1), an increase of four percentage points from the previous survey. Eighty-one percent of births took place in a public health facility in the North region compared with 54 percent in the Central region. More women (44 percent) in the Central region went to a private health facility than women from the North or South regions. Women are more likely to have their first birth at a private health facility than subsequent births. The reverse is true for public health facilities. Younger women are more likely to deliver at a public health facility or at home, while older women are

more likely to deliver in a private health facility. In rural areas more children are born in public health facilities than private health facilities, and vice versa in urban areas.

Only 3 percent of women gave birth at home, a drop of more than 50 percent from the previous JPFHS survey (7 percent). There is also a strong association between the level of education of mothers and the place of delivery. The proportion of births delivered in a public health facility is higher (78 percent) for uneducated mothers, compared with 50 percent of births to mothers with higher education. There is a ten-fold difference in the proportion of births at home by uneducated women (10 percent) compared with women with higher education (1 percent).

**Figure 9.1 Place of Delivery**



### Assistance at Delivery

Obstetric care by a trained provider during delivery is recognized as critical for the reduction of maternal and neonatal mortality. Table 9.6 shows the type of assistance during delivery by background characteristics. Almost all births in Jordan are delivered with the assistance of a trained health professional, that is, a doctor, nurse, or midwife.

In all regions, the proportion of births assisted by a trained health professional is fairly similar. Both urban and rural women get assistance from a trained health professional during delivery. However, urban women are more likely to receive assistance from a doctor compared to a nurse or a midwife. First births are more likely to be assisted by a doctor than higher-order births. Rural women are more likely to receive assistance during birth from a traditional birth attendant (1.5 percent) compared with urban women, although numbers are very small. Women's education is positively associated with deliveries by medical professionals. Almost all births to women with preparatory, secondary and higher education receive delivery assistance from a health professional, whereas 94 percent of women with no education receive the same. The remaining women with no education sought assistance during delivery from a traditional birth attendant (5 percent).

Table 9.6 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, Jordan 2002

Background characteristic	Doctor	Nurse/ midwife	Traditional birth attendant	No one	Total	Number of births
<b>Mother's age at birth</b>						
<20	64.5	35.1	0.4	0.0	100.0	358
20-34	62.4	37.1	0.4	0.1	100.0	4,654
35-49	65.1	34.3	0.5	0.1	100.0	808
<b>Birth order</b>						
1	73.5	26.4	0.1	0.0	100.0	1,186
2-3	62.8	36.9	0.1	0.1	100.0	2,131
4-5	58.6	40.8	0.5	0.1	100.0	1,396
6+	57.2	41.6	1.1	0.2	100.0	1,106
<b>Residence</b>						
Urban	66.4	33.5	0.1	0.1	100.0	4,487
Rural	51.4	46.9	1.5	0.2	100.0	1,333
<b>Region</b>						
Central	71.4	28.5	0.1	0.1	100.0	3,635
North	47.5	51.6	0.9	0.0	100.0	1,596
South	52.7	46.2	0.7	0.3	100.0	589
<b>Mother's education</b>						
No education	47.1	47.3	5.4	0.3	100.0	237
Elementary	54.9	43.6	1.3	0.2	100.0	484
Preparatory	56.1	43.7	0.1	0.1	100.0	1,154
Secondary	61.9	38.0	0.1	0.0	100.0	2,440
Higher	74.9	24.9	0.1	0.2	100.0	1,504
<i>Preparatory + secondary</i>	<i>60.1</i>	<i>39.8</i>	<i>0.1</i>	<i>0.0</i>	<i>100.0</i>	<i>3,594</i>
Total	62.9	36.6	0.4	0.1	100.0	5,820

Note: If the respondent mentioned more than one person, only the most qualified person is considered in this tabulation.

## Delivery Characteristics

Caesarean section (C-section) rates are one of the few indicators for measuring women's access to obstetric care. C-sections are generally performed because the mother has medical problems or experiences complications at the time of delivery. Based on research and analysis, WHO has determined that the rate of C-sections in a given population should not be less than 5 percent and not more than 15 percent of all pregnancies if the lives of women and infants are to be protected (UNICEF, 1999). Rates below 5 percent are clear and grave warnings that many women and babies may be dying because of inadequate access to the whole spectrum of obstetric services. Rates above 15 percent indicate an unnecessarily high reliance on a major surgical procedure with numerous risks. It is essential that C-sections be performed only when necessary, and in facilities that are adequately equipped and staffed to ensure safety (UNICEF, 1999).

The JPFHS 2002 obtained information on a number of other key aspects of deliveries, including the frequency of C-sections and the birth weights of babies. Table 9.7 shows that one in six deliveries in the five-year period before the survey was by C-section, a more than 50 percent increase from the previ-



ous survey (JPFHS 1997). Given the high C-section rates (16 percent) and the disproportionately large increase in the proportion of births delivered by C-section since 1997, the indications for the performance of a Caesarean section need to be reviewed and addressed in Jordan. C-sections are more frequent in the Central region (17 percent) compared with the North (13 percent) and South (15 percent) regions. Older women are more than twice as likely to have a C-section (25 percent) as younger women (12 percent), but this may be related to a woman's previous history of having a C-section and the proclivity of the medical community to routinely deliver a woman by C-section if she has had one before.

Birth weight is a major determinant of infant and child health and mortality. In the 2002 JPFHS, for all births during the five-year period preceding the survey, mothers were first asked to subjectively assess the size of their baby and then were asked to report the actual weight in kilograms if the baby had been weighed after delivery. Table 9.7 shows that less than 2 percent of babies were not weighed at birth. Among those births for which the mother was able to report the baby's weight, about 10 percent were classified as low birth weight – i.e., they weighed less than 2.5 kilograms at birth – and 88 percent weighed 2.5 kilograms or more.

Table 9.7 Delivery characteristics

Percentage of live births in the five years preceding the survey delivered by caesarean section, and percent distribution by birth weight and by mother's estimate of baby's size at birth, according to background characteristics, Jordan 2002

Background characteristic	Birth weight						Size of child at birth					Number of births
	Delivery by caesarean section	Not weighed	Less than 2.5 kg.	2.5 kg. or more	Don't know/missing	Total	Very small	Smaller than average	Average or larger	Don't know/missing	Total	
<b>Mother's age at birth</b>												
<20	11.7	1.0	8.2	90.4	0.4	100.0	4.8	18.2	77.0	0.0	100.0	358
20-34	14.7	1.5	10.8	87.1	0.6	100.0	4.4	12.4	83.0	0.2	100.0	4,654
35-49	25.3	1.9	7.6	89.8	0.7	100.0	4.3	7.5	88.3	0.0	100.0	808
<b>Birth order</b>												
1	17.1	0.5	11.6	87.5	0.4	100.0	5.0	16.1	78.9	0.1	100.0	1,186
2-3	15.7	1.3	9.5	88.7	0.5	100.0	4.0	11.7	84.3	0.1	100.0	2,131
4-5	13.4	1.7	10.9	86.7	0.8	100.0	4.8	11.7	83.3	0.2	100.0	1,396
6+	18.6	2.6	9.2	87.4	0.8	100.0	3.9	9.2	86.4	0.5	100.0	1,106
<b>Residence</b>												
Urban	16.3	0.8	8.9	89.9	0.4	100.0	3.7	11.6	84.6	0.0	100.0	4,487
Rural	14.8	3.7	14.6	80.3	1.5	100.0	6.5	13.7	79.0	0.8	100.0	1,333
<b>Region</b>												
Central	17.4	0.5	10.0	89.2	0.4	100.0	3.5	12.3	84.1	0.0	100.0	3,635
North	13.1	2.9	9.5	87.0	0.6	100.0	5.3	11.4	82.8	0.5	100.0	1,596
South	14.9	3.8	13.4	80.6	2.2	100.0	7.2	12.3	80.0	0.5	100.0	589
<b>Mother's education</b>												
No education	16.9	10.1	18.1	65.2	6.6	100.0	10.3	15.4	71.4	2.9	100.0	237
Elementary	23.2	3.6	13.4	81.9	1.1	100.0	6.2	12.2	81.1	0.5	100.0	484
Preparatory	16.0	1.4	11.5	86.7	0.4	100.0	4.0	13.7	82.2	0.1	100.0	1,154
Secondary	12.6	0.8	9.3	89.6	0.3	100.0	4.2	12.4	83.4	0.0	100.0	2,440
Higher	18.9	0.7	8.4	90.8	0.2	100.0	3.4	9.9	86.7	0.1	100.0	1,504
Preparatory + secondary	13.7	1.0	10.0	88.7	0.3	100.0	4.1	12.8	83.0	0.0	100.0	3,594
Total	16.0	1.5	10.2	87.7	0.6	100.0	4.4	12.1	83.3	0.2	100.0	5,820

Table 9.7 also includes information on the mother's assessment of the baby's size at birth. It is important to remember that this assessment may vary among respondents since it is based on the mother's perception of what is a small, average, or large baby and not on a uniform definition. Eighty-three percent of the births were considered average or larger than average. About 4 percent were considered very small.

## Payment for Delivery

Table 9.8 shows that in the five years preceding the survey, 41 percent of births delivered in any public facility were paid for by respondents or their families; the corresponding figure for deliveries in private facilities was 75 percent. Government insurance was used by 38 percent of respondents: 94 percent of deliveries in Royal Medical Services were paid for this way, as were 82 percent of deliveries in

Background characteristic	Party responsible for payment						Total	Number of births
	Government insurance	Private insurance	Other public UNRWA	Respondent/family	Other	Don't know/missing		
<b>Age at birth</b>								
<20	29.7	2.0	0.0	66.3	1.9	0.0	100.0	346
20-34	37.7	7.8	0.7	53.1	0.4	0.3	100.0	4,500
35-49	44.3	8.1	1.4	45.8	0.4	0.0	100.0	794
<b>Birth order</b>								
1	31.7	7.7	0.5	59.3	0.7	0.1	100.0	1,164
2-3	35.1	8.4	0.5	55.0	0.8	0.2	100.0	2,066
4-5	41.6	7.0	0.9	50.1	0.1	0.4	100.0	1,344
6+	46.6	6.2	1.2	45.5	0.3	0.1	100.0	1,065
<b>Residence</b>								
Urban	29.5	8.7	0.9	60.0	0.6	0.3	100.0	4,359
Rural	67.4	3.4	0.2	28.7	0.2	0.0	100.0	1,281
<b>Region</b>								
Central	25.1	8.6	0.8	64.6	0.7	0.3	100.0	3,551
North	60.2	4.2	0.9	34.5	0.3	0.0	100.0	1,526
South	60.6	9.8	0.0	29.1	0.2	0.4	100.0	563
<b>Educational level attended</b>								
No education	55.0	1.7	0.9	41.5	0.6	0.2	100.0	213
Elementary	40.9	7.7	1.1	49.5	0.7	0.0	100.0	459
Preparatory	39.0	4.1	0.3	55.9	0.5	0.2	100.0	1,103
Secondary	35.0	5.7	0.6	57.9	0.6	0.3	100.0	2,377
Higher	39.3	13.6	1.1	45.4	0.4	0.2	100.0	1,488
<i>Preparatory + secondary</i>	36.2	5.2	0.5	57.2	0.6	0.2	100.0	3,480
<b>Health facility</b>								
Government Hospital	43.1	0.5	1.0	55.1	0.3	0.0	100.0	2,682
Royal Medical Services	94.1	2.6	0.1	3.2	0.0	0.0	100.0	914
Other public sector	82.2	1.1	0.0	16.7	0.0	0.0	100.0	101
Private sector	2.7	19.8	0.8	75.0	1.1	0.6	100.0	1,943
<b>Assistance during delivery</b>								
Doctor	30.3	10.6	0.8	57.4	0.6	0.3	100.0	3,655
Nurse/midwife	42.5	6.0	0.7	50.1	0.5	0.2	100.0	3,991
Other/none	100.0	0.0	0.0	0.0	0.0	0.0	100.0	3
Total	38.1	7.5	0.7	52.9	0.5	0.2	100.0	5,640

other public sector health facilities. On the other hand, private insurance was used by 8 percent of respondents: 20 percent of deliveries in the private sector and only 3 percent of deliveries in the Royal Medical Services were paid for with private insurance. Rural women were more than twice as likely to use government insurance (67 percent) as women living in urban areas (30 percent). The cost of delivery for less than 1 percent of babies was covered by payments from the United Nations Relief and Works Agency (UNRWA).

### 9.3 POSTNATAL CARE AND PRACTICES

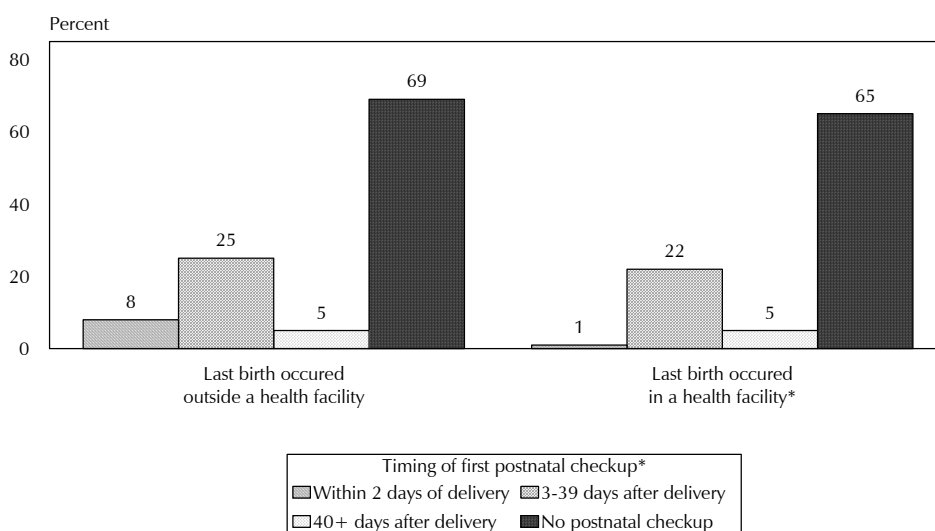
#### Postnatal Care

A large proportion of maternal and neonatal deaths occur during the first 48 hours after delivery. Safe motherhood programs have recently increased their emphasis on the importance of postnatal care, recommending that all women receive a health check within two days of delivery. To assess the extent of postnatal care utilization, respondents were asked whether they had received a health check after the delivery of their last birth in the five years preceding the survey.

Each woman with a birth in the five years previous to the survey was asked questions on the postnatal care she received for her latest birth, depending on where she gave birth. If she gave birth outside of a health facility, she was asked whether or not a health professional checked on her health after the birth. If, as did 97 percent of Jordanian women, she gave birth at a health facility, it was assumed that the woman received initial postnatal care shortly after birth while still in the facility; these women then were asked whether or not they received a postnatal check after they had been discharged from the facility.

Figure 9.2 shows that among women whose last birth in the five years preceding the survey took place outside of a health facility, only 8 percent received a postnatal checkup in the crucial 2 days after delivery. Twenty-two percent of women who gave birth outside of a facility had a postnatal checkup between 3 and 39 days after delivery, and 5 percent had a health checkup 40 days or more after delivery; the remaining 65 percent received no postnatal care.

**Figure 9.2 Postnatal Care by Timing of First Postnatal Checkup**



\* For women whose last birth occurred in a health facility, postnatal checkup refers to a checkup after discharge from the health facility.

It is assumed that women who give birth in a facility receive some degree of postnatal care before they leave the health facility, especially in countries such as Jordan, which has a well-developed health care system. Hence, those women who gave birth in a facility were asked whether or not they sought further postnatal care after they had left the facility in which they gave birth. Figure 9.2 shows that among women whose last birth in the five years preceding the survey took place in a health facility, most (69 percent) did not return for further postnatal care once they had left the health facility in which they gave birth. One percent of women who gave birth in a facility had another checkup within two days of leaving the facility, 25 percent had a checkup between 3 and 39 days after birth, and 5 percent more had a checkup 40 days or more after the birth of their last child.

Table 9.9 presents information on reasons given by women for either not receiving a postnatal check after leaving the place of delivery, or for not receiving any postnatal check (for those who did not deliver in a health facility). Most women felt no need to go for a checkup or didn't feel sick (delivered in facility: 89 percent; outside of facility: 76 percent). Of concern, particularly among women who gave

Table 9.9 Reasons for no postnatal check

Among women whose last birth was in the five years preceding the survey, percent distribution of those who delivered in a health facility but had no post-facility-discharge postnatal check and those who did not deliver in a health facility and had no postnatal check by reason for not having a postnatal check, according to background characteristics, Jordan 2002

Background characteristic	Reason for not having postnatal check												Total	Number of women
	Health facility too far	Too expensive	Waiting time too long	Facility not well equipped	Not enough qualified personnel	Not well received	No need to go, not sick	Not aware of availability	Husband, family opposed	Not supposed to go out <40 days	No one to take care of baby during visit	Other		
<b>Age at birth</b>														
<20	0.0	0.0	0.0	0.0	0.0	0.0	86.1	9.3	1.0	2.7	0.0	0.9	100.0	125
20-34	0.3	1.7	0.0	0.1	0.2	0.4	88.5	6.0	0.1	0.9	1.2	0.6	100.0	1,986
35-49	0.1	1.7	0.7	0.0	0.2	0.2	87.6	5.8	0.3	1.7	0.8	0.9	100.0	468
<b>Birth order</b>														
1	1.1	0.3	0.0	0.0	0.4	0.3	85.1	7.9	0.5	2.2	0.5	1.6	100.0	360
2-3	0.0	2.0	0.0	0.2	0.2	0.2	90.1	5.5	0.1	0.3	0.9	0.4	100.0	898
4-5	0.1	1.2	0.2	0.0	0.2	0.4	88.8	5.7	0.0	1.4	1.6	0.5	100.0	692
6+	0.2	2.3	0.3	0.1	0.2	0.5	86.5	6.4	0.2	1.6	1.0	0.8	100.0	630
<b>Residence</b>														
Urban	0.2	1.6	0.1	0.1	0.1	0.3	89.1	5.7	0.2	1.2	0.7	0.7	100.0	1,963
Rural	0.2	1.7	0.1	0.1	0.3	0.5	85.3	7.6	0.2	1.2	2.2	0.4	100.0	616
<b>Region</b>														
Central	0.3	1.3	0.2	0.0	0.3	0.1	93.1	2.1	0.2	1.1	0.4	0.7	100.0	1,510
North	0.1	2.2	0.1	0.3	0.1	0.4	78.4	14.4	0.1	1.0	2.5	0.5	100.0	798
South	0.3	1.5	0.1	0.0	0.1	1.3	89.4	4.4	0.0	1.8	0.2	0.9	100.0	271
<b>Educational level attended</b>														
No education	0.6	2.5	0.0	0.0	0.0	0.3	83.0	11.0	0.5	1.0	1.1	0.0	100.0	127
Elementary	0.2	4.8	1.1	0.2	0.2	0.2	84.0	6.8	0.0	1.1	1.1	0.2	100.0	232
Preparatory	0.1	1.7	0.2	0.0	0.1	0.1	85.5	9.0	0.2	1.0	1.2	1.0	100.0	532
Secondary	0.4	1.2	0.0	0.2	0.2	0.5	88.6	6.1	0.2	1.2	0.9	0.5	100.0	1,075
Higher	0.0	0.9	0.0	0.0	0.3	0.3	92.5	2.5	0.0	1.3	1.1	1.0	100.0	612
Preparatory + secondary	0.3	1.4	0.1	0.1	0.2	0.3	87.6	7.0	0.2	1.1	1.0	0.6	100.0	1,608
<b>Place of delivery</b>														
Health facility	0.2	1.5	0.1	0.1	0.2	0.3	88.5	6.0	0.2	1.1	1.0	0.7	100.0	2,513
Home/other	0.0	6.9	0.0	0.0	0.0	1.0	76.0	11.5	0.0	2.6	1.6	0.5	100.0	66
Total	0.2	1.6	0.1	0.1	0.2	0.3	88.2	6.1	0.2	1.2	1.1	0.7	100.0	2,579

birth outside of a facility, is the proportion of women who cited expense or lack of awareness of postnatal checks as the reason why they did not obtain postnatal care: among those who gave birth outside of a facility, 7 percent said that postnatal care was too expensive, and 12 percent said that they were not aware of the availability of postnatal care. The corresponding figures for women who gave birth in a health facility are 2 percent and 6 percent, respectively. There is a traditional belief in Jordan that women are not supposed to go out of their homes for forty days after delivery; however, the data indicate that this belief largely did not affect the likelihood that women would seek postnatal care (1.2 percent).

## 9.4 PROBLEMS IN ACCESSING HEALTH CARE

Many different factors can prevent women from getting medical advice or treatment for themselves. In the 2002 JPFHS, women were asked about various problems they can face in accessing health care. Table 9.10 shows that 64 percent of women reported having one or the other problem in accessing health care for themselves.

Table 9.10 Problems in accessing health care

Percentage of all ever-married women who reported they have big problems in accessing health care for themselves when they are sick, by type of problem and background characteristics, Jordan 2002

Background characteristic	Knowing where to go for treatment	Getting permission to go for treatment	Getting money for treatment	Distance to health facility	Having to take transport	Not wanting to go alone	Concern there may not be a female provider	Any of the specified problems	Number of women
<b>Age</b>									
15-19	12.5	6.7	22.5	26.9	29.5	51.0	41.0	73.3	158
20-29	11.1	8.7	29.3	31.8	31.6	35.4	28.0	69.6	1,903
30-39	9.6	7.0	28.8	27.0	29.9	23.7	25.4	61.8	2,424
40-49	8.6	5.5	34.3	27.4	28.3	23.4	22.8	60.4	1,520
<b>Number of living children</b>									
0	12.7	8.5	32.0	29.8	31.7	39.8	29.4	71.1	521
1-2	11.7	8.7	27.7	27.2	28.9	32.9	25.3	65.7	1,490
3-4	8.1	6.5	25.9	24.9	26.4	23.9	23.7	59.5	1,807
5+	9.5	6.3	35.0	32.4	33.4	25.4	27.5	65.5	2,188
<b>Marital status</b>									
Married	9.7	7.0	29.4	28.3	29.8	27.8	26.2	63.9	5,706
Divorced	13.0	20.1	47.9	37.5	35.3	35.1	21.8	75.5	130
Widowed	12.0	1.0	42.0	32.2	32.6	30.5	23.0	65.2	170
<b>Residence</b>									
Urban	9.3	6.2	29.4	24.8	25.9	26.2	25.5	61.3	4,799
Rural	12.2	10.9	33.2	44.0	46.6	35.6	27.8	75.7	1,207
<b>Region</b>									
Central	9.7	6.3	29.2	24.4	26.4	25.6	25.1	60.7	3,898
North	9.5	8.5	31.3	35.8	35.0	33.1	28.5	70.2	1,542
South	12.2	9.2	34.3	38.6	41.2	31.7	25.3	72.4	566
<b>Educational level attended</b>									
No education	15.5	13.7	52.4	46.4	44.9	32.5	30.0	80.3	363
Elementary	11.2	11.6	45.6	35.4	36.7	32.4	28.7	73.3	689
Preparatory	11.3	9.3	38.1	34.1	34.7	30.6	27.8	71.0	1,231
Secondary	9.1	5.5	27.4	27.2	28.4	28.4	26.6	62.4	2,247
Higher	7.8	4.2	15.3	18.7	21.9	22.4	21.3	53.1	1,476
Preparatory + secondary	9.9	6.8	31.2	29.7	30.6	29.1	27.0	65.5	3,478
<b>Employment</b>									
Not employed	10.0	7.5	31.7	29.3	30.8	28.8	26.9	65.5	5,422
Employed	8.7	3.7	16.6	22.3	23.2	21.3	17.3	52.5	584
Total	9.9	7.2	30.2	28.6	30.0	28.1	26.0	64.2	6,006

The main problems women cited in accessing health care were getting money for treatment (30 percent), having to take transport (30 percent), not wanting to go alone (28 percent), and the distance to the health facility (29 percent). One in four women was concerned that there might not be a female provider at the health facility. Older women were more likely to go alone compared with younger women. Employed women and women with higher education were less likely to have problems in accessing health care than women with no education and women who were not employed. As expected, rural women were more likely than urban women to have problems related to distance to the health facility, need for transportation, not wanting to go alone, and knowing where to go for treatment.

## 9.5 SMOKING TOBACCO

Tobacco use is widely regarded as the most preventable cause of death and disease among adults. In general, chronic exposure to nicotine may cause an acceleration of coronary artery disease, peptic ulcer disease, reproductive disturbances, esophageal reflux and hypertension. Tobacco and its various components have been associated with an increased risk of cancer of various body organs.

Smoking is the most important contributor to the development of chronic bronchitis and chronic obstructive pulmonary disease (COPD), which are characterized by chronic cough, phlegm and airflow obstruction. Smoking is well established as the cause of the majority of pulmonary emphysema. Smoking among women also creates particular risks for their offspring. Poor pregnancy outcomes, including low birth weight (LBW) and intrauterine growth retardation (IUGR), are more frequent among women who smoke than among those who do not smoke.

Table 9.11 shows the percentage of women who use tobacco for smoking. Overall, 12 percent of women smoke tobacco (either cigarettes or nargila). Older women are more likely to smoke cigarettes than younger women. However, younger women smoke more nargila (water pipe) than older women. Women living in urban areas (13 percent) are more likely to smoke tobacco than women living in rural areas (8 percent). Also, women in the Central region (including the capital city Amman) are more likely to smoke tobacco compared with women from other regions.

Women with no education are more likely to smoke tobacco (17 percent) than women who have secondary education (11 percent) or higher (12 percent). During pregnancy and lactation, more

Table 9.11 Use of smoking tobacco

Percentage of all ever-married women who smoke cigarettes or nargila, by background characteristics and maternity status, Jordan 2002

Background characteristic	Cigarettes	Nargila	Cigarettes or nargila	Does not smoke tobacco	Number of women
<b>Age</b>					
15-19	5.5	7.9	9.1	90.9	158
20-34	9.5	5.0	11.8	88.2	3,257
35-49	10.6	2.9	12.0	88.0	2,591
<b>Residence</b>					
Urban	10.4	4.8	12.7	87.3	4,799
Rural	7.7	1.5	8.3	91.7	1,207
<b>Region</b>					
Central	10.8	5.4	13.4	86.6	3,898
North	7.4	2.0	8.2	91.8	1,542
South	10.5	1.6	11.2	88.8	566
<b>Educational level attended</b>					
No education	17.0	2.1	17.1	82.9	363
Elementary	9.3	2.0	10.1	89.9	689
Preparatory	11.4	4.3	12.8	87.2	1,231
Secondary	8.6	4.7	10.8	89.2	2,247
Higher	9.1	4.8	12.1	87.9	1,476
Preparatory + secondary	9.6	4.6	11.5	88.5	3,478
<b>Maternity status</b>					
Pregnant	6.0	2.7	7.0	93.0	700
Breastfeeding (not pregnant)	7.0	2.8	8.1	91.9	1,269
Neither	11.5	4.9	13.8	86.2	4,036
Total	9.9	4.2	11.8	88.2	6,006

than 92 percent of women do not use tobacco. However, 7 and 8 percent of mothers smoke during pregnancy and lactation, respectively.

## 9.6 PREMARITAL MEDICAL EXAMINATIONS

Premarital examinations, which normally include genetic testing (given the high proportion of consanguineous unions in Jordan), are considered an important aspect of the process of forming a marital union in Jordan. Unfortunately, there are few facilities available for premarital examinations, and they tend to be avoided because of fear of findings; even first-cousin marriages are known to avoid a premarital examination (Jordan National Population Commission and The Futures Policy Project 2000). The lack of facilities and the desire to avoid premarital medical examinations are likely to have the result of increasing poor health outcomes for children if their parents are too closely related to one another by blood.

Table 9.12 indicates that only 6 percent of ever-married women and/or their husbands underwent premarital medical examinations. This is particularly worrisome given that 43 percent of ever-married women are related in some way to their husband, and 26 percent of women report that they are first cousins to their spouses (see Chapter 6, Table 6.4). Women residing in urban areas (6 percent) are twice as likely to go for premarital medical examinations as women residing in rural areas (3 percent). Also, women with higher education (7 percent) are more likely to go for a premarital medical examination than women with no education (2 percent).

## 9.7 BREAST CANCER EXAMINATIONS

Women themselves detect most breast cancers. Therefore, breast self-examination (BSE) is a very important part of every adult woman's personal health regimen. BSE should be performed once each month beginning at age 20 and should continue each month throughout a woman's lifetime. In addition to BSE, adult women should receive regular physician-performed clinical breast exams. Table 9.13 shows the percentage of women who have had a breast cancer self-exam or an exam by a health specialist.

Only 17 percent of women had a breast cancer exam in the twelve months preceding the survey. Women who are currently married, women who live in urban areas, women with higher education, and employed women are more likely to have had a breast cancer self-exam or an examination by a health professional.

Table 9.12 Premarital medical examinations

Percent distribution of all ever-married women by whether they and/or their husband underwent a premarital medical examination, according to background characteristics, Jordan 2002

Background characteristic	Premarital medical exam		Total	Number of women
	No	Yes		
<b>Residence</b>				
Urban	93.7	6.3	100.0	4,799
Rural	97.3	2.7	100.0	1,207
<b>Region</b>				
Central	93.6	6.4	100.0	3,898
North	95.9	4.1	100.0	1,542
South	96.2	3.8	100.0	566
<b>Educational level attended</b>				
No education	98.3	1.7	100.0	363
Elementary	96.7	3.3	100.0	689
Preparatory	94.5	5.5	100.0	1,231
Secondary	94.1	5.9	100.0	2,247
Higher	92.7	7.3	100.0	1,476
Preparatory + secondary	94.2	5.8	100.0	3,478
<b>Age at first marriage</b>				
15-19	95.4	4.6	100.0	2,682
20-24	93.9	6.1	100.0	2,266
25-29	92.3	7.7	100.0	649
30-34	89.5	10.5	100.0	121
35+	90.7	9.3	100.0	54
Total	94.4	5.6	100.0	6,006

Table 9.13 Breast cancer examinations

Percent distribution of all ever-married women by whether they have had a breast cancer self-exam or an exam by a health specialist to detect breast cancer in the twelve months preceding the survey, according to background characteristics, Jordan 2002

Background characteristic	Breast cancer exam		Total	Number of women
	No	Yes		
<b>Age</b>				
15-19	93.4	6.6	100.0	158
20-29	86.2	13.8	100.0	1,903
30-39	80.5	19.5	100.0	2,424
40-49	82.2	17.8	100.0	1,520
<b>Number of living children</b>				
0	89.6	10.4	100.0	521
1-2	83.6	16.4	100.0	1,490
3-4	81.1	18.9	100.0	1,807
5+	82.8	17.2	100.0	2,188
<b>Marital status</b>				
Married	82.6	17.4	100.0	5,706
Divorced	89.5	10.5	100.0	130
Widowed	94.2	5.8	100.0	170
<b>Residence</b>				
Urban	82.5	17.5	100.0	4,799
Rural	85.3	14.7	100.0	1,207
<b>Region</b>				
Central	84.0	16.0	100.0	3,898
North	79.3	20.7	100.0	1,542
South	86.7	13.3	100.0	566
<b>Educational level attended</b>				
No education	93.0	7.0	100.0	363
Elementary	91.2	8.8	100.0	689
Preparatory	87.0	13.0	100.0	1,231
Secondary	82.6	17.4	100.0	2,247
Higher	74.2	25.8	100.0	1,476
Preparatory + secondary	84.2	15.8	100.0	3,478
<b>Employment</b>				
Not employed	83.8	16.2	100.0	5,422
Employed	76.0	24.0	100.0	584
Total	83.1	16.9	100.0	6,006

## 9.8 VACCINATION COVERAGE

Universal immunization of children from six vaccine-preventable diseases (namely, tuberculosis, diphtheria, whooping cough, tetanus, polio, and measles) is a crucial component in any strategy with the aim of reducing infant and child mortality. Differences in vaccination coverage among subgroups of the population are of great assistance for program planning. Additionally, information on immunization coverage is important for the monitoring and evaluation of the expanded program on immunization (EPI).

Jordan joined the United Nations Children's Fund's "Child Survival Revolution" in 1980. Since then, the Ministry of Health has made the immunization card a requirement for entry into the school system. At the time of a child's first vaccination, the card is issued through various service providers. Upon



registering at the Maternal and Child Health Center, each child receives a health card that shows vaccinations and child's height and weight.

The survey collected information on vaccination coverage for all living children born in the five years preceding the survey. According to the guidelines developed by the World Health Organization (WHO), children are considered fully vaccinated when they have received a vaccination against tuberculosis (BCG), three doses each of the DPT (diphtheria, pertussis and tetanus) and polio vaccines, and a measles vaccination by the age of 12 months. According to WHO, BCG should be given at birth or at first clinical contact.

Information on vaccination coverage was collected in two ways: from vaccination cards shown to the interviewer, and from mothers' verbal reports. If the cards were available, the interviewer copied the vaccination dates directly onto the questionnaire. The respondent was asked to recall the vaccines given to her child when there was no vaccination card for the child, or if a vaccine had not been recorded on the card. Table 9.14 and Figure 9.3 show the percentage of children age 12-23 months who have received the various vaccinations by source of information, that is, from vaccination card or mother's report. This is the youngest cohort of children who have reached the age by which they should be fully vaccinated.

Table 9.14 Vaccinations by source of information

Percentage of children 12-23 months who had received specific vaccines at any time before the survey, by source of information (vaccination card or mother's report), and percentage vaccinated by 12 months of age, Jordan 2002

Source of information	Percentage of children who had received:												Number of children
	BCG	DPT			Polio <sup>1</sup>			Measles	All <sup>2</sup>	All except BCG	No vaccinations		
		1	2	3	0	1	2					3	
<b>Vaccinated at any time before survey</b>													
Vaccination card	21.8	77.6	77.4	77.0	4.8	77.6	77.5	76.9	74.8	21.3	74.2	0.0	881
Mother's report	7.0	21.9	21.7	21.2	1.8	22.2	22.0	20.7	20.4	6.6	19.4	0.1	254
Either source	28.8	99.5	99.1	98.2	6.6	99.9	99.5	97.6	95.2	27.9	93.7	0.1	1,135
Vaccinated by 12 months of age <sup>3</sup>	28.8	99.3	98.9	97.9	6.6	99.7	99.4	97.3	88.6	26.5	87.2	0.3	1,135

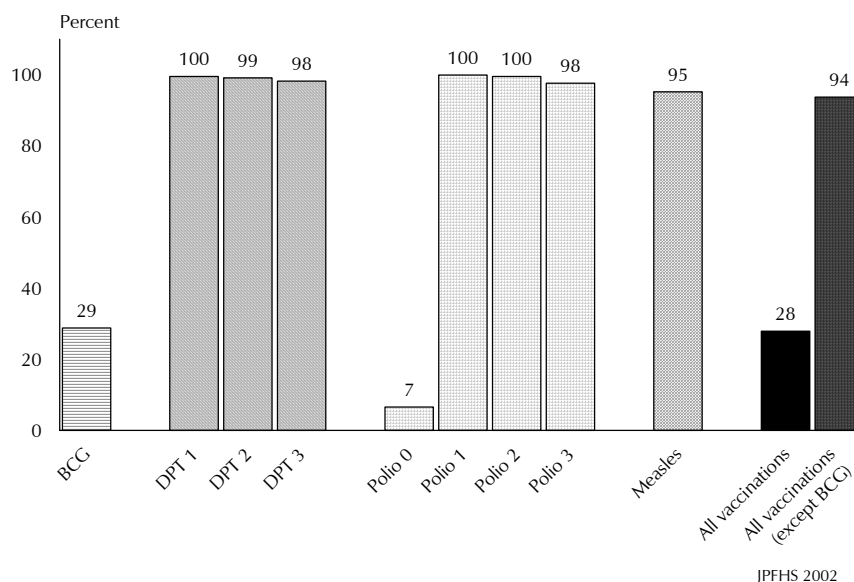
<sup>1</sup> Polio 0 is the polio vaccination given at birth.

<sup>2</sup> BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

<sup>3</sup> For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccination.

Ninety-four percent of children are fully vaccinated (except for BCG), an eight percentage point increase from the previous survey in which about 86 percent of children were fully immunized (except for BCG). However, the percentage of children receiving full immunization (including BCG) is only 28 percent because Jordan does not emphasize BCG vaccinations for children below six years of age. Ninety-five percent of children have been vaccinated against measles; this figure includes children who have received either the measles vaccine or at least one dose of MMR. MMR is a combined vaccine against measles, mumps and rubella.

**Figure 9.3 Percentage of Children Vaccinated by 12-23 Months of Age**



The coverage for the first dose and second doses of DPT is slightly higher (more than 99 percent for each) than that for the third dose of DPT (98 percent). Although DPT and polio vaccines are often administered at the same time, polio coverage is slightly higher than DPT coverage. The dropout between the first and third doses of polio is higher than that between the first and third doses of DPT. In addition, the percentage of children age 12-23 months who received polio at birth is only 7 percent.

Table 9.15 shows the vaccination coverage among children age 12-23 months, according to information from the vaccination card or mother’s report, by background characteristics. There are no significant differences in vaccination coverage – an indication of the success of the immunization program in reaching out to all population subgroups. However, there are small differences in vaccination coverage between urban and rural areas. The differences with respect to residence, region and education are higher for BCG and Polio 0 vaccination. As mentioned earlier, this could be because Jordan does not emphasize BCG vaccination below six years of age, nor does it emphasize polio vaccination at birth.

Table 9.15 Vaccinations of children 12-23 months by background characteristics

Percentage of children 12-23 months who received specific vaccines at any time before the survey (according to vaccination card or mother's report), and percentage with a vaccination card, by background characteristics, Jordan 2002

Background characteristic	Percentage of children who received:										All except BCG	No vaccinations	Percentage with vaccination card	Number of children
	BCG	DPT			Polio <sup>1</sup>				Measles	All <sup>2</sup>				
		1	2	3	0	1	2	3						
<b>Sex</b>														
Male	28.7	99.7	99.4	98.1	6.2	99.7	99.6	97.0	94.7	27.2	92.4	0.3	76.9	558
Female	28.9	99.3	98.8	98.3	7.0	100.0	99.4	98.2	95.6	28.5	94.9	0.0	78.3	577
<b>Birth order</b>														
1	39.3	99.2	99.2	98.7	8.9	99.8	99.5	97.8	96.6	37.4	95.0	0.2	78.5	213
2-3	30.2	100.0	99.8	99.5	5.2	100.0	99.8	99.0	95.9	29.2	95.2	0.0	75.8	443
4-5	23.2	99.4	99.1	98.1	8.1	99.8	99.4	97.8	94.6	22.8	92.8	0.2	79.6	279
6+	22.2	98.6	97.3	94.8	5.2	99.8	98.8	94.0	92.8	21.8	90.0	0.2	78.0	199
<b>Residence</b>														
Urban	35.2	99.6	99.2	98.4	8.2	100.0	99.7	97.6	95.4	34.0	93.9	0.0	75.7	879
Rural	6.8	99.1	98.7	97.3	1.4	99.6	99.0	97.5	94.2	6.8	92.9	0.4	84.1	256
<b>Region</b>														
Central	38.1	99.5	99.1	98.6	8.9	99.9	99.6	97.5	95.0	36.8	93.3	0.1	75.1	705
North	17.3	100.0	99.8	98.9	3.7	100.0	99.8	98.9	96.2	17.0	95.6	0.0	82.1	315
South	2.9	98.1	97.3	93.3	1.1	99.1	98.3	94.6	93.6	2.9	90.4	0.9	80.7	115
<b>Educational level attended</b>														
No education	5.6	92.6	89.1	82.2	5.6	98.9	95.4	83.0	80.8	5.6	78.2	1.1	67.8	37
Elementary	18.2	99.4	99.4	98.3	6.6	100.0	100.0	99.6	93.2	18.2	92.1	0.0	82.7	88
Preparatory	26.8	99.5	98.3	96.3	10.4	100.0	98.8	94.6	91.8	24.3	88.1	0.0	77.8	219
Secondary	31.3	99.9	99.8	99.4	6.4	99.9	99.8	99.1	97.3	30.5	96.5	0.1	81.4	509
Higher	32.1	99.7	99.7	99.4	4.2	99.9	99.9	98.6	96.4	31.8	95.4	0.1	70.3	282
Preparatory + secondary	30.0	99.8	99.3	98.5	7.6	99.9	99.5	97.7	95.6	28.7	94.0	0.1	80.4	728
Total	28.8	99.5	99.1	98.2	6.6	99.9	99.5	97.6	95.2	27.9	93.7	0.1	77.6	1,135

<sup>1</sup> Polio 0 is the polio vaccination given at birth.

<sup>2</sup> BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

## Trends in Vaccination Coverage

One way of measuring trends in vaccination coverage is to compare coverage among children of different ages. Table 9.16 shows the percentage of children who have received vaccinations during the first year of life according to their current age. This type of data can provide evidence of any trends in the vaccination coverage over the past five years.

There is a noticeable change in the vaccination coverage over the past five years. Table 9.16 shows an increase of four percentage points in vaccination coverage from the age group 48-59 months (83 percent) to 12-23 months (87 percent). Vaccination cards were shown for 78 percent of children age 12-23 months but only for 61 percent of children age 48-59 months. The lower percentage of cards shown for older children could be due to failure of the mother to show the health card to the interviewer. The card is generally kept at the school when the child enters primary school.

Table 9.16 Vaccinations in first year of life

Percentage of children 1-4 years of age at the time of the survey who received specific vaccines by 12 months of age, and percentage with a vaccination card, by current age of child, Jordan 2002

Current age of child in months	Percentage of children who received:										Percentage with a vaccination card seen		Number of children	
	BCG	DPT			Polio <sup>1</sup>				Measles	All <sup>2</sup>	All except BCG	No vaccinations		
		1	2	3	0	1	2	3						
12-23	28.8	99.3	98.9	97.9	6.6	99.7	99.4	97.3	88.6	26.5	87.2	0.3	77.6	1,135
24-35	28.2	99.4	99.2	97.5	6.9	99.5	99.3	97.0	85.1	23.3	83.2	0.4	74.8	1,154
36-47	23.6	99.5	99.3	97.9	5.6	99.4	99.3	97.3	88.0	20.4	86.4	0.4	71.3	1,058
48-59	25.5	98.7	98.2	97.0	6.3	98.8	98.5	96.2	84.7	21.5	82.8	1.1	60.9	1,166
Total	26.6	99.2	99.0	97.6	6.4	99.4	99.1	97.0	86.8	23.1	85.1	0.5	71.1	4,512

Note: Information was obtained from the vaccination card or if there was no written record, from the mother. For children whose information was based on the mother's report, the proportion of vaccinations given during the first year of life was assumed to be the same as for children with a written record of vaccinations.

<sup>1</sup> Polio 0 is the polio vaccination given at birth.

<sup>2</sup> BCG, measles, and three doses each of DPT and polio vaccine (excluding polio vaccine given at birth)

## Place of Vaccination

For last-born children born in the 5 years preceding the survey who had received three doses of DPT, the respondent was asked about the place/location where each dose was received. For the first dose of DPT, approximately 70 percent of children received the vaccination at a public facility, 22 percent received it from UNRWA, and 8 percent received it from a private health facility. Percent distribution of the location was same for the second and third doses of DPT (data not shown). Similar results were also obtained for measles vaccination: 78 percent received the vaccination from a public facility, 11 percent from a private facility, and 11 percent from UNRWA. Distribution of location was also similar for the second dose of measles vaccination. Based on these data, it can be concluded that there was no shift from one sector to another for different doses of vaccinations.

## Additional Doses

Table 9.17 shows percentage of children 24-59 months who received polio, DPT, Hepatitis, Hib, Measles and MMR vaccines at any time before the survey.

Polio 1, 2 and 3 are generally given at 2-month intervals. In addition, polio at birth, a fourth dose of polio at nine months of age, and a booster dose of polio at 18 months are also given. There are no noticeable differences in polio vaccination coverage for polio 1, 2 and 3. However, there is a significant decrease between the proportion of children vaccinated with polio 3 and the proportion vaccinated with polio 4 or the booster dose. It should be noted that the JPFHS included only children less than five years of age, while the booster dose is generally given between the ages of 4 and 6 years. Therefore, a large percentage of children included in the survey were still too young to have received the booster dose.

As already mentioned, DPT 1, 2, and 3 coverage is high with slight differences between the first three doses. However, as in the case for polio, coverage for DPT booster, usually given at 18 months, is slightly lower than DPT 3.

Table 9.17 Vaccinations of children 24-59 months by background characteristics

Percentage of children 24-59 months who received specific vaccines at any time before the survey (according to a vaccination card or the mother's report), and percentage with a vaccination card, by background characteristics, Jordan 2002

Background characteristic	Polio						DPT				Number of children	
	0	1	2	3	4	Booster	1	2	3	Booster		
<b>Sex</b>												
Male	6.5	99.7	99.6	98.3	49.3	61.7	99.7	99.6	99.6	74.8	1,739	
Female	6.3	99.8	99.7	98.7	51.3	60.5	99.7	99.5	99.7	75.5	1,639	
<b>Birth order</b>												
1	5.7	99.4	99.4	98.9	51.9	60.0	99.7	99.6	99.4	76.1	693	
2-3	6.5	99.8	99.7	98.1	50.2	61.0	99.8	99.7	99.7	75.7	1,232	
4-5	7.2	100.0	100.0	99.4	53.4	62.1	99.9	99.8	100.0	77.5	820	
6+	5.9	99.7	99.4	97.7	44.5	61.0	99.3	98.9	99.4	70.0	632	
<b>Residence</b>												
Urban	7.7	99.8	99.8	98.6	49.3	59.0	99.8	99.7	99.8	74.6	2,604	
Rural	2.0	99.6	99.3	98.2	53.6	68.1	99.3	99.1	99.3	77.2	774	
<b>Region</b>												
Central	8.3	99.7	99.7	98.2	46.1	56.3	99.7	99.6	99.7	71.5	2,105	
North	3.6	99.8	99.8	99.5	59.1	70.6	99.8	99.8	99.8	82.8	924	
South	2.3	99.4	99.0	97.6	52.2	64.6	99.2	98.8	99.0	76.7	348	
<b>Education</b>												
No education	2.1	97.9	97.7	93.3	46.3	56.0	96.4	96.2	97.7	67.6	155	
Elementary	4.6	100.0	99.6	99.3	51.6	69.6	100.0	99.6	99.6	76.8	288	
Preparatory	7.3	99.6	99.6	97.8	52.1	59.2	99.7	99.4	99.6	76.5	684	
Secondary	5.6	99.9	99.9	98.9	49.8	63.0	99.9	99.9	99.9	75.4	1,370	
Higher	8.2	99.7	99.7	99.1	49.8	57.6	99.7	99.8	99.7	74.5	880	
Preparatory + secondary	6.2	99.8	99.8	98.6	50.6	61.8	99.9	99.7	99.8	75.8	2,055	
Total	6.4	99.7	99.7	98.5	50.3	61.1	99.7	99.6	99.7	75.2	3,378	
Background characteristic	Hepatitis B			Haemophilus influenza type b (Hib)			Measles		At least one MMR	Percentage with health card seen	Number of children	
	1	2	3	1	2	3	1	2				
<b>Sex</b>												
Male	98.2	98.0	97.4	10.6	6.7	5.1	97.6	37.5	49.9	69.2	1,739	
Female	98.4	98.2	97.4	11.5	8.0	6.9	97.5	37.9	48.7	68.6	1,639	
<b>Birth order</b>												
1	97.0	97.0	96.8	14.9	10.4	7.7	97.4	36.8	50.9	67.0	693	
2-3	99.0	98.7	98.3	11.4	7.7	6.3	97.9	38.9	49.0	67.9	1,232	
4-5	99.4	99.1	98.7	10.4	6.9	6.4	98.3	38.3	49.6	70.0	820	
6+	97.1	96.8	95.0	7.1	3.8	3.1	95.7	35.7	47.8	71.3	632	
<b>Residence</b>												
Urban	98.3	98.1	97.7	12.6	8.5	6.9	98.0	36.4	52.5	67.4	2,604	
Rural	98.3	97.9	96.6	5.8	3.3	2.9	95.9	42.1	38.6	73.7	774	
<b>Region</b>												
Central	97.9	97.6	96.9	14.8	9.7	7.9	97.4	34.6	55.1	67.0	2,105	
North	99.4	99.4	99.0	5.1	3.7	3.4	98.5	43.3	41.9	72.4	924	
South	97.9	97.4	96.5	4.4	2.7	1.7	95.7	41.8	33.9	71.0	348	
<b>Education</b>												
No education	96.1	95.6	90.9	6.5	3.0	2.7	89.6	36.9	35.0	70.2	155	
Elementary	99.5	98.9	98.9	5.4	4.6	3.7	96.5	37.9	39.4	78.6	288	
Preparatory	98.3	98.1	97.6	6.4	4.8	4.1	97.6	37.7	45.8	68.0	684	
Secondary	98.1	97.9	97.5	10.7	7.5	6.3	98.2	35.8	53.4	71.9	1,370	
Higher	98.6	98.6	98.0	17.9	10.6	8.3	98.0	40.8	51.3	61.5	880	
Preparatory + secondary	98.2	97.9	97.5	9.3	6.6	5.6	9.08	36.5	50.9	70.6	2,055	
Total	98.3	98.1	97.4	11.0	7.3	6.0	97.5	37.7	49.3	68.9	3,378	

## Additional Vaccinations

*Hepatitis B* is a viral disease that primarily attacks the liver. Primary vaccination consists of three intramuscular injections: the first dose is administered at birth, and the second and third doses are given between the first and third month, and between the second and seventeenth month, respectively. The percentage of children vaccinated with Hepatitis B is high: 98 percent received both Hepatitis 1 and 2, and 97 percent received the third dose.

*Haemophilus influenzae type b (Hib)* is a bacterial disease that can cause meningitis in infants and severe infection of the epiglottis in older children. Children should receive 2 doses of Hib vaccine at two and four months of age, respectively. A third dose may be given at 6 months. Jordanian children age 24-59 months are not widely vaccinated with the Hib, and there is noticeable attrition in coverage from the first to the third dose of Hib vaccination: Hib 1 (11 percent), Hib 2 (7 percent) and Hib 3 (6 percent).

Since 1989, a routine two-dose schedule has been recommended for *measles* vaccination. The purpose of the second dose is to produce measles immunity in a person who failed to respond to the first dose. Both doses of measles vaccine should preferably be given as a combined MMR vaccine. The first dose is administered at 12 months and the second dose is recommended at 4-6 years, or prior to entry to kindergarten or first grade. Ninety-eight percent of children age 24-59 months received the first dose of the measles vaccine (Table 9.17) either as measles vaccine or as combined MMR. However, the percentage of children receiving the second dose of the measles vaccine drops to 38 percent. The substantial decline between the two doses is attributed to the fact that only children under five years of age were included in the survey, and only 49 percent of children had received at least one dose of MMR. However, as discussed earlier, 98 percent of children receiving the first dose of the measles vaccine also include children who have received at least one dose of MMR.

## 9.9 ACUTE RESPIRATORY INFECTION AND FEVER

Acute respiratory infection (ARI) is a leading cause of childhood morbidity and mortality throughout the world. Early diagnosis and treatment with antibiotics can prevent a large proportion of deaths caused by ARI. In the 2002 JPFHS, 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 compatible with ARI. It should be noted that the morbidity data collected are subjective, they are based on mother's perception of illness with no validation from medical personnel, and that the prevalence of ARI is subject to seasonality. Fever is a major manifestation of acute infections in children.

### Prevalence of ARI and Fever

Table 9.18 shows the percent distribution of children under five with fever and ARI during the two weeks preceding the survey by background characteristics.

Six percent of children under five years of age showed symptoms of ARI at some time in the two weeks preceding the survey. Prevalence of ARI varies by age of child. Children age 6-11 months have the greatest chance of having ARI symptoms (10 percent) compared with all other age groups. There is a slight difference in the prevalence of ARI by the sex of the child, region and place of residence. Mothers who smoke reported higher prevalence (10 percent) of ARI symptoms among children under five years compared with mothers who do not smoke (6 percent).

**Table 9.18 Prevalence and treatment of symptoms of acute respiratory infections (ARI) and fever**

Percentage of children under five years of age 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, Jordan 2002

Background characteristic	Prevalence of ARI and/or fever among children under five			Treatment of children with symptoms of ARI and/or fever	
	Percentage of children with symptoms of ARI	Percentage of children with fever	Number of children	Percentage for whom treatment was sought from a health facility or provider <sup>1</sup>	Number of children
<b>Age in months</b>					
<6	4.9	6.8	493	67.5	48
6-11	10.2	13.6	672	82.4	129
12-23	8.0	14.8	1,135	64.8	216
24-35	6.1	8.1	1,154	70.0	133
36-47	5.5	5.4	1,058	74.1	89
48-59	3.4	4.9	1,166	75.7	85
<b>Sex</b>					
Male	6.8	8.6	2,868	75.2	364
Female	5.6	9.0	2,810	68.0	337
<b>Residence</b>					
Urban	6.2	8.9	4,390	71.9	545
Rural	6.0	8.5	1,288	71.1	155
<b>Region</b>					
Central	6.1	7.9	3,561	70.6	412
North	7.0	11.0	1,544	72.9	224
South	4.9	8.6	573	74.7	65
<b>Educational level attended</b>					
No education	7.8	8.6	230	(60.5)	29
Elementary	7.2	7.8	468	72.1	52
Preparatory	7.6	10.5	1,126	73.3	161
Secondary	6.1	8.9	2,380	70.9	305
Higher	4.7	7.7	1,473	73.8	153
Preparatory + secondary	6.6	9.5	3,507	71.7	467
<b>Mother's smoking status</b>					
Smokes cigarettes/tobacco	9.8	8.8	529	71.0	79
Does not smoke cigarettes/tobacco	5.8	8.8	5,149	71.8	622
<b>Total</b>	<b>6.2</b>	<b>8.8</b>	<b>5,678</b>	<b>71.7</b>	<b>701</b>

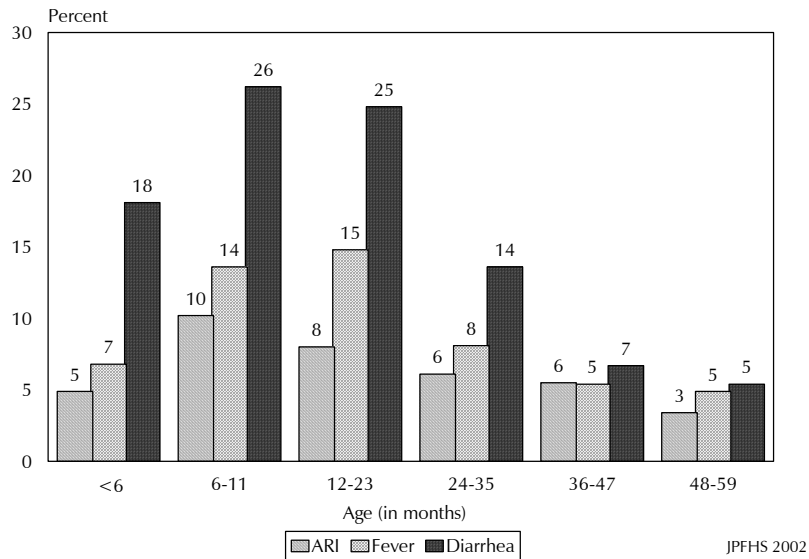
Note: Figures in parentheses are based on 25-49 unweighted cases.

ARI = Acute respiratory infection

<sup>1</sup> Excludes pharmacy, shop, and traditional practitioner

The prevalence of fever varies by age of child. Children age 6-11 and 12-23 months are more commonly sick with fever (14 and 15 percent, respectively) than other children (Figure 9.4). There are no significant variations in the prevalence of fever by the sex of the child or by place of residence. There are small variations by region, ranging from 8 percent in Central region to 11 percent in the North. Mother's education has little impact on the prevalence of fever among children less than five years.

**Figure 9.4 Percentage of Children Under Five Years With Symptoms of ARI, Fever, and Diarrhea in the Two Weeks Preceding the Survey**



### Treatment of Symptoms of ARI and Fever

Advice or treatment was sought from a health facility or provider for 72 percent of all children under five with cough and rapid breathing and/or fever. Children in the age group of 6-11 months are more likely to be taken to a health facility than children in other age groups. Male children are slightly more likely than female children to be taken to a health provider. There are no notable differences with respect to the place of residence or mother's smoking status.

### 9.10 PREVALENCE OF DIARRHEA

Diarrhea has been singled out for investigation for two reasons: dehydration from diarrhea is a major cause of death in infancy and childhood, and the condition can be easily treated by oral rehydration therapy (ORT). This makes diarrhea and its management a high priority for health programs. In interpreting the findings of the 2002 JPFHS, it should be borne in mind that the prevalence of diarrhea may be affected by recall bias of the mother as to when an episode of diarrhea actually occurred and that the number of diarrhea cases varies seasonally.

Table 9.19 shows the percentage of children under five with diarrhea in the two weeks preceding the survey according to background characteristics. Fifteen percent of all children less than five years of age experienced diarrhea at some time in the two weeks before the survey. The occurrence of diarrhea varies by age of the child. Young children ages 6-23 months are more prone to diarrhea than children in the other age groups (Figure 9.4). Episodes of diarrhea are slightly more common among rural children (16 percent) than among urban children (14 percent). There are also slight variations in the prevalence of diarrhea by regions. Children whose drinking water comes from a tanker truck are more likely to have experienced diarrhea (20 percent) compared to those who use bottled water (12 percent).



Table 9.19 Prevalence of diarrhea

Percentage of children under five years with diarrhea in the two weeks preceding the survey, by background characteristics, Jordan 2002

Background characteristic	Diarrhea in the two weeks preceding the survey	Number of children
<b>Age in months</b>		
<6	18.1	493
6-11	26.2	672
12-23	24.8	1,135
24-35	13.6	1,154
36-47	6.7	1,058
48-59	5.4	1,166
<b>Sex</b>		
Male	14.7	2,868
Female	14.8	2,810
<b>Residence</b>		
Urban	14.3	4,390
Rural	16.2	1,288
<b>Region</b>		
Central	14.3	3,561
North	15.4	1,544
South	16.0	573
<b>Mother's education</b>		
No education	13.3	230
Elementary	15.3	468
Preparatory	17.0	1,126
Secondary	15.0	2,380
Higher	12.7	1,473
<i>Preparatory + secondary</i>	15.6	3,507
<b>Source of drinking water</b>		
Piped into dwelling	14.8	4,888
Rainwater	15.9	283
Tanker truck	19.8	98
Bottled water	11.7	393
Other/missing	*	17
Total	14.7	5,678

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

## Knowledge of ORS Packets

Rehydration therapy may include the use of a solution prepared from packets of oral rehydration salts (ORS) or recommended home fluids (RHF) such as a sugar-salt-water solution. In addition, it is recommended that food intake not be decreased for children suffering from diarrhea. To ascertain how widespread knowledge of ORS is in Jordan, respondents were asked whether they knew about ORS packets.

Table 9.20 shows that majority of women (97 percent) who gave birth in the five years preceding the survey know about ORS packets. Mothers under 20 years of age are somewhat less likely to know about ORS packets compared with older women. However, there are no differences in the knowledge of ORS packets between women residing in urban and rural areas. Knowledge of ORS varies slightly by region. There are some differences in the knowledge of ORS packets by educational level of mothers: 98 percent of mothers with secondary and higher education, respectively, know about ORS packets, compared with 91 percent of mothers with no education.

### Diarrhea Treatment

Table 9.21 shows the percentage of children with diarrhea who received specific treatments according to background characteristics. Treatment and/or advice was sought from a health facility for more than half (53 percent) of children with diarrhea in the two weeks prior to the survey. Younger children are more likely to be taken to a health facility than older children. Notable differences also exist by residence. The proportion of children taken to a health facility in rural areas (56 percent) is higher than in urban areas (52 percent).

Less than two-thirds (64 percent) of children with diarrhea were treated with some kind of oral rehydration therapy: 18 percent were treated with solution prepared from ORS packets, 6 percent were given recommended home fluids (RHF) prepared at home, 22 percent received either ORS or RHF and more than half (54 percent) were given increased fluids. In addition, 49 percent of children were given pills or syrup, 8 percent were given home remedies, and 2 percent were given an injection. Twenty-two percent of children with diarrhea did not receive any type of treatment at all.

Diarrhea treatment varies slightly with age. More children in the younger age group (<6 months) are given RHF and injections than older children. However, children in this age group are more likely to receive no treatment than older children. Slight variations also exist between urban and rural areas and with respect to the sex of the children. Children in urban areas (65 percent) are slightly more likely to receive ORT – either ORS, RHF, or increased fluids – than children in rural areas (61 percent). Mother's education does not influence children's diarrheal treatment.

Table 9.20 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, Jordan 2002

Background characteristic	Percentage of mothers who know about ORS packets	Number of mothers
<b>Age</b>		
15-19	88.7	78
20-24	96.8	584
25-29	97.3	994
30-34	98.0	1,083
35-49	97.1	1,003
<b>Residence</b>		
Urban	97.2	2,931
Rural	97.4	812
<b>Region</b>		
Central	96.9	2,378
North	98.4	1,001
South	95.8	364
<b>Educational level attended</b>		
No education	91.1	149
Elementary	97.1	306
Preparatory	96.7	741
Secondary	97.6	1,539
Higher	97.8	1,008
Preparatory + secondary	97.3	2,280
Total	97.2	3,743

ORS = Oral rehydration salts

Table 9.21 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, by background characteristics, Jordan 2002

Background characteristic	Percent-age taken to a health facility <sup>1</sup>	Oral rehydration therapy (ORT) <sup>2</sup>					Other treatments					Number of children with diarrhea
		ORS packets	RHF	Either ORS or RHF	In-creased fluids	ORS,RHF or in-creased fluids	Pill or syrup	Injec-tion	Intra-venous solution	Home remedy/ other	No treat-ment	
<b>Age in months</b>												
<6	57.6	11.0	10.1	19.9	20.5	36.6	34.9	4.7	0.0	7.5	45.5	89
6-11	57.2	14.6	7.0	17.9	53.8	60.2	47.8	1.7	0.2	7.6	21.0	176
12-23	56.2	22.8	5.1	26.8	64.1	74.8	53.8	1.9	0.3	8.6	12.8	281
24-35	46.5	18.3	3.2	20.4	55.0	65.3	49.3	1.2	0.0	10.2	20.3	157
36-47	50.2	21.2	6.6	24.8	59.9	70.6	50.2	2.4	3.0	7.2	17.1	71
48-59	42.3	14.8	5.2	15.5	48.3	53.3	46.0	3.0	0.0	5.3	37.8	63
<b>Sex</b>												
Male	54.3	19.5	6.4	23.6	52.7	63.4	47.5	1.7	0.6	6.5	23.8	422
Female	52.0	17.0	5.1	20.3	55.3	64.4	50.1	2.6	0.2	10.0	19.5	415
<b>Residence</b>												
Urban	52.3	17.6	5.4	21.5	54.5	64.8	48.7	2.5	0.5	6.6	21.6	629
Rural	55.8	20.1	7.1	23.6	52.5	61.2	49.2	1.0	0.0	13.2	21.7	209
<b>Region</b>												
Central	54.7	20.5	5.3	24.1	51.3	62.6	49.6	3.3	0.5	8.1	22.9	508
North	47.8	15.1	5.8	18.0	59.4	66.7	44.3	0.2	0.2	8.3	20.7	238
South	58.6	13.8	8.5	20.5	55.5	63.6	56.1	1.1	0.3	8.9	17.4	91
<b>Mother's education</b>												
No education	70.6	32.2	8.3	34.4	50.2	68.1	53.6	1.7	0.0	7.1	21.3	31
Elementary	53.4	14.5	4.1	15.6	42.3	48.5	48.2	0.9	0.0	7.5	25.2	72
Preparatory	59.7	29.5	8.2	33.9	50.9	71.0	55.8	0.7	1.1	7.1	15.1	192
Secondary	54.1	17.3	5.8	21.6	56.4	64.1	50.2	3.9	0.1	8.9	21.2	357
Higher	41.9	7.6	3.7	11.0	57.8	61.3	38.4	1.0	0.4	8.6	28.1	187
Preparatory + secondary	56.0	21.6	6.6	25.9	54.5	66.5	52.1	2.7	0.5	8.3	19.0	548
Total	53.2	18.2	5.8	22.0	54.0	63.9	48.8	2.2	0.4	8.2	21.7	837

<sup>1</sup> Excludes pharmacy, shop, and traditional practitioner

<sup>2</sup> Oral rehydration therapy (ORT) includes solution prepared from oral rehydration salt (ORS) packets, recommended home fluids (RHF), or increased fluids.