CHAPTER 8

MATERNAL AND REPRODUCTIVE HEALTH

Promotion of maternal and child health has been one of the most important objectives of the Family Welfare Programme in India. The Government of India took steps to strengthen maternal and child health services as early as the First and Second Five-Year Plans (1951–56 and 1956–61). As part of the Minimum Needs Programme initiated during the Fifth Five-Year Plan (1974–79), maternal health, child health, and nutrition services were integrated with family planning services. The primary aim at that time was to provide at least a minimum level of public health services to pregnant women, lactating mothers, and preschool children (Kanitkar, 1979).

In 1992–93, the Child Survival and Safe Motherhood Programme continued the process of integration by bringing together several key child survival interventions with safe motherhood and family planning activities (Ministry of Health and Family Welfare, 1992). In 1996, safe motherhood and child health services were incorporated into the Reproductive and Child Health Programme. This new programme seeks to integrate maternal health, child health, and fertility regulation interventions with reproductive health programmes for both women and men. With regard to maternal and reproductive health (Ministry of Health and Family Welfare, 1997; 1998b), the important elements of the programme include:

- Provision of antenatal care, including at least three antenatal care visits, iron prophylaxis for pregnant and lactating women, two doses of tetanus toxoid vaccine, detection and treatment of anaemia in mothers, and management and referral of high-risk pregnancies

- Encouragement of institutional deliveries or home deliveries assisted by trained health personnel

- Provision of postnatal care, including at least three postnatal visits

- Identification and management of reproductive tract and sexually transmitted infections

In rural areas, the government delivers reproductive and other health services through its network of Primary Health Centres (PHCs), sub-centres, and other health facilities. In addition, pregnant women and children can obtain services from private maternity homes, hospitals, private practitioners, and in some cases, nongovernmental organizations (NGOs). In urban areas, reproductive health services are available mainly through government or municipal hospitals, urban health posts, hospitals and nursing homes operated by NGOs, and private nursing and maternity homes.

In rural areas, a female paramedical worker, called an auxiliary nurse midwife (ANM), is posted at a sub-centre to provide basic maternal health, child health, and family welfare services to women and children either in their homes or in the health clinic. Her work is overseen by a lady health visitor (LHV) posted at the PHC. With regard to safe motherhood, the ANM is responsible for registering pregnant women, motivating them to obtain antenatal and postnatal care, assessing their health throughout pregnancy and in the postpartum period, and referring women with high-risk pregnancies. The ANM is assisted by a male health worker whose duties

include motivating men to participate in the family welfare programme and educating men about reproductive tract and sexually transmitted infections. The ANM and LHV also assist the medical officer at the PHC where health services, including antenatal and postnatal care, are provided (Ministry of Health and Family Welfare, 1997; 1998b).

The National Population Policy adopted by the Government of India in 2000 (Ministry of Health and Family Welfare, 2000) reiterates the government's commitment to the safe motherhood programmes within the wider context of reproductive health. Among the national socio-demographic goals for 2010 specified by the policy, several goals pertain to safe motherhood, namely that 80 percent of all deliveries should take place in institutions by 2010, 100 percent of deliveries should be attended by trained personnel, and the maternal mortality ratio should be reduced to a level below 100 per 100,000 live births. Empowering women for improved health and nutrition is 1 of the 12 strategic themes identified in the policy to be pursued in stand-alone or intersectoral programmes.

An important objective of NFHS-2 is to provide information on the use of safe motherhood services provided by the public and private sectors. In addition, the survey included questions on the prevalence and treatment of reproductive health problems. The Woman's Questionnaire included relevant maternal and safe motherhood information for women age 15–49 who have given birth since 1 January 1995. The topics covered include pregnancy complications, utilization and specific components of antenatal and postnatal care, place of and assistance during delivery, delivery characteristics, and postpartum complications. Although NFHS-2 obtained information for the two most recent live births since 1 January 1995, the information presented in this chapter pertains only to the subset of those births that took place during the three years preceding the woman's interview. With regard to reproductive health, all women were asked about their experience of specific symptoms of reproductive health problems, and if problems were reported, whether and where they received treatment.

8.1 Antenatal Problems and Care

Antenatal care (ANC) refers to pregnancy-related health care provided by a doctor or a health worker in a medical facility or at home. The Safe Motherhood Initiative proclaims that all pregnant women must receive basic, professional antenatal care (Harrison, 1990). Ideally, antenatal care should monitor a pregnancy for signs of complications, detect and treat pre-existing and concurrent problems of pregnancy, and provide advice and counselling on preventive care, diet during pregnancy, delivery care, postnatal care, and related issues. The Reproductive and Child Health Programme recommends that as part of antenatal care, women receive two doses of tetanus toxoid vaccine, adequate amounts of iron and folic acid tablets or syrup to prevent and treat anaemia, and at least three antenatal check-ups that include blood pressure checks and other procedures to detect pregnancy complications (Ministry of Health and Family Welfare, 1997; 1998b).

NFHS-2 collected information from women on specific problems they may have had during their pregnancies and whether they received any antenatal check-ups. Women who did not receive antenatal check-ups were asked why they did not. Women who received antenatal check-ups were asked about the care provider, the timing of the first antenatal check-up, the total number of check-ups, the procedures conducted during the check-ups, and the advice given. In addition, the

survey asked women whether they received tetanus toxoid injections and iron and folic acid tablets or syrup during the pregnancy. Results from each of these questions are discussed in this chapter.

Problems During Pregnancy

For each of the two most recent births in the three years preceding the survey, the mother was asked if at any time during the pregnancy she experienced any of the following pregnancy-related problems: night blindness, blurred vision, convulsions (not from fever), swelling (of the legs, body, or face), excessive fatigue, anaemia, or vaginal bleeding. Night blindness, or difficulty in seeing at dusk, is the result of chronic vitamin A deficiency and is often seen in pregnant women in areas where vitamin A deficiency is endemic. Convulsions accompanied by signs of hypertension can be symptomatic of eclampsia, a potentially fatal condition. The potential health risk posed by vaginal bleeding during pregnancy varies by when in the pregnancy the bleeding takes place. Although documenting the prevalence of the symptoms of pregnancy complications is vital for planning services to reduce maternal morbidity and mortality, the information presented here is based on women's self reports, rather than medical diagnoses, and should be interpreted with care.

As shown in Table 8.1 and Figure 8.1, the problems most commonly reported are excessive fatigue (39 percent), anaemia (23 percent), and swelling of the legs, body, or face (19 percent). Fourteen percent of women reported blurred vision, 3 percent reported convulsions that were not from fever, 2 percent reported vaginal bleeding, and 1 percent reported night blindness. Although differentials in the prevalence of pregnancy complications by urban-rural residence are generally small, a higher proportion of urban than rural women reported having anaemia. In contrast, a higher proportion of rural than urban women reported having blurred vision.

Table 8.1 Health problems during pregnancy

Among births during the three years preceding the survey, percentage of mothers experiencing specific health problems during pregnancy by residence, Haryana, 1998–99

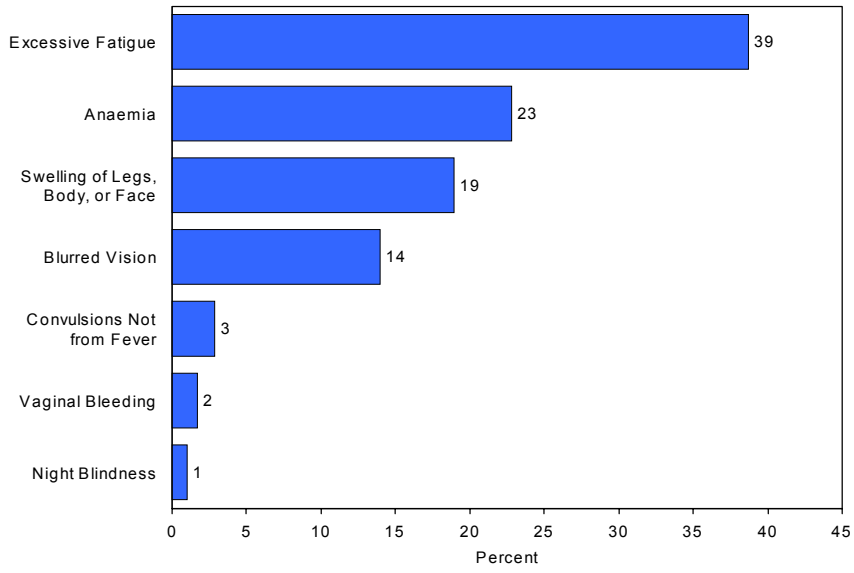
Problem during pregnancy	Urban	Rural	Total
Night blindness	1.6	0.9	1.0
Blurred vision	10.8	14.9	14.0
Convulsions not from fever	2.9	2.9	2.9
Swelling of the legs, body, or face	18.5	19.1	18.9
Excessive fatigue	39.3	38.6	38.7
Anaemia	30.3	20.5	22.8
Vaginal bleeding	3.3	1.2	1.7
Number of births	246	814	1,060

Note: Table includes only the two most recent births during the three years preceding the survey.

Antenatal Check-Ups

A pregnant woman can have an antenatal check-up by visiting a doctor or another health professional in a medical facility, receiving a home visit from a health worker, or both. NFHS-2 asked women who had a birth during the three years preceding the survey whether any health worker had visited them at home to provide antenatal check-ups. The survey also asked whether

Figure 8.1
Problems During Pregnancy



Note: Based on births in the three years preceding the survey (1996–98)

NFHS-2, Haryana, 1998–99

women had gone for antenatal check-ups outside the home, and if they had, what type of service provider gave them the check-ups.

Table 8.2 and Figure 8.2 show the percent distribution of births in the three years preceding the survey by the source of antenatal check-ups received during pregnancy. Women who received antenatal check-ups both at home and outside the home are categorized as having received care outside the home. If a woman received check-ups from more than one type of health provider, only the provider with the highest qualification is considered.

NFHS-2 results for Haryana show that mothers received antenatal check-ups for only 58 percent of births during the three years preceding the survey (compared with a much higher level of 75 percent in NFHS-1). Thirty-five percent received check-ups from doctors and 22 percent from other health professionals outside the home. Only 1 percent received check-ups only at home from a health worker. Antenatal check-ups are more common for births to younger women than to older women, and for women giving lower order births. By mother's age at birth, the proportion receiving antenatal check-ups declines from 57–59 percent for mothers below age 35 to 40 percent for mothers age 35 or older. By birth order, the proportion receiving antenatal check-ups declines steadily from 68 percent for first order births to 34 for sixth or higher order births. The proportion of births for which the mother received antenatal check-ups is much higher in urban areas (78 percent) than in rural areas (52 percent). Antenatal check-ups from doctors are also much more common for urban women (56 percent) than for rural women (28 percent).

Mothers with at least a high school education received antenatal check-ups for a large majority of their births (85 percent), but illiterate mothers received antenatal check-ups for only 43 percent of their births. As expected, more-educated women are more likely than less-educated women to receive antenatal check-ups from doctors for their births. The utilization of antenatal

Table 8.2 Antenatal check-ups

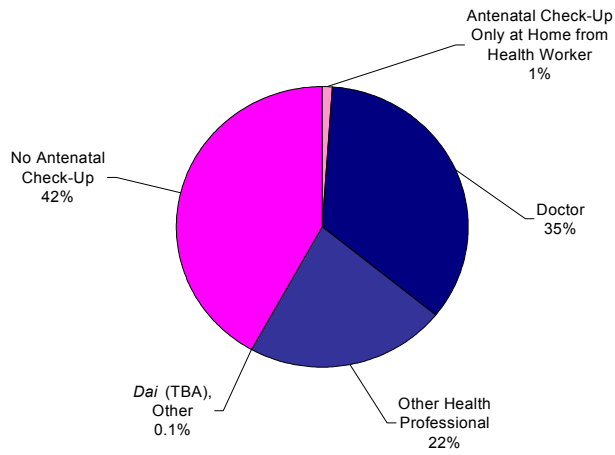
Percent distribution of births during the three years preceding the survey by source of antenatal check-up, according to selected background characteristics, Haryana, 1998–99

Background characteristic	Antenatal check-up only at home from health worker	Antenatal check-ups outside home[1] from:			No antenatal check-up	Total percent	Number of births
		Doctor	Other health professional	Traditional birth attendant, other			
Mother's age at birth							
< 20	1.4	29.1	26.3	0.5	42.7	100.0	205
20–34	1.0	36.6	21.3	0.0	41.1	100.0	825
35–49	(0.0)	(26.6)	(13.4)	(0.0)	(60.0)	100.0	30
Birth order							
1	0.6	44.9	22.4	0.0	32.0	100.0	308
2–3	1.4	36.4	23.7	0.2	38.2	100.0	489
4–5	1.1	22.0	19.1	0.0	57.8	100.0	184
6+	0.0	16.3	17.5	0.0	66.2	100.0	80
Residence							
Urban	0.8	56.4	20.7	0.4	21.6	100.0	246
Rural	1.1	28.4	22.5	0.0	48.0	100.0	814
Mother's education							
Illiterate	1.1	21.7	19.7	0.0	57.5	100.0	540
Literate, < middle school complete	1.4	33.4	27.6	0.5	37.1	100.0	206
Middle school complete	1.1	44.5	28.4	0.0	26.0	100.0	95
High school complete and above	0.4	64.4	20.2	0.0	15.0	100.0	219
Religion							
Hindu	1.2	36.2	22.3	0.1	40.2	100.0	913
Muslim	0.0	12.8	18.1	0.0	69.1	100.0	73
Sikh	0.0	37.5	24.6	0.0	37.9	100.0	69
Caste/tribe							
Scheduled caste	0.8	20.9	23.1	0.4	54.9	100.0	268
Other backward class	1.5	38.3	25.8	0.0	34.4	100.0	257
Other[2]	0.9	40.3	19.8	0.0	38.9	100.0	535
Standard of living index							
Low	0.8	18.1	19.4	0.0	61.7	100.0	138
Medium	0.9	27.8	22.6	0.2	48.5	100.0	531
High	1.3	50.6	22.2	0.0	25.9	100.0	385
Total	1.0	34.9	22.1	0.1	41.9	100.0	1,060

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 4 births to women belonging to other religions, 1 birth to a scheduled-tribe woman, and 1 and 6 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
( ) Based on 25–49 Unweighted cases
[1]Includes all births for which the mothers received an antenatal check-up outside the home, even if they also received an antenatal check-up at home from a health worker. If more than one type of antenatal check-up provider was mentioned, only the provider with the highest qualifications is shown.
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

check-up services is much lower among Muslims (31 percent) than among Hindus (60 percent) or Sikhs (62 percent). By caste/tribe, the proportion of births for which the mother received antenatal check-ups ranges from 45 percent for scheduled-caste women to 66 percent for women from other backward classes. By the standard of living index, the proportion ranges from 38 percent for women living in households with a low standard of living to 74 percent for women living in households with a high standard of living.

Figure 8.2
Source of Antenatal Check-Ups During Pregnancy



Note: Percents add to more than 100.0 due to rounding

NFHS-2, Haryana, 1998–99

In summary, more than two out of five women in Haryana did not receive an antenatal check-up for births in the three years preceding the survey. Women not receiving antenatal check-ups tend disproportionately to be older women, women of high parity, women from scheduled castes, illiterate women, and poor women. This suggests that improving the coverage of antenatal programmes in Haryana requires special efforts to reach older, high-parity women and women who are socioeconomically disadvantaged.

Reasons for Not Receiving Antenatal Check-Ups

Table 8.3 shows the percent distribution of births in the three years preceding the survey whose mothers did not receive any antenatal check-ups by the main reason for not receiving any check-ups. For births to mothers who did not have any antenatal check-ups, a large majority of mothers (86 percent) said a check-up was not necessary and 2 percent said it was not customary. Another 5 percent said that their families did not allow them to get them a check-up, and 4 percent said a check-up costs too much. Distance, lack of transport, and poor quality of service were rarely mentioned. As expected, a higher proportion of rural than urban women do not consider it necessary to have antenatal check-ups; but surprisingly, a higher proportion of urban than rural women report lack of knowledge as their main reason for not receiving antenatal check-ups. These results suggest the need to inform women and families about the availability and benefits of antenatal check-ups to help overcome traditional attitudes and other hurdles that prevent them from seeking antenatal care for their pregnancies.

Number and Timing of Antenatal Check-Ups

The number of antenatal check-ups and the timing of the first check-up are important for the health of the mother and the outcome of the pregnancy. The conventional recommendation for normal pregnancies is that once pregnancy is confirmed, antenatal check-ups should be scheduled at four-week intervals during the first seven months, then every two weeks until the

Table 8.3 Reason for not receiving an antenatal check-up

Percent distribution of births during the three years preceding the survey to mothers who did not receive an antenatal check-up by the main reason for not receiving an antenatal check-up, Haryana, 1998–99

Reason for not receiving an antenatal check-up	Urban	Rural	Total
Not necessary	80.8	87.1	86.3
Not customary	1.8	2.5	2.4
Costs too much	3.9	3.5	3.6
Too far/no transport	0.0	0.3	0.2
Poor quality service	0.0	0.2	0.2
No time to go	0.0	0.8	0.7
Family did not allow	5.8	4.8	5.0
Lack of knowledge	7.7	0.5	1.4
No health worker visited	0.0	0.3	0.2
Total percent	100.0	100.0	100.0
Number of births	53	391	444

Note: Table includes only the two most recent births during the three years preceding the survey.

last month, and weekly thereafter (MacDonald and Pritchard, 1980). Four antenatal check-ups—one each during the third, sixth, eighth, and ninth months of pregnancy—have been recommended as the minimum necessary (Park and Park, 1989). The conventional recommendation is to schedule the first check-up within six weeks of a woman's last menstrual period. Studies on the timing of the initial antenatal check-up, however, show that even when antenatal care is initiated as late as the third trimester, there is a substantial reduction in perinatal mortality (Ramachandran, 1992).

In India, the Reproductive and Child Health Programme includes the provision of at least three antenatal care visits for pregnant women. Guidelines for the programme require that each pregnancy be registered in the first 12–16 weeks (Ministry of Health and Family Welfare, 1997). Accordingly, the first antenatal check-up should take place at the latest during the second trimester of pregnancy. NFHS-2 asked women who received antenatal check-ups for births in the three years preceding the survey about the total number of check-ups they received and when in their pregnancies they received their first check-up.

Table 8.4 and Figure 8.3 show the percent distribution of births in the three years preceding the survey by the number and timing of antenatal check-ups. In Haryana, mothers of only 37 percent of births received at least three antenatal check-ups (compared with 44 percent in India as a whole) and 22 percent had at least four check-ups. The median number of check-ups for those who received at least one check-up was 2.6. There are substantial differences by residence in the number of antenatal check-ups. At least three antenatal check-ups were received for 63 percent of births to mothers living in urban areas, compared with only 30 percent of births to mothers living in rural areas. Among births to mothers who received at least one antenatal check-up, the median number of check-ups was 3.7 in urban areas and 2.3 in rural areas. The shorter distances to antenatal-care services and the comparative ease of travelling in urban areas, as well as the higher educational attainment of mothers, could be important factors for the larger number of check-ups received by mothers in urban areas than in rural areas.

Table 8.4 Number and timing of antenatal check-ups and stage of pregnancy

Percent distribution of births during the three years preceding the survey by number of antenatal check-ups and by the stage of pregnancy at the time of the first check-up, according to residence, Haryana, 1998–99

Number and timing of check-ups	Urban	Rural	Total
Number of antenatal check-ups			
0	21.6	48.0	41.9
1	4.1	3.4	3.6
2	11.6	18.7	17.1
3	18.8	14.0	15.1
4+	43.9	15.8	22.3
Total percent	100.0	100.0	100.0
Median number of check-ups (for those who received at least one antenatal check-up)	3.7	2.3	2.6
Stage of pregnancy at the time of the first antenatal check-up			
No antenatal check-up	21.6	48.0	41.9
First trimester	54.1	26.4	32.8
Second trimester	21.4	22.6	22.3
Third trimester	2.9	3.0	2.9
Total percent	100.0	100.0	100.0
Median months pregnant at first antenatal check-up (for those who received at least one antenatal check-up)	2.9	3.5	3.3
Number of births	246	814	1,060

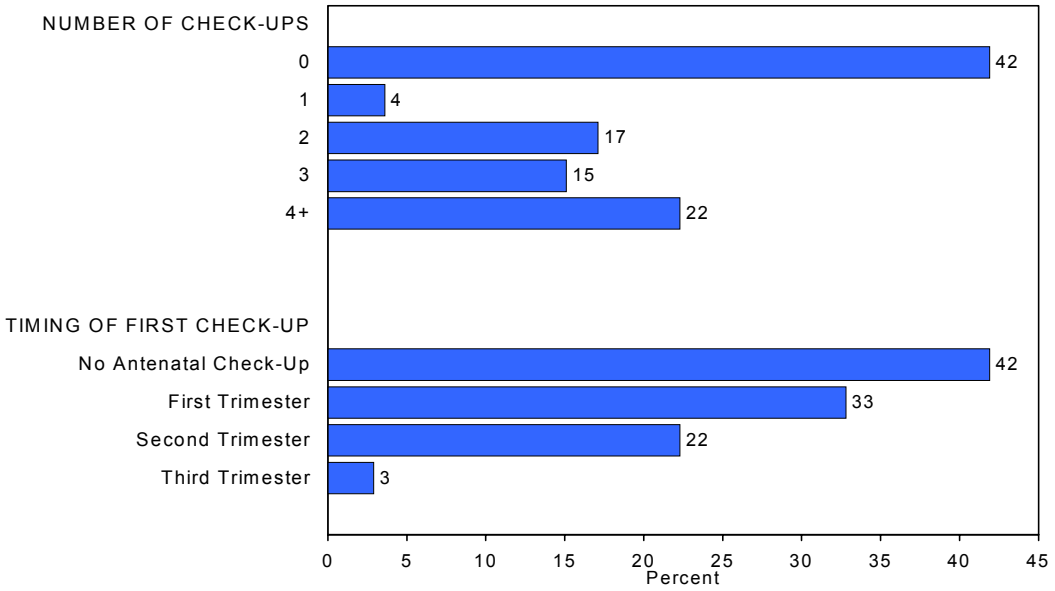
Note: Table includes only the two most recent births during the three years preceding the survey.

Thirty-three percent of births that took place in the three years preceding the survey were to mothers who received their first antenatal check-up in the first trimester of pregnancy (down slightly from 34 percent in NFHS-1), and another 22 percent were to mothers who received their first check-up in the second trimester (down from 31 percent in NFHS-1). The first check-up was received in the third trimester for only 3 percent of births (down from 11 percent in NFHS-1). Check-ups during the first trimester were much more common in urban areas (54 percent) than in rural areas (26 percent). The median timing of the first antenatal check-up was 3.5 months in rural areas, 2.9 months in urban areas, and 3.3 months in the state as a whole.

Components of Antenatal Check-Ups

The effectiveness of antenatal check-ups in ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the check-ups. NFHS-2 collected information on this important aspect of antenatal care for the first time by asking mothers who received antenatal check-ups whether they received each of several components of antenatal check-ups at least once during any of their check-ups during pregnancy. For births during the three years preceding the survey for which antenatal check-ups were received, Table 8.5 presents the percentage whose mothers received specific components of check-ups by residence. Except

Figure 8.3
Number and Timing of Antenatal Check-Ups



Note: Based on births in the three years preceding the survey (1996–98)

NFHS-2, Haryana, 1998–99

Table 8.5 Components of antenatal check-ups

Among births during the three years preceding the survey for which an antenatal check-up was received, percentage receiving specific components of antenatal check-ups by residence, Haryana, 1998–99

Components of antenatal check-ups	Urban	Rural	Total
Antenatal measurements/tests			
Weight measured	88.9	75.1	79.4
Height measured	12.6	11.4	11.7
Blood pressure checked	89.0	64.3	72.0
Blood tested	89.5	75.1	79.6
Urine tested	84.7	56.3	65.2
Abdomen examined	90.5	78.8	82.4
Internal examination	13.7	6.4	8.7
X-ray	4.8	2.3	3.1
Sonography or ultrasound	34.1	11.3	18.5
Amniocentesis	2.1	0.9	1.3
Antenatal advice			
Diet	93.1	83.5	86.5
Danger signs of pregnancy	43.9	34.6	37.5
Delivery care	67.1	48.5	54.3
Newborn care	65.4	41.7	49.1
Family planning	46.8	34.4	38.3
Number of births for which the mother received at least one antenatal check-up	193	423	616

Note: Table includes only the two most recent births during the three years preceding the survey.

for X-rays (which are not recommended as a standard component of antenatal care), all of the measurements and tests are part of essential obstetric care or are required for monitoring high-risk pregnancies.

Among all births for which mothers received antenatal check-ups, mothers had an abdominal examination in 82 percent of cases, had their blood tested in 80 percent of cases, and had their weight measured in 79 percent of cases. Other common components of antenatal check-ups were blood pressure checks (72 percent) and urine tests (65 percent). Mothers of only 19 percent of births had a sonogram or ultrasound check-up, and mothers of only 12 percent of births had their height measured. X-ray examinations and amniocentesis were rarely performed. All of these measurements or tests were performed more often for women living in urban areas than for women living in rural areas. The differences by residence are most pronounced for sonography or ultrasound (34 percent in urban areas and 11 percent in rural areas), blood pressure checks (89 percent in urban areas and 64 percent in rural areas), urine tests (85 percent in urban areas and 56 percent in rural areas), and internal examinations (14 percent in urban areas and 6 percent in rural areas).

Table 8.5 also shows the type of advice received by mothers who had antenatal check-ups for births in the three years preceding the survey. Dietary advice was given to mothers most often (in 87 percent of cases). Mothers were less likely to receive advice on delivery care (54 percent), on newborn care (49 percent), on family planning (38 percent), and on the danger signs of pregnancy (38 percent). The proportions receiving advice on each of these topics is higher in urban areas than in rural areas.

Tetanus Toxoid Vaccination

In India, an important cause of death in infancy is neonatal tetanus, which is caused by newborn infants becoming infected by tetanus organisms, usually at the umbilical stump. 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 typically develops during the first or second week of life and is fatal in 70–90 percent of cases (Foster, 1984). If neonatal tetanus infection occurs where expert medical help is not available, as is common in many rural areas in India, death is almost certain. Neonatal tetanus, however, is a preventable disease. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 percent effective in preventing tetanus among both newborn infants and their mothers. Immunity against tetanus is transferred to the foetus through the placenta when the mother is vaccinated.

In India, the tetanus toxoid immunization programme for expectant mothers was initiated in 1975–76 and was integrated with the Expanded Programme on Immunization (EPI) in 1978 (Ministry of Health and Family Welfare, 1991). To step up the pace of the immunization programme, the Government of India initiated the Universal Immunization Programme (UIP) in 1985–86. An important objective of the UIP was to vaccinate all pregnant women against tetanus by 1990. In 1992–93, the UIP was integrated into the Child Survival and Safe Motherhood Programme, which in turn has been integrated into the Reproductive and Child Health Programme. According to the National Immunization Schedule, a pregnant woman should receive two doses of tetanus toxoid vaccine, the first when she is 16 weeks pregnant and the second when she is 20 weeks pregnant (Central Bureau of Health Intelligence, 1991). Re-inoculation is recommended

every three years. If two doses were received less than three years earlier, a single booster injection is recommended.

For each of the two most recent births during the three years preceding the survey, NFHS-2 asked women whether they were given an injection in the arm to prevent them and their baby from getting tetanus. Women who said they had received a tetanus injection were asked how many times they had received the injection during the pregnancy.

Table 8.6 shows the distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics. Tetanus toxoid coverage in Haryana, although high, is far from complete. For births in the three years preceding the survey, 80 percent of the mothers received at least two tetanus toxoid injections during pregnancy, and another 5 percent received one injection. The proportion of mothers who received two or more tetanus toxoid injections during their pregnancies rose from 65 percent to 80 percent between NFHS-1 and NFHS-2, indicating that tetanus toxoid coverage in Haryana has improved substantially in recent years.

Tetanus toxoid coverage (two or more injections) is higher in urban areas (87 percent) than in rural areas (78 percent). Coverage also varies by age of mother and birth order. Tetanus toxoid coverage is much higher for births to women under age 35 (80 percent) than for the small number of births to older women (63 percent). At least two tetanus toxoid injections were received by mothers for 87 percent of first births, compared with 64 percent of births of order six or higher. Coverage is positively related to mother's level of education, ranging from 71 percent for births to illiterate women to 94 percent for births to women who have at least completed a high school education. Tetanus toxoid coverage is much lower for Muslim mothers (56 percent) than for Sikh mothers (84 percent) or Hindu mothers (81 percent). Coverage does not vary much by caste/tribe status of the household head. Tetanus toxoid coverage increases with an increasing standard of living of the household, from 65 percent for births to women living in households with a low standard of living to 90 percent for births to mothers living in households with a high standard of living. These results suggest that despite generally improving coverage of tetanus toxoid vaccinations, the coverage for socioeconomically disadvantaged women lags behind the level for the state as a whole.

Iron and Folic Acid Supplementation

Nutritional deficiencies in women are often exacerbated during pregnancy because of the additional nutrient requirements of foetal growth. Iron deficiency anaemia is the most common micronutrient deficiency in the world. It is a major threat to safe motherhood and to the health and survival of infants because it contributes to low birth weight, lowered resistance to infection, impaired cognitive development, and decreased work capacity. Studies in different parts of India have estimated that the proportion of births with a low birth weight (less than 2,500 grams) ranges from 15 percent in Trivandrum to 46 percent in Baroda (Nutrition Foundation of India, 1993). Overall, about one-third of newborn children in India are of low birth weight, indicating that many pregnant women in India suffer from nutritional deficiencies. Improvement in a woman's nutritional status, coupled with proper health care during pregnancy, can substantially increase her child's birth weight (Ramachandran, 1992). To this end, the provision of iron and folic acid (IFA) tablets to

Table 8.6 Tetanus toxoid vaccination and iron and folic acid tablets or syrup

Percent distribution of births during the three years preceding the survey by the number of tetanus toxoid injections received by the mother, percentage of births for which the mothers were given iron and folic acid (IFA) tablets or syrup during the pregnancy, and among those who received iron and folic acid tablets or syrup, percentage who received enough for three months or longer and percentage who consumed all the supply given, according to selected background characteristics, Haryana, 1998–99

Background characteristic	Number of tetanus toxoid injections				Percentage given iron and folic acid tablets or syrup	Number of births	Percentage who received supply for 3+ months[1]	Percentage who consumed all the supply[1]	Number of births whose mothers received IFA
	None	One	Two or more	Total percent					
Mother's age at birth									
< 20	12.1	7.8	80.1	100.0	71.4	205	74.1	85.7	146
20–34	15.0	4.8	80.1	100.0	66.6	825	81.0	88.7	550
35–49	(33.2)	(3.5)	(63.3)	100.0	(46.4)	30	*	*	14
Birth order									
1	9.3	3.3	87.4	100.0	74.1	308	79.1	85.1	228
2–3	12.5	6.1	81.4	100.0	70.7	489	83.6	89.2	346
4–5	24.4	6.6	69.0	100.0	52.5	184	74.9	94.8	96
6+	30.0	6.3	63.7	100.0	49.8	80	(59.9)	(82.5)	40
Residence									
Urban	8.2	4.9	86.9	100.0	74.3	246	87.1	92.3	183
Rural	17.0	5.5	77.5	100.0	64.8	814	77.0	86.9	527
Mother's education									
Illiterate	23.3	5.4	71.3	100.0	56.2	540	72.9	88.8	303
Literate, < middle school complete	9.6	7.8	82.6	100.0	67.6	206	75.0	88.5	139
Middle school complete	7.2	4.2	88.5	100.0	76.9	95	86.3	86.2	73
High school complete and above	2.7	3.6	93.6	100.0	88.6	219	90.9	88.2	194
Religion									
Hindu	13.7	5.2	81.1	100.0	69.4	913	79.7	88.0	634
Muslim	35.9	8.3	55.8	100.0	37.7	73	(77.8)	(88.7)	27
Sikh	10.1	5.8	84.2	100.0	65.1	69	(78.1)	(93.5)	45
Caste/tribe									
Scheduled caste	17.5	3.7	78.8	100.0	61.1	268	77.5	90.2	164
Other backward class	16.8	7.1	76.1	100.0	65.5	257	77.9	86.8	168
Other[2]	12.6	5.4	82.0	100.0	70.7	535	81.3	88.1	378
Standard of living index									
Low	26.8	7.9	65.3	100.0	44.1	138	70.2	90.1	61
Medium	17.7	6.0	76.3	100.0	64.1	531	74.3	88.5	340
High	6.7	3.4	89.9	100.0	79.2	385	87.5	88.2	305
Total	15.0	5.4	79.7	100.0	67.0	1,060	79.6	88.3	710

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births to mothers belonging to other religions, scheduled-tribe mothers, and births with missing information on religion and the standard of living index, which are not shown separately.
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unweighted cases
[1]Among births whose mothers received iron and folic acid tablets or syrup
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

pregnant women to prevent nutritional anaemia forms an integral part of the safe-motherhood services offered as part of the Reproductive and Child Health Programme. The programme recommendation is that pregnant women consume 100 tablets of iron and folic acid during pregnancy.

For each birth during the three years preceding the survey, NFHS-2 collected information on whether the mother received IFA tablets or syrup during pregnancy. IFA syrup was included in the question along with IFA tablets since IFA syrup is sometimes prescribed in the private sector and may even be prescribed in the public sector when and where tablets are not available. Table 8.6 shows that mothers in Haryana received IFA supplements for about two-thirds (67 percent) of births. As with tetanus toxoid coverage, IFA coverage in Haryana is well below average for births to disadvantaged mothers (i.e., illiterate women and women with a low standard of living), Muslim mothers, older mothers, and mothers of higher-order births. IFA coverage is also lower in rural areas (65 percent) than in urban areas (74 percent).

Not all mothers who received IFA received the recommended three-month supply of tablets or syrup. Among births to women who received IFA during pregnancy, 80 percent received at least a three-month supply and 88 percent consumed all the supplements that were given to them. Mothers staying in urban areas, mothers having higher levels of education, and mothers from higher standard of living households were more likely to receive at least a three-month supply of IFA supplement. Differentials by religion and caste/tribe of household head in the proportion who received at least a three-month supply of IFA supplements are small. Differentials by most background characteristics in the proportion of mothers who consumed all the supply received are minimal.

Thus, despite a fair amount of success in ensuring that pregnant women receive the recommended dosage of IFA supplementation during pregnancy, a considerable proportion of pregnant women in Haryana are not receiving IFA supplements and many women who receive IFA are not consuming an adequate amount of IFA during their pregnancies. This suggests that the Reproductive and Child Health Programme needs to do a better job of informing pregnant women about the advantages of IFA, trying to understand why many women do not consume all the IFA supplements they receive, and overcoming resistance to the consumption of IFA.

8.2 Delivery Care

Place of Delivery

Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. For each birth during the three years preceding the survey, NFHS-2 asked the mother where she gave birth and who assisted during the delivery. Table 8.7 and Figure 8.4 show that only 22 percent of births in Haryana took place in health facilities (up slightly from 18 percent in NFHS-1), 73 percent took place in the women's own homes, and 4 percent took place in their parents' homes. Sixteen percent of births took place in private health facilities and only 6 percent took place in public institutions (such as government-operated district, *tehsil,* town, or municipal hospitals and Primary Health Centres).

In NFHS-2, the proportion of births that took place in health facilities is more than three times as high in urban areas (47 percent) as in rural areas (15 percent). The 1998 SRS estimated that 25 percent of births in Haryana took place in institutions, which is slightly higher than the NFHS-2 estimate of 22 percent for the three years before the NFHS-2 survey (approximately 1996–98). This difference is mainly due to a difference in the estimates for rural areas (20 percent in the SRS compared with 15 percent in NFHS-2). In urban areas, the SRS estimate is slightly lower (45 percent) than the NFHS-2 estimate (47 percent).

Table 8.7 Place of delivery

Percent distribution of births during the three years preceding the survey by place of delivery, according to selected background characteristics, Haryana, 1998–99

Background characteristic	Place of delivery: Health facility/institution: Public	Health facility/institution: NGO/trust	Health facility/institution: Private	Home: Own home	Home: Parents' home	Other[1]	Total percent	Number of births
Mother's age at birth								
< 20	4.4	0.0	13.6	78.1	3.9	0.0	100.0	205
20–34	6.1	0.1	17.3	71.8	4.5	0.1	100.0	825
35–49	(13.1)	(0.0)	(6.8)	(80.1)	(0.0)	(0.0)	100.0	30
Birth order								
1	8.1	0.0	26.1	60.9	4.9	0.0	100.0	308
2–3	6.0	0.2	14.2	74.5	4.9	0.2	100.0	489
4–5	4.9	0.0	8.8	84.1	2.2	0.0	100.0	184
6+	0.0	0.0	9.0	88.5	2.5	0.0	100.0	80
Residence								
Urban	14.0	0.0	33.1	49.2	3.3	0.4	100.0	246
Rural	3.6	0.1	11.2	80.5	4.5	0.0	100.0	814
Mother's education								
Illiterate	2.8	0.0	7.5	84.6	5.2	0.0	100.0	540
Literate, < middle school complete	5.4	0.0	13.6	75.2	5.8	0.0	100.0	206
Middle school complete	7.5	0.0	16.8	72.5	3.2	0.0	100.0	95
High school complete and above	13.7	0.4	40.4	44.1	0.9	0.5	100.0	219
Religion								
Hindu	5.5	0.0	16.4	73.7	4.2	0.1	100.0	913
Muslim	5.6	0.0	2.8	90.2	1.4	0.0	100.0	73
Sikh	7.2	1.4	30.4	53.6	7.4	0.0	100.0	69
Caste/tribe								
Scheduled caste	1.9	0.0	7.8	84.3	6.0	0.0	100.0	268
Other backward class	5.9	0.0	14.5	75.7	3.9	0.0	100.0	257
Other[2]	8.1	0.2	21.5	66.5	3.5	0.2	100.0	535
Standard of living index								
Low	2.9	0.0	5.1	85.4	6.6	0.0	100.0	138
Medium	3.8	0.0	9.4	82.1	4.5	0.2	100.0	531
High	9.9	0.3	29.9	56.9	3.1	0.0	100.0	385
Number of antenatal check-ups								
0	1.6	0.0	5.2	89.2	4.0	0.0	100.0	444
1	(2.7)	(0.0)	(13.1)	(81.6)	(2.6)	(0.0)	100.0	38
2	2.8	0.0	12.8	80.1	4.4	0.0	100.0	181
3	9.3	0.0	15.0	70.1	5.6	0.0	100.0	160
4+	15.0	0.4	41.4	38.9	3.8	0.4	100.0	237
Total	6.0	0.1	16.3	73.3	4.2	0.1	100.0	1,060

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 4 births to mothers belonging to other religions, 1 birth to a scheduled-tribe mother, and 1 and 6 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
NGO: Nongovernmental organization
( ) Based on 25–49 unweighted cases
[1]Includes missing
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

The proportion of births occurring in health facilities is higher for mothers age 20–34 (24 percent) than for mothers age less than 20 (18 percent) or for mothers age 35 and above (20 percent). Institutional deliveries are highest for first births (34 percent) and lowest for births of order six or higher (9 percent). Sikh mothers are much more likely to give birth in a health facility (39 percent) than are Hindu (22 percent) or Muslim (8 percent) mothers. Only 10 percent of births to scheduled-caste mothers occurred in health facilities, compared with 30 percent of births to mothers who do not belong to scheduled castes or other backward classes. Institutional deliveries, particularly in private health facilities, increase sharply with education and with standard of living. Only 10 percent of illiterate women gave birth in health facilities, compared with 55 percent of women with high school or more education; and only 8 percent of women from low standard of living households gave birth in medical institutions, compared with 40 percent of women from high standard of living households.

The proportion of institutional deliveries is more than three times as high among women who received four or more antenatal check-ups (57 percent) as among women who received two antenatal check-ups (16 percent) and more than eight times as high as among women who did not receive any antenatal check-ups (7 percent). Several different factors are likely to contribute to the positive relationship between antenatal check-ups and delivery in a health facility. Women who receive antenatal check-ups are more likely than other women to deliver in a health facility because their antenatal care providers might have advised them to do so. Conversely, women who register with a health facility for delivery may be called for regular antenatal check-ups by the facility. Another important factor may be pregnancy complications, because women with complications are more likely than other women to have antenatal check-ups and also to deliver in a health facility. Another contributing factor may be the growing awareness of the benefits of professional medical care during both pregnancy and delivery, especially among urban, young, educated women.

With regard to deliveries at home, the proportion of deliveries in a woman's own home increases and the proportion in her parents' home decreases with birth order. Mother's education and the standard of living are both negatively associated with delivery in both women's own homes and in their parents' homes. Rural women, Muslim women, and scheduled-caste women are much more likely than other women to have delivered in their own homes. The number of antenatal check-ups is strongly negatively associated with delivery in women's own homes.

Assistance During Delivery

Table 8.8 and Figure 8.4 provide information on assistance during delivery by selected background characteristics. If more than one type of attendant assisted at delivery, only the most qualified attendant is shown. Only 42 percent of births in the three years preceding the survey were attended by a health professional, including 28 percent by a doctor and 14 percent by an ANM, nurse, midwife, or LHV. These estimates are quite similar to the estimates for all India. The delivery assistance estimates at the national level are 42 percent by a health professional, 30 percent by a doctor, and 11 percent by an ANM, nurse, midwife, or LHV. More than one-half (58 percent) of births in Haryana were attended by a traditional birth attendant, and a negligible proportion of births were attended by friends, relatives, or other persons. The NFHS-2 estimates for assistance during delivery are substantially lower than the corresponding SRS estimates for Haryana. According to the 1997 SRS, 93 percent of deliveries were attended by a health professional, only 7 percent by a TBA, and less than 1 percent by relatives or others. However, the NFHS-2 estimates are more in line with the estimates from the Rapid Household Survey,

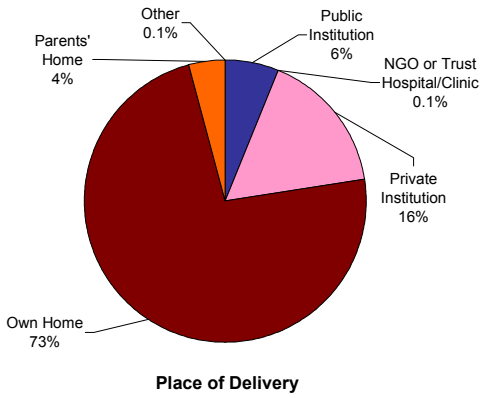
Table 8.8 Assistance during delivery

Percent distribution of births during the three years preceding the survey by attendant assisting during delivery, according to selected background characteristics, Haryana, 1998–99

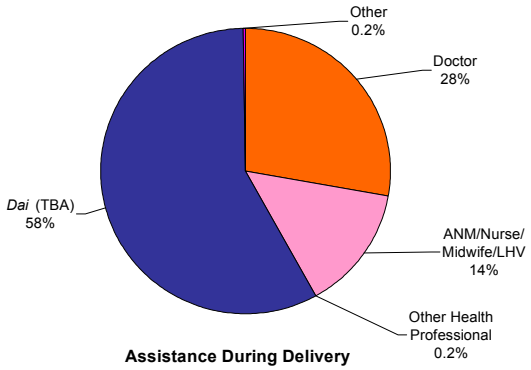
Background characteristic	Attendant assisting during delivery[1]					Total percent	Number of births
	Doctor	ANM/nurse/ midwife/ LHV	Other health professional	*Dai* (TBA)	Other		
Mother's age at birth							
< 20	21.4	16.1	0.5	61.6	0.5	100.0	205
20–34	29.8	13.6	0.1	56.4	0.1	100.0	825
35–49	(19.7)	(10.1)	(0.0)	(70.2)	(0.0)	100.0	30
Birth order							
1	38.8	16.5	0.6	44.0	0.0	100.0	308
2–3	25.3	14.7	0.0	59.6	0.4	100.0	489
4–5	23.6	9.9	0.0	66.5	0.0	100.0	184
6+	11.5	8.7	0.0	79.8	0.0	100.0	80
Residence							
Urban	49.0	17.1	0.0	33.9	0.0	100.0	246
Rural	21.5	13.0	0.2	65.0	0.2	100.0	814
Mother's education							
Illiterate	16.4	11.1	0.0	72.5	0.0	100.0	540
Literate, < middle school complete	27.1	18.5	0.0	54.0	0.5	100.0	206
Middle school complete	37.0	14.9	1.0	46.0	1.0	100.0	95
High school complete and above	52.9	16.3	0.5	30.4	0.0	100.0	219
Religion							
Hindu	28.0	13.8	0.2	57.7	0.2	100.0	913
Muslim	14.1	7.0	0.0	78.9	0.0	100.0	73
Sikh	36.3	24.4	0.0	39.3	0.0	100.0	69
Caste/tribe							
Scheduled caste	19.0	11.5	0.4	69.1	0.0	100.0	268
Other backward class	23.9	13.4	0.0	61.9	0.8	100.0	257
Other[2]	34.3	15.5	0.2	50.1	0.0	100.0	535
Standard of living index							
Low	10.2	8.8	0.0	81.0	0.0	100.0	138
Medium	20.7	12.9	0.2	66.0	0.2	100.0	531
High	44.0	17.4	0.3	38.1	0.3	100.0	385
Number of antenatal check-ups							
0	14.8	8.1	0.0	77.1	0.0	100.0	444
1	(20.9)	(13.3)	(0.0)	(65.7)	(0.0)	100.0	38
2	25.0	20.9	1.1	51.9	1.1	100.0	181
3	25.6	21.8	0.0	52.6	0.0	100.0	160
4+	57.3	14.5	0.0	28.3	0.0	100.0	237
Place of delivery							
Public health facility	84.1	15.9	0.0	0.0	0.0	100.0	63
Private health facility	83.9	16.1	0.0	0.0	0.0	100.0	173
Own home	11.7	12.5	0.3	75.3	0.3	100.0	777
Parents' home	(11.2)	(28.8)	(0.0)	(59.9)	(0.0)	100.0	45
Total	27.9	14.0	0.2	57.8	0.2	100.0	1,060

Note: Table includes the two most recent births during the three years preceding the survey. Total includes 4 births to mothers belonging to other religions, 1 birth to a scheduled-tribe mother, 1 birth delivered in a nongovernmental organization or trust hospital/clinic, 1 birth delivered in another place, and 1 and 6 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant
( ) Based on 25–49 unweighted cases
[1]If the respondent mentioned more than one attendant, only the most qualified attendant is shown.
[2]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Figure 8.4
Place of Delivery and Assistance During Delivery



Place of Delivery



Assistance During Delivery

Note: Percents do not add to 100.0 due to rounding

NFHS-2, Haryana, 1998–99

which found that 33 percent of births in Haryana were attended by a doctor, a nurse or an ANM (International Institute for Population Sciences, 2000). According to the two NFHS surveys, the proportion of deliveries attended by a health professional increased from 32 percent in NFHS-1 to 42 percent in NFHS-2.

Births to mothers age 20–34 are more likely to be attended by a doctor than births to younger (under age 20) or older (age 35 and above) mothers. The differentials in the proportion of births attended by a doctor are much larger by birth order, ranging from 39 percent for first-order births to 12 percent for births of order six or higher. Births are much more likely to be assisted by a doctor in urban areas (49 percent) than in rural areas (22 percent). The proportion of births delivered by a doctor increases sharply with the mother's level of education and the household standard of living. Among religious groups, Sikh women are most likely (36 percent) and Muslim women are least likely (14 percent) to have a delivery attended by a doctor. Births to women belonging to scheduled castes or other backward classes are less likely to be attended by a doctor or other health professional than births to other women. Only 31 percent of births to women belonging to scheduled castes were attended by a health professional, compared with 50 percent of births to women who do not belong to scheduled castes or other backward classes. Only 23 percent of births to women who did not have any antenatal check-ups were attended by a health professional, compared with 72 percent of births to women who had four or more antenatal check-ups. Seventy-seven percent of births to women who did not have any antenatal check-ups were attended by a TBA.

By place of delivery, the proportion of births attended by a doctor was 84 percent for births in public health facilities and in private health facilities, 12 percent for births occurring in women's own homes, and 11 percent for births occurring in their parents' homes. Thirteen percent of births occurring in women's own homes and 29 percent of births in their parents' homes were attended by a health professional other than a doctor. Seventy-five percent of births occurring in women's own homes and 60 percent of births in their parents' homes were attended by a TBA.

Table 8.9 Characteristics of births

Percentage of births during the three years preceding the survey that were delivered by caesarian section and percent distribution of births by birth weight and by the mother's estimate of the baby's size at birth, according to residence, Haryana, 1998–99

Characteristic of births	Urban	Rural	Total
Percentage delivered by caesarian section	9.6	2.7	4.3
Birth weight			
< 2.5 kg	7.3	4.0	4.8
2.5 kg or more	32.1	9.7	14.9
Don't know/missing	4.0	1.9	2.4
Not weighed	56.6	84.4	77.9
Total percent	100.0	100.0	100.0
Size at birth			
Large	5.4	4.9	5.0
Average	77.3	76.2	76.4
Small	16.6	16.1	16.2
Very small	0.8	2.8	2.3
Total percent	100.0	100.0	100.0
Number of births	246	814	1,060

Note: Table includes only the two most recent births during the three years preceding the survey.

Delivery Characteristics

Table 8.9 shows the percentage of births during the three years preceding the survey that were delivered by caesarian section and the percent distribution of births by birth weight and the mother's estimate of the baby's size at birth. Based on mothers' reports, 4 percent of children born in Haryana in the past three years were delivered by caesarian section. The proportion of deliveries by caesarian section was much higher in urban areas (10 percent) than in rural areas (3 percent). Although caesarian sections are still rare in Haryana, they have increased from 2 percent of births in NFHS-1 to 4 percent in NFHS-2.

Babies with low birth weights face substantially higher risks of dying than do babies with normal birth weights. For each birth that took place in the three years preceding the survey, respondents were asked the baby's birth weight. Because babies delivered at home are unlikely to be weighed and because the mother might not remember the birth weight even if the baby was weighed, the survey also asked mothers to estimate the size of each baby at birth (large, average, small, or very small).

In Haryana, more than three out of four babies born in the three years preceding the survey (78 percent) were not weighed at birth. The proportion not weighed is 57 percent in urban areas and 84 percent in rural areas. Even for babies that were weighed, some mothers did not remember the weight. Therefore, the resulting sample of births for which weights are reported is subject to a potentially large selection bias, so the results should be interpreted with caution. Among births for which birth weights are reported, 24 percent weighed less than 2.5 kilograms. The proportion weighing less than 2.5 kilograms is higher in rural areas (29 percent) than in urban areas (19 percent).

Table 8.10 Postpartum check-ups

Percentage of noninstitutional births during the three years preceding the survey for which a postpartum check-up was received within two months of birth by selected background characteristics, Haryana, 1998–99

Background characteristic	Percentage with a postpartum check-up	Number of births
Mother's age at birth		
< 20	12.4	168
20–34	16.7	631
Birth order		
1	14.7	202
2–3	15.9	389
4–5	17.0	158
6+	15.0	73
Residence		
Urban	21.8	130
Rural	14.6	693
Mother's education		
Illiterate	15.2	484
Literate, < middle school complete	16.6	167
Middle school complete	12.6	72
High school complete and above	19.2	100
Religion		
Hindu	16.0	713
Muslim	12.3	67
Sikh	(16.5)	42
Caste/tribe		
Scheduled caste	13.5	242
Other backward class	16.8	204
Other[1]	16.6	376
Standard of living index		
Low	12.5	127
Medium	16.4	461
High	16.5	231
Number of antenatal check-ups		
0	6.7	415
1	(37.1)	32
2	21.5	153
3+	25.4	223
Assistance during delivery		
Doctor/ANM/nurse/midwife/LHV[2]	26.4	208
Dai (TBA)	12.2	613
Total	15.7	823

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 3 births to women age 35–49, 1 birth to a scheduled-tribe woman, 2 births to women who were assisted by persons other than a health professional or a TBA during delivery, and 1 and 4 births with missing information on religion and the standard of living index, respectively, which are not shown separately.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant
( ) Based on 25–49 unweighted cases
[1]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class
[2]Includes other health professionals

According to mothers' estimates, 5 percent of babies born in the three years preceding the survey were large, 76 percent were of average size, 16 percent were small, and 2 percent were very small. The proportion of babies reported as small or very small was 17 percent in urban areas and 19 percent in rural areas.

8.3 Postnatal Care

The health of a mother and her newborn child depends not only on the health care she receives during her pregnancy and delivery, but also on the care she and the infant receive during the first few weeks after delivery. Postpartum check-ups within two months after delivery are particularly important for births that take place in noninstitutional settings. Recognizing the importance of postpartum check-ups, the Reproductive and Child Health Programme recommends three postpartum visits (Ministry of Health and Family Welfare, 1998b).

Table 8.10 gives the percentage of noninstitutional births in the three years preceding the survey that were followed by a postpartum check-up within two months of delivery. Only 16 percent of noninstitutional births were followed by a check-up within two months of the delivery.

Among births that were followed by a check-up, only 16 percent of check-ups took place within two days of birth (which is the most crucial period) and only 49 percent took place within one week of birth (data not shown). Postpartum check-ups are not very common for any group of noninstitutional births in Haryana. Births to urban mothers were more likely to be followed by a postpartum check-up (22 percent) than were births to rural mothers (15 percent). Births for which the mothers received antenatal check-ups were much more likely to be followed by a postpartum check-up (22–37 percent) than were births to mothers who did not receive any antenatal check-ups (7 percent). Noninstitutional births delivered with the assistance of a health professional were more likely to be followed by a postpartum check-up (26 percent) than were births delivered with the assistance of a TBA (12 percent). These results clearly indicate that women are more likely to have a postpartum check-up if they have had continuous interaction with health providers through their pregnancy and delivery, even if they did not give birth in a health facility.

Mothers who did not deliver in a health facility but who received a postpartum check-up were asked whether they received specific components of postpartum care, including an abdominal examination and advice on family planning, breastfeeding, and baby care. Although this information is not provided in the table, the data show that 81 percent of these mothers reported an abdominal examination. Fifty-four percent received advice on baby care and breastfeeding and 52 percent received family planning advice.

Postpartum Complications

Every woman who had a birth in the three years preceding the survey was asked if she had massive vaginal bleeding or a very high fever—both symptoms of possible postpartum complications—at any time during the two months after delivery. For 3 percent of births the mother reported massive vaginal bleeding, and for 6 percent of births the mother reported a very high fever in the postpartum period (Table 8.11). Massive vaginal bleeding was slightly less common among rural mothers and among teenage mothers. Massive vaginal bleeding was reported more frequently for first order births, for births that took place in private health facilities or at the parents' homes, and for births that were assisted by health professionals other than a doctor. Although the differences in the proportion of mothers who experienced very high fever within two months of delivery are generally small by most background characteristics, mothers who delivered at their parents' homes and mothers who received delivery assistance from health professionals other than a doctor were more likely than other women to have experienced very high fever in the postpartum period.

8.4 Reproductive Health Problems

Absence of reproductive tract infections (RTIs) is essential for the reproductive health of both women and men and is critical for their ability to meet their reproductive goals. There are three different types of reproductive tract infections for women: endogenous infections that are caused by the multiplying of organisms normally present in the vagina; iatrogenic infections caused by the introduction of bacteria or other infection-causing micro-organisms through medical procedures such as an IUD insertion; and sexually transmitted infections (STIs). Endogenous infections and several of the iatrogenic and sexually transmitted infections are often easily cured if detected early and given proper treatment. If left untreated, RTIs can cause pregnancy-related complications, congenital infections, infertility, and chronic pain. They are also a risk factor for pelvic inflammatory disease and HIV (Population Council, 1999).

Table 8.11 Symptoms of postpartum complications

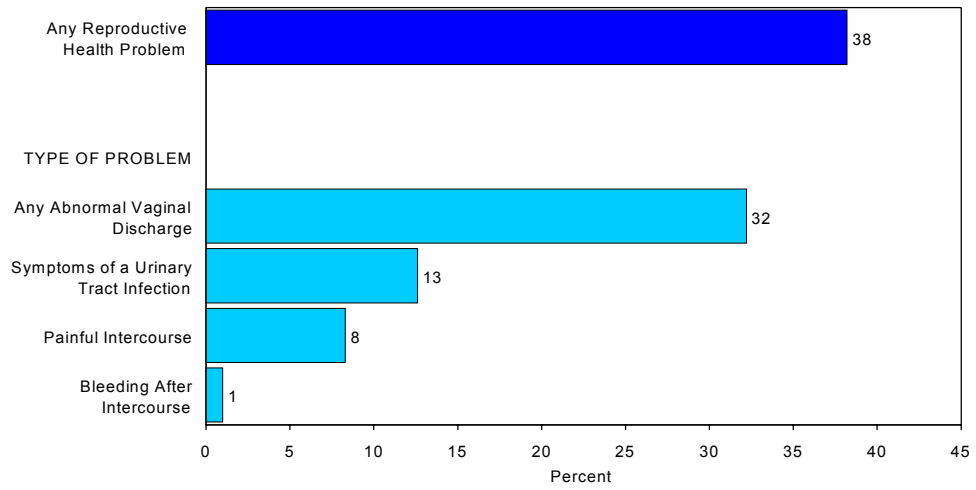
Among births during the three years preceding the survey, percentage for which the mother had massive vaginal bleeding or very high fever within two months after the delivery by selected background characteristics, Haryana, 1998–99

Background characteristic	Massive vaginal bleeding	Very high fever	Number of births
Residence			
Urban	4.5	5.8	230
Rural	3.0	6.0	781
Mother's age at birth			
< 20	1.5	7.3	192
20–34	3.8	5.6	789
35–49	(3.3)	(7.1)	29
Birth order			
1	4.1	7.2	292
2–3	3.2	4.3	467
4–5	2.8	7.5	175
6+	2.7	7.9	77
Place of delivery			
Public health facility	1.7	6.5	62
Private health facility	5.1	6.9	161
Own home	3.1	5.4	741
Parents' home	(4.6)	(11.3)	44
Assistance during delivery			
Doctor	3.7	5.2	277
ANM/nurse/midwife/LHV	5.6	11.3	142
Other[1]	2.5	4.8	588
Total	3.4	6.0	1,010

Note: Table includes only the two most recent births during the 2–35 months preceding the survey. Total includes 1 birth delivered in a nongovernmental organization or trust hospital/clinic,1 birth delivered in another place, 2 births assisted by a *dai* (traditional birth attendant), and 2 births with missing information on assistance during delivery, which are not shown separately.
ANM: Auxilary nurse midwife; LHV: Lady health visitor
( ) Based on 25–49 unweighted cases
[1]Includes missing

A number of studies (Bang et al., 1989; Bang and Bang, 1991; Pachauri and Gittlesohn, 1994; Jejeebhoy and Rama Rao, 1992) have shown that many Indian women suffer from RTIs. Several researchers have also shown that women in India often bear the symptoms of RTIs silently without seeking health care. RTIs and their sequellae are an important component of programmes for family planning, child survival, women's health, safe motherhood, and HIV prevention. RTIs have profound implications for the success of each of these initiatives, and conversely, these initiatives provide a critical opportunity for the prevention and control of RTIs (Germain et al., 1992). Studies have demonstrated that RTIs are an important reason for the poor acceptance and low continuation rates of contraceptive methods such as the IUD. Bhatia and Cleland (1995) found a higher incidence of gynaecological symptoms among women who had undergone a tubectomy than among other women. The Government of India recognized the importance of RTIs and STIs in undermining the health and welfare of individuals and couples in a policy statement on the Reproductive and Child Health Programme, which states that couples should be 'able to have sexual relations free of fear of pregnancy and contracting diseases' (Ministry of Health and Family Welfare, 1997:2). The Reproductive and Child Health Programme includes the following interventions: establishment of RTI/STI clinics at district

Figure 8.5
Reproductive Health Problems Among Currently Married Women



NFHS-2, Haryana, 1998–99

hospitals (where not already available), provision of technicians for laboratory diagnosis of RTIs/STIs, and in selected districts, screening and treatment of RTIs/STIs (Ministry of Health and Family Welfare, 1997).

NFHS-2 collected information from women on some common symptoms of RTIs, namely problems with abnormal vaginal discharge or urinary tract infections in the three months preceding the survey, intercourse-related pain (often), and bleeding after intercourse (ever). Specifically, the prevalence of reproductive health problems among ever-married women is estimated from women's self-reported experience with each of the following problems: vaginal discharge accompanied by itching, by irritation around the vaginal area, by bad odour, by severe lower abdominal pain, by fever, or by any other problem; pain or burning while urinating or frequent or difficult urination; and (among currently married women only) painful intercourse or bleeding after intercourse. Women who experience one or more of these reproductive health problems could either have or be at risk of getting an RTI/STI. However, since information on health problems is based on self reports rather than clinical tests or examinations, the results should be interpreted with caution.

Table 8.12 shows the prevalence of different reproductive health problems among women in Haryana by selected background characteristics. Thirty-two percent of ever-married women reported at least one type of problem related to vaginal discharge, and 13 percent reported symptoms of a urinary tract infection. Overall, 35 percent of ever-married women reported either problems with vaginal discharge or symptoms of a urinary tract infection. Among problems related to vaginal discharge, itching or irritation was mentioned most frequently (25 percent), followed by bad odour (20 percent) and severe lower abdominal pain (17 percent).

Table 8.12 and Figure 8.5 show that 38 percent of currently married women report one or more reproductive health problems (almost the same as the national average of 39 percent). Eight percent of currently married women report painful intercourse and 1 percent report bleeding after

Table 8.12 Symptoms of reproductive health problems

Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse by background characteristics, Haryana, 1998–99

Background characteristic	Ever-married women									Currently married women			
		Vaginal discharge accompanied by:											
	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain[1]	Fever	Other problem	Symptoms of a urinary tract infection[2]	Any abnormal vaginal discharge or symptoms of a urinary tract infection[2]	Number of ever-married women	Painful intercourse (often)	Bleeding after intercourse (ever)[1]	Any reproductive health problem	Number of currently married women
Age													
15–19	23.1	16.5	12.7	14.3	3.3	2.7	9.3	25.3	182	19.7	3.3	35.3	181
20–24	29.8	23.4	19.8	16.4	1.2	7.0	12.6	34.3	515	10.5	0.8	38.4	511
25–29	35.9	27.2	23.4	20.4	2.6	8.9	12.4	39.0	606	6.6	1.4	39.9	594
30–34	37.5	28.9	23.4	21.4	4.0	9.3	15.4	42.0	559	11.3	0.9	44.5	539
35–39	33.8	28.0	20.6	17.1	2.9	6.5	10.8	36.9	418	5.1	0.8	39.1	397
40–44	30.2	24.1	17.8	14.9	2.3	5.7	11.5	31.6	347	5.0	0.3	34.8	321
45–49	17.9	13.6	10.0	9.3	2.5	4.7	12.2	23.9	281	2.7	0.0	25.9	256
Residence													
Urban	29.2	22.9	18.3	15.8	2.1	7.1	10.4	31.7	837	7.9	0.8	34.1	814
Rural	32.6	25.3	20.3	17.9	2.9	7.1	13.3	36.7	2,071	8.5	1.1	39.9	1,985
Education													
Illiterate	32.3	25.2	21.0	18.1	3.4	7.5	13.4	36.3	1,605	6.8	0.9	38.4	1,519
Literate, < middle school complete	30.0	23.3	19.9	16.8	2.5	6.2	10.7	32.5	486	11.6	1.3	37.2	472
Middle school complete	37.6	29.9	23.5	20.1	1.7	8.0	15.9	43.2	234	11.4	0.9	48.2	234
High school complete and above	28.6	22.2	14.5	14.3	1.2	6.5	9.8	31.5	583	8.2	1.1	34.4	574
Religion													
Hindu	31.9	25.1	19.8	17.1	2.7	7.5	12.8	35.7	2,590	8.3	0.9	38.8	2,489
Muslim	34.9	26.3	24.7	22.3	1.7	6.8	11.1	37.5	118	8.7	0.0	39.9	116
Sikh	26.1	17.7	15.2	16.3	3.2	2.1	8.9	28.7	190	7.5	2.2	30.5	185
Caste/tribe													
Scheduled caste	31.9	23.8	21.0	17.6	3.2	7.2	14.0	35.6	597	8.1	0.9	38.6	571
Other backward class	35.9	27.5	23.5	20.3	3.0	7.7	13.0	39.6	629	9.1	0.7	42.4	612
Other[3]	29.9	23.9	17.9	16.1	2.3	6.9	11.7	33.5	1,679	8.1	1.1	36.6	1,615

Contd ...

Table 8.12 Symptoms of reproductive health problems (contd.)

Percentage of ever-married women reporting abnormal vaginal discharge or symptoms of a urinary tract infection during the three months preceding the survey and percentage of currently married women reporting painful intercourse or bleeding after intercourse by background characteristics, Haryana, 1998–99

Background characteristic	Ever-married women									Currently married women			
		Vaginal discharge accompanied by:											
	Any abnormal vaginal discharge	Itching or irritation	Bad odour	Severe lower abdominal pain[1]	Fever	Other problem	Symptoms of a urinary tract infection[2]	Any abnormal vaginal discharge or symptoms of a urinary tract infection[2]	Number of ever-married women	Painful inter-course (often)	Bleeding after inter-course (ever)[1]	Any reproductive health problem	Number of currently married women
Standard of living index													
Low	33.0	25.1	20.9	20.7	5.0	9.3	15.1	36.3	280	8.7	0.4	39.9	265
Medium	32.7	26.1	21.3	17.1	2.7	6.8	12.7	36.6	1,331	7.1	1.1	39.2	1,272
High	30.0	22.9	17.9	16.6	2.0	7.0	11.5	33.4	1,279	9.5	1.0	36.8	1,245
Work status													
Working in family farm/ business	40.7	31.5	21.3	20.3	3.2	11.2	16.3	43.8	97	3.4	0.0	45.9	86
Employed by someone else	35.6	28.6	21.8	22.7	4.1	12.1	15.4	37.6	247	7.9	1.3	40.7	228
Not worked in past 12 months	30.7	23.8	19.4	16.5	2.5	6.4	12.0	34.5	2,542	8.5	1.0	37.6	2,467
Number of children ever born													
0	24.5	18.2	14.5	15.9	3.2	3.7	9.0	26.7	221	19.6	3.2	36.0	219
1	23.1	17.4	14.3	12.5	0.6	5.7	12.6	28.6	350	9.4	0.9	33.0	339
2–3	33.2	26.4	20.8	18.4	2.7	8.2	12.3	36.4	1,348	6.8	0.8	38.5	1,300
4–5	36.9	27.6	22.6	19.2	3.5	7.8	13.4	40.3	682	8.9	0.9	42.7	652
6+	27.4	23.1	18.6	14.7	2.6	5.2	13.7	32.6	306	4.1	0.3	34.7	288
All ever-married women	31.6	24.6	19.7	17.3	2.7	7.1	12.5	35.2	2,908	NA	NA	NA	NA
All currently married women	32.2	25.0	20.1	17.6	2.7	7.1	12.6	35.9	2,799	8.3	1.0	38.2	2,799

Note: Total includes a small number of women belonging to other religions, scheduled-tribe women, women who are self employed, and women with missing information on religion and the standard of living index, who are not shown separately.
NA: Not applicable
[1]Not related to menstruation
[2]Includes pain or burning while urinating or more frequent or difficult urination
[3]Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

intercourse. Problems related to vaginal discharge and symptoms of urinary tract infections are marginally more prevalent among currently married women than among ever-married women.

Reproductive health problems related to vaginal discharge and symptoms of urinary tract infection are more common among women in the middle of the reproductive age span than at the extremes of 15–19 and 45–49. Intercourse-related problems are much more common among younger women than among older women. All types of reproductive health problems are more common among rural women than among urban women. The prevalence of reproductive health problems does not vary in a consistent way by education, but women who have at least completed high school have a slightly lower prevalence level than other women. The prevalence of reproductive health problems is much lower among Sikh women (31 percent) than among Hindu or Muslim women (39–40 percent). By caste/tribe, women belonging to other backward classes are somewhat more likely to report symptoms of reproductive health problems than those belonging to scheduled castes or other castes. Reproductive health problems do not vary much by the standard of living index. The prevalence of reproductive health problems is higher for women working in a family farm or business than for women who were employed by someone else or for women who did not work in the past 12 months. The prevalence of reproductive health problems does not vary consistently by the number of children ever born.

Among women who report any reproductive health problems, 56 percent have not seen anyone for advice or treatment (Table 8.13). The proportion of women who have not obtained advice or treatment is much higher in rural areas (61 percent) than in urban areas (40 percent). Overall, 83 percent of women who obtained advice or treatment were seen by someone in the private medical sector (86 percent in urban areas and 82 percent in rural areas). Among women who sought advice or treatment, 66 percent saw a private doctor and only 19 percent saw a government doctor.

NFHS–2 results in Haryana show that although almost two in every five currently married women report at least one reproductive health problem that could be symptomatic of a more serious reproductive tract infection, the majority of them bear the problems silently without seeking advice or treatment. These findings highlight the need to educate women regarding the symptoms and consequences of reproductive health problems and the urgent need to expand counselling and reproductive health services in both rural and urban areas.

Table 8.13 Treatment of reproductive health problems

Among women with a reproductive health problem, percentage who sought advice or treatment from specific providers by residence, Haryana, 1998–99

Provider	Urban	Rural	Total
Public medical sector	14.5	11.4	12.2
Government doctor	10.9	7.4	8.3
Public health nurse	0.4	0.2	0.3
ANM/LHV	3.3	3.7	3.6
Male MPW/supervisior	0.0	0.1	0.1
Aganwadi worker	0.0	0.1	0.1
Village health guide	0.0	0.1	0.1
Private medical sector	51.7	31.7	36.9
Private doctor	42.7	24.8	29.4
Private nurse	5.1	4.4	4.6
Vaidya/hakim/homeopath	2.5	2.5	2.5
Dai (TBA)	2.6	1.5	1.8
Traditional healer	0.0	0.1	0.1
Other private medical sector	0.0	0.1	0.1
Other	0.0	0.1	0.1
None	39.6	61.3	55.7
Number of women	281	809	1,089

Note: Table includes currently married women who report abnormal vaginal discharge, symptoms of a urinary tract infection, painful intercourse, or bleeding after intercourse and women who are ever married but not currently married who report abnormal vaginal discharge or symptoms of a urinary tract infection. Percentages add to more than 100.0 because women could report treatment from multiple providers.
ANM: Auxiliary nurse midwife; LHV: Lady health visitor; MPW: Multipurpose health worker; TBA: Traditional birth attendant