CHAPTER 6

MORTALITY, MORBIDITY, AND IMMUNIZATION

This chapter presents mortality rates, particularly for infants and young children, and data on the prevalence of certain diseases (morbidity). It also presents information on the prevention and treatment of diseases, especially those that are life-threatening to young children. The chapter ends with data on women's knowledge of AIDS. This type of information is relevant both to an assessment of the demographic situation and to the design of appropriate health policies and programmes. Mortality estimates are also useful for projecting the future size of the population. Detailed information on mortality and morbidity (by demographic and socioeconomic characteristics) can be used to identify population groups that are at high risk and in need of health services. This chapter primarily presents information on child health, while other chapters of this report, particularly Chapter 8, present information on maternal and reproductive health.

The Government of India has repeatedly taken steps to strengthen maternal and child health services in India, starting during the First and Second Five-Year Plans (1951–56 and 1956–61) under the Ministry of Health, and continuing with the Minimum Needs Programme initiated during the Fifth Five-Year Plan (1974–79). More recently, efforts to improve maternal and child health have been enhanced by activities of the Family Welfare Programme and by the introduction of the Child Survival and Safe Motherhood Programme (Ministry of Health and Family Welfare, 1992). The Ministry of Health and Family Welfare has also sponsored special projects under the Maternal and Child Health Programme, including the Oral Rehydration Therapy (ORT) programme, the establishment of Regional Institutes of Maternal and Child Health in states where infant mortality rates are high, the Universal Immunization Programme, and the Maternal and Child Health Supplemental Programme within the Postpartum Programme (Ministry of Health and Family Welfare, 1992). These programmes are now integrated into the Reproductive and Child Health Programme launched in 1996.

Maternal and child health services in rural areas of India are delivered mainly by government-run Primary Health Centres and sub-centres. In urban areas, such services are available mainly through government or municipal hospitals, urban health posts, hospitals and nursing homes operated by nongovernmental organizations (NGOs), and private nursing homes and maternity homes.

The second National Family Health Survey (NFHS-2) includes questions on mortality and morbidity on both the Household Questionnaire and the Woman's Questionnaire. The Household Questionnaire has questions on individuals in the household suffering from asthma, tuberculosis, jaundice, and malaria, plus questions on deaths occurring to usual residents of the household during the past two years. The Woman's Questionnaire collects information on the survival status of all births and the age at death of children who died. The Woman's Questionnaire also contains questions on child immunization coverage and sources; vitamin A supplementation for children; prevalence of acute respiratory infection, fever, and diarrhoea among children and the treatment of these illnesses; and mothers' knowledge of oral rehydration therapy.

The information on child health and health-care practices was collected from mothers for children born since 1 January 1995. If a woman had more than two live births during the three years preceding the survey, the information was collected for only the two most recent births. The information on child health presented in this chapter pertains to children born during the three years preceding the survey.

6.1 Crude Death Rates and Age-Specific Death Rates

Table 6.1 shows crude death rates (CDR) and age-specific death rates by sex for the usual resident (*de jure*) population of Bihar from NFHS-2 and the Sample Registration System (SRS). The table also presents crude death rates and age-specific death rates from NFHS-1 for the total population (both sexes combined). The SRS death rates are based on deaths to the usual resident population in 1997. The NFHS-1 and NFHS-2 death rates are based on the average annual number of deaths occurring to usual residents of the household during the two-year period preceding the survey (approximately 1991–92 for NFHS-1 and 1997–98 for NFHS-2). The denominators for the NFHS-2 death rates are obtained by projecting the number of usual residents at the time of the survey backwards to the mid-point of the time period in question on the basis of the intercensal population growth rate in the state. The intercensal growth rate is assumed to be the same for all age and sex groups.

Questions on the number of deaths occurring to usual residents in each household during a particular time period have been included in demographic surveys in many countries and have often resulted in a substantial underreporting of deaths. The Sample Registration System (SRS), maintained by the Office of the Registrar General of India, provides the most useful comparison. The most recent report on mortality estimates by age for Bihar is for 1997 (Office of the Registrar General, 1999a).

Table 6.1 shows an estimated average annual CDR for Bihar of 11.3 deaths per 1,000 population based on NFHS-2 data (covering roughly 1997–98) compared with 10.0 from the 1997 SRS. Thus, contrary to expectations, the CDR estimated from NFHS-2 is higher than the corresponding SRS estimate. NFHS-2 age-specific death rates are also higher than the SRS rates for all of the broad age groups above age 5, especially for the 60+ age group. For ages below 5 years, the NFHS-2 rate is lower than the SRS rate.

The NFHS-2 CDR estimate of 11.3 is almost the same as the corresponding NFHS-1 estimate of 11.5 (covering roughly 1991–92). The age-specific death rate at age 60 and above is higher in NFHS-2 than in NFHS-1, but death rates for children less than 15 years of age are lower in NFHS-2 than in NFHS-1. This comparison suggests an increase in death rates at older ages and a decrease in death rates for children in Bihar since 1991–92 if the completeness of reporting of deaths is the same in the two surveys.

In most countries, male death rates are higher than female death rates at nearly all ages. South Asia generally has been an exception in this respect, with higher death rates for females over much of the age span (Tabutin and Willems, 1995; Preston, 1989; Ghosh, 1987). The NFHS-2 shows that the male CDR is slightly higher than the female CDR, but according to the SRS the reverse is true. The age-specific death rates are also reversed between NFHS-2 and the SRS. According to the NFHS-2, male death rates are higher at younger ages (0–14) and lower at older ages (50+), but according to the SRS, female death rates are higher at younger ages (0–14)

Table 6.1 Age-specific death rates and crude death rates

Age-specific death rates and crude death rates (CDR) by sex from NFHS-1, NFHS-2, and the SRS, Bihar

	NFHS-1 (1991–92)	NFHS-2 (1997–98)			SRS (1997)		
Age	Total	Male	Female	Total	Male	Female	Total
< 5	28.0	19.3	18.7	19.0	24.8	27.1	25.9
5–14	3.3	3.1	2.5	2.8	1.8	2.9	2.4
15–49	4.0	4.6	5.1	4.8	3.7	4.1	3.9
50–59	17.5	16.6	17.7	17.1	16.7	16.4	16.6
60+	54.7	69.2	79.6	73.6	58.9	50.7	55.1
CDR	11.5	11.5	11.1	11.3	9.9	10.2	10.0

Note: Age-specific death rates and crude death rates by sex from NFHS-1 and NFHS-2 are based on the annual number of deaths reported for the *de jure* population during the two years preceding the survey. The SRS rates are also *de jure*, based on deaths during 1997. Rates are specified on a per-thousand basis.
Source for SRS: Office of the Registrar General, 1999b

and lower at older ages (50+). According to both the NFHS-2 and the SRS, female death rates are slightly higher than male death rates during the reproductive years (15–49).

6.2 Infant and Child Mortality

Infant and child mortality rates reflect a country's level of socioeconomic development and quality of life and are used for monitoring and evaluating population and health programmes and policies. NFHS-2 asked all ever-married women age 15–49 to provide a complete history of their births, including for each live birth, the sex, month and year of birth, survival status, and age at the time of the survey or age at death. Age at death was recorded in days for children dying in the first month of life, in months for other children dying before their second birthday, and in years for children dying at later ages. This information was used to calculate the following direct estimates of infant and child mortality[1]:

Neonatal mortality: The probability of dying in the first month of life

Postneonatal mortality: The probability of dying after the first month of life but before the first birthday

Infant mortality ($_1q_0$): The probability of dying before the first birthday

Child mortality ($_4q_1$): The probability of dying between the first and fifth birthdays

Under-five mortality ($_5q_0$): The probability of dying before the fifth birthday

[1]A detailed description of the method for calculating the probabilities presented here is given in Rutstein (1984). The mortality estimates are not rates, but are true probabilities, calculated according to the conventional life-table approach. Deaths and exposure in any calendar period are first tabulated for the age intervals 0, 1–2, 3–5, 6–11, 12–23, 24–35, 36–47, and 48–59 months. Then age-interval-specific probabilities of survival are calculated. Finally, probabilities of mortality for larger age segments are produced by multiplying the relevant age-interval survival probabilities together and subtracting the product from one:

$$_nq_x = 1 - \prod_i (1 - q_i)$$

Assessment of Data Quality

The reliability of mortality estimates calculated from retrospective birth histories depends upon the completeness with which deaths of children are reported and the extent to which birth dates and ages at death are accurately reported and recorded. Estimated rates of infant and child mortality are subject to both sampling and nonsampling errors. While sampling errors for various mortality estimates are provided in Appendix A, this section describes the results of various checks for nonsampling errors—in particular, underreporting of deaths in early childhood (which would result in an underestimate of mortality) and misreporting the date of birth or age at death (which could distort the age pattern of under-five mortality). Both problems are likely to be more pronounced for children born further in the past than for children born recently. Underreporting of infant deaths is usually most serious for deaths that occur very early in infancy. If deaths in the early neonatal period are selectively underreported, there will be an abnormally low ratio of deaths under seven days to all neonatal deaths and an abnormally low ratio of neonatal to infant mortality. Changes in these ratios over time can be examined to test the hypothesis that underreporting of early infant deaths is more common for births that occurred further in the past than for births that occurred more recently. Failure to report deaths will result in mortality figures that are low and if underreporting is more severe for children born longer ago than for children born recently, any decline in mortality will tend to be understated.

Results from Table B.5 (Appendix B) suggest that early neonatal deaths have not been seriously underreported in the NFHS-2 results for Bihar, since the ratios of deaths under seven days to all neonatal deaths are consistently high (between 71 and 78 percent) for the different time periods preceding the survey (a ratio of less than 25 percent is often used as a guideline to indicate underreporting of early neonatal deaths). The ratios of infant deaths that occurred during the neonatal period (Appendix Table B.6) are also consistently high (between 66 and 67 percent) for the different time periods preceding the survey.

Another problem inherent in most retrospective surveys is heaping of age at death on certain digits, e.g., 6, 12, and 18 months. If the net result of misreporting is the transference of deaths between age segments for which the rates are calculated, misreporting of the age at death will bias estimates of the age pattern of mortality. For instance, an overestimate of child mortality relative to infant mortality may result if children dying during the first year of life are reported as having died at age one or older. Thus, heaping at 12 months can bias the mortality estimates because a certain fraction of these deaths may have actually occurred during infancy (i.e., at ages 0–11 months). In such cases, heaping would bias infant mortality ($_1q_0$) downward and child mortality ($_4q_1$) upward.

In the Bihar NFHS-2, there appears to be a slight preference for reporting age at death at 1, 6, 8, 12, 15, 20, and 30 days (Table B.5 in Appendix B). An examination of the distribution of deaths under age two years during the 15 years preceding the survey by month of death (Appendix Table B.6) indicates a heaping of deaths at 6, 12, and 18 months of age. The amount of heaping on 12 months is minor, probably due to the strong emphasis on this problem during the training of interviewers for NFHS–2 fieldwork[2]. This brief assessment of the internal consistency of NFHS-2 childhood mortality data for Bihar suggests that, although there may be

[2]Interviewers were trained to probe for the exact number of months lived by the child if the age at death was reported as 'one year'.

some heaping of age at death at certain ages, the heaping is minimal and any resulting bias in infant and child mortality rates is negligible.

It is seldom possible to establish mortality levels with confidence for a period of more than 15 years before a survey. Even within the recent 15-year period considered here, apparent trends in mortality rates should be interpreted with caution for several reasons. First, there may be differences in the completeness of death reporting related to the length of time before the survey. Second, the accuracy of reports of age at death and of date of birth may deteriorate with time. Third, sampling variability of mortality rates tends to be high, especially for groups with relatively few births. Fourth, mortality rates are truncated as they go back in time because women currently age 50 or above who were bearing children during earlier periods were not included in the survey. This truncation affects mortality trends, in particular. For example, for the period 10–14 years before the survey, the rates do not include any births for women age 40–49 since these women were over age 50 at the time of the survey and not eligible to be interviewed. Since these excluded births to older women were likely to be at a somewhat greater risk of dying than births to younger women, the mortality rates for the period may be slightly underestimated. Estimates for more recent periods are less affected by truncation bias since fewer older women are excluded. The extent of this bias depends on the proportion of births omitted. Table 4.18 (Chapter 4) shows that very few of the children born in the five years before NFHS-2 were born to women age 35 and above. Given the small proportion of births excluded, selection bias for infant and child mortality statistics as far back as 15 years before the survey should be negligible.

Levels, Trends, and Differentials in Infant and Child Mortality

Table 6.2 and Figure 6.1 present various measures of infant and child mortality by residence for the three five-year periods preceding the survey. Infant mortality in Bihar declined from 78 deaths per 1,000 live births during 1989–94 (5–9 years before the survey) to 73 deaths per 1,000 live births during 1994–98 (0–4 years before the survey), an average rate of decline of one infant death per 1,000 live births per year. However, when compared with the period 10–14 years before the survey, the infant mortality rate in Bihar does not show any decline during the past 15 years. A comparison of the infant mortality rate for the period 0–4 years before NFHS-2 (73) with the infant mortality rate 0–4 years before NFHS-1 (89) suggests a more rapid decline of 16 deaths per 1,000 live births over the six years between the two surveys.

Neonatal mortality and child mortality rates presented in Table 6.2 also suggest a very slow pace of decline, and postneonatal mortality shows no decline during the past 15 years. As in the case of infant mortality, however, a comparison with the corresponding rates derived from NFHS-1 suggests that the declines may have been more rapid than indicated by NFHS–2 data alone.

Despite the overall decline in infant and child mortality, 1 in every 14 children born in Bihar during the five years before NFHS-2 died within the first year of life, and 1 in every 10 children died before reaching age five. Clearly child-survival programmes in Bihar need to be intensified to achieve further reductions in infant and child mortality. Overall, 64 percent of infant deaths recorded in Bihar during the five-year period before NFHS-2 occurred during the first month of life, up slightly from 61 percent for the comparable period before NFHS-1. This indicates that the decline in the infant mortality rate in recent years has come disproportionately from improvement in postneonatal mortality.

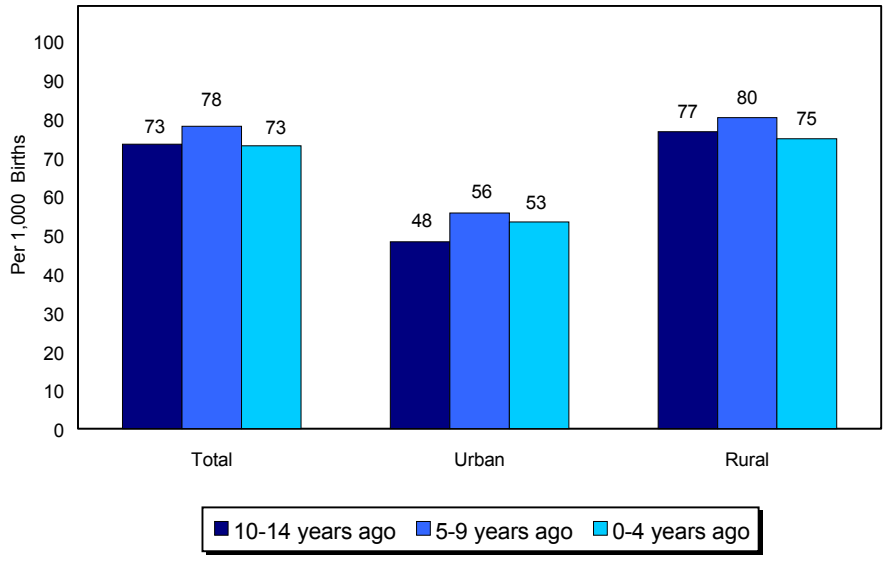
Table 6.2 Infant and child mortality

Neonatal, postneonatal, infant, child, and under-five mortality rates for five-year periods preceding the survey by residence, Bihar, 1998–99

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
URBAN					
0–4	(32.8)	(20.5)	(53.3)	(15.8)	(68.3)
5–9	37.6	18.0	55.6	(23.4)	77.7
10–14	37.3	10.9	48.2	(25.4)	72.4
RURAL					
0–4	47.8	27.0	74.8	36.5	108.6
5–9	53.2	27.0	80.2	42.2	119.1
10–14	49.4	27.2	76.6	48.8	121.7
TOTAL					
0–4	46.5	26.4	72.9	34.7	105.1
5–9	51.8	26.2	78.0	40.2	115.1
10–14	48.1	25.3	73.3	45.9	115.8

Note: The first five-year period preceding the survey does not include the month in which the interview took place. Rates are specified on a per-thousand basis. See text for definition of rates.
( ) Based on 250–499 children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates

Figure 6.1
Infant Mortality Rate for Five-Year Periods by Residence



Note: Rates are for five-year periods preceding the survey

NFHS-2, Bihar, 1998–99

Rural mortality rates are considerably higher than urban mortality rates. During the five years preceding the survey, infant mortality is 40 percent higher in rural areas and child mortality is 131 percent higher in rural areas. Under-five mortality is 59 percent higher in rural areas than in urban areas.

In both urban and rural areas, child mortality has declined gradually during the 15 years preceding the survey. But, neonatal, postneonatal, and infant mortality rates do not show any consistent decline during this period in either urban or rural areas. A comparison with corresponding figures from NFHS-1, however, suggests a considerable decline in both urban and rural areas in all indicators of infant and child mortality during the six and one-half years between the two surveys.

The estimated NFHS-2 infant mortality rate of 73 deaths per 1,000 live births during 1994–98 is in close agreement with the SRS value of 70 deaths per 1,000 live births averaged for the period 1994–98. The NFHS-2 and average SRS estimates of the infant mortality rate for rural and urban areas over the same period are also in close agreement. For rural areas, NFHS-2 estimated the infant mortality rate at 75 deaths per 1,000 live births, compared with the SRS value of 71 deaths per 1,000 live births; and for urban areas, NFHS-2 estimated the infant mortality rate at 53 deaths per 1,000 live births, compared with the SRS value of 55 deaths per 1,000 live births.

Socioeconomic Differentials in Infant and Child Mortality

The probability of dying in early childhood is higher in some population groups than in others. Table 6.3 presents differentials in infant and child mortality rates for the 10-year period preceding the survey by selected background characteristics. Children in rural areas of Bihar experience a 42 percent higher probability of dying before their first birthday and 55 percent higher probability of dying before their fifth birthday than urban children. Infant and child mortality rates are somewhat lower in the Jharkhand region than in other regions.

All the infant and child mortality rates decline sharply with an increase in education of mothers, as expected. Infant mortality rate ranges from a high of 82 deaths per 1,000 live births for illiterate mothers to a low of 37 deaths per 1,000 live births for mothers who have at least completed high school. Under-five mortality similarly ranges from a high of 121 for illiterate mothers to a low of 47 for mothers who have at least completed high school.

All the infant and child mortality rates are higher for Hindus than for Muslims. Under-five mortality is 112 death per 1,000 live births for Hindu children and 99 deaths per 1,000 live births for Muslim children. At the time of NFHS-1, by contrast, all the infant and child mortality rates were higher for Muslims than for Hindus. The sample size for Muslim children is relatively small, however. Mortality differentials by religion presumably reflect influences other than religion. This is confirmed by a study based on NFHS-1 data, which noted that the difference in infant and child mortality rates between Hindu and Muslim children is reduced considerably when other demographic and socioeconomic variables are controlled statistically (Pandey et al., 1998).

Children whose mothers belong to scheduled castes, scheduled tribes, and other backward classes have considerably higher levels of infant and child mortality than do children whose mothers do not belong to any of these groups. As expected, all indicators of infant and

Table 6.3 Infant and child mortality by background characteristics

Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey by selected background characteristics, Bihar, 1998–99

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Residence					
Urban	35.3	19.2	54.6	19.8	73.3
Rural	50.7	27.0	77.7	39.2	113.9
Region					
North Bihar Plain	49.6	25.4	75.0	40.2	112.2
South Bihar Plain	50.4	29.1	79.5	40.5	116.8
Jharkhand	47.1	24.0	71.1	27.1	96.3
Mother's education					
Illiterate	53.2	29.0	82.2	42.0	120.8
Literate, < middle school complete	39.2	19.9	59.1	22.1	79.9
Middle school complete	(35.5)	(10.2)	(45.7)	(17.0)	(61.9)
High school complete and above	26.3	10.7	37.0	10.6	47.2
Religion					
Hindu	49.9	26.5	76.5	38.7	112.2
Muslim	46.5	24.8	71.3	29.6	98.7
Caste/tribe					
Scheduled caste	52.8	33.5	86.3	52.0	133.8
Scheduled tribe	56.3	25.6	81.9	37.8	116.6
Other backward class	51.0	24.3	75.3	34.1	106.8
Other	37.2	24.0	61.2	29.9	89.3
Standard of living index					
Low	58.3	31.0	89.3	48.4	133.4
Medium	37.9	20.4	58.3	23.4	80.4
High	31.2	15.0	46.2	17.2	62.6
Total	49.3	26.3	75.7	37.3	110.2

Note: The 10-year period preceding the survey does not include the month in which the interview took place. Rates are specified on a per-thousand basis. See text for definition of rates.
( ) Based on 250–499 children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates

child mortality decline substantially with increases in the household standard of living. For example, for children in the households with a high standard of living the infant mortality rate is 46 deaths per 1,000 live births and the under-five mortality rate is 63 deaths per 1,000 live births; the corresponding rates for children in households with a low standard of living are about twice as high at 89 and 133, respectively. The neonatal and postneonatal mortality rates are also about two times higher and the child mortality rate is almost three times higher in households with a low standard of living than in households with a high standard of living.

Demographic Differentials in Infant and Child Mortality

This section examines differentials in early childhood mortality by demographic characteristics of both the child and the mother. Table 6.4 and Figure 6.2 present various indicators of infant and child mortality for the 10 years preceding the survey by sex of the child, mother's age at childbirth, birth order, length of the previous birth interval, and medical care received by the mother during pregnancy, delivery, and the early postpartum period.

Table 6.4 Infant and child mortality by demographic characteristics

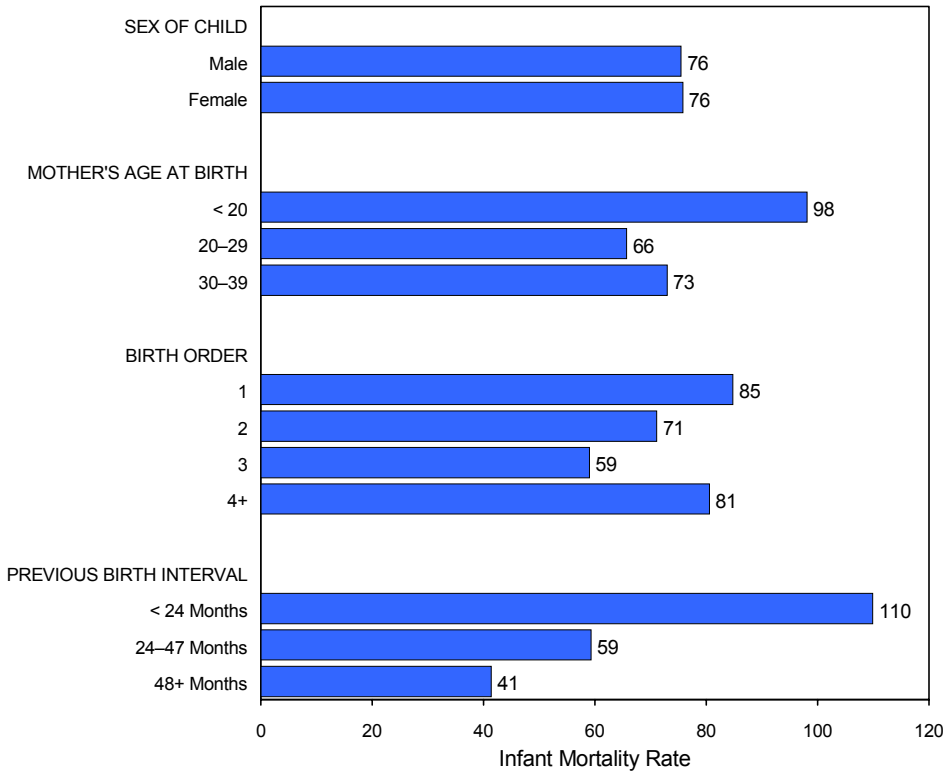
Neonatal, postneonatal, infant, child, and under-five mortality rates for the 10-year period preceding the survey by selected demographic characteristics, Bihar, 1998–99

Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality[1] (PNN)	Infant mortality ($_1q_0$)	Child mortality ($_4q_1$)	Under-five mortality ($_5q_0$)
Sex of child					
Male	51.9	23.6	75.5	31.4	104.6
Female	46.6	29.1	75.8	43.6	116.0
Mother's age at birth					
< 20	65.9	32.2	98.1	33.6	128.5
20–29	42.8	22.9	65.7	37.3	100.5
30–39	45.8	27.2	73.0	43.9	113.7
Birth order					
1	62.9	21.9	84.8	28.1	110.5
2	44.9	26.2	71.1	32.4	101.2
3	38.7	20.3	59.0	37.3	94.1
4+	48.8	31.8	80.6	45.9	122.8
Previous birth interval					
< 24 months	68.9	41.1	109.9	59.3	162.7
24–47 months	36.8	22.5	59.3	34.8	92.1
48+ months	25.2	16.2	41.4	14.7	55.4
Medical care[2]					
No care	43.7	25.3	69.1	U	U
One or two types of care	34.4	18.0	52.4	U	U
Birth size[3]					
Large	(44.9)	(17.7)	(62.6)	U	U
Average	24.2	21.4	45.6	U	U
Small	(81.3)	(32.1)	(113.4)	U	U

Note: The 10-year period preceding the survey does not include the month in which the interview took place. Rates are specified on a per-thousand basis. See text for definition of rates.
U: Not available
( ) Based on 250–499 children surviving to the beginning of the age interval
[1]Computed as the difference between the infant and neonatal mortality rates
[2]Medical care includes (i) antenatal care received from a health worker, (ii) delivery assistance given by a doctor, nurse, trained midwife, or other health professional, and (iii) postnatal care received in a health facility or at home within two months of delivery; rates are for the three-year period preceding the survey.
[3] Birth size as reported by mother; rates are for the three-year period preceding the survey.

Table 6.4 shows that under-five mortality in Bihar is slightly higher for girls than for boys. Excess female mortality occurs mainly after the first year of life. The infant mortality rate during the 10-year period before the survey is about the same for boys and girls (76 deaths per 1,000 live births), but the child mortality rate ($_4q_1$) is considerably higher for girls (44 deaths per 1,000 live births) than for boys (31 deaths per 1,000 live births). This reversal of sex differentials in mortality with increasing age has been observed in other studies in South Asia and is thought to reflect the relative medical and nutritional neglect of the girl-child (Das Gupta, 1987; Basu, 1989). Within the first year of life, neonatal mortality is higher for boys (52 deaths per 1,000 live births) than for girls (47 deaths per 1,000 live births), but postneonatal mortality is higher for girls (29 deaths per 1,000 live births) than for boys (24 deaths per 1,000 live births). This pattern of gender differentials in mortality during the first year of life is expected because neonatal mortality (which reflects largely congenital conditions) tends to be higher for boys than girls in most populations. The male-female differences in the neonatal and postneonatal mortality rates

Figure 6.2
Infant Mortality Rate by Selected Demographic Characteristics



Note: Based on births in the 10 years preceding the survey (1989–98)

NFHS-2, Bihar, 1998–99

in Bihar are, however, unlikely to be significant given the large sampling errors associated with the different estimates of infant and child mortality (Appendix Table A.2).

For both social and biological reasons, infant mortality rates and child mortality rates often exhibit a U-shaped pattern with respect to the mother's age at childbirth, with children of both very young and very old mothers experiencing higher mortality rates than children whose mothers are in the prime reproductive ages. Bihar exhibits the expected U-shaped pattern of mortality by mother's age, with higher infant mortality rate among children of mothers under age 20 (98 deaths per 1,000 live births) and children of mothers age 30–39 (73 deaths per 1,000 live births) than among children of mothers age 20–29 (66 deaths per 1,000 live births). Similar patterns are observed for neonatal and postneonatal mortality rates. Infants born to young mothers are more likely to be of low birth weight, which is probably an important factor contributing to their higher neonatal mortality rate. Similarly, children born to mothers above age 30 are at higher risk than other children of experiencing congenital problems. The U-shaped relationship is not observed in the case of child mortality. Mortality among children age 1–4 years increases steadily with mother's age at childbirth.

Birth order also tends to have a U-shaped relationship to infant deaths, with first births and high-order births having elevated mortality rates. In Table 6.4, birth order shows the expected U-shaped pattern for neonatal, postneonatal, and infant mortality rates, although postneonatal mortality rate is higher for birth order two than for birth order one. This association

is likely to reflect not only the effect of birth order but also the effect of the age of the mother at childbirth. Child mortality tends to increase with birth order, as with mother's age at childbirth. The increase in the child mortality rate with birth order may reflect a more intense competition faced by higher birth-order children for the caregiver's time, for medical resources, and for nutritious food once children are weaned. It is also likely that higher birth-order children are disproportionately from lower socioeconomic groups, where mortality tends to be higher. Under-five mortality, combining infant and child mortality, has a U-shaped relationship with birth order, as expected.

The timing of successive births has a powerful effect on the survival chances of children in Bihar. Infant and child mortality rates decrease as the length of the previous birth interval increases and both measures are especially high for children born less than 24 months after a previous birth. The infant mortality rate is 165 percent higher for children with a preceding birth interval of less than 24 months than for children with a preceding birth interval of 48 months or more (110 deaths compared with 41 deaths per 1,000 live births). The previous birth interval has a similar effect on all other indicators of infant and child mortality as shown in Table 6.4. Although the length of the preceding birth interval is likely to affect mortality risks directly, a substantial portion of the association between birth intervals and mortality risks may reflect the effect of factors that are correlated with birth intervals. For example, shorter birth intervals are likely to occur in large families, and large families tend to come from lower socioeconomic groups and are more likely than other families to live in rural areas where medical facilities and other survival-enhancing resources are less readily available. Nevertheless, multivariate analyses of birth-interval effects on child survival commonly find an association between short birth intervals (less than 24 months) and increased mortality even after controlling for other demographic and socioeconomic characteristics (Retherford et al., 1989).

Antenatal, delivery, and postnatal care are usually associated with lower infant mortality. Table 6.4 shows that children of mothers who receive one or two types of care have considerably lower risk of neonatal and postneonatal mortality than do children whose mothers receive no maternity-related medical care. It is not possible to compare the mortality rates for children of mothers who receive all three types of maternity-related care due to the small number of cases in that category.

6.3 Morbidity

There is limited experience in collecting morbidity data from population-based demographic sample surveys. NFHS-1 collected data on five major morbidity conditions—partial and complete blindness, tuberculosis, leprosy, physical impairment of the limbs, and malaria—among all persons in the sampled households. The results were found to be generally plausible and useful. For this reason, it was decided to include similar morbidity questions in NFHS-2. In NFHS-2, questions on blindness, leprosy, and physical impairment of the limbs were replaced by questions on asthma and jaundice. The questions on tuberculosis and malaria were retained, and a question on medical treatment of tuberculosis was added to get a better measure of the prevalence of tuberculosis. The household head or other knowledgeable adult in the household reported morbidity for all household members, and no effort was made to do clinical tests for any of the disease conditions.

Table 6.5 shows the prevalence of asthma, tuberculosis, jaundice, and malaria in the household population by age, sex, and place of residence. There are several reasons why the results of NFHS-2 may understate the prevalence of these conditions. Diseases carrying a stigma, such as tuberculosis, may be underreported due to intentional concealment by respondents. Underestimation may also occur because the respondents are unaware that they or other members of the household have the condition. It is also possible that the respondents know that a household member suffers from a given condition but fail to report it because they do not recognize the term used by the enumerator to describe the condition. On the other hand, a factor contributing to a possible overestimation of prevalence without clinical verification is that some other disease can be mistaken by the respondent as one of the listed diseases; for example, chronic bronchitis may be reported as tuberculosis or common flu as malaria.

Asthma

Asthma is a chronic respiratory disease characterized by sudden attacks of laboured breathing, chest constriction, and coughing. There has been a rapid increase in asthma cases in recent years in many parts of the world. In Bihar, 2 percent of the population was reported to be suffering from asthma at the time of the survey. The prevalence of asthma is considerably higher in rural areas (2,103 per 100,000 population) than in urban areas (1,430 per 100,000 population). The prevalence is slightly lower among males (1,991 per 100,000) than among females (2,067 per 100,000). Age differences are marked, with the prevalence of asthma increasing from 477 per 100,000 for the 0–14 to 11,149 per 100,000 at age 60 and over.

Tuberculosis

Tuberculosis, which is also resurgent worldwide, is an infectious disease that affects the lungs and other body tissues. Tuberculosis of the lungs, the most commonly known form, is characterized by coughing up mucus and sputum, fever, weight loss, and chest pain. In Bihar, about 1 percent of the population was reported to be suffering from tuberculosis at the time of NFHS-2, up considerably from about 0.6 percent at the time of NFHS-1. The prevalence of tuberculosis is 65 percent higher in rural areas (1,035 per 100,000) than in urban areas (629 per 100,000). The prevalence of tuberculosis increases rapidly with age, ranging from 249 per 100,000 among persons age 0–14 to 1,372 per 100,000 among persons age 15–59 and 2,651 per 100,000 among persons age 60 and above. The prevalence rate is much higher for males (1,170 per 100,000) than for females (799 per 100,000). The overall gender differential in the prevalence of tuberculosis in Bihar stems from a large differential in rural areas. In urban areas, the gender differential is negligible. Probable causes for the much higher prevalence of tuberculosis among males than females are that men are more likely than women to come in contact with people who suffer from active tuberculosis and that men in Bihar smoke more than women.

Medically treated tuberculosis is expected to give a more reliable measure of the prevalence of active tuberculosis than a measure based on all reported cases considered in the preceding paragraph. As expected, the prevalence of medically treated tuberculosis in Bihar is considerably lower (833 per 100,000) than the prevalence based on all reported cases (989 per 100,000). The prevalence of medically treated tuberculosis reported in NFHS-2 is much higher than the prevalence of all reported cases in NFHS-1, indicating that the prevalence of tuberculosis may be increasing in Bihar. Differentials in the prevalence of medically treated

Table 6.5 Morbidity

Number of persons per 100,000 usual household residents suffering from asthma, tuberculosis, jaundice, or malaria by age, sex, and residence, Bihar, 1998–99

Age and sex	Number of persons per 100,000 suffering from: Asthma	Tuberculosis[1]	Medically treated tuberculosis	Jaundice during the past 12 months	Malaria during the past 3 months	Number of usual residents
			URBAN			
Age						
< 15	374	184	184	1,395	1,310	1,638
15–59	1,438	819	736	1,714	2,262	2,468
60+	9,028	1,784	1,335	897	935	225
Sex						
Male	1,306	621	577	1,786	1,832	2,252
Female	1,564	638	538	1,296	1,834	2,078
Total	1,430	629	558	1,551	1,833	4,330
			RURAL			
Age						
< 15	489	256	200	1,099	3,608	14,337
15–59	2,243	1,449	1,212	1,881	4,235	17,771
60+	11,362	2,738	2,420	1,199	5,174	2,231
Sex						
Male	2,079	1,240	1,073	1,946	4,106	17,586
Female	2,130	819	653	1,052	3,960	16,753
Total	2,103	1,035	868	1,510	4,034	34,339
			TOTAL			
Age						
< 15	477	249	199	1,129	3,373	15,974
15–59	2,145	1,372	1,154	1,860	3,994	20,239
60+	11,149	2,651	2,321	1,171	4,786	2,456
Sex						
Male	1,991	1,170	1,017	1,928	3,847	19,838
Female	2,067	799	640	1,079	3,725	18,831
Total	2,028	989	833	1,515	3,788	38,669

[1]Includes medically treated tuberculosis

tuberculosis by residence, age, and sex are similar to differentials in the prevalence of all reported cases.

Jaundice

Jaundice is characterized by yellowish discolouration of the eyes and skin, fever, liver enlargement, and abdominal pain. NFHS-2 asked household respondents if any member of the household had suffered from jaundice at any time during the 12 months preceding the survey. In Bihar, 1,515 persons per 100,000 population were reported to have suffered from jaundice during the past 12 months. The prevalence of jaundice was similar in rural (1,510 per 100,000) and urban (1,551 per 100,000) areas. Males were much more likely to have suffered from jaundice (1,928 per 100,000) than females (1,079 per 100,000). The prevalence of jaundice was highest

for the age group 15–59 (1,860 per 100,000) followed by the age groups 60 and above (1,171 per 100,000) and 0–14 (1,129 per 100,000). Age and sex differentials in the prevalence of jaundice are similar in the urban and rural areas, except the prevalence in urban areas is higher for persons age 0–14 than for persons age 60 and above.

Malaria

Malaria is characterized by recurrent high fever with shivering. NFHS-2 asked household respondents whether any member of their household had suffered from malaria at any time during the three months preceding the survey. In Bihar, 3,788 persons per 100,000 population were reported to have suffered from malaria during the three months before the survey. Since the prevalence of malaria is known to vary considerably by season, the NFHS-2 estimates should not be interpreted as representative of the level throughout the year. It is also misleading to compare this estimate with the much higher NFHS-1 estimate because months of the year comprising the reference period for the malaria estimates from the two surveys are different.

Rural residents are more than twice as likely to suffer from malaria (4,034 per 100,000) as are urban residents (1,833 per 100,000). The prevalence of malaria increases steadily with age, from 3,373 per 100,000 in the population age 0–14 to 4,786 per 100,000 in the population age 60 and above. The steady increase with age occurs in rural areas but not in urban areas. The prevalence of malaria is slightly higher among males (3,847 per 100,000) than among females (3,725 per 100,000). This is mainly due to higher malaria prevalence among males than females in rural areas. There is no gender differential in malaria prevalence in urban areas.

6.4 Child Immunization

The vaccination of children against six serious but preventable diseases (tuberculosis, diphtheria, pertussis, tetanus, poliomyelitis, and measles) has been a cornerstone of the child health care system in India. As part of the National Health Policy, the National Immunization Programme is being implemented on a priority basis. The Expanded Programme on Immunization (EPI) was initiated by the Government of India in 1978 with the objective of reducing morbidity, mortality, and disabilities from these six diseases by making free vaccination services easily available to all eligible children. Immunization against poliomyelitis was introduced in 1979–80, and tetanus toxoid for school children was added in 1980–81. Immunization against tuberculosis (BCG) was brought under the EPI in 1981–82. The latest addition to the Programme was vaccination against measles in 1985–86 (Ministry of Health and Family Welfare, 1991).

The Universal Immunization Programme (UIP) was introduced in 1985–86 with the following objectives: to cover at least 85 percent of all infants against the six vaccine-preventable diseases by 1990 and to achieve self-sufficiency in vaccine production and the manufacture of cold-chain equipment (Ministry of Health and Family Welfare, 1991). This scheme has been introduced in every district of the country, and the target now is to achieve 100 percent immunization coverage. Pulse Polio Immunization Campaigns began in December 1995 as part of a major national effort to eliminate polio. The standard immunization schedule developed for the child immunization programme specifies the age at which each vaccine is to be administered, the number of doses to be given, and the route of vaccination (intramuscular, oral, or subcutaneous). Vaccinations received by infants and children are usually recorded on a vaccination card that is issued for the child.

NFHS-2 asked mothers in Bihar whether they had a vaccination card for each child born since January 1995. If a card was available, the interviewer was required to copy carefully the dates when the child received vaccinations against each disease. For vaccinations not recorded on the card, the mother's report that the vaccination was or was not given was accepted. If the mother could not show a vaccination card, she was asked whether the child had received any vaccinations. If any vaccination had been received, the mother was asked whether the child had received a vaccination against tuberculosis (BCG); diphtheria, whooping cough (pertussis), and tetanus (DPT); poliomyelitis (polio); and measles. For DPT and polio, information was obtained on the number of doses of the vaccine given to the child. Mothers were not asked the dates of vaccinations. To distinguish Polio 0 (polio vaccine given at the time of birth) from Polio 1 (polio vaccine given about six weeks after birth), mothers were also asked whether the first polio vaccine was given just after birth or later[3].

Table 6.6 gives the percentages of urban and rural children age 12–23 months who received specific vaccinations at any time before the interview and before 12 months of age, according to whether a vaccination card was shown to the interviewer or the mother was the source of all vaccination information. The 12–23 month age group was chosen for analysis because both international and Government of India guidelines specify that children should be fully immunized by the time they complete their first year of life. Because the date of vaccination was not asked of the mother if she could not show a vaccination card, for children whose information is based on the mother's report, the proportion of vaccinations given during the first year of life is assumed to be the same as the proportion of vaccinations given during the first year of life among children with an exact date of vaccination on the card.

In NFHS-2, children who received BCG, measles, and three doses each of DPT and polio (excluding Polio 0) are considered to be fully vaccinated. Based on information obtained from a card or reported by the mother ('Either source'), 11 percent of children age 12–23 months are fully vaccinated, and 17 percent have not received any vaccinations. Coverage for BCG, DPT, and polio (except Polio 0) vaccinations is much higher than the percentage fully vaccinated. Thirty-eight percent of children have received BCG, 24 percent of children have received three doses of DPT, and 41 percent have received three doses of polio vaccine. More than 70 percent have received the first and second doses of polio vaccine (see Figure 6.3). Even though the DPT and polio vaccines are normally given together as part of the routine immunization programme, the polio coverage rates are much higher than the DPT coverage rates, undoubtedly because of the Pulse Polio Campaigns. Not all children who begin with the DPT and polio vaccination series go on to complete them. The difference between the percentages of children receiving the first and third doses is 16 percentage points for DPT and 40 percentage points for polio. Only 17 percent of children age 12–23 months have been vaccinated against measles. The relatively low percentage vaccinated against measles is partly responsible for the fact that the percentage fully vaccinated is not higher than it is.

[3]Because mothers sometimes report that the first dose was given just after birth even if it was given several weeks later, an adjustment was made to the estimates of the number of polio vaccinations given, based on reports of the number of DPT vaccinations. This adjustment is based on the fact that when children receive a DPT vaccination, they are almost always given a polio vaccination at the same time. Thus, if the number of polio vaccinations was reported to be less than the number of DPT vaccinations and the first polio vaccination was reported to be given just after birth, then Polio 0 was assumed to really be Polio 1, Polio 1 was assumed to be Polio 2, etc. For comparative purposes, this same adjustment was made to the NFHS-1 vaccination estimates.

Table 6.6 Childhood vaccinations by source of information

Percentage of children age 12–23 months who received specific vaccinations at any time before the interview and before 12 months of age by source of information on vaccination history and residence, Bihar, 1998–99

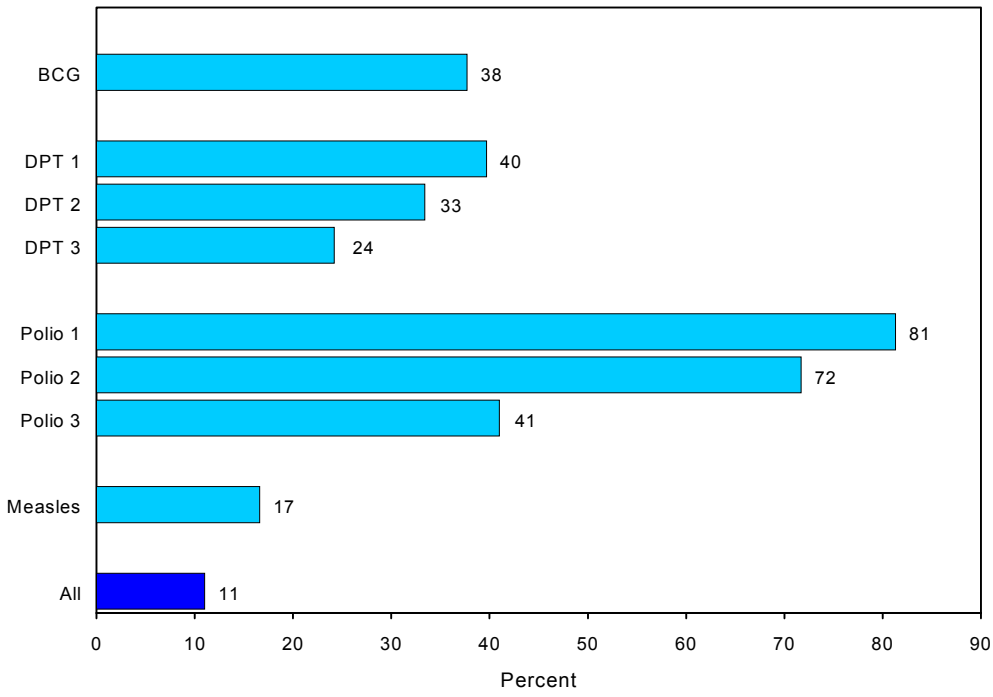
Source of information	Percentage vaccinated											Number of children
			DPT			Polio						
	BCG	Polio 0	1	2	3	1	2	3	Measles	All[1]	None	
URBAN												
Vaccinated at any time before the interview												
Vaccination card	*	*	*	*	*	*	*	*	*	*	*	16
Mother's report	54.2	5.1	45.7	32.5	22.6	88.2	83.3	45.6	29.6	9.5	10.1	64
Either source	63.5	8.1	56.8	46.2	37.0	89.3	85.4	54.0	39.8	22.4	8.1	80
Vaccinated by 12 months of age[2]	57.8	8.1	48.5	42.4	33.7	75.3	75.3	48.4	35.9	19.3	14.5	80
RURAL												
Vaccinated at any time before the interview												
Vaccination card	89.1	10.9	96.4	85.5	66.2	97.1	84.7	68.1	38.5	35.0	0.0	137
Mother's report	24.0	1.5	25.9	21.1	14.0	77.1	67.3	33.8	9.3	4.7	21.3	665
Either source	35.1	3.1	38.0	32.1	23.0	80.6	70.3	39.7	14.3	9.9	17.7	802
Vaccinated by 12 months of age[2]	28.9	3.1	31.3	25.1	17.2	65.6	54.7	30.1	9.1	5.9	31.6	802
TOTAL												
Vaccinated at any time before the interview												
Vaccination card	90.2	11.9	96.8	87.0	69.1	96.7	85.6	70.1	42.9	39.1	0.0	154
Mother's report	26.6	1.8	27.6	22.1	14.8	78.1	68.7	34.8	11.1	5.1	20.3	729
Either source	37.7	3.6	39.7	33.4	24.2	81.3	71.7	41.0	16.6	11.0	16.8	882
Vaccinated by 12 months of age[2]	31.4	3.6	32.8	26.6	18.7	66.5	56.6	31.7	11.4	7.0	30.0	882

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
*Percentage not shown; based on fewer than 25 unweighted cases
[1]BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)
[2] For children whose information was based on the mother's report, the proportion of vaccinations given by 12 months of age is assumed to be the same as for children with a written record of vaccination.

The proportion of children fully immunized has remained at 11 percent since NFHS-1. However, the proportion of children who had received no vaccinations has declined substantially from 54 percent to 17 percent between the two surveys, indicating that many more children have been brought into the programme during recent years. The coverage of BCG and measles has increased marginally, but the coverage of DPT has declined between the two surveys. The coverage of polio, especially the first two doses, has increased dramatically since NFHS-1, undoubtedly due to the Pulse Polio Campaigns initiated in 1995. The comparative data from the two surveys suggest that the child immunization programmes in Bihar are lagging way behind the expectations and the goal of universal immunization coverage for children has yet to take off.

According to the immunization schedule, all primary vaccinations, including measles, should be completed by the time a child is 12 months old. Table 6.6 shows that only 7 percent of all children (or 64 percent of fully vaccinated children) were fully vaccinated by age 12 months. Thirty percent of all children did not receive any vaccination by age 12 months. Coverage of each type of vaccine was much lower within the recommended first year of life. For example,

Figure 6.3
Percentage of Children Age 12–23 Months Who Have Received Specific Vaccinations



NFHS-2, Bihar, 1998–99

although the measles vaccine is supposed to be given when a child is nine months old, about one-third (31 percent) of all children who were vaccinated against measles received the vaccine after their first birthday.

The analysis of vaccine-specific data indicates much higher coverage for each type of vaccine in urban areas than in rural areas. Twenty-two percent of children age 12–23 months in urban areas were fully vaccinated at some time before the survey, compared with only 10 percent in rural areas. The proportion fully vaccinated during the first year of life is also higher in urban areas (19 percent) than in rural areas (6 percent). Consistent with this, dropout rates for DPT and polio are lower in urban areas than in rural areas. As expected, vaccination coverage is much higher for children for whom a vaccination card was shown than for other children.

Table 6.7 and Figure 6.4 present vaccination coverage rates (according to the vaccination card or the mother) for children age 12–23 months by selected background characteristics. The table also shows the percentage of children with vaccination cards that were shown to the interviewers. Mothers could show vaccination cards for only 17 percent of children age 12–23 months. There has been no change in the percentage of mothers who could show vaccination cards for children age 12–23 since NFHS-1. Vaccination cards were shown for 20 percent of children in urban areas and 17 percent in rural areas.

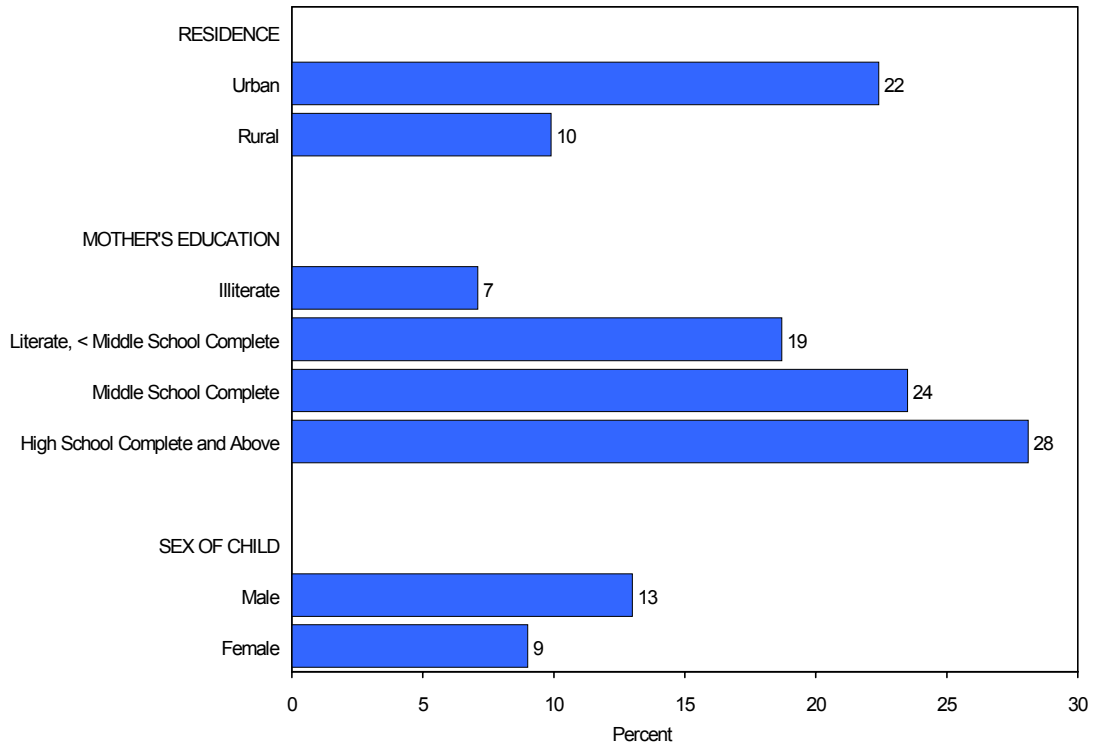
Table 6.7 Childhood vaccinations by background characteristics

Percentage of children age 12–23 months who received specific vaccinations at any time before the interview (according to the vaccination card or the mother) and percentage with a vaccination card that was shown to the interviewer by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage vaccinated											Percentage showing vaccination card	Number of children
			DPT			Polio							
	BCG	Polio 0	1	2	3	1	2	3	Measles	All[1]	None		
Sex of child													
Male	39.6	4.0	42.8	36.4	25.8	82.5	74.2	39.8	19.5	13.0	14.8	18.4	457
Female	35.7	3.1	36.3	30.0	22.6	80.1	69.0	42.2	13.5	9.0	18.9	16.4	425
Birth order													
1	43.7	4.4	46.9	40.6	31.6	84.0	75.8	48.1	21.5	13.7	15.0	20.8	211
2	41.5	3.5	39.6	35.1	25.4	80.6	71.6	42.6	19.4	14.2	15.8	19.7	223
3	40.7	5.8	40.6	33.0	23.9	79.1	68.6	44.2	19.6	12.8	19.6	15.4	163
4+	28.6	1.8	33.8	26.8	18.0	81.3	70.4	32.6	9.1	5.6	17.3	14.3	284
Residence													
Urban	63.5	8.1	56.8	46.2	37.0	89.3	85.4	54.0	39.8	22.4	8.1	20.3	80
Rural	35.1	3.1	38.0	32.1	23.0	80.6	70.3	39.7	14.3	9.9	17.7	17.1	802
Region													
North Bihar Plain	38.6	2.8	42.2	36.5	28.2	92.0	82.0	47.1	16.6	12.6	7.0	19.5	407
South Bihar Plain	32.4	4.6	33.4	28.1	20.3	73.7	64.4	35.3	15.7	10.4	23.8	14.9	294
Jharkhand	44.4	3.6	44.2	34.9	21.7	69.8	60.1	36.5	18.2	8.8	27.3	16.8	182
Mother's education													
Illiterate	27.7	1.8	30.7	25.1	17.3	79.1	69.0	37.7	10.7	7.1	19.4	13.7	667
Literate, < middle school complete	58.0	6.9	54.3	42.0	29.7	85.3	74.0	39.4	31.2	18.7	13.6	25.5	91
Middle school complete	(67.2)	(0.0)	(70.1)	(61.4)	(50.3)	(85.9)	(77.2)	(58.0)	(26.6)	(23.5)	(11.3)	(26.9)	37
High school complete and above	80.5	15.2	80.3	75.7	60.5	92.6	87.0	60.5	42.2	28.1	2.6	33.1	87
Religion													
Hindu	40.4	3.7	41.3	35.9	26.7	82.2	72.6	42.1	18.3	12.5	16.3	19.1	714
Muslim	25.4	2.6	32.1	21.5	13.5	78.6	67.9	36.3	8.4	4.6	17.6	10.2	160
Caste/tribe													
Scheduled caste	30.7	1.5	32.0	27.3	19.3	76.1	69.0	35.0	13.4	9.5	21.5	14.9	215
Scheduled tribe	36.8	2.2	30.6	26.5	12.3	61.9	59.8	32.4	8.0	4.0	38.1	12.1	53
Other backward class	36.7	3.0	39.9	33.3	24.5	84.6	73.3	44.2	16.0	11.1	13.5	18.1	459
Other	50.9	8.7	52.7	44.2	34.5	85.4	74.4	42.7	25.8	15.3	12.6	20.7	155
Standard of living index													
Low	25.8	1.3	27.6	22.4	15.5	76.3	66.4	34.7	9.7	6.0	22.1	12.1	498
Medium	47.9	4.5	50.8	43.0	31.0	87.0	76.5	48.4	20.4	15.4	11.0	25.0	308
High	76.1	15.4	75.8	67.8	55.5	91.4	86.0	53.7	47.7	27.3	5.8	22.0	74
Total	37.7	3.6	39.7	33.4	24.2	81.3	71.7	41.0	16.6	11.0	16.8	17.4	882

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 3 and 4 children belonging to Christian and 'other' religions, respectively, and 2 children with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases
[1]BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

Figure 6.4
Percentage of Children Age 12–23 Months Who Have Received All Vaccinations



NFHS-2, Bihar, 1998–99

Male children (13 percent) are more likely than female children (9 percent) to be fully vaccinated. Male children are also much more likely than female children to have received most of the individual vaccinations. Mothers were more likely to show vaccination cards for male children (18 percent) than for female children (16 percent). The proportions of male and female children with full vaccination coverage were virtually the same at the time of NFHS-1, but the gender differential in the availability of vaccination cards was slightly higher in the earlier survey, at 19 percent for male children and 14 percent for female children. These results indicate that child immunization coverage and discrimination against girls in receiving immunizations have not improved in Bihar in the past six years since NFHS-1.

The relationship between vaccination coverage and birth order is consistently negative for almost all vaccinations. One reason may be that a large majority of first-order births occur to younger women who are more likely than older women to utilize child health services. There is a positive relationship between mother's education and children's vaccination coverage. Only 7 percent of children of illiterate mothers are fully vaccinated, compared with 28 percent of children whose mothers have at least completed high school. Household standard of living also has a strong positive relationship with vaccination coverage. Six percent of children from households with a low standard of living are fully vaccinated, compared with 27 percent of children from households with a high standard of living. Hindu children are about three times as likely to be fully vaccinated as Muslim children. By caste/tribe, immunization coverage is much

Table 6.8 Childhood vaccinations received by 12 months of age

Percentage of children age 12–23 months and 24–35 months with a vaccination card that was shown to the interviewer and percentage who received specific vaccinations by 12 months of age according to residence and child's current age, Bihar, 1998–99

	Urban		Rural		Total	
Vaccination status	12–23 months	24–35 months	12–23 months	24–35 months	12–23 months	24–35 months
Vaccination card shown to interviewer	20.3	23.7	17.1	11.4	17.4	12.4
Percentage vaccinated by 12 months of age[1]						
BCG	57.8	44.0	28.9	18.7	31.4	21.0
Polio 0	8.1	NC	3.1	2.8	3.6	3.2
DPT						
1	48.5	41.5	31.3	17.5	32.8	19.5
2	42.4	36.8	25.1	15.3	26.6	17.1
3	33.7	27.6	17.2	11.6	18.7	12.9
Polio						
1	75.3	55.3	65.6	40.3	66.5	42.3
2	75.3	50.9	54.7	40.0	56.6	41.5
3	48.4	38.4	30.1	26.2	31.7	27.6
Measles	35.9	44.2	9.1	5.3	11.4	8.1
All vaccinations[2]	19.3	24.4	5.9	3.7	7.0	5.3
No vaccinations	14.5	47.3	31.6	58.2	30.0	56.7
Number of children	80	70	802	810	882	880

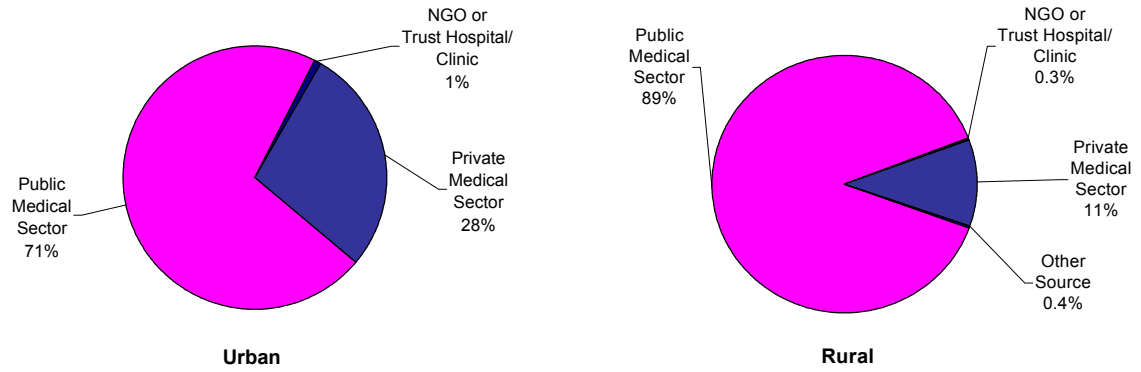
Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.
NC: Not calculated since there was no case with a valid date
[1]Information was obtained either from the vaccination card or from the mother if there was no written record. For children whose information was based on the mother's report, the proportion of vaccinations given by 12 months of age is assumed to be the same as for children with a written record of vaccinations.
[2]BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

lower among scheduled-tribe children than among other children. Children in the Jharkhand region are somewhat less likely to be fully vaccinated than children in other regions.

Table 6.8 shows, for children age 12–35 months, the percentage with a vaccination card that was shown to the interviewer and the percentage who received specific vaccinations during the first year of life by current age of the child and place of residence. The table suggests some improvement in vaccination coverage over time. For children without a vaccination card, the proportion vaccinated during the first year of life is assumed to be the same as for children with a written record of vaccinations. The proportion vaccinated during the first year of life is estimated separately for children in each age group. The row labelled 'No vaccinations' indicates the percentage of children who have not received any vaccination by age 12 months.

The proportion of children whose vaccination status was determined from a vaccination card declines with the age of children. This may reflect an upward trend in the use of vaccination cards as well as an upward trend in overall vaccination coverage. It is also possible that vaccination cards may have been lost or discarded, especially for older children who have received all their vaccinations. The proportion of children fully vaccinated by age 12 months, which is very low to begin with, declines slightly from 7 percent for children age 12–23 months to 5 percent for children age 24–35 months. A small decline in coverage with increasing

Figure 6.5
Source of Childhood Vaccinations by Residence



Note: Percents for rural add to more than 100.0 due to rounding

NFHS-2, Bihar, 1998–99

children's age is also observed for all vaccines in rural areas, but in urban areas coverage for measles is higher in the older age group.

Table 6.9 and Figure 6.5 give the percent distribution of children under age three years who have received any vaccinations by the source of most of the vaccinations, according to selected background characteristics. In Bihar, the public sector is the primary provider of childhood vaccinations. Eighty-seven percent of all children who have received any vaccinations received most of them from a public-sector source and only 12 percent received them from a private-sector source. The percentage of children receiving vaccinations from the private sector is considerably lower in rural areas (11 percent) than in urban areas (28 percent), where private-sector services tend to be concentrated. Even in urban areas, however, 71 percent of children received their vaccinations from the public sector. Children of more educated mothers and those belonging to households with a high standard of living are more likely than other children to receive vaccinations from the private sector. Hindu children are slightly more likely to receive vaccinations from the private sector than Muslim children. Children who belong to scheduled castes, scheduled tribes, or other backward classes are much less likely than other children to receive vaccinations from the private sector.

6.5 Vitamin A Supplementation

Vitamin A deficiency is one of the most common nutritional deficiency disorders in the world, affecting more than 250 million children worldwide (Bloem et al., 1997). The National Programme on Prevention of Blindness targets children under age five years and administers oral doses of vitamin A every six months starting at age nine months. NFHS-2 asked mothers of children born during the three years before the survey whether their children ever received a dose of vitamin A. Those who said that their child had received at least one dose of vitamin A were asked how long ago the last dose of vitamin A was given. Table 6.10 shows the percentage of children age 12–35 months who received at least one dose of vitamin A and who received a dose of vitamin A within the past six months by selected background characteristics. In the state as a

Table 6.9 Source of childhood vaccinations

Percent distribution of children under age 3 who have received any vaccinations by source of most of the vaccinations, according to selected background characteristics, Bihar, 1998–99

Background characteristic	Source				Total percent	Number of children
	Public medical sector	NGO or trust hospital/ clinic	Private medical sector	Other		
Age of child						
< 12 months	85.9	0.3	13.4	0.3	100.0	626
12–23 months	85.8	0.3	13.6	0.4	100.0	734
24–35 months	89.1	0.6	10.0	0.3	100.0	730
Sex of child						
Male	86.0	0.6	13.0	0.4	100.0	1,072
Female	88.0	0.2	11.5	0.3	100.0	1,018
Birth order						
1	83.1	0.6	16.3	0.0	100.0	505
2	83.5	0.7	15.4	0.4	100.0	471
3	87.5	0.0	12.2	0.3	100.0	363
4+	91.5	0.3	7.7	0.5	100.0	752
Residence						
Urban	71.2	1.0	27.7	0.0	100.0	205
Rural	88.7	0.3	10.6	0.4	100.0	1,885
Region						
North Bihar Plain	93.3	0.1	6.5	0.1	100.0	1,089
South Bihar Plain	81.5	0.7	17.9	0.0	100.0	624
Jharkhand	77.7	0.9	19.8	1.6	100.0	377
Mother's education						
Illiterate	92.3	0.4	6.9	0.3	100.0	1,528
Literate, < middle school complete	76.0	0.5	22.7	0.9	100.0	222
Middle school complete	83.6	1.1	15.3	0.0	100.0	99
High school complete and above	64.4	0.0	35.6	0.0	100.0	240
Religion						
Hindu	86.7	0.4	12.5	0.4	100.0	1,712
Muslim	89.9	0.0	10.1	0.0	100.0	358
Caste/tribe						
Scheduled caste	88.9	0.4	10.2	0.4	100.0	452
Scheduled tribe	85.0	1.1	13.9	0.0	100.0	101
Other backward class	88.6	0.5	10.6	0.4	100.0	1,135
Other	80.7	0.0	19.0	0.2	100.0	403
Standard of living index						
Low	92.8	0.5	6.4	0.4	100.0	1,121
Medium	85.3	0.3	14.0	0.4	100.0	768
High	60.5	0.6	38.9	0.0	100.0	197
Total	87.0	0.4	12.3	0.3	100.0	2,090

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 14 and 7 children belonging to Christian and 'other' religions, respectively, and 5 children with missing information on the standard of living index, who are not shown separately.
NGO: Nongovernmental organization

Table 6.10 Vitamin A supplementation for children

Percentage of children age 12–35 months who received at least one dose of vitamin A and who received at least one dose of vitamin A within the six months preceding the survey by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who received vitamin A: At least one dose	Percentage who received vitamin A: At least one dose within past six months	Number of children
Age of child			
12–23 months	9.2	7.7	882
24–35 months	11.2	6.0	880
Sex of child			
Male	11.1	7.3	895
Female	9.2	6.4	868
Birth order			
1	13.3	9.9	404
2	14.7	8.9	408
3	9.3	6.3	305
4+	5.7	3.9	646
Residence			
Urban	19.4	14.5	150
Rural	9.3	6.1	1,613
Region			
North Bihar Plain	9.5	6.3	830
South Bihar Plain	9.8	5.5	575
Jharkhand	12.3	10.2	357
Mother's education			
Illiterate	6.2	4.4	1,329
Literate, < middle school complete	14.6	9.7	182
Middle school complete	20.7	15.3	72
High school complete and above	31.0	18.2	179
Religion			
Hindu	11.3	7.8	1,418
Muslim	5.1	2.5	324
Caste/tribe			
Scheduled caste	8.6	6.3	408
Scheduled tribe	5.9	5.9	109
Other backward class	10.6	7.0	919
Other	12.2	7.4	326
Standard of living index			
Low	5.2	3.8	982
Medium	14.6	9.3	632
High	24.6	16.4	145
Total	10.2	6.8	1,762

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 11 and 10 children belonging to Christian and 'other' religions, respectively, and 3 children with missing information on the standard of living index, who are not shown separately.

whole, only 10 percent of children age 12–35 months received at least one dose of vitamin A, and only 7 percent received a dose within the past six months. This indicates that a large majority of children in Bihar have not received vitamin A supplementation at all and even fewer children receive vitamin A supplementation regularly.

Table 6.10 shows that children living in urban areas and children living in the Jharkhand region are considerably more likely than other children to receive vitamin A supplementation. Children of more educated mothers and children from households with a high standard of living are also much more likely than other children to receive vitamin A. Muslim children are less likely than Hindu children to receive vitamin A supplementation, and scheduled-tribe children are less likely than other children to receive vitamin A. Children of higher birth orders are much less likely than children of lower birth orders to receive vitamin A supplementation. In general, children from groups that are less likely to have received at least one dose of vitamin A supplementation are also less likely to have received a dose in the past six months.

6.6 Child Morbidity and Treatment

This section discusses the prevalence and treatment of acute respiratory infection (ARI), fever, and diarrhoea. Mothers of children born during the three years preceding the survey were asked if their children suffered from cough, fever, or diarrhoea during the past two weeks, and if so, the type of treatment given. Accuracy of all these measures is affected by the reliability of the mother's recall of when the disease episode occurred. The two-week recall period is thought to be most suitable for ensuring that there will be an adequate number of cases to analyze and that recall errors will not be too serious. Table 6.11 shows the percentage of children with cough accompanied by fast breathing (symptoms of acute respiratory infection), fever, and diarrhoea during the two weeks preceding the survey and the percentage with acute respiratory infection who received advice or treatment from a health facility or provider, by selected background characteristics.

Acute Respiratory Infection

Acute respiratory infection, primarily pneumonia, is a major cause of illness among infants and children and the leading cause of childhood mortality throughout the world (Murray and Lopez, 1996). Early diagnosis and treatment with antibiotics can prevent a large proportion of ARI/pneumonia deaths. NFHS-2 found that 22 percent of children under age three in Bihar suffered from acute respiratory infection (cough accompanied by short, rapid breathing) at some time during the two-week period before the survey. A comparison with NFHS-1 ARI data is not meaningful since the two surveys took place at different times of the year and rates of ARI are affected by the time of the year when the measurements are taken.

Table 6.11 shows that there was little variation in the prevalence of ARI by most of the background characteristics included in the table. The prevalence levels of ARI are similar for boys and girls and for children living in urban and rural areas. ARI prevalence levels are also similar in the three geographic regions in Bihar. Children of mothers who have at least completed high school had a lower prevalence of ARI than other children. The prevalence of ARI was lower among children from high standard of living households (17 percent) than among children from low standard of living households (23 percent). The small variation in the prevalence of ARI by most socioeconomic characteristics indicates that respiratory infections affect children of all strata in Bihar irrespective of their socioeconomic background.

Table 6.11 Prevalence of acute respiratory infection, fever, and diarrhoea

Percentage of children under age 3 who were ill with a cough accompanied by fast breathing (symptoms of acute respiratory infection—ARI), fever, or diarrhoea during the two weeks preceding the survey and percentage with ARI who were taken to a health facility or provider, by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of children suffering in past two weeks from:				Number of children	Percentage with ARI taken to a health facility or provider	Number of children with ARI
	Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea				
			Any diarrhoea[1]	Diarrhoea with blood			
Age of child							
1–5 months	20.3	23.6	14.0	0.8	532	45.4	108
6–11 months	24.6	30.3	23.7	4.0	398	63.3	98
12–23 months	23.1	36.4	20.8	3.4	882	60.5	204
24–35 months	19.9	30.4	14.1	3.2	880	60.7	175
Sex of child							
Male	21.8	30.4	17.1	2.7	1,370	62.2	299
Female	21.6	31.5	18.3	3.1	1,322	54.1	286
Birth order							
1	21.9	30.5	17.2	2.3	622	59.9	136
2	23.4	32.8	17.3	3.1	598	61.8	140
3	21.8	28.7	18.3	1.9	478	56.9	104
4+	20.6	31.3	18.0	3.7	994	55.4	205
Residence							
Urban	21.5	24.1	15.6	3.5	244	63.3	52
Rural	21.7	31.7	17.9	2.8	2,448	57.7	532
Region							
North Bihar Plain	22.4	35.2	19.0	3.1	1,266	59.3	284
South Bihar Plain	20.8	26.7	13.4	2.5	872	67.9	181
Jharkhand	21.7	28.2	21.5	3.2	554	41.1	120
Mother's education							
Illiterate	22.5	32.3	18.5	3.0	2,049	58.5	461
Literate, < middle school complete	25.4	31.1	16.9	1.9	267	56.1	68
Middle school complete	16.1	19.2	19.7	5.3	115	*	19
High school complete and above	14.2	25.8	11.7	1.9	261	(57.5)	37
Religion							
Hindu	21.1	30.5	17.2	2.8	2,167	57.5	457
Muslim	23.4	33.3	19.4	3.5	493	63.1	115
Caste/tribe							
Scheduled caste	25.7	33.4	20.6	3.0	607	54.2	156
Scheduled tribe	24.9	31.4	19.3	1.8	178	(39.6)	44
Other backward class	19.2	29.1	16.6	3.0	1,413	60.5	272
Other	22.8	33.2	16.7	3.1	495	65.6	113
Standard of living index							
Low	22.9	32.2	18.3	3.0	1,511	52.5	346
Medium	20.9	30.0	17.9	2.9	951	67.3	199
High	17.0	26.0	12.4	2.2	226	(63.6)	38

Contd…

Table 6.11 also shows the percentage of children suffering from ARI symptoms in the two weeks before the survey for whom advice or treatment was sought from a health facility or provider. Fifty-eight percent of children received some advice or treatment from a health facility or health provider when ill with ARI. The percentage receiving advice or treatment is relatively low for children under six months of age, for female children, for rural children, for children in

Table 6.11 Prevalence of acute respiratory infection, fever, and diarrhoea (contd.)

Percentage of children under age 3 who were ill with a cough accompanied by fast breathing (symptoms of acute respiratory infection—ARI), fever, or diarrhoea during the two weeks preceding the survey and percentage with ARI who were taken to a health facility or provider, by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage of children suffering in past two weeks from:				Number of children	Percentage with ARI taken to a health facility or provider	Number of children with ARI
	Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea				
			Any diarrhoea[1]	Diarrhoea with blood			
Source of drinking water							
Piped water	16.3	26.4	13.4	1.7	187	(75.1)	31
Hand pump	22.6	31.9	18.0	3.1	1,935	58.4	436
Well water	21.4	30.1	18.7	2.8	509	54.1	109
Surface water	(14.6)	(17.0)	(14.9)	(2.3)	42	*	6
Purification of water[2]							
Straining by cloth	24.4	20.2	23.0	5.5	79	*	19
Water filter	(12.7)	(13.0)	(6.2)	(0.0)	33	*	4
Boiling	24.5	24.9	25.3	8.0	80	*	20
Nothing	21.7	31.7	17.6	2.8	2,514	58.1	545
Total	21.7	31.0	17.7	2.9	2,692	58.2	585

Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey. Total includes a small number of children to mothers belonging to Christian and 'other' religions, children in households having 'other' sources of drinking water, children in households using alum or electronic water purifiers or 'other' methods to purify water, and children with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases
*Percentage not shown; based on fewer than 25 unwieghted cases
[1]Includes diarrhoea with blood
[2]Number of children and number of children with ARI sum to more than the respective totals because multiple methods of purification of water could be recorded.

the Jharkhand region, for scheduled-tribe children, and for children from low standard of living households. Hindu children are somewhat less likely to receive advice or treatment when ill with ARI than Muslim children. The likelihood of receiving advice or treatment for ARI does not vary by mother's level of education.

Fever

Fever was the most common of the three conditions examined, with 31 percent of children suffering from fever during the two weeks before the survey. The prevalence of fever is lower among children under age six months (24 percent) than among older children (30–36 percent). The prevalence of fever is higher among rural children, children in the North Bihar Plain region, children of less educated mothers, and children from lower standard of living households. In general, the prevalence of fever does not vary widely or in any predictable direction with most of the remaining demographic and socioeconomic characteristics. As with acute respiratory infection, fever tends to affect young children irrespective of their demographic and socioeconomic background.

Diarrhoea

Diarrhoea is the second most important killer of children under age five worldwide, following acute respiratory infection. Deaths from acute diarrhoea are most often caused by dehydration due to loss of water and electrolytes. Nearly all dehydration-related deaths can be prevented by

prompt administration of rehydration solutions. Because deaths from diarrhoea are a significant proportion of all child deaths, the Government of India has launched the Oral Rehydration Therapy Programme as one of its priority activities for child survival. One major goal of this programme is to increase awareness among mothers and communities about the causes and treatment of diarrhoea. Oral rehydration salt (ORS) packets are made widely available and mothers are taught how to use them. NFHS-2 asked mothers of children born during the past three years a series of questions about episodes of diarrhoea suffered by their children in the two weeks before the survey, including questions on feeding practices during diarrhoea and treatment of diarrhoea, and about their knowledge and use of ORS.

Table 6.11 shows that 18 percent of children under age three suffered from diarrhoea in the two-week period before the interview. There are seasonal variations in the prevalence of diarrhoea, however, so that the percentages shown in Table 6.11 cannot be assumed to reflect the situation throughout the year.

Among children age 1–35 months, those in the middle age groups (6–23 months old) were more likely to have suffered from diarrhoea than either younger (0–5 months old) or older (24–35 months old) children. The prevalence of diarrhoea was about the same among boys (17 percent) and girls (18 percent). Differentials by birth order, place of residence, mother's education, religion, and caste/tribe membership were small with one exception: Children whose mothers have at least a high school education were less likely to suffer from diarrhoea than were children of mothers in other education categories. Children in the South Bihar Plain region were less likely to suffer from diarrhoea than were children in the other two regions of Bihar. As expected, children in households with a high standard of living were less likely than other children to have suffered from diarrhoea. Also consistent with expectations, diarrhoea was somewhat less common among children living in households that use piped water for drinking (13 percent) than among children in households that use hand pumps (18 percent) or wells (19 percent) for drinking water.

About 16 percent of children who suffered from diarrhoea in Bihar during the two weeks preceding NFHS-2 suffered from diarrhoea with blood, a symptom of dysentery. Children under age six months had a much lower prevalence of diarrhoea with blood (0.8 percent) than did older children (3–4 percent). Children living in urban areas, children of birth order four or higher, and Muslim children all have slightly elevated risks of bloody diarrhoea. Unexpectedly, the prevalence of bloody diarrhoea is noticeably higher among children of mothers who have completed middle school but not any higher level of education and among children living in households that purify water by boiling or straining with a cloth. This may be due to small numbers of cases in these categories.

Table 6.12 shows that 38 percent of mothers with births during the three years preceding the survey know about ORS packets. The knowledge of ORS packets among mothers has not improved much in Bihar since NFHS-1, when 37 percent of mothers with births during the three years preceding the survey had reported knowledge of ORS packets. Knowledge of ORS packets is highest for mothers age 20–24. As expected, knowledge is considerably higher among urban mothers than among rural mothers, and higher among literate mothers than among illiterate mothers. Knowledge is slightly higher in the Jharkhand region than in the other two regions. Knowledge of ORS is about the same among Hindu mothers and Muslim mothers. Knowledge of ORS packets is much lower among mothers who are not regularly exposed to any mass media than among mothers who are regularly exposed to some media. By caste/tribe, knowledge ranges

Table 6.12 Knowledge of diarrhoea care

Among mothers with births during the three years preceding the survey, percentage who know about oral rehydration salt (ORS) packets, percent distribution by quantity to be given to drink during diarrhoea, and percentage who know two or more signs of diarrhoea that indicate the need for medical treatment by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who know about ORS packets	Reported quantity to be given to drink					Percentage who know two or more signs for medical treatment of diarrhoea[1]	Number of mothers
		Less	Same	More	Don't know/ missing	Total percent		
Age								
15–19	34.8	38.7	25.0	20.6	15.8	100.0	49.9	338
20–24	42.1	30.8	25.5	30.6	13.2	100.0	50.3	924
25–29	35.1	31.7	25.4	27.1	15.8	100.0	52.5	765
30–34	33.7	31.1	22.8	29.6	16.5	100.0	46.8	385
35–49	37.1	31.2	22.5	24.4	21.8	100.0	40.9	225
Residence								
Urban	63.1	28.7	26.4	36.0	8.8	100.0	54.1	227
Rural	35.1	32.4	24.6	26.9	16.1	100.0	49.2	2,411
Region								
North Bihar Plain	35.5	37.6	23.8	24.1	14.5	100.0	52.9	1,229
South Bihar Plain	37.9	24.9	22.3	32.2	20.6	100.0	46.3	869
Jharkhand	41.4	31.2	30.8	28.3	9.7	100.0	47.2	539
Education								
Illiterate	30.2	34.6	24.7	23.3	17.4	100.0	48.3	2,036
Literate, < middle school complete	50.9	29.7	18.7	40.2	11.5	100.0	50.5	253
Middle school complete	58.1	20.0	33.2	35.5	11.3	100.0	50.8	110
High school complete and above	75.6	19.0	27.7	48.2	5.0	100.0	58.6	239
Religion								
Hindu	37.6	30.9	25.1	28.1	16.0	100.0	50.0	2,126
Muslim	36.7	37.5	22.0	26.2	14.3	100.0	47.5	479
Caste/tribe								
Scheduled caste	30.0	34.3	24.3	23.2	18.3	100.0	46.9	594
Scheduled tribe	25.5	33.5	32.4	19.6	14.5	100.0	50.0	184
Other backward class	38.0	32.6	24.3	28.0	15.1	100.0	50.1	1,386
Other	50.1	27.6	23.6	35.3	13.5	100.0	51.1	474
Exposure to media								
Exposed to any media	60.5	27.8	23.6	38.8	9.8	100.0	51.9	678
Watches television weekly	64.9	25.9	25.6	40.5	8.0	100.0	53.5	379
Listens to radio weekly	61.0	28.2	24.4	37.6	9.8	100.0	53.1	530
Visits cinema/theatre monthly	62.3	27.3	29.2	37.0	6.5	100.0	48.6	107
Reads newspaper/magazine weekly	71.6	15.8	28.4	49.5	6.4	100.0	53.8	218
Not regularly exposed to any media	29.5	33.6	25.1	23.8	17.5	100.0	48.8	1,960
Total	37.5	32.1	24.7	27.6	15.5	100.0	49.6	2,638

Note: Total includes 17 and 15 women belonging to Christian and 'other' religions, respectively, who are not shown separately.
[1]Percentage who know two or more signs of illness that indicate that a child should be taken to a health facility or health worker

from a low of 26 percent among scheduled-tribe mothers to a high of 50 percent among mothers who do not belong to a scheduled caste, scheduled tribe, or other backward class. Mothers belonging to scheduled tribes are less likely to know about ORS than mothers with any other background characteristics.

In order to assess mothers' knowledge of children's need for extra fluids during episodes of diarrhoea, all mothers of children born in the past three years were asked: 'When a child is sick with diarrhoea, should he/she be given less to drink than usual, about the same, or more than usual?' Table 6.12 shows the response of mothers to this question by selected background characteristics. In Bihar, only 28 percent of mothers report that children should be given more to drink than usual during an episode of diarrhoea and, contrary to the standard recommendation, 32 percent report that children should be given less to drink. This suggests that mothers in Bihar need much more education in the proper management of diarrhoea. The proportion reporting correctly that children with diarrhoea should be given more to drink is particularly low among rural mothers, mothers in the North Bihar Plain region, illiterate mothers, mothers belonging to a scheduled tribe or scheduled caste, and mothers not regularly exposed to any mass media. Mothers age 15–19 and 35–49 are also less likely to know that children with diarrhoea should be given extra fluids when ill with diarrhoea than are mothers age 20–34.

To assess whether mothers are aware of one or more signs associated with diarrhoea which suggest the need for medical treatment, mothers were also asked: 'When a child is sick with diarrhoea, what signs of illness would tell you that he or she should be taken to a health facility or health worker?' All answers given by the respondent were recorded. The signs warranting medical treatment include repeated watery stools, repeated vomiting, blood in the stools, fever, marked thirst, not eating or not drinking well, getting sicker or very sick, and not getting better. Table 6.12 shows that 50 percent of women were able to name two or more signs of diarrhoea that indicate that a child with diarrhoea should be given medical treatment. Knowledge of danger signs of diarrhoea does not vary much by any of the demographic or socioeconomic background characteristics included in Table 6.12. Women age 35–49 have noticeably lower knowledge of two or more signs of diarrhoea requiring medical treatment than women age 15–34. Education level has some positive association with knowledge of two or more danger signs of diarrhoea, but exposure to mass media has virtually no effect. These findings suggest a need for further educating mothers with regard to children's diarrhoea so that they are better able to recognize the signs of diarrhoea for which a health provider should be consulted.

Table 6.13 shows the percentage of children under age three who had diarrhoea during the two weeks preceding NFHS-2 for whom advice or treatment was sought from a health facility or health provider, the percentage who received various types of oral rehydration therapy (ORT), and the percentage who received other types of treatment, by selected background characteristics. Medical advice or treatment was sought for 50 percent of children in Bihar who suffered from diarrhoea during the two weeks preceding the survey. Thirty-nine percent of children with diarrhoea did not receive any treatment at all. Children in the Jharkhand region were much less likely to receive medical advice or treatment when sick with diarrhoea than children in the other two regions. Urban children and scheduled-tribe children were also much less likely to receive medical advice or treatment than other children, but these figures are based on small numbers of cases and should be viewed with caution. The likelihood of seeking medical advice or treatment does not vary much by other demographic or socioeconomic background characteristics.

Table 6.13 Treatment of diarrhoea

Among children under age 3 who had diarrhoea during the two weeks preceding the survey, percentage taken to a health facility or provider, percentage who received various types of oral rehydration therapy (ORT), and percentage who received other treatments by selected background characteristics, Bihar, 1998–99

Background characteristic	Taken to a health facility or provider	Oral rehydration					Other treatment				No treatment	Number of children with diarrhoea
		Oral rehydration salt (ORS) packets	Gruel	Homemade sugar-salt-water solution	Increased fluids	ORT not given	Pill or syrup	Injection	Intravenous (IV/drip/bottle)	Home remedy/herbal medicine		
Age of child												
1–11 months	43.5	10.0	7.6	2.4	18.0	73.6	35.2	20.9	8.1	4.9	48.4	169
12–23 months	54.0	18.4	20.8	0.5	27.1	49.9	45.8	21.8	3.4	2.8	32.8	184
24–35 months	54.1	18.3	22.0	4.0	31.2	52.5	47.4	29.3	7.1	5.5	34.5	125
Sex of child												
Male	49.8	16.8	18.1	2.5	22.6	58.8	41.0	20.2	5.5	3.5	39.6	234
Female	50.7	14.1	14.9	1.7	27.3	59.1	43.8	26.5	6.6	4.9	38.0	242
Residence												
Urban	(38.9)	(28.1)	(19.5)	(2.6)	(27.2)	(50.1)	(33.0)	(14.0)	(2.8)	(2.8)	(44.5)	38
Rural	51.3	14.3	16.2	2.0	24.8	59.7	43.3	24.2	6.3	4.3	38.3	439
Region												
North Bihar Plain	56.7	14.0	10.4	2.8	20.3	68.5	54.6	30.8	6.3	3.6	35.0	240
South Bihar Plain	54.2	13.3	23.3	1.8	28.6	51.6	41.4	27.6	8.9	3.5	36.0	117
Jharkhand	33.5	20.4	22.1	0.9	30.8	47.0	18.9	4.4	2.6	6.2	49.2	119
Mother's education												
Illiterate	50.5	13.8	15.3	2.6	24.5	60.9	42.4	23.6	6.8	4.8	38.6	378
Literate, < middle school complete	(50.3)	(21.7)	(13.7)	(0.0)	(27.1)	(51.1)	(40.8)	(28.0)	(2.3)	(2.3)	(38.8)	45
High school complete and above	(47.2)	(20.2)	(26.7)	(0.0)	(36.6)	(43.0)	(46.5)	(23.8)	(6.8)	(0.0)	(39.9)	31
Religion												
Hindu	49.8	16.5	16.5	1.8	22.5	60.0	41.3	22.5	6.4	4.6	39.9	372
Muslim	54.4	12.7	17.8	3.3	33.6	54.5	49.7	29.1	5.3	3.2	30.0	96
Caste/tribe												
Scheduled caste	49.5	12.5	15.1	1.5	19.6	62.3	40.2	20.7	4.0	1.6	41.3	125
Scheduled tribe	(18.7)	(12.9)	(15.3)	(3.2)	(31.6)	(52.7)	(8.7)	(5.7)	(3.0)	(9.4)	(60.1)	34
Other backward class	54.6	16.0	15.7	1.6	24.5	60.1	47.1	25.5	6.6	5.0	37.1	235
Other	52.3	19.3	21.2	3.8	31.8	53.4	46.6	29.1	8.5	3.8	30.8	83
Standard of living index												
Low	47.0	11.1	14.6	2.5	21.0	65.2	40.2	21.6	5.2	3.6	39.7	277
Medium	54.5	21.1	18.2	1.7	31.7	50.0	46.5	26.4	7.3	5.3	36.5	170
High	(54.0)	(24.9)	(25.9)	(0.0)	(25.2)	(49.1)	(42.4)	(24.6)	(7.4)	(3.8)	(39.1)	28
Total	50.3	15.4	16.5	2.1	25.0	59.0	42.4	23.4	6.0	4.2	38.8	477

Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey. Total includes 23 children whose mother's education is middle school complete, 3 and 5 children belonging to Christian and 'other' religions, respectively, and 2 children with missing information on the standard of living index, who are not shown separately.
( ) Based on 25–49 unweighted cases

Fifteen percent of the children age 1–35 months who suffered from diarrhoea during the two weeks preceding the survey were treated with a solution made from ORS packets. This is up from 12 percent in NFHS-1, indicating a slight improvement in the use of ORS packets in Bihar for the treatment of childhood diarrhoea.

The proportion of children who did not receive any of the various types of oral rehydration therapy (ORT) when sick with diarrhoea declined from 70 percent in NFHS-1 to 59 percent in NFHS-2, again suggesting improvements in the management of childhood diarrhoea in the state. Only 25 percent received increased fluids when sick with diarrhoea, and only 17 percent received gruel.

The use of antibiotics and other antidiarrhoeal drugs is not generally recommended for the treatment of childhood diarrhoea. Yet, 42 percent of children who had diarrhoea in the two weeks before NFHS-2 were treated with pills or syrup, and 23 percent received an injection. These figures indicate poor knowledge about the proper treatment of diarrhoea not only among mothers but also among health-care providers. They underscore the need for informational programmes for mothers and supplemental training for health-care providers that emphasizes the importance of ORT, increased fluid intake, and continued feeding during bouts of childhood diarrhoea and discouraging the use of drugs.

Children less than one-year old, children living in rural areas, children in the North Bihar Plain region, children of illiterate mothers, Hindu children, children belonging to a scheduled caste or other backward class, and children from low standard of living households are less likely than other children to receive any of the various types of oral rehydration therapy. The use of unnecessary drugs or injections is substantially higher for rural children than for urban children, in the North Bihar Plain and South Bihar Plain regions than in the Jharkhand region, for Muslim children than for Hindu children, and for children whose mothers do not belong to a scheduled caste, scheduled tribe, or other backward class. The use of drugs or injections is lowest among scheduled-tribe children.

Table 6.14 shows the percent distribution of children who were treated with ORS for diarrhoea in the two weeks before NFHS-2 by source of the ORS packets. Only 74 children were treated with ORS packets in the Bihar sample, so the results in this table should be interpreted with caution. For 18 percent of children who were treated with ORS, the packets were obtained from public-sector sources, for 28 percent the packets were obtained from private-sector medical sources, and for the remaining 54 percent the packets were obtained from other sources. Among the public-sector sources, ORS packets were most often obtained from government or municipal hospitals, followed by sub-centres. Among private-sector sources, ORS packets were most often obtained from a private doctor, followed by a private hospital or clinic or a pharmacy or drugstore. The pharmacy or drugstore category, listed under private-sector sources, accounts for 4 percent of all cases. If the pharmacy/drugstore category is added to the shop category, the proportion purchasing ORS packets from shops, pharmacies, or drugstores becomes 42 percent.

Table 6.14 Source of ORS packets

Among children under age 3 who were treated with a solution made from oral rehydration salt (ORS) packets for diarrhoea in the two weeks preceding the survey, percent distribution of children by source of ORS packets, Bihar, 1998–99

Source	Percent
Public medical sector	18.2
Government/municipal hospital	10.8
UHC/UHP/UFWC	1.5
Sub-centre	4.4
Other public medical sector	1.5
Private medical sector	28.1
Private hospital/clinic	5.5
Private doctor	14.2
Private paramedic	1.3
Pharmacy/drugstore	4.3
Other private medical sector	2.8
Other source	53.7
Shop	38.1
Husband	15.6
Total percent	100.0
Number of children treated with ORS	74

Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey. Table excludes children with missing information on source of ORS packets.
UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre

6.7 HIV/AIDS

Acquired Immune Deficiency Syndrome (AIDS) is an illness caused by the Human Immunodeficiency Virus (HIV), which weakens the immune system and leads to death through secondary infections such as tuberculosis or pneumonia. The virus is generally transmitted through sexual contact, through the placenta of HIV-infected women to their unborn children, or through contact with contaminated needles (injections) or blood. HIV and AIDS prevalence in India have been on the rise for more than a decade and have reached alarming proportions in recent years. The Government of India established a National AIDS Control Organization (NACO) under the Ministry of Health and Family Welfare in 1989 to deal with the epidemic. Since then there have been various efforts to prevent HIV transmission, such as public health education through the media and the activities of many nongovernmental organizations (NGOs).

NFHS-2 included a set of questions on knowledge of AIDS and AIDS prevention. Ever-married women age 15–49 were first asked if they had ever heard of an illness called AIDS. Respondents who had heard of AIDS were asked further questions about their sources of information on AIDS, whether they believe that AIDS is preventable, and if so, what precautions, if any, a person can take to avoid infection.

Knowledge of AIDS

Table 6.15 shows the percentage of women who have heard about AIDS by background characteristics. Eighty-eight percent of women in Bihar have never heard of AIDS. NFHS-1 did not include AIDS-awareness questions for Bihar so it is not possible to assess any trend in AIDS awareness between NFHS-1 and NFHS-2.

Knowledge of AIDS varies little by women's age. Urban residence, education, and household standard of living have a strong positive association with AIDS knowledge. Forty-two percent of urban women in Bihar have heard about AIDS, compared with only 8 percent of rural women. Knowledge of AIDS increases from only 3 percent among illiterate women to 66 percent among women who have at least completed high school. Similarly, knowledge of AIDS increases from only 3 percent among women in households with a low standard of living to 52 percent among women in households with a high standard of living. Christian women are more likely to know about AIDS (30 percent) than other women (7–12 percent). Knowledge of AIDS is much lower among women belonging to a scheduled tribe, scheduled caste, or other backward class (4–10 percent) than among other women (26 percent). Exposure to mass media increases women's knowledge about AIDS substantially. Sixty-two percent of women who read a newspaper or magazine at least once a week know about AIDS compared with just 2 percent of women who are not regularly exposed to any mass media (newspapers, magazines, radio, television, cinema, or theatre).

Source of Knowledge About AIDS

As part of its AIDS prevention programme, the Government of India has been using mass media extensively, especially the electronic media, to create awareness among the general public about AIDS and its prevention. NFHS-2 asked women who had heard of AIDS about their sources of AIDS information. Table 6.15 shows the percentage of ever-married women who have heard about AIDS from specific sources by background characteristics. Television is the most important source of information about AIDS among ever-married women in Bihar. Eighty-three percent of women who have heard about AIDS report television as a source of their information about AIDS, followed by radio (55 percent), newspapers/magazines (22 percent), and cinema (14 percent). Only 1 percent of women report that they received information about AIDS from a health worker.

Television is the most important source of information about AIDS in both rural and urban areas, followed by the radio. Urban women are more likely than rural women to have learned about AIDS from television, cinema, or a newspaper or magazine. On the other hand, urban women are less likely than rural women to have learned about AIDS from the radio or from friends or relatives. More-educated women are more likely than less-educated women to have learned about AIDS from the radio, television, newspaper or magazine, cinema, or a poster or hoarding, but are less likely to have learned about AIDS from a friend or relative. Hindu women are more likely than Muslim women to have learned about AIDS from the radio, from a newspaper or magazine, or from a friend or relative, but are less likely to have learned about AIDS from television.

Table 6.15 Source of knowledge about AIDS

Percentage of ever-married women who have heard about AIDS and among women who have heard about AIDS, percentage who received information from specific sources by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who have heard about AIDS	Number of women	Among those who have heard about AIDS, percentage who received information from:										Number of women who have heard about AIDS
			Radio	Television	Cinema	Newspaper/ magazine	Poster/ hoarding	Health worker	Adult education programme	Friend/ relative	School teacher	Other source	
Age													
15–24	11.4	2,244	57.5	80.8	12.1	18.7	2.1	0.8	0.0	16.8	0.4	1.7	256
25–34	13.3	2,507	58.2	83.6	17.8	26.5	4.0	1.2	0.3	16.6	1.6	4.2	334
35–49	10.2	2,274	48.9	84.3	9.8	19.5	2.2	1.8	0.9	15.8	0.9	3.5	231
Residence													
Urban	42.0	718	51.1	93.7	17.8	30.1	3.9	0.7	0.4	11.2	0.3	2.4	301
Rural	8.2	6,306	57.8	76.7	11.4	17.4	2.3	1.6	0.4	19.5	1.5	3.7	520
Region													
North Bihar Plain	9.6	3,133	63.5	84.2	11.8	21.6	3.8	1.0	0.3	18.1	0.0	4.8	301
South Bihar Plain	11.8	2,199	52.1	81.1	11.7	16.6	1.7	2.0	0.8	16.5	2.5	2.5	260
Jharkhand	15.4	1,692	49.2	83.3	18.0	28.1	3.0	0.8	0.0	14.4	0.8	2.1	260
Education													
Illiterate	2.9	5,383	47.9	71.1	8.2	1.3	0.6	2.1	0.0	19.5	2.8	3.2	155
Literate, < middle school complete	21.6	779	50.6	80.0	8.5	10.5	1.9	0.6	0.0	15.9	0.0	1.3	168
Middle school complete	40.5	267	53.6	82.8	15.2	22.0	0.0	0.0	0.0	13.2	0.0	1.8	108
High school complete and above	65.6	595	60.9	88.9	17.8	35.4	5.0	1.5	0.8	16.3	1.1	4.4	390
Religion													
Hindu	12.4	5,872	56.1	82.5	13.7	22.2	3.1	1.4	0.3	17.3	1.2	3.1	726
Muslim	6.9	1,038	46.6	86.4	14.7	16.0	0.0	0.0	1.5	8.4	0.0	1.4	72
Christian	30.4	59	*	*	*	*	*	*	*	*	*	*	18
Other	9.5	55	*	*	*	*	*	*	*	*	*	*	5
Caste/tribe													
Scheduled caste	7.0	1,452	41.2	77.7	9.7	11.4	6.2	0.0	0.0	18.5	2.2	3.1	102
Scheduled tribe	4.3	582	*	*	*	*	*	*	*	*	*	*	25
Other backward class	9.5	3,642	53.7	81.1	13.9	19.7	2.4	0.9	0.6	16.4	1.9	3.0	345
Other	25.9	1,348	59.8	87.5	14.8	26.9	2.6	1.5	0.3	15.7	0.0	2.5	349

Contd…

Table 6.15 Source of knowledge about AIDS (contd.)

Percentage of ever-married women who have heard about AIDS and among women who have heard about AIDS, percentage who received information from specific sources by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who have heard about AIDS	Number of women	Among those who have heard about AIDS, percentage who received information from:										Number of women who have heard about AIDS
			Radio	Television	Cinema	Newspaper/ magazine	Poster/ hoarding	Health worker	Adult education programme	Friend/ relative	School teacher	Other source	
Standard of living index													
Low	2.5	3,709	39.7	57.5	4.5	6.5	1.0	1.2	0.0	25.0	2.3	4.4	94
Medium	13.7	2,595	56.5	77.7	14.9	15.9	1.7	1.7	0.3	15.9	1.2	2.6	357
High	51.8	712	58.2	94.3	14.8	32.1	4.5	0.9	0.6	14.9	0.6	3.5	369
Exposure to mass media													
Exposed to any media	36.8	1,915	57.3	88.3	15.1	24.8	3.2	1.0	0.4	13.1	0.8	3.2	705
Listens to radio weekly	36.5	1,428	71.0	87.5	15.3	27.0	2.7	0.9	0.6	12.3	0.8	3.4	521
Watches television weekly	49.2	1,177	53.3	97.1	16.2	24.4	3.4	1.0	0.5	11.8	0.8	3.1	579
Goes to cinema/theatre monthly	52.1	309	63.9	95.7	33.3	29.2	3.1	0.0	0.7	5.6	0.7	3.0	161
Reads newspaper/magazine weekly	62.1	652	60.4	89.9	18.7	35.7	4.3	1.0	0.7	13.2	1.1	3.5	405
Not regularly exposed to any media	2.3	5,109	43.5	50.4	5.5	5.4	0.8	2.7	0.0	36.5	2.8	3.5	116
Total	11.7	7,024	55.4	82.9	13.8	22.1	2.9	1.2	0.4	16.4	1.1	3.2	821

Note: Total includes a small number women with missing information on the standard of living index, who are not shown separately.
*Percentage not shown; based on fewer than 25 unweighted cases

Women in households with a high standard of living are more likely than other women to have learned about AIDS from the mass media, but are less likely to have learned about AIDS from a friend or relative. Not surprisingly, a considerable proportion (37 percent) of women who are not regularly exposed to any media have learned about AIDS from a friend or relative, but even among this group 50 percent have heard about AIDS from television and 44 percent from the radio.

Knowledge of Ways to Avoid AIDS

Respondents who had heard of AIDS were asked if a person could do anything to avoid becoming infected. Those who reported that something could be done were asked what a person could do to avoid AIDS. Table 6.16 shows the percentage of ever-married women who know of no way to avoid AIDS and the percentage who report that AIDS can be avoided in specific ways, by selected background characteristics.

Among women who have heard about AIDS, 50 percent do not know any way to avoid infection. As expected, the percentage who do not know any way to avoid becoming infected with AIDS decreases sharply with increasing levels of education and household standard of living. This percentage is higher among Muslim women (59 percent) than among Hindu women (49 percent). Women belonging to scheduled castes and other backward classes are less likely to know any way to avoid AIDS than other women. The percentage who do not know any way to avoid becoming infected with AIDS is substantially higher among women not regularly exposed to mass media than among other women.

Among women who report that something can be done to prevent AIDS, 'having only one sex partner' (26 percent) and 'using condoms' (24 percent) are the most commonly mentioned ways of avoiding AIDS infection. 'Abstaining from sex', 'avoiding injections/using clean needles', and 'avoiding sex with commercial sex workers' are also mentioned as ways to avoid AIDS by substantial proportions of women (19 percent, 17 percent, and 12 percent, respectively). Only 5 percent mention 'avoiding intravenous drug use' and only 3 percent mention 'avoiding sex with homosexuals' as ways to avoid AIDS. The percentage reporting 'abstaining from sex', 'using condoms', or 'having only one sex partner' are higher among urban women than among rural women. The level of education and the household standard of living are strongly and positively associated with women mentioning each of these ways of avoiding AIDS. The use of condoms as a way of avoiding AIDS is mentioned most often by women who have at least completed high school, women from households with a high standard of living, and women who go to the cinema or theatre regularly.

Table 6.16 Knowledge about avoidance of AIDS

Among ever-married women who have heard about AIDS, percentage who believe AIDS can be avoided in specific ways by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who believe AIDS can be avoided by:									Knows no way to avoid AIDS	Number of women
	Abstaining from sex	Using condoms	Having only one sex partner	Avoiding sex with commercial sex workers	Avoiding sex with homo-sexuals	Avoiding blood transfusions	Avoiding injections/ using clean needles	Avoiding IV drug use	Other ways		
Age											
15–24	16.4	18.8	25.4	9.7	2.0	9.3	13.0	4.6	12.0	51.6	256
25–34	20.1	27.0	28.3	13.7	3.6	10.6	20.4	5.4	13.9	48.6	334
35–49	19.4	24.2	22.2	11.3	4.0	9.1	15.6	3.0	9.7	48.7	231
Residence											
Urban	20.8	27.2	28.1	9.3	2.7	8.5	17.4	3.8	11.9	47.0	301
Rural	17.6	21.6	24.3	13.2	3.5	10.5	16.4	4.9	12.2	51.0	520
Region											
North Bihar Plain	19.8	28.7	29.6	16.2	4.2	8.9	18.8	6.0	12.1	45.2	301
South Bihar Plain	20.9	24.8	22.1	14.4	4.1	9.4	12.8	1.9	7.0	55.6	260
Jharkhand	15.6	16.8	24.6	4.1	1.2	11.2	18.4	5.2	17.2	48.6	260
Education											
Illiterate	17.2	9.0	12.8	9.0	5.3	10.9	14.5	4.4	11.1	61.2	155
Literate, < middle school complete	12.0	19.4	13.4	11.5	1.7	7.4	11.5	1.2	6.9	64.1	168
Middle school complete	19.6	14.8	28.4	10.0	3.6	8.7	17.8	6.6	13.1	55.9	108
High school complete and above	22.1	33.8	35.3	13.5	2.9	10.7	19.6	5.3	14.5	36.9	390
Religion											
Hindu	18.4	24.1	26.4	11.6	3.0	10.1	16.3	4.0	12.4	49.4	726
Muslim	15.8	20.1	15.6	15.7	4.4	5.6	18.3	8.4	7.2	58.8	72
Caste/tribe											
Scheduled caste	19.8	18.6	20.4	8.8	2.0	8.5	13.8	1.1	11.3	55.4	102
Other backward class	18.4	22.9	23.0	11.3	2.6	9.3	16.0	6.0	12.1	52.2	345
Other[1]	18.4	26.8	31.4	13.4	3.7	9.8	18.6	4.3	12.3	45.1	349

Contd…

Table 6.16 Knowledge about avoidance of AIDS (contd.)

Among ever-married women who have heard about AIDS, the percentage who believe AIDS can be avoided in specific ways by selected background characteristics, Bihar, 1998–99

Background characteristic	Percentage who believe AIDS can be avoided by:									Knows no way to avoid AIDS	Number of women
	Abstaining from sex	Using condoms	Having only one sex partner	Avoiding sex with commercial sex workers	Avoiding sex with homo-sexuals	Avoiding blood transfusions	Avoiding injections/ using clean needles	Avoiding IV drug use	Other ways		
Standard of living index											
Low	13.1	14.0	13.1	8.8	2.3	5.6	13.8	0.0	5.5	63.9	94
Medium	18.7	19.3	21.6	10.4	4.2	10.1	17.7	4.7	13.1	52.6	357
High	20.4	30.5	33.0	13.9	2.5	10.6	16.7	5.4	12.9	42.7	369
Exposure to mass media											
Exposed to any media	18.6	25.6	27.8	11.9	2.9	10.1	17.6	5.1	12.9	47.1	705
Listens to radio weekly	19.1	26.0	29.1	11.8	2.6	10.4	16.9	4.3	11.6	47.1	521
Watches television weekly	19.4	27.6	28.0	11.9	2.6	10.0	18.4	5.0	13.3	46.3	579
Goes to cinema/theatre monthly	30.4	42.8	37.8	15.8	4.9	12.6	17.7	7.3	15.5	32.7	161
Reads newspaper/magazine weekly	20.0	32.7	33.2	14.8	3.5	11.9	18.9	4.6	13.2	38.8	405
Not regularly exposed to any media	19.8	12.1	12.8	11.1	5.3	8.1	11.4	0.9	7.1	64.3	116
Total	18.8	23.7	25.7	11.8	3.2	9.8	16.8	4.5	12.1	49.6	821

Note: Total includes18 and 5 women belonging to Christian and 'other' religions, respectively, 25 scheduled-tribe women, and 2 women with missing information on the standard of living index, who are not shown separately.
[1]Children not belonging to a scheduled caste, a scheduled tribe, or an other backward class