

NFHS-2

PN-ACN-250

West Bengal

**National Family
Health Survey
India
1998-99**



International Institute for Population Sciences



MEASURE DHS+
ORC MACRO

World Summit for Children Indicators: West Bengal, 1998-99

BASIC INDICATORS

Childhood mortality	Infant mortality rate	49 per 1,000
	Under-five mortality rate	68 per 1,000
Childhood malnutrition	Percent stunted (children 0-35 months)	41.5
	Percent wasted (children 0-35 months)	13.6
	Percent underweight (children 0-35 months)	48.7
Clean water supply	Percent of households within 15 minutes of a safe water supply ¹	72.3
Sanitary excreta disposal	Percent of households with flush toilet	33.8
Basic education	Percent of women age 15-49 with completed primary education	41.4
	Percent of men age 15-49 with completed primary education	59.5
	Percent of girls age 6-12 attending school	80.0
	Percent of boys age 6-12 attending school	83.2
	Percent of women age 15-49 who are literate	57.2
Children in especially difficult situations	Percent of children age 0-14 who live in single adult households	2.1

SUPPORTING INDICATORS

Birth spacing	Percent of births within 24 months of a previous birth	23.0
Safe motherhood	Percent of births with medical antenatal care	89.5
	Percent of births with antenatal care in first trimester	35.1
	Percent of births with medical assistance at delivery	44.2
	Percent of births in a medical facility	40.1
	Percent of births at high risk	43.4
Family planning	Contraceptive prevalence rate (any method, currently married women)	66.6
	Percent of currently married women with an unmet need for family planning	11.8
	Percent of currently married women with an unmet need for family planning to avoid a high-risk birth	7.8
Maternal nutrition	Percent of women with low body mass index (BMI)	43.7
Low birth weight	Percent of births with low birth weight (of those reporting a numeric weight)	25.5
Breastfeeding	Percent of children under 4 months who are exclusively breastfed	48.8
Iodized salt intake	Percent of households that use iodized salt (at least 15 ppm)	61.7
Vaccinations	Percent of children whose mothers received tetanus toxoid vaccinations during pregnancy	91.4
	Percent of children 12-23 months with measles vaccination	52.4
	Percent of children 12-23 months fully vaccinated	43.8
Diarrhoea control	Percent of children with diarrhoea in the preceding 2 weeks who received ORS, sugar-salt-water solution, or gruel	64.8
Acute respiratory infection	Percent of children with acute respiratory infection in the preceding 2 weeks seen by medical personnel	52.4

¹Water from pipes, hand pump, covered well, or tanker truck

NATIONAL FAMILY HEALTH SURVEY (NFHS-2)

INDIA

1998-99

WEST BENGAL

**International Institute for Population Sciences
Mumbai, India**

**MEASURE *DHS+*, ORC MACRO
Calverton, Maryland, USA**

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NFHS-2 data sets for this state can be obtained from the website listed above

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PREFACE

The success of the first National Family Health Survey, conducted in 1992–93, in creating an important demographic and health database in India has paved the way for repeating the survey. The second National Family Health Survey (NFHS-2), undertaken in 1998–99, is designed to strengthen the database further and facilitate implementation and monitoring of population and health programmes in the country. As in the earlier survey, the principal objective of NFHS-2 is to provide state and national estimates of fertility, the practice of family planning, infant and child mortality, maternal and child health, and the utilization of health services provided to mothers and children. In addition, the survey provides indicators of the quality of health and family welfare services, women's reproductive health problems, and domestic violence, and includes information on the status of women, education, and the standard of living.

Another feature of NFHS-2 is measurement of the nutritional status of women. Height and weight measurements, which were available only for young children in the earlier survey, were extended to cover all eligible women in NFHS-2. In addition, ever-married women and their children below age three had their blood tested for the level of haemoglobin, using the HemoCue instrument. Through these blood tests, for the first time the survey provides information on the prevalence of anaemia throughout India. In two metropolitan cities, Delhi and Mumbai, a further test was done for children below age three to measure the lead content in their blood. The survey also measured the extent to which households in India use cooking salt that has been fortified with iodine.

The NFHS-2 survey was funded by the United States Agency for International Development (USAID) through ORC Macro, USA. UNICEF provided additional financial support for the nutritional components of the survey. The survey is the outcome of the collaborative efforts of many organizations. The International Institute for Population Sciences (IIPS) was designated as the nodal agency for this project by the Ministry of Health and Family Welfare, Government of India, New Delhi. Thirteen reputed field organizations (FOs) in India, including five Population Research Centres, were selected to carry out the houselisting operation and data collection for NFHS-2. The field organization for West Bengal was Economic Information Technology in Kolkata. ORC Macro, Calverton, Maryland, USA, and the East-West Center, Honolulu, Hawaii, USA, provided technical assistance for all survey operations.

The NFHS-2 survey covered a representative sample of about 90,000 eligible women age 15–49 from 26 states that comprise more than 99 percent of India's population. The data collection was carried out in two phases, starting in November 1998 and March 1999. The survey provides state-level estimates of demographic and health parameters as well as data on various socioeconomic and programmatic factors that are critical for bringing about desired changes in India's demographic and health situation. The survey provides urban and rural estimates for most states, regional estimates for five states (Bihar, Jammu and Kashmir, Madhya Pradesh, Rajasthan, and Uttar Pradesh), separate estimates for three metro cities (Chennai, Kolkata, and Mumbai), and estimates for slum areas in Mumbai.

The survey used uniform questionnaires, sample designs, and field procedures to facilitate comparability of the data and to achieve a high level of data quality. Preliminary reports with selected results were prepared earlier for each state and presented to policymakers and

programme administrators responsible for improving health and family welfare programmes in most states.

The final state reports are based on a standard tabulation plan developed at a workshop held in Kodaikanal on 15–17 January 1999. IIPS finalized the tabulation plan according to the recommendations of the NFHS-2 Technical Advisory Committee and produced the tables and figures for the final reports. In most states, the final state reports were written by representatives of the Population Research Centres, faculty members from IIPS, representatives from ORC Macro and the East-West Center, and reputed researchers from other organizations in the field of population and health in India. Each report has been reviewed by an Indian expert in the field of population sciences.

We are happy to present the final NFHS-2 state report for West Bengal, which was covered in the first phase of the survey. We hope that the report will provide helpful insights into the changes that are taking place in the state and will provide policymakers and programme managers with up-to-date estimates of indicators that can be used for effective management of health and family welfare programmes, with an emphasis on reproductive health dimensions. The report should also contribute to the knowledge of researchers and analysts in the fields of population, health, and nutrition.

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The second National Family Health Survey was successfully completed due to the efforts and involvement of numerous organizations and individuals at different stages of the survey. We would like to thank everyone who was involved in the survey and made it a success.

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Kamla Gupta
Parveen Nangia

FACT SHEET, WEST BENGAL

NATIONAL FAMILY HEALTH SURVEY, 1998-99

Sample Size

Households.....	4,725
Ever-married women age 15-49	4,408

Characteristics of Households

Percent with electricity.....	36.7
Percent within 15 minutes of safe water supply ¹	72.3
Percent with flush toilet	33.8
Percent with no toilet facility	54.9
Percent using govt. health facilities for sickness.....	24.2
Percent using iodized salt (at least 15 ppm)	61.7

Characteristics of Women²

Percent urban	23.8
Percent illiterate	50.0
Percent completed high school and above.....	10.6
Percent Hindu.....	74.5
Percent Muslim	22.9
Percent Buddhist/Neo-Buddhist.....	0.4
Percent regularly exposed to mass media.....	61.4
Percent working in the past 12 months.....	28.5

Status of Women²

Percent involved in decisions about own health.....	45.1
Percent with control over some money	51.4

Marriage

Percent never married among women age 15-19.....	63.1
Median age at marriage among women age 20-49	17.1

Fertility and Fertility Preferences

Total fertility rate (for the past 3 years).....	2.29
Mean number of children ever born to women 40-49	4.21
Median age at first birth among women age 20-49	19.4
Percent of births ³ of order 3 and above	36.5
Mean ideal number of children ⁴	2.4
Percent of women with 2 living children wanting another child.....	11.1

Current Contraceptive Use⁵

Any method.....	66.6
Any modern method.....	47.3
Pill.....	9.2
IUD	1.4
Condom.....	2.9
Female sterilization	32.0
Male sterilization.....	1.8
Any traditional method	18.5
Rhythm/safe period	8.7
Withdrawal.....	9.8
Other traditional or modern method.....	0.9

Unmet Need for Family Planning⁵

Percent with unmet need for family planning	11.8
Percent with unmet need for spacing.....	6.3

¹Water from pipes, hand pump, covered well, or tanker truck

²Ever-married women age 15-49

³For births in the past 3 years

⁴Excluding women giving non-numeric responses

⁵Among currently married women age 15-49

Quality of Family Planning Services⁶

Percent told about side effects of method.....	10.0
Percent who received follow-up services.....	31.4

Childhood Mortality

Infant mortality rate ⁷	48.7
Under-five mortality rate ⁷	67.6

Safe Motherhood and Women's Reproductive Health

Percent of births ⁸ within 24 months of previous birth.....	23.0
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Percent of births³ whose mothers received:

Antenatal check-up from a health professional	89.5
Antenatal check-up in first trimester	35.1
Two or more tetanus toxoid injections.....	82.4
Iron and folic acid tablets or syrup.....	71.6

Percent of births³ whose mothers were assisted at delivery by a:

Doctor	35.3
ANM/nurse/midwife/LHV	8.7
Traditional birth attendant.....	29.6

Percent⁵ reporting at least one reproductive health problem

45.3

Awareness of AIDS

Percent of women ² who have heard of AIDS.....	26.4
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Child Health

Percent of children age 0-3 months exclusively breastfed.....	48.8
Median duration of breastfeeding (months).....	≥ 36.0

Percent of children⁹ who received vaccinations:

BCG.....	76.5
DPT (3 doses)	58.3
Polio (3 doses)	61.7
Measles	52.4
All vaccinations	43.8

Percent of children¹⁰ with diarrhoea in the past

2 weeks who received oral rehydration salts (ORS)	40.5
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Percent of children¹⁰ with acute respiratory infection in the past 2 weeks taken to a health facility or provider

52.4

Nutrition

Percent of women with anaemia ¹¹	62.7
Percent of women with moderate/severe anaemia ¹¹	17.4
Percent of children age 6-35 months with anaemia ¹¹	78.3
Percent of children age 6-35 months with moderate/ severe anaemia ¹¹	51.4
Percent of children chronically undernourished (stunted) ¹²	41.5
Percent of children acutely undernourished (wasted) ¹²	13.6
Percent of children underweight ¹²	48.7

⁶For current users of modern methods

⁷For the 5 years preceding the survey (1994-98)

⁸For births in the past 5 years (excluding first births)

⁹Children age 12-23 months

¹⁰Children under 3 years

¹¹Anaemia-haemoglobin level < 11.0 grams/decilitre (g/dl) for children and pregnant women and < 12.0 g/dl for nonpregnant women. Moderate/severe anaemia-haemoglobin level < 10.0 g/dl.

¹²Stunting assessed by height-for-age, wasting assessed by weight-for-height, underweight assessed by weight-for-age

SUMMARY OF FINDINGS

The second National Family Health Survey (NFHS-2), conducted in 1998–99, provides information on fertility, mortality, family planning, and important aspects of health, nutrition, and health care. The International Institute for Population Sciences (IIPS) coordinated the survey, which collected information from a nationally representative sample of approximately 90,000 ever-married women age 15–49 from 26 states of India. These states comprise more than 99 percent of India's population.

IIPS also coordinated the first National Family Health Survey (NFHS-1) in 1992–93. Most of the types of information collected in NFHS-2 were also collected in the earlier survey, making it possible to identify trends over the intervening period of six years. In addition, the NFHS-2 questionnaire covered a number of new or expanded topics with important policy implications, such as reproductive health, women's autonomy, domestic violence, women's nutrition, anaemia, and salt iodization.

In West Bengal, NFHS-2 field staff collected information from 4,725 households between 1 December 1998 and 23 April 1999 and interviewed 4,408 eligible women in these households. In addition, the survey collected information on 1,316 children born to eligible women in the three years preceding the survey. One health investigator on each survey team measured the height and weight of eligible women and young children and took blood samples to assess the prevalence of anaemia.

Background Characteristics of the Survey Population

Three-quarters of the population in West Bengal lives in rural areas. The age distribution is typical of populations in which fertility has fallen recently; however, there are still higher proportions in the youngest age groups than in the oldest age groups. Thirty-four percent of the population is below age 15, and 5 percent is age 65 and above. The sex ratio is 963 females for every 1,000 males in rural areas and 912 females for every 1,000 males in urban areas, suggesting that more men than women have migrated to urban areas.

The survey provides a variety of demographic and socioeconomic background information. In the state as a whole, 98 percent of household heads are either Hindu (76 percent) or Muslim (22 percent). Muslims constitute a higher proportion of the population in rural areas (27 percent) than in urban areas (6 percent). In contrast, Hindus make up a larger proportion of the urban population (93 percent) than the rural population (70 percent). Twenty-three percent of household heads belong to scheduled castes, 7 percent belong to scheduled tribes, and 5 percent belong to other backward classes. Almost two-thirds of household heads do not belong to any of these groups.

Questions about housing conditions and the standard of living of household members indicate slight improvements since the time of NFHS-1. Thirty-seven percent of households in West Bengal have electricity and 25 percent have piped drinking water, compared with 33 percent and 18 percent, respectively, at the time of NFHS-1. Fifty-five percent of households do not have any toilet facility, compared with 60 percent in NFHS-1.

Seventy-six percent of males and 57 percent of females age six and above are literate. Literacy rates have remained virtually unchanged since NFHS-1. Seventy-nine percent of children age 6–14 currently attend school, an increase from 68 percent in NFHS-1. The proportion of children attending school has increased for all age groups, particularly for rural girls, but girls still lag behind boys in school attendance. Moreover, the disparity in school attendance by sex grows with increasing age of children. At age 6–10, 84 percent of boys and 82 percent of girls attend school, compared with 51 percent of boys and 37 percent of girls at age 15–17.

Women in West Bengal tend to marry at an early age. Thirty-six percent of women age 15–19 are already married. Less than 1 percent are married but *gauna* has yet to be performed. In rural areas, 43 percent of women age 15–19 have already married, compared with 17 percent of women age 15–19 in urban areas. Older women are more likely than younger women to have married at an early age: 36 percent of women who are now age 45–49 married before they were 15, compared with 10 percent of women age 15–19. Although this indicates that the proportion of women who marry young is declining rapidly, the majority of women in West Bengal still marry before reaching the legal minimum age of 18 years. On average, women are almost seven years younger than the men they marry.

As part of an increasing emphasis on gender issues in NFHS-2, the survey asked women about their participation in household decisionmaking. In West Bengal, 92 percent of women are involved in decisionmaking on at least one of four selected topics. A much lower proportion (45 percent) of women, however, are involved in making decisions about their own health care. Twenty-nine percent of women do work other than housework, and 89 percent of these women work for cash. Fifty-two percent of women who earn cash can decide independently how to spend the money that they earn. Fifty-one percent of working women report that their earnings constitute at least half of total family earnings, including 28 percent who report that the family is entirely dependent on their earnings.

Fertility and Family Planning

Fertility continues to decline in West Bengal. At current fertility levels, women will have an average of 2.3 children each throughout their childbearing years, one of the lowest fertility levels in India. The total fertility rate is down from 2.9 children per woman at the time of NFHS-1 and is approaching the replacement level of just over two children per woman.

Efforts to encourage the trend toward lower fertility might usefully focus on groups within the population that have higher fertility than average. In West Bengal, women living in rural areas, illiterate women, Muslim women, scheduled-caste and scheduled-tribe women, and women from households with a low standard of living have much higher fertility than other women. Fertility is slightly lower in Kolkata than in urban areas as a whole. One important feature of the fertility pattern in West Bengal is the high level of childbearing among young women. Among women age 25–49, the median age at first childbirth is 19 years, and women age 15–19 account for 23 percent of total fertility. Studies in India and elsewhere have shown that health and mortality risks increase when women give birth at young ages—both for the women themselves and for their children. Family planning programmes focusing on women in this age group could make a significant impact on maternal and child health and could also reduce overall fertility in the state.

The appropriate design of family planning programmes depends, to a large extent, on women's fertility preferences. Women may have large families because they want many children, or they may prefer small families but, for a variety of reasons, may have more children than they actually want. For 9 percent of births over the three years preceding NFHS-2, mothers report that they did not want the pregnancy at all, and for another 20 percent of births, mothers say that they would have preferred to delay the pregnancy. When asked about their preferred family size, 51 percent of women who already have three living children and more than one-fourth (27 percent) of women with four or more living children said that they consider the two-child family to be ideal. This gap between women's actual fertility experience and what they want or would consider ideal suggests a need for expanded or improved family welfare services to help women achieve their fertility goals. In West Bengal, 80 percent of women want at least one son and 76 percent want at least one daughter. A preference for sons is indicated by the fact that almost 21 percent want more sons than daughters but only 3 percent want more daughters than sons.

If women in West Bengal are not using family planning, it is not due to lack of knowledge. Knowledge of contraception is nearly universal: 99 percent of currently married women know at least one modern family planning method. Women are most familiar with female sterilization (98 percent), followed by the pill (93 percent), male sterilization (84 percent), the condom (79 percent), and the IUD (73 percent). Knowledge of modern spacing methods has increased by 21–26 percentage points since the time of NFHS-1, although use rates of these methods remain low.

Sixty-seven percent of married women are currently using some method of contraception, an increase from 58 percent at the time of NFHS-1, and higher than the NFHS-2 national level of 48 percent. Contraceptive prevalence is higher in urban areas (73 percent) than in rural areas (65 percent). Female sterilization is by far the most popular method: 32 percent of currently married women are sterilized, an increase from 27 percent at the time of NFHS-1. By contrast, use of male sterilization has declined in recent years. Only 2 percent of women in NFHS-2 report that their husbands are sterilized, which is lower than the NFHS-1 estimate of 4 percent. Overall, sterilization accounts for 51 percent of total contraceptive use. Use rates for the pill (9 percent), IUD (1 percent), and condom (3 percent) remain very low. Traditional methods are an important part of contraceptive method mix in West Bengal. Nineteen percent of women report that they are currently using a traditional method, mostly withdrawal or the rhythm method.

Contraceptive prevalence in West Bengal does not vary widely among socioeconomic groups. Muslim women and scheduled-tribe women are less likely than other women to use contraception. Rural women, illiterate women, and women with a low standard of living are also less likely than other women to use contraception. Women with no living children are much less likely to be currently using contraception than other population groups. Urban women, women who have at least completed middle school, women belonging to other backward classes and 'other' castes/tribes, and women from households with a high standard of living are all more likely than other women to use the three modern spacing methods—pills, IUDs, and condoms. Although Muslim women have a lower contraceptive prevalence than other women, they are more likely to use the three modern spacing methods.

Given the emphasis on sterilization, women tend to adopt family planning only after they have achieved their desired family size. As a result, contraceptive use can be expected to rise

steadily with age and with number of living children. In West Bengal, contraceptive use generally increases with age, peaking at 81 percent for women age 35–39, then declines thereafter. Use also goes up with the number of children, peaking at 78 percent for women with three living children. Son preference appears to have a considerable effect on contraceptive use. Women who have one or more sons are much more likely to use contraception than women who have the same number of children but have only daughters.

Six percent of currently married women are not using contraception but say that they want to wait at least two years before having another child. Another 6 percent are not using contraception although they do not want any more children. These women are described as having an 'unmet need' for family planning. The unmet need is highest for young women, who have a strong interest in spacing their births. These results underscore the need for strategies that provide spacing as well as terminal contraceptive methods in order to meet the changing needs of women over their lifecycle.

For many years, the Government of India has been using electronic and other mass media to promote family planning. Among the different types of media, radio and television have the broadest reach across all categories of women. Overall, 42 percent of ever-married women listen to the radio at least once a week and 41 percent watch television at least once a week. Nevertheless, more than one-third (39 percent) of women are not regularly exposed to television, radio, or other types of mass media. Fifty-seven percent of women saw or heard a family planning message in the media during the few months preceding the survey. Radio and television are the primary sources of these messages. Exposure to family planning messages is relatively low among disadvantaged socioeconomic groups, including women from households with a low standard of living (38 percent), scheduled-tribe women (33 percent), and illiterate women (40 percent).

The majority (70 percent) of women who use modern contraception obtained their method from a government hospital or other source in the public sector. Only 14 percent obtained their method from the private medical sector. The private sector plays a larger role in urban areas (where it is the source of modern methods for 23 percent of users) than in rural areas (where it is the source of modern methods for 11 percent of users).

An important indication of the quality of family planning services is the information that women receive when they obtain contraception and the extent to which they receive follow-up services after accepting contraception. In West Bengal, only 9 percent of users of modern contraceptives who were motivated by someone to use their method were told about any other method. Moreover, at the time of adopting the method, only 10 percent were told by a health or family planning worker about possible side effects of the method they adopted. The likelihood of receiving information on other methods is greater if the worker came from the public sector (25 percent) than the private sector (15 percent). Thirty-one percent of modern contraceptive users received follow-up services after accepting the method.

From the information provided in NFHS-2, a picture emerges of women marrying before the legal age at marriage, having their first birth at 19 years of age, and ending their childbearing at a fairly young age. Contraceptive prevalence is relatively high. However, improved coverage and quality of family planning services can further enable women to achieve their desired family size and/or space their births effectively.

Infant and Child Mortality

NFHS-2 provides estimates of infant and child mortality and factors associated with the survival of young children. During the five years preceding the survey, the infant mortality rate was 49 deaths at age 0–11 months per 1,000 live births, a substantial decrease from the corresponding rate of 75 per 1,000 live births in NFHS-1. The child mortality rate, at 20 deaths at age 1–4 years per 1,000 children reaching age one, has decreased from 26 per 1,000 in NFHS-1. NFHS-2 indicates that 1 in 21 children die in the first year of life, and 1 in 15 die before reaching age five. Child-survival programmes might usefully focus on specific groups of children with particularly high infant and child mortality rates, such as children who live in rural areas, children whose mothers are illiterate, children belonging to scheduled castes or scheduled tribes, and children from households with a low standard of living.

Along with various socioeconomic groups, efforts to promote child survival need to concentrate on mothers under age 20 and above age 30, first-order births and those of order three or higher, and mothers whose children are closely spaced. Infant mortality is 39 percent higher among children born to mothers under age 20 than among children born to mothers age 20–29 (61 deaths, compared with 44, per 1,000 live births). Infant mortality is more than three times as high among children born less than 24 months after a previous birth as among children born after a gap of 48 months or more (78 deaths, compared with 24, per 1,000 live births). Clearly, efforts to expand the use of temporary contraceptive methods for delaying and spacing births would help reduce infant mortality as well as fertility.

Health and Health Care

Promotion of maternal and child health has been one of the most important components of the Reproductive and Child Health Programme of the Government of India. One goal is for each pregnant woman to receive at least three antenatal check-ups plus two tetanus toxoid injections and a full course of iron and folic acid supplementation. In West Bengal, mothers of 90 percent of children born in the three years preceding NFHS-2 received at least one antenatal check-up (much higher than the level of 65 percent for India as a whole), and mothers of 57 percent received at least three antenatal check-ups. More than four-fifths (82 percent) of mothers received the recommended number of tetanus toxoid vaccinations, and almost three-fourths (72 percent) received iron and folic acid supplementation during their pregnancies. Women in disadvantaged socioeconomic groups are much less likely to be covered by each of the three recommended types of antenatal care than other women. Coverage is also relatively low for older women and for women who have many children.

The Reproductive and Child Health Programme encourages women to deliver in a medical facility or, if at home, with assistance from a trained health professional and to receive at least three check-ups after delivery. During the three years preceding NFHS-2, only 40 percent of births in West Bengal were delivered in a medical facility. Forty-six percent of births were delivered in the woman's own home and 13 percent in her parents' home. Trained health professionals assisted with the delivery of 44 percent of births. Thirty percent of deliveries were assisted by a *dai* (traditional birth attendant), and 26 percent were attended only by friends, relatives, or other persons who were not health professionals. Only 7 percent of births delivered at home were attended by a health professional. Less than one-third (32 percent) of births outside a medical facility were followed by a postpartum check-up within two months of delivery.

Overall, these results show that maternity-related services are reaching more women during pregnancy than during delivery or after childbirth in West Bengal.

The Government of India recommends that breastfeeding should begin immediately after childbirth and that infants should be exclusively breastfed for about the first four months of life. Although breastfeeding is nearly universal in West Bengal, very few children begin breastfeeding immediately after birth—only 25 percent are breastfed within the first hour. However, the majority of children begin breastfeeding within the first day of birth. For more than three-quarters of births, mothers squeeze the first milk (colostrum) from the breast before breastfeeding begins. Only 49 percent of children under four months of age are exclusively breastfed, as recommended at that age by national policy. The median duration of breastfeeding is greater than three years, but the median duration of exclusive breastfeeding is only 1.1 months. At age 6–9 months, children should be receiving solid or mushy food in addition to breast milk. However, less than half (46 percent) of children age 6–9 months receive the recommended combination of breast milk and solid/mushy foods.

NFHS-2 uses three internationally recognized standards to assess children's nutritional status—weight-for-age, height-for-age, and weight-for-height. Children who are more than two standard deviations below the median of an international reference population are considered underweight (measured in terms of weight-for-age), stunted (height-for-age), or wasted (weight-for-height). Stunting is a sign of chronic, long-term undernutrition, wasting is a sign of acute, short-term undernutrition, and underweight is a composite measure that takes into account both chronic and acute undernutrition.

Based on these measures, 49 percent of children under age three years are underweight, 42 percent are stunted, and 14 percent are wasted. Underweight prevalence has declined slightly since NFHS-1, when 55 percent of young children were underweight. Undernutrition is much higher in rural areas than in urban areas and is particularly high among children from disadvantaged socioeconomic groups. Girls are more likely to be underweight or stunted, but they are less likely to be wasted. Seventy-eight percent of children age 6–35 months are anaemic. Although there are some differentials in the prevalence of anaemia among groups, a large majority of children in every subgroup of the population are anaemic.

Child immunization is an important component of child-survival programmes in India, with efforts focusing on six serious but preventable diseases—tuberculosis, diphtheria, pertussis, tetanus, polio, and measles. The objective of the Universal Immunization Programme (UIP), launched in 1985–86, was to extend immunization coverage against these diseases to at least 85 percent of infants by 1990. In West Bengal, only 44 percent of children age 12–23 months are fully vaccinated, another 43 percent have received some but not all of the recommended vaccinations, and 14 percent have not been vaccinated at all.

Immunization coverage, although far from complete, has improved slightly since NFHS-1, when 22 percent of children received no vaccinations at all. There has also been an increase in the proportion of children fully vaccinated, from 34 percent in NFHS-1 to 44 percent in NFHS-2. With the exception of BCG vaccination coverage, the largest increases in vaccination coverage between NFHS-1 and NFHS-2 are for measles and the first two doses of polio vaccine. Improvements in polio vaccination coverage are undoubtedly due to the introduction of the Pulse Polio Immunization Campaign in 1995. According to NFHS-2, 78

percent of children age 12–23 months receive the first dose of DPT vaccination, but only 58 percent receive all three doses. Similarly, 84 percent of children age 12–23 months receive the first polio vaccination, but only 62 percent receive all three doses. Thus, dropout rates for the series of DPT and polio vaccinations continue to be a problem in West Bengal. More than three-fourths (77 percent) of children age 12–23 months have been vaccinated against tuberculosis, and 52 percent have been vaccinated against measles. It is also recommended that children under age five years receive oral doses of vitamin A every six months starting at age nine months. However, only 43 percent of children age 12–35 months received any vitamin A supplementation and only 24 percent received a dose of vitamin A in the six months preceding the survey.

NFHS-2 collected information on the prevalence and treatment of three health problems that cause considerable mortality in young children—fever, acute respiratory infection (ARI), and diarrhoea. In West Bengal, 30 percent of children under age three were ill with fever during the two weeks preceding the survey, 25 percent were ill with ARI, and 8 percent had diarrhoea. Five out of 10 children who became ill with ARI or diarrhoea were taken to a health facility or health-care provider. Knowledge of the appropriate treatment of diarrhoea remains less than optimal, however. Although 76 percent of mothers of children age less than 3 years know about oral rehydration salt (ORS) packets, 58 percent incorrectly believe that when children are sick with diarrhoea, they should be given less to drink than usual. In addition, only 34 percent of mothers know two or more signs for medical treatment of diarrhoea. Fifty-four percent of children with diarrhoea were taken to a health facility or health provider, and 73 percent of children with diarrhoea received some form of oral rehydration therapy (ORT), including 41 percent who received ORS. ORS use has not improved since NFHS-1, when it was 47 percent.

Based on a weight-for-height index (the body mass index), 44 percent of women in West Bengal are undernourished. Nutritional deficiency is particularly serious for women in rural areas and women in disadvantaged socioeconomic groups. Women who are undernourished themselves are also much more likely than other women to have children who are undernourished. Overall, 63 percent of women in West Bengal have some degree of anaemia, and 17 percent are moderately to severely anaemic. Anaemia is a serious problem among women in every population group, with prevalence rates ranging from 55 to 74 percent. Pregnant women are more likely than nonpregnant women to be moderately anaemic.

Sixty-two percent of households use cooking salt that is iodized at the recommended level of 15 parts per million, suggesting that iodine deficiency disorders are likely to be a problem in West Bengal. Rural households and households with a low standard of living are much less likely than other households to be using adequately iodized cooking salt.

Forty-five percent of currently married women in West Bengal report some type of reproductive health problem, including abnormal vaginal discharge, symptoms of a urinary tract infection, and pain or bleeding associated with intercourse. Among these women, almost three-fourths (73 percent) have not sought any advice or treatment. These results suggest a need to expand reproductive health services and information programmes that encourage women to discuss their problems with a health-care provider.

In recent years, there has been growing concern about domestic violence in India. NFHS-2 found that in West Bengal there is some acceptance among ever-married women that

the beating of wives by husbands is justified under some circumstances. Almost one-fourth (23 percent) of women accept at least one of six reasons as a justification for a husband beating his wife. Eighteen percent of ever-married women in West Bengal have experienced beatings or physical mistreatment since age 15, with one-half of physically mistreated women experiencing such violence in the 12 months preceding the survey. Most of these women have been beaten or physically mistreated by their husbands. Domestic violence against women is especially prevalent among unmarried women, illiterate women, women from households with a low standard of living, and women in nuclear households. Surprisingly, working women are also more likely to have experienced domestic violence than nonworking women.

Overall, only 18 percent of women received a home visit from a health or family planning worker during the 12 months preceding the survey. A large majority of the women who received home visits expressed satisfaction with the amount of time that the worker spent with them and with the way the worker talked to them.

The survey collected information on the prevalence of tuberculosis, asthma, malaria, and jaundice among all household members. Disease prevalence based on reports from household heads must be interpreted with caution, however. The survey found that less than 1 percent of the population suffers from tuberculosis, 3 percent suffers from asthma, 1 percent suffered from malaria during the three months preceding the survey, and 2 percent suffered from jaundice during the 12 months preceding the survey. For each of the four conditions, the prevalence is higher in rural areas than in urban areas and among males than females.

A large majority (60 percent) of household respondents in West Bengal said that household members usually go to private hospitals or clinics for treatment when they get sick. Almost one-quarter (24 percent) normally use the public medical sector. Use of private-sector services is much higher in urban areas than in rural areas. It is also higher among households with a high standard of living than among other households. Households with a low standard of living are more likely to use services in the public medical sector than households with a higher standard of living. Most respondents are generally satisfied with the health care they receive. Ratings on quality of services are lower for public-sector facilities than for private-sector facilities, as well as for facilities in rural areas than for those in urban areas.

NFHS-2 also collected information on selected lifestyle indicators for household members. According to household respondents, 40 percent of men and 3 percent of women smoke, 11 percent of men and 2 percent of women drink alcohol, and 23 percent of men and 16 percent of adult women chew *paan masala* or tobacco.

Although the spread of HIV/AIDS is a major concern in India, only 24 percent of women in West Bengal have heard of AIDS. Awareness of AIDS is particularly low among illiterate women (5 percent), scheduled-tribe women (5 percent), women with a low standard of living (5 percent), and women who are not regularly exposed to media (3 percent). Among women who have heard of AIDS, 85 percent learned about the disease from television, 31 percent from radio, and 26 percent from newspapers and magazines, suggesting that the government's efforts to promote AIDS awareness through the electronic mass media and print media have achieved some success. However, given the low level of mass media exposure in West Bengal, the AIDS programmes will have to find innovative ways of reaching women who are not exposed to mass media. Among women who have heard of AIDS, 51 percent do not know of any way to avoid

infection. Survey results suggest that health personnel could play a much larger role in promoting AIDS awareness. In West Bengal, only 2 percent of women who know about AIDS learned about the disease from a health worker.

CHAPTER 1

INTRODUCTION

1.1 Background of the Survey

India's first National Family Health Survey (NFHS-1) was conducted in 1992–93 (International Institute for Population Sciences, 1995). The Ministry of Health and Family Welfare (MOHFW) subsequently designated the International Institute for Population Sciences (IIPS), Mumbai, as the nodal agency to initiate a second survey (NFHS-2), which was conducted in 1998–99. An important objective of NFHS-2 is to provide state-level and national-level information on fertility, family planning, infant and child mortality, reproductive health, child health, nutrition of women and children, and the quality of health and family welfare services. Another important objective is to examine this information in the context of related socioeconomic and cultural factors. The survey is also intended to provide estimates at the regional level for five states (Bihar, Jammu and Kashmir, Madhya Pradesh, Rajasthan, and Uttar Pradesh) and estimates for three metro cities (Chennai, Kolkata, and Mumbai), as well as slum areas in Mumbai. This information will assist policymakers and programme administrators in planning and implementing strategies for improving population, health, and nutrition programmes. Comparative state results from NFHS-2 have already been published (International Institute for Population Sciences and ORC Macro, 2000). The current report provides a more comprehensive picture of the findings for West Bengal.

The NFHS-2 national sample covers more than 99 percent of India's population living in the 26 states that existed at the time of the survey. It does not cover the union territories. NFHS-2 is a household sample survey with an overall sample size of 90,303 ever-married women in the age group 15–49 living in 92,486 households.

NFHS-2 was conducted with financial support from the United States Agency for International Development (USAID), with additional funding from UNICEF. Technical assistance was provided by ORC Macro, Calverton, Maryland, USA, and the East-West Center, Honolulu, Hawaii, USA. Thirteen field organizations were selected to collect the data. Eight of the field organizations are private-sector organizations and five are Population Research Centres (PRCs) established by the Government of India in various states. Each field organization had responsibility for collecting the data in one or more states. Economic Information Technology (EIT) in Kolkata was selected as the field organization for NFHS-2 in West Bengal.

1.2 Basic Socioeconomic and Demographic Features of West Bengal

West Bengal covers an area of 88,752 square kilometres (km²) and accounts for 3 percent of India's total area. It is the twelfth-largest state in terms of geographic size and ranks fourth in terms of population size. Kolkata is the capital of West Bengal. The state is divided into 18 districts that are distributed across three major divisions: Jalpaiguri Division, Presidency Division, and Barddhaman Division. The district composition of each division is as follows:

Jalpaiguri Division: Koch Bihar, Jalpaiguri, Darjiling, Uttar Dinajpur, Dakshin Dinajpur, Maldah

Presidency Division: Murshidabad, Nadia, North Twenty-Four Parganas, South Twenty-Four Parganas, Haora, Kolkata

Barddhaman Division: Hugli, Medinipur, Bankura, Puruliya, Barddhaman, Birbhum

The districts of Uttar Dinajpur and Dakshin Dinajpur were formed by partitioning the district of West Dinajpur in 1992.

Agriculture plays a pivotal role in West Bengal's economy. The contribution of the agricultural sector to the state domestic product has been constant between 1980-81 (28 percent) and 1996-97 (29 percent). The contribution of the manufacturing sector to the state domestic product declined from 21 percent in 1980-81 to 17 percent in 1996-97, but the share of other sectors increased from 51 percent in 1980-81 to 55 percent in 1996-97 (EPW Research Foundation, 1998). At the time of the 1991 Census, the agricultural sector provided a livelihood to 59 percent of the working population in the state (Office of the Registrar General and Census Commissioner, 1992). Nearly three-fourths of West Bengal's workers are directly or indirectly dependent upon agriculture. The state has 3 percent of India's cultivable land, and it contributes 8 percent to the nation's total food grain production. West Bengal leads the country in rice production and contributes nearly one-sixth of India's total rice crop. Other important crops produced in the state are oilseeds, betelvine, tobacco, wheat, barley, and maize. More than three-fifths of the country's raw jute fibre is produced in West Bengal, and the state also contributes to slightly more than one-fifth of India's tea production. Tea production is concentrated primarily in the northern hilly areas, particularly in the district of Darjiling.

In addition to being a major contributor to the country's agricultural sector, West Bengal occupies a leading position within India's industrial sector. There are three major steel plants (one steel plant in Barddhaman and a steel plant and an alloy plant in Durgapur) and 23 mini steel plants in the state. The other major industries located in West Bengal are engineering, automobiles, chemicals, pharmaceuticals, ceramics, aluminium, leather, jute, cotton, textiles, paper, glass, and timber processing. The state also has several important public-sector undertakings that have been set up by the Central Government such as coal, locomotive, cable, shipbuilding, and ordnance. The State Government undertakings include tea, fruit and vegetable processing, sugar, dairy, poultry, plywood, and electrochemical plants. Two important minerals found in abundance in the state are coal and china clay. Mining and manufacturing contributed 28 percent to the total state income during 1988-89.

In West Bengal, the annual per capita net domestic product has increased from Rs. 1,773 in 1980-81 to Rs. 2,876 in 1996-97 at constant (1980-81) prices or Rs. 9,441 at current prices (EPW Research Foundation, 1998). As per the estimates given by the Planning Commission for 1993-94, 41 percent of the rural population and 22 percent of the urban population in West Bengal were below the poverty line (Central Statistical Organisation, 1999).

According to provisional estimates from the 2001 Census, West Bengal has a population of 80.2 million, accounting for 8 percent of India's total population (Office of the Registrar General and Census Commissioner, 2001). The total population of West Bengal was 44.3 million in 1971, 54.6 million in 1981, and 68.1 in 1991. The decadal growth rate decreased from 27 percent in 1961-71 to 23 percent in 1971-81. It rose to 25 percent in 1981-91 but has since fallen to 18 percent in 1991-2001. West Bengal's decadal growth rate for 1991-2001 (18

percent) is lower than the all-India rate of 21 percent for the same time period. Population density per km² in West Bengal has increased substantially over the past four decades. West Bengal's population density was 504 in 1971, 615 in 1981, and 767 in 1991. The provisional 2001 estimate is 904, almost three times higher than the density for the country as a whole (324), placing West Bengal sixth among India's states and union territories in terms of density. The increasing density indicates an increasing pressure on land and other resources.

West Bengal has been undergoing slow but steady urbanization. The percentage of the total population living in urban areas increased from 24.8 percent in 1971 to 26.4 percent in 1981 and 27.5 percent in 1991. West Bengal's level of urbanization in recent years is slightly higher than the level of urbanization for India as a whole (26 percent). According to the 1991 Census, the proportion of the total population designated as scheduled caste is higher and the proportion designated as scheduled tribe is lower in West Bengal than in India as a whole.¹ West Bengal's scheduled-caste population increased from 20 percent of the total population in 1971 to 24 percent in 1991. The scheduled-tribe population showed no increase during 1971–91, remaining at the level of 6 percent.

The level of literacy in West Bengal is higher than the national rate. However, there is still a large gap between males and females. According to the 2001 Census, the literacy rate among the population age seven and above was 69 percent, compared with 65 percent for India as a whole. The literacy rates are 78 percent for males and 60 percent for females in West Bengal, compared with 76 percent for males and 54 percent for females in all India.

For 1997, the Sample Registration System estimated an infant mortality rate of 55 per 1,000 live births in West Bengal, compared with 71 for all India. For 1996–2001, life expectancy is projected to be 64.5 years for males and 67.2 years for females, a substantial increase from the estimates of 56.9 years for males and 56.3 years for females in 1981–86 (Office of the Registrar General, 1997). The couple protection rate (defined as the percentage of eligible couples effectively protected against pregnancy by various methods of contraception) in West Bengal was 34 in 1997, compared with 10 percent in 1971. The couple protection rate in 1997 was lower than the estimate for all India (47).

Between 1981 and 1997, fertility declined substantially in the state. The crude birth rate declined from 33.2 per 1,000 population in 1981 to 22.4 in 1997. The total fertility rate also declined from 4.2 children per woman in 1981 to 2.6 children per woman in 1997—dropping by 1.6 children in 16 years. The crude death rate also declined from 11.0 per 1,000 population in 1981 to 7.7 in 1997. The infant mortality rate declined from 91 per 1,000 live births in 1981 to 40 in 1997, a decline of 56 percent.

1.3 Questionnaires

NFHS-2 used three types of questionnaires: the Household Questionnaire, the Woman's Questionnaire, and the Village Questionnaire. The overall content and format of the questionnaires were determined through a series of workshops held at IIPS in Mumbai in 1997 and 1998. The workshops were attended by representatives of a wide range of organizations in

¹Scheduled castes and scheduled tribes are castes and tribes that the Government of India officially recognizes as socially and economically backward and in need of special protection from injustice and exploitation.

the population and health fields, as well as experts working on gender issues. The questionnaires in West Bengal were bilingual, with questions in both Bengali and English.

The Household Questionnaire listed all usual residents in each sample household plus any visitors who stayed in the household the night before the interview. For each listed person, the survey collected basic information on age, sex, marital status, relationship to the head of the household, education, and occupation. The Household Questionnaire also collected information on the prevalence of asthma, tuberculosis, malaria, and jaundice, as well as three risk behaviours—chewing *paan masala* or tobacco, drinking alcohol, and smoking. Information was also collected on the usual place where household members go for treatment when they get sick, the main source of drinking water, type of toilet facility, source of lighting, type of cooking fuel, religion of the household head, caste/tribe of the household head, ownership of a house, ownership of agricultural land, ownership of livestock, and ownership of other selected items. In addition, a test was conducted to assess whether the household uses cooking salt that has been fortified with iodine. Finally, the Household Questionnaire asked about deaths occurring to household members in the two years preceding the survey, with particular attention to maternal mortality. The information on the age, sex, and marital status of household members was used to identify eligible respondents for the Woman's Questionnaire.

The Woman's Questionnaire collected information from ever-married women age 15–49 who were usual residents of the sample household or visitors who stayed in the sample household the night before the interview. The questionnaire covered the following topics:

Background characteristics: Questions on age, marital status, education, employment status, and place of residence provide information on characteristics likely to influence demographic and health behaviour. Questions are also asked about the background characteristics of a woman's husband.

Reproductive behaviour and intentions: Questions cover dates and survival status of all births, current pregnancy status, and future childbearing intentions of each woman.

Quality of care: Questions assess the quality of family planning and health services.

Knowledge and use of contraception: Questions cover knowledge and use of specific family planning methods. For women not using family planning, questions are included on reasons for not using contraception and intentions concerning future use.

Sources of family planning: Questions determine where a user obtained her family planning method.

Antenatal, delivery, and postpartum care: The questionnaire collects information on whether women received antenatal and postpartum care, who attended the delivery, and the nature of complications during pregnancy for the last two births since January 1995.

Breastfeeding and health: Questions cover feeding practices, the length of breastfeeding, immunization coverage, and recent occurrences of diarrhoea, fever, and cough for young children.

Reproductive health: Questions assess various aspects of women's reproductive health and the type of care sought for health problems.

Status of women: The questionnaire asks about gender roles, women's autonomy, and violence against women.

Knowledge of AIDS: Questions assess women's knowledge of AIDS and the sources of their knowledge, as well as their knowledge about ways to avoid getting AIDS.

In addition, the health investigator on each survey team measured the height and weight of each woman and each of her children born since January 1995. This height and weight information is useful for assessing levels of nutrition prevailing in the population. The health investigators also took blood samples from each woman and each of her children born since January 1995, to assess haemoglobin levels. This information is useful for assessing prevalence rates of anaemia among women and children. Haemoglobin levels were measured in the field at the end of each interview using portable equipment (the HemoCue) that provides test results in less than one minute. Severely anaemic women and children were referred to local medical authorities for treatment.

For each village selected in the NFHS-2 sample, the Village Questionnaire collected information on the availability of various facilities in the village (especially health and education facilities) and amenities such as electricity and telephone connections. Respondents to the Village Questionnaire were also asked about development and welfare programmes operating in the village. The village survey included a short, open-ended questionnaire that was administered to the village head, with questions on major problems in the village and actions that could be taken to alleviate the problems.

1.4 Survey Design and Sample Implementation

Sample Size and Reporting Domains

The NFHS-2 sample in West Bengal was designed to provide estimates for the state as a whole, for urban and rural areas, and for the urban district of Kolkata. The sample is not large enough, however, to provide reliable estimates for other districts.

A target sample size of 4,000 completed interviews with eligible women was initially divided between urban and rural areas by allocating the sample proportionally to the population of these two areas. The NFHS-1 nonresponse rates at the household and individual levels were used to estimate the sample size that would be required to achieve the target number of completed interviews in NFHS-2. The sampling rates used in urban and rural areas take expected rates of nonresponse into account based on urban and rural nonresponse rates from NFHS-1. In order to provide separate estimates for Kolkata, a higher sampling rate was used in Kolkata than in other urban areas. Specifically, 750 additional interviews were conducted in Kolkata in order to achieve a sample size of 1,000 for the district.

Sample Design

There were three sampling domains: rural areas, urban areas excluding Kolkata, and Kolkata. Within each of the sampling domains, a systematic, multi-stage stratified sampling design was

used. The rural sample was selected in two stages: the selection of Primary Sampling Units (PSUs), which are villages or groups of villages (in the case of small linked villages), with probability proportional to size (PPS) in the first stage, followed by the selection of households using systematic sampling within each selected PSU in the second stage. In the remaining two domains (Kolkata and urban areas excluding Kolkata), a three-stage sampling procedure was followed. In the first stage, wards were selected with PPS. From each selected ward, one census enumeration block (CEB) was selected with PPS in the second stage, followed by selection of households using systematic sampling within each selected CEB in the third stage.

Sample Selection in Rural Areas

In rural areas, the 1991 Census list of villages served as the sampling frame. The list was stratified by a number of variables. The first level of stratification was geographic, with districts being assigned to one of five regions as follows:

- Region I: Jalpaiguri, Darjiling
- Region II: Koch Bihar, West Dinajpur (comprising Uttar Dinajpur and Dakshin Dinajpur), Maldah, Murshidabad
- Region III: Nadia, Haora, Hugli, North Twenty-Four Parganas, South Twenty-Four Parganas, Barddhaman
- Region IV: Medinipur, Bankura, Birbhum
- Region V: Puruliya

In each region, villages were further stratified by village size and the percentage of the population from scheduled castes or scheduled tribes. Table 1.1 provides details of the sample stratification in rural areas along with the population of each stratum. The final level of stratification was implicit for all strata, consisting of an ordering of villages within each stratum by the level of female literacy (obtained from the 1991 Census Village Directory). From the list of villages arranged in this manner, villages were selected systematically with probability proportional to the 1991 Census population of the village. Small villages with 5–49 households were linked with one or more adjoining villages to form PSUs with a minimum of 50 households. Villages with fewer than five households were excluded from the sampling frame.

The domain sampling fraction, i.e., the probability of selecting a woman from rural West Bengal (f) was computed as:

$$f = \frac{n}{N}$$

where n = number of rural women to be interviewed, after upward adjustment to account for nonresponse and other loss,

N = projected rural population of eligible women in December 1998.

Table 1.1 Sampling stratification				
Sampling stratification procedure in rural areas, West Bengal				
Stratification variables				
Stratum	Region	Village size (number of residential house- holds)	Percent SC/ST population	Population ¹
1	1	NU	NU	3,246,034
2	2	≤ 250	NU	2,900,262
3	2	> 250 and ≤ 500	NU	2,866,865
4	2	> 500 and ≤ 1,000	NU	2,743,765
5	2	> 1,000	NU	2,896,460
6	3	≤ 300	≤ 35.0	2,473,408
7	3	≤ 300	> 35.0	2,701,590
8	3	> 300 and ≤ 600	≤ 35.0	3,502,600
9	3	> 300 and ≤ 600	> 35.0	2,889,271
10	3	> 600 and ≤ 900	NU	3,845,700
11	3	> 900	≤ 35.0	2,681,994
12	3	> 900	> 35.0	2,193,935
13	4	≤ 125	NU	3,013,870
14	4	> 125 and ≤ 250	NU	3,689,408
15	4	> 250 and ≤ 450	NU	2,882,017
16	4	> 450	NU	2,816,460
17	5	NU	NU	2,013,863
Total	NA	NA	NA	49,357,502

Note: The level of female literacy is used for implicit stratification.
SC: Scheduled caste; ST: Scheduled tribe
NA: Not applicable
NU: Not used for stratification
¹The population shown is the 1991 Census population, excluding persons living in villages with fewer than five households.

A total of 97 rural PSUs were selected in the state. The probability of selecting a PSU (f_i) from rural West Bengal was computed as:

$$f_i = \frac{a \times s_i}{\sum s_i}$$

where a = number of rural PSUs selected from the state,
 s_i = population size of the i^{th} PSU,
 $\sum s_i$ = total rural population of the state.

A mapping and household listing operation carried out in each sample area provided the necessary frame for selecting households at the second stage. The household listing operation involved preparing up-to-date notional and layout sketch maps of each selected PSU, assigning numbers to structures, recording addresses of these structures, identifying residential structures, and listing the names of heads of all the households in residential structures in the selected PSUs. Sample villages larger than 500 households were segmented into three or more segments, and two segments were selected randomly using the PPS method. The household listing in these PSUs was carried out only in the selected segments. The work was carried out by 15 teams, each comprising 1 lister and 1 mapper, under the supervision of 5 field supervisors and 3 field

executives. The teams were trained from 8–9 September 1998 in Kolkata by an official from EIT, Kolkata, who was earlier trained in a workshop conducted by IIPS. The mapping and household listing operation was carried out between September 1998 and January 1999. The households to be interviewed were selected with equal probability from the household list in each area using systematic sampling.

The probability of selecting a household from a selected PSU (f_2) was computed as:

$$f_2 = \frac{f}{f_1}$$

On average, 30 households were initially targeted for selection in each selected enumeration area. To avoid extreme variations in the workload, minimum and maximum limits were put on the number of households that could be selected from any area, at 15 and 60, respectively. All the selected households were visited during the main survey, and no replacement was made if a selected household was absent during data collection. However, if a PSU was inaccessible, a replacement PSU with similar characteristics was selected by IIPS and provided to the field organization.

Sample Selection in Kolkata and Other Urban Areas

The 1991 Census list of urban wards was arranged according to districts and within districts by the level of female literacy, and a sample of wards was selected systematically with probability proportional to population size. Next, one census enumeration block (CEB), consisting of approximately 150–200 households, was selected from each selected ward using the PPS method. In West Bengal, 33 wards were selected from Kolkata and 28 wards were selected from other urban areas. As in rural areas, a household listing operation was carried out in the selected CEBs and, on average, 30 households per block were targeted for selection.

The domain sampling fraction, i.e., the probability of selecting a woman from an urban domain (Kolkata and other urban areas) in West Bengal (f) was computed as:

$$f = \frac{n}{N}$$

Where n = number of urban women to be interviewed (after adjusting upward to account for nonresponse and other loss),

N = projected urban population of eligible women in the state in December 1998.

The probability of selecting an urban ward (f_1) was computed as:

$$f_1 = \frac{a \times s_i}{\sum s_i}$$

where a = number of wards selected from the domain,

s_i = population size of the i^{th} ward,

$\sum s_i$ = the total population in the domain.

The probability of selecting a CEB from a selected ward (f_2) was computed as:

$$f_2 = \frac{B_i}{\sum B_i}$$

where B_i = population size of a specific CEB

$\sum B_i$ = total population of the ward.

A household listing operation carried out in each selected census enumeration block provided the necessary frame for selecting households in the third stage of sample selection.

The probability of selecting a household from a selected CEB (f_3) was computed as:

$$f_3 = \frac{f}{f_1 \times f_2}$$

Sample Weights

In West Bengal, the sample was weighted at the level of the sampling domain. Sample weights for households and women are based on design weights, adjusted for the effect of differential nonresponse in different geographical areas. The method of calculating the weights is specified below.

Let R_{Hi} and R_{Wi} be the response rates for households and eligible women, respectively. Then the household weight (w_{Hi}) is calculated as follows:

$$w_{Hi} = \frac{w_{Di}}{R_{Hi}}$$

where w_{Di} = the design weight for the i^{th} domain, calculated as the ratio of the overall sampling fraction ($F = n/N$) and the sampling fraction for the i^{th} domain ($f = n_i/N_i$). Note that $n = \sum n_i$ and $N = \sum N_i$.

The eligible woman's weight (w_{Wi}) is calculated as follows:

$$w_{Wi} = \frac{w_{Di}}{R_{Hi} \times R_{Wi}}$$

After adjustment for nonresponse, the weights are normalized so that the total number of weighted cases is equal to the total number of unweighted cases. The final weights for households and eligible women are:

$$W_{Hi} = \frac{\sum n_i}{\sum w_{Hi} \times n_i} \times w_{Hi}$$

$$W_{wi} = \frac{\sum n_i}{\sum w_{wi} \times n_i} \times w_{wi}$$

where n_i refers to the actual number of cases (households or eligible women) interviewed in the i^{th} domain.

For the tabulations on anaemia and height/weight of women and children, two separate sets of weights were calculated using a similar procedure. In this case, however, the response rates for anaemia (for both women and children) are based on the percentage of eligible women whose haemoglobin level was measured and the response rates for height/weight (for both women and children) are based on the percentage of eligible women whose height or weight was measured.

Sample Implementation

A total of 158 PSUs were selected for the sample, of which 61 (39 percent) were urban (33 PSUs from Kolkata and 28 PSUs from other urban areas) and 97 (61 percent) were rural. Table 1.2 shows response rates for households and individuals and reasons for nonresponse. Nonresponse can occur at the stage of the household interview or at the stage of the woman's interview. The last row of the table shows the overall effect of nonresponse at the two stages. The survey achieved a high overall response rate of 93 percent. The overall response rate is higher in rural areas (97 percent) than in urban areas (90 percent).

Of the 5,137 households selected in West Bengal, interviews were completed in 92 percent of the cases. Only 1 percent of households refused to be interviewed. The remaining 7 percent of households were not interviewed because there was no household member or no competent respondent at home at the time of interview (2 percent), the household was absent for an extended period (3 percent), or the dwelling was vacant, destroyed, or not found (2 percent). The household response rate—the number of households interviewed per 100 occupied households—was 94 percent in urban areas and 99 percent in rural areas.

In the interviewed households, 4,561 women were identified as eligible for the individual interview. Interviews were successfully completed with 97 percent of the eligible women. The response rate for women was slightly lower in urban areas (95 percent) than in rural areas (98 percent). Nonresponse at the individual level was primarily due to eligible women not being at home despite repeated household visits. Very few eligible women refused to be interviewed.

1.5 Recruitment, Training, and Fieldwork

Field staff for the main survey were trained in Kolkata by officials of EIT, who were trained earlier in a Training of Trainers Workshop conducted by IIPS. Training in West Bengal consisted of classroom training, general lectures, and demonstration and practice interviews, as well as field practice and additional training for field editors and supervisors. The classroom training included instructions in interviewing techniques and survey field procedures, a detailed review of each item in the questionnaires, instruction and practice in weighing and measuring women and children, and mock interviews between participants. Special guest lectures on family planning and on child health were also arranged. Health investigators attached to interviewing teams were given additional specialized training on measuring height and weight and testing for

Table 1.2 Sample results

Sample results for households and ever-married women age 15–49 by residence, West Bengal, 1998–99

Result	Urban		Rural		Total		Kolkata	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Households selected	2,667	100.0	2,470	100.0	5,137	100.0	1,513	100.0
Households completed (C)	2,335	87.6	2,390	96.8	4,725	92.0	1,253	82.8
Households with no household member at home or no competent respondent at home at the time of interview (HP)	70	2.6	24	1.0	94	1.8	56	3.7
Households absent for extended period (HA)	101	3.8	29	1.2	130	2.5	78	5.2
Households postponed (P)	0	0.0	1	0.0	1	0.0	0	0.0
Households refused (R)	56	2.1	1	0.0	57	1.1	43	2.8
Dwelling vacant/address not a dwelling (DV)	56	2.1	15	0.6	71	1.4	39	2.6
Dwelling destroyed (DD)	9	0.3	6	0.2	15	0.3	6	0.4
Dwelling not found (DNF)	16	0.6	0	0.0	16	0.3	15	1.0
Other (O)	24	0.9	4	0.2	28	0.5	23	1.5
Households occupied	2,477	100.0	2,416	100.0	4,893	100.0	1,367	100.0
Households interviewed	2,335	94.3	2,390	98.9	4,725	96.6	1,253	91.7
Households not interviewed	142	5.7	26	1.1	168	3.4	114	8.3
Household response rate (HRR) ¹	NA	94.3	NA	98.9	NA	96.6	NA	91.7
Eligible women	2,047	100.0	2,514	100.0	4,561	100.0	1,044	100.0
Women interviewed (EWC)	1,947	95.1	2,461	97.9	4,408	96.6	979	93.8
Women not at home (EWNH)	60	2.9	34	1.4	94	2.1	43	4.1
Women postponed (EWP)	0	0.0	0	0.0	0	0.0	0	0.0
Women refused (EWR)	16	0.8	5	0.2	21	0.5	9	0.9
Women partly interviewed (EWPC)	8	0.4	3	0.1	11	0.2	3	0.3
Other (EWO)	16	0.8	11	0.4	27	0.6	10	1.0
Eligible women's response rate (EWRR) ²	NA	95.1	NA	97.9	NA	96.6	NA	93.8
Overall response rate (ORR) ³	NA	89.7	NA	96.8	NA	93.3	NA	86.0

Note: Eligible women are defined as ever-married women age 15–49 who stayed in the household the night before the interview (including both usual residents and visitors). This table is based on the unweighted sample; all other tables are based on the weighted sample unless otherwise specified.

NA: Not applicable

¹Using the number of households falling into specific response categories, the household response rate (HRR) is calculated as:

$$\text{HRR} = \frac{C}{C+HP+P+R+DNF} \times 100$$

²Using the number of eligible women falling into specific response categories, the eligible women's response rate (EWRR) is calculated as:

$$\text{EWRR} = \frac{\text{EWC}}{\text{EWC}+\text{EWNH}+\text{EWP}+\text{EWR}+\text{EWPC}+\text{EWO}} \times 100$$

³The overall response rate (ORR) is calculated as:

$$\text{ORR} = \frac{\text{HRR} \times \text{EWRR}}{100}$$

anaemia in a centralized training programme conducted by the All India Institute of Medical Sciences (AIIMS), New Delhi, in collaboration with IIPS. This specialized training took place in New Delhi. It included classroom training and extensive field practice in schools, *anganwadis*, and communities.

Five interviewing teams conducted the main fieldwork in West Bengal, each team consisting of one field supervisor, one female field editor, four female interviewers, and one

health investigator. The fieldwork was carried out between 1 December 1998 and 23 April 1999. Coordinators and senior staff of EIT monitored and supervised the data collection operations. IIPS also appointed one research officer to help with monitoring throughout the training and fieldwork period in order to ensure that correct survey procedures were followed and data quality was maintained. From time to time, project coordinators, senior research officers, and other faculty members from IIPS, as well as staff members from ORC Macro and the East-West Center, visited the field sites to monitor the data collection operation. Medical health coordinators appointed by IIPS monitored the nutritional component of the survey. Field data were quickly entered into microcomputers, and field-check tables were produced to identify certain types of errors that might have occurred in eliciting information and filling out questionnaires. Information from the field-check tables was fed back to the interviewing teams and their supervisors so that they could improve their performance.

1.6 Data Processing

Completed questionnaires were sent to the EIT office in Kolkata for data processing, which consisted of office editing, coding, data entry, and machine editing, using the Integrated System for Survey Analysis (ISSA) software. Data entry was done by seven data entry operators under the supervision of EIT senior staff who were trained at a data-processing workshop in Hyderabad. Data entry and editing operations were completed by May 1999. Tabulations for the preliminary report as well as for the present final report were carried out at IIPS in Mumbai.

CHAPTER 2

BACKGROUND CHARACTERISTICS OF HOUSEHOLDS

This chapter presents a profile of the demographic and socioeconomic characteristics of NFHS-2 households and describes facilities and services that are available in villages in West Bengal. The chapter also includes some comparisons of NFHS-2 results with results from NFHS-1, the Census of India, and the Sample Registration System (SRS).

2.1 Age-Sex Distribution of the Household Population

The NFHS-2 household population can be tabulated in two ways: *de facto* (the place each person stayed the night before the survey interview) or *de jure* (the place of usual residence). The *de facto* and *de jure* populations in West Bengal may differ because of temporary population movements. Table 2.1 shows the *de facto* population in the NFHS-2 household sample for West Bengal, classified by age, residence, and sex. The total *de facto* sample population is 23,107. The sample is 25 percent urban and 75 percent rural.

The age distribution of the population in West Bengal is typical of populations in which fertility has fallen recently. There is a lower proportion of individuals in the age group 0–4 years than in the age groups 5–9 years or 10–14 years. Nevertheless, West Bengal still has a young age distribution. There is a higher proportion of the population in the younger age groups than in the older age groups (Figure 2.1). Thirty-four percent are below 15 years of age and 5 percent are age 65 or older. The proportion below age 15 is higher in rural areas (37 percent) than in urban areas (26 percent).

The single-year age distributions by sex in the *de facto* population (see Appendix Table B.1) indicate that there is considerable preference for ages ending in 0, 2, 5, and 8. One of the most commonly used measures of digit preference in age reporting is Myers' Index (United Nations, 1955). This index provides an overall summary of preferences for, or avoidance of, each of the 10 digits, from 0 to 9. The index is often used as one indicator of the quality of age reporting on a survey. Values of Myers' Index computed for the age range 10–69 in the household sample population in West Bengal are 24 for males and 16 for females. The lower estimate for females is probably due to the emphasis during the interviewer training on obtaining accurate age information for women to correctly determine the eligibility of women for the individual interview. The values of Myers' Index from NFHS-2 are higher for males and about the same for females, compared with the values from NFHS-1.

Table 2.2 compares the age distributions by sex from the NFHS-2 *de jure* sample with the age distributions by sex from the Sample Registration System (SRS) for 1997. The SRS baseline survey, which is *de jure*, counts all usual residents in a sample area (Office of the Registrar General, 1999a). The NFHS-2 and SRS age distributions do not differ much for broad age groups, despite the misreporting of age that is evident in the NFHS-2 single-year age data.

Tables 2.1 and 2.2 also present sex ratios (females per 1,000 males) in West Bengal from NFHS-2. The sex ratio of the *de facto* population is 950 (Table 2.1). The sex ratio of the *de jure* population (943) in Table 2.2 is slightly lower than the sex ratio of the *de facto* population (950).

Table 2.1 Household population by age and sex

Percent distribution of the household population by age, according to residence and sex, West Bengal, 1998-99

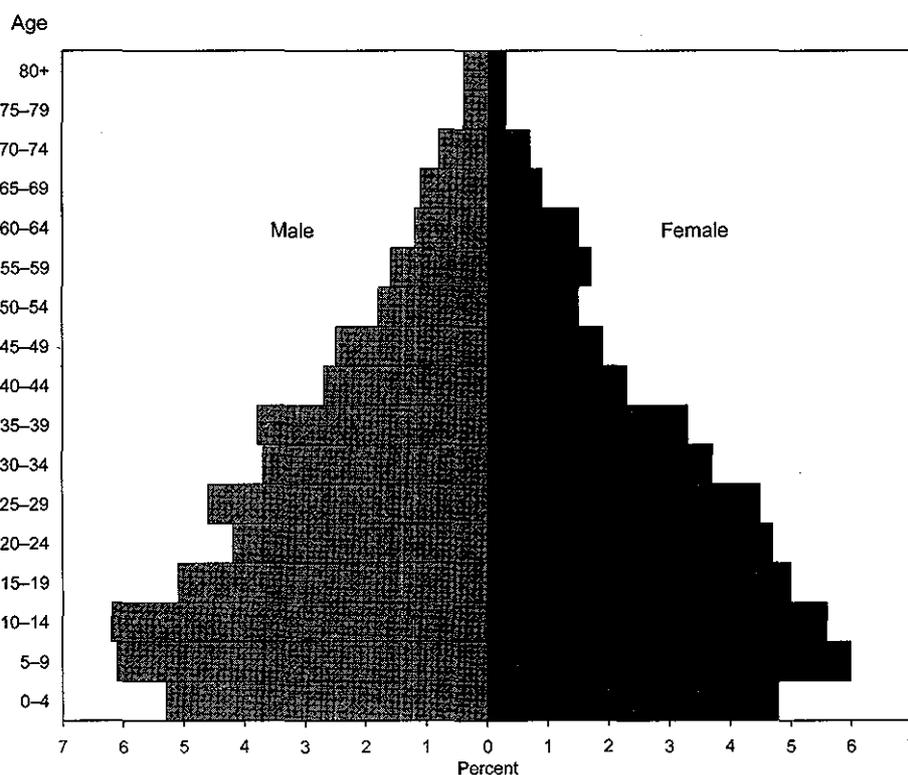
Age	Urban			Rural			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
< 1	1.4	1.3	1.3	2.5	1.9	2.2	2.2	1.8	2.0
1-4	6.2	6.1	6.1	8.7	8.7	8.7	8.1	8.0	8.1
5-9	7.9	8.8	8.3	13.2	13.4	13.3	11.8	12.3	12.1
10-14	9.2	10.6	9.9	13.1	11.9	12.5	12.1	11.6	11.8
15-19	9.9	9.5	9.7	10.0	10.6	10.3	9.9	10.3	10.1
20-24	9.2	9.6	9.4	7.8	9.6	8.7	8.1	9.6	8.9
25-29	9.4	9.8	9.6	8.8	9.1	9.0	9.0	9.3	9.1
30-34	8.6	7.8	8.2	6.7	7.5	7.1	7.2	7.5	7.4
35-39	7.8	7.8	7.8	7.2	6.5	6.8	7.3	6.8	7.1
40-44	6.2	6.4	6.3	5.1	4.1	4.6	5.3	4.7	5.0
45-49	5.8	5.1	5.5	4.4	3.6	4.0	4.8	4.0	4.4
50-54	4.9	4.3	4.6	3.0	2.8	2.9	3.5	3.2	3.3
55-59	4.0	4.3	4.1	2.8	3.3	3.0	3.1	3.5	3.3
60-64	3.1	3.0	3.0	2.0	3.0	2.5	2.3	3.0	2.6
65-69	2.6	2.3	2.5	2.0	1.7	1.8	2.1	1.8	2.0
70-74	2.1	1.4	1.8	1.4	1.3	1.3	1.5	1.3	1.4
75-79	1.0	0.9	0.9	0.6	0.5	0.5	0.7	0.6	0.6
80+	0.8	1.0	0.9	0.8	0.6	0.7	0.8	0.7	0.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of persons	3,004	2,741	5,745	8,843	8,519	17,362	11,847	11,260	23,107
Sex ratio ¹	NA	NA	912	NA	NA	963	NA	NA	950

Note: Table is based on the *de facto* population, i.e., persons who stayed in the household the night before the interview (including both usual residents and visitors).

NA: Not applicable

¹Females per 1,000 males

**Figure 2.1
Population Pyramid**



NFHS-2, West Bengal, 1998-99

Table 2.2 Population by age and sex from the SRS and NFHS-2					
Percent distribution of population by age and sex from the SRS and NFHS-2, West Bengal, 1997-99					
Age	SRS (1997)		NFHS-2 (1998-99)		
	Male	Female	Male	Female	Sex ratio ¹
< 5	9.2	9.6	9.8	9.6	925
5-14	23.5	23.7	23.5	23.8	952
15-29	28.4	29.1	27.3	29.3	1,012
30-49	26.7	24.7	25.1	23.0	867
50-64	8.8	8.8	9.1	9.9	1,021
65+	3.3	4.1	5.2	4.5	804
Total	100.0	100.0	100.0	100.0	943
Median age	U	U	23.9	23.0	NA

Note: Table is based on the *de jure* population, i.e., usual residents.
NA: Not applicable
U: Not available
¹Females per 1,000 males
Source for SRS: Office of the Registrar General, 1999a

Table 2.1 shows that the sex ratio of the *de facto* population is 912 in urban areas and 963 in rural areas, suggesting that rural-urban migration has been dominated by males in West Bengal.

2.2 Marital Status

NFHS-2 includes information on the marital status of all household members age six and above. Table 2.3 shows the marital status distribution of the *de facto* household population, classified by age, residence, and sex. Among females age six and above, 53 percent are currently married and 36 percent have never been married. The proportion never married is higher for males (49 percent) than for females (36 percent) and is almost identical in urban areas (48 percent for males and 36 percent for females) and rural areas (49 percent for males and 36 percent for females). The proportion divorced, separated, or deserted is small, and widowhood is quite limited until the older ages. Fifty-one percent of women age 50 or older are widowed, but only 9 percent of males in that age group are widowed.

Also of interest is the proportion of persons who marry young. At age 15-19, the proportions ever married are 3 percent for males and 37 percent for females (2 percent for males and 17 percent for females in urban areas, and 3 percent for males and 43 percent for females in rural areas). By age 25-29, 92 percent of females in West Bengal have ever been married. For males in this age group, 62 percent have ever been married (40 percent in urban areas and 70 percent in rural areas). Overall, the table shows that women marry at much younger ages than men, and that both men and women marry at younger ages in rural areas than in urban areas.

Table 2.4 shows estimates of the singulate mean age at marriage (SMAM), which can be calculated from age-specific proportions single in a census or household survey. SMAM is calculated from the *de jure* population in NFHS-2 in order to arrive at estimates that are more comparable to those derived from the censuses, which are modified *de jure* counts. According to the SMAM measure, men in West Bengal tend to marry women who are almost seven years younger than themselves. Although there have been small changes in the SMAM during the six years between NFHS-1 and NFHS-2, the census and NFHS-2 data indicate that age at marriage

Table 2.3 Marital status of the household population

Percent distribution of the household population age 6 and above by marital status, according to age, residence, and sex, West Bengal, 1998-99

Age	Marital status							Total percent
	Never married	Currently married	Married, <i>gauna</i> not performed	Widowed	Divorced	Separated	Deserted	
URBAN								
Male								
6-12	99.8	0.2	0.0	0.0	0.0	0.0	0.0	100.0
13-14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15-19	98.4	1.4	0.0	0.0	0.0	0.0	0.3	100.0
20-24	88.6	11.1	0.0	0.0	0.0	0.0	0.3	100.0
25-29	59.9	39.0	0.0	0.4	0.0	0.0	0.7	100.0
30-49	14.3	84.2	0.0	1.0	0.1	0.1	0.3	100.0
50+	2.8	90.7	0.0	6.0	0.2	0.0	0.3	100.0
Total	48.1	50.0	0.0	1.6	0.1	0.1	0.3	100.0
Female								
6-12	99.4	0.6	0.0	0.0	0.0	0.0	0.0	100.0
13-14	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0
15-19	82.7	16.1	1.1	0.0	0.0	0.0	0.1	100.0
20-24	42.1	56.6	0.0	0.4	0.4	0.1	0.4	100.0
25-29	13.0	83.9	0.0	1.5	1.0	0.3	0.3	100.0
30-49	4.7	87.1	0.0	5.9	0.6	0.4	1.2	100.0
50+	1.2	52.1	0.0	46.2	0.0	0.0	0.5	100.0
Total	35.8	52.4	0.1	10.6	0.3	0.2	0.5	100.0
RURAL								
Male								
6-12	99.8	0.2	0.0	0.0	0.0	0.0	0.0	100.0
13-14	98.9	0.7	0.0	0.4	0.0	0.0	0.0	100.0
15-19	97.0	3.0	0.0	0.0	0.0	0.0	0.0	100.0
20-24	69.2	30.1	0.0	0.2	0.0	0.2	0.2	100.0
25-29	30.3	69.4	0.0	0.2	0.0	0.0	0.2	100.0
30-49	5.2	94.1	0.0	0.4	0.0	0.1	0.2	100.0
50+	0.7	89.2	0.0	10.0	0.0	0.0	0.1	100.0
Total	49.2	49.0	0.0	1.6	0.0	0.0	0.1	100.0
Female								
6-12	99.7	0.1	0.0	0.1	0.0	0.0	0.1	100.0
13-14	98.4	1.6	0.0	0.0	0.0	0.0	0.0	100.0
15-19	57.5	41.7	0.2	0.0	0.3	0.2	0.2	100.0
20-24	13.2	83.4	0.2	0.7	1.6	0.5	0.4	100.0
25-29	6.0	91.4	0.0	0.9	0.7	0.7	0.2	100.0
30-49	1.3	88.3	0.0	7.8	0.8	0.5	1.3	100.0
50+	0.6	45.1	0.0	53.6	0.3	0.1	0.3	100.0
Total	35.5	52.9	0.0	10.3	0.5	0.3	0.5	100.0

Table 2.3 Marital status of the household population (contd.)								
Percent distribution of the household population age 6 and above by marital status, according to age, residence, and sex, West Bengal, 1998-99								
Age	Marital status							Total percent
	Never married	Currently married	Married, <i>gauna</i> not performed	Widowed	Divorced	Separated	Deserted	
TOTAL								
Male								
6-12	99.8	0.2	0.0	0.0	0.0	0.0	0.0	100.0
13-14	99.1	0.6	0.0	0.3	0.0	0.0	0.0	100.0
15-19	97.4	2.6	0.0	0.0	0.0	0.0	0.1	100.0
20-24	74.8	24.7	0.0	0.1	0.0	0.1	0.2	100.0
25-29	38.1	61.3	0.0	0.2	0.0	0.0	0.3	100.0
30-49	7.9	91.2	0.0	0.6	0.0	0.1	0.2	100.0
50+	1.4	89.7	0.0	8.7	0.1	0.0	0.2	100.0
Total	48.9	49.3	0.0	1.6	0.0	0.0	0.2	100.0
Female								
6-12	99.7	0.2	0.0	0.1	0.0	0.0	0.1	100.0
13-14	98.8	1.2	0.0	0.0	0.0	0.0	0.0	100.0
15-19	63.1	36.0	0.4	0.0	0.3	0.1	0.1	100.0
20-24	20.2	76.9	0.1	0.6	1.3	0.4	0.4	100.0
25-29	7.8	89.5	0.0	1.1	0.8	0.6	0.2	100.0
30-49	2.3	88.0	0.0	7.3	0.7	0.5	1.3	100.0
50+	0.8	47.2	0.0	51.4	0.2	0.1	0.3	100.0
Total	35.6	52.8	0.1	10.4	0.5	0.3	0.5	100.0
Note: Table is based on the <i>de facto</i> population, i.e., persons who stayed in the household the night before the interview (including both usual residents and visitors). The marital status distribution for females by age cannot be directly compared with the published distribution for NFHS-1 because the ages in the current table are based entirely on the reports of the household respondents, whereas in NFHS-1 the ages of ever-married women age 13-49 were taken from the Woman's Questionnaire.								

has been rising for both men and women. Marriage ages are higher in urban areas than in rural areas, and there is evidence that this urban-rural differential is getting larger over time among males. In NFHS-2, urban women and men marry almost four years later than their rural counterparts. As estimated from NFHS-2, the SMAM for females in West Bengal is 19.6 (22.4 in urban areas and 18.7 in rural areas).

2.3 Household Composition

Table 2.5 shows the percent distribution of households by various characteristics of the household head (sex, age, religion, and caste/tribe), as well as by household type and the number of usual household members, according to residence. The table is based on the *de jure* population because household type and the number of usual household members pertain to the usual-resident population. The table shows that 88-89 percent of all household heads are male, regardless of area of residence (rural or urban). This proportion is slightly lower in Kolkata, where it is 85 percent.

Table 2.4 Singulate mean age at marriage			
Singulate mean age at marriage by sex from selected sources, West Bengal, 1961–1998/99			
Source	Singulate mean age at marriage (SMAM)		
	Male	Female	Difference
1961 Census	24.3	15.9	8.4
1971 Census	24.6	18.0	6.6
1981 Census	26.0	19.3	6.7
1991 Census	25.9	19.7	6.2
1992 NFHS-1			
Urban	27.6	21.8	5.8
Rural	25.0	18.1	6.9
Total	25.9	19.2	6.7
1998–99 NFHS-2			
Urban	29.0	22.4	6.6
Rural	25.2	18.7	6.5
Total	26.2	19.6	6.6

Note: Table is based on the *de jure* population.

The median age of household heads is 49 years in urban areas and 42 years in rural areas. More than two-thirds (68 percent) of household heads are age 30–59 and only 12 percent are less than age 30. Seventy-six percent of household heads are Hindu, 22 percent are Muslim, and 2 percent belong to other religions. Hindus constitute a higher proportion of the population in urban areas (93 percent) than in rural areas (70 percent). In contrast, the proportion of the population that is Muslim is much higher in rural areas (27 percent) than in urban areas (6 percent). Twenty-three percent of household heads belong to scheduled castes, 7 percent to scheduled tribes, and 5 percent to other backward classes.¹ Almost two-thirds (65 percent) of household heads in West Bengal do not belong to a scheduled caste, a scheduled tribe, or an other backward class. Scheduled castes and scheduled tribes constitute a much higher proportion of the population in rural areas (35 percent) than in urban areas (18 percent). Kolkata has a lower proportion of these two groups than urban areas as a whole. Sixty-two percent of all households are nuclear family households (consisting of an unmarried adult living alone or a married person or couple and their unmarried children, if any). Nuclear households are somewhat less common in Kolkata (56 percent). In West Bengal, the average household size is 4.9 persons (5.1 in rural areas and 4.6 in urban areas).

2.4 Educational Level

The level of education of household members may affect reproductive behaviour, contraceptive use, the health of children, and proper hygienic practices. Table 2.6 shows the percent distribution of the *de facto* household population by literacy and educational level, according to age, residence, and sex. (This table and all subsequent tables and figures in this report are based on the *de facto* sample, unless otherwise specified.)

¹Other backward classes are castes and communities that have been designated by the Government of India as socially and educationally backward and in need of special protection from social injustice.

Table 2.5 Household characteristics				
Percent distribution of households by selected characteristics of the household head, household type, and household size, according to residence, West Bengal, 1998-99				
Characteristic	Urban	Rural	Total	Kolkata
Sex of household head				
Male	87.9	89.0	88.7	85.0
Female	12.1	11.0	11.3	15.0
Age of household head				
< 30	5.2	14.0	11.7	6.0
30-44	32.4	39.9	37.9	32.5
45-59	36.7	27.1	29.7	32.0
60+	25.7	19.0	20.8	29.5
Median age	49.3	42.0	45.1	49.3
Religion of household head				
Hindu	92.8	69.6	75.8	88.4
Muslim	6.2	27.4	21.8	10.4
Christian	0.3	0.3	0.3	0.5
Sikh	0.3	0.0	0.1	0.3
Buddhist/Neo-Buddhist	0.0	0.5	0.4	0.1
Jain	0.0	0.0	0.0	0.1
Jewish	0.0	0.0	0.0	0.2
No religion	0.0	0.1	0.1	0.0
Other	0.2	1.7	1.3	0.0
Missing	0.1	0.3	0.2	0.1
Caste/tribe of household head				
Scheduled caste	17.1	24.9	22.8	12.7
Scheduled tribe	0.6	9.6	7.2	0.3
Other backward class	6.2	3.8	4.5	2.4
Other	76.0	61.2	65.1	84.3
Don't know/missing	0.2	0.5	0.5	0.2
Household type				
Nuclear household	62.0	61.4	61.5	56.2
Non-nuclear household	38.0	38.6	38.5	43.8
Number of usual members				
1	4.7	2.6	3.1	6.5
2	9.2	7.4	7.8	9.8
3	18.6	13.2	14.7	20.5
4	24.9	21.9	22.7	21.1
5	16.5	20.7	19.6	16.2
6	11.1	13.4	12.8	11.0
7	4.9	9.5	8.3	5.6
8	3.4	4.6	4.2	3.9
9+	6.7	6.7	6.7	5.3
Mean household size	4.6	5.1	4.9	4.5
Total percent	100.0	100.0	100.0	100.0
Number of households	1,259	3,466	4,725	315

Note: Table is based on the *de jure* population.

In West Bengal, 43 percent of females and 24 percent of males age six and above are illiterate. Overall levels of illiteracy have not changed much since NFHS-1, when the levels of female and male illiteracy were 45 percent and 25 percent, respectively. Although the overall rate of illiteracy has remained fairly constant between the two surveys, examination of the proportion illiterate by age indicates some improvement, particularly for young females. For example, in NFHS-1, 37 percent of females ages 6-9 years were illiterate. Based upon NFHS-2,

Table 2.6 Educational level of the household population										
Percent distribution of the household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age, residence, and sex, West Bengal, 1998-99										
Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
URBAN										
Male										
6-9	13.7	86.1	0.1	0.0	0.0	0.0	0.0	100.0	193	1.3
10-14	8.0	41.9	42.9	6.5	0.6	0.0	0.0	100.0	277	5.0
15-19	7.6	14.3	24.6	27.0	19.3	7.1	0.0	100.0	297	8.3
20-29	8.7	7.9	14.9	18.9	16.0	33.6	0.0	100.0	560	10.0
30-39	11.4	9.6	10.6	16.6	16.6	35.2	0.0	100.0	494	10.1
40-49	12.2	10.0	12.4	15.3	13.0	37.0	0.0	100.0	360	10.0
50+	12.8	12.6	14.6	12.9	18.0	29.1	0.0	100.0	552	9.6
Total	10.6	19.1	16.6	15.1	13.8	24.8	0.0	100.0	2,733	8.5
Female										
6-9	12.5	87.5	0.0	0.0	0.0	0.0	0.0	100.0	206	1.4
10-14	10.6	47.1	36.4	5.9	0.0	0.0	0.0	100.0	290	4.6
15-19	13.5	13.6	22.2	28.5	12.8	9.4	0.0	100.0	261	8.1
20-29	18.1	8.1	15.2	19.4	15.3	23.9	0.0	100.0	532	9.0
30-39	24.4	10.4	14.1	16.6	12.8	21.6	0.0	100.0	428	8.2
40-49	28.4	13.5	14.5	14.3	9.0	20.4	0.0	100.0	317	7.0
50+	42.5	16.4	13.1	10.7	6.5	10.6	0.2	100.0	470	3.7
Total	23.3	22.3	16.5	14.4	9.1	14.3	0.0	100.0	2,503	5.7
Total										
6-9	13.1	86.9	0.1	0.0	0.0	0.0	0.0	100.0	399	1.4
10-14	9.3	44.6	39.6	6.2	0.3	0.0	0.0	100.0	567	4.8
15-19	10.4	14.0	23.5	27.7	16.3	8.2	0.0	100.0	557	8.2
20-29	13.3	8.0	15.1	19.1	15.7	28.9	0.0	100.0	1,092	9.5
30-39	17.5	10.0	12.2	16.6	14.8	28.9	0.0	100.0	922	9.3
40-49	19.8	11.6	13.4	14.8	11.1	29.3	0.0	100.0	677	8.7
50+	26.4	14.3	13.9	11.9	12.7	20.6	0.1	100.0	1,022	6.9
Total	16.7	20.6	16.5	14.8	11.6	19.8	0.0	100.0	5,236	7.3

28 percent of females in that age group are illiterate. There have also been some improvements in the level of educational attainment, which can be seen by examining the differences in educational levels by age.²³ For example, the proportion of males completing at least high school rises from 21 percent at age 50 and above to 28 percent at ages 20-29. For females, the proportion completing at least high school is only 6 percent at age 50 and above but reaches a level of 16 percent at ages 20-29.

²Although the number of years of education at each level (primary school, middle school, secondary school, and higher secondary school) is different in different states, to facilitate comparisons of educational attainment among states, the NFHS-2 tabulations use the same levels in all states (five years of primary school, three years of middle school, two years of secondary school, and two years of higher secondary school). In West Bengal, however, most primary schools and middle schools consist of four years each. In NFHS-1, tabulations followed the actual educational system in West Bengal (four years of primary school, four years of middle school, two years of secondary school, and two years of higher secondary school), so that the educational levels in NFHS-1 and NFHS-2 published tables are not strictly comparable.

Table 2.6 Educational level of the household population (contd.)

Percent distribution of the household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age, residence, and sex, West Bengal, 1998-99

Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
RURAL										
Male										
6-9	31.3	68.1	0.5	0.0	0.0	0.0	0.2	100.0	898	0.0
10-14	14.1	59.7	23.5	2.8	0.0	0.0	0.0	100.0	1,155	3.7
15-19	19.6	21.6	30.3	19.1	8.5	1.0	0.0	100.0	881	5.9
20-29	23.4	18.1	20.8	18.3	9.7	9.7	0.0	100.0	1,469	6.1
30-39	35.3	20.0	13.6	17.1	5.9	8.1	0.0	100.0	1,228	4.5
40-49	35.9	22.5	12.1	11.7	7.3	10.5	0.0	100.0	840	4.2
50+	43.8	24.8	13.8	9.0	5.1	3.5	0.0	100.0	1,113	3.0
Total	28.8	32.5	16.7	11.6	5.4	5.0	0.0	100.0	7,584	4.0
Female										
6-9	31.7	68.1	0.0	0.0	0.0	0.0	0.2	100.0	921	0.0
10-14	25.1	49.9	22.7	2.3	0.0	0.0	0.0	100.0	1,012	3.2
15-19	32.6	21.6	24.6	15.9	4.2	1.1	0.0	100.0	903	4.7
20-29	47.3	15.5	17.2	11.8	4.8	3.4	0.0	100.0	1,598	3.2
30-39	59.4	16.7	12.1	6.1	3.7	1.9	0.0	100.0	1,189	0.0
40-49	67.9	17.7	8.0	4.7	1.3	0.4	0.0	100.0	655	0.0
50+	79.6	14.7	4.0	0.7	0.7	0.3	0.1	100.0	1,118	0.0
Total	49.2	27.8	13.1	6.3	2.4	1.3	0.0	100.0	7,396	0.0
Total										
6-9	31.5	68.1	0.2	0.0	0.0	0.0	0.2	100.0	1,820	0.0
10-14	19.2	55.1	23.1	2.5	0.0	0.0	0.0	100.0	2,167	3.5
15-19	26.1	21.6	27.4	17.5	6.3	1.1	0.0	100.0	1,784	5.3
20-29	35.9	16.8	18.9	14.9	7.1	6.4	0.0	100.0	3,067	4.7
30-39	47.2	18.4	12.9	11.7	4.8	5.1	0.0	100.0	2,417	2.7
40-49	49.9	20.4	10.3	8.6	4.7	6.1	0.0	100.0	1,495	2.1
50+	61.7	19.7	8.9	4.8	2.9	1.9	0.1	100.0	2,230	0.0
Total	38.8	30.2	14.9	9.0	3.9	3.1	0.0	100.0	14,980	2.6

With the exception of the age groups 6-9 and 10-14 years, a higher percentage of males than of females have completed each level of education. There is no difference between males and females in the youngest age group, which reflects the strides that have been made in female literacy and educational attainment. The median number of years of schooling is very low for both sexes. It is only 4.7 years for males and 2.1 years for females. However, examination of the median number of years of schooling by age group indicates that the sex differential has eroded over time.

Education levels are much higher in urban areas than in rural areas. The proportion illiterate is more than twice as high for rural males (29 percent) and females (49 percent) as for urban males (11 percent) and females (23 percent).

Table 2.6 Educational level of the household population (contd.)

Percent distribution of the household population age 6 and above by literacy and level of education, and median number of completed years of schooling, according to age, residence, and sex, West Bengal, 1998-99

Age	Educational level ¹							Total percent	Number of persons	Median number of years of schooling
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing			
TOTAL										
Male										
6-9	28.2	71.3	0.4	0.0	0.0	0.0	0.1	100.0	1,091	0.0
10-14	12.9	56.2	27.2	3.5	0.1	0.0	0.0	100.0	1,432	3.9
15-19	16.5	19.7	28.9	21.1	11.2	2.5	0.0	100.0	1,178	6.5
20-29	19.3	15.3	19.2	18.5	11.4	16.3	0.0	100.0	2,029	7.4
30-39	28.4	17.0	12.7	17.0	9.0	15.9	0.0	100.0	1,723	5.9
40-49	28.8	18.8	12.2	12.8	9.0	18.5	0.0	100.0	1,200	5.6
50+	33.5	20.7	14.1	10.3	9.4	12.0	0.0	100.0	1,665	4.6
Total	24.0	29.0	16.7	12.5	7.6	10.2	0.0	100.0	10,317	4.7
Female										
6-9	28.2	71.7	0.0	0.0	0.0	0.0	0.1	100.0	1,128	0.0
10-14	21.9	49.3	25.7	3.1	0.0	0.0	0.0	100.0	1,301	3.7
15-19	28.3	19.8	24.1	18.7	6.1	3.0	0.0	100.0	1,164	5.3
20-29	40.0	13.7	16.7	13.7	7.4	8.5	0.0	100.0	2,130	4.6
30-39	50.2	15.0	12.6	8.9	6.1	7.2	0.0	100.0	1,617	1.9
40-49	55.0	16.3	10.1	7.8	3.8	7.0	0.0	100.0	972	0.0
50+	68.6	15.2	6.7	3.6	2.4	3.3	0.2	100.0	1,587	0.0
Total	42.6	26.4	13.9	8.4	4.1	4.6	0.0	100.0	9,899	2.1
Total										
6-9	28.2	71.5	0.2	0.0	0.0	0.0	0.1	100.0	2,218	0.0
10-14	17.2	52.9	26.5	3.3	0.1	0.0	0.0	100.0	2,733	3.8
15-19	22.4	19.8	26.5	19.9	8.7	2.8	0.0	100.0	2,342	6.0
20-29	29.9	14.5	17.9	16.0	9.4	12.3	0.0	100.0	4,159	5.9
30-39	39.0	16.1	12.7	13.1	7.6	11.7	0.0	100.0	3,340	4.4
40-49	40.5	17.7	11.3	10.6	6.7	13.3	0.0	100.0	2,172	4.2
50+	50.6	18.0	10.5	7.0	6.0	7.8	0.1	100.0	3,252	1.1
Total	33.1	27.7	15.4	10.5	5.9	7.5	0.0	100.0	20,216	3.8

Note: This table and all subsequent tables (unless otherwise indicated) are based on the *de facto* population. Illiterate persons may have been to school, but they cannot read and write.

¹In this report, 'primary school complete' means 5-7 completed years of education, 'middle school complete' means 8-9 completed years of education, 'high school complete' means 10-11 completed years of education, and 'higher secondary complete and above' means 12 or more completed years of education.

Table 2.7 and Figure 2.2 show school attendance rates for the school-age household population by age, sex, and residence. In West Bengal, 79 percent of children age 6-14 are attending school, up from 68 percent in NFHS-1. The attendance rate drops off sharply from 83 percent at age 6-10 to 45 percent at age 15-17. For the age group 6-17 years, the attendance rate is 74 percent for males, 68 percent for females, and 71 percent for the state as a whole. Attendance rates are higher in urban areas than in rural areas. In urban areas, attendance rates are not that different for males and females, although the gap between males and females is much wider among older children (age 15-17) than among younger children. A similar pattern emerges in rural areas, with the male-female differential in school attendance being highest at age 15-17.

Table 2.7 School attendance
Percentage of the household population age 6–17 years attending school by age, sex, and residence, West Bengal, 1998–99

Age	Urban	Rural	Total	Kolkata
MALE				
6–10	88.2	82.8	83.7	88.0
11–14	78.5	74.6	75.4	86.5
15–17	64.1	47.6	51.4	61.8
6–14	83.8	79.4	80.2	87.4
6–17	78.5	72.5	73.7	79.9
FEMALE				
6–10	87.9	80.8	82.1	87.3
11–14	74.9	66.9	68.7	87.1
15–17	55.4	31.9	36.9	62.7
6–14	82.0	75.3	76.7	87.2
6–17	76.1	65.9	68.0	80.7
TOTAL				
6–10	88.1	81.8	82.9	87.7
11–14	76.6	71.0	72.2	86.8
15–17	60.1	40.0	44.5	62.2
6–14	82.9	77.4	78.5	87.3
6–17	77.3	69.3	70.9	80.3

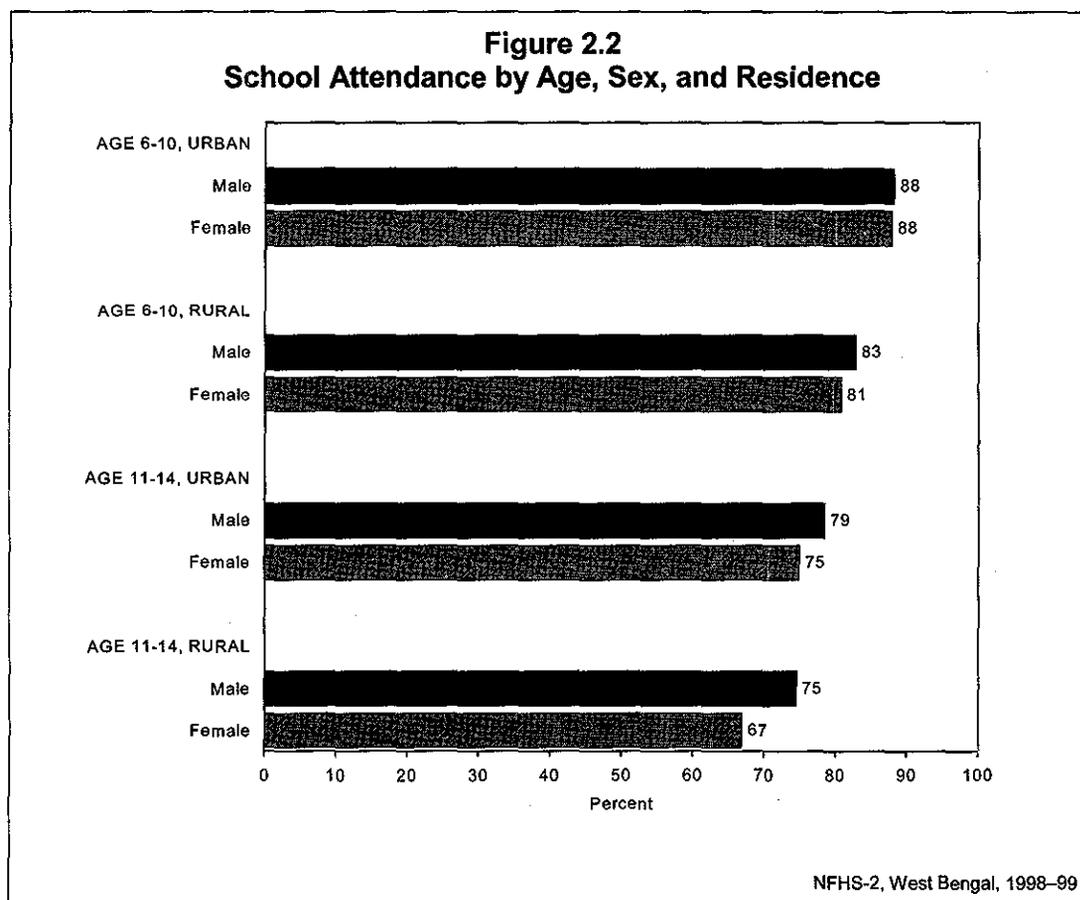


Table 2.8 Reasons for children not attending school

Percent distribution of children age 6–17 years who never attended school by the main reason for never attending school and percent distribution of children age 6–17 years who have dropped out of school by the main reason for not currently attending school, according to residence and sex, West Bengal, 1998–99

Reason	Urban		Rural		Total	
	Male	Female	Male	Female	Male	Female
Main reason for never attending school¹						
School too far away	0.0	0.0	2.2	1.2	1.9	1.0
Transport not available	0.0	1.2	0.0	0.0	0.0	0.2
Education not considered necessary	1.7	1.2	0.0	0.9	0.2	0.9
Required for household work	1.8	5.6	3.6	8.1	3.4	7.8
Required for work on farm/family business	0.0	0.0	0.0	0.6	0.0	0.5
Costs too much	36.1	52.8	35.4	38.6	35.5	40.4
No proper school facilities for girls	0.0	0.3	0.0	1.2	0.0	1.1
Required for care of siblings	0.0	1.2	0.0	1.2	0.0	1.2
Not interested in studies	33.0	23.7	36.3	26.2	35.8	25.9
Other	27.4	13.9	22.1	18.7	22.8	18.1
Don't know/missing	0.0	0.0	0.4	3.3	0.4	2.9
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of children	50	72	323	480	373	552
Main reason for not currently attending school²						
School too far away	0.0	0.0	0.0	2.3	0.0	1.9
Further education not considered necessary	2.2	2.4	0.8	0.0	1.1	0.5
Required for household work	6.1	13.5	12.4	15.0	11.2	14.7
Required for work on farm/family business	1.4	0.0	2.5	1.4	2.3	1.1
Required for outside work for payment in cash or kind	3.8	1.2	3.4	0.5	3.5	0.6
Costs too much	36.8	39.9	27.4	26.5	29.2	29.1
No proper school facilities for girls	0.0	2.4	0.0	0.5	0.0	0.8
Required for care of siblings	0.0	0.0	0.8	2.3	0.7	1.9
Not interested in studies	43.7	22.9	44.9	19.2	44.6	19.9
Repeated failures	0.0	2.8	0.8	1.8	0.7	2.0
Got married	0.0	5.4	0.4	19.6	0.3	16.9
Other	4.1	8.1	5.1	8.2	4.9	8.2
Don't know/missing	2.0	1.5	1.3	2.7	1.4	2.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of children	80	74	340	317	420	392
¹ For children who never attended school						
² For children who have dropped out of school						

Table 2.8 shows reasons for children never attending school or not currently attending school (for those who have dropped out of school), as reported by the respondent to the Household Questionnaire. For both boys and girls, the main reasons for never attending school are that school costs too much and the children are not interested in studies. For boys who used to attend school, but have dropped out, the main reasons for not currently attending school are that the child is not interested in studies, school costs too much, and the child is required for household work. For girls, cost is the most common reason for not currently attending school, followed by a lack of interest in studies, marriage, and the girl being required for household work. One in five girls in rural areas, compared with 1 in 19 girls in urban areas, stopped attending school because of marriage. In West Bengal, one in six boys and girls are not currently attending school because they are required for household work, work on a family farm or in a family business, or outside work for payment in cash or kind.

2.5 Housing Characteristics

Table 2.9 provides information on housing characteristics by residence. Thirty-seven percent of households in West Bengal have electricity (up slightly from 33 percent in NFHS-1). In recent years, there has been a substantial improvement in the proportion of urban households with electricity, up from 72 percent in NFHS-1 to 85 percent in NFHS-2. There has been a smaller improvement among rural households, up from 14 percent to 19 percent in the six years between the two surveys. Ninety-four percent of households in Kolkata have electricity.

Water sources and sanitary facilities have an important influence on the health of household members, especially children. NFHS-1 and NFHS-2 contained questions on sources of drinking water and types of sanitary facilities. Only one-fourth of households in West Bengal use piped drinking water (up slightly from 22 percent in NFHS-1). Hand pumps are the predominant source of drinking water in rural West Bengal, whereas most urban households use piped drinking water. More than three-fourths (78 percent) of rural households obtain their drinking water from hand pumps. The proportion of households with piped drinking water is 66 percent in urban areas but only 11 percent in rural areas. Nine percent of all households in West Bengal drink water from wells. Most households have fairly easy access to drinking water. Seventy-nine percent of households either have a source of drinking water in their residence/yard or take less than 15 minutes to get drinking water, including the time to go to the source, get water, and come back. The median time to get drinking water is 1.3 minutes in urban areas, 4.7 minutes in rural areas, and 4.5 minutes overall. The median time to get drinking water is longer in Kolkata (4.0 minutes) than in urban areas as a whole (1.3 minutes). The overwhelming majority (86 percent) of households in West Bengal do not purify their drinking water. There are vast urban-rural differences, with 9 percent of rural households and 29 percent of urban households purifying their drinking water by some method. In urban areas, the most popular methods of water purification are filtering and boiling water. In rural areas, more than one-half of all households that purify their drinking water do so by boiling it.

Regarding sanitation facilities, 34 percent of households have a flush toilet (using either piped water or bucket water for flushing), up from 29 percent in NFHS-1. Eleven percent of households have a pit toilet or latrine, and 55 percent have no facility. Again there are large urban-rural differences: 80 percent of urban households have a flush toilet, whereas 72 percent of rural households have no toilet facility at all. Ninety-eight percent of households in Kolkata have a toilet facility, primarily flush toilets.

Several types of fuel are used for cooking in West Bengal, with wood as the most common type. In the state as a whole, 31 percent of households rely mainly on wood; 26 percent on crop residues; 15 percent on coal, coke, lignite, or charcoal; 11 percent on liquid petroleum gas; 9 percent on dung cakes; 7 percent on kerosene; and the remainder on other fuels. Again there are large urban-rural differences. Almost two-thirds (65 percent) of urban households rely mainly on liquid petroleum gas or coal, coke, lignite, or charcoal. In contrast, 73 percent of rural households rely mainly on wood or crop residues. Kerosene (50 percent) and liquid petroleum gas (40 percent) are the main types of fuel used for cooking by households in Kolkata.

Table 2.9 Housing characteristics				
Percent distribution of households by housing characteristics, according to residence, West Bengal, 1998-99				
Housing characteristic	Urban	Rural	Total	Kolkata
Electricity				
Yes	85.0	19.2	36.7	93.8
No	15.0	80.8	63.3	6.2
Total percent	100.0	100.0	100.0	100.0
Source of drinking water				
Piped	66.0	10.5	25.3	64.0
Hand pump	26.2	77.7	64.0	34.5
Well water	6.6	9.9	9.1	0.2
Surface water	0.0	0.5	0.3	0.0
Other	1.2	1.3	1.3	1.4
Missing	0.0	0.1	0.1	0.0
Total percent	100.0	100.0	100.0	100.0
Time to get drinking water				
Percentage < 15 minutes	88.9	75.6	78.7	85.6
Median time (minutes)	1.3	4.7	4.5	4.0
Method of drinking water purification¹				
Strains water by cloth	2.7	1.9	2.1	1.0
Uses alum	0.9	0.7	0.7	0.7
Uses water filter	17.9	1.8	6.1	17.0
Boils water	7.4	4.9	5.6	5.7
Uses electronic purifier	1.2	0.1	0.4	2.7
Uses other method	0.8	0.6	0.6	0.8
Does not purify water	71.4	90.8	85.6	74.2
Sanitation facility				
Flush toilet	80.3	17.0	33.8	89.5
Pit toilet/latrine	10.9	11.0	11.0	8.9
Other	0.1	0.3	0.3	0.0
No facility	8.6	71.7	54.9	1.6
Total percent	100.0	100.0	100.0	100.0
Main type of fuel used for cooking				
Wood	12.2	37.5	30.8	2.4
Crop residues	0.9	35.3	26.1	0.2
Dung cakes	0.9	11.7	8.8	0.1
Coal/coke/lignite/charcoal	29.5	10.1	15.3	6.1
Kerosene	19.9	1.8	6.6	50.3
Electricity	0.5	0.1	0.2	0.2
Liquid petroleum gas	35.5	1.6	10.6	39.9
Biogas	0.1	0.3	0.3	0.0
Other	0.4	1.4	1.1	0.6
Missing	0.1	0.1	0.1	0.2
Total percent	100.0	100.0	100.0	100.0
Type of house				
<i>Kachha</i>	4.9	39.9	30.6	0.2
<i>Semi-pucca</i>	15.2	44.2	36.5	5.2
<i>Pucca</i>	79.8	15.7	32.8	94.1
Missing	0.1	0.2	0.2	0.5
Total percent	100.0	100.0	100.0	100.0
Persons per room				
< 3	68.3	57.2	60.2	57.4
3-4	20.0	28.2	26.0	25.3
5-6	8.6	11.4	10.7	11.9
7+	3.1	3.1	3.1	5.5
Missing	0.1	0.1	0.1	0.0
Total percent	100.0	100.0	100.0	100.0
Mean number of persons per room	2.4	2.8	2.7	2.8
Number of households	1,259	3,466	4,725	315

¹Totals add to more than 100.0 because households may use more than one method of purification.

Table 2.10 Household ownership of agricultural land, house, and livestock				
Percent distribution of households owning agricultural land and percentage owning a house and livestock by residence, West Bengal, 1998–99				
Asset	Urban	Rural	Total	Kolkata
No agricultural land	90.3	50.8	61.3	93.2
Irrigated land only				
< 1 acre	1.1	13.1	9.9	1.3
1–5 acres	1.3	6.3	5.0	1.4
6+ acres	0.3	0.4	0.4	0.2
Nonirrigated land only				
< 1 acre	3.3	11.1	9.0	1.4
1–5 acres	2.0	8.3	6.6	0.9
6+ acres	0.5	0.4	0.4	0.4
Both irrigated and nonirrigated land				
< 1 acre	0.1	2.4	1.8	0.2
1–5 acres	0.5	6.1	4.6	0.5
6+ acres	0.1	0.9	0.7	0.2
Missing	0.5	0.3	0.4	0.4
Total percent	100.0	100.0	100.0	100.0
Percentage owning a house	69.3	96.2	89.0	52.7
Percentage owning livestock	10.8	53.0	41.8	3.1
Number of households	1,259	3,466	4,725	315

Regarding type of house construction, 31 percent of houses are *kachha* (made from mud, thatch, or other low-quality materials), 37 percent are semi-*pucca* (partly low-quality and partly high-quality materials), and 33 percent are *pucca* (high-quality materials throughout, including roof, walls, and floor). The proportion of houses that are *pucca* is 80 percent in urban areas and only 16 percent in rural areas. Ninety-four percent of households in Kolkata live in houses that are *pucca*.

Crowded housing conditions may also affect health as well as the quality of life. Forty percent of households live in houses with three or more persons per room. The mean number of persons per room is 2.7 (compared with 2.8 in NFHS-1). There is not much variation by place of residence (2.4 in urban areas and 2.8 in rural areas).

Table 2.10 shows a number of measures related to the socioeconomic status of the household (ownership of land, house, and livestock). Overall, 61 percent of households do not own any agricultural land—an increase since the time of NFHS-1, when 55 percent of households in West Bengal did not own any agricultural land. Fifty-one percent of households in rural areas do not own agricultural land, compared with 90 percent of households in urban areas (93 percent in Kolkata). In rural areas, among those who own land, 60 percent have at least some irrigated land. The proportion of households owning a house is 69 percent in urban areas, 96 percent in rural areas, and 89 percent overall. Only 53 percent of households in Kolkata own a house. The proportion of households owning livestock is 11 percent in urban areas (only 3 percent in Kolkata), 53 percent in rural areas, and 42 percent overall.

Table 2.11 Household ownership of durable goods and standard of living

Percentage of households owning selected durable goods and percent distribution of households by type of kitchenware and the standard of living index, according to residence, West Bengal, 1998-99

Asset	Urban	Rural	Total	Kolkata
Durable goods				
Mattress	71.1	25.0	37.3	76.9
Pressure cooker	57.2	10.9	23.2	66.0
Chair	59.7	24.3	33.7	57.1
Cot/bed	83.9	54.0	62.0	83.0
Table	63.1	27.8	37.2	54.2
Clock/watch	87.9	52.2	61.7	92.0
Electric fan	78.5	17.4	33.7	85.3
Bicycle	55.3	52.6	53.3	31.9
Radio/transistor	53.3	33.3	38.6	55.9
Sewing machine	23.4	3.5	8.8	23.3
Telephone	19.2	1.0	5.8	25.6
Refrigerator	26.7	1.5	8.2	28.4
Television (black and white)	48.4	12.3	21.9	45.7
Television (colour)	21.0	1.3	6.5	28.4
Moped/scooter/motorcycle	10.1	2.6	4.6	8.9
Car	3.4	0.3	1.1	5.2
Water pump	9.4	4.9	6.1	10.7
Bullock cart	0.7	6.6	5.1	0.5
Thresher	0.4	4.6	3.4	0.2
Tractor	0.2	0.5	0.4	0.2
None of the above	3.1	18.0	14.0	2.0
Main type of kitchenware used				
Clay	0.5	0.0	0.2	0.6
Aluminium	8.8	25.9	21.4	5.5
Cast iron	0.2	0.5	0.4	0.2
Brass/copper	0.2	1.0	0.8	0.4
Stainless steel	90.1	72.4	77.1	93.0
Missing	0.2	0.1	0.1	0.3
Total percent	100.0	100.0	100.0	100.0
Standard of living index				
Low	15.6	55.7	45.0	11.1
Medium	51.9	36.3	40.5	56.2
High	30.9	6.2	12.8	30.2
Missing	1.6	1.7	1.7	2.4
Total percent	100.0	100.0	100.0	100.0
Number of households	1,259	3,466	4,725	315

The possession of durable goods is another indicator of a household's socioeconomic level, although these goods may also have other benefits. For example, having access to a radio or television may expose household members to innovative ideas or important information about health and family welfare; a refrigerator prolongs the wholesomeness of food; and a means of transportation allows greater access to many services outside the local area. Table 2.11 shows that the majority of households in West Bengal have a cot or a bed (62 percent), a clock or watch (62 percent), or a bicycle (53 percent). Other durable goods often found in households are radios/transistors (39 percent), mattresses (37 percent), tables (37 percent), electric fans (34 percent), chairs (34 percent), pressure cookers (23 percent), and black and white televisions (22 percent). Even smaller proportions own sewing machines (9 percent), refrigerators (8 percent), colour televisions (7 percent), water pumps (6 percent), telephones (6 percent), bullock carts (5 percent), mopeds, scooters, or motorcycles (5 percent), threshers (3 percent), or cars (1 percent). Urban households are much more likely than rural households to own most of these durable goods. However, a higher proportion of households in rural areas than in urban areas own a

bullock cart, a thresher, or a tractor, all of which are used mainly for cultivation. Fourteen percent of households in West Bengal do not own any of the above durable goods. More than three-fourths (77 percent) of households use stainless steel kitchenware, and 21 percent use aluminium kitchenware. Aluminium kitchenware is more popular in rural areas (26 percent) than in urban areas (9 percent).

Table 2.11 shows a summary household measure called the standard of living index (SLI), which is calculated by adding the following scores:

House type: 4 for *pucca*, 2 for *semi-pucca*, 0 for *kachha*;

Toilet facility: 4 for own flush toilet, 2 for public or shared flush toilet or own pit toilet, 1 for shared or public pit toilet, 0 for no facility;

Source of lighting: 2 for electricity, 1 for kerosene, gas, or oil, 0 for other source of lighting;

Main fuel for cooking: 2 for electricity, liquid petroleum gas, or biogas, 1 for coal, charcoal, or kerosene, 0 for other fuel;

Source of drinking water: 2 for pipe, hand pump, or well in residence/yard/plot, 1 for public tap, hand pump, or well, 0 for other water source;

Separate room for cooking: 1 for yes, 0 for no;

Ownership of house: 2 for yes, 0 for no;

Ownership of agricultural land: 4 for 5 acres or more, 3 for 2.0–4.9 acres, 2 for less than 2 acres or acreage not known, 0 for no agricultural land;

Ownership of irrigated land: 2 if owns at least some irrigated land, 0 for no irrigated land;

Ownership of livestock: 2 if owns livestock, 0 if does not own livestock;

Ownership of durable goods: 4 each for a car or tractor, 3 each for a moped/scooter/ motorcycle, telephone, refrigerator, or colour television, 2 each for a bicycle, electric fan, radio/transistor, sewing machine, black and white television, water pump, bullock cart, or thresher, 1 each for a mattress, pressure cooker, chair, cot/bed, table, or clock/watch.

Index scores range from 0–14 for a low SLI to 15–24 for a medium SLI to 25–67 for a high SLI. By this measure, 45 percent of households in West Bengal have a low standard of living, 41 percent have a medium standard of living, and 13 percent have a high standard of living. The proportion with a low standard of living is much higher in rural areas (56 percent) than in urban areas (16 percent). In Kolkata, 11 percent of households have a low standard of living, 56 percent have a medium standard of living, and 30 percent have a high standard of living. The proportion with a high standard of living is much higher in urban areas (31 percent) than in rural areas (6 percent). The proportion with a medium standard of living is also higher in urban areas than in rural areas.

2.6 Lifestyle Indicators

The NFHS-2 Household Questionnaire asked about certain aspects of the lifestyle of household members. Table 2.12 shows the percentages of men and women age 15 and above who chew *paan masala* or tobacco, drink alcohol, or smoke. These lifestyle indicators are of considerable interest because the use of *paan masala*, tobacco, and alcohol all have detrimental effects on health.

The respondent to the Household Questionnaire reported on these lifestyle indicators for all persons in the household and, therefore, the results should be interpreted with caution because the household respondent may not be aware of use that takes place outside the household environs. In addition, to the extent that social stigma may be attached to the use of some of the substances, underreporting is likely.

Twenty percent of persons age 15 and above are reported to chew *paan masala* or tobacco. This proportion rises from 8 percent of males and 4 percent of females at age 15–19 to 33 percent and 29 percent, respectively, at age 60 and above. Chewing of *paan masala* or tobacco is more common among males than among females and slightly more common in rural areas than in urban areas. In addition, the practice of chewing *paan masala* or tobacco is inversely related to education: It is more than two times higher among illiterate males than it is among males who have completed at least high school. Among females, chewing *paan masala* or tobacco is five times higher among illiterate females than it is among females who have completed at least high school. It is also higher among men and women in households with a low standard of living than those in households with a high standard of living.

Eleven percent of males, but only 2 percent of females, age 15 and above drink alcohol. Among men, the proportion who drink ranges from 2 percent at age 15–19 to 18 percent at age 40–49. Among women, the proportion ranges from less than 1 percent at age 15–19 to 4 percent at age 50–59. The proportion who drink is much higher in rural areas than in urban areas and among illiterate men and women than literate persons. Drinking alcohol has an inverse relationship with the household's standard of living.

Only 3 percent of females are reported to have ever smoked and 3 percent currently smoke. Among males age 15 and above, 40 percent currently smoke. The proportion of males who smoke rises from 7 percent at age 15–19 to 59 percent at age 50–59 and then falls to 51 percent at age 60 and above. The proportion of males who smoke is 28 percent higher in rural areas than in urban areas. It is much higher among illiterate males than literate males. In addition, one-half of males with a low standard of living currently smoke, compared with 30 percent of males with a high standard of living. Ninety-two percent of males who ever smoked were still smokers at the time of the survey. The pattern of differentials for ever-smokers closely resembles the pattern for current smokers.

Table 2.12 Lifestyle indicators

Percentage of usual household members age 15 and above who chew *paan masala* or tobacco, drink alcohol, currently smoke, or have ever smoked by selected background characteristics and sex, West Bengal, 1998–99

Background characteristic	Chew <i>paan masala</i> or tobacco	Drink alcohol	Currently smoke	Ever smoked ¹	Number of household members
MALE					
Age					
15–19	8.3	1.6	6.5	6.7	1,205
20–24	14.8	4.5	20.3	20.7	993
25–29	22.5	8.0	31.6	33.1	1,081
30–39	26.5	17.3	49.8	52.1	1,772
40–49	29.6	17.7	58.4	62.4	1,240
50–59	30.5	12.6	59.2	65.4	802
60+	32.6	11.1	51.1	63.7	919
Residence					
Urban	21.1	8.0	33.1	36.9	2,323
Rural	24.2	12.2	42.3	45.6	5,689
Kolkata	19.5	8.0	33.3	35.9	592
Education					
Illiterate	32.5	21.8	55.6	59.9	2,044
Literate, < middle school complete	25.6	10.7	40.1	43.1	2,802
Middle school complete	18.8	6.7	32.2	35.6	1,275
High school complete and above	13.2	2.7	26.6	29.9	1,892
Standard of living index					
Low	30.2	18.4	50.3	53.7	2,932
Medium	21.3	7.5	34.3	37.4	3,652
High	13.7	3.5	30.3	34.9	1,286
Total	23.3	11.0	39.6	43.1	8,012
FEMALE					
Age					
15–19	4.0	0.3	0.0	0.0	1,156
20–24	6.3	0.8	0.7	0.7	1,097
25–29	11.0	1.5	1.3	1.4	1,066
30–39	15.5	2.6	2.0	2.1	1,621
40–49	25.4	3.0	4.3	4.5	991
50–59	25.1	3.6	6.2	7.0	766
60+	29.3	2.7	6.1	6.7	855
Residence					
Urban	12.6	0.3	0.6	0.6	2,042
Rural	16.7	2.6	3.3	3.6	5,510
Kolkata	9.6	0.2	0.3	0.3	511
Education					
Illiterate	23.2	3.7	4.8	5.2	3,629
Literate, < middle school complete	11.0	0.5	0.7	0.8	2,248
Middle school complete	6.1	0.1	0.5	0.5	798
High school complete and above	4.6	0.1	0.1	0.1	872
Standard of living index					
Low	20.5	3.2	4.0	4.3	2,989
Medium	14.2	1.5	2.0	2.2	3,247
High	7.9	0.3	0.6	0.7	1,190
Total	15.6	2.0	2.6	2.8	7,553
Total male and female	19.6	6.6	21.6	23.5	15,565

Note: Total includes 5 females with missing information on education and 142 males and 126 females with missing information on the standard of living index, who are not shown separately.

¹Includes household members who currently smoke

2.7 Availability of Facilities and Services to the Rural Population

The NFHS-2 Village Questionnaire collected information from the *sarpanch*, other village officials, or other knowledgeable persons in the village on facilities and services in the village. One important set of questions was on the distance of the village from various types of health facilities, including Primary Health Centres (PHCs), sub-centres, hospitals, and dispensaries or clinics. Table 2.13 summarizes findings on distance from a health facility. The unit of analysis is ever-married women age 15–49 who reside in rural areas. Only 7 percent of rural women live in a village with a Primary Health Centre, 50 percent live in a village with a sub-centre, and 50 percent live in a village with either a PHC or a sub-centre. The proportions who live in a village with other health facilities are 5 percent for hospitals and 21 percent for dispensaries or clinics. Fifty-seven percent of rural women live in a village that has some kind of health facility. Median distances from particular health facilities are 5.7 km for a Primary Health Centre, 6.5 km for a hospital, and 2.4 km for a dispensary or a clinic.

Distance	Health facility					Any health facility
	Primary Health Centre	Sub-centre	Either PHC or sub-centre	Hospital ¹	Dispensary/clinic	
Within village	6.7	50.1	50.1	4.5	21.2	56.5
< 5 km	35.5	40.2	40.2	29.0	48.7	38.9
5–9 km	33.7	9.0	9.0	30.8	16.5	4.6
10+ km	24.0	0.6	0.6	35.6	13.6	0.0
Don't know/missing	0.1	0.1	0.1	0.1	0.1	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Median distance (in km)	5.7	0.0	0.0	6.5	2.4	0.0

Note: The category '< 5 km' excludes cases where the facility is within the village. When median distance is calculated, 'within village' cases and cases with a facility less than 1 km from the village are assigned a distance of zero.
 PHC: Primary Health Centre
¹Includes community health centre, rural hospital, government hospital, and private hospital

Table 2.14 shows the proportion of rural residents (the *de jure* rural population) in West Bengal that live in villages that have various facilities and services. Eighty-eight percent of rural residents live in villages that have a primary school, and one-fourth live in villages with a middle school or secondary school. Higher secondary schools are available in villages where 8 percent of the rural population live. Almost three-quarters (74 percent) of rural residents live in villages that have an *anganwadi*³ (a nursery school for children age 3–6 years) and 23 percent live in villages with an adult education centre. A majority of rural residents (32 percent) live in villages that have a private doctor and 72 percent live in villages with a traditional birth attendant. Only 65 percent of rural residents live in villages that are at least partly electrified.

³*Anganwadi* workers provide integrated child development services and may also engage in the promotion of family planning.

Table 2.14 Availability of facilities and services

Percentage of rural residents living in villages that have selected facilities and services, West Bengal, 1998-99

Facility/service	Percentage of residents	Facility/service	Percentage of residents
Primary school	87.6	At least one village household has a telephone	30.1
Middle school	24.1	Mill/small-scale industry	23.3
Secondary school	24.8	Credit cooperative society	16.7
Higher secondary school	8.4	Agricultural cooperative society	28.6
College	0.0	Fishermen's cooperative society	5.5
<i>Anganwadi</i>	74.3	Milk cooperative society	3.6
Adult education centre	23.1	<i>Kirana</i> /general market shop	65.1
Primary Health Centre	7.3	Weekly market	31.3
Sub-centre	50.8	Fair price shop	56.4
Hospital ¹	4.6	<i>Paan</i> shop	55.0
Dispensary/clinic	21.3	Pharmacy/medical shop	30.8
Private doctor	32.1	<i>Mahila mandal</i>	22.2
Visiting doctor	30.4	Youth club	72.6
Village health guide	41.9	Community centre	6.9
Traditional birth attendant	72.1	Community television set	6.8
Mobile health unit	6.9	Cable connection	18.2
Electricity	64.8	Integrated Rural Development Programme (IRDP)	72.9
Bank	21.0	National Rural Employment Programme (NREP)	11.1
Post office	41.4	Training Rural Youth for Self-Employment (TRYSEM)	14.4
Telegraph office	7.0	Employment Guarantee Scheme (EGS)	14.1
STD (Subscriber Trunk Dialling) phone booth	8.2	Development of Women and Children of Rural Areas (DWACRA)	21.9
		Indira Awas Yojana (IAY)	65.7
		Sanjay Gandhi Niradhar Yojana (SGNY)	0.0
		Total population	17,512

Note: Table is based on the *de jure* population.

¹Includes community health centre, rural hospital, government hospital, and private hospital

Although only 8 percent of rural residents live in villages with an STD booth (for telephoning within India), 30 percent live in villages that have at least one household with a private telephone. Eighteen percent of rural residents live in villages that have cable television service. Twenty-two percent live in villages with a *mahila mandal*, a women's community group. Other facilities and clubs that are available in villages where most rural residents live are youth clubs, *kirana* shops (small grocery stores), fair price shops, and *paan* shops. The most widely available rural development programmes as reported by the respondents to the Village Questionnaire are the Integrated Rural Development Programme (IRDP) and the Indira Awas Yojana (IAY).

CHAPTER 3

BACKGROUND CHARACTERISTICS OF RESPONDENTS

Women's demographic and health-seeking behaviour is associated with several characteristics including their age, marital status, religion, and caste. Modernizing influences such as education and exposure to mass media are also important catalysts for demographic and socioeconomic change. In addition, women's status and autonomy are critical in promoting change in reproductive attitudes and behaviour, especially in patriarchal societies (Dyson and Moore, 1983; Das Gupta, 1987; Jeffery and Basu, 1996). The National Population Policy, 2000, of the Government of India identifies the low status of women in India, typified by factors such as discrimination against the girl child and female adolescents, early age at marriage, and high rates of maternal mortality, as an important barrier to the achievement of population and maternal and child welfare goals (Ministry of Health and Family Welfare, 2000).

This chapter presents a profile of the demographic and socioeconomic characteristics of ever-married women age 15–49 who were identified in the NFHS-2 Household Questionnaire as eligible respondents for the Woman's Questionnaire. In addition, data are presented on the extent to which women in West Bengal enjoy autonomy as measured by their participation in household decisionmaking, freedom of movement, and access to money they can spend as they wish. Finally, data on women's attitudes towards the acceptance of spousal violence under specific circumstances and their experience of physical violence are discussed.

3.1 Background Characteristics

Table 3.1 presents the percentage distribution of ever-married women age 15–49 by age, marital status, coresidence with husband, education, religion, caste/tribe, work status, and husband's education. The proportion of respondents in five-year age groups increases from 9 percent in the age group 15–19 years to 20 percent in the age group 25–29 years and then falls steadily to 9 percent in the age group 45–49 years. The initial increase reflects the increasing share of ever-married women in each of these age groups. The decline after age 25–29 (an age by which most women have been married) reflects the normal pyramid shape of the population's age distribution. Rural areas have a younger age distribution than urban areas. The proportion of rural respondents who are age 15–19 (10 percent) is almost three times higher than the proportion of urban respondents in this age group (4 percent). The higher share of respondents age 15–19 among rural women than among urban women is largely a consequence of the younger age at marriage in rural areas.

Ninety-three percent of respondents are currently married, 4 percent are widowed, and the remainder are divorced, separated, or deserted. The proportion of respondents living with their husbands is 90 percent, indicating that almost all currently married women were coresident with their husbands at the time of the survey.

The educational levels of respondents and their husbands have an important influence on demographic and health-seeking behaviour. Half of all ever-married women age 15–49 in West Bengal are illiterate, compared with 58 percent of women in India as a whole. The level of illiteracy for women has remained fairly constant in West Bengal since the time of NFHS-1,

Table 3.1 Background characteristics of respondents

Percent distribution of ever-married women age 15–49 by selected background characteristics, according to residence, West Bengal, 1998–99

Background characteristic	Residence				Number of women	
	Urban	Rural	Total	Kolkata	Weighted	Unweighted
Age						
15–19	3.7	10.3	8.7	3.2	383	322
20–24	13.4	20.1	18.5	16.9	818	782
25–29	19.7	20.3	20.1	14.7	888	849
30–34	18.2	16.5	16.9	19.5	746	770
35–39	17.6	14.9	15.5	18.2	684	711
40–44	15.9	9.6	11.1	15.5	489	543
45–49	11.6	8.3	9.1	12.0	400	431
Marital status						
Currently married	93.8	93.3	93.4	93.3	4,116	4,117
Widowed	4.2	4.3	4.3	4.1	188	187
Divorced	0.2	0.4	0.4	0.3	17	16
Separated	1.1	0.9	1.0	2.0	43	50
Deserted	0.7	1.1	1.0	0.4	43	38
Coresidence with husband						
Living with husband	91.3	90.0	90.3	90.6	3,983	3,989
Not living with husband	2.4	3.2	3.0	2.6	133	128
Not currently married	6.2	6.7	6.6	6.7	292	291
Education						
Illiterate	26.1	57.4	50.0	25.6	2,202	1,920
Literate, < primary school complete	11.0	15.4	14.4	8.7	634	578
Primary school complete	15.7	14.6	14.9	13.5	655	649
Middle school complete	16.8	7.9	10.1	13.6	443	535
High school complete	11.8	3.0	5.1	11.2	226	300
Higher secondary complete and above	18.5	1.5	5.5	22.2	243	420
Missing	0.2	0.1	0.1	0.3	4	6
Religion						
Hindu	92.5	68.9	74.5	88.0	3,285	3,472
Muslim	6.4	28.0	22.9	10.7	1,007	838
Christian	0.4	0.2	0.3	0.5	12	14
Sikh	0.4	0.0	0.1	0.3	6	8
Buddhist/Neo-Buddhist	0.0	0.5	0.4	0.1	18	14
Jain	0.0	0.0	0.0	0.2	1	2
Zoroastrian/Parsi	0.0	0.1	0.1	0.0	3	2
Other	0.2	2.0	1.5	0.0	68	50
Missing	0.1	0.2	0.2	0.1	9	8
Caste/tribe						
Scheduled caste	18.5	25.1	23.5	13.6	1,038	948
Scheduled tribe	0.6	9.3	7.2	0.3	319	239
Other backward class	6.2	3.9	4.4	1.9	196	187
Other	74.5	61.1	64.3	84.1	2,834	3,016
Missing	0.2	0.6	0.5	0.2	21	18
Work status						
Working in family farm/business	2.5	6.4	5.5	2.0	241	201
Employed by someone else	9.2	16.8	14.9	10.5	659	601
Self-employed	6.9	8.5	8.1	9.9	356	363
Not worked in past 12 months	81.5	68.4	71.5	77.6	3,151	3,242
Missing	0.0	0.0	0.0	0.0	1	1

Contd...

Table 3.1 Background characteristics of respondents (contd.)

Percent distribution of ever-married women age 15–49 by selected background characteristics, according to residence, West Bengal, 1998–99

Background characteristic	Residence				Number of women	
	Urban	Rural	Total	Kolkata	Weighted	Unweighted
Husband's education						
Illiterate	13.6	37.6	31.9	12.1	1,406	1,181
Literate, < primary school complete	11.0	20.0	17.9	7.6	788	683
Primary school complete	13.6	14.9	14.6	12.6	644	627
Middle school complete	15.8	13.7	14.2	17.2	628	657
High school complete	13.2	6.1	7.8	15.4	345	421
Higher secondary complete and above	32.2	6.6	12.7	33.5	558	795
Missing	0.6	1.0	0.9	1.7	39	44
Total percent	100.0	100.0	100.0	100.0	NA	NA
Number of women						
Weighted	1,049	3,359	4,408	242	4,408	NA
Unweighted	1,947	2,461	4,408	979	NA	4,408
NA: Not applicable						

when the illiteracy rate for ever-married women was 51 percent. The level of illiteracy is much lower for urban women (26 percent) than for rural women (57 percent). Among literate rural women, the majority have not been educated beyond primary school. Only 5 percent of all rural women (about 1 out of 10 literate rural women) have completed at least high school. In contrast, more than 4 out of 10 literate women in urban areas have completed at least high school.

Thirty-two percent of ever-married women age 15–49 have illiterate husbands, which is almost the same as in NFHS-1 (31 percent). The proportion of respondents with illiterate husbands is almost three times as high in rural areas (38 percent) as in urban areas (14 percent). One-fifth of women (21 percent) have husbands who completed at least high school. This proportion is much higher in urban areas (45 percent) than in rural areas (13 percent). Forty-nine percent of women in Kolkata have husbands who have completed at least high school. There are only small differences by residence in the proportion of women with husbands who have completed primary or middle school.

There are notable urban-rural differences in the distribution of respondents by religion and caste/tribe. Ninety-seven percent of ever-married women in West Bengal are either Hindu or Muslim. The proportion of women who are Hindu is higher in urban areas (93 percent) than in rural areas (69 percent), whereas the proportion of women who are Muslim is much lower in urban areas (6 percent) than in rural areas (28 percent). In Kolkata, 88 percent of ever-married women are Hindu and 11 percent are Muslim.

One-quarter (24 percent) of women belong to scheduled castes. The percentage belonging to scheduled castes is larger in rural areas (25 percent) than in urban areas (19 percent). Scheduled-tribe women constitute 7 percent of all ever-married women, 9 percent of rural women, and less than 1 percent of urban women. Only 4 percent of women belong to other backward classes (OBC), and almost two-thirds (64 percent) belong to other castes/tribes. In Kolkata, 84 percent of women do not belong to a scheduled caste, a scheduled tribe, or an other backward class.

Almost three-fourths (72 percent) of respondents in West Bengal did not participate in work other than their regular housework during the 12 months preceding the NFHS-2 survey. More than two-thirds (68 percent) of rural respondents fall into this category compared with more than four-fifths (82 percent) of urban respondents. Fifteen percent of women are employed by someone else, 8 percent are self-employed, and 6 percent work on a family farm or in a family business.

3.2 Educational Level

Table 3.2 presents the percent distribution of ever-married women age 15–49 by the highest level of education attained, according to age, religion, caste/tribe, and husband's education. The educational distribution of women in different age groups illustrates the progress in the spread of education over a period of about three decades. As expected, the level of illiteracy declines with declining age from 58 percent at age 45–49 to 42 percent at age 20–24, but rises slightly to 46 percent at age 15–19 (undoubtedly because illiterate women are more likely than literate women to marry at young ages). Therefore, even though illiteracy is declining, at least 4 out of 10 ever-married women—even in the youngest cohorts—are illiterate. There is no clear age pattern in the proportion of women who have completed at least high school, which is 9 percent for women age 20–24, fluctuates between 11 and 15 percent for women age 25–44, then falls to 8 percent for women age 45–49.

A lower proportion of Hindu women are illiterate (46 percent) than Muslim or other women (61–62 percent). Hindus (13 percent) and women belonging to 'other' religions (12 percent) are four to five times more likely than Muslim women (3 percent) to have completed at least high school. The level of literacy also varies considerably by caste/tribe. Eighty-three percent of scheduled-tribe women, 67 percent of scheduled-caste women, 36 percent of women belonging to other backward classes, and 41 percent of women belonging to other castes/tribes are illiterate. Scheduled-tribe and scheduled-caste women are less likely than other women to have completed primary school, middle school, or high school.

Eighty-four percent of women with illiterate husbands are themselves illiterate. Notably, only 3 percent of women whose husbands have completed higher secondary school are illiterate. The table shows that husbands at each level of education are more likely to have wives with a lower level of education than an equal or higher level of education. Specifically, the proportion of women who have a lower education than their husbands is 60 percent for women whose husbands are literate but have not completed primary school, 66 percent for women whose husbands have completed primary school, 75 percent for women whose husbands have completed middle school, 77 percent for women whose husbands have completed high school, and 61 percent for women whose husbands have completed higher secondary school. Among women with literate husbands, women whose husbands have not completed primary school are most likely to have equal or higher education than their husbands (40 percent).

Table 3.2 Respondent's level of education by background characteristics									
Percent distribution of ever-married women age 15–49 by highest level of education attained, according to selected background characteristics, West Bengal, 1998–99									
Background characteristic	Respondent's level of education							Total percent	Number of women
	Illiterate	Literate, < primary school complete	Primary school complete	Middle school complete	High school complete	Higher secondary complete and above	Missing		
Age									
15–19	46.1	17.3	24.0	10.1	1.2	1.2	0.0	100.0	383
20–24	42.2	15.6	17.1	15.6	6.1	3.1	0.2	100.0	818
25–29	47.6	12.8	16.8	10.6	6.1	6.1	0.0	100.0	888
30–34	51.3	13.0	13.0	8.3	6.9	7.6	0.0	100.0	746
35–39	56.5	13.6	11.5	7.8	4.7	5.8	0.1	100.0	684
40–44	52.5	14.4	11.3	8.4	4.5	8.4	0.5	100.0	489
45–49	58.1	16.5	10.7	6.5	2.9	5.3	0.0	100.0	400
Religion									
Hindu	46.0	13.6	15.5	11.7	6.1	7.0	0.0	100.0	3,285
Muslim	61.2	18.0	13.3	4.6	1.8	0.8	0.3	100.0	1,007
Other	62.0	5.1	10.6	10.8	7.5	4.0	0.0	100.0	106
Caste/tribe									
Scheduled caste	67.2	12.5	10.0	7.7	1.7	0.8	0.0	100.0	1,038
Scheduled tribe	82.9	7.0	5.6	3.4	1.1	0.0	0.0	100.0	319
Other backward class	36.4	14.4	17.1	16.3	9.9	6.0	0.0	100.0	196
Other	40.8	15.9	17.5	11.3	6.5	7.9	0.2	100.0	2,834
Husband's education									
Illiterate	84.1	9.4	5.1	1.3	0.1	0.0	0.0	100.0	1,406
Literate, < primary school complete	59.5	22.9	13.5	3.4	0.3	0.0	0.3	100.0	788
Primary school complete	45.5	20.8	24.6	8.5	0.4	0.2	0.0	100.0	644
Middle school complete	26.2	19.3	29.6	20.1	3.9	1.0	0.0	100.0	628
High school complete	14.0	10.9	22.1	29.5	17.7	5.8	0.1	100.0	345
Higher secondary complete and above	3.4	4.0	9.8	20.2	24.0	38.4	0.2	100.0	558
Total	50.0	14.4	14.9	10.1	5.1	5.5	0.1	100.0	4,408

Note: Total includes 9, 21, and 39 women with missing information on religion, caste/tribe, and husband's education, respectively, who are not shown separately.

3.3 Age at First Marriage

Table 3.3 provides information on age at first marriage for all women. The table shows the percentage of women who first married by specified exact ages, and the median age at first marriage and first cohabitation by current age and residence. The median age of first marriage/cohabitation with husband for a cohort of women is the age by which 50 percent of the cohort marries/cohabits.

Although there is an early age pattern of marriage in West Bengal, the table provides evidence of a steady rise in the age at first marriage. The proportion married before they reach age 15 falls from 36 percent among women age 45–49 to 10 percent among women age 15–19. The largest decline in the proportion married by age 15 occurs between women age 45–49 (36 percent) and women age 40–44 (28 percent). Declines proceed slowly until the younger age groups; then there is a notable decline from 17 percent for women age 20–24 to 10 percent for women age 15–19. Both rural and urban areas have experienced declines in the proportion of

Table 3.3 Age at first marriage								
Percentage of women married by specific exact ages, median age at first marriage, and median age at first cohabitation with husband, according to current age and residence, West Bengal, 1998–99								
Current age ¹	Percentage ever married by exact age						Median age at first marriage	Median age at first cohabitation with husband
	13	15	18	20	22	25		
URBAN								
15–19	0.2	2.6	NA	NA	NA	NA	NC	NC
20–24	1.3	5.7	21.0	41.9	NA	NA	NC	NC
25–29	2.9	10.8	34.2	52.1	62.8	77.8	19.7	19.7
30–34	3.9	12.5	38.2	55.1	66.6	78.4	19.3	19.4
35–39	8.3	20.7	49.1	63.4	72.0	82.7	18.1	18.2
40–44	5.7	17.9	45.6	67.2	80.0	88.3	18.3	18.4
45–49	6.8	19.7	55.2	71.0	83.9	93.1	17.4	17.8
20–49	4.5	13.6	38.5	56.5	NA	NA	19.0	19.1
25–49	5.3	15.7	43.0	60.3	71.5	82.9	18.6	18.7
RURAL								
15–19	2.5	11.8	NA	NA	NA	NA	NC	NC
20–24	4.8	20.8	53.7	72.8	NA	NA	17.6	17.7
25–29	6.2	21.6	62.2	80.2	88.0	92.3	16.9	17.0
30–34	8.8	26.5	71.7	86.8	92.6	96.7	16.5	16.6
35–39	10.7	29.1	70.3	85.9	91.4	96.2	16.2	16.4
40–44	14.7	32.7	72.3	86.9	96.2	97.5	16.1	16.3
45–49	18.5	43.6	78.4	88.2	96.0	98.0	15.4	15.7
20–49	9.0	26.5	65.5	81.8	NA	NA	16.6	16.8
25–49	10.4	28.4	69.4	84.8	91.8	95.5	16.4	16.6
TOTAL								
15–19	2.0	9.7	NA	NA	NA	NA	NC	NC
20–24	3.9	17.2	45.9	65.4	NA	NA	18.3	18.4
25–29	5.4	19.0	55.4	73.5	82.0	89.1	17.5	17.6
30–34	7.6	22.8	62.9	78.6	85.9	92.0	16.9	17.0
35–39	10.1	26.8	64.5	79.8	86.1	92.6	16.6	16.7
40–44	11.6	27.7	63.2	80.4	90.9	94.6	16.5	16.8
45–49	14.9	36.3	71.4	83.0	92.4	96.6	16.0	16.3
20–49	7.8	23.1	58.3	75.1	NA	NA	17.1	17.3
25–49	9.0	24.9	62.1	78.2	86.3	92.2	16.8	16.9

NA: Not applicable
NC: Not calculated because less than 50 percent of women in the age group 15–19 or 20–24 have married or started living with their husband by age 15 or age 20, respectively.
¹The current age group includes both never-married and ever-married women.

women married by age 15. The practice of very early marriage (by age 13) is not common in West Bengal and has virtually disappeared in urban areas. In rural areas, 3 percent of women age 15–19 still marry before age 13.

The median age at first marriage has risen over the past three decades. In rural areas, the median age at first marriage is two years higher for women age 20–24 than for women age 45–49, and in urban areas it is more than two years higher for women age 25–29 than for women age 45–49. (The median age at first marriage could not be calculated for women age 15–19 and 20–24 in urban areas and for women age 15–19 in rural areas because more than half of the women in these age groups were not married at the time of the survey). For women age 25–29, the median age at first marriage is almost three years higher in urban areas than in rural areas.

Despite evidence of a rising age at marriage, the table shows that almost three-fifths of women age 20–49 in West Bengal were married before they had reached the legal minimum age at marriage of 18 years, as set by the Child Marriage Restraint Act of 1978. Specifically, 58 percent of all women, 66 percent of rural women, and 39 percent of urban women age 20–49 married before age 18. In urban areas, the median age at first marriage for women age 20–49 is above the legal minimum age. The median age at first marriage in rural areas is below the legal minimum for women age 20–49, although it is approaching the legal cutoff among younger women. For rural women age 20–24, the median age at first marriage is 17.6 years.

Table 3.3 also provides information on the median age at first cohabitation with husband. This, along with age at first marriage, shows the gap between formal marriage and the time when a wife starts living with her husband. In West Bengal, there is almost no difference between median age at first marriage and median age at first cohabitation, indicating that in West Bengal, cohabitation with the husband is initiated closely after formal wedding rites.

3.4 Exposure to Mass Media

In a state like West Bengal, where a large majority of women are illiterate or have little formal education, informal channels such as the mass media can play an important role in bringing about modernization. In NFHS-2, women were asked questions about whether they read a newspaper or magazine, watch television, or listen to the radio at least once a week, and whether they visit the cinema or theatre at least once a month. Table 3.4 gives information on women's exposure to these forms of mass media by selected background characteristics.

In West Bengal, 39 percent of women are not regularly exposed to any mass media. There is not much variation by age, although a higher proportion of women age 15–19 are not regularly exposed to any media than other women. There is greater variation in exposure to mass media by level of education. As expected, the percentage not regularly exposed to the media decreases with increasing education, ranging from 59 percent among illiterate women to 2 percent among women who have completed high school. Regular exposure to media increases with the standard of living. The percentage not regularly exposed to any mass media is 63 percent among women with a low standard of living, 24 percent among women with a medium standard of living, and only 3 percent among women with a high standard of living.

Forty-seven percent of rural women are not regularly exposed to any media compared with only 10 percent of urban women (8 percent of women in Kolkata). The proportion of Hindu women not regularly exposed to any media (33 percent) is much lower than that of Muslim women (57 percent) and other women (48 percent). Sixty-four percent of scheduled-tribe women are not regularly exposed to any media compared with 44 percent of scheduled-caste women, 35 percent of 'other' women, and 25 percent of women from other backward classes.

Among the different types of mass media, 42 percent of women usually listen to the radio at least once a week (down from 48 percent in NFHS-1). Forty-one percent of women are regularly exposed to television (up from 33 percent in NFHS-1). Television has a much greater reach in urban areas than in rural areas. The proportion exposed to television is three times higher for urban women (84 percent) than for rural women (27 percent). The urban-rural difference is not very large in terms of exposure to radio. Forty-six percent of urban women (48 percent in Kolkata) listen to the radio at least once a week, compared with 40 percent of rural

Table 3.4 Exposure to mass media

Percentage of ever-married women age 15–49 who usually read a newspaper or magazine, watch television, or listen to the radio at least once a week, who usually visit a cinema/theatre at least once a month, or who are not regularly exposed to any of these media by selected background characteristics, West Bengal, 1998–99

Background characteristic	Exposure to mass media					Number of women
	Reads a newspaper or magazine at least once a week	Watches television at least once a week	Listens to the radio at least once a week	Visits the cinema/theatre at least once a month	Not regularly exposed to any media	
Age						
15–19	6.0	33.1	41.3	15.2	41.1	383
20–24	13.2	39.2	42.8	14.5	38.1	818
25–29	16.3	40.6	39.7	10.7	38.9	888
30–34	17.1	40.7	43.6	9.8	38.8	746
35–39	14.7	41.8	37.9	6.9	39.7	684
40–44	18.6	45.4	46.0	3.9	34.5	489
45–49	17.2	45.1	40.7	3.6	39.3	400
Residence						
Urban	40.3	84.3	46.2	10.6	10.4	1,049
Rural	7.1	27.2	40.1	9.4	47.4	3,359
Kolkata	45.8	88.0	48.2	11.0	7.6	242
Education						
Illiterate	0.0	20.9	29.8	6.3	58.7	2,202
Literate, < middle school complete	11.9	46.2	49.7	12.1	26.5	1,289
Middle school complete	35.8	71.4	56.3	13.3	12.4	443
High school complete and above	74.8	90.7	60.3	15.5	2.3	469
Religion						
Hindu	17.8	47.2	45.1	11.4	32.7	3,285
Muslim	6.5	22.3	30.0	4.0	56.8	1,007
Other	12.7	23.0	41.5	10.6	48.4	106
Caste/tribe						
Scheduled caste	5.9	34.5	37.7	10.0	44.4	1,038
Scheduled tribe	3.4	11.6	28.4	5.0	63.6	319
Other backward class	16.9	57.7	49.3	10.7	25.4	196
Other	19.7	45.5	44.0	9.9	34.5	2,834
Standard of living index						
Low	2.0	15.9	27.1	6.8	63.1	1,906
Medium	14.9	50.5	50.8	11.6	24.2	1,821
High	57.6	92.2	60.8	13.2	2.6	605
Total	15.0	40.8	41.6	9.7	38.6	4,408

Note: Total includes 4, 9, 21, and 77 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

women. Fifteen percent of women read a newspaper or magazine at least once a week, and 10 percent visit the cinema or theatre on a monthly basis. Exposure to each of these media increases sharply with education and with standard of living. Women who have completed at least high school and women with a high standard of living are much more likely than other women to read newspapers or magazines regularly. Exposure to television and print media increases with age, whereas exposure to the cinema or theatre decreases with age. There is no clear age pattern in the exposure to radio. Among women age 20 and above, exposure to newspapers or magazines varies little by age.

3.5 Women's Employment

Labour force participation not only gives women an opportunity to earn income, but also exposes them to the outside world and to authority structures and networks other than kin-based ones (Dixon-Mueller, 1993). In a developing country such as India, however, where women's workforce participation is often motivated by poverty, these benefits are likely to be mediated by the social context of women's work and their total work burden (Bardhan, 1985; Desai and Jain, 1994). In addition, the empowering effects of employment for women are likely to depend on their occupation, the continuity of their workforce participation, and whether they earn income. It is generally expected that women who work at a regular job, who earn money, and who perceive that their contribution is a substantial part of total family earnings are more likely to be empowered than other employed and unemployed women (Youssef, 1982; Sen, 1990; Mahmud and Johnston, 1994). The National Population Policy adopted by the Government of India in 2000 (Ministry of Health and Family Welfare, 2000) explicitly recognizes the importance of women's paid employment in achieving the goal of population stabilization in India and also specifies measures that will encourage paid employment and self-employment of women.

Table 3.5 provides information on these aspects of women's employment for ever-married women age 15–49 according to residence. In West Bengal, 72 percent of women report that they did not work during the 12 months preceding the survey, aside from doing their own housework. One percent of women were employed during the 12 months preceding the survey but were not employed at the time of NFHS-2. Current employment of women increased slightly from 23 percent in NFHS-1 to 27 percent in NFHS-2. Thirty-two percent of rural women, but only 19 percent of urban women, worked at any time in the 12 months preceding the survey. Among women who worked during that period, the majority (64 percent) worked throughout the year. Although a smaller proportion of women in urban areas than in rural areas work, urban women who do work are much more likely to work throughout the year. Eighty-two percent of urban respondents and 61 percent of rural respondents worked throughout the year preceding the survey. More than three-fourths of rural working women are either agricultural workers (52 percent) or production workers (25 percent). There is greater occupational diversity in urban areas, where 23 percent of working women are engaged in production work, another 17 percent are professionals, and 12 percent are in sales and services jobs. Forty-one percent of urban working women are engaged in 'other' occupations such as labourers and clerical staff.

There is some diversity in the method of payment for female workers, although the majority of women are paid in cash only. Seventy-eight percent of working women in West Bengal are paid only in cash, 2 percent are paid only in kind, and 11 percent receive both cash and in-kind payments. Nine percent of women are not paid for their work at all. In urban areas, 96 percent of working women receive at least some cash for their work, compared to 88 percent in rural areas.

A significant feature of women's work participation in West Bengal is their substantial contribution to family earnings. In both urban and rural areas, more than one-quarter (26–28 percent) of women who worked and earned cash in the past 12 months report that the family is entirely dependent on their earnings. Another 22–23 percent report that they contribute at least half of the total family earnings. Twenty-seven percent in urban areas and 16 percent in rural areas report that they contribute almost nothing to total family earnings.

Table 3.5 Employment				
Percent distribution of ever-married women age 15–49 by employment characteristics, according to residence, West Bengal, 1998–99				
Employment characteristic	Urban	Rural	Total	Kolkata
Employment status				
Currently working	17.3	30.4	27.3	21.6
Worked in past 12 months (not currently working)	1.2	1.2	1.2	0.8
Not worked in past 12 months	81.5	68.4	71.5	77.6
Continuity of employment¹				
Throughout the year	82.2	60.8	64.1	91.3
Seasonally/part of the year	8.4	32.0	28.4	2.4
Once in a while	9.4	7.2	7.5	6.3
Type of earning¹				
Cash only	93.4	75.5	78.2	93.0
Cash and kind	2.1	12.6	11.0	3.0
Kind only	0.8	2.3	2.1	0.0
Not paid	3.7	9.7	8.7	3.9
Occupation¹				
Professional	16.6	3.0	5.1	17.5
Sales worker	9.2	4.0	4.8	12.9
Service worker	2.7	0.1	0.5	6.5
Production worker	23.1	25.0	24.7	10.9
Agricultural worker	2.4	51.7	44.0	0.9
Other worker	40.7	10.5	15.2	45.9
Missing	5.4	5.8	5.8	5.4
Earnings contribution to total family earnings²				
Almost none	27.3	16.4	18.2	25.3
Less than half	24.1	32.2	30.9	21.6
About half	11.4	11.7	11.6	16.9
More than half	10.8	11.5	11.4	16.1
All	26.2	28.2	27.9	19.6
Missing	0.1	0.0	0.0	0.5
Total percent	100.0	100.0	100.0	100.0
Number of women	1,049	3,359	4,408	242
Number of employed women ¹	194	1,063	1,257	54
Number of women earning cash	186	936	1,121	52
¹ For currently working women and women who have worked in the past 12 months				
² For women earning cash				

3.6 Women's Autonomy

Education, work participation, and exposure to mass media are some of the means by which women gain status and autonomy, both important aspects of their empowerment. To measure women's autonomy and empowerment more directly, NFHS-2 asked about women's participation in household decisionmaking, their freedom of movement, and access to money that they can spend as they wish. Women's autonomy is likely to have a significant impact on the demographic and health-seeking behaviour of couples by altering women's relative control over fertility and contraceptive use, and by influencing their attitudes (for example, attitudes towards the sex composition of children) and abilities (for example, the ability to obtain health services for themselves and their children) (Sen and Batliwala, 1997).

In order to measure women's participation in household decisionmaking, NFHS-2 asked women to report who in their households makes decisions about the following: what items to

cook, obtaining health care for the respondent, purchasing jewellery or other major household items, and the respondent going and staying with parents or siblings. The survey also asked women who earn cash who decides how the money they earn is spent. Table 3.6 gives the percent distribution of ever-married women age 15–49 by the person (or persons) who makes each of the specified household decisions according to residence.

As expected, women in West Bengal are most likely to participate in the decision about what to cook: 70 percent of women make this decision on their own and another 18 percent make this decision jointly with their husband or someone else in the household (see Figure 3.1). However, 13 percent of women are not involved in the decision regarding what to cook. In addition, one out of every two women in West Bengal is not involved at all in decisions about seeking health care for themselves (55 percent), purchasing jewellery or other major household items (52 percent), and going and staying with parents or siblings (53 percent). Participation rates by type of decision are generally higher among urban women than rural women. More than one-half of women who earn cash report that they decide solely on how the money they earn will be used, one-third report that only their husbands or only others in the household make the decision, and the remainder report that they make the decision together with their husbands or someone else in their households. The proportion of women who do not participate in the decision about how the money they earn should be used is higher in rural areas (36 percent) than in urban areas (13 percent), and the proportion who make this decision alone is higher in urban areas (78 percent) than in rural areas (47 percent).

Women's participation in household decisionmaking, alone or jointly with others in the household, increases with age, suggesting that autonomy increases with age (Table 3.7). Specifically, only 1–7 percent of women age 25 and above do not participate in any decisionmaking, compared with 16–21 percent of women age 15–24. Participation in each of the four specified decisions also increases with age.

With the exception of decisions regarding what to cook, urban women are much more likely than rural women to participate in the different types of household decisionmaking. The proportion of women not involved in any decisionmaking does not vary much by other background characteristics. Illiterate women and women with a low standard of living are slightly more likely to be involved in decisions about what to cook than other women. Interestingly, literate women with less than a complete middle school education are less likely to participate in each of the different decisions than illiterate women. Women who worked for cash during the last year are more likely than women in other employment categories to participate in each of the different decisions.

NFHS-2 also collected information on two other dimensions of women's autonomy, namely, women's freedom of movement and their access to money that they can spend as they wish. With regard to freedom of movement, respondents were asked whether they need permission to go to the market or to visit friends or relatives. Women's access to spending money was measured by asking respondents, 'Are you allowed to have some money set aside that you can use as you wish?'

Most women say that they need permission to go to the market or to visit friends or relatives. Only 18 percent say that they do not need permission to go to the market, and 14 percent say that they do not need permission to visit friends or relatives. Freedom of movement

Table 3.6 Household decisionmaking						
Percent distribution of ever-married women by person who makes specific household decisions, according to residence, West Bengal, 1998-99						
Household decision	Respondent only	Husband only	Respondent with husband	Others in household only	Respondent with others in household	Total percent
URBAN						
What items to cook	67.2	3.6	4.4	7.8	17.0	100.0
Obtaining health care for herself	19.0	38.2	27.7	3.5	11.6	100.0
Purchasing jewellery or other major household items	20.7	32.0	31.3	4.7	11.2	100.0
Going and staying with her parents or siblings	17.9	32.2	32.4	5.4	12.1	100.0
How the money she earns will be used ¹	78.1	11.4	6.5	1.2	2.8	100.0
RURAL						
What items to cook	70.6	2.7	3.7	10.2	12.7	100.0
Obtaining health care for herself	16.0	53.4	16.8	5.6	8.2	100.0
Purchasing jewellery or other major household items	14.4	48.5	20.0	7.7	9.4	100.0
Going and staying with her parents or siblings	11.3	50.0	20.3	8.3	10.1	100.0
How the money she earns will be used ¹	46.5	35.4	13.4	1.0	3.7	100.0
TOTAL						
What items to cook	69.8	2.9	3.9	9.7	13.8	100.0
Obtaining health care for herself	16.7	49.8	19.4	5.1	9.0	100.0
Purchasing jewellery or other major household items	15.9	44.5	22.7	7.0	9.8	100.0
Going and staying with her parents or siblings	12.9	45.8	23.2	7.6	10.6	100.0
How the money she earns will be used ¹	51.7	31.5	12.3	1.1	3.5	100.0
¹ For women earning cash						

increases substantially with age, although it is still quite limited in the older ages. A much lower proportion of Muslim women reported having freedom of movement than women belonging to other religions. As expected, women who earn cash have more freedom of movement than other women. What is most remarkable about women's freedom of movement in West Bengal, however, is how little it varies by background characteristics. The proportion of women who do not need permission to go to the market is never greater than 31 percent for any category, and the proportion who do not need permission to go to visit friends and relatives is never greater than 26 percent.

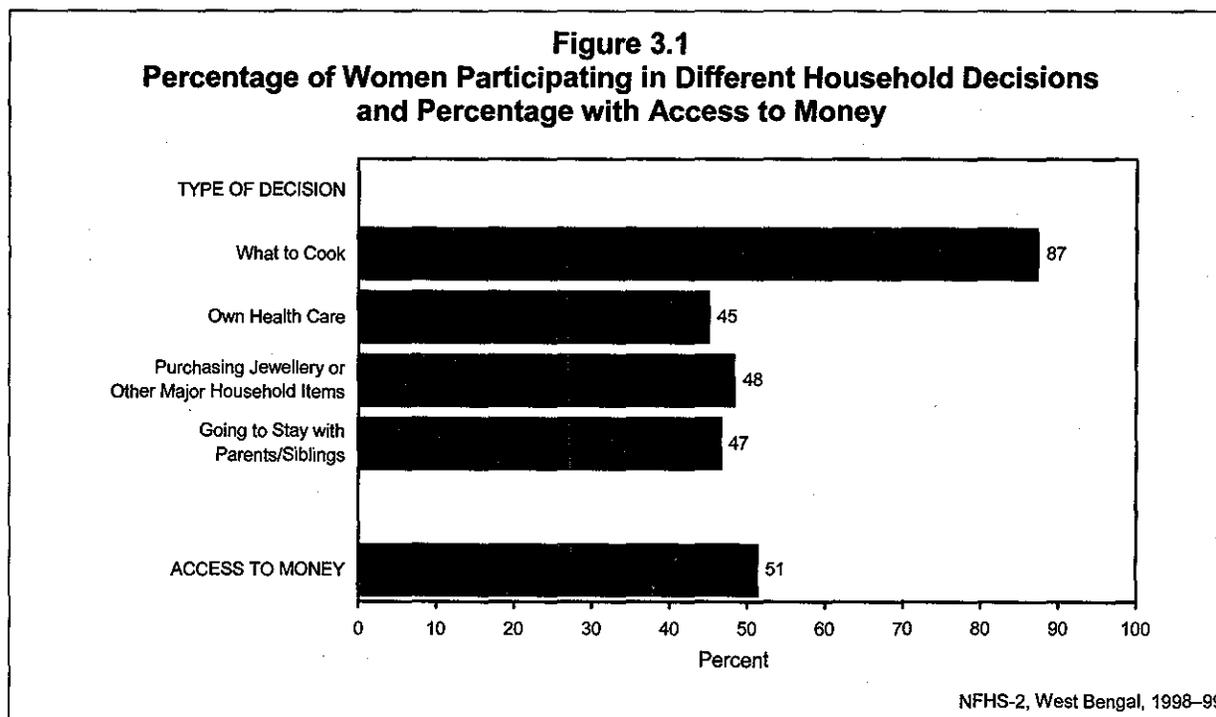
In contrast to freedom of movement, there is great variation in women's access to money by background characteristics. Overall, 51 percent of women say that they are allowed to have some money set aside that they can spend as they wish, but this proportion varies widely by age, residence, education, religion, caste/tribe, employment status, and household standard of living. Specifically, access to money increases with age, is greater for urban women than for rural women, is lower for Muslims than for women belonging to other religions, and is greater for

Table 3.7 Women's autonomy

Percentage of ever-married women involved in household decisionmaking, percentage with freedom of movement, and percentage with access to money by selected background characteristics, West Bengal, 1998-99

Background characteristic	Percentage not involved in any decision-making	Percentage involved in decisionmaking on:				Percentage who do not need permission to:		Percentage with access to money	Number of women
		What to cook	Own health care	Purchasing jewellery, etc.	Staying with her parents/siblings	Go to the market	Visit friends/relatives		
Age									
15-19	21.4	70.0	34.1	34.3	33.1	4.7	2.7	39.1	383
20-24	15.7	78.8	36.5	39.1	40.3	9.1	6.6	47.1	818
25-29	6.7	88.1	43.4	44.4	44.5	14.4	11.0	50.1	888
30-34	4.5	91.8	46.6	52.1	47.6	19.9	16.1	51.6	746
35-39	4.1	92.4	51.4	55.2	51.3	24.9	19.1	54.9	684
40-44	3.5	94.4	52.8	58.1	54.1	26.1	21.5	59.4	489
45-49	1.4	95.0	54.3	59.8	58.5	29.3	25.6	59.2	400
Residence									
Urban	5.9	88.6	58.3	63.3	62.4	25.4	18.1	68.2	1,049
Rural	8.7	87.0	41.0	43.8	41.7	15.4	12.8	46.2	3,359
Kolkata	7.7	87.1	58.1	61.1	60.9	30.6	21.5	71.4	242
Education									
Illiterate	7.0	89.7	44.7	46.7	44.5	17.9	15.1	46.3	2,202
Literate, < middle school complete	9.8	85.4	41.1	44.4	42.6	15.4	11.7	47.5	1,289
Middle school complete	9.7	82.9	48.8	55.7	55.0	15.8	11.2	59.3	443
High school complete and above	6.5	86.6	54.5	61.1	60.1	25.7	18.6	78.8	469
Religion									
Hindu	7.9	87.4	46.0	50.7	48.9	19.3	15.2	54.0	3,285
Muslim	8.9	87.0	42.3	40.3	38.1	12.1	9.7	42.5	1,007
Other	5.2	90.5	46.1	59.6	59.0	24.4	21.3	59.7	106
Caste/tribe									
Scheduled caste	8.6	87.7	44.9	49.4	45.9	16.8	13.6	49.0	1,038
Scheduled tribe	4.4	93.0	43.4	50.1	51.8	19.3	16.9	57.4	319
Other backward class	8.2	87.8	47.3	54.1	57.6	22.2	21.1	64.8	196
Other	8.2	86.7	45.3	47.5	45.6	17.7	13.4	51.0	2,834
Cash employment									
Working for cash	5.3	90.2	57.0	60.8	59.0	28.3	24.7	61.2	1,121
Working but not for cash	8.0	88.3	43.2	49.0	46.6	12.0	8.0	45.7	136
Not worked in past 12 months	9.0	86.4	40.9	44.0	42.2	14.3	10.5	48.2	3,151
Standard of living index									
Low	7.8	89.7	42.9	44.6	41.8	17.9	14.6	44.3	1,906
Medium	8.4	85.9	45.8	49.5	48.4	16.4	12.9	53.6	1,821
High	7.3	84.9	51.0	58.8	57.5	22.1	16.1	68.7	605
Total	8.0	87.4	45.1	48.4	46.7	17.8	14.1	51.4	4,408

Note: Total includes 4, 9, 21, and 77 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.



women belonging to other backward classes than for women of other castes/tribes. Access to money also increases with standard of living: 44 percent of women with a low standard of living have access to money compared with 69 percent of women with a high standard of living. Women who worked for cash (61 percent) are much more likely than women in other employment categories to have access to money (46-48 percent). Women who have completed high school are more likely to have access to money than women with any other characteristic.

3.7 Women's Educational Aspirations for Children

The desire to invest in improving the quality of children, including investing in their education, is important for bringing about transition to lower levels of fertility and improved health. In order to obtain information on this subject, NFHS-2 asked ever-married women for their opinion about how much education should be given to a boy or a girl. Women's responses to these questions also provide an indication of the degree of son preference prevailing at the time of the survey.

As shown in Table 3.8, 35 percent of women believe that a boy should be given as much education as he wants, compared with 28 percent who believe that a girl should be given as much education as she wants. Twenty-four percent of women believe that an education above high school (higher secondary school, graduate and above, or professional degree) is appropriate for boys, whereas 15 percent feel that it is appropriate for girls. Notably, less than 1 percent of women feel that girls should not be given any education, and 24 percent feel that girls should be given an education but not beyond middle school. The corresponding proportions for boys are less than 1 percent and 15 percent, respectively. Only 6 percent of women did not specify a level of education appropriate for girls, and 7 percent did not specify an appropriate level for boys.

Table 3.8 indicates that there are sharp urban-rural differences in women's educational aspirations for both girls and boys. Rural respondents are more likely than urban respondents to say that a child should be given less than a high school education. In addition, rural respondents

Table 3.8 Perceived educational needs of girls and boys

Percent distribution of ever-married women by their opinion on how much education should be given to girls and boys, according to residence, West Bengal, 1998–99

Educational level	Urban	Rural	Total
Education for girls			
No education	0.1	0.4	0.4
Less than primary school	0.1	1.6	1.2
Primary school	2.4	9.9	8.1
Middle school	5.7	17.7	14.9
High school	19.3	28.8	26.5
Higher secondary school	4.2	4.9	4.7
Graduate and above	17.5	5.4	8.3
Professional degree	5.6	0.5	1.7
As much as she desires	41.5	23.6	27.9
Depends	2.8	5.2	4.6
Don't know	0.8	1.9	1.7
Total percent	100.0	100.0	100.0
Education for boys			
No education	0.1	0.2	0.2
Less than primary school	0.0	0.5	0.4
Primary school	1.1	5.5	4.5
Middle school	2.9	12.0	9.8
High school	11.6	21.6	19.2
Higher secondary school	5.7	8.7	8.0
Graduate and above	17.1	11.1	12.5
Professional degree	8.3	1.9	3.4
As much as he desires	49.3	31.0	35.3
Depends	3.0	5.7	5.0
Don't know	0.8	1.9	1.6
Total percent	100.0	100.0	100.0

are much less likely than urban respondents to say that girls and boys should be given as much education as they desire. It is notable, however, that even in rural areas at least 6 out of 10 women say that girls should be given at least a high school education or as much education as they desire.

3.8 Domestic Violence: Attitudes and Experience

In recent years, there has been increasing concern about violence against women in general, and domestic violence in particular, in both developed and developing countries (United Nations General Assembly, 1991). Not only has domestic violence against women been acknowledged worldwide as a violation of the basic human rights of women, but an increasing amount of research highlights the health burdens, intergenerational effects, and demographic consequences of such violence (Heise et al., 1998; 1994; Jejeebhoy, 1998; Ramasubban and Singh, 1998; Rao and Bloch, 1993). In patriarchal societies such as India, women are not only socialized into being silent about their experience of violence but traditional norms teach them to accept, tolerate, and even rationalize domestic violence (Jaisingh, 1995; Hegde, 1996; Prasad, 1999). The recent IndiaSAFE multi-site study of family violence in India, conducted at about the same time as NFHS-2, finds violence by husbands to be fairly widespread (International Clinical Epidemiology Network, 2000). Both tolerance of and experience of domestic violence are significant barriers to the empowerment of women, with consequences for women's health, their health-seeking behaviour, their adoption of a small family norm, and the health of their children. In NFHS-2, an attempt was made to assess whether women view wife-beating as justified and to

measure the prevalence of violence against women including, but not limited to, violence committed by a woman's husband. Special training was provided to interviewers to sensitize them to the issue of domestic violence and impress upon them the necessity of ensuring privacy when asking these questions.

In order to assess women's attitudes towards wife-beating, before asking about personal experience with domestic violence, the survey asked all respondents whether they thought that a husband is justified in beating his wife for each of the following reasons: if he suspects her of being unfaithful; if her natal family does not give expected money, jewellery, or other items; if she shows disrespect for her in-laws; if she goes out without telling him; if she neglects the house or children; or if she does not cook food properly. These reasons, which range from reasons that involve suspicions about a wife's moral character to those that may be considered more trivial, such as not cooking properly, were chosen to provide variation in the perceived seriousness of behavioural-norm violation. Table 3.9 gives the percentages of ever-married women who agree with various reasons for wife-beating by background characteristics.

Almost one out of four women (23 percent) in West Bengal accept at least one reason as justification for wife-beating (much lower than the estimate of 56 percent for India as a whole). Women are most likely to agree that wife-beating is justified if the wife neglects the house or children (16 percent), and least likely to agree that wife-beating is justified if her natal family does not give expected money or other items (3 percent). If a wife goes out without telling her husband, 14 percent of women say that the husband would be justified in beating her. Eleven percent of women agree that wife-beating is justified if the wife shows disrespect for in-laws, and 7 percent believe it is justified if she does not cook food properly.

Women who are neither Hindu nor Muslim are more likely to agree with at least one reason for wife-beating than any other population group shown in Table 3.9. There are no sharp differences by age or marital duration in women's attitudes towards wife-beating, although the percentages justifying wife-beating are somewhat lower than average for women age 40-49 and for women who are not currently married. There are notable urban-rural differences in these attitudes. Not only do a higher proportion of rural women (26 percent) than urban women (11 percent) agree with at least one reason justifying wife-beating, but rural women are also more likely than urban women to agree with each specific reason. Women in Kolkata (7 percent) have a lower percentage agreeing with at least one reason justifying wife-beating than any other category in the table. The percentage of women agreeing with at least one reason justifying wife-beating is also very low among women who have completed at least high school (9 percent). Agreement with at least one reason, as well as with each of the different reasons for wife-beating, declines sharply with education. One-fourth of women who are either illiterate or have not completed middle school agree with at least one reason justifying wife-beating, compared with 15 percent of women who have completed middle school and 9 percent of women who have completed high school.

As expected, the proportion of women who agree that wife-beating is justified declines as the standard of living increases. About one-fourth of women with a low or medium standard of living agree with at least one reason justifying wife-beating, compared with 10 percent of women with a high standard of living. However, the expectation that women who work, especially those who work for cash, would be less likely than other women to justify wife-beating is not borne

Table 3.9 Reasons given for justifying a husband beating his wife

Percentage of ever-married women who agree with specific reasons for justifying a husband beating his wife by selected background characteristics, West Bengal, 1998–99

Background characteristic	Percentage who agree with specific reasons							Number of women
	Percentage who agree with at least one reason	Husband suspects wife is unfaithful	Natal family does not give expected money or other items	Wife shows disrespect for in-laws	Wife goes out without telling husband	Wife neglects house or children	Wife does not cook food properly	
Age								
15–19	26.9	13.0	3.6	16.6	17.7	20.3	8.7	383
20–29	24.7	10.6	2.6	12.4	16.2	17.8	8.2	1,706
30–39	22.5	11.1	2.8	11.6	13.8	14.9	6.1	1,430
40–49	17.1	7.2	1.5	6.5	10.0	11.2	3.7	889
Marital duration (in years)								
< 5	24.5	10.2	2.8	13.1	16.0	17.2	7.2	998
5–9	24.4	11.3	2.6	13.2	16.1	18.1	10.0	652
10 or more	21.9	10.2	2.4	10.3	13.4	14.9	5.8	2,466
Not currently married	19.1	9.4	2.2	9.4	12.5	12.4	4.7	292
Residence								
Urban	11.1	4.4	0.8	5.0	4.5	7.6	2.8	1,049
Rural	26.3	12.1	3.0	13.3	17.4	18.3	7.9	3,359
Kolkata	6.8	1.6	0.2	3.6	3.8	5.5	1.6	242
Education								
Illiterate	25.7	12.1	3.9	12.8	17.6	17.9	7.9	2,202
Literate, < middle school complete	25.2	10.8	1.7	12.6	15.1	17.6	8.0	1,289
Middle school complete	15.2	7.0	0.5	7.1	6.7	9.3	2.4	443
High school complete and above	8.8	3.7	0.1	5.0	4.2	6.4	1.5	469
Religion								
Hindu	20.3	8.6	2.0	10.1	11.8	13.8	5.5	3,285
Muslim	29.3	14.9	4.4	15.6	22.9	21.8	10.4	1,007
Other	33.5	18.0	1.2	9.0	11.6	18.0	6.4	106
Caste/tribe								
Scheduled caste	23.8	9.7	2.2	10.5	14.7	16.7	7.9	1,038
Scheduled tribe	23.6	11.2	3.0	11.7	14.2	13.5	7.2	319
Other backward class	22.5	11.1	1.1	9.2	10.1	10.2	3.6	196
Other	22.1	10.3	2.7	11.7	14.5	16.0	6.3	2,834
Cash employment								
Working for cash	25.5	11.5	2.4	13.4	16.8	18.2	9.2	1,121
Working but not for cash	30.9	15.1	1.0	10.8	19.1	19.1	10.6	136
Not worked in past 12 months	21.3	9.7	2.6	10.6	13.2	14.7	5.6	3,151
Standard of living index								
Low	26.5	12.1	3.7	14.3	18.4	18.1	8.6	1,906
Medium	22.5	9.8	1.7	9.9	12.5	15.8	6.1	1,821
High	10.4	5.2	0.7	5.7	4.9	7.0	2.0	605
Total	22.7	10.3	2.5	11.3	14.3	15.7	6.7	4,408

Note: Total includes 4, 9, 21, and 77 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

out. Women who have not worked in the past 12 months are less likely than working women to justify wife-beating for almost every reason given in Table 3.9.

In order to assess the prevalence of domestic violence, NFHS-2 asked women if they had been beaten or mistreated physically since age 15.¹ Women who reported being beaten or physically mistreated were asked who beat or physically mistreated them. Interviewers recorded all the persons mentioned by the respondent. As mentioned earlier, there is a culture of silence surrounding the topic of domestic violence that makes the collection of data on this sensitive topic particularly difficult. Even women who want to speak about their experience with domestic violence may find it difficult because of feelings of shame or fear. This may be more true if violence occurred recently (for example, in the preceding 12 months) than in the more distant past. In addition, depending on the varied cultural meanings ascribed to different acts, there may be women who do not report their experience of domestic violence because they do not view it as violence or physical mistreatment. For these reasons, NFHS-2 results on the prevalence of domestic violence need to be interpreted with caution.

Table 3.10 presents results on the prevalence of beatings or physical mistreatment since age 15 by women's background characteristics. Prevalence is also shown according to the person(s) who beat or physically mistreated them—their husbands, their in-laws, or other persons.

According to the reports of respondents, 18 percent of women in West Bengal have experienced violence (lower than the national average of 21 percent), and 16 percent have been beaten or physically mistreated by their husbands. Two percent have been beaten or physically mistreated by in-laws and 2 percent by other persons. This implies that among women who were beaten, almost 9 out of 10 (89 percent) have been beaten by their husbands and 1 out of 10 have been beaten by their in-laws.

Women age 15–19 are less likely than older women to have been beaten, but because of their young age they have had less time to be exposed to the risk of being beaten since age 15. Similarly, women who have been married for less than five years are less likely to have been beaten (11 percent) than women who have been married longer (19 percent). Urban women (11 percent) are less likely than rural women (20 percent) to experience violence. In Kolkata, 9 percent of women have been beaten or physically mistreated. Illiterate women (23 percent) are almost nine times as likely to experience violence as women who have completed high school (3 percent). The prevalence of domestic violence decreases substantially as the standard of living increases. Specifically, 25 percent of women with a low standard of living have experienced violence, compared with 14 percent of women with a medium standard of living and only 5 percent of women with a high standard of living.

Women from nuclear households are more likely than women from non-nuclear households to experience domestic violence. A similar finding was reported by Visaria (1999) among women in rural Gujarat. Working women are more likely than non-working women to experience violence.

In West Bengal, women with no living children or women with only living daughters are less likely than other women to have experienced violence (13 percent compared with 19–20

¹The question does not limit women to reporting only domestic violence, but almost all women who report any violence report beatings or physical mistreatment only by husbands or relatives.

Table 3.10 Women's experience with beatings or physical mistreatment

Percentage of ever-married women who have been beaten or physically mistreated by their husband, in-laws, or other persons since age 15, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Percentage beaten or physically mistreated since age 15	Percentage beaten or physically mistreated since age 15 by:			Number of women
		Husband	In-laws	Other persons	
Age					
15-19	12.5	10.6	0.4	2.6	383
20-29	17.5	15.4	1.7	2.4	1,706
30-39	20.2	18.0	2.4	3.0	1,430
40-49	15.7	14.7	1.2	1.2	889
Marital duration (in years)					
< 5	11.4	9.2	0.5	2.7	998
5-9	19.0	16.7	1.6	2.5	652
10 or more	18.7	17.3	2.2	2.0	2,466
Not currently married	26.2	21.8	2.3	4.2	292
Residence					
Urban	11.0	9.1	0.9	2.1	1,049
Rural	19.6	17.7	2.0	2.4	3,359
Kolkata	8.9	7.6	0.6	1.6	242
Education					
Illiterate	22.9	21.0	2.0	2.6	2,202
Literate, < middle school complete	17.0	14.7	1.8	2.8	1,289
Middle school complete	8.5	6.6	1.5	1.5	443
High school complete and above	2.6	1.6	0.2	0.9	469
Religion					
Hindu	15.9	13.9	1.6	2.5	3,285
Muslim	23.4	22.0	2.0	1.7	1,007
Other	10.3	10.3	0.0	1.3	106
Caste/tribe					
Scheduled caste	18.5	16.0	1.8	3.1	1,038
Scheduled tribe	17.8	16.5	0.4	2.2	319
Other backward class	14.7	12.8	0.4	1.5	196
Other	17.4	15.6	1.9	2.2	2,834
Household type					
Nuclear household	20.7	18.6	2.2	2.6	2,298
Non-nuclear household	14.2	12.5	1.2	2.1	2,110
Cash employment					
Working for cash	22.4	20.4	1.4	2.5	1,121
Working but not for cash	26.3	24.7	3.0	4.7	136
Not worked in past 12 months	15.5	13.6	1.7	2.2	3,151
Standard of living index					
Low	24.6	22.6	2.4	2.7	1,906
Medium	14.1	11.8	1.3	2.5	1,821
High	4.7	4.2	0.6	0.8	605
Living children					
No living children	13.3	10.2	0.2	4.0	507
Only daughters	13.3	11.2	1.8	2.4	750
Only sons	18.7	16.8	1.2	2.5	945
Both daughters and sons	19.5	18.0	2.2	1.9	2,206
Total	17.6	15.7	1.7	2.4	4,408

Note: Total includes 4, 9, 21, and 77 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

percent). This may be due in part to the fact that childless women tend to be younger women, and younger women have a lower prevalence of domestic violence than do older women. The proportions of women who have been beaten or physically mistreated by their husbands according to various background characteristics are similar to the proportions of all women who have experienced domestic violence. This is not surprising since, as already noted, almost 90 percent of women who report beatings are beaten by their husbands. The proportion of women who have been beaten or physically mistreated by their in-laws or by other persons is too small to allow a meaningful discussion of differentials by women's background characteristics.

NFHS-2 asked women who experienced violence since age 15 how often they were beaten or physically mistreated in the 12 months preceding the survey: many times, a few times, once, or not at all. Table 3.11 shows the frequency of beatings in the past 12 months for women who report beatings or physical mistreatment. One-half of women who experienced violence were beaten at least once during the 12 months preceding the survey and more than one-third (36 percent) were beaten more than once in this period. Women in Kolkata (37 percent) were much less likely to be beaten in the 12 months preceding the survey than rural women (50 percent) and urban women as a whole (46 percent).

As mentioned earlier, largely due to the inherent tendency for underreporting of domestic violence, these results need to be interpreted with caution. Nevertheless, the NFHS-2 estimates set a lower bound on the proportion of women experiencing domestic violence in West Bengal: *at least* 1 in 6 ever-married women in West Bengal has experienced domestic violence since age 15, and *at least* 1 in 11 has experienced domestic violence in the past 12 months.

Table 3.11 Frequency of beatings or physical mistreatment

Percent distribution of ever-married women who report being beaten or physically mistreated since age 15 by frequency of beatings or physical mistreatment in the 12 months preceding the survey, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Beaten or physically mistreated in past 12 months					Total percent	Number of women
	Many times	A few times	Once	Not beaten	Missing		
Age							
15-19	(18.2)	(32.4)	(14.4)	(35.0)	(0.0)	100.0	48
20-29	17.4	20.7	16.4	44.6	0.7	100.0	298
30-39	15.6	21.9	11.1	51.4	0.0	100.0	289
40-49	11.6	10.9	12.8	64.7	0.0	100.0	140
Marital duration (in years)							
< 5	21.2	28.5	17.3	31.0	1.9	100.0	114
5-9	15.3	21.8	14.9	48.0	0.0	100.0	124
10 or more	15.6	19.3	13.7	51.4	0.0	100.0	460
Not currently married	9.0	10.0	5.7	75.4	0.0	100.0	76
Residence							
Urban	13.8	19.5	12.2	53.7	0.7	100.0	115
Rural	16.1	20.2	13.9	49.6	0.2	100.0	660
Kolkata	4.6	25.8	6.8	62.8	0.0	100.0	21
Education							
Illiterate	16.9	21.5	12.5	49.1	0.0	100.0	505
Literate, < middle school complete	14.7	15.3	15.3	54.1	0.6	100.0	219
Middle school complete	(11.5)	(29.4)	(11.5)	(47.5)	(0.0)	100.0	38
Religion							
Hindu	15.6	20.3	15.2	48.5	0.4	100.0	524
Muslim	16.6	19.8	8.7	54.9	0.0	100.0	236
Caste/tribe							
Scheduled caste	16.1	26.3	10.1	46.8	0.7	100.0	192
Scheduled tribe	(21.6)	(14.5)	(18.4)	(45.6)	(0.0)	100.0	57
Other backward class	(7.6)	(22.6)	(27.5)	(39.4)	(2.9)	100.0	29
Other	15.3	18.4	13.8	52.6	0.0	100.0	493
Household type							
Nuclear household	18.7	20.0	11.5	49.3	0.5	100.0	475
Non-nuclear household	11.0	20.4	17.0	51.6	0.0	100.0	300
Cash employment							
Working for cash	17.8	16.4	14.4	51.4	0.0	100.0	252
Working but not for cash	(19.8)	(22.8)	(7.8)	(49.6)	(0.0)	100.0	36
Not worked in past 12 months	14.4	21.9	13.6	49.7	0.5	100.0	487
Standard of living index							
Low	18.8	20.6	10.1	50.5	0.0	100.0	468
Medium	12.2	19.7	18.2	49.1	0.9	100.0	257
High	(0.0)	(21.0)	(25.6)	(53.4)	(0.0)	100.0	29
Living children							
No living children	16.5	26.0	14.8	40.6	2.0	100.0	68
Only daughters	14.1	22.9	11.8	51.1	0.0	100.0	100
Only sons	15.9	23.8	15.0	44.9	0.5	100.0	177
Both daughters and sons	16.0	17.1	13.3	53.7	0.0	100.0	430
Total	15.7	20.1	13.6	50.2	0.3	100.0	775

Note: Total includes 12 women who have completed at least high school, 11 women belonging to other religions, and 1, 4, 4, and 20 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

CHAPTER 4

FERTILITY AND FERTILITY PREFERENCES

A major objective of NFHS-2 is to provide detailed information on fertility levels, differentials, and trends. This chapter presents a description of current and past fertility, cumulative fertility and family size, birth intervals, age at first cohabitation with husband, age at first and last birth, age at menopause, and durations of postpartum amenorrhoea, abstinence, and insusceptibility to pregnancy. Also discussed are fertility preferences, ideal and actual number of children, preference for sons or daughters, planning status of pregnancies, and wanted and actual total fertility rates.

Most of the fertility measures presented in this chapter are based on the complete birth histories collected from ever-married women age 15–49 years. Several measures and procedures were used to obtain complete and accurate reporting of births, deaths, and the timing of these events. First, women were asked a series of questions aimed at recording all the live births that had occurred in their lifetime. Second, for each live birth, the survey collected information on the age, sex, and survival status of the child. For dead children, age at death was recorded. Interviewers were given extensive training in probing techniques designed to help respondents report this information accurately. For example, interviewers were instructed to check any documents (such as horoscopes, school certificates, or vaccination cards) that might provide additional information on dates of birth, and to probe for the reason for any birth interval of four or more years in order to prevent omission of births, especially of children who died soon after birth. Stillbirths, miscarriages, and induced abortions that occurred between live births were also recorded.

Despite these measures to improve data quality, NFHS-2 is subject to the same types of errors that are inherent in all retrospective sample surveys—namely, the omission of some births (especially births of children who died at a very young age) and the difficulty of determining the date of birth of each child accurately. These problems can bias estimates of fertility levels and trends.

4.1 Age at First Cohabitation

The number of children that a woman will have in her lifetime is strongly influenced by the age at which she marries. In many parts of India, however, formal marriage is not always immediately followed by cohabitation. Rather, the husband and the wife typically begin to cohabit only after the *gauna* ceremony. Even if *gauna* is not practised, a marriage may not be consummated immediately if it occurs at a very young age. In such instances, there is a difference between age at marriage and age at consummation of marriage. Age at consummation of marriage is, of course, what is relevant for fertility. NFHS-2 measured age at first cohabitation as a proxy for age at consummation of marriage. In Table 4.1, the median age at first cohabitation for a group of women is defined as the age by which half of the entire group began to cohabit, rather than the age by which half of all ever-cohabiting women in the group began to cohabit. In West Bengal, the median age at first cohabitation is almost the same as the median age at first marriage.

Table 4.1 Age at first cohabitation with husband								
Median age at first cohabitation with husband among women age 20–49 years by current age and selected background characteristics, West Bengal, 1998–99								
Background characteristic	Current age						20–49	25–49
	20–24	25–29	30–34	35–39	40–49			
Residence								
Urban	NC	19.7	19.4	18.2	18.2	19.1	18.7	
Rural	17.7	17.0	16.6	16.4	16.1	16.8	16.6	
Kolkata	NC	21.2	20.1	19.4	18.7	19.9	19.6	
Education								
Illiterate	16.7	16.3	16.2	16.0	15.7	16.1	16.0	
Literate, < middle school complete	18.0	17.3	16.9	16.7	16.8	17.1	16.9	
Middle school complete	18.9	18.8	18.4	19.4	17.6	18.7	18.6	
High school complete and above	NC	23.1	22.3	22.5	20.7	NC	22.3	
Religion								
Hindu	18.7	18.0	17.5	16.9	16.8	17.7	17.3	
Muslim	16.8	16.4	16.1	15.6	15.7	16.2	16.0	
Other	(19.0)	*	*	*	*	18.3	16.9	
Caste/tribe								
Scheduled caste	17.9	16.9	16.4	16.0	15.7	16.5	16.3	
Scheduled tribe	18.2	(16.4)	(16.5)	(17.1)	(16.7)	17.0	16.6	
Other backward class	(19.9)	(18.7)	(17.6)	(17.4)	(17.1)	18.3	17.8	
Other	18.8	17.9	17.4	17.0	16.8	17.7	17.3	
Standard of living index								
Low	17.0	16.5	16.3	15.8	15.8	16.3	16.1	
Medium	18.7	18.1	17.2	17.0	16.6	17.7	17.2	
High	NC	20.8	21.0	19.5	18.4	19.9	19.6	
Total	18.4	17.6	17.0	16.7	16.6	17.3	16.9	

Note: Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.
 NC: Not calculated because less than 50 percent of the women have started living with their husband by age 20
 () Based on 25–49 unweighted cases
 *Median not shown; based on fewer than 25 unweighted cases

Table 4.1 shows that, in West Bengal, the median age at first cohabitation with husband is 17.3 years for women age 20–49. The median age at first cohabitation increases steadily from 16.6 for women age 40–49 to 18.4 for women age 20–24, suggesting a modest increase in the median age at first cohabitation, particularly in recent years.

Table 4.1 also shows differentials in the median age at first cohabitation by various background characteristics. Comparisons are based on medians that pertain to women age 25–49 since medians could not be calculated for all categories of women age 20–49.

For women age 25–49, the median age at first cohabitation is slightly more than two years higher for women in urban areas than in rural areas. Women in Kolkata have a higher median age at first cohabitation (19.6 years) than urban women as a whole (18.7). The median age at first cohabitation has risen faster in urban areas than in rural areas, so the urban-rural gap has been

widening over time. The median age at first cohabitation rises sharply with women's level of education. The median is higher for Hindu women (17.3 years) than for Muslim (16.0 years) or other women (16.9 years). The median age at first cohabitation is lower for women from scheduled castes (16.3 years) and scheduled tribes (16.6 years) than for women from other backward classes (17.8 years) and other castes/tribes (17.3 years). The median age at first cohabitation is more than three years higher for women living in households with a high standard of living than for women living in households with a low standard of living.

4.2 Current Fertility Levels

NFHS-2 provides estimates of age-specific fertility rates (ASFR), total fertility rates (TFR), and crude birth rates (CBR) for the three-year period preceding the survey, which in West Bengal corresponds roughly to the period 1996–98. This three-year period was chosen as a compromise between the need to obtain recent information (suggesting the use of a short period close to the survey date) and the need to reduce sampling variation and minimize problems related to displacement of births from recent years to earlier years (suggesting the use of a longer period). The ASFR for any specific age group is calculated by dividing the number of births to women in the age group during the period 1–36 months preceding the survey by the number of woman-years lived by women in the age group during the same three-year time period. The TFR is a summary measure, based on the ASFRs, that gives the number of children a woman would bear during her reproductive years if she were to experience the ASFRs prevailing at the time of the survey. Mathematically, the TFR is calculated as five times the sum of all the ASFRs for the five-year age groups. The CBR is defined as the annual number of births per 1,000 population.

Based on the three-year period before NFHS-2, the CBR for West Bengal is estimated at 20.8 live births per 1,000 population, and the TFR is estimated at 2.29 births per woman, as shown in Table 4.2.

Table 4.2 shows that NFHS-2 fertility estimates are much lower in urban areas than in rural areas. Both the CBR and the TFR are about 50 percent higher for rural areas than for urban areas. ASFRs are lower in urban areas than in rural areas for almost all age groups (see Figure 4.1), although differences are negligible at ages 25 and above. Seventy percent of urban total fertility and 60 percent of rural total fertility is concentrated in the prime childbearing ages of 20–29. Fertility at age 15–19 accounts for 15 percent of total fertility in urban areas, 25 percent in rural areas, and 23 percent overall, indicating that there is a substantial amount of early childbearing. For the state as a whole, fertility at ages 35 and older accounts for 5 percent of total fertility.

Based on estimates for the three-year period preceding NFHS-1 and NFHS-2, the CBR fell from 25.5 to 20.8 between the two surveys, a decline of 18 percent in approximately six years and a half years. Over the same period, the TFR fell from 2.92 to 2.29, a decline of 22 percent. Table 4.2 and Figure 4.2 show that fertility fell for all age groups, although fertility for women ages 40–44 and 45–49 was already very low in NFHS-1. Consequently, the fertility decline above age 40 had a negligible impact on the CBR and the TFR during the six years between the two surveys.

Table 4.2 Current fertility

Age-specific and total fertility rates and crude birth rates from NFHS-1, NFHS-2, and the SRS by residence, West Bengal

Age	NFHS-1 (1989-91)	NFHS-2 (1996-98)		SRS (1997)			
	Total	Urban	Rural	Total	Urban	Rural	Total
15-19	0.123	0.049	0.125	0.107	0.040	0.075	0.067
20-24	0.202	0.133	0.185	0.173	0.130	0.229	0.201
25-29	0.138	0.102	0.112	0.110	0.104	0.140	0.131
30-34	0.075	0.047	0.047	0.047	0.050	0.074	0.067
35-39	0.031	0.007	0.019	0.015	0.019	0.032	0.028
40-44	0.008	0.000	0.004	0.003	0.007	0.018	0.014
45-49	0.005	0.000	0.006	0.004	0.002	0.003	0.003
TFR 15-44	2.89	1.69	2.46	2.27	1.75	2.84	2.54
TFR 15-49	2.92	1.69	2.49	2.29	1.76	2.86	2.56
CBR	25.5	15.1	22.7	20.8	15.9	24.8	22.4

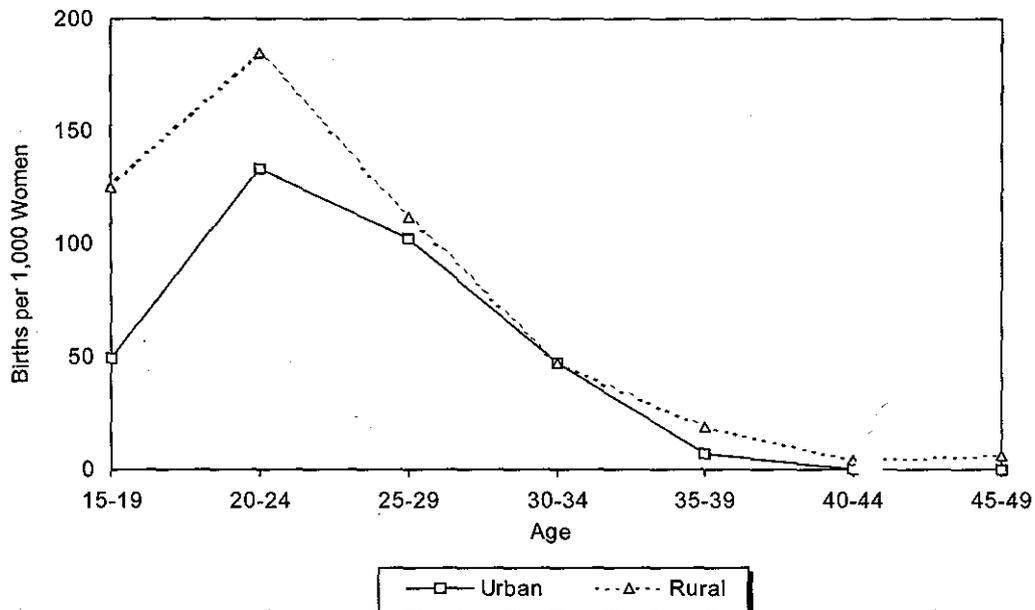
Note: Rates from NFHS-1 and NFHS-2 are for the period 1-36 months preceding the survey. Rates for the age group 45-49 might be slightly biased due to truncation. Rates from the SRS are for one calendar year. Age-specific and total fertility rates are expressed per woman.

TFR: Total fertility rate

CBR: Crude birth rate, expressed per 1,000 population

Source for SRS: Office of the Registrar General, 1999a

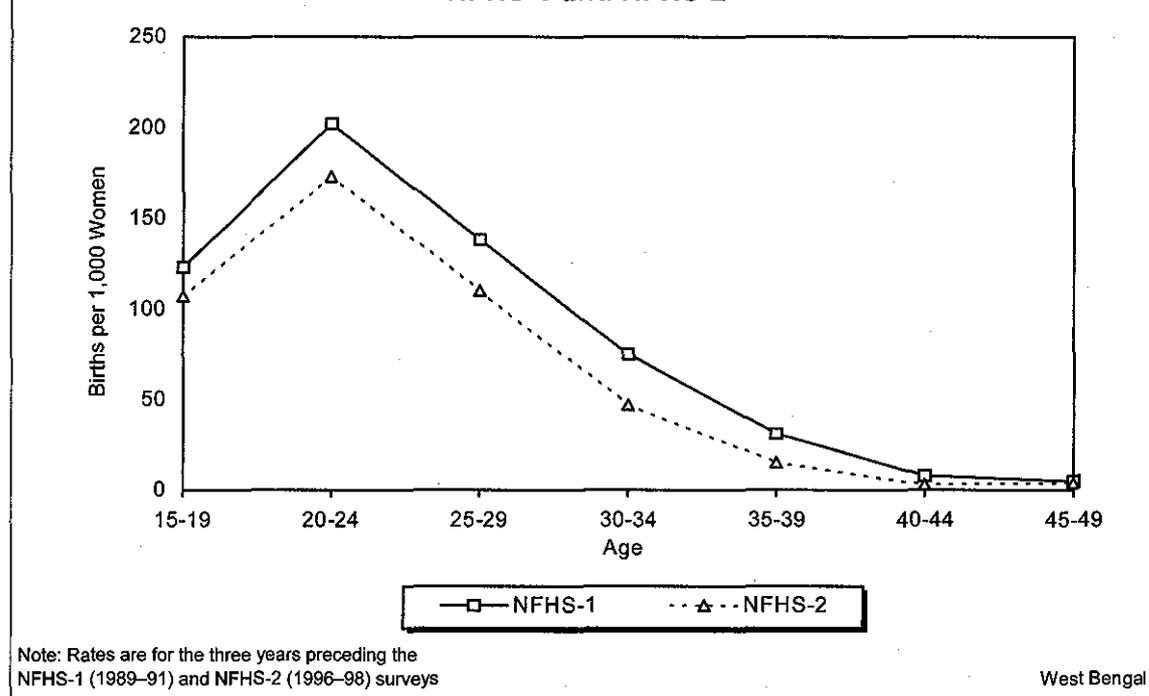
**Figure 4.1
Age-Specific Fertility Rates
by Residence**



Note: Rates are for the three years preceding the survey (1996-98)

NFHS-2, West Bengal, 1998-99

Figure 4.2
Age-Specific Fertility Rates
NFHS-1 and NFHS-2



NFHS-2 fertility estimates can be compared with estimates from the Sample Registration System (SRS), which is maintained by the Office of the Registrar General, India. Since the NFHS-2 rates refer to 1996-98, it is appropriate to compare them with the SRS estimates for 1997, which are also shown in Table 4.2. The NFHS-2 estimate of the CBR, at 20.8, is slightly lower than the SRS estimate of the CBR, at 22.4. The NFHS-2 estimate of the TFR (2.29) is 0.3 children lower than the SRS estimate of 2.56. The differences between the NFHS-2 and SRS estimates may be caused partly by age misreporting in NFHS-2, which tends to result in the displacement of births further in the past. Retrospective surveys, such as NFHS-1 and NFHS-2, are subject to such displacement, whereas the SRS, in which births are recorded during the year in which they occur, is not. Narasimhan et al. (1997) compared NFHS-1 and SRS estimates of fertility and concluded that both are probably underestimates. Nevertheless, since the SRS estimates are not subject to age displacement, they are likely to be closer to the true level of fertility than the NFHS-1 estimates. This argument is probably equally valid for the NFHS-2 estimates of fertility as compared with the corresponding SRS estimates. It should be noted, however, the change in CBR and TFR is almost exactly the same in NFHS and the SRS. According to SRS the CBR declined by 17 percent and the TFR declined by 20 percent between 1991 and 1997.

4.3 Fertility Differentials and Trends

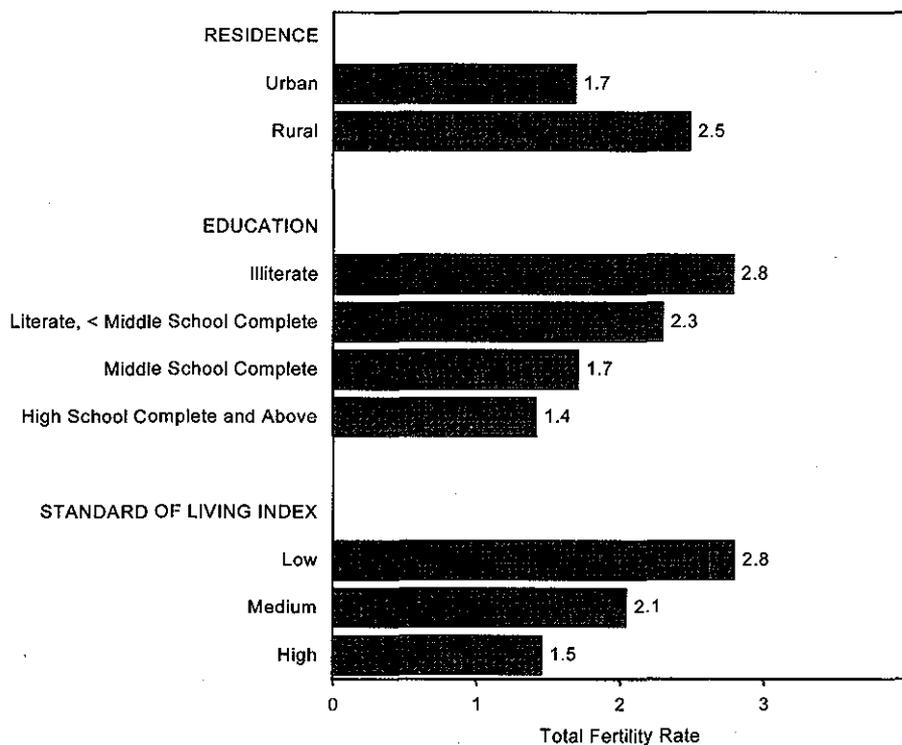
Table 4.3 and Figure 4.3 show how the TFR, the percentage currently pregnant, and the mean number of children ever born to women age 40-49 vary by selected background characteristics. In West Bengal, the TFR is more than one child higher among illiterate women than among women who have completed at least high school. Muslim women (3.29) have a higher TFR than any other population group in the table. Scheduled-caste women (2.34) and scheduled-tribe

Table 4.3 Fertility by background characteristics			
Total fertility rate for the three years preceding the survey, percentage of all women age 15–49 currently pregnant, and mean number of children ever born to all women age 40–49 by selected background characteristics, West Bengal, 1998–99			
Background characteristic	Total fertility rate ¹	Percentage currently pregnant ²	Mean number of children ever born to all women age 40–49 years
Residence			
Urban	1.69	2.6	2.98
Rural	2.49	4.9	4.80
Kolkata	1.55	3.8	2.81
Education			
Illiterate	2.79	4.4	4.93
Literate, < middle school complete	2.30	4.7	4.14
Middle school complete	1.71	3.8	2.87
High school complete and above	1.42	3.9	1.73
Religion			
Hindu	2.02	3.9	3.72
Muslim	3.29	6.0	6.03
Other	1.68	3.3	*
Caste/tribe			
Scheduled caste	2.34	4.7	4.67
Scheduled tribe	2.31	5.1	(4.25)
Other backward class	1.89	5.8	(3.39)
Other	2.21	3.8	4.11
Standard of living index			
Low	2.80	4.2	4.97
Medium	2.05	5.3	4.16
High	1.46	2.2	2.90
Total	2.29	4.3	4.21
Note: Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately. () Based on 25–49 unweighted cases *Mean not shown; based on fewer than 25 unweighted cases ¹ Rate for women age 15–49 years ² For this calculation, it is assumed that women who are never married, widowed, divorced, separated, or deserted are not currently pregnant.			

women (2.31) have higher levels of fertility than women from other backward classes (1.89). The TFR among women living in households with a low standard of living is almost two times higher than the TFR among women living in households with a high standard of living. The TFR for Kolkata (1.55) is slightly lower than the TFR for all urban areas of West Bengal.

Fertility transitions in other countries have shown that fertility differentials typically diverge early in the transition and reconverge (though rarely completely) towards the end of the transition as fertility approaches the replacement level. Table 4.3 and Figure 4.3 indicate that in West Bengal, there are still large fertility differentials, with the TFR and other fertility indicators varying widely among population groups.

Figure 4.3
Total Fertility Rate by Selected Background Characteristics



Note: Rates are for the three years preceding the survey (1996-98)

NFHS-2, West Bengal, 1998-99

Overall, 4 percent of women in West Bengal report that they are currently pregnant (slightly lower than the national average of 6 percent). Differentials in the percentage currently pregnant do not always follow the same pattern as that for differentials in the TFR. For example, women in other backward classes have a lower TFR than other women; however, they have the highest percentage currently pregnant. This may be due partly to the fact that the TFR is not affected by the age structure, whereas the percentage currently pregnant is affected by the age structure.

The last column of Table 4.3 shows the mean number of children ever born to all women age 40-49 at the time of the survey. The average number of children ever born for these women, who are at the end of their childbearing years, is 4.2. The substantial decline in fertility in West Bengal over time is evident from the difference of 1.9 children between the average number of children for women who are currently in their forties and the number of children women would have in their lifetime if they were subject to the current age-specific fertility rates (the last column and first column of Table 4.3). The pattern of differentials in the mean number of children ever born parallels the pattern of differentials in the TFR.

The preceding section already discussed fertility trends based on estimates from NFHS-1 and NFHS-2 for the three-year period preceding each survey. Table 4.4 shows fertility trends for

Table 4.4 Fertility trends				
Age-specific fertility rates for five-year periods preceding the survey by residence, West Bengal, 1998–99				
Age	Years preceding survey			
	0–4	5–9	10–14	15–19
URBAN				
15–19	0.058	0.084	0.122	0.140
20–24	0.133	0.163	0.195	0.210
25–29	0.102	0.103	0.126	0.153
30–34	0.044	0.055	0.061	[0.096]
35–39	0.006	0.016	[0.025]	U
40–44	0.000	[0.004]	U	U
45–49	[0.000]	U	U	U
RURAL				
15–19	0.135	0.184	0.206	0.190
20–24	0.186	0.238	0.267	0.294
25–29	0.111	0.162	0.205	0.224
30–34	0.052	0.085	0.140	[0.185]
35–39	0.020	0.063	[0.087]	U
40–44	0.008	[0.024]	U	U
45–49	[0.006]	U	U	U
TOTAL				
15–19	0.116	0.160	0.184	0.178
20–24	0.174	0.219	0.249	0.269
25–29	0.109	0.147	0.181	0.201
30–34	0.050	0.076	0.115	[0.155]
35–39	0.016	0.048	[0.066]	U
40–44	0.005	[0.018]	U	U
45–49	[0.004]	U	U	U

Note: Age-specific fertility rates are expressed per woman.
U: Not available
[] Truncated, censored

five-year time periods preceding NFHS-2, estimated solely from NFHS-2 birth histories. It is not possible to show TFRs in this table because of progressively greater age truncation as one goes back in time. For example, for the period 5–9 years preceding the survey, it is not possible to compute an ASFR for age 45–49 because the women in question would be 50–54 at the time of the survey, whereas NFHS-2 only collected birth histories for women up to age 49. Similarly, for the period 10–14 years preceding the survey, it is not possible to compute ASFRs for women age 40–49, and for the period 15–19 years preceding the survey, it is not possible to compute ASFRs for women age 35–49. Thus Table 4.4 shows only the truncated trends in ASFRs. Results are shown separately for urban and rural areas as well as for the entire state. These results show substantial fertility declines in all age groups in both urban and rural areas. As mentioned earlier, however, these trends may be distorted by displacement of births to earlier years, and this displacement tends to exaggerate the extent of fertility decline.

For the periods 0–4 years and 5–9 years before the survey, it is possible to calculate truncated TFRs (more appropriately called cumulative fertility rates, or CFRs) for the age range 15–39, based on the ASFRs shown in Table 4.4. This is done by summing ASFRs for the age

Table 4.5 Fertility by marital duration				
Fertility rates for ever-married women by duration since first cohabitation with husband (in years) and residence for five-year periods preceding the survey, West Bengal, 1998-99				
Duration since first cohabitation (in years)	Years preceding survey			
	0-4	5-9	10-14	15-19
URBAN				
< 5	0.256	0.272	0.325	0.304
5-9	0.116	0.147	0.188	0.215
10-14	0.050	0.079	0.096	0.146
15-19	0.017	0.026	0.062	(0.073)
20-24	0.003	0.017	(0.019)	*
25-29	0.001	(0.000)	*	U
RURAL				
< 5	0.292	0.324	0.336	0.296
5-9	0.166	0.241	0.264	0.298
10-14	0.087	0.124	0.187	0.215
15-19	0.042	0.081	0.156	0.175
20-24	0.020	0.064	0.074	*
25-29	0.006	0.031	*	U
TOTAL				
< 5	0.283	0.312	0.334	0.298
5-9	0.155	0.220	0.245	0.274
10-14	0.079	0.113	0.161	0.196
15-19	0.035	0.065	0.130	0.154
20-24	0.015	0.051	0.063	*
25-29	0.004	0.024	*	U
Note: Duration-specific fertility rates are expressed per woman. The duration since first cohabitation with husband is defined as the difference between the woman's age at the specific time period and her age when she began living with her husband.				
U: Not available				
() Based on 125-249 woman-years of exposure				
*Rate not shown; based on fewer than 125 woman-years of exposure				

groups 15-19 through 35-39 and multiplying the sum by five. For the state as a whole, the CFR (15-39) declined from 3.25 to 2.33 between these two five-year periods, a decline of 0.9 children. The decline was 0.4 children for urban areas and 1.1 for rural areas, indicating that the absolute level of fertility fell more rapidly in rural areas than in urban areas.

Another way of looking at fertility is to calculate fertility rates by the number of years since first cohabitation with the husband. These rates are measures of marital fertility, i.e., fertility within marriage. Table 4.5 shows fertility rates by duration since first cohabitation for ever-married women over the entire 20-year period preceding the survey.¹ Fertility has declined at all durations, but more at longer durations than at shorter durations. It is also evident from Table 4.5 that marital fertility is lower in urban areas than in rural areas for almost all durations and time periods.

¹Since NFHS-2 collected information only on a woman's age at the time of first cohabitation and not on the year and month when she first began cohabiting with her husband, the exact number of months since first cohabitation cannot be calculated. For this reason, the first year since cohabitation contains only six months, on average, and the first five years since cohabitation contain only 4.5 years, on average.

4.4 Children Ever Born and Living

The number of children a woman has ever borne is a cohort measure of fertility. Because it reflects fertility in the past, it provides a somewhat different picture of fertility levels, trends, and differentials than do period measures of fertility such as the CBR and the TFR. Table 4.6 shows the percent distribution of all women and currently married women by the number of children ever born (CEB). The table shows these distributions by the age of the woman at the time of the survey and also shows the mean number of children ever born and living children.

Among women age 15–49, the mean number of children ever born is 2.2 for all women and 2.7 for currently married women. The mean number of children ever born increases steadily with women's age, reaching a high of 4.5 children among all women age 45–49 and 4.6 among currently married women in this age group. The table also shows that early childbearing is fairly common in West Bengal. Eighteen percent of all women age 15–19 and 48 percent of currently married women age 15–19 have already had a child.

For women age 45–49, the number of children ever born is of particular interest because these women have virtually completed their childbearing. For all women in this age group, irrespective of marital status, the modal number of children ever born is four. Twenty percent of these women have reached the end of childbearing with four children ever born. The modal number of children is the same among currently married women age 45–49, with 19 percent of these women reaching the end of childbearing with four children ever born. Only 3 percent of currently married women age 30–49 have never given birth, suggesting that primary infertility (which is the proportion of couples who are unable to have any children) is low in West Bengal.

For all women age 15–49, the average number of dead children per woman is 0.26. For currently married women, the average number of dead children is 0.31, indicating that 11 percent of children ever born to currently married women have died. For currently married women, the proportion of children ever born who have died increases from 8 percent for women age 20–24 to 16 percent for women age 45–49.

4.5 Birth Order

The distribution of births by birth order is yet another way to view fertility. Table 4.7 shows the distribution of births during the three-year period preceding the survey by birth order for selected background characteristics. For birth orders less than four, the proportion of births at each order is larger than the proportion of births at the next higher order. Thirty-five percent of all births are first-order births, 29 percent are second-order births, and 17 percent are third-order births.

Seventy-two percent of births to women age 15–19 are first-order births. By contrast, 63 percent of births to women age 30–39 are of order four or higher. The proportion of births that are of order four or higher is 14 percent in urban areas (11 percent in Kolkata) and 21 percent in rural areas. The proportion of births that are of order four or higher is relatively large for births to illiterate women, Muslim women, scheduled-tribe women, self-employed women, and women in households with a low standard of living. The range is particularly wide for education groups: 30 percent of births to illiterate women are of order four or higher, compared with 2 percent of births to women who have at least completed high school. The range is also wide according to the household standard of living: 27 percent of births to women in households with a low

Table 4.6 Children ever born and living															
Percent distribution of all women and of currently married women by number of children ever born (CEB) and mean number of children ever born and living, according to age, West Bengal, 1998–99															
Age	Children ever born											Total percent	Number of women	Mean number of CEB	Mean number of living children
	0	1	2	3	4	5	6	7	8	9	10+				
ALL WOMEN															
15–19	82.5	12.9	4.1	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	1,043	0.23	0.21
20–24	34.6	28.7	22.9	9.6	3.3	0.9	0.0	0.0	0.0	0.0	0.0	100.0	1,045	1.21	1.12
25–29	13.2	16.2	33.9	21.0	11.0	3.2	1.1	0.1	0.2	0.0	0.0	100.0	964	2.17	1.99
30–34	6.9	12.7	25.9	20.9	15.5	9.2	5.2	2.9	0.4	0.4	0.1	100.0	772	2.94	2.70
35–39	6.7	10.9	18.6	22.9	16.0	12.3	6.1	2.5	1.5	1.6	1.0	100.0	701	3.32	2.87
40–44	4.1	9.0	16.6	18.9	15.7	12.0	9.4	5.8	3.9	2.0	2.6	100.0	496	3.96	3.34
45–49	3.5	5.2	15.4	14.8	19.8	10.8	9.4	7.1	4.0	4.8	5.2	100.0	401	4.52	3.77
Total	27.4	15.3	20.0	14.4	9.8	5.5	3.3	1.8	0.9	0.8	0.8	100.0	5,421	2.21	1.95
CURRENTLY MARRIED WOMEN															
15–19	52.0	35.4	11.1	1.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	375	0.62	0.58
20–24	15.9	36.3	29.8	12.7	4.3	1.1	0.0	0.0	0.0	0.0	0.0	100.0	791	1.57	1.45
25–29	5.7	16.5	37.5	23.0	12.1	3.5	1.2	0.2	0.3	0.0	0.0	100.0	859	2.37	2.18
30–34	2.9	11.8	28.2	21.5	16.3	10.0	5.4	3.1	0.4	0.4	0.1	100.0	696	3.10	2.84
35–39	3.2	9.7	19.9	23.5	16.9	12.9	6.8	2.8	1.5	1.6	1.1	100.0	617	3.50	3.04
40–44	2.4	8.9	16.3	18.7	17.0	11.7	10.5	5.9	4.0	2.4	2.3	100.0	429	4.07	3.44
45–49	2.9	5.2	15.4	15.1	18.7	10.8	8.6	7.6	4.2	5.5	5.9	100.0	349	4.64	3.89
Total	10.4	18.5	25.3	17.8	12.0	6.7	4.0	2.2	1.1	1.0	0.9	100.0	4,116	2.72	2.41

Table 4.7 Birth order						
Percent distribution of births during the three years preceding the survey by birth order, according to selected background characteristics, West Bengal, 1998-99						
Background characteristic	Birth order				Total percent	Number of births
	1	2	3	4+		
Mother's current age						
15-19	72.3	24.8	2.8	0.0	100.0	190
20-29	32.8	33.5	20.3	13.5	100.0	918
30-39	8.7	14.0	13.8	63.4	100.0	198
Residence						
Urban	46.5	27.0	12.7	13.9	100.0	239
Rural	31.9	29.4	17.5	21.2	100.0	1,081
Kolkata	49.5	27.8	11.8	10.8	100.0	52
Mother's education						
Illiterate	23.5	25.6	20.8	30.1	100.0	654
Literate, < middle school complete	38.4	30.5	16.7	14.4	100.0	407
Middle school complete	49.5	41.2	6.4	2.9	100.0	140
High school complete and above	65.1	28.2	4.6	2.1	100.0	117
Religion						
Hindu	38.0	31.7	16.8	13.5	100.0	881
Muslim	27.4	23.1	15.8	33.7	100.0	412
Caste/tribe						
Scheduled caste	32.9	32.8	18.9	15.4	100.0	319
Scheduled tribe	27.0	25.8	22.9	24.3	100.0	95
Other backward class	38.5	27.7	22.8	11.0	100.0	49
Other	36.0	28.1	14.4	21.4	100.0	849
Mother's work status						
Working in family farm/business	(27.7)	(24.4)	(34.9)	(12.9)	100.0	59
Employed by someone else	23.5	26.2	25.4	24.9	100.0	170
Self-employed	29.8	27.3	15.6	27.3	100.0	61
Not worked in past 12 months	37.0	29.8	14.2	19.0	100.0	1,030
Standard of living index						
Low	25.0	27.2	20.8	26.9	100.0	672
Medium	42.6	31.2	12.9	13.4	100.0	505
High	51.0	34.7	8.2	6.2	100.0	116
Total	34.5	29.0	16.6	19.9	100.0	1,320
Note: Total includes 14 births to mothers currently age 40-49, 24 births to mothers with other religions, and 2, 3, 8, and 26 births with missing information on mother's education, religion, caste/tribe, and the standard of living index, respectively, which are not shown separately. () Based on 25-49 unweighted cases						

standard of living are of order four or higher, compared with 6 percent of births to women in households with a high standard of living.

4.6 Birth Intervals

A birth interval, defined as the length of time between two successive live births, indicates the pace of childbearing. Short birth intervals may adversely affect a mother's health and her children's chances of survival. Past research has shown that children born too close to a previous

birth are at increased risk of dying, especially if the interval between the births is less than 24 months (Pandey et al., 1998; Govindasamy et al., 1993).

Table 4.8 shows the percent distribution of births during the five years preceding the survey by birth interval according to selected demographic and socioeconomic background characteristics. In West Bengal, 10 percent of births occur within 18 months of a previous birth and 23 percent occur within 24 months. Forty-five percent of births occur after an interval of three years or more.

The median birth interval in West Bengal is 34 months. The median birth interval ranges from 25 months for women age 15–19 to 44 months for women age 40–49. The relatively short birth interval for women age 15–19 may result partly from a selection effect: Only women who have had two or more births are included in the table, and women age 15–19 with more than one birth are likely to have shorter birth intervals due to high fecundity. Given the finding that the median birth interval increases with mother's age, it is surprising that it does not also increase with the order of the previous birth. Perhaps this is due to the absence of the selection effect just noted. There may also be another type of selection effect operating: Mothers of higher-order births may be more fecund, on average, than mothers of lower-order births.

The median birth interval does not depend on the sex of the previous child. Birth intervals are much shorter if the previous child died (25 months) than if the previous child survived (35 months). In part, this reflects the shortening of postpartum amenorrhoea that occurs when the preceding child dies in infancy and breastfeeding stops prematurely.

Birth intervals are one month longer for births to women in urban areas than to those in rural areas. Births to mothers in Kolkata have a much longer median birth interval (44 months) than births to other mothers (33–35 percent). Birth intervals increase with mother's level of education and standard of living. Births to mothers who completed at least a high school education (42 months) have a median birth interval that is 10 months longer than the interval for births to illiterate mothers (33 months). Similarly, births to mothers with a high standard of living have a median birth interval that is eight months longer than the median interval for mothers who live in households with a low standard of living. Muslims have a shorter median birth interval (31 months) than Hindus (36 months). The median birth interval for births to women from other backward classes is 13–14 months longer than the interval for women in scheduled castes, scheduled tribes, or other castes/tribes.

4.7 Age at First and Last Birth

The ages at which women start and stop childbearing are important demographic determinants of fertility. A higher median age at first birth and a lower median age at last birth are indicators of lower fertility. Table 4.9 shows the median age at first birth for various age groups by selected background characteristics. In this table, the median age at first birth for any group of women is defined as the age by which half of all women in the group have had a first birth, rather than the age by which half of all mothers in the group have had a first birth. If the median age at first birth calculated for an age group lies above the lower limit of that age group, it is not valid because some younger women in the age group who have not yet had a first birth will not have reached the median age by the time of the survey. In such cases, the estimate of the median is not shown.

Table 4.8 Birth interval									
Percent distribution of births during the five years preceding the survey by interval since previous birth and median number of months since previous birth, according to selected background characteristics, West Bengal, 1998-99									
Background characteristic	Months since previous birth						Total percent	Median months since previous birth	Number of births
	< 12	12-17	18-23	24-35	36-47	48+			
Mother's current age									
15-19	(0.0)	(16.7)	(26.5)	(48.3)	(5.9)	(2.6)	100.0	(25.1)	51
20-29	1.6	7.7	14.8	33.5	21.8	20.7	100.0	32.6	1,014
30-39	1.5	7.6	7.6	28.1	19.2	36.0	100.0	39.0	368
40-49	(7.4)	(7.4)	(17.3)	(5.0)	(18.6)	(44.3)	100.0	(43.5)	36
Residence									
Urban	1.0	13.0	12.1	25.7	17.5	30.7	100.0	34.7	221
Rural	1.7	7.1	13.7	33.0	21.1	23.4	100.0	33.4	1,249
Kolkata	1.1	8.0	10.9	20.7	13.8	45.6	100.0	43.8	45
Mother's education									
Illiterate	1.2	8.3	12.8	34.9	20.8	22.0	100.0	32.5	875
Literate, < middle school complete	2.3	7.7	14.1	31.8	19.7	24.4	100.0	33.0	404
Middle school complete	1.2	8.0	17.7	17.3	20.4	35.3	100.0	38.1	119
High school complete and above	4.0	4.3	8.7	19.7	23.5	39.8	100.0	42.4	68
Religion									
Hindu	1.0	7.9	11.4	29.8	21.3	28.6	100.0	35.9	898
Muslim	2.8	7.9	17.5	35.1	19.0	17.8	100.0	31.0	536
Other	(0.0)	(13.0)	(4.4)	(40.1)	(20.8)	(21.8)	100.0	(33.6)	32
Caste/tribe									
Scheduled caste	0.6	7.6	11.5	35.0	21.3	24.0	100.0	33.2	348
Scheduled tribe	2.3	11.5	9.2	35.6	18.4	23.0	100.0	32.3	118
Other backward class	(2.5)	(9.8)	(10.7)	(20.1)	(10.9)	(46.0)	100.0	(46.2)	53
Other	1.9	7.7	14.7	30.9	21.2	23.6	100.0	33.7	938
Standard of living index									
Low	1.8	8.1	12.3	33.9	21.2	22.6	100.0	33.1	851
Medium	1.2	7.3	15.5	30.9	21.0	24.1	100.0	33.5	491
High	2.6	9.1	12.3	18.0	18.0	40.1	100.0	40.6	102
Order of previous birth									
1	1.9	6.8	13.9	29.5	20.9	27.0	100.0	35.1	659
2	0.5	7.6	15.0	33.8	21.3	21.8	100.0	32.9	352
3	0.7	6.8	9.0	38.6	20.5	24.3	100.0	34.2	186
4+	3.0	12.0	13.4	31.0	18.8	21.8	100.0	31.5	273
Sex of previous birth									
Male	1.4	8.8	13.2	32.8	21.8	21.9	100.0	33.0	720
Female	1.8	7.2	13.6	31.1	19.3	26.9	100.0	34.1	750
Survival of previous birth									
Living	1.1	6.3	13.0	32.1	21.5	26.0	100.0	34.7	1,314
Dead	6.1	22.5	16.8	30.3	12.8	11.6	100.0	25.0	156
Total	1.6	8.0	13.4	31.9	20.5	24.5	100.0	33.6	1,470

Note: Table includes only second- and higher-order births. The interval for multiple births is the number of months since the preceding pregnancy that ended in a live birth. Total includes 4, 5, 13, and 25 births with missing information on mother's education, religion, caste/tribe, and the standard of living index, respectively, which are not shown separately.
() Based on 25-49 unweighted cases

Table 4.9 Median age at first birth

Median age at first birth among women age 20–49 years by current age and selected background characteristics, West Bengal, 1998–99

Background characteristic	Current age							
	20–24	25–29	30–34	35–39	40–44	45–49	20–49	25–49
Residence								
Urban	NC	22.0	21.3	20.2	20.5	20.1	NC	20.9
Rural	19.5	18.9	18.5	18.7	18.7	18.8	18.9	18.7
Kolkata	NC	23.5	22.4	21.1	20.7	21.3	NC	21.7
Education								
Illiterate	18.4	18.1	18.2	18.3	18.5	18.7	18.3	18.3
Literate, < middle school complete	19.8	19.0	18.5	18.8	19.2	19.1	19.0	18.9
Middle school complete	NC	21.1	19.9	21.2	18.6	(20.9)	NC	20.4
High school complete and above	NC	NC	24.0	24.2	23.2	22.9	NC	24.1
Religion								
Hindu	NC	19.8	19.4	19.2	19.2	19.4	19.8	19.5
Muslim	18.7	18.2	18.1	18.1	19.3	18.5	18.4	18.3
Caste/tribe								
Scheduled caste	19.6	18.6	18.1	18.3	18.6	18.8	18.7	18.5
Scheduled tribe	NC	(18.8)	(18.7)	(19.6)	*	*	19.6	18.9
Other backward class	NC	(20.3)	(19.8)	(19.5)	(18.6)	*	NC	19.7
Other	NC	19.9	19.2	19.3	19.8	19.3	19.8	19.5
Standard of living index								
Low	18.8	18.2	18.1	18.0	18.6	19.1	18.4	18.3
Medium	NC	20.0	19.0	19.4	19.2	19.3	19.8	19.4
High	NC	22.5	22.9	22.1	21.1	19.3	NC	21.8
Total	NC	19.5	19.0	19.0	19.2	19.2	19.4	19.2

Note: Total includes women belonging to other religions and women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.
 NC: Not calculated because less than 50 percent of women had their first birth by the beginning of the age group
 () Based on 25–49 unweighted cases
 *Median not shown; based on fewer than 25 unweighted cases

As shown in the last row of the table, the median age at first birth in the state as a whole has not changed much over the past 10 years. This is shown by the fact that the median only increases from 19.0 years for women age 35–39 to 19.5 years for women age 25–29.

There are differentials in the median age at first birth by background characteristics. Comparisons are based on medians for women age 25–49, since medians could not be calculated for all categories of women age 20–49. The median age at first birth is particularly low among women who live in rural areas, women who are illiterate or who have not completed middle school, Muslim women, scheduled-caste women, and women who live in households with a low standard of living. The median age at first birth is more than two years higher in urban areas (20.9) than in rural areas (18.7). Women in Kolkata have a higher median age at first birth (21.7 months) than urban women overall (20.9 months). The median is almost six years lower for illiterate women (18.3) than for women who have completed at least high school (24.1), and it is

Table 4.10 Age at last birth											
Percent distribution of ever-married women age 40–49 years by age at last birth and median age at last birth, according to current age, West Bengal, 1998–99											
Current age	No birth	Age at last birth							Total percent	Median age at last birth	Number of women
		< 20	20–24	25–29	30–34	35–39	40–44	45–49			
40–44	2.8	4.2	25.3	32.1	24.7	10.0	0.8	NA	100.0	28.3	489
45–49	3.2	4.5	18.9	29.4	24.3	14.6	4.4	0.7	100.0	29.2	400
40–49	3.0	4.4	22.4	30.9	24.5	12.1	2.4	0.3	100.0	28.7	889
NA: Not applicable											

three and a half years lower for women in households with a low standard of living (18.3) than for women in households with a high standard of living (21.8).

For older women, the age at last childbirth is an indicator of cessation of childbearing. Table 4.10 presents the distribution of ever-married women in the age group 40–49 by age at last birth, as well as the median age at last birth. Although a few of these women may have another birth later on, the very low fertility rates for women in this age group suggest that childbearing is virtually complete by these ages. Fifty-eight percent of women in this age group had their last birth by age 30, 82 percent by age 35, and 94 percent by age 40. The median age at last birth is 28.3 years for women age 40–44 and 29.2 for women age 45–49. The typical reproductive age span (which is the difference between the median age at last birth and the median age at first birth for women who have ever had a birth) is almost the same in West Bengal (9.6 years) as in India as a whole (9.9 years).

4.8 Postpartum Amenorrhoea, Abstinence, Insusceptibility, and Menopause

Among the factors that influence the risk of pregnancy following a birth are breastfeeding and sexual abstinence. Breastfeeding prolongs postpartum protection from conception through its effect on the period of amenorrhoea (the period prior to the return of menses) following a birth. Delaying the resumption of sexual relations following a birth also prolongs the period of postpartum protection. Women are defined as insusceptible to pregnancy following a birth if they are not at risk of conception because they are amenorrhoeic, abstaining from sexual relations, or both.

Table 4.11 shows the percentage of births occurring during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible, by the number of months since the birth. These distributions are based on current status information, that is, on the proportions of births occurring within the 36 months before the survey whose mothers were amenorrhoeic, abstaining, or insusceptible. In other words, the table is based on cross-sectional data and does not represent the experience of a real cohort of births over time. The data are grouped in two-month intervals to minimize fluctuations in the distributions. The table also shows median and mean durations of amenorrhoea, abstinence, and insusceptibility. The prevalence/incidence mean is obtained by dividing the number of mothers who are amenorrhoeic, abstaining, or insusceptible by the average number of births per month over the 36-month period.

Table 4.11 Postpartum amenorrhoea, abstinence, and insusceptibility

Percentage of births during the three years preceding the survey whose mothers are postpartum amenorrhoeic, abstaining, or insusceptible by number of months since birth, and median and mean durations, West Bengal, 1998–99

Months since birth	Percentage of births whose mothers are:			Number of births
	Amenorrhoeic	Abstaining	Insusceptible	
< 2	(90.6)	(86.9)	(100.0)	48
2–3	71.6	44.7	79.6	85
4–5	62.2	29.2	67.3	97
6–7	38.4	13.7	43.8	72
8–9	49.0	6.5	49.0	68
10–11	36.8	9.0	41.3	61
12–13	48.7	6.0	52.5	73
14–15	31.1	7.3	34.0	94
16–17	18.5	1.4	19.8	100
18–19	11.6	3.5	15.1	72
20–21	7.8	7.5	13.3	69
22–23	(16.3)	(0.5)	(16.7)	50
24–25	4.2	2.1	6.3	65
26–27	3.5	1.4	4.9	100
28–29	3.2	0.0	3.2	69
30–31	0.3	1.9	2.2	74
32–33	2.8	1.8	4.6	48
34–35	2.0	4.1	6.1	67
Median ¹	6.7	2.4	7.5	NA
Mean	10.3	4.9	11.4	NA
Prevalence/incidence mean	9.9	4.2	11.1	NA

Note: Median and mean durations are based on current status. Insusceptible is defined as amenorrhoeic, abstaining, or both.
 NA: Not applicable
 () Based on 25–49 unweighted cases
¹ Based on a three-period moving average of percentages

Ninety-one percent of women who had a birth in the two months before the survey and 72 percent of women who had a birth 2–3 months before the survey are still amenorrhoeic. The proportion amenorrhoeic generally decreases as the number of months since the last birth increases. More than three-fifths of women who had a birth 4–5 months before the survey are still amenorrhoeic, and the proportion amenorrhoeic drops off rapidly thereafter. The proportion of women abstaining from sexual intercourse within two months after a birth is only slightly lower than the proportion amenorrhoeic, but only 45 percent of women are still abstaining 2–3 months after a birth, and this percentage declines rapidly thereafter. Overall, when amenorrhoea and abstinence are considered together, about half of women are susceptible to pregnancy by 8–9 months after giving birth, and about four-fifths become susceptible by 16–17 months.

The median and mean durations of insusceptibility are 8 and 11 months, respectively. Because the mean is affected by extreme values and the median is not, and because the distribution is skewed towards the higher durations, the mean is somewhat higher than the median. The median duration of amenorrhoea (7 months) is about three times higher than the median duration of abstinence (2 months). The results indicate that women in West Bengal

Table 4.12. Menopause						
Percentage of currently married women age 30–49 years who are in menopause by age and residence, West Bengal, 1998–99						
Age	Urban		Rural		Total	
	Percentage	Number	Percentage	Number	Percentage	Number
30–34	1.2	179	1.6	517	1.5	696
35–39	6.8	165	3.3	452	4.3	617
40–41	14.0	76	12.2	145	12.8	221
42–43	30.6	53	17.7	101	22.1	154
44–45	35.9	59	34.5	123	34.9	182
46–47	43.1	40	47.5	86	46.1	126
48–49	62.5	37	(39.5)	59	48.4	95
30–49	16.7	608	11.1	1,483	12.8	2,091

Note: Percentage menopausal is defined as the percentage of currently married women who are not pregnant and not postpartum amenorrhoeic and who reported that their last menstrual period occurred six or more months preceding the survey or that they are menopausal or have had a hysterectomy.
() Based on 25–49 unweighted cases

remain unsusceptible to pregnancy for about 11 months after a birth, primarily due to the effect of postpartum amenorrhoea.

Menopause is a primary limiting factor of fertility. It is the culmination of a gradual decline in fecundity with increasing age. After age 30, the risk of pregnancy declines with age as an increasing proportion of women become infecund. In NFHS-2, menopause is defined as the absence of menstruation for six or more months preceding the survey among currently married women. Women who report that they are menopausal or that they have had a hysterectomy are also included in this category. Women who are pregnant or postpartum amenorrhoeic are assumed not to be menopausal. Table 4.12 presents data on menopause among women age 30–49 years. In West Bengal, menopause is not common among women in their thirties, but its incidence increases rapidly thereafter. By age 44–45, 35 percent of women are menopausal. The proportion menopausal rises to 48 percent by age 48–49.

4.9 Desire for More Children

In order to obtain information on fertility preferences, NFHS-2 asked nonsterilized, currently married, nonpregnant women: ‘Would you like to have (a/another) child or would you prefer not to have any (more) children?’ Pregnant women were asked, ‘After the child you are expecting, would you like to have another child or would you prefer not to have any more children?’ Women who expressed a desire for additional children were asked how long they would like to wait before the birth of their next child. The survey also collected information on the preferred sex of the next child and the ideal number of children by sex.

Table 4.13 and Figure 4.4 show future fertility preferences of currently married women. Thirty-nine percent of currently married women say that they do not want any more children, an additional 34 percent cannot have another child because either the wife or the husband has been sterilized, and only 1 percent of women say that they cannot get pregnant (that is, they are ‘declared infecund’). Twenty-five percent of women say that they would like to have another

Table 4.13 Fertility preferences

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, West Bengal, 1998-99

Desire for children	Number of living children ¹					Total
	0	1	2	3	4+	
URBAN						
Desire for additional child						
Wants another soon ²	63.9	8.6	1.1	0.6	1.1	9.0
Wants another later ³	23.7	23.0	2.6	1.1	0.7	10.1
Wants another, undecided when	2.5	1.3	0.0	0.2	0.0	0.6
Undecided	0.8	2.3	0.4	0.7	0.0	1.0
Up to God	0.0	0.0	0.4	0.0	0.0	0.1
Wants no more	4.4	61.2	63.1	39.9	35.7	49.4
Sterilized	1.0	2.7	31.0	55.7	61.0	28.2
Declared infecund	3.7	0.9	1.4	1.8	1.5	1.5
Missing	0.0	0.0	0.0	0.0	0.0	0.0
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	90	295	297	145	156	984
Preferred sex of additional child⁴						
Boy	25.5	42.4	*	*	*	38.3
Girl	5.7	28.7	*	*	*	16.6
Doesn't matter	51.8	20.1	*	*	*	33.0
Up to God	17.1	8.8	*	*	*	12.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	81	84	11	3	3	181
RURAL						
Desire for additional child						
Wants another soon ²	69.0	18.4	4.5	1.7	1.3	11.0
Wants another later ³	15.6	48.6	9.0	5.8	0.9	14.5
Wants another, undecided when	2.1	2.0	0.2	0.2	0.0	0.6
Undecided	3.2	0.9	0.9	0.2	0.2	0.8
Up to God	3.2	0.7	0.3	0.2	0.2	0.6
Wants no more	2.6	22.1	41.2	36.8	51.5	35.9
Sterilized	1.1	6.8	43.6	54.5	44.1	35.6
Declared infecund	2.2	0.5	0.3	0.4	1.7	0.8
Missing	1.1	0.0	0.0	0.2	0.2	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	255	596	882	659	742	3,132
Preferred sex of additional child⁴						
Boy	29.4	39.3	62.5	(71.8)	*	41.8
Girl	4.3	28.9	15.1	(15.6)	*	18.2
Doesn't matter	49.9	23.0	13.7	(3.1)	*	28.9
Up to God	16.4	8.8	8.7	(9.5)	*	11.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	218	327	109	44	15	712

Table 4.13 Fertility preferences (contd.)

Percent distribution of currently married women by desire for children and preferred sex of additional child, according to number of living children and residence, West Bengal, 1998-99

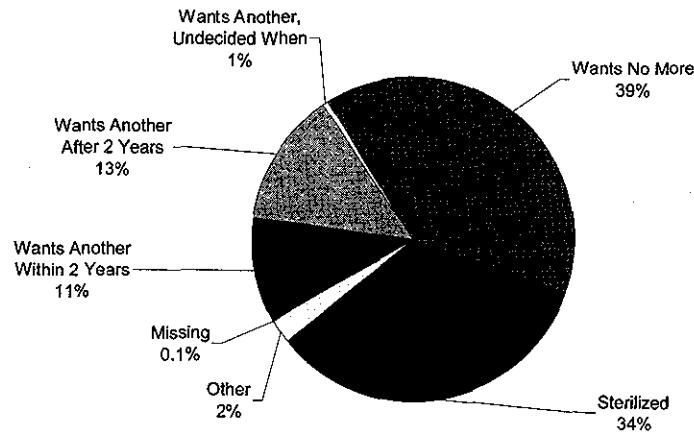
Desire for children	Number of living children ¹					Total
	0	1	2	3	4+	
TOTAL						
Desire for additional child						
Wants another soon ²	67.6	15.1	3.6	1.5	1.3	10.5
Wants another later ³	17.7	40.1	7.4	4.9	0.9	13.4
Wants another, undecided when	2.2	1.8	0.1	0.2	0.0	0.6
Undecided	2.6	1.4	0.8	0.3	0.2	0.8
Up to God	2.4	0.5	0.3	0.2	0.2	0.5
Wants no more	3.1	35.0	46.8	37.4	48.7	39.2
Sterilized	1.0	5.5	40.4	54.7	47.0	33.8
Declared infecund	2.6	0.6	0.6	0.7	1.6	1.0
Missing	0.8	0.0	0.0	0.2	0.2	0.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	344	891	1,179	804	898	4,116
Preferred sex of additional child⁴						
Boy	28.3	40.0	64.2	(72.9)	*	41.1
Girl	4.7	28.8	14.8	(14.7)	*	17.9
Doesn't matter	50.4	22.4	13.2	(3.5)	*	29.7
Up to God	16.6	8.8	7.9	(8.9)	*	11.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women wanting more ⁴	299	411	120	46	18	894
() Based on 25-49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases ¹ Includes current pregnancy, if any ² Wants next birth within 2 years ³ Wants to delay next birth for 2 or more years ⁴ Excludes currently pregnant women						

child (11 percent within two years, 13 percent after waiting at least two years, and 1 percent are undecided when they want the next child). Overall, 86 percent of women want to either space their next birth or do not want any more children, including women who are sterilized or whose husbands are sterilized. This proportion is 88 percent in urban areas and 86 percent in rural areas. Less than 1 percent of women say that the decision about having children is up to God.

The desire to have a child within two years drops rapidly with the number of living children, from 68 percent of women with no living children to 4 percent or less for women with two or more living children. For women with one living child, 40 percent (23 percent in urban areas and 49 percent in rural areas) would like to wait at least two years before having the next child.

Forty-one percent of women who want another child say that they want the next child to be a boy, 18 percent say that they want the child to be a girl, and the rest say that the sex of the child either does not matter (30 percent) or is up to God (11 percent). Irrespective of their number of living children, women are much more likely to express a desire for a son than for a

Figure 4.4
Fertility Preferences Among Currently Married Women



Note: Percents add to more than 100.0 due to rounding

NFHS-2, West Bengal, 1998-99

daughter. The proportion of women expressing a desire for a child of a particular sex and the proportion expressing a desire for a son increases with the number of living children. Among women with no living children, 28 percent want their first child to be a son, 5 percent want a daughter, and 67 percent say that the sex of the child is up to God or does not matter. Among women with two living children, 64 percent want their next child to be a son, 15 percent want a daughter, and 21 percent say that the sex of the child is up to God or does not matter.

Table 4.14 provides information about differentials in the desire to limit family size by selected background characteristics. In this table, women who are sterilized (or whose husbands are sterilized) are included among those who say that they want no more children. It is striking that 87 percent of women with two living children want no more children. As expected, older women are much more likely than younger women to want no more children. Already by age 25-34, 82 percent of women want no more children. The proportion of women who want no more children is higher among urban women (78 percent) than among rural women (72 percent). The proportion wanting no more children does not vary systematically with women's educational level, ranging from 65 percent among women who have completed middle school but not high school to 76 percent among illiterate women. The proportion wanting no more children is higher among Hindus (75 percent) than among Muslims (67 percent), and it is lower among scheduled-tribe women (61 percent) than among other women (73-77 percent). There is not much variation by standard of living in the proportion wanting no more children, although a larger proportion of women with a high standard of living (78 percent) than other women (72 percent) want no more children.

Table 4.14 Desire to have no more children by background characteristics

Percentage of currently married women who want no more children by number of living children and selected background characteristics, West Bengal, 1998-99

Background characteristic	Number of living children ¹					Total
	0	1	2	3	4+	
Age						
15-24	0.6	18.2	75.9	74.9	*	36.6
25-34	0.0	57.7	87.8	92.8	94.6	81.9
35-49	24.3	90.8	97.1	97.1	96.4	93.4
Residence						
Urban	5.3	63.9	94.1	95.6	96.7	77.6
Rural	3.7	28.9	84.8	91.3	95.6	71.5
Kolkata	7.2	64.0	94.1	98.5	97.0	77.8
Education						
Illiterate	6.5	25.5	84.6	91.1	95.0	75.6
Literate, < middle school complete	3.6	31.4	86.0	94.1	97.7	71.1
Middle school complete	0.6	41.0	88.2	87.8	(98.9)	64.5
High school complete and above	1.5	71.5	96.4	(100.0)	*	74.6
Religion						
Hindu	4.4	45.6	91.3	93.8	97.1	74.9
Muslim	3.8	19.0	66.2	86.0	93.5	66.8
Other	*	*	*	*	*	68.6
Caste/tribe						
Scheduled caste	8.9	34.4	88.7	94.8	97.1	75.4
Scheduled tribe	(3.6)	(16.9)	(76.7)	(86.8)	94.2	60.5
Other backward class	*	(51.0)	90.3	(89.5)	(100.0)	76.7
Other	2.5	44.3	87.0	91.8	95.2	73.1
Standard of living index						
Low	4.7	26.4	84.2	89.5	94.9	72.2
Medium	4.3	36.1	86.3	93.9	97.3	71.9
High	2.6	69.3	94.8	97.7	94.0	78.1
Number of living sons²						
0	4.1	40.7	63.3	69.4	(85.0)	35.3
1	NA	48.4	92.1	93.1	95.5	80.6
2	NA	NA	92.7	97.9	98.0	96.2
3+	NA	NA	NA	94.4	95.6	95.4
Number of living daughters²						
0	4.1	48.4	92.7	94.4	(86.4)	51.4
1	NA	40.7	92.1	97.9	97.4	81.5
2	NA	NA	63.3	93.1	98.0	88.1
3+	NA	NA	NA	69.4	95.0	90.9
Total	4.1	40.5	87.2	92.1	95.8	73.0

Note: Women who have been sterilized or whose husbands have been sterilized are considered to want no more children. Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.

NA: Not applicable

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

¹Includes current pregnancy, if any

²Excludes pregnant women

The background characteristic with the strongest effect on women's desire to limit family size is number of living sons. Only 35 percent of women with no living sons want no more children, compared with at least 95 percent of women with two or more living sons. Differences associated with the number of living daughters are also large, but not nearly as large as differences associated with the number of living sons. Fifty-one percent of women with no living daughters want no more children, compared with 91 percent of women with three or more living daughters. It is interesting to note that 63 percent of women with two daughters and no sons do not want a third child, compared with 47 percent of women in India as a whole.

4.10 Ideal Number of Children

To assess women's ideal number of children, NFHS-2 asked each woman the number of children she would like to have if she could start over again. Women with no children were asked, 'If you could choose exactly the number of children to have in your whole life, how many would that be?' Women who already had children were asked, 'If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?' Some women found it difficult to answer these hypothetical questions, and hence the question sometimes had to be repeated to ensure that the meaning was understood. Yet 96 percent of women in West Bengal were able to give a numerical response.

Table 4.15 shows that almost three-fourths (74 percent) of ever-married women in West Bengal consider two or three to be the ideal number of children. Only 22 percent have an ideal number that differs from two or three children. Among all women who gave a numeric response, the average number of children considered ideal is 2.4, ranging from 1.9–2.1 for women who have two or fewer children to 3.2 for women who have four or more children.

Asking a question on ideal family size is sometimes criticized on the grounds that women tend to adjust their ideal family size upward as their number of living children increases, in a process of rationalizing previously unwanted children as wanted. It is argued that the question on ideal family size prompts many women to state the actual number of children they already have as their ideal. It is evident from Table 4.15, however, that this is not so for many women in West Bengal. Among women with four or more living children, for example, 54 percent state that fewer than four children would be ideal. Similarly, among women with three living children, 53 percent state that their ideal family size is smaller than three children. It is evident from these results that a substantial proportion of women in West Bengal already have more children than they now consider ideal. This proportion may be taken as another indicator of surplus or unwanted fertility.

Table 4.16 shows the mean ideal number of children for ever-married women by age, according to selected background characteristics. The mean ideal number of children increases gradually from 2.1 children for women age 20–24 to 2.9 children for women age 45–49. The average ideal number of children is lower in urban areas (2.0) than in rural areas (2.5). Ideal family size is negatively correlated with the level of education. The mean ideal number of children is one child higher for illiterate women (2.7) than for women with at least a high school education (1.7). The mean ideal number of children is 0.7 children higher for Muslim women than for Hindu women. Differences by caste/tribe are not large. Nevertheless, scheduled-tribe women have the highest ideal number of children (2.6), and women from other backward classes have the lowest ideal number (2.2). For women who are self employed or have not worked in the

Table 4.15 Ideal and actual number of children						
Percent distribution of ever-married women by ideal number of children, and mean ideal number of children, by number of living children, West Bengal, 1998-99						
Ideal number of children	Number of living children ¹					Total
	0	1	2	3	4+	
0	0.0	0.1	0.0	0.0	0.0	0.0
1	19.7	27.4	5.8	2.2	0.8	10.0
2	63.5	60.0	77.3	50.9	27.0	56.3
3	10.1	7.2	10.1	33.3	26.2	17.5
4	3.0	1.8	4.0	8.3	28.6	9.6
5	0.7	0.6	0.4	0.7	3.5	1.2
6+	0.0	0.9	0.0	0.3	3.8	1.1
Non-numeric response	2.9	2.0	2.3	4.3	10.1	4.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	391	969	1,231	866	950	4,408
Mean ideal number ²	2.0	1.9	2.1	2.5	3.2	2.4
Number of women giving numeric response	380	950	1,203	828	854	4,215

¹Includes current pregnancy, if any
²Means are calculated excluding women who gave non-numeric responses.

past 12 months, the mean ideal number of children is 2.3, which is slightly lower than the ideal for women in the other work-status categories. Women who live in households with a low standard of living have a mean ideal family size that is 0.7 children higher than the mean ideal for women who live in households with a high standard of living. For women whose husbands are illiterate, the mean ideal number of children is 0.2 to 0.9 children higher than for women whose husbands are in the five other educational categories.

4.11 Sex Preference for Children

A strong preference for sons has been found to be pervasive in Indian society, affecting both attitudes and behaviour with respect to children (Arnold et al., 1998; Arnold, 1996; Basu, 1989; Das Gupta, 1987; Kishor, 1995; Koenig and Foo, 1992; Murthi et al., 1995; Nag, 1991; Parasuraman et al., 1994). In NFHS-2, women who gave a numerical response to the question on the ideal number of children were asked how many of these children they would like to be boys, how many they would like to be girls, and for how many the sex would not matter. Table 4.17 shows women's mean ideal number of sons and daughters, the percentages who want more children of a particular sex, the percentage who want at least one son, and the percentage who want at least one daughter, according to selected background characteristics. The table shows a consistent preference for sons over daughters. Overall, the average ideal family size of 2.4 children consists of 1.1 sons, 0.9 daughters, and 0.4 children of either sex. Twenty-one percent of women want more sons than daughters, but only 3 percent want more daughters than sons.

Table 4.16 Ideal number of children by background characteristics

Mean ideal number of children reported by ever-married women, according to current age and selected background characteristics, West Bengal, 1998-99

Background characteristic	Current age							Total
	15-19	20-24	25-29	30-34	35-39	40-44	45-49	
Residence								
Urban	1.9	1.8	1.9	2.0	2.1	2.0	2.2	2.0
Rural	2.2	2.2	2.4	2.6	2.6	2.8	3.2	2.5
Kolkata	(2.0)	1.8	1.7	1.9	2.1	2.0	2.1	1.9
Education								
Illiterate	2.4	2.4	2.5	2.8	2.7	2.8	3.3	2.7
Literate, < middle school complete	2.2	2.0	2.3	2.3	2.3	2.6	2.6	2.3
Middle school complete	(1.7)	1.9	1.9	1.9	1.9	2.1	(2.2)	1.9
High school complete and above	*	1.7	1.6	1.7	1.7	1.6	1.8	1.7
Religion								
Hindu	2.0	2.0	2.1	2.2	2.3	2.3	2.7	2.2
Muslim	2.5	2.5	2.9	3.2	3.1	3.2	3.9	2.9
Other	*	*	*	*	*	*	*	2.5
Caste/tribe								
Scheduled caste	2.1	2.1	2.2	2.5	2.6	2.9	3.1	2.4
Scheduled tribe	*	2.3	(2.6)	(2.8)	(2.7)	*	*	2.6
Other backward class	*	(2.0)	(2.0)	(2.4)	(2.5)	(2.1)	*	2.2
Other	2.3	2.1	2.3	2.4	2.4	2.4	2.8	2.3
Work status								
Working in family farm/business	*	(2.3)	(2.3)	(2.7)	(3.1)	*	*	2.7
Employed by someone else	(2.3)	2.2	2.5	2.6	2.6	2.7	(3.0)	2.5
Self-employed	*	(2.2)	2.3	2.3	2.5	2.5	*	2.3
Not worked in past 12 months	2.2	2.1	2.2	2.4	2.4	2.4	2.9	2.3
Standard of living index								
Low	2.3	2.3	2.5	2.7	2.7	3.0	3.3	2.6
Medium	2.2	2.0	2.2	2.3	2.4	2.5	2.7	2.3
High	*	1.9	1.7	1.8	1.9	1.8	2.5	1.9
Husband's education								
Illiterate	2.3	2.4	2.5	2.7	2.8	3.0	3.5	2.7
Literate, < primary school complete	2.3	2.3	2.5	2.6	2.7	2.7	(3.0)	2.5
Primary school complete	2.2	2.0	2.4	2.7	2.5	2.6	2.9	2.4
Middle school complete	(1.9)	2.0	2.1	2.2	2.2	2.2	2.3	2.1
High school complete	(2.2)	1.8	2.1	2.2	2.2	(2.0)	2.6	2.2
Higher secondary complete and above	*	1.9	1.8	1.7	1.8	1.9	2.2	1.8
Total	2.2	2.1	2.3	2.4	2.5	2.5	2.9	2.4

Note: Means are calculated excluding women who gave non-numeric responses. Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

*Mean not shown; based on fewer than 25 unweighted cases

Table 4.17 Indicators of sex preference

Mean ideal number of sons, daughters, and children of either sex for ever-married women, percentage who want more sons than daughters, percentage who want more daughters than sons, percentage who want at least one son, and percentage who want at least one daughter by selected background characteristics, West Bengal, 1998-99

Background characteristic	Mean ideal number of:			Percentage who want more sons than daughters	Percentage who want more daughters than sons	Percentage who want at least one son	Percentage who want at least one daughter	Number of women
	Sons	Daughters	Either sex					
Residence								
Urban	0.9	0.7	0.4	17.5	4.4	72.9	66.9	1,019
Rural	1.2	0.9	0.4	21.7	3.0	82.2	78.2	3,194
Kolkata	0.8	0.7	0.5	15.7	2.6	68.5	62.1	231
Education								
Illiterate	1.3	1.0	0.4	25.2	2.8	84.6	81.0	2,054
Literate, < middle school complete	1.0	0.8	0.4	17.5	3.2	80.2	75.6	1,252
Middle school complete	0.9	0.7	0.3	17.3	3.0	76.8	68.4	438
High school complete and above	0.7	0.6	0.4	12.5	6.4	61.5	57.2	465
Religion								
Hindu	1.0	0.8	0.4	19.4	3.2	79.0	73.8	3,200
Muslim	1.3	1.1	0.5	24.7	3.6	81.6	79.8	909
Other	1.3	1.1	0.1	24.3	7.4	92.8	88.9	95
Caste/tribe								
Scheduled caste	1.2	0.9	0.4	24.3	1.7	82.5	76.8	1,009
Scheduled tribe	1.3	1.1	0.2	22.3	5.5	91.2	87.8	298
Other backward class	1.1	0.9	0.3	19.1	3.5	82.5	77.7	196
Other	1.0	0.9	0.4	19.2	3.7	77.6	73.5	2,690
Work status								
Working in family farm/business	1.3	1.0	0.3	25.3	3.0	86.6	81.3	228
Employed by someone else	1.2	1.0	0.3	23.3	3.4	86.0	81.9	626
Self-employed	1.1	0.9	0.4	24.9	6.2	79.6	76.0	346
Not worked in past 12 months	1.0	0.9	0.4	19.3	3.1	78.2	73.6	3,011
Standard of living index								
Low	1.2	1.0	0.4	23.9	3.1	84.4	80.3	1,790
Medium	1.0	0.8	0.4	18.8	3.1	78.2	73.6	1,754
High	0.8	0.7	0.4	15.8	4.7	70.0	64.9	596
Husband's education								
Illiterate	1.3	1.0	0.4	24.2	2.6	84.9	81.7	1,311
Literate, < primary school complete	1.2	1.0	0.4	22.8	3.7	83.5	79.3	752
Primary school complete	1.1	0.9	0.4	22.1	2.4	80.8	75.2	615
Middle school complete	0.9	0.8	0.4	17.5	3.7	80.6	74.7	613
High school complete	0.9	0.8	0.4	17.5	3.0	75.2	69.2	338
Higher secondary complete and above	0.8	0.7	0.4	13.5	5.7	65.5	61.1	552
Total	1.1	0.9	0.4	20.7	3.4	79.9	75.5	4,212

Note: Table excludes women who gave non-numeric responses to the questions on ideal number of children or ideal number of sons and daughters. Total includes 4, 8, 20, 1, 73, and 31 women with missing information on education, religion, caste/tribe, work status, the standard of living index, and husband's education, respectively, who are not shown separately.

The indicator that shows the percentage of women who want at least one son and at least one daughter exhibits the weakest son preference. Eighty percent of women say they want at least one son among their children and a slightly smaller percentage (76 percent) want at least one daughter. One reason that a substantial proportion of women want to have at least one daughter is to fulfil the Hindu religious obligation of *kanyadan* (giving a daughter away at the time of her marriage), which is one of the acts that enable the parents to acquire the highest level of merit (*punya*).

Son preference is relatively weak among women who live in Kolkata, women who have at least completed high school, women with a high standard of living, and women whose husbands have attend school beyond high school. Son preference does not vary much between Hindus and Muslims, nor does it vary by caste/tribe. Women who have not worked in the past 12 months show less of a preference for sons than do working women. These variations notwithstanding, son preference exists among all population groups.

4.12 Fertility Planning

For each child born in the three years before the survey and for each current pregnancy, NFHS-2 asked women whether the pregnancy was wanted at that time (planned), wanted at a later time (mistimed), or not wanted at all. Because a woman may retrospectively describe an unplanned pregnancy as one that was wanted at that time, responses to these questions may lead to an underestimation of unplanned childbearing. Nevertheless, this information provides a potentially powerful indicator of the degree to which couples successfully control childbearing. It should be noted that the proportion of births that are unplanned is influenced not only by whether, and how effectively, couples use contraception, but also by the couple's ideal family size.

Table 4.18 shows the percent distribution of births during the three years preceding the survey and current pregnancies according to fertility planning status. Twenty-nine percent of all pregnancies that resulted in live births in the three years preceding the survey (including current pregnancies) were unplanned (that is, unwanted at the time the woman became pregnant). One-fifth of all pregnancies were wanted later and 9 percent were not wanted at all. The proportion of births that were unplanned increases with mother's age. Within the unplanned category, the proportion of births that were wanted later falls and the proportion that were not wanted at all rises as mother's age increases.

The proportion of births that were unplanned is higher in rural areas (30 percent) than in urban areas (25 percent). It is only 18 percent in Kolkata. The proportion of births that were unplanned varies substantially by mother's education. Women who are literate but did not complete middle school (33 percent) have the highest proportion of unplanned births, whereas women who have completed at least high school (18 percent) have the lowest proportion. A lower proportion of births to Hindu women (26 percent) were unplanned than births to Muslim women (34 percent). Scheduled-tribe women have a lower proportion of unwanted births than other women. The proportion of births that were unplanned is considerably lower for births to women living in households with a high standard of living (20 percent) than for births to women living in households with a low or medium standard of living (29 percent each). Not surprisingly, births of higher orders are more likely than births of lower orders to be unplanned. Specifically, the proportion unplanned increases from 20 percent for first-order births to 43 percent for births

Table 4.18 Fertility planning

Percent distribution of births during the three years preceding the survey and current pregnancies by fertility planning status, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Planning status of pregnancy				Total percent	Number of births and current pregnancies
	Wanted then	Wanted later	Not wanted at all	Missing		
Mother's age at birth¹						
< 20	72.1	26.4	0.8	0.6	100.0	430
20-24	75.6	19.2	4.7	0.5	100.0	610
25-29	66.8	18.2	15.0	0.0	100.0	347
30-34	63.7	10.8	25.5	0.0	100.0	122
35-39	(40.3)	(7.8)	(51.8)	(0.0)	100.0	36
Residence						
Urban	75.3	17.2	7.4	0.1	100.0	276
Rural	70.0	20.6	9.0	0.4	100.0	1,274
Kolkata	81.4	11.4	6.9	0.4	100.0	65
Mother's education						
Illiterate	70.6	17.2	11.8	0.4	100.0	755
Literate, < middle school complete	66.0	25.9	7.5	0.6	100.0	485
Middle school complete	77.6	19.9	2.5	0.0	100.0	166
High school complete and above	82.2	14.0	3.8	0.0	100.0	143
Religion						
Hindu	73.5	18.6	7.5	0.4	100.0	1,037
Muslim	65.6	22.6	11.8	0.0	100.0	482
Caste/tribe						
Scheduled caste	74.8	17.8	7.0	0.4	100.0	377
Scheduled tribe	76.4	14.0	7.2	2.4	100.0	113
Other backward class	72.3	21.4	6.4	0.0	100.0	64
Other	69.0	21.2	9.6	0.2	100.0	987
Standard of living index						
Low	70.2	17.5	11.9	0.4	100.0	764
Medium	70.6	22.9	6.1	0.5	100.0	624
High	80.0	16.5	3.5	0.0	100.0	134
Birth order²						
1	79.4	18.8	1.5	0.3	100.0	606
2	72.1	23.2	4.0	0.6	100.0	419
3	64.4	22.0	13.0	0.6	100.0	238
4+	56.7	16.1	27.2	0.0	100.0	288
Total	70.9	20.0	8.7	0.4	100.0	1,550

Note: Table includes the two most recent births in the three years preceding the survey and current pregnancies. Total includes 4 births and 1 birth to women age 40-44 and age 45-49, respectively, 28 births to women with other religions, and 2, 3, 9, and 29 births with missing information on mother's education, religion, caste/tribe, and the standard of living index, respectively, which are not shown separately.

() Based on 25-49 unweighted cases

¹ For current pregnancy, estimated maternal age at birth

² Includes current pregnancy, if any

Table 4.19 Wanted fertility rates		
Total wanted fertility rate and total fertility rate for the three years preceding the survey by selected background characteristics, West Bengal, 1998-99		
Background characteristic	Total wanted fertility rate	Total fertility rate
Residence		
Urban	1.38	1.69
Rural	1.90	2.49
Kolkata	1.30	1.55
Education		
Illiterate	2.10	2.79
Literate, < middle school complete	1.75	2.30
Middle school complete	1.53	1.71
High school complete and above	1.31	1.42
Religion		
Hindu	1.63	2.02
Muslim	2.25	3.29
Other	1.38	1.68
Caste/tribe		
Scheduled caste	1.89	2.34
Scheduled tribe	1.81	2.31
Other backward class	1.56	1.89
Other	1.68	2.21
Standard of living index		
Low	2.03	2.80
Medium	1.68	2.05
High	1.31	1.46
Total	1.78	2.29
Note: Rates are based on births in the period 1-36 months preceding the survey to women age 15-49. The total fertility rates are the same as those presented in Table 4.3. Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.		

of order four or higher. The fact that 27 percent of births of order four or higher were not wanted at all indicates that the family welfare programme has failed to meet the needs of women who already have at least three children to control their fertility. The substantial proportion of women at all parities who would have liked to have their births later suggests that attention also needs to be given to the promotion of spacing methods of contraception.

The impact of unwanted fertility can be measured by comparing the total wanted fertility rate with the total fertility rate (TFR). The total wanted fertility rate represents the level of fertility that theoretically would result if all unwanted births were prevented. A comparison of the TFR with the total wanted fertility rate indicates the potential demographic impact of the elimination of all unwanted births. The total wanted fertility rates presented in Table 4.19 are calculated in the same way as the TFR except that unwanted births are excluded from the numerator. In this case, a birth is considered unwanted if the number of living children at the time of conception was greater than or equal to the ideal number of children reported by the

respondent at the time of the survey. Women who did not give a numeric response to the question on ideal number of children are assumed to have wanted all the births they had.

Overall, the total wanted fertility rate of 1.78 in West Bengal is lower by 0.51 children (i.e., 22 percent) than the total fertility rate of 2.29. This means that if unwanted births could be eliminated, West Bengal could achieve below-replacement fertility, since the TFR would drop to 1.8 children per woman. Most women—with the exception of illiterate women, Muslims, and women living in households with a low standard of living—would want to have fewer than two children, on average, under these circumstances. The difference between the total fertility rate and the total wanted fertility rate is larger for rural women (0.59 children) than for urban women (0.31 children). This difference is smaller for women in Kolkata (0.25 children) than for women in urban areas as a whole. The difference is larger for illiterate women (0.69 children) than for women who have completed at least high school (0.11 children) and is also higher for Muslims (1.04 children) than for Hindus (0.39 children) or other women (0.30 children). It is lower (0.33 children) for women from other backward classes than for women in the other caste/tribe categories (0.45–0.53 children). The difference is very large for women living in households with a low standard of living (0.77 children) and smallest for women living in households with a high standard of living (0.15 children). Overall, the TFR exceeds the wanted TFR most for rural women, illiterate women, Muslim women, and women living in households with a low standard of living.

CHAPTER 5

FAMILY PLANNING

The National Family Welfare Programme in India has traditionally sought 'to promote responsible and planned parenthood through voluntary and free choice of family planning methods best suited to individual acceptors' (Ministry of Health and Family Welfare, 1998a). In April 1996, the programme was renamed the Reproductive and Child Health Programme and given a new orientation to meet the health needs of women and children more completely. The programme now aims to cover all aspects of women's reproductive health throughout their lives. With regard to family planning, the new approach emphasizes the target-free promotion of contraceptive use among eligible couples, the provision to couples of a choice of contraceptive methods (including condoms, oral pills, IUDs, and male and female sterilization), and the assurance of high-quality care. An important component of the programme is the encouragement of adequate spacing of births, with at least three years between births (Ministry of Health and Family Welfare, n.d.).

The new National Population Policy, 2000, adopted by the Government of India has set as its immediate objective the task of addressing unmet need for contraception in order to achieve the medium-term objective of bringing the total fertility rate down to replacement level by the year 2010. One of the 14 national socio-demographic goals identified for this purpose is to achieve universal access to information/counselling and services for fertility regulation and contraception with a wide range of choices (Ministry of Health and Family Welfare, 2000).

Information about the knowledge and use of contraceptive methods provided in this chapter is designed to be of practical relevance to programme administrators and policymakers responsible for monitoring existing programmes and formulating new strategies to meet the health and family planning needs of the population. The chapter begins with an appraisal of women's knowledge of contraceptive methods and then discusses women's past and present use of contraception, as well as the sources of supply of modern contraceptive methods. Special attention is focused on reasons for discontinuation and non-use of contraception and on intentions to use family planning methods in the future. The chapter also contains information on exposure to family planning messages through the media and on discussions about family planning with relatives and friends. It concludes with an assessment of the extent to which the need for family planning services in West Bengal is being met effectively.

5.1 Knowledge of Family Planning Methods

Lack of knowledge of contraceptive methods can be a major obstacle to their use. In NFHS-2, interviewers obtained information on knowledge and ever use of contraceptive methods by asking each respondent the following question: 'Now I would like to talk about family planning—the various ways or methods that a couple can use to delay or avoid a pregnancy. For each method I mention, please tell me if you have ever heard of the method and whether you have ever used the method at any time in your life.' If a respondent did not recognize the name of a method, a short description was read. In this way, the survey assesses women's knowledge and ever use of seven contraceptive methods, namely the pill, condom, IUD, female sterilization, male sterilization, rhythm or safe-period method, and withdrawal. In addition, the survey

Table 5.1 Knowledge of contraceptive methods			
Percentage of currently married women who know any contraceptive method by specific method and residence, West Bengal, 1998–99			
Method	Urban	Rural	Total
Any method	99.9	99.6	99.6
Any modern method	99.9	99.3	99.4
Pill	96.8	91.2	92.5
IUD	85.7	68.6	72.7
Condom	92.4	74.7	78.9
Female sterilization	99.3	98.0	98.3
Male sterilization	92.6	80.9	83.7
Any traditional method	86.1	71.1	74.7
Rhythm/safe period	78.5	64.0	67.5
Withdrawal	76.5	56.9	61.6
Other method ¹	1.9	3.4	3.0
Number of women	984	3,132	4,116
¹ Includes both modern and traditional methods that are not listed separately			

collected information on respondents' knowledge and ever use of any other contraceptive methods (modern, traditional, or folkloric).

Table 5.1 shows the extent of knowledge of contraceptive methods among currently married women by specific method and urban-rural residence. Knowledge of contraceptive methods is universal in West Bengal, with virtually all currently married women recognizing at least one method of contraception and at least one modern method of contraception.

Female sterilization is the most widely known method of contraception in West Bengal. Overall, at least 98 percent of currently married women in urban and rural areas know about female sterilization. Knowledge of officially-sponsored spacing methods (pill, IUD, and condom) is less widespread. A large majority (93 percent) of women know about the pill, but the IUD (73 percent) and condom (79 percent) are less well known. For each of the modern spacing methods, knowledge is higher for urban women than for rural women, with differences being more pronounced for the IUD and condom (17–18 percent) than for the pill (6 percent). Ninety-seven percent of urban women know about the pill, compared with 91 percent of rural women. Although knowledge of spacing methods remains lower than knowledge of sterilization, knowledge of spacing methods has increased substantially since NFHS-1. At the time of NFHS-1, 86 percent of currently married women knew about pills and 68 percent knew about condoms or IUDs.

In West Bengal, a large majority of currently married women know at least one traditional method (75 percent), up marginally from 73 percent in NFHS-1. The rhythm/safe period method is known more widely (68 percent) than withdrawal (62 percent). Knowledge of traditional methods is much higher in urban areas (86 percent) than in rural areas (71 percent).

5.2 Contraceptive Use

Ever Use of Family Planning Methods

NFHS-2 asked respondents if they had ever used each of the methods they knew about. Women who said they had not used any of the methods were asked if they had 'ever used anything or tried in any way to delay or avoid getting pregnant'. Table 5.2 presents the pattern of ever use of family planning methods for currently married women by age and residence.

Although nearly all currently married women know at least one method of contraception, 79 percent have ever used a method, which increased from 70 percent at the time of NFHS-1. Sixty percent of currently married women have ever used a modern method and 40 percent have ever used a traditional method. The most commonly used methods are female sterilization (32 percent), the rhythm/safe-period method (29 percent), the pill (26 percent), and withdrawal (24 percent). Only 2 percent have adopted male sterilization, and 5 and 10 percent have ever used the IUD and condom, respectively. Ever use of any method is higher in urban areas (86 percent) than in rural areas (77 percent), as is ever use of all modern and traditional methods with the exception of female sterilization, male sterilization, and 'other' methods.

Ever use of any method increases with women's age up to age 35–39 (peaking at 88 percent) and declines at older ages. The increase in contraceptive use up to age 35–39 reflects a life-cycle effect, with women increasingly adopting contraception as their fertility goals are met. Declining ever use of modern methods by older women reflects, at least in part, larger family size norms and lower levels of contraceptive prevalence in the past. At most ages, urban women are more likely than rural women to have used contraception. Two exceptions are age 15–19 and 35–39, for which rates of ever use are the same in both urban and rural areas.

Current Use of Family Planning Methods

Table 5.3 provides information on current use of family planning methods for currently married women in West Bengal by age and urban-rural residence. Current contraceptive prevalence in West Bengal is among the highest in India, with 67 percent of currently married women in the state using some method of contraception (compared with the national average of 48 percent). Only Punjab (67 percent) and Himachal Pradesh (68 percent) have contraceptive prevalence rates equal to or higher than that of West Bengal. The NFHS-2 estimate of current use in West Bengal, for both overall use and use of specific methods, is almost identical to the estimate obtained by the Rapid Household Survey (RHS) under the Reproductive and Child Health Project, which was carried out at about the same time as NFHS-2 (International Institute for Population Sciences, 2000). For women age 15–44, the use of modern methods was reported to be 47 percent in NFHS-2 and 47 percent in the RHS survey, and the use of traditional methods was reported by 19 percent of women in NFHS-2 and 20 percent of women in the RHS survey.

Tables 5.2 and 5.3 show that 84 percent of ever users of contraception are current users. Seventy-one percent of current contraceptive users are using a modern method. In West Bengal, as in most of the states of India, sterilization dominates the contraceptive method mix. Thirty-two percent of currently married women are sterilized, and female sterilization accounts for 48 percent of total current contraceptive prevalence. Only 2 percent of women report male sterilization as their current method. The three officially-sponsored spacing methods together

Table 5.2 Ever use of contraception

Percentage of currently married women who have ever used any contraceptive method by specific method, according to age and residence, West Bengal, 1998-99

Age	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Number of women
URBAN												
15-19	52.3	22.0	12.3	0.6	8.2	2.2	0.0	39.3	20.1	28.2	0.0	38
20-24	77.6	54.6	30.8	2.9	20.2	8.3	0.0	47.5	31.8	34.8	1.5	138
25-29	90.5	68.1	33.4	6.2	25.6	21.5	0.0	52.7	32.8	35.6	1.8	199
30-34	92.1	66.8	29.6	8.0	22.8	29.2	0.0	54.7	36.6	38.3	1.4	179
35-39	87.9	70.0	28.2	4.7	17.4	40.6	1.0	50.6	33.8	35.0	1.5	165
40-44	87.1	62.5	26.2	4.8	13.7	34.1	3.0	49.7	37.3	33.4	0.6	154
45-49	82.1	58.5	17.8	1.2	10.4	34.9	5.1	47.1	37.2	28.0	0.0	110
Total	85.6	62.5	27.8	4.8	18.7	27.0	1.2	50.4	34.2	34.4	1.2	984
RURAL												
15-19	52.3	21.5	14.2	1.6	6.9	0.8	0.0	39.3	27.9	22.3	0.4	337
20-24	71.5	47.4	29.9	3.8	9.0	15.2	0.2	42.9	29.9	25.8	0.6	653
25-29	79.7	65.2	31.1	7.5	7.9	36.2	0.2	37.3	27.2	24.5	2.9	660
30-34	84.7	70.5	27.4	6.1	7.4	46.7	1.3	37.0	29.7	18.0	2.6	517
35-39	87.9	75.8	24.8	5.5	6.7	50.2	5.4	35.0	25.4	20.6	3.3	452
40-44	80.0	71.0	21.4	1.5	4.5	52.1	5.0	27.0	22.5	15.5	3.0	275
45-49	76.6	60.0	12.1	1.7	5.2	41.0	9.1	28.1	20.7	13.2	2.9	239
Total	76.8	59.3	25.2	4.6	7.2	33.5	2.2	36.7	27.1	21.2	2.2	3,132
TOTAL												
15-19	52.3	21.5	14.0	1.5	7.0	0.9	0.0	39.3	27.1	22.9	0.4	375
20-24	72.5	48.7	30.0	3.6	10.9	14.0	0.2	43.7	30.3	27.4	0.8	791
25-29	82.2	65.9	31.7	7.2	12.0	32.8	0.2	40.8	28.5	27.0	2.6	859
30-34	86.6	69.5	28.0	6.6	11.3	42.2	1.0	41.6	31.4	23.2	2.3	696
35-39	87.9	74.3	25.7	5.3	9.6	47.6	4.2	39.2	27.6	24.4	2.8	617
40-44	82.6	67.9	23.2	2.7	7.8	45.6	4.3	35.2	27.8	22.0	2.1	429
45-49	78.3	59.5	13.9	1.6	6.8	39.1	7.8	34.1	25.9	17.9	2.0	349
Total	78.9	60.1	25.8	4.6	10.0	32.0	2.0	40.0	28.8	24.4	1.9	4,116

¹Includes both modern and traditional methods that are not listed separately

account for one-fifth of contraceptive prevalence. Specifically, pills are used by 9 percent of women, condoms by 3 percent, and IUDs by only 1 percent of women.

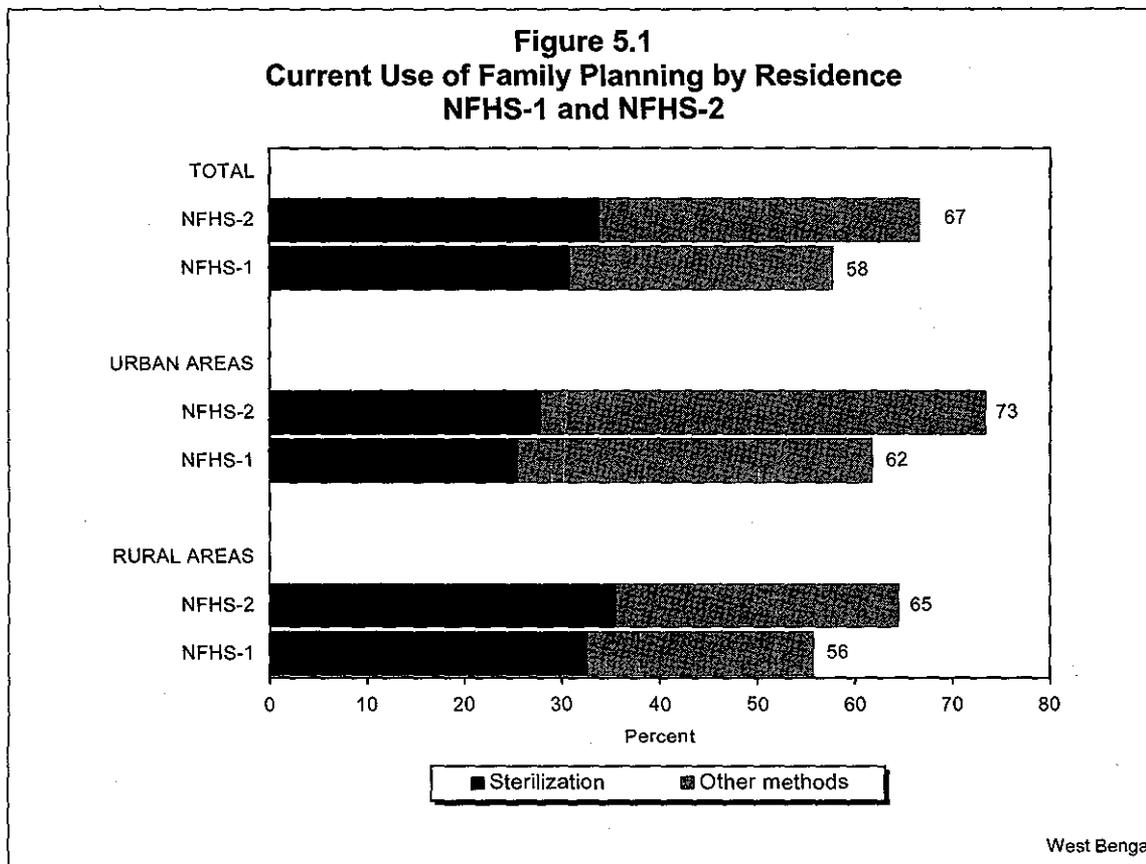
Current use of contraceptive methods is higher in urban areas (73 percent) than in rural areas (65 percent). However, current use of modern contraceptive methods is slightly lower in urban areas (46 percent) than in rural areas (48 percent). This is due primarily to the fact that female sterilization is less prominent in the mix of methods used by women in urban areas (where it accounts for 37 percent of contraceptive prevalence) than in rural areas (where it accounts for 52 percent of contraceptive prevalence). Current use of traditional methods is 19 percent in West Bengal, the highest level in India. Unlike modern contraceptive use, use of traditional methods is higher in urban areas (27 percent) than in rural areas (16 percent). Withdrawal is the most widely used traditional method (15 percent in urban areas and 8 percent in rural areas).

Table 5.3 Current use of contraception

Percent distribution of currently married women by contraceptive method currently used, according to age and residence, West Bengal, 1998-99

Age	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
URBAN														
15-19	39.2	16.1	7.7	0.6	5.6	2.2	0.0	23.2	8.3	14.8	0.0	60.8	100.0	38
20-24	63.0	37.0	19.5	1.9	7.2	8.3	0.0	24.8	8.9	15.9	1.2	37.0	100.0	138
25-29	77.7	49.8	13.9	2.8	11.6	21.5	0.0	27.5	12.0	15.5	0.4	22.3	100.0	199
30-34	83.3	50.6	9.3	2.6	9.5	29.2	0.0	32.0	12.7	19.4	0.6	16.7	100.0	179
35-39	79.9	53.5	4.8	1.6	5.5	40.6	1.0	26.1	10.3	15.8	0.3	20.1	100.0	165
40-44	76.7	47.9	3.9	2.3	4.6	34.1	3.0	28.9	14.8	14.0	0.0	23.3	100.0	154
45-49	60.4	43.0	1.6	0.0	1.4	34.9	5.1	17.4	10.9	6.6	0.0	39.6	100.0	110
Total	73.4	46.4	9.1	2.0	7.1	27.0	1.2	26.6	11.6	15.1	0.4	26.6	100.0	984
RURAL														
15-19	32.4	10.6	6.5	1.2	2.0	0.8	0.0	21.9	9.3	12.6	0.0	67.6	100.0	337
20-24	51.2	32.0	13.6	1.0	1.9	15.2	0.2	19.2	10.9	8.4	0.0	48.8	100.0	653
25-29	68.8	52.4	11.8	2.1	2.1	36.2	0.2	14.7	7.5	7.3	1.7	31.2	100.0	660
30-34	78.7	61.4	9.8	1.3	2.4	46.7	1.3	15.9	7.9	7.9	1.3	21.3	100.0	517
35-39	81.0	64.6	7.8	1.2	0.6	50.2	4.8	14.5	5.8	8.8	1.8	19.0	100.0	452
40-44	73.5	61.0	4.0	0.0	0.5	52.1	4.5	11.0	5.0	6.0	1.5	26.5	100.0	275
45-49	62.3	50.7	0.6	0.0	0.6	41.0	8.5	10.4	5.2	5.2	1.2	37.7	100.0	239
Total	64.5	47.5	9.2	1.2	1.6	33.5	2.0	15.9	7.8	8.1	1.0	35.5	100.0	3,132
TOTAL														
15-19	33.1	11.1	6.6	1.2	2.4	0.9	0.0	22.0	9.2	12.8	0.0	66.9	100.0	375
20-24	53.3	32.8	14.7	1.2	2.8	14.0	0.2	20.2	10.5	9.7	0.2	46.7	100.0	791
25-29	70.8	51.8	12.3	2.2	4.3	32.8	0.2	17.7	8.5	9.2	1.4	29.2	100.0	859
30-34	79.8	58.7	9.7	1.6	4.2	42.2	1.0	20.0	9.2	10.9	1.1	20.2	100.0	696
35-39	80.7	61.7	7.0	1.3	1.9	47.6	3.8	17.6	7.0	10.7	1.4	19.3	100.0	617
40-44	74.7	56.3	3.9	0.8	2.0	45.6	3.9	17.4	8.5	8.9	1.0	25.3	100.0	429
45-49	61.7	48.3	0.9	0.0	0.9	39.1	7.5	12.6	7.0	5.6	0.8	38.3	100.0	349
Total	66.6	47.3	9.2	1.4	2.9	32.0	1.8	18.5	8.7	9.8	0.9	33.4	100.0	4,116

¹Includes both modern and traditional methods that are not listed separately



By age, current contraceptive use increases from 33 percent for women age 15–19 to 81 percent for women age 35–39 and decreases for older women. Female sterilization is highest (48 percent) among women age 35–39. The majority of contraceptive users under age 30 currently use either a modern spacing method or a traditional method, whereas the majority of current users age 30 or above use female sterilization. In urban areas, contraceptive use peaks at 83 percent among women age 30–34, whereas contraceptive use in rural areas peaks at 81 percent among women age 35–39. Notably, the majority of current users below age 35 in urban areas use either a modern spacing method or a traditional method rather than sterilization. In rural areas, by contrast, female sterilization accounts for more than half of contraceptive use among women age 25 and above. Traditional methods account for 66 and 38 percent of current contraceptive use among all women age 15–19 and 20–24, respectively.

The NFHS-2 contraceptive prevalence rate of 67 percent is substantially higher than the NFHS-1 rate of 58 percent (Figure 5.1). During the period between the two surveys, there was an overall increase in the use of modern methods (from 38 percent to 47 percent); however, use of traditional methods did not change much between NFHS-1 (20 percent) and NFHS-2 (19 percent). Thus, recent improvements in contraceptive prevalence in West Bengal have been due primarily to increased use of modern methods. In NFHS-1, modern-method use accounted for 65 percent of current contraceptive prevalence; however, in NFHS-2, modern methods account for 71 percent of current contraceptive use. Among the modern methods, current use of female sterilization has risen from 27 percent in NFHS-1 to 32 percent in NFHS-2, but current use of the three officially-sponsored spacing methods increased two-fold between the two surveys (from 7 percent to 14 percent) and the use of male sterilization declined. These results suggest that the

increased emphasis on contraceptive choice and on modern spacing methods in the Reproductive and Child Health Programme might be successful in changing contraceptive use patterns in West Bengal. Although female sterilization still dominates the method mix in this state, the contribution of modern spacing methods to total contraceptive use is becoming more prominent.

Socioeconomic Differentials in Current Use of Family Planning Methods

Table 5.4 shows differences in current contraceptive use by background characteristics. It is noteworthy that three-fourths of currently married women living in Kolkata are current users of a contraceptive method. Thirty-three percent of women in Kolkata use a traditional method, with withdrawal being the most widely used (21 percent). Interestingly, use of modern methods is slightly lower in Kolkata (42 percent) than in rural areas (48 percent) and urban areas as a whole (46 percent). Twenty-four percent of women in Kolkata are sterilized, 9 percent use the pill, 2 percent use the IUD, and 6 percent use the condom. Current contraceptive use increases steadily with education: from 62 percent among illiterate women to 73–75 percent among women who have completed at least middle school. Female sterilization is most common among women who are illiterate (accounting for 64 percent of total contraceptive use), and the rate of use declines substantially with increasing education. For women who have completed at least high school, female sterilization accounts for only 18 percent of total contraceptive use. Whereas use of female sterilization decreases with education, use of modern spacing methods increases substantially. Modern spacing methods account for 12 percent of all contraceptive use among illiterate women and 33 percent of all contraceptive use among women who have completed at least high school. One percent of illiterate women use condoms, compared with 11 percent of women who have completed at least high school. The use of the pill and the IUD differs substantially between illiterate and literate women, although there is no clear pattern of use among literate women. The use of traditional methods also increases with education. Contraceptive use has increased substantially since NFHS-1 among women in every educational category except for women who have completed at least high school education. The percentage increase has been much more rapid among illiterate women (27 percent) than among literate women who have not completed high school (12 percent). Various studies based on NFHS-1 data have shown that even after controlling the effects of other factors, education is a key factor influencing contraceptive use in India (Retherford and Ramesh, 1996; Ramesh et al., 1996).

Contraceptive prevalence is higher among Hindus (70 percent) than Muslims (56 percent) and other women (65 percent). Female sterilization is much more common among Hindus (36 percent) than among Muslims (19 percent). Hindus and Muslims do not differ much in terms of condom or IUD use, but Muslims (13 percent) are more likely to use the pill than Hindus (8 percent). The three modern spacing methods — the pill, condom, and IUD—together account for 30 percent of contraceptive use by Muslims, but only 18 percent of contraceptive use by Hindus and 22 percent of use by women from other religious groups. Nineteen percent of Hindus, 18 percent of Muslims, and 15 percent of women from other religious groups use a traditional method. Among the traditional methods, withdrawal is most popular among Hindus, whereas withdrawal and the rhythm method are equally popular among Muslims.

Contraceptive prevalence is highest for women who belong to an other backward class (74 percent) and lowest for women belonging to a scheduled tribe (53 percent). The use of any

Table 5.4. Current use by background characteristics

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
Residence														
Urban	73.4	46.4	9.1	2.0	7.1	27.0	1.2	26.6	11.6	15.1	0.4	26.6	100.0	984
Rural	64.5	47.5	9.2	1.2	1.6	33.5	2.0	15.9	7.8	8.1	1.0	35.5	100.0	3,132
Kolkata	75.0	41.7	9.1	1.9	6.3	23.8	0.5	32.6	11.7	21.0	0.7	25.0	100.0	226
Education														
Illiterate	62.2	49.4	5.5	0.7	1.0	39.5	2.7	11.8	5.8	6.1	1.0	37.8	100.0	1,985
Literate, < middle school complete	68.7	47.9	13.1	1.2	2.4	30.0	1.2	19.7	9.8	10.0	1.1	31.3	100.0	1,243
Middle school complete	75.1	45.9	14.0	3.6	4.4	23.2	0.8	28.9	12.6	16.3	0.3	24.9	100.0	429
High school complete and above	72.5	37.8	9.7	2.8	11.4	12.9	1.1	34.1	14.9	19.2	0.5	27.5	100.0	454
Religion														
Hindu	69.8	50.2	8.2	1.4	2.8	35.9	1.9	19.0	8.8	10.2	0.7	30.2	100.0	3,077
Muslim	56.3	37.6	12.6	0.8	3.5	18.7	1.9	17.5	8.7	8.8	1.2	43.7	100.0	934
Other	64.6	44.3	6.8	5.1	2.1	30.2	0.0	14.6	7.7	6.9	5.7	35.4	100.0	96
Caste/tribe														
Scheduled caste	68.2	53.1	5.4	1.0	1.3	43.6	1.7	14.0	7.3	6.7	1.1	31.8	100.0	954
Scheduled tribe	52.8	41.3	4.9	1.9	0.5	31.1	2.9	9.6	4.2	5.4	1.9	47.2	100.0	284
Other backward class	73.9	59.4	9.8	3.7	4.0	40.4	1.4	14.1	6.3	7.8	0.4	26.1	100.0	189
Other	66.9	44.9	10.9	1.3	3.7	27.3	1.8	21.2	9.8	11.4	0.7	33.1	100.0	2,672
Standard of living index														
Low	61.1	46.0	6.7	0.8	1.1	35.1	2.2	14.0	7.3	6.7	1.0	38.9	100.0	1,744
Medium	68.3	48.1	11.9	1.4	2.2	31.1	1.4	19.4	8.9	10.5	0.8	31.7	100.0	1,721
High	78.5	47.8	9.0	3.0	10.3	23.5	2.0	30.0	13.0	17.0	0.6	21.5	100.0	581

Contd...

Table 5.4 Current use by background characteristics (contd.)

Percent distribution of currently married women by contraceptive method currently used, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Any method	Any modern method	Pill	IUD	Condom	Female sterilization	Male sterilization	Any traditional method	Rhythm/safe period	Withdrawal	Other method ¹	Not using any method	Total percent	Number of women
Number and sex of living children														
No children	21.8	4.5	1.6	0.0	2.1	0.3	0.5	17.3	6.8	10.6	0.0	78.2	100.0	460
1 child	58.9	28.2	14.4	2.1	5.9	4.7	1.1	30.4	15.3	15.1	0.3	41.1	100.0	840
1 son	61.8	29.7	14.4	2.4	6.3	5.7	0.9	31.8	17.1	14.7	0.4	38.2	100.0	449
No sons	55.6	26.5	14.4	1.8	5.4	3.5	1.4	28.8	13.3	15.5	0.3	44.4	100.0	391
2 children	77.1	57.2	10.4	2.3	2.7	39.8	2.0	19.2	8.7	10.5	0.7	22.9	100.0	1,141
2 sons	78.9	64.8	9.0	1.4	1.4	51.9	1.1	13.4	4.9	8.4	0.7	21.1	100.0	319
1 son	77.7	57.5	11.3	2.1	2.5	38.9	2.6	19.7	9.8	9.9	0.6	22.3	100.0	648
No sons	71.8	42.5	9.9	4.6	5.7	21.0	1.4	28.3	11.7	16.6	0.9	28.2	100.0	175
3 children	78.0	64.9	6.8	1.1	1.5	52.1	3.4	12.1	5.7	6.4	0.9	22.0	100.0	792
3 sons	85.6	70.1	0.3	0.3	1.1	62.9	5.5	13.6	3.6	10.0	1.9	14.4	100.0	74
2 sons	81.5	71.8	7.6	1.5	0.8	58.3	3.6	8.5	3.5	5.0	1.3	18.5	100.0	344
1 son	76.6	62.1	6.6	1.2	2.3	48.8	3.1	14.0	8.1	5.9	0.5	23.4	100.0	294
No sons	60.9	41.4	10.4	0.0	1.9	27.4	1.6	19.5	8.2	11.3	0.0	39.1	100.0	81
4+ children	73.6	58.9	8.5	0.4	2.1	46.3	1.6	12.5	6.1	6.4	2.2	26.4	100.0	882
2+ sons	73.0	58.7	8.2	0.4	1.5	47.0	1.5	12.3	6.0	6.3	2.0	27.0	100.0	681
1 son	76.2	59.6	11.1	0.2	3.2	42.7	2.4	13.4	6.8	6.6	3.2	23.8	100.0	169
No sons	(72.0)	(60.0)	(0.7)	(0.0)	(9.6)	(49.6)	(0.0)	(12.1)	(5.2)	(6.9)	(0.0)	(28.0)	100.0	32
Total	66.6	47.3	9.2	1.4	2.9	32.0	1.8	18.5	8.7	9.8	0.9	33.4	100.0	4,116

Note: Total includes 4, 9, 18, and 70 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

¹Includes both modern and traditional methods that are not listed separately

contraception is positively related to the standard of living index (SLI). Contraceptive prevalence increases from 61 percent for the poorest women (who have a low SLI) to 79 percent for women with a high SLI. The use of modern spacing methods increases substantially with the standard of living: women with a high SLI are more than twice as likely to use a modern spacing method as women with a low SLI. The use of female sterilization decreases from 35 percent among women with a low SLI to 24 percent among the women with a high SLI. Interestingly, traditional-method use increases sharply with the standard of living, ranging from 14 percent to 30 percent.

Table 5.4 also shows differences in current use by the number and sex of living children. In general, there are vast differences between women who have no living children and women who have at least one living child. Contraceptive use increases sharply from 22 percent for women who do not have a living child to 78 percent for women with three living children. It then declines slightly to 74 percent for women with four or more living children. The same pattern is evident for female sterilization. Only 5 percent of women with one living child are sterilized, compared with at least 40 percent of women with two or more living children. Condom use, however, is highest for women with one living child (6 percent). Among women with at least one living child, the use of traditional methods generally decreases with the number of living children, ranging from 30 percent among those with one living child to 12–13 percent among women with three or more living children. Seventeen percent of women with no living children currently use traditional methods.

Prevalence rates by the sex composition of living children indicate the existence of son preference. For each number of living children, women with no sons are less likely than women with one or more sons to be using contraception. For example, among women with three living children, 61 percent with no sons are using contraception, compared with 86 percent with three sons.

Number of Living Children at First Use of Contraception

In order to examine the timing of initiation of family planning use, NFHS-2 included a question on how many living children women had when they first used a method. Table 5.5 shows the distribution of ever-married women by the number of living children at the time of first contraceptive use, according to current age and residence. Seventeen percent of ever-married women (23 percent of ever-married women who have ever used contraception) began using contraception when they did not have any living children and another 23 percent (30 percent of ever users) began using when they had one living child. Use of contraception among women with no living children is almost five times higher than the national average. About 56 percent of ever-married women (72 percent of ever users) began using when they had two or fewer living children.

The demographic impact of contraception depends on both the percentage of couples that use contraception and the parity at which they start using. An emphasis on sterilization in the contraceptive method mix, however, increases the likelihood that women will begin contraceptive use only after achieving their desired family size. Notably, a sizeable proportion of women in West Bengal use spacing methods (both modern and traditional), which explains why the parity at which women first accept contraception is already quite low.

Table 5.5. Number of living children at first use									
Percent distribution of ever-married women by number of living children at the time of first use of contraception, according to current age and residence, West Bengal, 1998-99									
Current age	Never used	Number of living children at the time of first use					Missing	Total percent	Number of women
		0	1	2	3	4+			
URBAN									
15-19	48.0	31.8	18.0	2.1	0.0	0.0	0.0	100.0	39
20-24	23.7	39.3	26.3	7.3	2.3	1.2	0.0	100.0	141
25-29	11.3	30.8	37.4	9.1	8.0	3.3	0.0	100.0	207
30-34	9.1	22.5	35.6	13.4	9.6	9.7	0.0	100.0	190
35-39	15.0	16.2	33.0	12.9	10.8	12.0	0.0	100.0	184
40-44	15.8	14.0	30.6	12.8	12.3	14.5	0.0	100.0	167
45-49	19.6	12.6	30.5	14.2	6.3	16.1	0.7	100.0	121
Total	16.3	23.1	32.2	11.2	8.2	8.9	0.1	100.0	1,049
RURAL									
15-19	48.2	36.8	11.5	3.6	0.0	0.0	0.0	100.0	345
20-24	30.0	23.2	27.1	14.5	4.0	1.2	0.0	100.0	677
25-29	21.6	15.1	25.4	22.1	11.8	4.0	0.0	100.0	682
30-34	17.2	10.9	21.8	20.8	15.2	14.0	0.0	100.0	556
35-39	16.9	8.5	18.0	18.9	18.0	19.7	0.0	100.0	500
40-44	23.3	4.2	15.4	11.0	16.5	29.6	0.0	100.0	322
45-49	27.9	5.4	8.8	14.3	11.3	32.3	0.0	100.0	278
Total	25.3	15.4	20.3	16.3	10.9	11.8	0.0	100.0	3,359
TOTAL									
15-19	48.2	36.3	12.1	3.4	0.0	0.0	0.0	100.0	383
20-24	28.9	26.0	26.9	13.2	3.7	1.2	0.0	100.0	818
25-29	19.2	18.8	28.2	19.1	10.9	3.8	0.0	100.0	888
30-34	15.1	13.9	25.4	18.9	13.8	12.9	0.0	100.0	746
35-39	16.4	10.6	22.1	17.3	16.1	17.6	0.0	100.0	684
40-44	20.8	7.6	20.6	11.6	15.0	24.4	0.0	100.0	489
45-49	25.4	7.6	15.4	14.3	9.8	27.4	0.2	100.0	400
Total	23.1	17.3	23.1	15.1	10.3	11.1	0.0	100.0	4,408

Problems with Current Method

Women who were using a modern contraceptive method were asked if they had experienced any problems with their current method. Table 5.6 shows the percentage of current contraceptive users who report specific problems. Overall, a large majority (85 percent) of current users report having no problems with their method. This may be an underestimate of the extent of problems, however, because women who have experienced problems with spacing methods may have stopped using contraception altogether, and these women are not represented in the table.

The analysis of method-specific problems reveals that 75 percent of sterilized women and 89 percent of women whose husbands are sterilized report having no problem with their method. The most common problems experienced by sterilized women are headache, bodyache, or backache (10 percent), weakness or tiredness (8 percent), abdominal pain (6 percent), white discharge (3 percent), and irregular periods (2 percent). Among women whose husbands are sterilized, the most common complaint is weakness or tiredness (5 percent). With regard to modern spacing methods, 20 percent of women had problems in using pills, 6 percent had problems using the IUD, and 2 percent had problems using condoms. The most common

Table 5.6 Problems with current method

Percentage of current users of specific contraceptive methods who have had problems in using the method, West Bengal, 1998-99

Problem	Contraceptive method								Total
	Pill	IUD	Condom	Female sterilization	Male sterilization	Rhythm/safe period	Withdrawal	Other method ¹	
No problem	80.4	93.6	98.4	75.3	89.3	100.0	98.3	(88.9)	84.6
Weight gain	0.0	0.0	0.0	0.4	0.0	0.0	0.0	(0.0)	0.2
Weight loss	1.1	0.0	0.0	1.1	1.8	0.0	0.0	(0.0)	0.7
Too much bleeding	0.4	1.5	0.0	0.6	0.0	0.0	0.0	(0.0)	0.4
Hypertension	0.6	0.0	0.0	0.4	0.0	0.0	0.0	(3.8)	0.3
Headache/bodyache/backache	9.6	0.0	0.0	9.6	1.8	0.0	0.0	(0.0)	6.0
Nausea/vomiting	2.6	0.0	0.0	1.0	1.8	0.0	0.0	(0.0)	0.9
No menstruation	0.4	0.5	0.0	0.2	0.0	0.0	0.0	(0.0)	0.2
Weakness/tiredness	9.0	0.0	0.0	8.2	5.4	0.0	0.9	(7.4)	5.5
Dizziness	1.6	0.0	0.0	1.1	1.8	0.0	0.0	(0.0)	0.8
Fever	1.3	0.0	0.0	0.8	1.8	0.0	0.0	(0.0)	0.6
Cramps	0.4	0.0	0.0	0.0	0.0	0.0	0.0	(0.0)	0.0
Inconvenient to use	0.0	0.0	0.0	0.0	0.0	0.0	0.1	(0.0)	0.0
Abdominal pain	0.9	2.9	0.7	6.0	1.8	0.0	0.4	(3.7)	3.2
White discharge	0.1	0.5	0.0	2.7	0.0	0.0	0.0	(0.0)	1.3
Irregular periods	1.1	1.5	0.7	1.9	0.0	0.0	0.0	(0.0)	1.1
Allergy	0.0	1.5	0.0	0.5	0.0	0.0	0.0	(0.0)	0.3
Other	2.3	0.0	0.2	5.8	0.0	0.0	0.7	(0.0)	3.2
Number of users	377	56	121	1,315	76	359	403	37	2,743

Note: Percentages may add to more than 100.0 because multiple problems could be recorded.
 () Based on 25-49 unweighted cases
¹ Includes both modern and traditional methods that are not listed separately

problems for pill users were headache, bodyache, or backache, weakness or tiredness, and nausea or vomiting. IUD users mentioned abdominal pain, too much bleeding, irregular periods, and allergies most often. These results point to a continuing need to strengthen post-operative care for sterilization acceptors and counselling and support for all contraceptive acceptors.

5.3 Timing of Sterilization

Table 5.7 shows how many years before the survey women or their husbands were sterilized and how old the women were when the sterilization took place. Of 1,391 sterilizations reported, 95 percent are female sterilizations. Thirty-seven percent of the female sterilizations took place less than 6 years before the survey, another 26 percent took place 6-9 years before the survey, and 37 percent took place 10 or more years before the survey. By contrast, 84 percent of male sterilizations took place 10 or more years before the survey. The median age of women at the time they or their husbands were sterilized was 25.1 years, slightly less than the median of 25.7 years for India as a whole. Forty-nine percent of sterilized couples underwent sterilization before the wife was age 25, and by age 30, 80 percent of them were sterilized.

The median age of women at the time of sterilization has declined by one year from age 26 in the period 8-9 years before the survey to age 25 in more recent years. From NFHS-2 data it is not possible to assess the trend in the median age at sterilization for more than 10 years before the survey because only women age 15-49 years were interviewed. Women in their forties 10 or more years before the survey would have been age 50-59 years at the time of the survey and would, therefore, not have been interviewed. Examining NFHS-1 and NFHS-2 data together, however, suggests that the decline in women's age at sterilization did not begin until the early

Table 5.7 Timing of sterilization

Percent distribution of currently married, sterilized women, and wives of sterilized men by age at the time of sterilization and median age of the woman at the time of sterilization, according to the number of years since sterilization, West Bengal, 1998–99

Years since sterilization	Woman's age at the time of sterilization							Total percent	Number sterilized	Median age ¹
	< 20	20–24	25–29	30–34	35–39	40–44	45–49			
STERILIZED WOMEN										
< 2	8.3	43.2	30.4	14.1	2.2	0.9	0.9	100.0	150	24.7
2–3	7.9	41.5	27.1	18.0	4.5	1.0	0.0	100.0	157	25.0
4–5	9.4	37.6	26.6	20.9	3.9	1.6	0.0	100.0	174	25.3
6–7	11.0	35.9	32.4	13.3	5.3	2.1	U	100.0	185	25.3
8–9	12.3	33.5	28.7	15.9	8.8	0.9	U	100.0	159	25.5
10+	8.4	39.6	36.0	14.8	1.2	U	U	100.0	490	NC
Total	9.3	38.7	31.7	15.8	3.5	0.8	0.1	100.0	1,315	25.2
WIVES OF STERILIZED MEN										
Total	20.1	38.4	23.7	14.2	1.8	1.7	0.0	100.0	76	24.1
STERILIZED WOMEN AND WIVES OF STERILIZED MEN										
< 2	8.2	42.8	30.2	14.8	2.2	0.9	0.9	100.0	152	24.7
2–3	7.9	41.1	26.8	17.9	4.4	1.8	0.0	100.0	158	25.0
4–5	9.4	37.3	27.2	20.8	3.8	1.6	0.0	100.0	175	25.4
6–7	11.3	34.7	31.3	14.7	5.9	2.0	U	100.0	191	25.4
8–9	13.0	33.2	28.5	15.8	8.7	0.9	U	100.0	161	25.5
10+	9.7	40.3	34.9	14.1	1.0	U	U	100.0	554	NC
Total	9.9	38.7	31.2	15.7	3.4	0.9	0.1	100.0	1,391	25.1

NC: Not calculated due to censoring

U: Not available

¹To avoid censoring, median age is calculated only for sterilizations that took place when the woman was less than 40 years old.

1990s. The median age at sterilization was 26 years even in 1983–84 (about 8–9 years before NFHS-1) and remained fairly constant until 1990–91.

5.4 Sources of Contraceptive Methods

Family planning methods and services in West Bengal are provided primarily through a network of government hospitals and urban family welfare centres in urban areas and Primary Health Centres (PHC) and sub-centres in rural areas. Family planning services are also provided by private hospitals and clinics, as well as nongovernmental organizations (NGOs). Sterilizations and IUD insertions are carried out mostly in government hospitals and PHCs. Sterilization camps, organized from time to time, also provide sterilization services. Modern spacing methods such as the IUD, pill, and condom are available through both the government and private sectors.

To assess the relative importance of various sources of contraceptive methods, NFHS-2 included a question on where current contraceptive users obtained their methods. Table 5.8 and Figure 5.2 show the percent distribution of current users of modern contraceptives by the source from which they obtained their method most recently, according to specific method and residence. The public medical sector, consisting of government/municipal hospitals, government dispensaries, Primary Health Centres, and other governmental health infrastructure, is the source of contraception for 70 percent of current users of modern methods, down from 80 percent in

Table 5.8 Source of modern contraceptive methods						
Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method and residence, West Bengal, 1998-99						
Source	Contraceptive method					
	Pill	IUD	Condom	Female sterilization	Male sterilization	All modern methods
URBAN						
Public medical sector	6.0	(56.8)	3.6	79.9	*	52.6
Government/municipal hospital	0.5	(37.4)	1.2	58.4	*	37.5
Government dispensary	0.9	(1.2)	0.0	0.0	*	0.2
UHC/UHP/UFWC	0.0	(4.3)	0.0	0.1	*	0.2
CHC/rural hospital/PHC	0.0	(4.3)	0.0	7.4	*	4.9
Sub-centre	3.3	(4.3)	1.2	0.0	*	1.0
Government mobile clinic	0.0	(4.2)	0.0	0.1	*	0.2
Camp	0.0	(1.2)	1.2	9.7	*	5.9
Other public medical sector	1.2	(0.0)	0.0	4.2	*	2.7
NGO or trust	0.9	(1.4)	0.0	3.3	*	2.2
Hospital/clinic	0.0	(1.4)	0.0	3.3	*	2.0
NGO worker	0.9	(0.0)	0.0	0.0	*	0.2
Private medical sector	37.1	(41.8)	27.4	15.9	*	22.9
Private hospital/clinic	0.0	(29.1)	2.4	14.9	*	10.6
Private doctor	2.7	(12.7)	0.0	0.0	*	1.1
Private paramedic	3.6	(0.0)	1.2	0.0	*	0.9
Vaidya/nakim/homeopath	0.0	(0.0)	0.0	0.0	*	0.0
Pharmacy/drugstore	29.8	(0.0)	23.8	0.0	*	9.5
Other private medical sector	0.9	(0.0)	0.0	1.0	*	0.8
Other source	53.6	(0.0)	69.1	0.5	*	21.6
Shop	52.1	(0.0)	69.1	0.0	*	20.9
Other	1.5	(0.0)	0.0	0.5	*	0.8
Don't know ¹	1.9	(0.0)	0.0	0.0	*	0.4
Missing	0.5	(0.0)	0.0	0.4	*	0.3
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	90	19	70	265	12	456

NFHS-1. The private medical sector, including private hospitals or clinics, private doctors, private paramedics, and pharmacies or drugstores, is the source for 14 percent of current users, down from 16 percent in NFHS-1. Thirteen percent of current users obtain their methods from other sources such as shops, friends, and relatives, and 2 percent obtain their methods from NGO or trust sources. Government/municipal hospitals are the main source (43 percent) for female sterilization, followed by community health centres, rural hospitals, or Primary Health Centres (36 percent), sterilization camps (9 percent), and private hospitals or clinics (6 percent). With the exception of sterilization camps, similar sources are used for male sterilizations. By contrast, shops and private pharmacies or drugstores are the main source for condoms (82 percent) and for pills (71 percent). Only 13 percent of current pill users and 11 percent of current condom users obtain their supply from the public medical sector. The public medical sector is, however, the main source for IUDs (83 percent).

Seventy-five percent of rural users obtain their contraceptives from the public medical sector, compared with 53 percent of urban users. Although the public medical sector is the main source for female sterilizations in both urban and rural areas, in urban areas the private sector also plays a substantial role. Sixteen percent of female sterilizations were performed in the

Table 5.8 Source of modern contraceptive methods (contd.)

Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method and residence, West Bengal, 1998-99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
RURAL						
Public medical sector	15.7	(96.3)	(21.5)	92.3	(78.7)	74.6
Government/municipal hospital	1.9	(37.1)	(2.6)	38.9	(36.1)	30.4
Government dispensary	1.0	(7.3)	(0.0)	0.0	(0.0)	0.4
UHC/UHP/UFWC	0.0	(0.0)	(0.0)	0.4	(0.0)	0.3
CHC/rural hospital/PHC	4.3	(26.1)	(2.7)	42.8	(40.4)	33.5
Sub-centre	7.6	(18.4)	(16.2)	0.0	(0.0)	2.5
Government mobile clinic	0.0	(0.0)	(0.0)	0.4	(0.0)	0.3
Camp	0.5	(7.4)	(0.0)	9.2	(2.1)	6.9
Other public medical sector	0.5	(0.0)	(0.0)	0.5	(0.0)	0.5
NGO or trust	0.0	(0.0)	(0.0)	2.2	(4.3)	1.8
Hospital/clinic	0.0	(0.0)	(0.0)	2.2	(4.3)	1.8
NGO worker	0.0	(0.0)	(0.0)	0.0	(0.0)	0.0
Private medical sector	37.2	(3.7)	(35.1)	3.4	(10.7)	11.3
Private hospital/clinic	3.8	(3.7)	(0.0)	3.4	(10.7)	3.7
Private doctor	5.2	(0.0)	(2.7)	0.0	(0.0)	1.1
Private paramedic	1.5	(0.0)	(2.8)	0.0	(0.0)	0.4
Vaidya/hakim/homeopath	3.4	(0.0)	(0.0)	0.0	(0.0)	0.7
Pharmacy/drugstore	23.3	(0.0)	(29.6)	0.0	(0.0)	5.5
Other private medical sector	0.0	(0.0)	(0.0)	0.0	(0.0)	0.0
Other source	44.8	(0.0)	(37.9)	0.5	(2.2)	10.4
Shop	44.3	(0.0)	(37.9)	0.0	(0.0)	9.8
Other	0.5	(0.0)	(0.0)	0.5	(2.2)	0.5
Don't know ¹	1.9	(0.0)	(5.5)	0.0	(0.0)	0.6
Missing	0.5	(0.0)	(0.0)	1.6	(4.2)	1.4
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	287	37	51	1,050	64	1,489

private medical sector in urban areas, compared with only 3 percent in rural areas. In both urban and rural areas, most users of pills and condoms obtain their supply from private pharmacies, private drugstores, or shops, and most users of IUDs use the public medical sector.

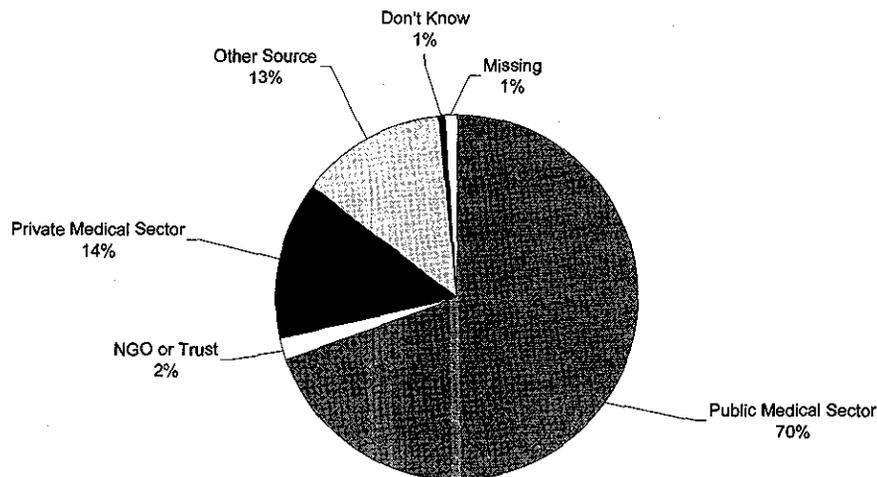
Table 5.8 Source of modern contraceptive methods (contd.)

Percent distribution of current users of modern contraceptive methods by most recent source, according to specific method and residence, West Bengal, 1998-99

Source	Contraceptive method					All modern methods
	Pill	IUD	Condom	Female sterilization	Male sterilization	
TOTAL						
Public medical sector	13.4	82.7	11.1	89.8	78.7	69.5
Government/municipal hospital	1.6	37.2	1.8	42.8	40.7	32.0
Government dispensary	0.9	5.2	0.0	0.0	0.0	0.3
UHC/UHP/UFWC	0.0	1.5	0.0	0.3	0.0	0.3
CHC/rural hospital/PHC	3.2	18.6	1.1	35.7	36.3	26.8
Sub-centre	6.6	13.6	7.5	0.0	0.0	2.1
Government mobile clinic	0.0	1.4	0.0	0.3	0.0	0.3
Camp	0.4	5.3	0.7	9.3	1.8	6.6
Other public medical sector	0.6	0.0	0.0	1.3	0.0	1.0
NGO or trust	0.2	0.5	0.0	2.5	3.6	1.9
Hospital/clinic	0.0	0.5	0.0	2.5	3.6	1.8
NGO worker	0.2	0.0	0.0	0.0	0.0	0.0
Private medical sector	37.1	16.8	30.6	5.9	11.2	14.0
Private hospital/clinic	2.9	12.4	1.4	5.7	11.2	5.3
Private doctor	4.6	4.4	1.1	0.0	0.0	1.1
Private paramedic	2.0	0.0	1.8	0.0	0.0	0.5
Vaidya/hakim/homeopath	2.6	0.0	0.0	0.0	0.0	0.5
Pharmacy/drugstore	24.9	0.0	26.2	0.0	0.0	6.4
Other private medical sector	0.2	0.0	0.0	0.2	0.0	0.2
Other source	46.9	0.0	56.0	0.5	2.9	13.0
Shop	46.2	0.0	56.0	0.0	0.0	12.4
Other	0.7	0.0	0.0	0.5	2.9	0.6
Don't know ¹	1.9	0.0	2.3	0.0	0.0	0.5
Missing	0.5	0.0	0.0	1.3	3.5	1.1
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of users	377	56	121	1,315	76	1,945

UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre; CHC: Community health centre; PHC: Primary Health Centre; NGO: Nongovernmental organization
 () Based on 25-49 unweighted cases
 *Percentage not shown; based on fewer than 25 unweighted cases
¹For the pill and the condom, this category includes women who say their husband or a friend or other relative obtained the method, but they don't know the original source of supply.

Figure 5.2
Sources of Family Planning Among Current Users of Modern Contraceptive Methods



Note: Percents add to more than 100.0 due to rounding

NFHS-2, West Bengal, 1998-99

5.5 Reasons for Discontinuation/Non-Use of Contraception

Currently married, nonpregnant women who were not using a contraceptive method at the time of the survey fall into two categories with respect to their contraceptive experience: those who used contraception in the past and those who never used contraception. NFHS-2 asked women who had discontinued contraceptive use their main reason for discontinuing. The survey also asked women who had never used contraception the main reason they were not currently using a method. Table 5.9 shows that 377 nonpregnant women who ever used family planning methods (12 percent of ever users) have discontinued use. Among the group that discontinued contraception, the most commonly mentioned reason for discontinuing is that the couple wanted to have a child (25 percent). Other frequently cited reasons for discontinuing use are that contraceptive use created a health problem or a menstrual problem, the husband was away, and woman did not like the method. Urban and rural women gave similar reasons for discontinuing use, with both rural and urban women most frequently giving the desire for another child as the main reason for discontinuing use. A substantial proportion (28 percent) of women cited 'other' reasons for discontinuing use, such as the woman is menopausal, the husband is opposed to the use of contraceptives, or the woman believed that contraception was not necessary.

Among women who never used contraception, the most commonly mentioned reason for not currently using a method is also the desire for more children (25 percent), followed by the fact that the woman is menopausal, had a hysterectomy, or is infecund or subfecund (13 percent). Another 11 percent of women say they are not using contraception because of health concerns or because they are worried about side effects. Nine percent mention different types of opposition, such as their husband opposing contraception (7 percent) or that contraceptive use is against their religion (2 percent). Three percent say they are not using contraception because it costs too much and another 3 percent say that their husband is away. There are no substantial urban-rural differences in reasons for not currently using contraception; however, only 10 percent of rural women say that their being menopausal or having had hysterectomy is the main reason for not

Table 5.9 Reasons for discontinuation/non-use

Percent distribution of nonpregnant, currently married women who stopped using contraception by main reason for stopping use and percent distribution of nonpregnant, currently married women who never used contraception by main reason for not currently using, according to residence, West Bengal, 1998-99

Reason	Urban	Rural	Total
REASON FOR STOPPING USE			
Method failed/got pregnant	2.5	2.4	2.5
Lack of sexual satisfaction	3.6	2.9	3.1
Created menstrual problem	12.8	10.3	11.0
Created health problem	11.0	11.8	11.6
Inconvenient to use	0.8	1.9	1.7
Hard to get method	0.3	0.0	0.1
Did not like the method	4.5	5.4	5.2
Wanted to have a child	23.7	26.1	25.4
Lack of privacy for use	0.9	1.0	1.0
Husband away	8.5	6.3	6.9
Costs too much	0.8	3.9	3.1
Other	30.5	27.4	28.2
Missing	0.0	0.5	0.4
Total percent	100.0	100.0	100.0
Number of women	98	279	377
REASON FOR NOT CURRENTLY USING			
Husband away	5.6	3.0	3.4
Fertility-related reasons	53.6	41.4	43.5
Not having sex	2.3	1.7	1.8
Infrequent sex	1.3	0.8	0.9
Menopausal/had hysterectomy	21.7	9.9	11.8
Subfecund/infecund	0.4	1.5	1.3
Postpartum/breastfeeding	4.6	2.4	2.8
Wants more children	23.2	25.1	24.8
Opposition to use	6.0	9.5	8.9
Opposed to family planning	0.2	0.2	0.2
Husband opposed	5.0	7.1	6.8
Other people opposed	0.0	0.4	0.4
Against religion	0.8	1.7	1.6
Lack of knowledge	2.0	1.3	1.4
Knows no method	1.3	1.1	1.1
Knows no source	0.7	0.2	0.3
Method-related reasons	15.5	18.5	18.0
Health concerns	7.1	9.0	8.7
Worry about side effects	3.0	2.6	2.6
Costs too much	1.3	3.9	3.4
Inconvenient	0.7	0.2	0.3
Afraid of sterilization	0.7	0.4	0.5
Doesn't like existing methods	2.8	2.4	2.4
Other	14.9	22.2	21.0
Don't know/missing	2.4	4.1	3.8
Total percent	100.0	100.0	100.0
Number of women	126	635	762

currently using contraception, compared with 22 percent of urban women. Some of the 'other' responses given for never using contraception are that the woman believes contraception is not necessary, or that the husband is ill.

5.6 Future Intentions Regarding Contraceptive Use

Currently married women who were not using any contraceptive method at the time of the survey (including those who were pregnant at the time of the survey) were asked about their intentions to use a method in the future. If they intended to use a method, they were asked about their preferred method. This type of information can help managers of family welfare programmes to identify potential groups of contraceptive users and to provide the types of contraception that are likely to be in demand. Table 5.10 gives women's responses to the questions on future use according to residence and number of living children.

More than half (57 percent) of currently married women who are not currently using any contraceptive method express an intention to use a method in the future. Among women who intend to use contraception, 60 percent intend to use a method within the next 12 months. The proportion of women who intend to use contraception any time in the future increases from 42 percent for women with no living children to 66 percent for women with two living children, and then steadily declines with increasing numbers of children to 43 percent for women with four or more living children. Fifty-five percent of women with four or more living children say they have no intention of using contraception at any time in the future.

The expressed timing of future use also varies by number of living children. The proportion of women who say that they intend to use contraception after 12 months falls steadily with the number of living children from 35 percent among women with no children to 7 percent among those with four or more children. The proportion expressing an intention to use contraception within the next 12 months increases from 6 percent among those with no children to 46 percent among those with three living children and then declines. The overall proportion of women who intend to use contraception at some time in the future is much higher in rural areas (60 percent) than in urban areas (41 percent). Among rural women, 43 percent who have no living children and 67 percent who have one living child intend to use contraception sometime in the future. Among urban women, 37 percent who have no living children and 50 percent who have one living child intend to use contraception sometime in the future. Among urban women with no living children, there are no women who intend to use contraception within the next 12 months. However, the intention to use contraception within the next 12 months rises to 37 percent for women with one living child, then declines for women with more than one living child. In rural areas, by contrast, the intention to use contraception in the next 12 months increases steadily with number of living children from 7 percent among women with no living children to 50 percent for women with three living children, then declines to 36 percent for women with four or more living children.

The survey asked currently married women who were not using any method of contraception and who said that they did not intend to use a method at any time in the future why they did not intend to use contraception. This type of information is crucial for understanding the obstacles to further increases in contraceptive use and for designing effective information programmes. Table 5.11 shows that 50 percent of women mention a fertility-related reason for not intending to use contraception in the future, 11 percent mention opposition to use, 17 percent

Table 5.10 Future use of contraception						
Percent distribution of currently married women who are not currently using any contraceptive method by intention to use in the future, according to number of living children and residence, West Bengal, 1998–99						
Intention to use in the future	Number of living children ¹					Total
	0	1	2	3	4+	
URBAN						
Intends to use in next 12 months	0.0	36.9	32.8	(21.0)	22.4	24.3
Intends to use later	35.1	8.8	7.0	(21.0)	5.4	14.9
Intends to use, unsure when	2.3	4.0	0.8	(0.0)	0.0	2.0
Unsure as to intention	12.3	5.7	3.0	(0.0)	0.7	5.3
Does not intend to use	50.3	44.3	55.0	(54.3)	71.6	52.7
Missing	0.0	0.3	1.4	(3.8)	0.0	0.7
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	59	83	63	22	35	261
RURAL						
Intends to use in next 12 months	7.4	38.6	45.7	49.9	35.8	36.0
Intends to use later	35.3	24.3	23.6	14.1	7.0	21.2
Intends to use, unsure when	0.7	3.9	3.4	2.5	2.6	2.8
Unsure as to intention	7.3	7.8	3.5	3.3	1.3	4.9
Does not intend to use	48.6	25.3	23.7	28.5	52.7	34.6
Missing	0.7	0.0	0.0	1.7	0.6	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	185	314	236	163	213	1,112
TOTAL						
Intends to use in next 12 months	5.6	38.3	43.0	46.4	33.9	33.8
Intends to use later	35.2	21.1	20.2	15.0	6.8	20.0
Intends to use, unsure when	1.1	3.9	2.9	2.2	2.2	2.7
Unsure as to intention	8.5	7.4	3.4	2.9	1.2	5.0
Does not intend to use	49.0	29.2	30.3	31.6	55.4	38.0
Missing	0.6	0.1	0.3	1.9	0.6	0.5
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	244	396	298	186	248	1,373
() Based on 25–49 unweighted cases ¹ Includes current pregnancy, if any						

mention a method-related reason, and 1 percent mention a reason related to lack of knowledge. The most frequently mentioned reason given for not intending to use contraception is that the woman is menopausal or she has undergone a hysterectomy (28 percent). Other important fertility-related reasons are the desire to have as many children as possible (13 percent) and that the woman is not having sex (6 percent). Eight percent of women do not intend to use contraception because of the husband's opposition to use, 3 percent do not intend to use because it is against their religion, and another 3 percent because they do not like the existing methods. Nine percent of women report that they do not intend to use contraception because of concerns about health.

Thirty percent of women below age 30 mention the desire to have as many children as possible as the main reason for not intending to use contraception, compared with only 6 percent

Table 5.11 Reasons for not intending to use contraception

Percent distribution of currently married women who are not using any contraceptive method and who do not intend to use any method in the future by main reason for not intending to use contraception, according to current age, West Bengal, 1998–99

Reason	Current age		Total
	15–29	30–49	
Fertility-related reasons	43.0	53.3	50.3
Not having sex	0.0	8.6	6.1
Infrequent sex	0.0	2.3	1.6
Menopausal/had hysterectomy	11.6	34.9	28.1
Subfecund/infecund	1.1	1.6	1.4
Wants as many children as possible	30.4	5.9	13.1
Opposition to use	20.0	7.8	11.4
Opposed to family planning	0.9	0.7	0.7
Husband opposed	14.1	4.8	7.5
Other people opposed	0.0	0.2	0.2
Against religion	5.0	2.1	3.0
Lack of knowledge			
Knows no method	1.4	0.7	0.9
Method-related reasons	16.6	17.2	17.1
Health concerns	6.4	9.8	8.8
Worry about side effects	0.9	2.9	2.3
Costs too much	4.5	1.4	2.3
Inconvenient	0.0	0.2	0.2
Afraid of sterilization	0.0	0.8	0.5
Doesn't like existing methods	4.8	2.2	3.0
Other	12.3	17.7	16.1
Don't know/missing	6.7	3.1	4.2
Total percent	100.0	100.0	100.0
Number of women	153	369	522

of women age 30–49. Younger women are also much more likely than older women to give reasons relating to opposition to use. For example, 14 percent of women age 15–29 say that they do not intend to use contraception because of their husband's opposition, compared with only 5 percent of women age 30–49. Thirty-seven percent of older women mention reasons related to menopause, hysterectomy, infecundity, or subfecundity, compared with only 13 percent of younger women.

Since women below age 30 account for 85 percent of total current fertility in West Bengal, the reasons they give for not intending to use contraception are extremely important from a policy perspective. Among younger women who give reasons not related to fertility, the reason given most often is that the husband is against using contraception. However, a substantial proportion of young women who do not intend to use contraception mention health concerns or concerns about side effects (7 percent), high cost (5 percent), religious opposition to contraceptive use (5 percent), and not liking the existing methods (5 percent). This suggests that involvement of men in family planning programmes and improved quality of services and information programmes could enhance the success of the family welfare programme in West Bengal. Moreover, stronger IEC (information, education, and communication) activities and proper counselling may also help reduce the opposition to use contraception. Nevertheless,

Table 5.12 Preferred method

Percent distribution of currently married women who are not currently using a contraceptive method but who intend to use a method in the future by preferred method, according to timing of intended use and residence, West Bengal, 1998–99

Preferred method	Timing of intended use			Total
	Next 12 months	Later	Unsure about timing	
URBAN				
Pill	25.4	26.5	*	24.8
IUD	1.7	0.6	*	1.2
Condom	13.0	1.9	*	8.6
Female sterilization	35.2	44.0	*	39.2
Male sterilization	0.0	0.0	*	0.0
Rhythm/safe period	4.5	0.0	*	3.1
Withdrawal	7.5	14.1	*	9.8
Other	0.4	0.0	*	0.2
Unsure	12.3	12.8	*	12.9
Total percent	100.0	100.0	100.0	100.0
Number	64	39	5	108
RURAL				
Pill	46.6	27.8	*	39.6
IUD	2.1	2.3	*	2.1
Condom	1.7	1.2	*	1.4
Female sterilization	30.2	49.1	*	37.3
Male sterilization	0.3	1.2	*	0.8
Rhythm/safe period	5.4	2.3	*	4.9
Withdrawal	2.7	1.7	*	2.3
Other	3.0	2.3	*	2.6
Unsure	7.8	12.1	*	9.0
Total percent	100.0	100.0	100.0	100.0
Number	401	236	31	668
TOTAL				
Pill	43.7	27.6	(34.1)	37.6
IUD	2.0	2.1	(0.0)	1.9
Condom	3.3	1.3	(0.7)	2.4
Female sterilization	30.9	48.4	(41.4)	37.6
Male sterilization	0.3	1.0	(3.7)	0.7
Rhythm/safe period	5.3	2.0	(6.3)	4.7
Withdrawal	3.4	3.5	(0.8)	3.3
Other	2.7	2.0	(0.0)	2.3
Unsure	8.4	12.2	(3.0)	9.5
Total percent	100.0	100.0	100.0	100.0
Number	464	274	37	775
() Based on 25–49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases				

among younger women who are not using contraception, the desire to have as many children as possible remains the major reason for not intending to use contraception in the future.

NFHS-2 asked currently married women who were not using contraception but intended to use a method in the future which method of family planning they would prefer to use. Table 5.12 shows the results according to the timing of intended use. Among women who intend to use contraception, 38 percent say they would prefer to use female sterilization, 38 percent say they would prefer to use the pill, and 10 percent are unsure about the method they would prefer to use. Only 2 percent say they would prefer to use condoms, another 2 percent the IUD, and less than 1 percent prefer that their husbands get sterilized. Eight percent would prefer to use a traditional method, mostly the rhythm method. There are important differences in the choice of preferred methods by timing of intended use. Women who intend to use contraception within the next 12 months show a greater preference for spacing methods, whereas women who plan to use contraception later are more likely to prefer female sterilization. Specifically, 49 percent of women who intend to use contraception within the next 12 months would prefer to use a modern spacing method, compared with 31 percent of women who intend to use later. By contrast, 48 percent of women who intend to use contraception after at least 12 months would prefer to use female sterilization, compared with 31 percent of women who want to use contraception within 12 months. Women intending to use contraception within 12 months also show a slightly greater preference for traditional methods (9 percent) than women who intend to use later (6 percent). Results are similar for urban and rural areas with a few exceptions. Among women who intend to use a method within the next 12 months, a substantially higher proportion of rural women (47 percent) than urban women (25 percent) prefer the pill, whereas a higher proportion of urban women (13 percent) than rural women (2 percent) prefer the condom.

Overall, the mix of contraceptive methods that intended future users say they would prefer to use is somewhat different from the methods currently being used. These results suggest a desire among intended users to shift away from female sterilization to the officially-sponsored spacing methods. While 49 percent of those who intend to use a method within 12 months and 42 percent of those who intend to use contraception any time in the future say that they would prefer to use a modern spacing method, only 20 percent of current users are actually using a modern spacing method (Table 5.3). However, for both current users of spacing methods, and those who intend to use contraception in the future, the pill is the most preferred modern spacing method. These results suggest that there is a significant short-term, as well as a longer term, potential demand for modern spacing methods, especially for the pill.

5.7 Exposure to Family Planning Messages

For many years, the family planning programme has been using electronic and other mass media to promote family planning. Studies have confirmed that even after controlling for the effect of residence and education, exposure to electronic mass media has a substantial effect on contraceptive use (Ramesh et al., 1996). Exposure to mass media has also been found to strengthen women's motivation to prevent unwanted fertility (Kulkarni and Choe; 1998). In order to explore the reach of family planning messages through various mass media, NFHS-2 asked women whether they had heard or seen any message about family planning in the past few months. Table 5.13 shows the proportions of currently married women who report having heard or seen a family planning message in the past few months, according to various background characteristics. Messages disseminated through the mass media over the past few months have reached more than half (57 percent) of ever-married women in West Bengal. The most common sources of recent exposure to family planning messages are the radio and the television. Thirty-nine percent of ever-married women report having heard a family planning message on

Table 5.13 Exposure to family planning messages

Percentage of ever-married women who have heard or seen any message about family planning in the past few months by specific media source and selected background characteristics, West Bengal, 1998-99

Background characteristic	Source of family planning message						Any source	Number of women
	Radio	Television	Cinema/ film show	News-paper/ magazine	Wall painting/ hoarding	Drama/ folk dance/ street play		
Age								
15-24	40.1	32.2	6.9	9.3	25.2	3.4	58.2	1,201
25-34	39.4	35.8	8.3	12.4	26.2	5.2	57.1	1,634
35-49	36.4	36.5	6.2	12.4	21.7	4.4	54.6	1,573
Residence								
Urban	41.4	71.8	15.5	30.0	38.4	6.8	77.6	1,049
Rural	37.6	23.6	4.6	5.8	19.9	3.7	49.9	3,359
Kolkata	47.4	75.5	14.1	32.6	45.3	3.9	80.6	242
Education								
Illiterate	30.2	17.5	3.4	0.2	9.7	1.7	39.9	2,202
Literate, < middle school complete	45.1	37.2	6.7	9.3	30.4	4.1	64.9	1,289
Middle school complete	48.2	65.8	11.7	25.6	42.0	10.4	79.7	443
High school complete and above	50.5	82.5	21.8	57.6	59.1	12.5	89.5	469
Religion								
Hindu	39.3	39.6	8.5	13.9	27.1	5.3	59.7	3,285
Muslim	35.3	21.8	3.1	4.2	15.4	1.7	46.1	1,007
Other	45.4	21.8	6.5	8.9	24.2	1.9	55.5	106
Caste/tribe								
Scheduled caste	35.7	28.7	5.5	3.6	17.3	4.3	50.3	1,038
Scheduled tribe	26.7	8.2	2.1	1.6	10.7	0.4	33.0	319
Other backward class	45.4	52.0	7.9	12.2	27.6	4.6	68.2	196
Other	40.5	39.4	8.4	15.5	28.1	4.9	60.7	2,834
Standard of living index								
Low	29.2	13.4	2.9	1.4	13.1	2.0	37.9	1,906
Medium	45.7	43.5	7.5	12.0	28.7	4.6	66.7	1,821
High	46.4	78.7	19.3	42.5	47.6	11.8	85.1	605
Use of contraception								
Ever used	41.2	39.5	7.9	13.2	27.3	5.0	61.4	3,388
Never used	29.5	20.4	4.6	6.0	14.5	2.5	40.0	1,020
Total	38.5	35.1	7.2	11.5	24.3	4.4	56.5	4,408

Note: Total includes 4, 9, 21, and 77 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

the radio and 35 percent have seen a message on the television. Other important sources of family planning messages are wall paintings or hoardings (24 percent), newspapers or magazines (12 percent), and cinema or film shows (7 percent). Only 4 percent have been recently exposed to a family planning message through a drama, folk dance, or street play.

There is not much difference in exposure to family planning messages by age, although ever-married women below age 35 report slightly greater exposure to family planning messages through radio, cinema or film shows, and wall paintings or hoardings. A larger proportion of older women than younger women report exposure to family planning messages through television and newspapers and magazines. Overall, exposure to mass media messages on family

planning is much higher in urban areas than in rural areas. Seventy-eight percent of urban ever-married women (81 percent in Kolkata) report seeing or hearing a family planning message from at least one media source, compared with only 50 percent of women in rural areas. Urban women are also much more likely than rural women to have been exposed to a message through each form of mass media. With the exception of exposure to cinema or film shows and dramas, folk dances, and street plays, women in Kolkata have even greater exposure than urban women as a whole.

Exposure to family planning messages varies substantially by education. Ninety percent of women who have completed at least high school have heard or seen a family planning message from at least one media source in the past few months, compared with only 40 percent of women who are illiterate. Exposure to family planning messages through most specific media sources is as closely linked to education as is exposure in general. For example, 83 percent of women who have completed at least high school have seen a family planning message on television, compared with only 18 percent of women who are illiterate.

Exposure to family planning messages also differs by religion, with Hindu women more likely to be exposed to family planning messages. Sixty percent of Hindu women say they have heard or seen a family planning message through the media, compared with 46 percent of Muslim women and 56 percent of women belonging to other religions. Hindu women are more likely than Muslim women to have had exposure from each of the media sources.

Sixty-eight percent of ever-married women belonging to other backward classes have seen or heard a family planning message, followed by 61 percent of women not belonging to scheduled castes, scheduled tribes, or other backward classes, 50 percent of women from scheduled castes, and 33 percent of women from scheduled tribes. Exposure to family planning messages rises dramatically with an increasing standard of living, both for media in general and for each specific media source. Finally, women who have ever used contraception are much more likely to report hearing or seeing a media message on family planning than are women who have never used contraception. All of these differentials are likely to reflect some combination of the greater access to broadcast signals in urban areas, the greater ownership of radios and televisions among higher-income households, and variations in attentiveness to media messages associated with differing levels of education, leisure, and interest.

5.8 Discussion of Family Planning

Irrespective of whether they had ever used contraception, all currently married women were asked whether they had discussed family planning with their husband, friends, neighbours, or other relatives in the past few months. Information on whether women talk about family planning at all, and with whom they discuss it, sheds light on their level of interest in family planning and their familial and other sources of family planning information. Table 5.14 shows that only 25 percent of currently married women in West Bengal discussed family planning with their husband, friends, neighbours, or other relatives in the past few months. Eighteen percent of women discussed family planning with their husbands and 12 percent discussed family planning with friends or neighbours. Discussions of family planning with relatives other than the husband are rare.

Women age 15–24 years are most likely to have discussed family planning with someone (32 percent), followed by women age 25–34 (28 percent) and women age 35–49 (16 percent).

Table 5.14 Discussion of family planning

Percentage of currently married women who discussed family planning with their husbands, friends, neighbours, or other relatives in the past few months by selected background characteristics, West Bengal, 1998-99

Background characteristic	Person with whom discussed family planning								Any of these persons	Number of women
	Husband	Mother	Sister	Daughter	Mother-in-law	Sister-in-law	Friend/ neighbour	Other relative		
Age										
15-24	23.7	1.7	1.1	0.1	1.9	2.8	13.4	0.8	32.4	1,166
25-34	20.2	1.0	1.1	0.0	0.7	3.0	12.8	0.5	27.9	1,555
35-49	10.0	0.3	1.0	0.4	0.2	2.3	9.5	0.4	16.1	1,395
Residence										
Urban	25.0	1.3	1.5	0.1	0.7	2.8	14.7	0.6	31.7	984
Rural	15.5	0.9	1.0	0.2	0.9	2.7	11.0	0.5	23.1	3,132
Kolkata	29.8	0.9	1.2	0.2	0.4	1.6	10.2	0.3	33.3	226
Education										
Illiterate	14.2	0.8	0.6	0.2	0.7	2.4	9.9	0.5	21.1	1,985
Literate, < middle school complete	18.2	0.8	1.5	0.2	1.7	3.0	12.3	0.7	26.6	1,243
Middle school complete	23.6	1.1	1.3	0.1	0.3	3.6	15.5	0.2	32.2	429
High school complete and above	26.3	2.0	1.9	0.2	0.2	2.8	15.5	0.7	32.3	454
Religion										
Hindu	17.0	1.1	1.1	0.2	0.8	2.7	12.1	0.5	24.7	3,077
Muslim	20.3	0.6	1.0	0.0	1.0	3.0	11.2	0.6	26.8	934
Other	18.3	0.0	1.4	0.0	1.4	2.9	6.6	1.4	24.0	96
Caste/tribe										
Scheduled caste	15.3	0.8	0.7	0.2	0.5	2.7	12.9	0.6	23.8	954
Scheduled tribe	13.5	0.0	0.5	0.0	0.6	1.4	10.7	1.4	22.3	284
Other backward class	19.0	0.4	0.5	0.0	1.8	4.2	9.6	0.7	25.1	189
Other	19.1	1.2	1.3	0.1	1.0	2.7	11.8	0.4	26.0	2,672
Standard of living index										
Low	14.1	0.9	0.6	0.1	0.8	2.5	11.8	0.6	21.9	1,744
Medium	19.9	0.8	1.4	0.3	1.3	2.8	10.7	0.5	26.5	1,721
High	21.6	1.1	1.6	0.0	0.0	3.1	14.8	0.4	29.6	581
Use of contraception										
Ever used	19.5	1.0	1.2	0.2	1.1	3.0	12.4	0.5	26.7	3,249
Never used	11.2	1.0	0.6	0.0	0.2	1.6	9.8	0.8	19.5	867
Husband's education										
Illiterate	13.4	0.9	0.5	0.1	0.5	2.3	10.6	0.5	20.8	1,255
Literate, < middle school complete	17.7	0.9	1.4	0.2	1.4	2.9	12.2	0.6	25.8	1,363
Middle school complete	17.5	0.2	1.2	0.0	1.1	3.1	10.9	0.8	24.6	602
High school complete and above	24.2	1.8	1.3	0.3	0.5	2.8	14.0	0.4	31.1	867
Total	17.8	1.0	1.1	0.2	0.9	2.7	11.8	0.5	25.2	4,116

Note: Total includes 4, 9, 18, 70, and 29 women with missing information on education, religion, caste/tribe, the standard of living index, and husband's education, respectively, who are not shown separately.

Urban women are more likely than rural women to have discussed family planning. A higher proportion of women in Kolkata have discussed family planning with their husbands than urban women as a whole (30 percent compared with 25 percent). The proportion of women reporting discussions on family planning generally rises with women's education, husband's education, and the standard of living index. The proportion of women who discussed family planning does

not vary much by religion or caste/tribe. Women who have ever used contraception are more likely to have discussed family planning (27 percent) than women who have never used contraception (20 percent).

5.9 Need for Family Planning

Currently married women who are not using any method of contraception but who do not want any more children or want to wait two or more years before having another child are defined as having an unmet need for family planning. Current contraceptive users are said to have a met need for family planning. The total demand for family planning is the sum of the met need and the unmet need. Table 5.15 shows the unmet need, met need, and total demand for family planning, according to whether the need is for spacing or limiting births. The footnotes in the table provide detailed definitions of these concepts.

According to these definitions, 12 percent of currently married women in West Bengal have an unmet need for family planning. The unmet need in West Bengal is equally divided between unmet need for spacing births and for limiting births. If all of the women who say they want to space or limit their births were to use family planning, the contraceptive prevalence rate would increase from 67 percent to 78 percent in the state. Current programmes are meeting the majority (85 percent) of the family planning need (as shown in the last column of Table 5.15). These results suggest that there has been some decline in unmet need during the period since NFHS-1 when unmet need in West Bengal was estimated to be 17 percent. The proportion of demand satisfied increased during this period from 77 percent in NFHS-1 to 85 percent in NFHS-2.

Unmet need decreases steadily from 29 percent among women age 15–19 to 6 percent among women age 40–49. For the youngest women (age 15–24) unmet need is largely for spacing rather than for limiting. Among women age 25–29, the need for spacing and the need for limiting are fairly equal. However, the met and unmet need for contraception among women age 30 years and above is almost exclusively for limiting. About half of the total demand for family planning is being met for married women age 15–19. This proportion rises steadily with the age of women to 93 percent for women age 40–44 then falls to 91 percent for women age 45–49.

Unmet need for family planning is higher in rural areas (13 percent) than in urban areas (9 percent) and the percentage of demand satisfied is higher in urban areas (89 percent) than in rural areas (84 percent). Unmet need is even lower in Kolkata (6 percent), where 92 percent of demand is being satisfied. Unmet need is somewhat lower for women who have completed at least middle school than for other women. Most unmet need among literate women who have not completed high school is for spacing, whereas most unmet need among highly educated or illiterate women is for limiting. The percentage of demand satisfied increases with education from 83 percent among illiterate women to 90 percent among women who have completed at least high school.

Muslim women have higher unmet need for family planning (18 percent) than either Hindu or other women (10 percent each). The percentage of total demand satisfied is much higher for Hindu women and women belonging to 'other' religions (87–88 percent) than for Muslim women (76 percent). Notably, unmet need among Hindu women is almost equally divided between the unmet need for spacing and for limiting, whereas the majority of the unmet need among Muslim women and women from other religions is for spacing. The percentage of

Table 5.15 Need for family planning services

Percentage of currently married women with unmet need, met need, and total demand for family planning (FP) services and percentage of total demand satisfied by selected background characteristics, West Bengal, 1998-99

Background characteristic	Unmet need for FP ¹			Met need (currently using) ²			Total demand for FP			Percentage of demand satisfied
	For spacing	For limiting	Total	For spacing	For limiting	Total	For spacing	For limiting	Total	
Age										
15-19	26.8	2.1	28.9	27.5	5.6	33.1	54.3	7.7	62.0	53.4
20-24	12.2	3.4	15.6	23.1	30.2	53.3	35.3	33.6	68.9	77.3
25-29	5.8	6.5	12.3	10.2	60.6	70.8	16.0	67.1	83.1	85.2
30-34	1.1	7.2	8.2	3.4	76.5	79.8	4.4	83.6	88.1	90.7
35-39	0.5	6.9	7.4	0.8	79.8	80.7	1.3	86.7	88.1	91.6
40-44	0.0	5.6	5.6	0.0	74.7	74.7	0.0	80.3	80.3	93.1
45-49	0.0	6.2	6.2	0.0	61.7	61.7	0.0	67.8	67.8	90.9
Residence										
Urban	3.4	5.3	8.7	11.0	62.4	73.4	14.4	67.7	82.1	89.4
Rural	7.1	5.6	12.8	9.4	55.1	64.5	16.5	60.8	77.3	83.5
Kolkata	3.0	3.3	6.3	11.5	63.5	75.0	14.5	66.8	81.3	92.3
Education										
Illiterate	5.8	6.7	12.6	5.6	56.6	62.2	11.5	63.3	74.8	83.2
Literate, < middle school complete	8.1	4.1	12.2	11.1	57.6	68.7	19.2	61.8	81.0	84.9
Middle school complete	6.3	3.6	9.9	20.7	54.4	75.1	27.0	58.0	85.0	88.3
High school complete and above	2.7	5.7	8.5	14.0	58.6	72.5	16.7	64.3	81.0	89.5
Religion										
Hindu	4.8	5.2	10.0	9.7	60.1	69.8	14.5	65.3	79.8	87.5
Muslim	11.0	7.1	18.0	10.3	46.0	56.3	21.2	53.1	74.3	75.7
Other	7.1	2.9	10.0	10.0	54.6	64.6	17.1	57.5	74.6	86.6
Caste/tribe										
Scheduled caste	4.8	5.1	9.8	8.4	59.8	68.2	13.1	64.9	78.0	87.4
Scheduled tribe	6.1	6.3	12.3	9.5	43.3	52.8	15.6	49.5	65.1	81.1
Other backward class	4.5	2.3	6.8	7.0	67.0	73.9	11.5	69.3	80.8	91.5
Other	6.9	5.9	12.8	10.6	56.3	66.9	17.5	62.2	79.7	83.9
Standard of living index										
Low	6.6	7.2	13.8	7.2	53.9	61.1	13.8	61.1	74.8	81.6
Medium	6.6	4.5	11.2	11.5	56.8	68.3	18.1	61.3	79.5	86.0
High	3.3	3.7	7.0	12.6	65.9	78.5	15.9	69.6	85.5	91.8
Number of living children										
0	15.0	0.4	15.3	21.0	0.8	21.8	36.0	1.1	37.2	58.7
1	11.8	3.4	15.1	27.2	31.8	58.9	38.9	35.2	74.1	79.6
2	3.8	6.0	9.8	5.3	71.8	77.1	9.1	77.8	86.9	88.8
3	3.7	6.9	10.5	1.7	76.3	78.0	5.4	83.1	88.5	88.1
4	1.4	6.4	7.8	0.5	80.5	81.0	2.0	86.9	88.8	91.2
5	1.9	7.1	9.0	0.6	77.6	78.2	2.6	84.7	87.3	89.6
6+	2.9	13.8	16.7	0.0	56.0	56.0	2.9	69.8	72.7	77.0
Total	6.3	5.5	11.8	9.8	56.9	66.6	16.0	62.4	78.4	85.0

Note: Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.

¹Unmet need for *spacing* includes pregnant women whose pregnancy was mistimed, amenorrhoeic women whose last birth was mistimed, and women who are neither pregnant nor amenorrhoeic who are not using any method of family planning and who say they want to wait two or more years for their next birth. Also included in unmet need for *spacing* are women who are unsure whether they want another child or who want another child but are unsure when to have the birth. Unmet need for *limiting* refers to pregnant women whose pregnancy was unwanted, amenorrhoeic women whose last child was unwanted, and women who are neither pregnant nor amenorrhoeic who are not using any method of family planning and who want no more children.

²Met need for *spacing* refers to women who are using some method of family planning and say they want to have another child or are undecided whether to have another. Met need for *limiting* refers to women who are using some method and who want no more children. Note that *spacing* and *limiting* refer to the reason for using contraception rather than to the particular method used.

demand satisfied is highest for women who belong to other backward classes (92 percent), followed by scheduled-caste women (87 percent), women who do not belong to a scheduled caste, a scheduled tribe, or an other backward class (84 percent), and scheduled-tribe women (81 percent). Unmet need declines with the standard of living index, whereas the percentage of demand satisfied increases with the index.

There is no clear pattern in unmet need according to the number of living children. Nevertheless, unmet need is highest for women with six or more living children. The percent of demand satisfied is lowest for women with no living children (59 percent), which is much less than the overall percentage demand satisfied (85 percent). Among women with no children, unmet need is almost exclusively for spacing; by contrast, unmet need for limiting is dominant for women with two or more children. For women with one child, 80 percent of demand is satisfied. For women with two or more living children, 77–91 percent of total demand is satisfied.

These results reveal some unmet need for family planning services among women in most subgroups and among women at all parities. A family planning programme with an emphasis on sterilization fails to meet the needs of young women who are still in the process of family formation. In West Bengal, many women have an unmet need for spacing, especially before their first birth and between their first and second births. However, unmet need for limiting among older women suggests that women who need permanent methods of contraception are not being served fully by current programmes. Thus, there is a need to strengthen sterilization services for couples who want to use sterilization. At the same time, the family planning programme in West Bengal needs to provide women who want to stop childbearing but who do not wish to adopt sterilization with methods and options that they find acceptable for long-term use.

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 that was 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 two years preceding the survey. 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 infections, fever, and diarrhoea among children and the treatment of these illnesses; and mothers' knowledge of oral rehydration therapy.

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, West Bengal							
Age	NFHS-1 (1991-92)	NFHS-2 (1997-98)		SRS (1997)			Total
	Total	Male	Female	Male	Female	Total	
< 5	18.7	11.3	9.1	10.3	17.5	16.1	16.8
5-14	1.9	0.2	1.6	0.9	1.0	1.0	1.0
15-49	3.0	2.6	1.9	2.2	3.0	2.8	2.9
50-59	18.0	14.1	12.6	13.4	17.6	12.3	15.1
60+	60.5	68.9	64.5	66.8	59.0	49.8	56.1
CDR	9.6	8.7	8.0	8.4	8.1	7.3	7.7

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

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 that period, 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 West Bengal 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 midpoint of the time period on the basis of the intercensal population growth rate in the state. The rural intercensal growth rate is applied to all rural age and sex groups and the urban intercensal growth rate is applied to all urban 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 a useful comparison (Office of the Registrar General, 1999a).

Table 6.1 shows an estimated average annual CDR for West Bengal of 8.4 deaths per 1,000 population based on NFHS-2 data (covering roughly 1997-98), compared with the 1997 SRS rate of 7.7. With the exception of age group 60 and above, the NFHS-2 age-specific death rates are lower than the corresponding rates in the SRS. This is particularly true for the youngest age group. There are only slight differences between the SRS and NFHS-2 death rates for the 5-14 and 15-49 age groups. For the age group 60 and above, the SRS death rate is lower than the

NFHS-2 rate. This higher death rate in the oldest age group accounts for the higher CDR estimated by NFHS-2 compared with the SRS.

The NFHS-2 CDR estimate of 8.4 is lower than the all-India NFHS-2 rate of 9.7 and the corresponding NFHS-1 estimate of 9.6 for West Bengal (covering roughly 1991–92). Between NFHS-1 and NFHS-2, death rates declined substantially in the youngest age group (less than five years old) and at age 50–59. Death rates declined only slightly for ages 5–49. For ages 60 and above, death rates increased between 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). In West Bengal, according to both NFHS-2 and the SRS, death rates are higher for males than for females at all ages except the 5–14 year age group.

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

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

¹A 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:

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

checks for nonsampling errors—in particular, underreporting of deaths in early childhood (which would result in an underestimate of mortality) and misreporting of 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 deaths. 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 too low and if underreporting is more severe for children born further in the past than 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 West Bengal NFHS-2, since the ratios of deaths under seven days to all neonatal deaths are consistently high (between 61 and 73 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 67 and 69 percent) for the different time periods preceding the survey.

Another problem inherent in most retrospective surveys is heaping of the age at death on certain digits, e.g., 6, 12, and 18 months. If the net result of age 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 year 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 West Bengal NFHS-2, there appears to be a preference for reporting age at death at 3, 7, 8, 13, 15, 21, and 25 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 substantial heaping of deaths at 6, 12, 15, and 18 months of age. The amount of heaping on 12 months is particularly pronounced, despite the strong emphasis on this problem during the training of interviewers for the NFHS-2 fieldwork.² Nevertheless, even if one-third of the deaths reported at age 12 months or one year actually occurred at less than 12 months of age, the infant mortality rate for the 15 years before the survey would be underestimated by only 2 percent, and the infant mortality rate for the 5 years before the survey would be virtually unaffected.

An examination of the distribution of births and deaths since 1988 (Table B.4 in Appendix B) suggests that there may be some underreporting of deaths in the most recent five-year period. The proportion of deaths to births decreases from 8 percent in 1991–94 to 5 percent in 1995–98. Some of this decrease undoubtedly reflects a real reduction in mortality during that

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

period and some reflects the fact that younger children have had less exposure to the risk of mortality. However, the sharp disjuncture in the proportion of deaths between 1994 and 1996 may be due partly to underreporting of deaths relative to births during the most recent period.

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 were 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 only 2 percent of the children born in the three years before the survey 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 West Bengal declined from 85 deaths per 1,000 live births during 1984–88 (10–14 years before the survey) to 49 deaths per 1,000 live births during 1994–98 (0–4 years before the survey), an average rate of decline of nearly 4 infant deaths per 1,000 live births per year. A comparison of the infant mortality rate for the period 0–4 years before NFHS-2 (49) with the infant mortality rate 0–4 years before NFHS-1 (75) suggests about the same rate of decline over the six and a half years between the two surveys.

All other measures of infant and child mortality presented in Table 6.2 have also declined during the past 15 years. All of the measures declined by 39–44 percent, except for the child mortality rate, which declined by 32 percent. Despite the overall decline in the infant and child mortality rates, however, 1 in every 21 children born during the five years before NFHS-2 died within the first year of life, and 1 in every 15 children died before reaching age five. However, according to the NFHS-2 estimates, the infant mortality rate in West Bengal (49) is much lower than the national IMR of 68.

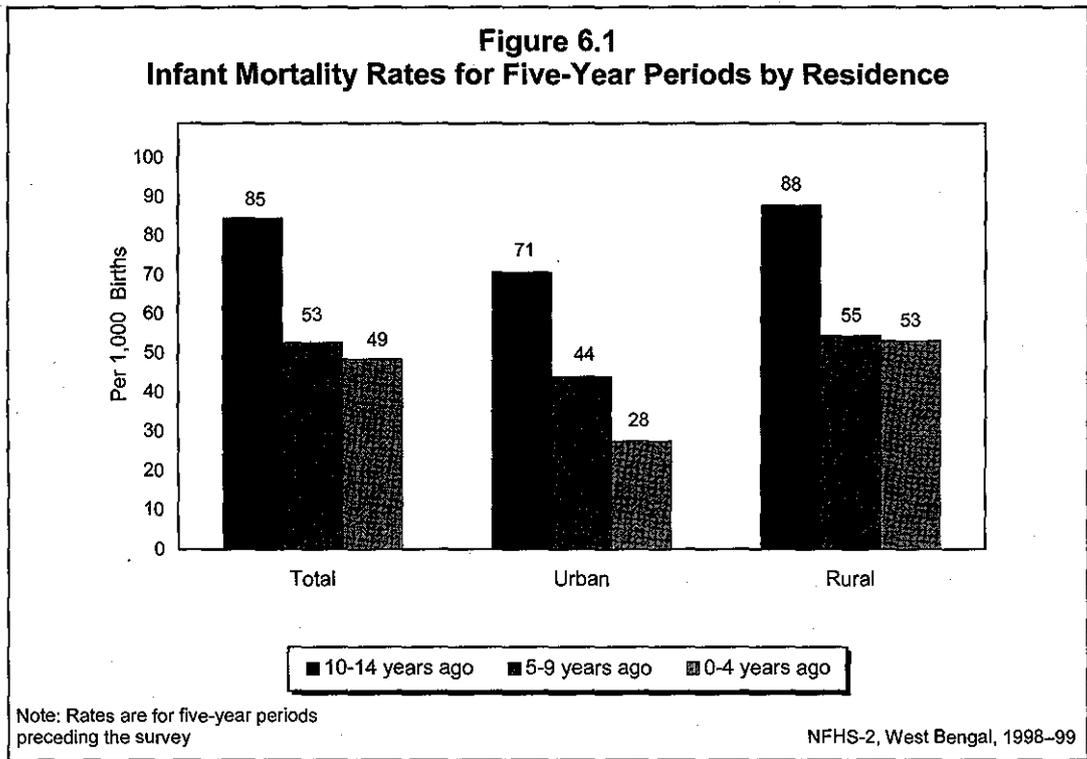
Rural mortality rates are considerably higher than urban mortality rates. For example, in the five years before the survey, the rural infant mortality rate is almost twice the urban infant mortality rate and the rural child mortality rate is over 50 percent higher than the urban child mortality rate. During the period covered in Table 6.2, almost all mortality rates declined steadily in rural West Bengal, although there has not been much change in the rates for the 0–4 years and

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, West Bengal, 1998–99

Years preceding the survey	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality (iq ₀)	Child mortality (4q ₁)	Under-five mortality (5q ₀)
URBAN					
0–4	9.9	17.7	27.6	13.5	40.8
5–9	29.4	14.7	44.1	8.2	51.9
10–14	47.2	23.4	70.7	23.5	92.5
RURAL					
0–4	36.7	16.6	53.3	21.2	73.4
5–9	36.6	18.0	54.6	25.3	78.5
10–14	58.8	29.2	88.1	30.9	116.2
TOTAL					
0–4	31.9	16.8	48.7	19.9	67.6
5–9	35.4	17.4	52.8	22.2	73.8
10–14	56.6	28.1	84.7	29.2	111.4

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.
¹Computed as the difference between the infant and neonatal mortality rates



5–9 years before the survey. In urban areas, all mortality rates except the postneonatal and child mortality rates declined steadily. The infant mortality rate declined much faster in urban areas (61 percent) than in rural areas (40 percent) between 1984–88 and 1994–98. It appears that the rate of decline in under-five mortality was also faster in urban areas than in rural areas. A

comparison with corresponding figures from NFHS-1 shows a decline in all rural estimates and most urban estimates of infant and child mortality rates.

The estimated NFHS-2 infant mortality rate of 49 deaths per 1,000 live births during 1994–98 is lower than the SRS value of 57 deaths per 1,000 live births averaged for the period 1994–98. The SRS and NFHS-2 also differ in terms of urban and rural infant mortality rates. However, given the variability associated with estimates from both data sources, differences between the NFHS-2 and SRS estimates may not be statistically significant.

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. For the 10-year period preceding the survey, children in rural areas of West Bengal experience a 64 percent higher probability of dying before their fifth birthday than urban children. When compared with children living in Kolkata, rural children are at an even greater disadvantage in terms of under-five mortality. Children in Kolkata have a substantially lower under-five mortality rate (37 deaths per 1,000 live births) than children in rural areas (76 deaths per 1,000 live births) and children in urban areas as a whole (47 deaths per 1,000 live births).

The overall infant mortality rate declines sharply with increasing education of mothers, from a high of 60 deaths per 1,000 live births for illiterate mothers to a low of 16 deaths per 1,000 live births for mothers who have at least completed high school. Other mortality indicators shown in the table vary similarly with the education of the mother.

With the exception of the child and under-five mortality rates, there is not much difference between Hindus and Muslims in terms of early mortality. The infant mortality rate is 4 percent higher but the child mortality rate is 36 percent higher for Muslim children than for Hindu children. These findings are consistent with those of NFHS-1, which also recorded higher rates of infant and child mortality for Muslims than Hindus in West Bengal. Mortality differentials by religion presumably reflect influences other than religion alone (for example, a larger proportion of Hindus than Muslims in West Bengal live in urban areas, where mortality rates are generally low). This is confirmed by a study based on NFHS-1 data, which found 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).

An analysis of the NFHS-2 mortality data for West Bengal by caste/tribe should be interpreted with caution due to the small number of cases classified as scheduled tribe. Nevertheless, the data suggest that children whose mothers belong to scheduled tribes have higher rates of infant mortality than children from other castes or tribes. All indicators of infant and child mortality decline substantially with increases in the household standard of living. For example, for children in households with a high standard of living, the under-five mortality rate is 30 deaths per 1,000 live births; the corresponding rate for children in households with a low standard of living (85) is almost three times higher. Similarly, the child mortality rate is more than three times higher in households with a low standard of living than in households with a high standard of living.

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, West Bengal, 1998–99

Background characteristic	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality (i _{q0})	Child mortality (4 _{q1})	Under-five mortality (5 _{q0})
Residence					
Urban	20.3	16.0	36.3	10.6	46.5
Rural	36.7	17.3	54.0	23.4	76.2
Kolkata	18.6	10.5	29.1	7.7	36.6
Mother's education					
Illiterate	38.4	21.2	59.6	27.2	85.3
Literate, < middle school complete	34.9	12.6	47.4	15.0	61.7
Middle school complete	(25.7)	(8.8)	(34.4)	(8.7)	(42.8)
High school complete and above	5.1	11.1	16.2	(0.0)	16.2
Religion					
Hindu	33.0	16.8	49.8	19.5	68.3
Muslim	35.5	16.4	51.9	26.5	77.0
Caste/tribe					
Scheduled caste	31.7	23.7	55.4	27.6	81.5
Scheduled tribe	(58.3)	(26.8)	(85.1)	(16.4)	(100.1)
Other ²	31.8	13.2	45.0	19.3	63.4
Standard of living index					
Low	36.7	20.9	57.6	28.8	84.7
Medium	33.0	15.2	48.2	14.1	61.6
High	19.7	1.8	21.5	8.2	29.5
Total	33.8	17.1	50.9	21.1	71.0

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. Total includes a small number of children belonging to other religions and other backward classes and children with missing information on mother's education, religion, caste/tribe, and the standard of living index, who are not shown separately.

() Based on 250–499 children surviving to the beginning of the age interval

¹Computed as the difference between the infant and neonatal mortality rates

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

Demographic Differentials in Infant and Child Mortality

This section examines differentials in early childhood mortality by demographic characteristics of 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.

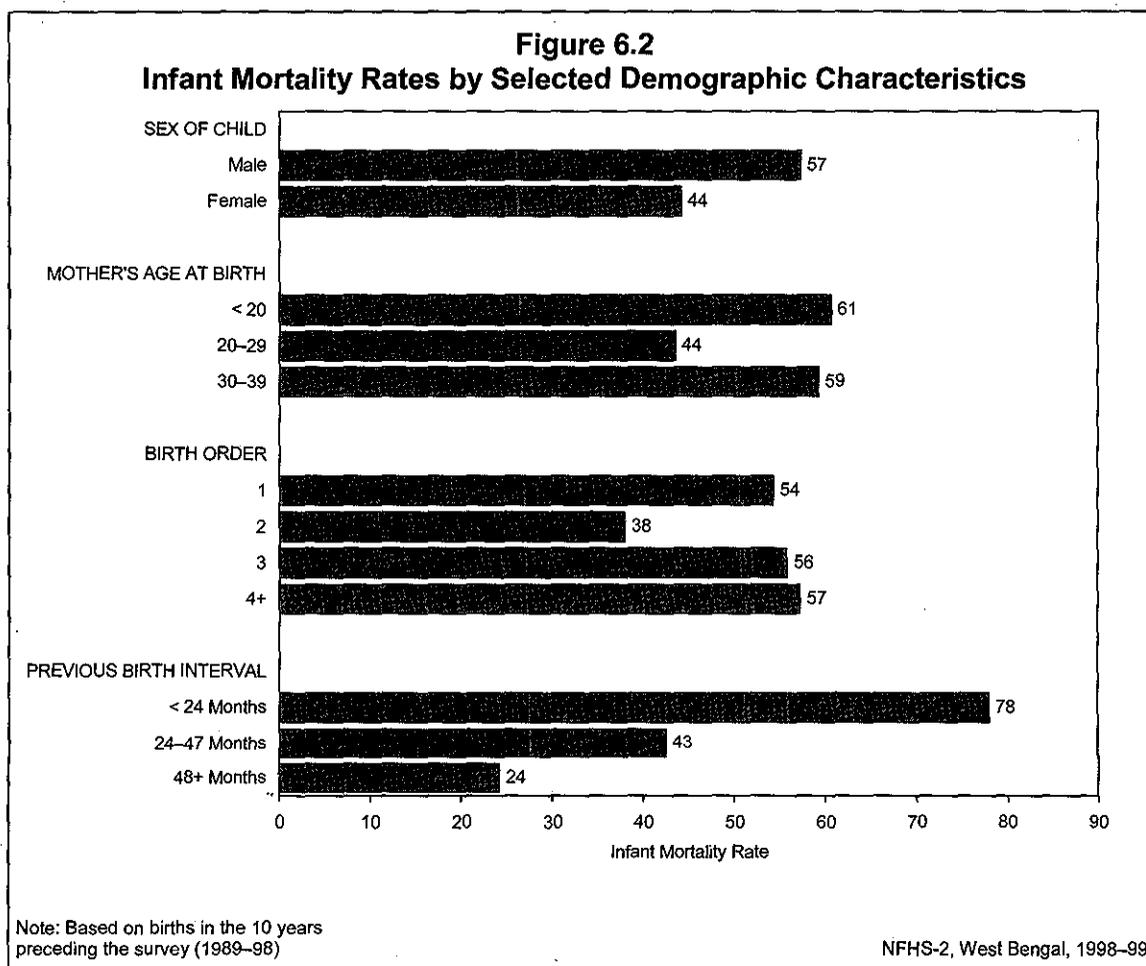
Table 6.4 shows that the neonatal mortality rate (which largely reflects mortality due to congenital conditions) is slightly higher for boys (37 deaths per 1,000 live births) than for girls (31 deaths per 1,000 live births). The postneonatal mortality rate is also higher for boys. However, the child mortality rate (4_{q1}) is 29 percent higher for girls (24 deaths per 1,000) than for boys (19 deaths per 1,000). 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).

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, West Bengal, 1998–99					
Demographic characteristic	Neonatal mortality (NN)	Postneonatal mortality ¹ (PNN)	Infant mortality (Iq ₀)	Child mortality (4q ₁)	Under-five mortality (5q ₀)
Sex of child					
Male	36.9	20.4	57.3	18.5	74.7
Female	30.6	13.6	44.2	23.9	67.1
Mother's age at birth					
< 20	42.8	17.9	60.7	22.4	81.7
20–29	26.4	17.1	43.6	17.3	60.2
30–39	46.3	13.0	59.3	32.2	89.6
Birth order					
1	35.6	18.6	54.3	13.2	66.8
2	24.5	13.5	38.0	15.4	52.9
3	32.7	23.2	55.8	19.4	74.2
4+	42.3	15.0	57.2	36.7	91.9
Previous birth interval					
< 24 months	52.9	25.1	78.1	39.8	114.8
24–47 months	27.8	14.8	42.5	18.9	60.6
48+ months	15.6	8.6	24.2	17.0	40.8
Medical care²					
One or two types of care	21.1	8.7	29.8	U	U
All three types of care	(13.6)	(9.3)	(22.9)	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. Total includes a small number of children to mothers age 40–49, who are not shown separately.
 U: Not available
 () Based on 250–499 children surviving to the beginning of the age interval
¹Computed as the difference between the infant and neonatal mortality rates
²Medical 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.

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 the youngest and oldest mothers experiencing higher mortality rates than children whose mothers are in their prime reproductive ages. Children born to young mothers are more likely to be of low birth weight, which is an important factor contributing to their higher neonatal mortality rate. Similarly, children born to mothers above age 30 are at a relatively high risk of experiencing congenital problems. Except for postneonatal mortality, West Bengal exhibits the expected U-shaped pattern of mortality by mother's age. For example, infant mortality is higher among children of mothers under age 20 (61 deaths per 1,000 live births) and age 30–39 (59 deaths per 1,000) than among children of mothers age 20–29 (44 deaths per 1,000). Postneonatal mortality rates decline with maternal age.

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, infant, and under-five mortality rates. 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. There is no clear pattern by birth order for postneonatal mortality rates. The child mortality rate (age 1–4 years) increases steadily with birth order, whereas it shows a U-shaped



relationship 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, in which mortality tends to be higher.

The timing of successive births has a powerful effect on the survival chances of children in West Bengal. All the mortality rates decrease sharply as the length of the previous birth interval increases, and all the measures are especially high for children born less than 24 months after a previous birth. The infant mortality rate is more than three times as high for children with a previous birth interval of less than 24 months as for children with a previous interval of 48 months or more (78 deaths compared with 24 deaths per 1,000 live births). The previous birth interval has a similar effect on all other indicators of infant and child mortality shown in Table 6.4. Although the length of the previous 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 and 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).

Due to the small number of cases, findings related to differences in mortality by antenatal, delivery, and postnatal care received by the mother should be interpreted with caution. Nevertheless, the data presented in Table 6.4 suggest that children whose mothers receive all three types of care have lower risks of neonatal and infant mortality than children whose mothers receive one or two types of care. Interestingly, there are only a few cases in which the mother did not receive medical care during the antenatal, delivery, and/or postnatal periods. As a result, it is not possible to make comparisons between the children of women who did not receive medical care and children of women who received some care.

6.3 Morbidity

There is only 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 sample 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 on 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. Respondents may underreport diseases carrying a stigma, such as tuberculosis due to intentional concealment. Underestimation may also occur because the household 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 asthma or 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 West Bengal, 3 percent of the population was reported to be suffering from asthma at the time of NFHS-2. The reported level of asthma (2,593 per 100,000 population) in West Bengal is not very different from the level reported for India as a whole (2,468 per 100,000 population). The prevalence of asthma in West Bengal is higher in rural areas (2,654 per 100,000 population) than in urban areas (2,410 per 100,000 population), and it is also

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, West Bengal, 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	2,034	292	77	2,952	956	1,471
15-59	1,702	381	177	1,685	971	3,829
60+	8,490	371	371	463	440	536
Sex						
Male	2,634	448	213	2,266	1,084	3,049
Female	2,164	257	122	1,483	737	2,787
Total	2,410	357	170	1,892	918	5,836
RURAL						
Age						
< 15	1,495	161	45	3,712	1,625	6,312
15-59	2,220	668	464	1,930	1,715	9,961
60+	12,049	1,406	702	1,522	1,525	1,238
Sex						
Male	2,875	581	403	3,151	1,856	8,967
Female	2,422	492	253	1,906	1,473	8,545
Total	2,654	537	330	2,544	1,669	17,512
TOTAL						
Age						
< 15	1,597	185	51	3,568	1,498	7,784
15-59	2,077	588	385	1,862	1,509	13,790
60+	10,974	1,093	602	1,202	1,197	1,775
Sex						
Male	2,814	547	355	2,927	1,660	12,016
Female	2,359	434	221	1,802	1,292	11,332
Total	2,593	492	290	2,381	1,482	23,349
¹ Includes medically treated tuberculosis						

higher among males (2,814 per 100,000) than among females (2,359 per 100,000). Age differences are marked, with the prevalence of asthma increasing from 1,597 per 100,000 at age 0-14 to 10,974 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. According to NFHS-2, the overall prevalence of tuberculosis in West Bengal is 492 per 100,000 population, which is lower than the national estimate of 544. The current prevalence of tuberculosis in West Bengal is somewhat higher than the level reported in NFHS-1 (360 per 100,000). The prevalence of tuberculosis is higher in rural areas (537 per 100,000) than in urban areas of West Bengal (357 per 100,000). The prevalence rate is higher for males (547 per 100,000) than for females (434

per 100,000). The sex differential in the prevalence of tuberculosis is much larger in urban areas than in rural areas. Probable reasons for the 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 West Bengal smoke more than women. The prevalence of tuberculosis increases rapidly with age. It is substantially higher among persons age 60 and above (1,093 per 100,000) than among those age 15–59 (588 per 100,000) or age 0–14 (185 per 100,000).

Medically treated tuberculosis is expected to give a more reliable measure of the prevalence of active tuberculosis than the measure based on all reported cases considered in the preceding paragraph. As expected, the prevalence of medically treated tuberculosis is considerably lower (290 per 100,000) than the prevalence based on all reported cases (492 per 100,000). Differentials in the prevalence of medically treated tuberculosis by residence, age, and sex are similar to differentials in the prevalence of all reported cases.

Jaundice

Jaundice is characterized by yellowish discoloration 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 West Bengal, 2,381 persons per 100,000 population were reported to have suffered from jaundice during the 12 months preceding the survey, much higher than the rate of 1,361 for India as a whole. People living in rural areas are much more likely to have suffered from jaundice (2,544 per 100,000) than those living in urban areas (1,892 per 100,000). Males are 62 percent more likely to have suffered from jaundice than females. In West Bengal, jaundice is the only condition measured that decreases over ages, irrespective of place of residence. The prevalence of jaundice is highest for the age group under 15 (3,568 per 100,000), followed by the age groups 15–59 years (1,862 per 100,000) and 60 years and above (1,202 per 100,000).

Malaria

Malaria is characterized by recurrent high fever with shivering. NFHS-2 asked household respondents whether any member of their household suffered from malaria any time during the three months preceding the survey. In West Bengal, 1,482 persons per 100,000 population were reported to have suffered from malaria during the three months preceding 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 not possible to compare this estimate with the NFHS-1 estimate because the months of the year comprising the reference period for the malaria estimates from the two surveys are not the same.

Rural residents are almost two times as likely to suffer from malaria (1,669 per 100,000) as are urban residents (918 per 100,000). The reported prevalence of malaria is higher for males than for females in both urban and rural areas. In addition, the prevalence of malaria shows an inverted U-shaped relationship with age in both urban and rural areas, with a higher malaria prevalence in the 15–59 age group than in the younger and older age groups.

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. In 1985–86, immunization against measles was added to the programme (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). Routine vaccinations received by infants and children are usually recorded on a vaccination card that is issued for the child.

NFHS-2 asked mothers in West Bengal 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

³Because 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 is assumed to really be Polio 1, Polio 1 is 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, West Bengal, 1998–99

Source of information	Percentage vaccinated											Number of children
	BCG	Polio 0	DPT			Polio			Measles	All ¹	None	
			1	2	3	1	2	3				
URBAN												
Vaccinated at any time before the interview												
Vaccination card	94.3	5.0	100.0	97.9	89.8	100.0	96.3	88.7	75.2	71.6	0.0	53
Mother's report	(77.7)	(9.0)	(70.4)	(66.5)	(60.4)	(83.0)	(73.6)	(58.1)	(52.2)	(30.5)	(16.2)	27
Either source	88.7	6.3	90.0	87.3	79.8	94.2	88.7	78.3	67.4	57.7	5.5	79
Vaccinated by 12 months of age²												
	86.7	6.3	84.9	80.3	76.5	88.9	80.1	73.7	56.6	49.6	9.3	79
RURAL												
Vaccinated at any time before the interview												
Vaccination card	94.6	0.7	96.0	84.1	76.0	96.0	84.7	76.7	69.3	63.9	0.0	204
Mother's report	47.1	1.7	48.8	43.6	24.8	63.2	59.8	34.3	23.1	11.2	35.0	159
Either source	73.8	1.1	75.3	66.3	53.6	81.7	73.8	58.1	49.1	40.8	15.4	364
Vaccinated by 12 months of age²												
	69.6	1.1	72.7	63.2	46.9	77.7	69.7	51.3	37.7	31.3	19.8	364
TOTAL												
Vaccinated at any time before the interview												
Vaccination card	94.6	1.5	96.8	86.9	78.8	96.8	87.1	79.1	70.5	65.5	0.0	257
Mother's report	51.5	2.8	51.9	46.9	30.0	66.1	61.8	37.7	27.3	14.0	32.3	186
Either source	76.5	2.1	77.9	70.1	58.3	83.9	76.5	61.7	52.4	43.8	13.6	443
Vaccinated by 12 months of age²												
	72.7	2.1	74.9	66.2	52.1	79.7	71.5	55.4	41.0	34.5	17.9	443

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.

() Based on 25–49 unweighted cases

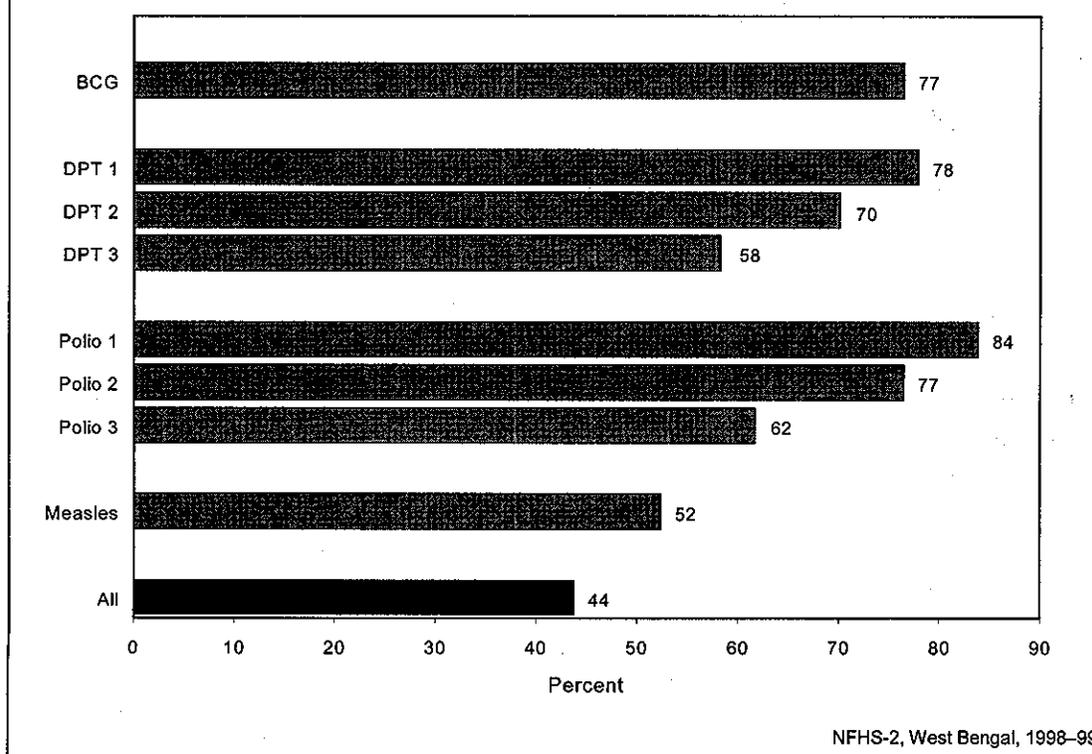
¹BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

²For 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.

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, the proportion of vaccinations given during the first year of life to children whose information is based on the mother's report is assumed to be the same as the proportion of vaccinations given during the first year of life to children with an exact date of vaccination on the card.

In NFHS-2, children who have 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'), only 44 percent of children age 12–23 months are fully vaccinated, and 14 percent have not received any vaccinations at all. Coverage for each vaccination except Polio 0 is much higher than the percentage fully vaccinated. BCG, the first dose of DPT, and the first and second doses of polio vaccine have each been received by more than three-fourths of children (see Figure 6.3). Only 58 percent of the children aged 12–23 months have received three doses of DPT and 62 percent have received three doses of polio

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



vaccine. Although DPT and polio vaccinations are given at the same time as part of the routine immunization programme, the coverage rates are higher for polio than for DPT, undoubtedly because of the Pulse Polio campaigns.

Not all children who begin 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 20 percentage points for DPT and 22 percentage points for polio. Moreover, only 52 percent of children age 12–23 months have been vaccinated against measles. The low percentage vaccinated against measles and the sizable proportion of children who do not receive the complete series of DPT and polio vaccines are responsible for the fact that the percentage fully vaccinated is quite low.

There has been some improvement in full vaccination coverage in West Bengal since the time of NFHS-1 when the proportion of children fully vaccinated was 34 percent. The proportion of children who did not receive any vaccinations declined substantially, from 22 percent in NFHS-1 to 14 percent in NFHS-2. The coverage of all vaccinations has also improved considerably since NFHS-1. These data indicate that despite the progress that has been made in immunization coverage for children in West Bengal, coverage levels are still low and a large proportion of children who receive some early vaccinations drop out of the programme before receiving all of the recommended vaccinations.

Government statistics suggest a higher level of vaccination coverage than NFHS-2 estimates for most vaccinations, although the two sets of estimates are fairly close in the case of

polio and measles vaccinations. According to government statistics for West Bengal for 1997–98, 55 percent of children age 12–23 months are fully vaccinated (compared with 44 percent in NFHS-2) and coverage is 79 percent for BCG, 67 percent for the third dose of DPT vaccine, 67 percent for the third dose of polio vaccine, and 55 percent for measles vaccine (Ministry of Health and Family Welfare, 1999).

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 35 percent of all children (or 79 percent of fully vaccinated children) were fully vaccinated by age 12 months. The percentages of children who received BCG, the third dose of DPT, and the third dose of polio by age 12 months are not much lower than the percentages who received these vaccines at any time before the survey. For measles vaccination, however, which is supposed to be given when the child is nine months old, the gap is wider (52 percent at any time before the survey, compared with 41 percent by age 12 months). Twenty-two percent of children who were vaccinated against measles received the vaccination 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. Fifty-eight percent of children age 12–23 months in urban areas had received all the recommended vaccinations by the time of the survey, compared with 41 percent in rural areas. The proportion fully vaccinated during the first year of life is also much higher in urban areas (50 percent) than in rural areas (31 percent). Dropout rates for DPT and polio (the proportion of children receiving the first dose but not the third dose) are lower in urban areas than in rural areas.

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 interviewer. Mothers showed vaccination cards for only 58 percent of children age 12–23 months. Vaccination cards were shown for 66 percent of children in urban areas and 56 percent in rural areas. As expected, vaccination coverage is much higher for children for whom a vaccination card was shown than for other children (see Table 6.6).

There is no difference between boys and girls in terms of the percentage fully vaccinated. However, boys are slightly more likely than girls to have received three doses of DPT vaccine and measles vaccine, whereas girls are slightly more likely to have received BCG and three doses of polio vaccine. Mothers showed vaccination cards for 56 percent of boys and 60 percent of girls. In NFHS-1, vaccination coverage was higher for girls than for boys. The percentage fully vaccinated decreases substantially as birth order increases. In general, a similar pattern is observed between birth order and the vaccine-specific rates. Full vaccination coverage is much higher in Kolkata (71 percent) than in urban areas as a whole.

Only 35 percent of the children whose mothers are illiterate are fully vaccinated, compared with 74 percent of children whose mothers have at least completed middle school. Hindu children are much more likely than Muslim children to have received each of the recommended vaccinations, a pattern that is also evident at the national level. Children from scheduled castes are more likely to have received each vaccination than children who are not from scheduled castes, scheduled tribes, or other backward classes. The standard of living of the household has a strong positive relationship with vaccination coverage.

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, West Bengal, 1998–99

Background characteristic	Percentage vaccinated											Percentage showing vaccination card	Number of children
	BCG	Polio 0	DPT			Polio			Measles	All ¹	None		
			1	2	3	1	2	3					
Sex of child													
Male	74.8	2.9	78.1	69.5	60.5	84.6	76.4	60.8	53.0	44.2	12.9	56.4	223
Female	78.2	1.2	77.8	70.6	56.0	83.2	76.6	62.6	51.7	43.5	14.3	59.6	220
Birth order													
1	84.4	3.2	86.3	80.7	71.3	88.7	84.5	71.5	63.0	55.4	9.3	68.7	150
2	86.5	3.1	89.5	81.1	67.9	93.0	87.9	74.1	59.7	52.7	6.0	63.4	137
3	66.6	0.0	62.5	57.3	41.0	74.0	65.1	45.4	39.0	30.5	18.5	42.4	74
4+	54.0	0.0	57.3	44.1	34.1	68.8	52.9	37.8	32.9	19.9	29.5	43.5	83
Residence													
Urban	88.7	6.3	90.0	87.3	79.8	94.2	88.7	78.3	67.4	57.7	5.5	66.2	79
Rural	73.8	1.1	75.3	66.3	53.6	81.7	73.8	58.1	49.1	40.8	15.4	56.2	364
Kolkata	90.4	11.4	92.1	88.7	82.3	92.2	90.3	80.1	77.5	70.5	6.3	61.0	15
Mother's education													
Illiterate	70.7	1.3	72.8	64.2	48.1	78.2	69.3	53.3	43.1	34.9	18.8	51.7	233
Literate, < middle school complete	72.9	1.8	74.5	64.6	54.9	84.8	76.4	60.1	48.5	40.5	13.1	56.7	127
Middle school complete	(99.4)	(3.6)	(94.9)	(94.9)	(91.7)	(96.8)	(96.8)	(85.3)	(79.5)	(73.8)	(0.0)	(79.5)	43
High school complete and above	96.0	5.8	100.0	94.7	91.4	100.0	96.0	89.4	88.1	73.5	0.0	75.0	41
Religion													
Hindu	81.5	2.9	84.1	77.2	66.0	89.9	83.0	69.3	58.5	51.9	8.7	64.3	298
Muslim	63.3	0.2	62.3	52.9	38.6	69.2	61.1	43.8	37.8	24.4	25.5	43.6	134
Caste/tribe													
Scheduled caste	81.6	3.3	83.2	76.2	63.7	88.0	82.6	66.1	58.5	50.9	9.7	71.0	116
Other ²	72.8	1.9	74.5	65.9	55.6	81.3	73.1	59.5	49.5	40.4	15.7	52.2	277
Standard of living index													
Low	74.4	1.4	75.7	67.1	53.4	80.7	70.8	56.0	44.6	37.8	14.4	60.0	223
Medium	76.4	2.1	77.2	68.9	60.6	84.2	78.6	64.2	58.4	48.2	15.7	54.5	179
High	(89.9)	(6.7)	(92.3)	(90.0)	(82.4)	(100.0)	(97.7)	(86.3)	(70.6)	(62.2)	(0.0)	(60.7)	35
Total	76.5	2.1	77.9	70.1	58.3	83.9	76.5	61.7	52.4	43.8	13.6	58.0	443

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 8, 33, and 16 children from other religions, scheduled tribes, and other backward classes, respectively, and 3, 1, and 6 children with missing information on religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

() Based on 25–49 unweighted cases

¹BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

²Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

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

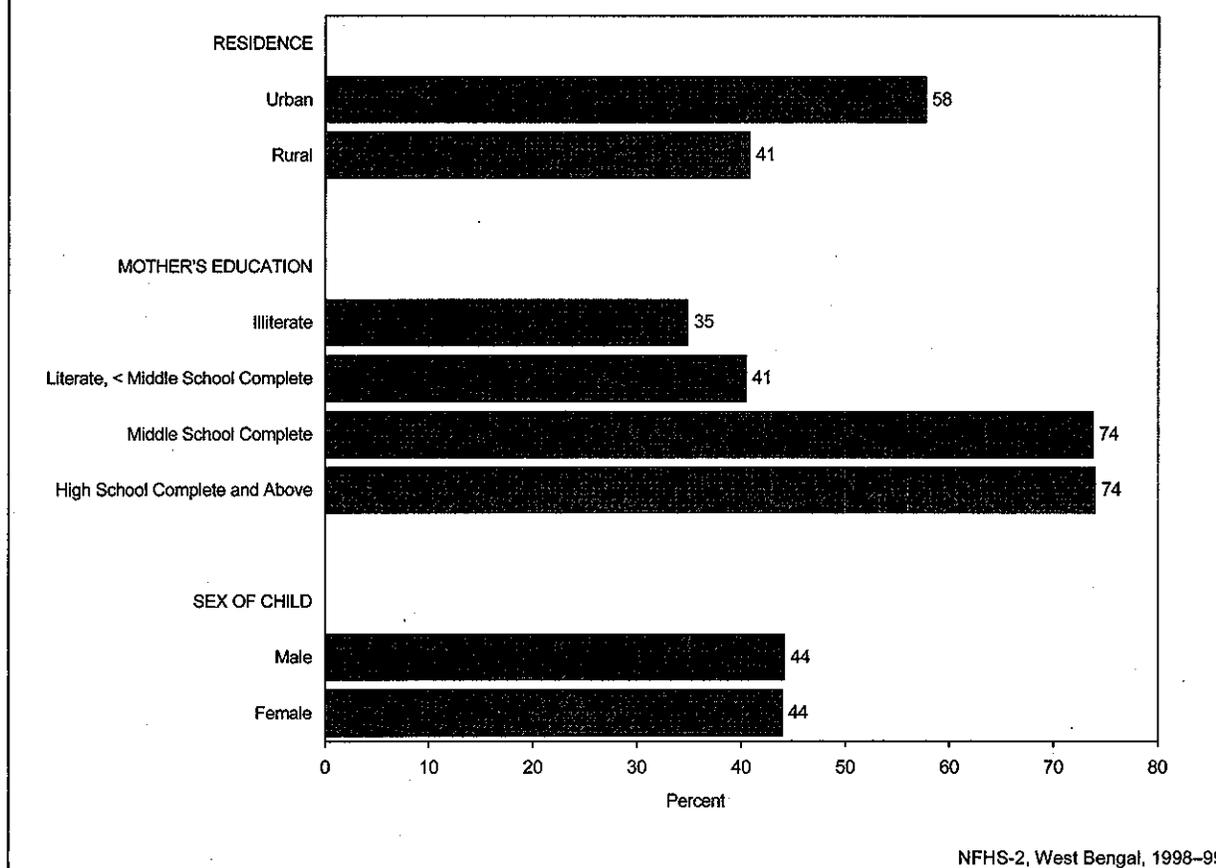


Table 6.8 shows the percentage of children age 12–35 months with a vaccination card that was shown to the interviewer and the percentage who received various vaccinations during the first year of life by current age of the child and place of residence. The table shows that there has been some improvement in vaccination coverage over a short period of time. 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 that have not received any vaccination by 12 months of age.

The proportion of children whose vaccination status was determined from a vaccination card declines with the age of children, particularly in rural areas. This may reflect an upward trend in the use of vaccination cards as well as an upward trend in overall vaccination coverage. On the other hand, 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 increases from 27 percent for children age 24–35 months to 35 percent for children age 12–23 months. In rural areas, this age pattern is observed for all vaccines except Polio 0. In urban areas, the inverse relationship between vaccination coverage and child’s age is observed only for measles vaccine coverage and full vaccination.

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

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, West Bengal, 1998–99

Vaccination status	Urban		Rural		Total	
	12–23 months	24–35 months	12–23 months	24–35 months	12–23 months	24–35 months
Vaccination card shown to interviewer	66.2	64.2	56.2	45.8	58.0	49.6
Percentage vaccinated by 12 months of age¹						
BCG	86.7	89.6	69.6	61.1	72.7	67.0
Polio 0	6.3	6.6	1.1	1.6	2.1	2.4
DPT						
1	84.9	87.5	72.7	61.1	74.9	66.5
2	80.3	86.0	63.2	52.3	66.2	59.2
3	76.5	78.3	46.9	41.4	52.1	48.9
Polio						
1	88.9	89.4	77.7	67.1	79.7	71.8
2	80.1	89.4	69.7	60.2	71.5	66.3
3	73.7	81.8	51.3	44.2	55.4	52.2
Measles	56.6	50.6	37.7	26.3	41.0	31.3
All vaccinations ²	49.6	46.2	31.3	22.3	34.5	27.2
No vaccinations	9.3	8.2	19.8	29.6	17.9	25.1
Number of children	79	82	364	323	443	405

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.

¹Information 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.

²BCG, measles, and three doses each of DPT and polio vaccines (excluding Polio 0)

selected background characteristics. The public sector is the primary provider of childhood vaccinations in West Bengal. Eighty-eight percent of all children who have received vaccinations received most of them from a public-sector source and only 7 percent received them from a private-sector source. The corresponding percentages for India as a whole are 82 and 13 percent, respectively. The percentage of vaccinated children receiving vaccinations from the private medical sector is almost five times higher in urban areas (19 percent), where private-sector services tend to be concentrated, than in rural areas (4 percent). The percentage is even higher in Kolkata, where 36 percent of children received their vaccinations from the private medical sector. Notably, even in urban areas, 73 percent of children received their vaccinations from the public sector (57 percent of children in Kolkata). More than 9 out of every 10 children in rural areas received their vaccinations from the public sector.

Children of highly educated mothers and children from households with a high standard of living are more likely than other children to receive vaccinations from the private medical sector. Hindu children are more likely to receive vaccinations from the private medical sector

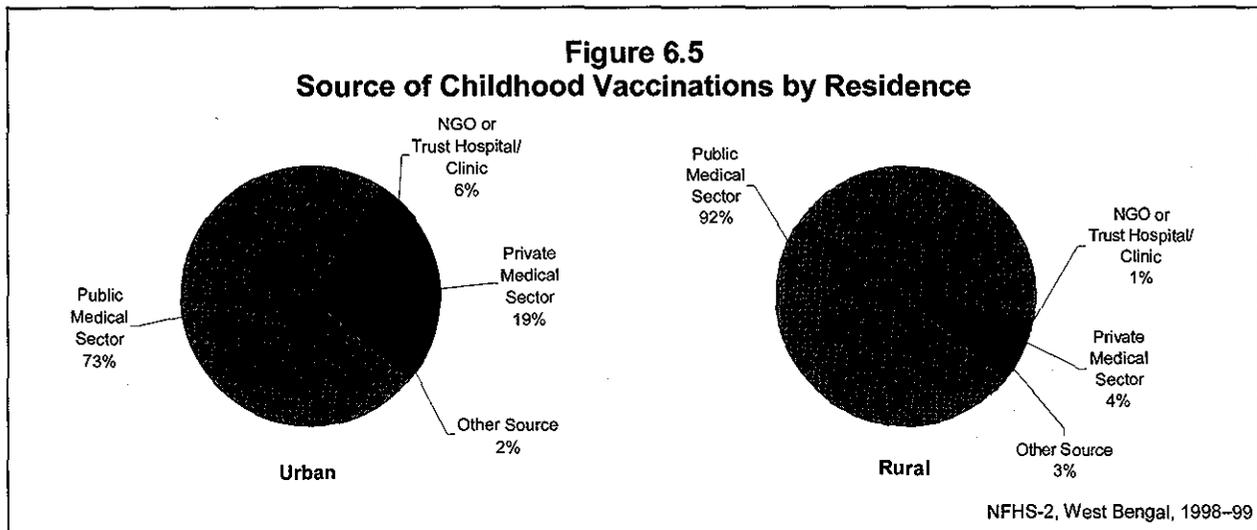
Table 6.9 Source of childhood vaccinations

Percent distribution of children under age 3 who have received any vaccinations by source of most of the vaccinations, according to selected background characteristics, West Bengal, 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	84.7	3.5	7.6	4.2	100.0	304
12–23 months	88.7	1.5	7.7	2.1	100.0	384
24–35 months	89.8	1.5	5.7	3.0	100.0	335
Sex of child						
Male	86.9	2.7	7.9	2.6	100.0	542
Female	89.0	1.5	6.0	3.5	100.0	481
Birth order						
1	83.9	2.6	10.4	3.1	100.0	380
2	90.4	2.4	5.5	1.8	100.0	308
3	87.4	1.0	7.3	4.3	100.0	158
4+	92.5	1.5	2.0	3.9	100.0	176
Residence						
Urban	73.1	5.5	19.1	2.3	100.0	218
Rural	91.9	1.2	3.7	3.2	100.0	805
Kolkata	56.5	4.1	35.9	3.5	100.0	49
Mother's education						
Illiterate	91.6	1.5	3.0	4.0	100.0	463
Literate, < middle school complete	89.9	2.2	6.0	1.9	100.0	330
Middle school complete	90.8	2.0	4.1	3.1	100.0	123
High school complete and above	62.1	4.8	30.8	2.3	100.0	107
Religion						
Hindu	86.1	2.5	7.9	3.6	100.0	736
Muslim	93.4	1.3	4.2	1.2	100.0	262
Caste/tribe						
Scheduled caste	90.7	2.3	3.9	3.1	100.0	266
Scheduled tribe	89.7	0.0	8.5	1.8	100.0	74
Other backward class	(75.1)	(5.7)	(8.1)	(11.1)	100.0	44
Other	87.2	2.0	8.1	2.6	100.0	633
Standard of living index						
Low	94.0	2.0	1.2	2.8	100.0	486
Medium	86.1	1.5	9.1	3.3	100.0	407
High	67.3	5.6	25.2	1.9	100.0	108
Total	87.9	2.1	7.0	3.0	100.0	1,023

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 22 children belonging to other religions and 3, 6, and 22 children with missing information on religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.
 NGO: Nongovernmental organization
 () Based on 25–49 unweighted cases

than Muslim children. Children from scheduled castes are less likely than other children to receive vaccinations from the private medical 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 whole, 43 percent of children age 12-35 months received at least one dose of vitamin A, and only 24 percent received a dose within the past six months. This indicates that the majority of children in West Bengal have not received vitamin A supplementation at all and even fewer children receive vitamin A supplementation regularly.

Children living in urban areas, children whose mothers completed at least middle school, and children living in households with a medium or high standard of living are more likely than other children to receive vitamin A supplementation. Boys are more likely than girls to receive vitamin A supplementation, providing some evidence of son preference in West Bengal. 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, except that children age 24-35 months are more likely than children age 12-23 months to have ever received vitamin A supplementation but are less likely to have received supplementation 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 less than three years old were asked if their children suffered from cough, fever, or diarrhoea during the two weeks preceding the survey, 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

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, West Bengal, 1998–99

Background characteristic	Percentage who received vitamin A		Number of children
	At least one dose	At least one dose within past six months	
Age of child			
12–23 months	39.4	26.9	443
24–35 months	47.8	19.7	405
Sex of child			
Male	45.6	27.0	429
Female	41.1	19.9	418
Birth order			
1	57.5	28.8	268
2	44.4	27.0	263
3	35.6	23.5	135
4+	26.8	10.5	182
Residence			
Urban	56.8	27.7	161
Rural	40.2	22.5	686
Kolkata	52.7	23.4	33
Mother's education			
Illiterate	34.0	20.2	431
Literate, < middle school complete	47.3	22.7	252
Middle school complete	62.8	33.6	88
High school complete and above	60.9	32.9	77
Religion			
Hindu	50.4	27.8	565
Muslim	27.4	13.7	266
Caste/tribe			
Scheduled caste	53.0	32.7	216
Scheduled tribe	(55.5)	(25.2)	58
Other backward class	(39.6)	(14.7)	33
Other	38.6	20.1	537
Standard of living index			
Low	35.8	18.9	438
Medium	50.7	29.4	324
High	56.4	22.9	72
Total	43.4	23.5	848

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey. Total includes 13 children belonging to other religions and 3, 4, and 14 children with missing information on religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.
() Based on 25–49 unweighted cases

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 were taken to 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 25 percent of children under age three in West Bengal suffered from acute respiratory infection (cough accompanied by short, rapid breathing) at some time during the two-week period before the survey. Table 6.11 shows that ARI was more common among boys than girls and among children living in rural areas than in urban areas. Children in Kolkata were less than half as likely as children elsewhere in the state to have symptoms of ARI. Children age 6–11 months were more likely to have suffered from ARI than any other group presented in the table. ARI was also more common among children whose mothers did not complete high school.

Table 6.11 also shows the percentage of children suffering from ARI symptoms in the two weeks before the survey who were taken to a health facility or provider. Fifty-two percent of children received advice or treatment from a health facility or health provider when ill with ARI. As expected, this percentage is relatively low for children whose mothers are illiterate and/or have a low standard of living. There is also a greater tendency for boys to be taken to a health facility or provider than girls (56 compared with 48 percent).

Fever

Fever is the most common of the three conditions examined in Table 6.11, with 30 percent of children suffering from fever during the two weeks preceding the survey. The prevalence of fever is higher among children age 6–23 months (34–35 percent) than among other children (25–26 percent). Fever is much less common for Hindu children, children living in Kolkata, children from households with a high standard of living, and children whose households use water filters to purify water. Interestingly, children living in households that purify water through boiling have a higher prevalence of fever than children in any other category in the table.

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 less than three years old a series of questions about episodes of diarrhoea suffered by their children in the two weeks

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, West Bengal, 1998–99

Background characteristic	Percentage of children suffering in past two weeks from:					Percentage with ARI taken to a health facility or provider	Number of children with ARI
	Cough accompanied by fast breathing (ARI)	Fever	Diarrhoea		Number of children		
			Any diarrhoea ¹	Diarrhoea with blood			
Age of child							
1–5 months	27.3	25.0	5.7	0.0	211	(42.9)	58
6–11 months	35.6	33.5	9.9	1.2	192	59.6	68
12–23 months	22.3	34.7	9.3	0.9	443	55.6	99
24–35 months	21.2	25.6	7.6	1.7	405	49.2	86
Sex of child							
Male	27.7	30.2	8.8	1.1	659	55.7	182
Female	21.6	29.7	7.6	0.9	592	47.5	128
Birth order							
1	26.6	33.6	7.5	1.5	431	58.1	115
2	21.1	25.7	10.8	0.4	369	53.4	78
3	28.0	28.5	7.8	1.3	203	(61.1)	57
4+	24.5	31.2	6.2	1.1	248	32.1	61
Residence							
Urban	21.2	31.4	6.9	0.4	231	51.7	49
Rural	25.6	29.6	8.6	1.2	1,019	52.5	261
Kolkata	11.3	19.6	3.5	0.0	51	*	6
Mother's education							
Illiterate	25.4	31.1	7.9	0.9	613	42.5	156
Literate, < middle school complete	25.3	31.5	10.4	1.6	388	61.4	98
Middle school complete	25.6	21.9	7.9	1.0	134	(62.9)	34
High school complete and above	17.9	27.1	3.3	0.0	114	*	20
Religion							
Hindu	24.0	25.4	7.5	1.1	836	51.6	201
Muslim	26.3	39.0	8.9	1.0	389	52.0	102
Caste/tribe							
Scheduled caste	25.2	25.0	8.0	0.5	301	44.3	76
Scheduled tribe	23.3	30.6	9.3	1.5	88	*	20
Other backward class	(29.3)	(31.8)	(6.4)	(0.0)	46	*	14
Other	24.6	31.7	8.2	1.1	809	54.6	199
Standard of living index							
Low	25.0	28.0	10.1	1.1	632	38.0	158
Medium	26.1	33.4	6.6	1.3	483	65.0	126
High	17.2	20.2	4.1	0.0	112	*	19
Source of drinking water							
Piped water	19.9	32.2	5.7	0.4	204	61.7	41
Hand pump	25.5	29.2	9.0	1.4	895	50.5	229
Well water	27.9	29.6	7.2	0.0	136	(57.5)	38
Purification of water							
Water filter	3.9	13.6	2.0	0.0	42	*	2
Boiling	26.2	43.1	3.9	0.0	56	*	15
Nothing	25.3	29.6	8.5	1.2	1,125	50.1	285
Total	24.8	29.9	8.3	1.0	1,251	52.4	310

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 belonging to other religions, children from households having surface water or 'other' sources of drinking water, households using cloth, alum, electronic water purifiers, or other methods to purify water, and children with missing information on mother's education, religion, caste/tribe, and the standard of living index, who are not shown separately.

() Based on 25–49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

¹Includes diarrhoea with blood

before the survey, including questions on feeding practices during diarrhoea, the treatment of diarrhoea, and their knowledge and use of ORS.

Table 6.11 shows that 8 percent of children under age three suffered from diarrhoea in the two-week period before the survey. 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 age 1–5 months are least susceptible to diarrhoea, although the variation in diarrhoea prevalence by age is very small. The prevalence of diarrhoea is also relatively low among children in Kolkata, children whose mothers completed at least high school, and children living in households with a high standard of living. Contrary to expectations, the prevalence of diarrhoea does not vary much by source of drinking water (6–9 percent). However, children living in households that purify drinking water have a lower prevalence of diarrhoea than children whose households do not purify water.

Only 1 percent of all children age 1–35 months (12 percent of children who suffered from diarrhoea in the two weeks preceding the survey) had diarrhoea with blood, a symptom of dysentery. There is not much variation in the prevalence of diarrhoea with blood by background characteristics.

Table 6.12 shows that 76 percent of mothers with births during the three years preceding the survey know about ORS packets, up sharply from 65 percent among women who gave birth during the three years before NFHS-1. The current level of knowledge in West Bengal is much higher than the national average (62 percent). Knowledge of ORS packets is lower among mothers age 15–19 than among other mothers. As expected, knowledge is considerably higher among urban mothers than rural mothers and among more educated mothers than less educated mothers. Knowledge of ORS packets is much lower among mothers who are not regularly exposed to any mass media than among mothers who are exposed to some media. Mothers belonging to scheduled tribes are less likely to know about ORS than other mothers.

In order to assess mothers' knowledge of children's need for extra fluids during episodes of diarrhoea, all mothers of children born in the three years preceding the survey were asked: 'When a child has diarrhoea, should he/she be given less to drink than usual, about the same amount, or more than usual?' Table 6.12 shows the responses of mothers to this question by selected background characteristics. In West Bengal, only 21 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, 58 percent report that children should be given less to drink. This suggests that mothers in West Bengal 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 illiterate mothers and mothers who are not regularly exposed to any media.

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 drinking well, getting sicker or very sick, and not

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, West Bengal, 1998–99

Background characteristic	Percentage who know about ORS packets	Reported quantity to be given to drink					Total percent	Percentage who know two or more signs for medical treatment of diarrhoea ¹	Number of mothers
		Less	Same	More	Don't know/missing				
Age									
15–19	67.0	64.8	12.8	19.2	3.1	100.0	37.5	173	
20–24	76.9	58.7	17.8	19.2	4.3	100.0	35.0	483	
25–29	79.0	55.0	16.4	25.3	3.3	100.0	33.0	355	
30–34	76.6	57.3	16.6	20.2	5.9	100.0	34.4	144	
35–49	75.9	43.7	26.7	21.9	7.8	100.0	27.5	59	
Residence									
Urban	89.9	48.4	20.8	26.8	4.0	100.0	41.9	221	
Rural	73.0	59.6	16.1	20.0	4.2	100.0	32.7	994	
Kolkata	88.3	43.1	16.0	36.4	4.5	100.0	38.5	48	
Education									
Illiterate	67.9	60.5	17.0	16.7	5.9	100.0	33.6	604	
Literate, < middle school complete	79.3	60.5	14.6	21.5	3.3	100.0	33.5	366	
Middle school complete	90.5	51.6	21.6	26.8	0.0	100.0	40.0	130	
High school complete and above	92.0	40.6	17.8	38.6	2.9	100.0	35.2	113	
Religion									
Hindu	76.3	56.5	17.5	21.8	4.2	100.0	35.0	822	
Muslim	75.8	60.1	16.5	19.8	3.6	100.0	32.3	366	
Caste/tribe									
Scheduled caste	73.2	56.0	17.7	21.6	4.6	100.0	33.9	296	
Scheduled tribe	69.6	60.2	10.6	20.0	9.1	100.0	34.9	89	
Other backward class	(81.1)	(48.8)	(28.6)	(20.7)	(1.9)	100.0	(26.8)	45	
Other	77.6	58.1	16.9	21.4	3.6	100.0	34.9	778	
Exposure to media									
Exposed to any media	82.1	57.8	16.0	23.7	2.5	100.0	36.8	657	
Watches television weekly	84.9	54.0	18.3	25.9	1.8	100.0	36.5	403	
Listens to radio weekly	82.7	58.2	16.4	22.6	2.9	100.0	36.9	444	
Visits cinema/theatre monthly	76.8	58.6	10.4	26.7	4.2	100.0	24.4	108	
Reads newspaper/magazine weekly	90.9	44.0	19.8	35.2	1.0	100.0	42.0	136	
Not regularly exposed to any media	68.9	57.3	18.0	18.4	6.2	100.0	31.5	557	
Total	76.0	57.6	16.9	21.2	4.2	100.0	34.4	1,214	

Note: Total includes 23 mothers belonging to other religions and 2, 3, and 6 mothers with missing information on education, religion, and caste/tribe, respectively, who are not shown separately.

() Based on 25–49 unweighted cases

¹Percentage who know two or more signs of illness that indicate that a child should be taken to a health facility or health worker

getting better. Table 6.12 shows that only 34 percent of mothers were able to name two or more signs that indicate that a child with diarrhoea should be given medical treatment. The percentage is relatively lower among mothers age 35–49 years, rural mothers, women belonging to other backward classes, and women who visit the cinema or theatre monthly, although the differences are generally quite small. In fact, knowledge of two or more signs of diarrhoea that suggest the

Table 6.13 Treatment of diarrhoea	
Among children under age 3 who had diarrhoea in the past two weeks, percentage taken to a health facility or provider, percentage who received various types of oral rehydration therapy (ORT), and percentage who received other treatments, West Bengal, 1998–99	
Treatment	Percent
Taken to a health facility or provider	54.2
Oral rehydration	
Oral rehydration salt (ORS) packets	40.5
Gruel	35.0
Homemade sugar-salt-water solution	4.3
Increased fluids	15.6
ORT not given	27.4
Other treatment	
Pill or syrup	30.6
Injection	5.3
Intravenous (IV/drip/bottle)	3.9
Other	1.3
No treatment	26.7
Number of children with diarrhoea	103
Note: Table includes only surviving children age 1–35 months from among the two most recent births in the three years preceding the survey.	

need for medical treatment is universally low across all demographic and socioeconomic groups. This lack of knowledge suggests a need for further educating mothers about 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 with diarrhoea during the two weeks preceding the survey who were taken to a health facility or provider, the percentage who received various types of oral rehydration therapy (ORT), and the percentage who received other types of treatment. Fifty-four percent of children in West Bengal who suffered from diarrhoea during the two weeks preceding the survey were taken to a health facility or provider for medical advice or treatment, which is lower than the national level of 63 percent. Twenty-seven percent of children with diarrhoea did not receive any treatment at all.

Only 41 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. ORS use has not improved since NFHS-1, when it was 47 percent. It is noteworthy, however, that current ORS use in West Bengal is much higher than current use at the national level (27 percent). Only 16 percent of children in West Bengal received increased fluids when sick with diarrhoea, and 35 percent received gruel. More than one-fourth of children with diarrhoea (27 percent) did not receive any of the various types of oral rehydration therapy (ORT).

The use of antibiotics and other antidiarrhoeal drugs is not generally recommended for the treatment of childhood diarrhoea. Yet 31 percent of the children who had diarrhoea in the two weeks before NFHS-2 were treated with pills or syrup, and 5 percent received an injection. These figures indicate poor knowledge about the proper treatment of diarrhoea not only among

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, West Bengal, 1998–99	
Source	Percent
Public medical sector	(15.8)
Government/municipal hospital	(7.0)
CHC/rural hospital/PHC	(3.3)
Sub-centre	(3.3)
Government mobile clinic	(2.1)
NGO or trust	(3.4)
NGO or trust hospital/clinic	(3.4)
Private medical sector	(39.7)
Private hospital/clinic	(0.6)
Private doctor	(19.6)
Vaidya/hakim/homeopath	(3.4)
Pharmacy/drugstore	(14.0)
Other private medical sector	(2.0)
Other source	(41.0)
Shop	(37.6)
Other	(3.4)
Total percent	100.0
Number of children treated with ORS	40
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. CHC: Community health centre; PHC: Primary Health Centre; NGO: Nongovernmental organization	

mothers but also among health-care providers. The results 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, and discourages the use of drugs to treat childhood diarrhoea.

Table 6.14 shows the percent distribution of children who were treated with ORS for diarrhoea in the two weeks before NFHS-2 by the source of the ORS packets. Given the small number of children with diarrhoea who were treated with ORS, findings should be interpreted with caution. As shown in the table, shops are an important source of ORS packets. There is also a greater dependence on the private medical sector for ORS supply than on the public sector: More than twice as many children received their ORS packet from the private medical sector than from the public sector. Within the private sector, ORS packets were usually obtained from a private doctor, followed by pharmacies or drugstores. Government and municipal hospitals are the primary source within the public sector.

6.7 HIV/AIDS

Acquired Immune Deficiency Syndrome (AIDS) is an illness caused by the HIV virus, 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. Seventy-four percent of women in West Bengal have never heard of AIDS, much higher than the national level of 60 percent. NFHS-1 also included AIDS-awareness questions for West Bengal. According to NFHS-1, 90 percent of women were unaware of AIDS. Thus, some gains have been made in increasing AIDS knowledge, although the overwhelming majority of women in West Bengal still do not know about AIDS.

Knowledge of AIDS is much lower among rural women, illiterate women, Muslim women, scheduled-tribe women, women from households with a low standard of living, and women who are not regularly exposed to media. The difference in the knowledge of AIDS by women's educational level is dramatic. Knowledge of AIDS increases from only 5 percent for illiterate women to 92 percent for women who have completed at least a high school education. There is also a strong positive relationship between knowledge of AIDS and household standard of living, ranging from 5 percent among women living in households with a low standard of living to 73 percent among women living in households with a high standard of living. The effect of media exposure on knowledge of AIDS is also very powerful. Only 3 percent of women who are not regularly exposed to radio, television, cinema, theatre, or print media say that they have heard about AIDS. In contrast, 80 percent of women who read newspapers or magazines weekly know about AIDS. The percentage of women having knowledge of AIDS in relation to exposure to other mass media varies between 37 to 55 percent.

Source of Knowledge About AIDS

As part of its AIDS prevention programme, the Government of India has been using mass media, especially electronic media, extensively 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. Television is by far the most prominent source of information about AIDS among ever-married women in West Bengal. Eighty-five percent of women who know about AIDS received information from that source. Other important sources of information about AIDS are the radio (31 percent), newspapers or magazines (26 percent), and friends or relatives (16 percent). Only 2 percent report that they received information about AIDS from a health worker. According to NFHS-1, the most prominent source of information was the television (59 percent), followed by newspapers and magazines (54 percent).

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, West Bengal, 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	21.9	1,201	37.8	80.5	3.2	19.3	5.4	1.5	0.0	19.9	1.0	4.5	263	
25-34	28.5	1,634	32.1	84.8	5.6	27.1	6.4	2.2	0.0	17.3	0.1	3.6	466	
35-49	27.6	1,573	26.6	87.3	6.0	28.4	5.9	1.6	0.0	13.1	0.1	4.5	434	
Residence														
Urban	63.2	1,049	23.6	95.4	7.3	32.8	6.5	1.1	0.0	11.0	0.3	2.9	663	
Rural	14.9	3,359	41.5	70.7	2.5	16.5	5.2	2.7	0.0	23.4	0.3	5.8	499	
Kolkata	72.7	242	24.9	94.0	8.3	32.1	6.7	0.9	0.1	14.0	0.8	3.5	176	
Education														
Illiterate	5.4	2,202	25.8	71.2	0.2	0.4	1.2	2.1	0.0	22.3	0.0	4.8	118	
Literate, < middle school complete	26.6	1,289	34.8	75.4	1.6	8.7	2.8	1.2	0.0	18.1	0.0	4.0	343	
Middle school complete	61.0	443	27.1	88.3	4.1	19.8	5.4	2.8	0.1	13.5	0.3	3.7	271	
High school complete and above	91.5	469	32.8	93.6	10.2	50.1	10.1	1.6	0.0	15.0	0.6	4.4	429	
Religion														
Hindu	31.2	3,285	30.9	86.8	5.7	27.0	6.0	1.6	0.0	13.9	0.3	4.2	1,025	
Muslim	10.3	1,007	27.1	74.0	2.0	13.6	3.5	1.7	0.0	32.8	0.0	0.8	103	
Other	30.3	106	(56.1)	(57.6)	(0.0)	(30.2)	(13.5)	(8.5)	(0.0)	(41.7)	(0.9)	(15.4)	32	
Caste/tribe														
Scheduled caste	16.7	1,038	32.8	80.2	3.4	12.0	2.5	4.5	0.0	15.7	0.3	3.9	173	
Scheduled tribe	4.7	319	*	*	*	*	*	*	*	*	*	*	15	
Other backward class	38.8	196	36.7	85.2	0.0	23.2	13.2	3.9	0.0	15.6	0.3	3.6	76	
Other	31.6	2,834	30.4	86.6	6.1	28.8	6.0	0.9	0.0	15.9	0.3	3.9	897	
Standard of living index														
Low	5.0	1,906	46.3	54.7	1.9	8.3	4.3	3.7	0.0	26.8	0.0	1.6	95	
Medium	33.9	1,821	32.8	81.6	2.2	17.0	4.6	1.7	0.0	17.3	0.4	4.8	617	
High	72.8	605	26.5	95.6	10.2	42.1	8.4	1.6	0.0	12.7	0.2	3.8	440	
Exposure to mass media														
Exposed to any media	41.1	2,706	31.8	86.4	5.4	26.7	6.0	1.8	0.0	15.1	0.3	4.2	1,113	
Listens to radio weekly	37.1	1,832	45.0	82.3	7.0	27.0	5.5	1.9	0.0	16.2	0.2	5.0	679	
Watches television weekly	54.5	1,800	28.6	92.5	5.8	28.3	5.8	1.4	0.0	13.0	0.4	3.7	980	
Goes to cinema/theatre monthly	42.5	426	39.2	82.8	8.4	26.2	5.1	2.3	0.0	22.0	0.0	7.3	181	
Reads newspaper/magazine weekly	79.8	663	32.5	93.1	10.5	47.0	8.1	1.2	0.0	13.6	0.3	3.5	530	
Not regularly exposed to any media	2.9	1,702	21.5	47.5	0.5	6.0	5.0	2.7	0.0	43.2	0.0	4.2	50	
Total	26.4	4,408	31.3	84.8	5.2	25.8	6.0	1.8	0.0	16.3	0.3	4.2	1,163	

Note: Total includes a small number of women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

Television is the most important source of information about AIDS in all of the groups shown in Table 6.15, and a substantial percentage of women in all groups received information about AIDS from the radio. Friends and relatives are an important source of AIDS information for women who live in households with a low standard of living and women who are not regularly exposed to any media.

Knowledge of Ways to Avoid AIDS

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

Among women who have heard about AIDS, 51 percent do not know any way to avoid infection, compared with 33 percent for India as a whole. The percentage is much higher among rural women (62 percent) than among urban women (42 percent), and among women not regularly exposed to mass media (85 percent) than among those exposed to any mass media (49 percent). The percentage is also considerably higher among Muslim women (74 percent) than among Hindu women (48 percent). Scheduled-caste and scheduled-tribe women are less likely than women who are not from scheduled castes, scheduled tribes, and other backward classes to know any way to avoid AIDS. Lack of knowledge of ways to avoid becoming infected with AIDS decreases sharply with increasing levels of education and household standard of living.

Among women who report that something can be done to prevent AIDS, the most commonly mentioned ways of avoiding AIDS are using condoms (21 percent), avoiding injections or using clean needles (20 percent), and having only one sex partner (19 percent). Substantial proportions of respondents (7–15 percent) also mention avoiding sex with commercial sex workers, avoiding blood transfusions, and abstaining from sex completely as ways of avoiding AIDS. Two percent of women mention avoiding sex with homosexuals as a way of avoiding AIDS, and even fewer women mention avoiding intravenous drug use. The percentage reporting specific ways of avoiding AIDS is lower among rural than among urban women and women not regularly exposed to mass media than other women. The level of education and the household standard of living are positively associated with women mentioning every way 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 read newspapers or magazines on a weekly basis.

The lack of knowledge of AIDS, its modes of transmission, and ways to avoid infection among women in West Bengal is a major challenge to efforts to avoid the spread of AIDS. Most ever-married women in their childbearing years have never heard of AIDS, and almost half of those who have heard of AIDS do not know even one way to avoid infection. It is clear that AIDS prevention organizations need to strengthen the educational components of their programmes, in addition to trying to reduce high-risk behaviour, since even basic information about AIDS is seriously deficient among women in West Bengal.

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, West Bengal, 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	8.3	19.5	14.7	12.1	2.0	12.9	16.7	0.5	5.4	54.8	263
25-34	6.9	22.4	20.4	15.8	2.2	10.7	22.5	1.0	5.1	48.1	466
35-49	5.6	20.5	19.9	16.3	1.9	9.5	20.4	1.4	5.7	50.5	434
Residence											
Urban	6.8	25.7	23.7	19.7	2.6	13.6	25.9	1.2	6.0	42.2	663
Rural	6.6	14.9	12.6	9.1	1.4	6.9	13.2	0.8	4.7	61.5	499
Kolkata	8.1	27.4	26.5	24.8	4.3	12.6	20.8	3.0	4.5	42.6	176
Education											
Illiterate	2.9	5.0	5.4	4.0	0.4	3.4	4.3	0.0	1.8	81.2	118
Literate, < middle school complete	5.3	9.8	8.0	8.2	0.8	4.9	11.3	0.4	2.2	70.1	343
Middle school complete	5.3	18.2	23.2	13.3	1.1	7.4	17.2	0.5	5.1	49.6	271
High school complete and above	9.8	36.4	28.7	24.8	4.2	19.4	34.2	2.1	9.1	27.1	429
Religion											
Hindu	6.9	22.6	20.0	16.1	2.3	11.0	21.4	1.2	5.7	47.8	1,025
Muslim	5.0	7.7	11.2	8.0	0.5	6.9	7.7	0.0	2.4	73.8	103
Other	(7.7)	(16.9)	(12.0)	(6.1)	(0.0)	(16.5)	(27.0)	(0.0)	(0.0)	(64.8)	32
Caste/tribe											
Scheduled caste	6.1	16.8	13.9	10.7	2.0	11.0	11.8	0.8	4.8	58.3	173
Other backward class	5.1	9.9	23.4	12.0	1.5	12.7	19.6	0.0	3.9	53.8	76
Other ¹	6.9	23.1	19.7	16.5	2.2	10.6	22.4	1.2	5.6	48.1	897
Standard of living index											
Low	1.7	7.5	2.6	8.0	0.0	4.6	6.6	0.0	0.2	82.9	95
Medium	6.5	15.1	16.0	10.6	1.6	7.8	16.2	0.3	4.5	57.0	617
High	8.2	32.5	26.5	22.7	3.2	15.9	29.0	2.1	7.9	34.4	440
Exposure to mass media											
Exposed to any media	6.9	21.8	19.5	15.8	2.2	11.2	21.1	1.1	5.6	49.0	1,113
Listens to radio weekly	7.5	22.8	19.1	13.5	2.8	10.6	20.3	1.4	5.8	49.8	679
Watches television weekly	6.8	22.7	20.9	17.5	2.0	11.8	22.3	1.1	6.0	46.7	980
Goes to cinema/theatre monthly	9.2	25.4	18.2	9.2	1.2	10.8	20.3	1.0	7.1	48.7	181
Reads newspaper/magazine weekly	9.0	33.3	27.2	21.4	3.2	16.6	29.3	2.0	8.1	33.4	530
Not regularly exposed to any media	3.2	4.9	6.1	0.6	0.0	0.0	6.2	0.0	0.0	84.7	50
Total	6.7	21.1	18.9	15.2	2.1	10.7	20.4	1.0	5.4	50.5	1,163

Note: Total includes 15 scheduled-tribe women and 2, 2, 1, and 10 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

CHAPTER 7

NUTRITION AND THE PREVALENCE OF ANAEMIA

This chapter focuses on the nutrition of women and young children, examining both the types of food consumed and the consequences of inadequate nutrition and poor feeding practices. NFHS-1 included basic information about feeding practices and the nutritional status of young children. NFHS-2 contains more comprehensive information on these topics, and, for the first time, information on the diet of women. Measurement of height and weight has been expanded to include ever-married women as well as young children. Two additional tests have been included for the first time—anaemia testing for women and young children and the testing of cooking salt to determine the extent of iodization. A specially trained health investigator attached to each interviewing team conducted height and weight measurements and anaemia testing.

7.1 Women's Food Consumption

The consumption of a wide variety of nutritious foods is important for women's health. Adequate amounts of protein, fat, carbohydrates, vitamins, and minerals are required for a well-balanced diet. Meat, fish, eggs, and milk, as well as pulses and nuts, are rich in protein. Green, leafy vegetables are a rich source of iron, folic acid, vitamin C, carotene, riboflavin, and calcium. Many fruits are also good sources of vitamin C. Bananas are rich in carbohydrates. Papayas, mangoes, and other yellow fruits contain carotene, which is converted to vitamin A. Vitamin A is also present in milk and milk products, as well as egg yolks (Gopalan et al., 1996).

NFHS-2 asked ever-married women how often they consume various types of food (daily, weekly, occasionally, or never). Women consume vegetables (both green, leafy vegetables and other vegetables) most often (Table 7.1). A majority of women consume each type of vegetable on a daily basis and more than 91 percent consume each type of vegetable at least once a week. Pulses and beans are also an important part of the diet for women. Slightly more than one-third of women (34 percent) eat pulses or beans every day, and another 42 percent eat pulses or beans weekly. Milk or curd is not a common part of the diet for a majority of women, but 25 percent of women consume milk or curd at least once a week, 49 percent only occasionally, and 26 percent never. Fruits are eaten every day by only 4 percent of women, and only 15 percent of women eat fruits at least once a week. Sixty-nine percent of women in West Bengal eat chicken, meat, or fish at least once a week. About 29 percent eat chicken, meat, or fish occasionally, and only 2 percent of women never consume these food items. Eggs are not consumed as often as chicken, meat, or fish. About 47 percent of women say that they eat eggs occasionally, and 10 percent say they never eat eggs.

Table 7.2 shows that there are substantial differentials in food consumption patterns by selected background characteristics. Age does not play an important role in women's consumption patterns. Although urban women consume more vegetables than their rural counterparts, differentials in vegetable consumption are not that large. Women in urban areas are much more likely than women in rural areas to include every other type of food in their diet, with a higher proportion of women in Kolkata consuming each type of food (except vegetables) than urban women in general. Women living in Kolkata are less likely to consume green leafy vegetables than urban women as a whole. Illiterate women have poorer and less varied diets than

Table 7.1 Women's food consumption

Percent distribution of ever-married women by frequency of consumption of specific foods, West Bengal, 1998-99

Type of food	Frequency of consumption					Total percent
	Daily	Weekly	Occasionally	Never	Missing	
Milk or curd	16.9	8.1	49.4	25.6	0.0	100.0
Pulses or beans	33.8	42.4	21.3	2.3	0.1	100.0
Green, leafy vegetables	55.0	36.4	8.0	0.6	0.1	100.0
Other vegetables	92.3	6.4	1.2	0.0	0.1	100.0
Fruits	4.2	10.8	66.0	18.9	0.2	100.0
Eggs	5.7	37.9	46.8	9.6	0.1	100.0
Chicken, meat, or fish	23.3	45.7	28.7	2.2	0.0	100.0

Table 7.2 Women's food consumption by background characteristics

Percentage of ever-married women consuming specific foods at least once a week by selected background characteristics, West Bengal, 1998-99

Background characteristic	Type of food							Number of women
	Milk or curd	Pulses or beans	Green, leafy vegetables	Other vegetables	Fruits	Eggs	Chicken, meat, or fish	
Age								
15-24	22.4	77.0	91.1	98.8	14.6	42.8	67.5	1,201
25-34	25.9	75.5	90.7	98.4	15.8	43.6	69.7	1,634
35-49	26.0	76.5	92.4	99.0	14.4	44.0	69.5	1,573
Residence								
Urban	38.8	90.7	95.7	99.5	30.9	58.6	81.5	1,049
Rural	20.7	71.7	90.1	98.5	10.0	38.8	65.1	3,359
Kolkata	42.1	92.6	91.0	99.5	41.8	62.0	84.6	242
Education								
Illiterate	13.1	67.3	88.8	98.2	5.6	34.9	61.1	2,202
Literate, < middle school complete	28.0	81.3	93.6	99.0	14.1	45.4	73.7	1,289
Middle school complete	41.1	87.7	94.5	99.1	28.4	58.7	79.0	443
High school complete and above	57.3	93.7	94.5	99.9	48.7	64.7	84.3	469
Religion								
Hindu	27.2	77.7	92.2	98.7	16.5	43.7	69.0	3,285
Muslim	17.9	70.6	88.6	98.9	10.2	44.6	70.2	1,007
Other	22.6	85.6	91.0	98.7	16.3	27.6	59.8	106
Caste/tribe								
Scheduled caste	16.3	69.6	93.1	97.9	8.8	34.2	62.6	1,038
Scheduled tribe	8.0	62.9	89.8	97.5	5.1	24.8	48.6	319
Other backward class	34.6	83.3	96.2	99.2	15.0	40.2	67.0	196
Other	29.5	79.8	90.7	99.1	18.4	49.3	73.8	2,834
Standard of living index								
Low	10.5	63.5	88.7	98.1	4.9	32.0	57.7	1,906
Medium	29.6	83.9	93.2	99.1	16.9	48.5	75.3	1,821
High	57.0	92.8	93.9	99.6	41.8	64.1	85.7	605
Total	25.0	76.3	91.4	98.7	15.0	43.5	69.0	4,408

Note: Total includes 4, 9, 21, and 77 women with missing information on education, religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

literate women, and their diets are particularly deficient in such nutritious foods as fruit and milk/curd, as well as eggs. A similar percentage of Hindu and Muslim women consume 'other' vegetables (99 percent), eggs (44–45 percent), and chicken, meat, or fish (69–70 percent) at least once a week. A greater proportion of Hindus consume milk or curd, pulses or beans, fruits, and green, leafy vegetables than Muslims. Women from scheduled castes and scheduled tribes have a relatively poor diet with particularly lower consumption of fruits, milk/curd, eggs, and chicken, meat, or fish. As expected, poverty has a strong negative effect on the consumption of nutritious types of food. Women in households with a low standard of living are much less likely than other women to eat fruits, milk or curd, and eggs on a regular basis. Among women from households with a low standard of living, only 5 percent and 11 percent consume fruits and milk or curd, respectively, at least once a week.

7.2 Nutritional Status of Women

In NFHS-2, ever-married women age 15–49 were weighed using a solar-powered digital scale with an accuracy of ± 100 grams. Their height was measured using an adjustable wooden measuring board specially designed to provide accurate measurements (to the nearest 0.1 cm) of women and children in a field situation. The weight and height data were used to calculate several indicators of women's nutritional status, which are shown in Table 7.3. The height of an adult is an outcome of several factors including nutrition during childhood and adolescence. A woman's height can be used to identify women at risk of having a difficult delivery, since small stature is often related to small pelvic size. The risk of having a baby with a low birth weight is also higher for mothers who are short.

The cutoff point for height, below which a woman can be identified as nutritionally at risk, varies among populations, but it is usually considered to be in the range of 140–150 centimetres (cm). NFHS-2 found a mean height for women in West Bengal of 150 cm (one cm shorter than the mean height for women in India as a whole). The mean height varies only slightly (between 148 and 153 cm) for women in different population groups, as shown in Table 7.3. Women living in households with a low standard of living are 3 cm shorter than women living in households with a high standard of living. Other women who are slightly shorter than average include illiterate women, scheduled-caste women, scheduled-tribe women, and women who are neither Hindu nor Muslim, but the differences are not large. Women who have completed high school and women from households with a high standard of living are taller than women in other population groups. Nineteen percent of women in West Bengal are under 145 cm in height. The highest percentage of women in any group who are less than 145 cm tall is 32 percent for women who are neither Hindu nor Muslim.

Table 7.3 also shows two measures of an index that relates a woman's weight to her height. These indices exclude women who were pregnant at the time of the survey or women who gave birth during the two months preceding the survey. The body mass index (BMI) can be used to assess both thinness and obesity. The BMI is defined as the weight in kilograms divided by the height in metres squared (kg/m^2). The mean BMI for women in West Bengal is 20 (varying within a narrow range of 18–23 for all the groups shown in the table). Chronic energy deficiency is usually indicated by a BMI of less than 18.5. Forty-four percent of women in West Bengal have a BMI below 18.5, indicating a high prevalence of nutritional deficiency. Nutritional problems, as indicated by the BMI, are particularly serious for women age 20–29, rural women, illiterate women, women who are not Hindu or Muslim, women in scheduled

Table 7.3 Nutritional status of women

Among ever-married women, mean height, percentage with height below 145 cm, mean body mass index (BMI), and percentage with BMI below 18.5 kg/m² by selected background characteristics, West Bengal, 1998-99

Background characteristic	Height			Weight-for-height ¹		
	Mean height (cm)	Percentage below 145 cm	Number of women for height	Mean body mass index (BMI)	Percentage with BMI below 18.5 kg/m ²	Number of women for BMI
Age						
15-19	149.2	22.6	356	19.2	42.1	330
20-24	150.0	18.6	769	18.9	48.3	705
25-29	150.2	18.1	841	19.3	49.5	801
30-34	150.6	16.5	700	19.9	43.0	686
35-49	149.7	20.6	1,473	20.3	39.0	1,460
Marital status						
Currently married	150.0	19.1	3,873	19.7	43.5	3,718
Not currently married	149.7	21.3	266	19.2	46.6	264
Residence						
Urban	150.7	16.1	982	22.0	24.5	961
Rural	149.8	20.2	3,157	18.9	49.8	3,021
Kolkata	151.2	14.6	227	22.6	18.3	221
Education						
Illiterate	149.0	24.1	2,066	18.7	53.0	1,978
Literate, < middle school complete	150.2	17.1	1,218	19.8	41.5	1,176
Middle school complete	151.5	12.9	421	20.7	34.3	408
High school complete and above	152.5	7.4	430	22.8	15.3	415
Religion						
Hindu	149.7	20.5	3,083	19.8	42.2	2,983
Muslim	151.0	13.8	948	19.2	47.6	894
Other	148.6	31.5	99	19.4	52.6	96
Caste/tribe						
Scheduled caste	149.1	24.2	986	19.0	49.4	938
Scheduled tribe	148.4	27.2	297	18.2	64.2	287
Other backward class	150.4	17.1	180	20.4	35.3	171
Other	150.5	16.6	2,656	20.0	39.9	2,567
Work status						
Working in family farm/business	149.6	20.7	228	18.9	51.4	213
Employed by someone else	149.5	21.5	629	18.6	55.8	609
Self-employed	149.6	24.0	322	19.6	41.8	316
Not worked in past 12 months	150.2	18.1	2,959	20.0	40.8	2,841
Standard of living index						
Low	149.1	24.4	1,793	18.4	57.1	1,710
Medium	150.2	17.1	1,720	20.0	38.4	1,657
High	152.3	8.1	556	22.7	16.8	548
Total	150.0	19.2	4,139	19.7	43.7	3,982

Note: Total includes women with missing information on education, religion, caste/tribe, work status, and the standard of living index, who are not shown separately.

¹Excludes women who are pregnant and women with a birth in the preceding two months. The body mass index (BMI) is the ratio of the weight in kilograms to the square of the height in metres (kg/m²).

castes and scheduled tribes, women who are employed by someone else or who work on a family farm or in a family business, and women from households with a low standard of living. Education and the standard of living are strongly related to chronic energy deficiency. Illiterate women and women with a low standard of living are more than three times as likely to have a

low BMI as women who at least completed high school and women from households with a high standard of living.

7.3 Anaemia Among Women

Anaemia is characterized by a low level of haemoglobin in the blood. Haemoglobin is necessary for transporting oxygen from the lungs to other tissues and organs of the body. Anaemia usually results from a nutritional deficiency of iron, folate, vitamin B₁₂, or some other nutrients. This type of anaemia is commonly referred to as iron-deficiency anaemia. Iron deficiency is the most widespread form of malnutrition in the world, affecting more than two billion people (Stolzfus and Dreyfuss, 1998). In India, anaemia affects an estimated 50 percent of the population (Seshadri, 1998).

Anaemia may have detrimental effects on the health of women and children and may become an underlying cause of maternal mortality and perinatal mortality. Anaemia results in an increased risk of premature delivery and low birth weight (Seshadri, 1997). Early detection of anaemia can help to prevent complications related to pregnancy and delivery as well as child-development problems. Information on the prevalence of anaemia can be useful for the development of health-intervention programmes designed to prevent anaemia, such as iron-fortification programmes.

In India, under the Government's Reproductive and Child Health Programme, iron and folic acid tablets are provided to pregnant women in order to prevent anaemia during pregnancy. Because anaemia is such a serious health problem in India, NFHS-2 undertook direct measurement of the haemoglobin levels of all ever-married women age 15–49 years and their children under three years of age. Measurements were taken in the field using the HemoCue system.¹ This system uses a single drop of blood from a finger prick (or a heel prick in the case of infants under six months old), which is drawn into a cuvette and then inserted into a portable, battery-operated instrument.² In less than one minute, the haemoglobin concentration is indicated on a digital read-out.

Before the anaemia testing was undertaken in a household, the health investigator read a detailed informed consent statement to the respondent, informing her about anaemia, describing the procedure to be followed for the test, and emphasizing the voluntary nature of the test. She was then asked whether or not she would consent to have the test done for herself and her young children, if any. The health investigator then signed the questionnaire at the bottom of the statement to indicate that it had been read to the respondent and recorded her agreement or lack of agreement to the testing. If the test was conducted, at the end of the test the respondent was given a written record of the results for herself and each of her young children. In addition, the health investigator described to her the meaning of the results and advised her if medical treatment was necessary. In cases of severe anaemia, the respondent was read an additional

¹The HemoCue instrument has been used extensively throughout the world for estimating the concentration of haemoglobin in capillary blood in field situations. The HemoCue has been found to give accurate results on venous blood samples, comparable to estimates from more sophisticated laboratory instruments (Von Schenk et al., 1986; McNulty et al., 1995; Krenzichick and Tanseco, 1996). A recent small-scale study in India (Prakash et al., 1999), however, found that the HemoCue provided slightly higher estimates of haemoglobin than the standard blood cell counter (BCC) method.

²Because the first 2–3 drops of blood are wiped away to be sure that the sample used for analysis consists of fresh capillary blood, it is actually the third or fourth drop of blood that is drawn into the cuvette.

statement asking whether or not she would give her permission for the survey organization to inform a local health official about the problem. For each Primary Sampling Unit, a local health official was given a list of severely anaemic women (and children) who had consented to the referral.

Table 7.4 and Figure 7.1 show anaemia levels for ever-married women age 15–49. The table and figure distinguish three levels of severity of anaemia: mild anaemia (10.0–10.9 grams/decilitre for pregnant women and 10.0–11.9 g/dl for nonpregnant women), moderate anaemia (7.0–9.9 g/dl), and severe anaemia (less than 7.0 g/dl). Appropriate adjustments in these cutoff points were made for women living at altitudes above 1,000 metres and women who smoke, since both of these groups require more haemoglobin in their blood (Centers for Disease Control and Prevention, 1998).

In West Bengal, the haemoglobin levels were tested for 92 percent of women (see Table B.3 in Appendix B), compared with 88 percent of women in India as a whole. Overall, 63 percent of women have some degree of anaemia.³ Forty-five percent of women are mildly anaemic, 16 percent are moderately anaemic, and 2 percent are severely anaemic. There are some differences in the prevalence of anaemia by background characteristics, but anaemia is substantial for women in every population group. Prevalence is higher for rural women (64 percent) than for urban women (58 percent). However, 61 percent of women living in Kolkata have some degree of anaemia. The prevalence of anaemia is relatively high for illiterate women, women belonging to scheduled castes or scheduled tribes, and women who are employed by someone else. Notably, women from scheduled tribes have the highest prevalence of anaemia among all the population groups presented in Table 7.4. Women who are neither Hindu nor Muslim have a much higher prevalence of anaemia than Hindus or Muslims. Anaemia decreases steadily with increases in the level of education and the standard of living index.

The prevalence of anaemia is higher for breastfeeding women than for other women, but there is also a difference in the prevalence of anaemia between pregnant women and nonpregnant women who are not breastfeeding. Since anaemia is often considered to be particularly problematic for pregnant women, it is noteworthy that these women have slightly lower than average levels of anaemia. The provision of iron and folic acid supplements to pregnant women has undoubtedly reduced the overall prevalence of anaemia in pregnant women to some extent (72 percent of pregnant women received IFA tablets or syrup during pregnancy for births in the three years preceding the survey—see Table 8.6). However, pregnant women have a much higher prevalence of moderate anaemia (26 percent) than nonpregnant women (14–19 percent).

Women with a low body mass index have a higher prevalence of anaemia than other women. The diet of women also plays a role in the likelihood that women have anaemia. Consumption of iron-rich foods can reduce the prevalence or severity of anaemia, and the absorption of iron from the diet can be enhanced (for example, by vitamin C) or inhibited (for example, by tea or coffee) if particular items are consumed around the time that a meal is eaten. In West Bengal, differentials in anaemia prevalence by fruit and vegetable consumption are not

³Rates that are not adjusted for altitude and smoking (62.5 percent for any anaemia, 45.3 percent for mild anaemia, 15.7 percent for moderate anaemia, and 1.5 percent for severe anaemia) are almost identical to the corresponding adjusted rates. The small impact of the adjustment factor is to be expected since, in West Bengal, the proportion of women who smoke is very small (see Table 2.12), and only 1 of the 158 sample PSUs is at an altitude above 1,000 metres.

Table 7.4 Anaemia among women

Percentage of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Percentage of women with any anaemia	Percentage of women with:			Number of women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age					
15-19	59.5	43.6	14.6	1.3	337
20-24	64.9	45.3	18.1	1.6	729
25-29	61.1	45.6	14.5	1.0	799
30-34	61.6	46.3	14.0	1.3	668
35-49	63.6	45.0	16.8	1.8	1,396
Marital status					
Currently married	62.7	45.6	15.7	1.4	3,684
Not currently married	61.7	39.5	19.6	2.6	245
Residence					
Urban	57.8	43.1	12.9	1.8	935
Rural	64.2	45.9	16.9	1.4	2,994
Kolkata	60.7	45.8	12.9	2.0	216
Education					
Illiterate	67.1	45.7	19.5	1.9	1,957
Literate, < middle school complete	59.7	44.9	13.4	1.4	1,163
Middle school complete	57.4	46.1	10.6	0.7	405
High school complete and above	55.3	43.4	11.3	0.6	400
Religion					
Hindu	63.3	45.4	16.4	1.5	2,936
Muslim	59.2	43.9	13.7	1.5	892
Other	74.0	49.3	23.1	1.7	93
Caste/tribe					
Scheduled caste	67.1	46.6	18.6	1.8	933
Scheduled tribe	80.6	44.7	32.8	3.1	286
Other backward class	61.7	43.6	18.1	0.0	167
Other	59.1	44.9	12.9	1.2	2,524
Work status					
Working in family farm/business	63.4	44.8	17.4	1.2	219
Employed by someone else	68.3	47.7	19.2	1.4	593
Self-employed	64.6	43.1	19.4	2.1	301
Not worked in past 12 months	61.2	45.0	14.7	1.5	2,814
Standard of living Index					
Low	67.9	46.1	19.8	2.0	1,696
Medium	59.1	43.9	14.1	1.2	1,652
High	57.2	46.7	9.6	0.9	516
Pregnancy/breastfeeding status					
Pregnant	56.9	29.8	25.7	1.4	205
Breastfeeding (not pregnant)	69.2	48.9	18.8	1.4	956
Not pregnant/not breastfeeding	60.8	45.1	14.2	1.5	2,768

Contd...

that large. Nevertheless, women who eat fruit (alone or in addition to green, leafy vegetables) at least weekly have a slightly lower level of anaemia than women who do not eat fruit regularly. Women who do not eat either fruit or green, leafy vegetables at least once a week have a higher than average prevalence of anaemia.

Table 7.4 Anaemia among women (contd.)

Percentage of ever-married women classified as having iron-deficiency anaemia by degree of anaemia, according to selected background characteristics, West Bengal, 1998-99

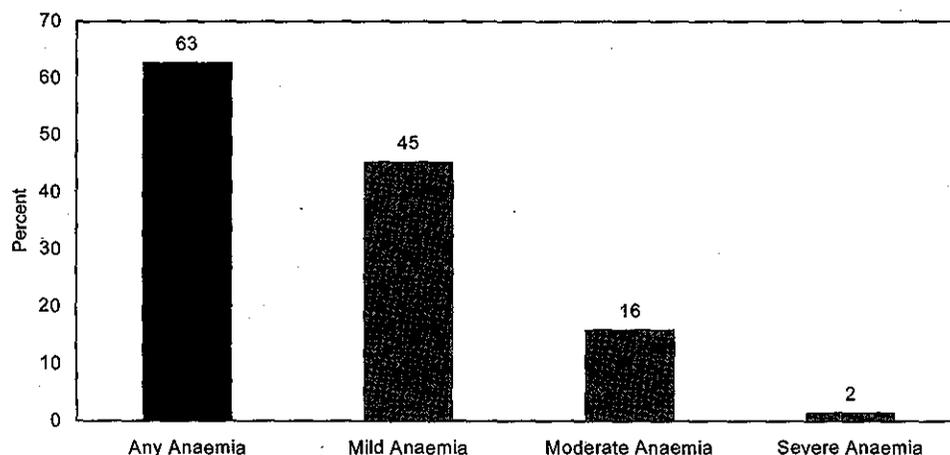
Background characteristic	Percentage of women with any anaemia	Percentage of women with:			Number of women
		Mild anaemia	Moderate anaemia	Severe anaemia	
Body mass index					
< 18.5 kg/m ²	67.0	47.4	17.8	1.7	1,701
≥ 18.5 kg/m ²	59.4	43.6	14.5	1.3	2,216
Fruit and vegetable consumption¹					
Fruit and vegetables	57.9	46.0	11.2	0.7	543
Fruit only	(60.0)	(46.9)	(12.2)	(1.0)	32
Vegetables only	63.0	44.8	16.6	1.7	3,050
Neither	67.9	48.8	18.0	1.1	302
Total	62.7	45.3	15.9	1.5	3,929

Note: The haemoglobin levels are adjusted for altitude of the enumeration area and for smoking when calculating the degree of anaemia. Total includes 4, 8, 19, 1, 65, 1, 12, and 2 women with missing information on education, religion, caste/tribe, work status, the standard of living index, height, body mass index, and fruit and vegetable consumption, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

¹Based on consumption at least weekly. Vegetables include only green, leafy vegetables.

**Figure 7.1
Anaemia Among Women**



NFHS-2, West Bengal, 1998-99

7.4 Infant Feeding Practices

Infant feeding practices have significant effects on both mothers and children. Mothers are affected through the influence of breastfeeding on the period of postpartum infertility, and hence on fertility levels and the length of birth intervals. These effects vary by both the duration and intensity of breastfeeding. Proper infant feeding, starting from the time of birth, is important for the physical and mental development of the child. Breastfeeding improves the nutritional status of young children and reduces morbidity and mortality. Breast milk not only provides important

nutrients but also protects the child against infection. The timing and type of supplementary foods introduced in an infant's diet also have significant effects on the child's nutritional status.

The Baby Friendly Hospitals Initiative, launched by the United Nations Children's Fund (UNICEF) recommends initiation of breastfeeding immediately after childbirth. The World Health Organization (WHO) and UNICEF recommend that infants should be given only breast milk for the first six months of their life. Under the Reproductive and Child Health Programme, the Government of India recommends that infants should be exclusively breastfed from birth to age four months (Ministry of Health and Family Welfare, n.d.). Most babies do not require any other foods or liquids during this period. By age seven months, adequate and appropriate complementary foods should be added to the infant's diet in order to provide sufficient nutrients for optimal growth. It is recommended that breastfeeding should continue, along with complementary foods, through the second year of life or beyond. It is further recommended that a feeding bottle with a nipple should not be used at any age, for reasons related mainly to sanitation and the prevention of infections.

WHO has suggested several indicators of breastfeeding practices to guide countries in gathering information for measuring and evaluating infant feeding practices. These indicators include the ever breastfed rate, the exclusive breastfeeding rate, the timely complementary feeding rate, the continued breastfeeding rate, and the bottle feeding rate. The *exclusive breastfeeding rate* is defined as the proportion of infants under age four months who receive only breast milk. The *timely complementary feeding rate* is the proportion of infants age 6–9 months who receive both breast milk and solid or semi-solid food. The *continued breastfeeding rate through one year of age* is the proportion of children age 12–15 months who are still breastfed. The *continued breastfeeding rate until two years of age* is the proportion of children age 20–23 months who are still breastfed. The *bottle feeding rate* is the proportion of infants who are fed using a bottle with a nipple.

In NFHS-2, data on breastfeeding and complementary feeding were obtained from a series of questions in the Woman's Questionnaire. These questions pertain to births since January 1995, but the tables are restricted to children born in the three years preceding the survey. For any given woman, information was obtained for a maximum of two births.

Initiation of breastfeeding immediately after childbirth is important because it benefits both the mother and the infant. As soon as the infant starts suckling at the breast, the hormone oxytocin is released, resulting in uterine contractions that facilitate expulsion of the placenta and reduce the risk of postpartum haemorrhage. It is also recommended that the first breast milk (colostrum) should be given to the child rather than squeezed from the breast and discarded, because it contains colostrum, which provides natural immunity to the child.

Table 7.5 shows the percentage of children born during the three years before the survey who started breastfeeding within one hour and one day of birth. It also gives the percentage of children whose mothers squeezed the first milk from the breast before breastfeeding, which is not recommended. Although breastfeeding is nearly universal in West Bengal, very few children are put to the breast immediately after birth. Twenty-five percent of children begin breastfeeding within one hour of birth, and only 51 percent begin breastfeeding within one day of birth. More than three out of every four women who gave birth to children during the three years preceding the survey squeezed the first milk from the breast before they began breastfeeding.

Table 7.5. Initiation of breastfeeding

Percentage of children born during the three years preceding the survey who started breastfeeding within one hour and within one day of birth and percentage whose mother squeezed the first milk from her breast before breastfeeding by selected background characteristics, West Bengal, 1998-99

Background characteristic	Percentage started breastfeeding within one hour of birth	Percentage started breastfeeding within one day of birth ¹	Percentage whose mother squeezed first milk from breast	Number of children
Residence				
Urban	22.3	50.2	78.4	239
Rural	25.6	50.7	75.9	1,077
Kolkata	22.1	53.9	78.0	52
Mother's education				
Illiterate	28.7	53.8	77.3	650
Literate, < middle school complete	23.2	48.1	75.7	407
Middle school complete	22.6	48.5	72.3	140
High school complete and above	14.1	43.7	77.6	117
Religion				
Hindu	25.2	53.9	76.8	879
Muslim	23.5	41.9	75.2	410
Caste/tribe				
Scheduled caste	26.0	56.7	79.0	319
Scheduled tribe	39.3	63.8	79.4	93
Other backward class	40.0	69.6	68.8	49
Other	22.2	45.8	75.2	846
Mother's work status				
Working in family farm/business	(30.5)	(53.9)	(74.7)	59
Employed by someone else	33.8	55.3	76.1	170
Self-employed	17.8	45.7	79.0	59
Not worked in past 12 months	23.7	50.0	76.3	1,027
Standard of living index				
Low	23.8	48.4	77.7	670
Medium	29.1	56.3	75.6	503
High	13.0	40.6	72.2	116
Assistance during delivery				
Health professional ²	23.4	54.7	76.2	581
Dai (TBA)	23.9	43.6	76.5	389
Other	29.5	52.7	77.7	340
Place of delivery				
Public health facility	25.6	60.5	77.1	416
Private health facility	14.5	39.2	72.9	105
Own home	27.8	48.5	79.0	605
Parents' home	21.9	44.9	69.6	168
Total	25.0	50.6	76.3	1,316

Note: Table includes only the two most recent births during the three years preceding the survey, whether living or dead at the time of interview. Total includes 24 children belonging to other religions, 7 children delivered in nongovernmental organization or trust hospitals/clinics, 9 children delivered in 'other' places, and 2, 3, 8, 26, 6, and 6 children with missing information on mother's education, religion, caste/tribe, the standard of living index, assistance during delivery, and place of delivery, respectively, who are not shown separately.

() Based on 25-49 unweighted cases

TBA: Traditional birth attendant

¹Includes children who started breastfeeding within one hour of birth

²Includes doctor, auxiliary nurse midwife, nurse, midwife, lady health visitor, and other health professionals

Differentials in the early initiation of breastfeeding and in squeezing the first milk from the breast are also shown in Table 7.5. No more than 40 percent of children in any group shown in the table were put to the breast within one hour of birth. Children from other backward classes are more likely to start breastfeeding early in life: two-fifths start breastfeeding within one hour of birth and 70 percent start breastfeeding within one day of birth. Women who have completed high school and women who live in households with a high standard of living are much less likely than other women to start breastfeeding their children early. The circumstances surrounding delivery of the baby can have an important effect on the early initiation of breastfeeding. Children whose delivery was assisted by a health professional or a *dai* are less likely than other children to start breastfeeding within one hour of birth. Children who were delivered in private health facilities are least likely to be breastfed early.

The custom of squeezing the first milk from the breast before breastfeeding a child is widely practised in West Bengal. Contrary to recommendations regarding infant feeding, mothers squeeze the first milk from the breast before breastfeeding for at least 69 percent in every group. This practice is least common for children from other backward classes and children whose mother delivered in her parents' home. It is most common among scheduled tribes, scheduled castes, and among children whose mother gave birth at her own home.

Mothers of children born in the three years preceding the survey were asked if the child had been given plain water, other liquids, or solid or mushy (semi-solid) food at any time during the day or night before the interview. Results are shown in Tables 7.6 and 7.7. Children who received nothing but breast milk during that period are defined as being *exclusively breastfed*. The introduction of supplementary foods before four months of age may put infants at risk of malnutrition because other liquids and solid foods are nutritionally inferior to breast milk. Consumption of liquids and solid or mushy foods at an early age also increases children's exposure to pathogens and consequently puts them at a greater risk of getting diarrhoea. However, a recent study based on findings from NFHS-1 (Anandaiah and Choe, 2000) concluded that breastfeeding with supplements is more beneficial than exclusive breastfeeding even for children at very young ages (less than four months). That report suggests that mothers who are not well nourished and who are in poor health themselves may not be able to provide adequate breast milk for their infants.

In West Bengal, 49 percent of children under four months of age are exclusively breastfed (less than the national level of 55 percent), 18 percent receive breast milk plus water, and 33 percent receive supplements along with breast milk (Table 7.6). The percentage of infants exclusively breastfed drops off after three months to 26 percent at age 4–6 months and 7 percent at age 7–9 months. Very few children are exclusively breastfed after the first year of life. The proportion of children receiving supplements along with breast milk increases steadily with age, peaking at 96 percent for children age 12–13 months, and declines thereafter as children are weaned from the breast and their food consumption is no longer supplementing their consumption of breast milk. However, breastfeeding generally continues for a long period. Ninety percent of children are still being breastfed at 18–19 months of age, as are 87 percent of children age 24–25 months. For the majority of children in West Bengal, breastfeeding continues even in the third year of life: 55 percent of children age 34–35 months are still breastfed.

Table 7.7 shows in more detail the types of food consumed by children under age three years the day or night before the interview. Because of the small number of non-breastfeeding

Table 7.6. Breastfeeding status by child's age

Percent distribution of children under age 3 years by breastfeeding status, according to child's age in months, West Bengal, 1998-99

Age in months	Breastfeeding status					Total percent	Number of living children
	Not breastfeeding	Exclusively breastfeeding	Breastfeeding and:				
			Receiving plain water only	Receiving supplements	Don't know if fed supplements		
< 2	(0.0)	(56.2)	(23.8)	(20.0)	(0.0)	100.0	46
2-3	0.0	44.6	14.5	40.9	0.0	100.0	82
4-5	4.1	27.3	9.3	59.3	0.0	100.0	97
6-7	3.5	16.6	11.8	68.1	0.0	100.0	69
8-9	7.6	4.1	10.3	78.0	0.0	100.0	67
10-11	0.9	7.3	4.8	87.0	0.0	100.0	56
12-13	4.2	0.0	0.0	95.8	0.0	100.0	71
14-15	4.2	1.5	0.0	94.3	0.0	100.0	94
16-17	7.1	0.0	2.8	90.1	0.0	100.0	96
18-19	9.6	0.0	0.0	90.4	0.0	100.0	67
20-21	11.7	4.0	1.2	83.1	0.0	100.0	68
22-23	(15.1)	(0.0)	(0.0)	(84.9)	(0.0)	100.0	47
24-25	13.1	0.0	1.3	84.3	1.3	100.0	65
26-27	26.3	0.0	0.0	73.7	0.0	100.0	97
28-29	31.7	0.0	0.0	68.3	0.0	100.0	63
30-31	21.5	0.0	0.0	78.5	0.0	100.0	70
32-33	(34.6)	(0.0)	(0.0)	(65.4)	(0.0)	100.0	44
34-35	45.2	0.0	0.0	54.8	0.0	100.0	65
< 4 months	0.0	48.8	17.8	33.4	0.0	100.0	129
4-6 months	4.7	25.7	8.9	60.8	0.0	100.0	132
7-9 months	5.3	6.8	12.2	75.7	0.0	100.0	101

Note: Table includes only surviving children from among the two most recent births during the three years preceding the survey. Breastfeeding status refers to the day or night before the interview. Children classified as 'breastfeeding and receiving plain water only' receive no supplements.
() Based on 25-49 unweighted cases

children, two-month age categories have been combined into broader age groups for the younger children. For children under four months of age, a higher proportion receive powdered milk than any other liquid. Except for children age 24-29 months, more than 50 percent of non-breastfeeding children in each age group were given other types of milk (such as cow's milk or buffalo's milk) the day or night before the interview. About 40 percent of breastfeeding children age 6-35 months drink non-powdered milk in addition to breast milk. Other liquids, such as juice or tea, are generally given less often than milk. Among all children, the consumption of green, leafy vegetables increases with age, from less than 1 percent for age groups under six months to 67 percent at age 30-35 months. Among breastfeeding children, the consumption of fruits increases from 2 percent at age 2-3 months to 31 percent at age 24-35 months. A lower proportion of non-breastfeeding children than breastfeeding children at ages 24-35 months ate any fruit the day or night before the interview.

From about six months of age, the introduction of complementary food is critical for meeting the protein, energy, and micronutrient needs of children. The rate of complementary feeding is less than optimal in West Bengal, with 39 percent of breastfeeding children age 6-7 months consuming solid or mushy foods. However, more than 90 percent of breastfeeding children receive complementary foods at age 12-13 months and above.

Table 7.7 Type of food received by children

Percentage of children under age 3 years who received specific types of food the day or night before the interview and percentage using a bottle with a nipple by current breastfeeding status and child's age in months, West Bengal, 1998-99

Age in months	Type of food received							Number of living children
	Powdered milk	Any other milk	Any other liquid	Green, leafy vegetables	Fruits	Any solid or mushy food ¹	Using bottle with a nipple	
BREASTFEEDING CHILDREN								
< 2	(10.6)	(5.9)	(14.7)	(0.5)	(5.9)	(6.4)	(1.8)	46
2-3	15.6	15.7	11.5	0.0	1.6	5.9	18.1	82
4-5	24.6	26.1	13.1	0.0	10.0	28.0	26.9	93
6-7	21.7	45.4	11.5	2.4	14.0	38.6	23.9	66
8-9	37.7	40.9	20.9	17.6	22.4	60.1	18.9	62
10-11	(14.6)	(45.3)	(11.8)	(21.1)	(12.3)	(70.0)	(18.0)	56
12-13	12.5	36.1	15.0	38.1	20.8	92.2	9.6	68
14-15	18.8	43.9	16.0	38.2	27.9	95.4	11.3	90
16-17	12.0	46.6	20.7	53.2	19.2	94.5	5.6	89
18-23	13.0	42.3	15.1	59.7	22.7	95.4	8.0	160
24-29	13.1	39.0	15.6	64.2	30.5	97.6	4.0	172
30-35	15.0	40.6	6.8	69.4	31.4	100.0	6.2	119
< 4 months	13.8	12.2	12.7	0.2	3.2	6.1	12.2	129
4-5 months	24.6	26.1	13.1	0.0	10.0	28.0	26.9	93
6-9 months	29.4	43.2	16.0	9.7	18.1	49.0	21.5	128
NON-BREASTFEEDING CHILDREN								
<15	(56.8)	(59.5)	(25.6)	(21.4)	(17.0)	(59.9)	(63.8)	19
16-23	(34.2)	(53.1)	(26.6)	(80.7)	(44.5)	(96.9)	(28.6)	28
24-29	11.9	39.8	8.9	70.6	22.1	96.5	10.3	54
30-35	14.2	51.9	14.1	63.5	23.6	97.7	15.3	60
ALL CHILDREN								
< 2	(10.6)	(5.9)	(14.7)	(0.5)	(5.9)	(6.4)	(1.8)	46
2-3	15.6	15.7	11.5	0.0	1.6	5.9	18.1	82
4-5	26.1	28.0	15.7	0.3	10.4	27.9	29.6	97
6-7	23.3	46.6	11.8	2.6	13.8	39.3	26.2	69
8-9	40.3	39.5	21.1	18.0	21.2	58.5	22.5	67
10-11	15.3	45.8	12.1	21.4	12.6	70.3	18.7	56
12-13	13.5	38.4	14.4	37.6	21.1	92.5	10.7	71
14-15	19.7	44.4	15.3	38.0	27.6	95.1	12.2	94
16-17	17.8	45.6	20.6	55.7	21.3	94.9	10.1	96
18-23	13.3	44.4	16.7	62.0	25.1	95.5	8.9	182
24-29	12.8	39.2	14.0	65.7	28.5	97.3	5.5	226
30-35	14.8	44.3	9.2	67.4	28.8	99.2	9.2	179
< 4 months	13.8	12.2	12.7	0.2	3.2	6.1	12.2	129
4-5 months	26.1	28.0	15.7	0.3	10.4	27.9	29.6	97
6-9 months	31.6	43.1	16.4	10.2	17.4	48.7	24.3	135

Note: Table includes only surviving children from among the two most recent births in the three years preceding the survey.

() Based on 25-49 unweighted cases

¹ Includes green, leafy vegetables and fruits

Bottle feeding has a direct effect on the mother's exposure to the risk of pregnancy because the period of amenorrhoea may be shortened when breastfeeding is reduced or replaced by bottle feeding. Because it is often difficult to sterilize the nipple properly, the use of bottles with nipples also exposes children to an increased risk of getting diarrhoea and other diseases. For children who are being breastfed, a sizable proportion were bottle fed the day or night before the interview, particularly among children age 2-11 months (Table 7.7). The use of a bottle with a nipple is most common for children age 4-5 months (27 percent).

Table 7.8 Median duration of breastfeeding				
Median duration of breastfeeding among children under age 3 years by sex of child and residence, and mean duration of breastfeeding, West Bengal, 1998–99				
Background characteristic	Median duration (months) ¹			Number of children
	Any breastfeeding	Exclusive breastfeeding	Exclusive breastfeeding or breastfeeding plus water only	
Sex of child				
Male	≥ 36.0	1.6	2.7	702
Female	(33.5)	0.7	3.1	613
Residence				
Urban	≥ 36.0	1.4	2.1	239
Rural	≥ 36.0	1.0	3.3	1,077
Median duration	≥ 36.0	1.1	2.9	1,316
Mean duration (months) ¹	30.2	3.6	5.1	1,316
Prevalence/incidence mean	29.8	3.0	4.5	1,316

Note: Table includes only the two most recent births in the three years preceding the survey. The median duration of any breastfeeding is shown as ≥ 36 months for groups in which the exact median cannot be calculated because the proportion of breastfeeding children does not drop below 50 percent in any age group for children under 36 months of age.
 () Based on 25–49 unweighted cases
¹Based on current status

Table 7.8 shows several statistics that describe the duration of breastfeeding. Estimates of both means and medians are based on the current proportions of children breastfeeding in each age group because information on current status is usually more accurate than information based on mother's recall. The median length of breastfeeding in West Bengal is more than three years. Supplementation begins relatively early, however. The median length of exclusive breastfeeding is only 1.1 months and the median length of exclusive breastfeeding or breastfeeding with water is 2.9 months.

The mean durations of any breastfeeding, exclusive breastfeeding and exclusive breastfeeding or breastfeeding with water only are 30.2 months, 3.6 months, and 5.1 months, respectively. The mean durations are slightly more than two months longer than the median durations for the last two measures.

An alternative measure of the duration of breastfeeding is the prevalence-incidence mean, which is calculated as the 'prevalence' of breastfeeding divided by its 'incidence'. In this case, prevalence is defined as the number of children whose mothers were breastfeeding at the time of the survey, and incidence is defined as the average number of births per month (averaged over a 36-month period to overcome problems of seasonality of births and possible reference-period errors). For each measure of breastfeeding, the prevalence-incidence mean is about the same as the mean calculated in the conventional manner.

The median duration of breastfeeding is at least two months longer for boys than for girls. This pattern is often observed in societies where son preference is strong because the parents may stop breastfeeding a girl at a younger age to increase their chances of having another child earlier (with the hope that the next child will be a boy). In West Bengal, there is not much

difference in the median duration of exclusive breastfeeding or breastfeeding plus water by sex of the child. The median length of breastfeeding is more than 36 months in both urban areas and rural areas.

7.5 Nutritional Status of Children

Nutritional status is a major determinant of the health and well-being of children. Inadequate or unbalanced diets and chronic illness are associated with poor nutrition among children. To assess their nutritional status, measurements of weight and height/length were obtained for children born in the three years preceding the survey. Children were weighed and measured with the same types of scales and measuring boards used for women. Children under two years of age were measured lying down and older children were measured standing up. Data on weight and height/length were used to calculate the following three summary indices of nutritional status:

- weight-for-age
- height-for-age
- weight-for-height

The nutritional status of children calculated according to these three measures is compared with the nutritional status of an international reference population recommended by the World Health Organization (Dibley et al., 1987a; 1987b). The use of this reference population is based on the empirical finding that well-nourished children in all population groups for which data exist follow very similar growth patterns (Martorell and Habicht, 1986). A scientific report from the Nutrition Foundation of India (Agarwal et al., 1991) has concluded that the WHO standard is generally applicable to Indian children.

The three indices of nutritional status are expressed in standard deviation units (z-scores) from the median for the international reference population. Children who are more than two standard deviations below the reference median on any of the indices are considered to be *undernourished*, and children who fall more than three standard deviations below the reference median are considered to be *severely undernourished*.

Each of these indices provides somewhat different information about the nutritional status of children. Weight-for-age is a composite measure that takes into account both chronic and acute undernutrition. Children who are more than two standard deviations below the reference median on this index are considered to be *underweight*. The height-for-age index measures linear growth retardation. Children who are more than two standard deviations below the median of the reference population in terms of height-for-age are considered short for their age or *stunted*. The percentage in this category indicates the prevalence of chronic undernutrition, which often results from a failure to receive adequate nutrition over a long period of time or from chronic or recurrent diarrhoea. Height-for-age, therefore, does not vary appreciably by the season in which data are collected.

The weight-for-height index examines body mass in relation to body length. Children who are more than two standard deviations below the median of the reference population in terms of weight-for-height are considered too thin or *wasted*. The percentage in this category indicates the prevalence of acute undernutrition. Wasting is associated with a failure to receive

adequate nutrition in the period immediately before the survey and may be the result of seasonal variations in food supply or recent episodes of illness.

The validity of these indices is determined by many factors, including the coverage of the population of children and the accuracy of the anthropometric measurements. The survey was not able to measure the height and weight of all eligible children, usually because the child was not at home at the time of the health investigator's visit or because the mother refused to allow the child to be weighed and measured. In West Bengal, NFHS-2 did not measure 5 percent of children under age three (see Table B.3 in Appendix B), a much lower nonresponse rate than the national rate of 13 percent. Also excluded from the analysis are children whose month and year of birth were not known and those with grossly improbable height or weight measurements. In addition, two of the three indices (weight-for-age and height-for-age) are sensitive to misreporting of children's ages, including heaping on preferred digits.

Table 7.9 shows the percentage of children classified as undernourished by selected demographic characteristics. Forty-nine percent of children under three years of age are underweight and 42 percent are stunted. Similar estimates at the national level are 47 and 46 percent, respectively. The proportion of children who are severely undernourished is also very high—16 percent according to weight-for-age and 19 percent according to height-for-age. In addition, wasting is quite evident in West Bengal, affecting 14 percent of children under three years of age, although this percentage is somewhat lower than the national estimate of 16 percent. The proportion of children under three years of age who are underweight decreased from 55 percent in NFHS-1 to 49 percent in NFHS-2, and the proportion severely underweight decreased from 18 percent to 16 percent. It is not possible to provide comparable figures for wasting and stunting between NFHS-1 and NFHS-2 as height/length of children was not measured during NFHS-1 in West Bengal.

The proportion of children who are undernourished increases steadily with the child's age through age 12–23 months, where it peaks at 23 percent for wasting and 54 percent for stunting. Even during the first six months of life, when most babies are breastfed, 7–16 percent of children are undernourished, according to the three nutritional indices. It is notable that at age 24–35 months, when many children have been weaned from breast milk, more than one-quarter are severely stunted and more than one-fifth are severely underweight.

Overall, girls are more likely than boys to be underweight and stunted, whereas boys are slightly more likely to be wasted. The prevalence of stunting and underweight generally increases with increasing birth order. There is no consistent pattern in the prevalence of wasting by birth order. Young children in families with four or more children are nutritionally the most disadvantaged. First births have lower than average levels of undernutrition on two out of the three measures (underweight and stunting). Children born after a short birth interval are more likely than other children to be undernourished.

Table 7.10 shows the nutritional status of children by selected background characteristics. Undernutrition is substantially higher in rural areas than in urban areas. Even in urban areas, 32 percent of children are underweight and 26 percent are stunted. Rates of undernutrition in Kolkata are slightly lower than rates for urban areas as a whole. Children whose mothers are illiterate are much more likely to be undernourished than children whose mothers have completed at least high school (see Figure 7.2). As the level of mother's education increases, the

Table 7.9 Nutritional status of children by demographic characteristics

Percentage of children under age 3 years classified as undernourished on three anthropometric indices of nutritional status, according to selected demographic characteristics, West Bengal, 1998-99

Demographic characteristic	Weight-for-age		Height-for-age		Weight-for-height		Number of children
	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	Percentage below -3 SD	Percentage below -2 SD ¹	
Age of child							
< 6 months	1.4	11.8	4.5	16.0	1.2	6.8	182
6-11 months	5.7	39.6	7.6	21.8	0.0	6.3	171
12-23 months	22.3	59.4	24.1	54.0	2.9	23.0	393
24-35 months	22.1	60.0	26.7	50.0	1.1	10.4	365
Sex of child							
Male	13.7	45.5	14.4	36.6	1.5	14.8	586
Female	19.1	52.3	24.5	47.0	1.7	12.3	525
Birth order							
1	12.7	43.0	16.0	37.2	0.7	13.6	379
2-3	16.4	48.3	17.2	39.9	2.0	13.8	509
4-5	21.4	58.5	30.3	52.5	3.1	15.1	156
6+	23.8	61.2	27.0	52.6	0.0	8.9	68
Previous birth interval²							
First birth	12.6	43.4	16.2	37.3	0.7	13.8	381
< 24 months	21.1	57.0	29.7	50.0	1.6	15.6	132
24-47 months	19.7	54.3	21.5	46.7	2.7	14.1	380
48+ months	13.8	43.4	14.0	34.7	1.2	11.2	218
Total	16.3	48.7	19.2	41.5	1.6	13.6	1,111

Note: Each index is expressed in standard deviation units (SD) from the median of the International Reference Population.
¹Includes children who are below -3 SD from the International Reference Population median
²First-born twins (triplets, etc.) are counted as first births because they do not have a previous birth interval.

percentage stunted and underweight declines substantially. Among children whose mothers are either illiterate or literate but did not complete high school, there is not much difference in the percentage wasted. Children of illiterate women are almost four times more likely to be wasted than children whose mothers completed high school. Muslim children are considerably more likely than Hindu children to be underweight and stunted, and they are slightly more likely to be wasted. Children belonging to scheduled castes and scheduled tribes have higher levels of undernutrition than other children on all three measures. Undernutrition is relatively low for children whose mothers have not worked in the past 12 months, which is not unexpected in the Indian situation where non-working women are likely to be from better off families.

The nutritional status of children is strongly related to maternal nutritional status. In general, undernutrition is more common for children of mothers whose height is less than 145 centimetres or whose body mass index is below 18.5 than for other children. All three measures of undernutrition are strongly related to the household's standard of living. Children from households with a low standard of living are 2-3 times more likely to be underweight or stunted than children from households with a high standard of living.

Table 7.10 Nutritional status of children

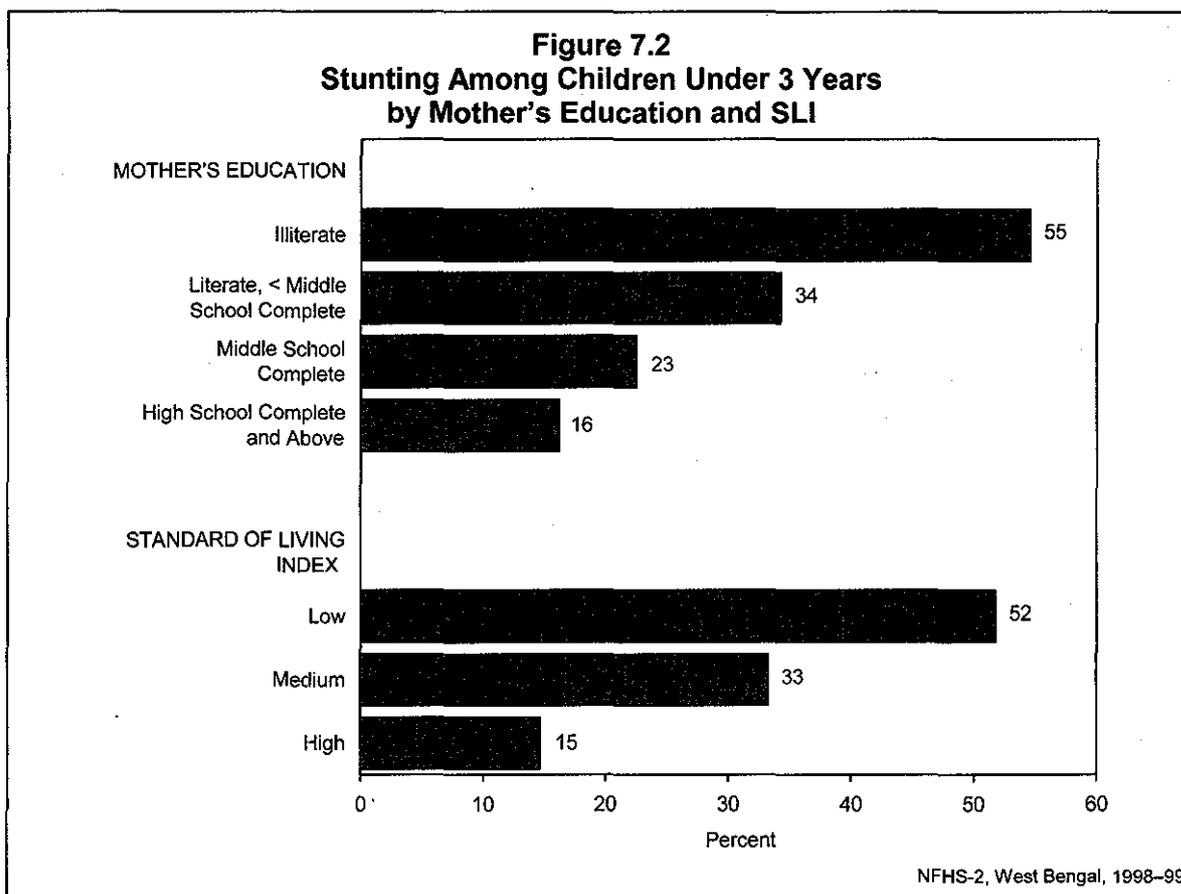
Percentage of children under age 3 years classified as undernourished on three anthropometric indices of nutritional status, according to selected background characteristics, West Bengal, 1998–99

Background characteristic	Weight-for-age		Height-for-age		Weight-for-height		Number of children
	Percent-age below -3 SD	Percent-age below -2 SD ¹	Percent-age below -3 SD	Percent-age below -2 SD ¹	Percent-age below -3 SD	Percent-age below -2 SD ¹	
Residence							
Urban	9.3	31.5	9.5	25.5	0.8	11.1	204
Rural	17.8	52.6	21.4	45.1	1.7	14.2	907
Kolkata	6.5	27.9	7.1	23.3	0.0	10.1	45
Mother's education							
Illiterate	23.5	58.4	26.0	54.6	2.7	15.8	550
Literate, < middle school complete	10.8	46.4	16.4	34.3	0.4	13.4	341
Middle school complete	9.7	36.5	6.7	22.5	1.1	12.2	121
High school complete and above	3.6	18.9	5.6	16.2	0.0	4.0	99
Religion							
Hindu	14.9	44.5	17.4	36.8	1.3	13.4	744
Muslim	19.4	58.0	23.5	51.8	2.3	14.3	347
Caste/tribe							
Scheduled caste	20.5	56.1	21.0	45.6	2.5	18.1	280
Scheduled tribe	22.4	57.4	22.4	46.6	1.7	17.7	76
Other backward class	(17.6)	(36.1)	(10.0)	(27.0)	(0.0)	(13.7)	39
Other	14.0	45.8	18.6	40.1	1.3	11.5	712
Mother's work status							
Working in family farm/business	(17.1)	(62.2)	(17.1)	(62.5)	(0.0)	(15.4)	52
Employed by someone else	24.3	57.8	27.9	48.0	1.9	15.2	141
Self-employed	(28.5)	(59.8)	(31.1)	(55.9)	(2.7)	(11.9)	47
Not worked in past 12 months	14.3	45.9	17.3	38.4	1.6	13.4	871
Mother's height							
< 145 cm	27.6	58.7	35.8	57.1	0.4	12.0	180
≥ 145 cm	14.1	46.8	16.0	38.5	1.8	13.9	931
Mother's body mass index							
< 18.5 kg/m ²	20.0	58.6	21.8	47.7	1.9	16.3	578
≥ 18.5 kg/m ²	12.4	38.1	16.5	34.8	1.3	10.8	529
Standard of living index							
Low	20.4	56.5	25.4	51.8	2.3	15.5	563
Medium	12.4	44.2	13.3	33.3	1.1	12.5	429
High	7.4	21.4	6.0	14.7	0.0	9.3	99
Total	16.3	48.7	19.2	41.5	1.6	13.6	1,111

Note: Each index is expressed in standard deviation units (SD) from the median of the International Reference Population. Total includes 19 children whose mothers belong to other religions and 2, 2, 5, 4, and 20 children with missing information on mother's education, religion, caste/tribe, mother's body mass index, and the standard of living index, respectively, who are not shown separately.

() Based on 25–49 unweighted cases

¹Includes children who are below -3 SD from the International Reference Population median



7.6 Anaemia Among Children

Anaemia is a serious concern for young children because it can result in impaired cognitive performance, behavioural and motor development, coordination, language development, and scholastic achievement, as well as increased morbidity from infectious diseases (Seshadri, 1997). One of the most vulnerable groups is children age 6–24 months (Stoltzfus and Dreyfuss, 1998).

In West Bengal, haemoglobin levels were tested for 93 percent of children age 6–35 months (see Table B.3 in Appendix B). Table 7.11 and Figure 7.3 show anaemia levels for children age 6–35 months. Overall, more than three-quarters (78 percent) of these children have some level of anaemia⁴, including 27 percent who are mildly anaemic (10.0–10.9 g/dl), 46 percent who are moderately anaemic (7.0–9.9 g/dl), and 5 percent who are severely anaemic (less than 7.0 g/dl). Notably, a much larger proportion of children (78 percent) than women (63 percent) are anaemic. In terms of mild anaemia, women (45 percent) have a higher proportion than children (27 percent). However, the rate of moderate anaemia is almost three times higher in children (46 percent) than in women (16 percent). Severe anaemia is more than three times higher among children than women.

⁴Rates that are not adjusted for altitude are identical to the corresponding adjusted rates.

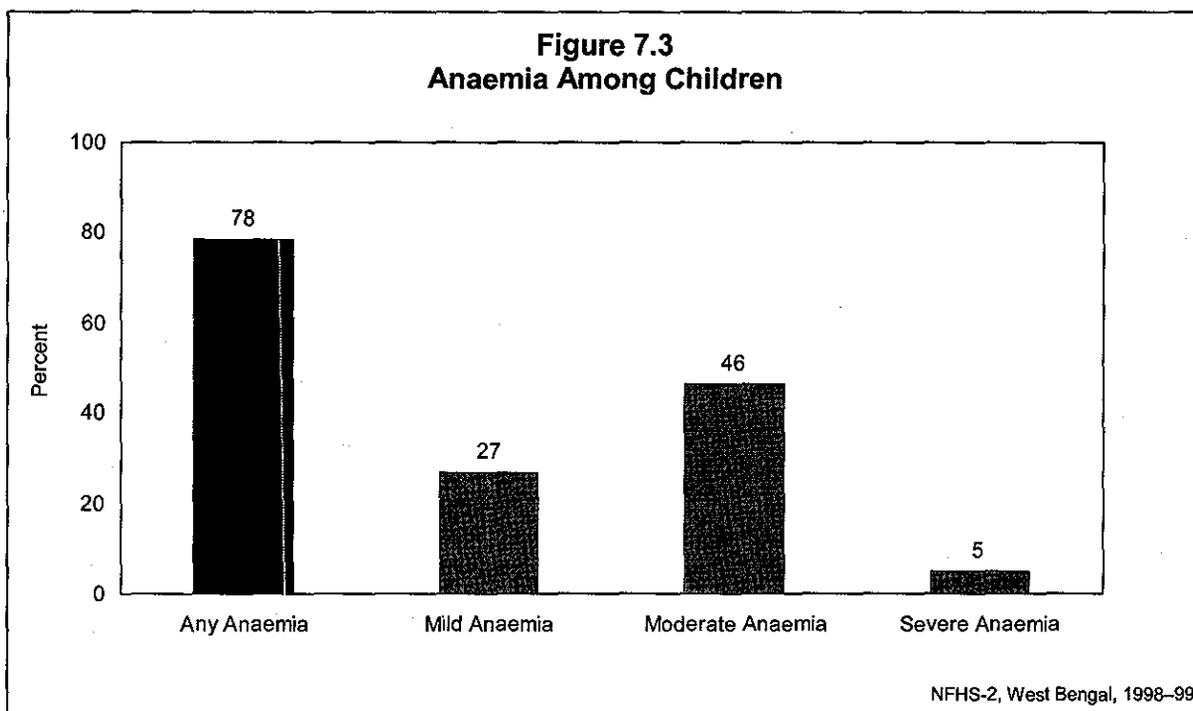
Table 7.11 Anaemia among children

Percentage of children age 6–35 months classified as having iron-deficiency anaemia by selected background characteristics, West Bengal, 1998–99

Background characteristic	Percentage of children with any anaemia	Percentage of children with:			Number of children
		Mild anaemia	Moderate anaemia	Severe anaemia	
Age of child					
6–11 months	81.7	31.9	45.9	3.9	164
12–23 months	82.6	24.4	52.0	6.2	396
24–35 months	72.2	27.3	40.3	4.6	370
Sex of child					
Male	78.1	26.5	46.3	5.3	485
Female	78.5	27.2	46.3	5.1	444
Birth order					
1	73.7	30.8	37.7	5.2	307
2–3	80.6	25.2	49.9	5.4	428
4–5	80.3	25.7	49.4	5.2	132
6+	81.3	21.0	56.9	3.3	62
Residence					
Urban	64.1	26.1	33.5	4.6	172
Rural	81.5	27.0	49.2	5.3	758
Kolkata	59.6	28.5	30.4	0.7	38
Mother's education					
Illiterate	85.2	23.0	57.6	4.6	459
Literate, < middle school complete	79.7	32.0	42.5	5.3	293
Middle school complete	63.9	31.7	22.9	9.2	105
High school complete and above	49.7	23.4	24.0	2.3	71
Religion					
Hindu	76.7	25.3	46.6	4.8	612
Muslim	80.7	30.8	44.4	5.5	296
Caste/tribe					
Scheduled caste	79.5	22.0	52.1	5.4	244
Scheduled tribe	94.7	18.1	66.7	9.9	63
Other backward class	(81.4)	(21.1)	(54.5)	(5.7)	35
Other	75.9	30.3	41.1	4.5	586
Mother's work status					
Working in family farm/business	(88.6)	(26.8)	(55.7)	(6.1)	43
Employed by someone else	83.4	25.4	54.2	3.8	120
Self-employed	(86.1)	(21.7)	(61.3)	(3.1)	40
Not worked in past 12 months	76.4	27.4	43.6	5.4	727
Standard of living index					
Low	85.0	26.1	54.6	4.2	476
Medium	74.3	28.2	39.9	6.3	363
High	54.0	24.0	23.3	6.7	76
Mother's anaemia status					
Not anaemic	68.1	28.3	32.9	6.9	302
Mildly anaemic	80.0	27.7	48.8	3.5	443
Moderately anaemic	91.3	21.4	64.0	5.9	174
Total	78.3	26.9	46.3	5.2	929

Note: Haemoglobin levels are adjusted for altitude when calculating the degree of anaemia. Total includes 19 children belonging to other religions, 10 children whose mothers are severely anaemic, and 2, 2, and 14 children with missing information on religion, caste/tribe, and the standard of living index, respectively, who are not shown separately.

() Based on 25–49 unweighted cases



Several groups of children have particularly high levels of anaemia. These include Muslim children, scheduled-tribe children, children from other backward classes, children living in rural areas, and children from households with a low standard of living. The overall prevalence of anaemia is much lower among children whose mothers have at least completed high school than among other children. As expected, there is a strong positive relationship between the anaemia status of mothers and prevalence of anaemia among children. Despite these differentials, anaemia is very widespread in West Bengal. The majority of children in almost every group shown in the table are anaemic.

7.7 Iodization of Salt

Iodine is an important micronutrient. A lack of iodine in the diet can lead to Iodine Deficiency Disorders (IDD), which, according to the World Health Organization, can cause miscarriages, brain disorders, cretinism, and retarded psychomotor development. Iodine deficiency is the single most important and preventable cause of mental retardation worldwide.

It has been estimated that 200 million people in India are exposed to the risk of iodine deficiency and 70 million suffer from goitre and other IDDs (IDD & Nutrition Cell, 1998). In addition, about one-fifth of pregnant women are at considerable risk of giving birth to children who will not reach their optimum physical and mental potential because of maternal iodine deficiency (Vir, 1995).

Iodine deficiency can be avoided by using salt that has been fortified with iodine. In 1983-84, the Government of India adopted a policy to achieve universal iodization of edible salt by 1992. In 1988, the Prevention of Food Adulteration Act was amended to fix the minimum iodine content of salt at 30 parts per million (ppm) at the manufacturing level and 15 ppm at the consumer level (Ministry of Health and Family Welfare, 1994). The Government of India

advised all states and union territories to issue notifications banning the sale of edible salt that is not iodized. However, the ban on iodized salt was lifted in September, 2000.

NFHS-2, with its representative sample of households throughout West Bengal, is an ideal vehicle for measuring the degree of salt iodization in the state. Iodine levels in salt can be measured in the laboratory using a standard titration test or in the field using a rapid-test kit. In NFHS-2, interviewers measured the iodine content of cooking salt in each interviewed household using a rapid-test kit. The test kit consists of ampoules of a stabilized starch solution and a weak acid-based solution. The interviewer squeezes one drop of the starch solution on a sample of cooking salt obtained from the household respondent. If the colour changes (from light blue through dark violet), the interviewer matches the colour of the salt as closely as possible to a colour chart on the test kit and records the iodine level as 7, 15, or 30 ppm. If the initial test is negative (no change in colour), the interviewer is required to conduct a second confirmatory test on a new salt sample, using the acid-based solution in addition to the starch solution. This test is necessary because the starch solution will not show any colour change even on iodized salt if the salt is alkaline or is mixed with alkaline free-flow agents. If the colour of the salt does not change even after the confirmatory test, the salt is not iodized. Because of uncertainties and subjective judgement in the matching process, the rapid test should not be seen as giving an exact quantitative estimate of salt iodization, but it does provide useful information on whether or not salt is iodized, as well as the extent of iodization. A recent multicentric study in eight centres in India concluded that the rapid test kit can be used for semi-quantitative estimation of the iodine content of salt to monitor the quality of salt being used in a community (Kapil et al., 1999).

Table 7.12 shows the extent of salt iodization at the household level. Overall, 62 percent of households use cooking salt that is iodized at the recommended level of 15 ppm or more. This level is quite low in light of the government regulations on salt iodization that were in effect at the time of the survey. Eleven percent of households use salt that is not iodized at all and 27 percent use salt that is inadequately iodized (less than 15 ppm). Differentials in salt iodization by background characteristics are pronounced. There are no substantial differences in salt iodization between large cities (84 percent), small cities (84 percent), and towns (78 percent). However, households in rural areas (55 percent) are much less likely to use adequately iodized salt. Households in which the head is neither Hindu nor Muslim are much less likely to use iodized salt than households with Hindu or Muslim heads. The use of iodized salt is lower in households headed by persons from scheduled tribes than in other households. The widest differentials are observed for the standard of living index. Eighty-four percent of households with a high standard of living use adequately iodized salt, compared with only 52 percent of households with a low standard of living.

Table 7.12 Iodization of salt

Percent distribution of households by degree of iodization of salt, according to selected background characteristics, West Bengal, 1998-99

Background characteristic	Not iodized	7 ppm	15 ppm	30 ppm	Missing	Total percent	Number of households
Type of place of residence							
Large city	4.8	10.9	19.1	64.4	0.8	100.0	315
Small city	4.7	11.2	18.9	65.0	0.2	100.0	446
Town	7.2	13.7	11.7	66.0	1.4	100.0	498
Rural area	13.3	31.7	29.2	25.4	0.3	100.0	3,466
Religion of household head							
Hindu	10.9	26.2	24.7	37.8	0.5	100.0	3,580
Muslim	11.7	27.1	29.2	31.4	0.6	100.0	1,029
Other	21.2	27.8	27.1	23.9	0.0	100.0	104
Caste/tribe of household head							
Scheduled caste	12.6	32.7	29.2	24.9	0.6	100.0	1,078
Scheduled tribe	16.3	32.4	30.6	20.7	0.0	100.0	338
Other backward class	11.7	21.7	29.3	36.5	0.8	100.0	210
Other	10.2	24.0	23.8	41.5	0.5	100.0	3,077
Standard of living index							
Low	14.8	32.8	29.7	22.1	0.6	100.0	2,128
Medium	9.3	24.2	25.7	40.3	0.4	100.0	1,913
High	4.9	11.0	11.8	72.1	0.1	100.0	605
Total	11.3	26.5	25.8	36.0	0.5	100.0	4,725

Note: Total includes 11, 21, and 79 households with missing information on religion, caste/tribe, and the standard of living index, respectively, which are not shown separately.
ppm: Parts per million

CHAPTER 8

MATERNAL AND REPRODUCTIVE HEALTH

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

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

- Provision of antenatal care, including at least three antenatal care visits, iron prophylaxis for pregnant and lactating women, two doses of tetanus toxoid vaccine, detection and treatment of anaemia in mothers, and management and referral of high-risk pregnancies
- Encouragement of institutional deliveries or home deliveries assisted by trained health personnel
- Provision of postnatal care, including at least three postnatal visits
- Identification and management of reproductive tract and sexually transmitted infections

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

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

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

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

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

8.1 Antenatal Problems and Care

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

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

folic acid tablets or syrup during the pregnancy. Results from each of these questions are discussed in this chapter.

Problems During Pregnancy

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

As shown in Table 8.1 and Figure 8.1, the problems most commonly reported are excessive fatigue (49 percent), swelling of the legs, body, or face (25 percent), anaemia (17 percent), and blurred vision (17 percent). Twelve percent of women reported night blindness, 7 percent reported convulsions that were not from fever, and 3 percent reported any vaginal bleeding. All of the above health problems have a higher reported prevalence in rural areas than in urban areas.

Table 8.1 Health problems during pregnancy			
Among births during the three years preceding the survey, percentage of mothers experiencing specific health problems during pregnancy by residence, West Bengal, 1998–99			
Problem during pregnancy	Urban	Rural	Total
Night blindness	5.0	13.1	11.6
Blurred vision	9.1	18.4	16.7
Convulsions not from fever	4.9	7.6	7.1
Swelling of the legs, body, or face	15.4	27.2	25.0
Excessive fatigue	42.8	50.6	49.2
Anaemia	13.7	17.4	16.7
Vaginal bleeding	1.4	3.3	3.0
Number of births	239	1,077	1,316

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

Antenatal Check-Ups

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

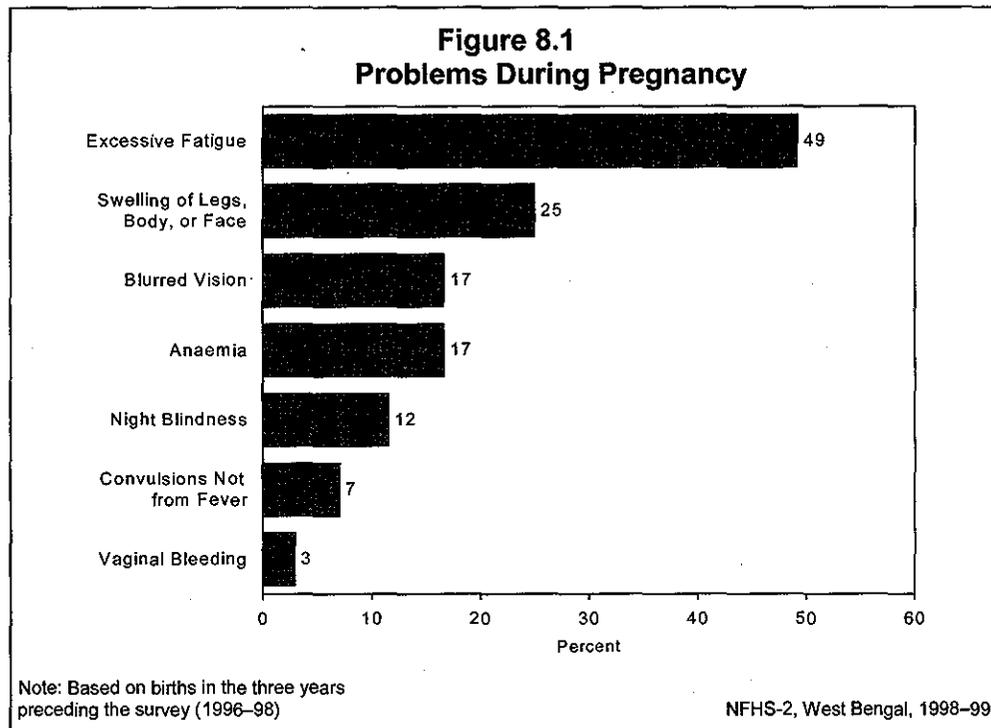


Table 8.2 and Figure 8.2 show the percent distribution of births in the three years preceding the survey by the source of antenatal check-ups received during pregnancy. Women who received antenatal check-ups both at home and outside the home are categorized as having received care outside the home. If a woman received check-ups from more than one type of health provider, only the provider with the highest qualification is considered. NFHS-2 results for West Bengal show that mothers received antenatal check-ups for 9 out of every 10 births during the three years preceding the survey, up from 77 percent of births in NFHS-1. Mothers received antenatal check-ups from doctors for 76 percent of births and from other health professionals (such as ANMs, nurses, midwives, or LHV's) for 11 percent of births. Only 3 percent received check-ups only at home from a health worker. Antenatal check-ups are more common for births to younger women than to older women, and they are particularly common for first births. The proportion of births for which the mother received antenatal check-ups was much higher in urban areas (96 percent) than in rural areas (89 percent). In Kolkata, the mother received at least one antenatal check-up from a doctor for virtually all births (98 percent).

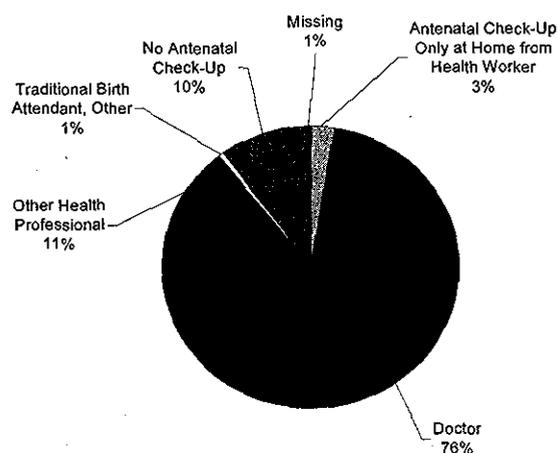
At least 91 percent of literate mothers in West Bengal received antenatal check-ups for their births. Virtually all mothers who have completed at least middle school had an antenatal check-up. Eighty-six percent of illiterate mothers received antenatal check-ups. The proportion of births whose mothers received antenatal check-ups from a doctor increases steadily with education, from 67 percent for illiterate mothers to 96 percent for mothers who have completed at least high school. Interestingly, illiterate mothers (15 percent) were more likely to receive antenatal check-ups from 'other health professionals' than were literate mothers (3-10 percent). Ninety-two percent of Hindu mothers and 85 percent of Muslim mothers received antenatal check-ups. A higher proportion of Hindus than Muslims received antenatal check-ups from doctors and other health professionals. By caste/tribe, the likelihood of having received any antenatal check-up and a check-up from a doctor is highest for women belonging to other backward classes. Scheduled-tribe mothers and women belonging to 'other' castes/tribes were

Table 8.2 Antenatal check-ups									
Percent distribution of births during the three years preceding the survey by source of antenatal check-up, according to selected background characteristics, West Bengal, 1998-99									
Background characteristic	Antenatal check-up only at home from health worker	Antenatal check-up outside home ¹ from:				No antenatal check-up	Missing	Total percent	Number of births
		Doctor	Other health professional	Traditional birth attendant, other					
Mother's age at birth									
< 20	2.7	78.3	10.6	0.8	6.9	0.8	100.0	358	
20-34	2.7	75.2	11.4	0.4	9.9	0.4	100.0	924	
35-49	(0.0)	(67.6)	(8.0)	(0.0)	(24.3)	(0.0)	100.0	34	
Birth order									
1	1.5	85.2	7.1	0.9	4.9	0.4	100.0	454	
2-3	3.2	74.1	13.6	0.0	8.3	0.8	100.0	601	
4-5	3.0	61.9	13.7	0.8	20.6	0.0	100.0	179	
6+	3.4	67.3	8.7	1.7	18.9	0.0	100.0	82	
Residence									
Urban	0.0	87.0	9.0	0.0	3.6	0.5	100.0	239	
Rural	3.2	73.4	11.5	0.6	10.8	0.5	100.0	1,077	
Kolkata	0.0	97.8	0.0	0.0	1.8	0.4	100.0	52	
Mother's education									
Illiterate	2.9	67.2	15.0	0.6	13.6	0.5	100.0	650	
Literate, < middle school complete	3.3	77.6	9.5	0.3	8.5	0.7	100.0	407	
Middle school complete	1.0	93.9	4.2	0.0	0.9	0.0	100.0	140	
High school complete and above	0.0	95.8	3.1	1.2	0.0	0.0	100.0	117	
Religion									
Hindu	2.0	77.6	12.4	0.3	7.1	0.6	100.0	879	
Muslim	4.0	71.8	8.3	1.0	14.8	0.0	100.0	410	
Caste/tribe									
Scheduled caste	0.9	74.2	17.9	0.9	5.7	0.4	100.0	319	
Scheduled tribe	1.5	65.3	18.7	0.0	11.6	2.9	100.0	93	
Other backward class	2.7	85.5	9.0	0.0	2.8	0.0	100.0	49	
Other	3.2	77.2	7.7	0.5	11.1	0.3	100.0	846	
Standard of living index									
Low	3.6	66.4	15.2	0.2	14.1	0.4	100.0	670	
Medium	0.8	84.5	7.4	0.5	5.9	0.7	100.0	503	
High	1.1	94.6	4.3	0.0	0.0	0.0	100.0	116	
Total	2.6	75.8	11.1	0.5	9.5	0.5	100.0	1,316	

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 24 births to women belonging to other religions and 2, 3, 8, and 26 births with missing information on mother's education, religion, caste/tribe, and the standard of living index, respectively, which are not shown separately.
 () Based on 25-49 unweighted cases
¹Includes all births for which the mothers received an antenatal check-up outside the home, even if they also received an antenatal check-up at home from a health worker. If more than one type of antenatal check-up provider was mentioned, only the provider with the highest qualification is shown.

least likely to receive any antenatal check-up. The likelihood of having received antenatal check-ups from a doctor increases with the household's standard of living, from 66 percent for births to mothers with a low standard of living to 95 percent for births to mothers with a high standard of living.

Figure 8.2
Source of Antenatal Check-Ups
During Pregnancy



Note: Percents add to more than 100.0 due to rounding

NFHS-2, West Bengal, 1998-99

In summary, mothers received antenatal care for the overwhelming majority of births in the three years preceding the survey in West Bengal. Women who did not receive an antenatal check-up are disproportionately older, of high parity, illiterate, Muslim, living in households with a low standard of living, and from scheduled tribes or 'other' castes/tribes. This suggests that further improvements in the coverage of antenatal care in West Bengal will require special efforts to reach high-parity women and women who are socioeconomically disadvantaged.

Reasons for Not Receiving Antenatal Check-Ups

Table 8.3 shows the percent distribution of births in the three years preceding the survey whose mothers did not receive any antenatal check-ups in a health facility or at home by the main reason for not receiving check-ups. For births to mothers who did not have any antenatal check-ups, 57 percent of mothers did not consider having a check-up to be necessary and 1 percent did not consider it to be customary. Cost accounts for another 24 percent of cases. Family opposition to antenatal care was the main reason for 5 percent of births whose mothers did not have antenatal check-ups. These results suggest the need to inform communities about the availability and benefits of antenatal check-ups to help overcome traditional attitudes and other hurdles that prevent mothers from seeking antenatal care for their pregnancies. Utilization of antenatal care services could also be increased by lowering the cost and making the services more accessible.

Number and Timing of Antenatal Check-Ups

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

Table 8.3 Reasons for not receiving an antenatal check-up	
Percent distribution of births during the three years preceding the survey to mothers who did not receive an antenatal check-up by the main reason for not receiving an antenatal check-up, West Bengal, 1998–99	
Reason for not receiving an antenatal check-up	Total
Not necessary	57.2
Not customary	1.1
Costs too much	24.4
Too far/no transport	2.2
Poor quality services	0.7
Family did not allow	4.6
Lack of knowledge	1.1
Other	8.8
Total percent	100.0
Number of births	125
Note: Table includes only the two most recent births during the three years preceding the survey.	

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

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

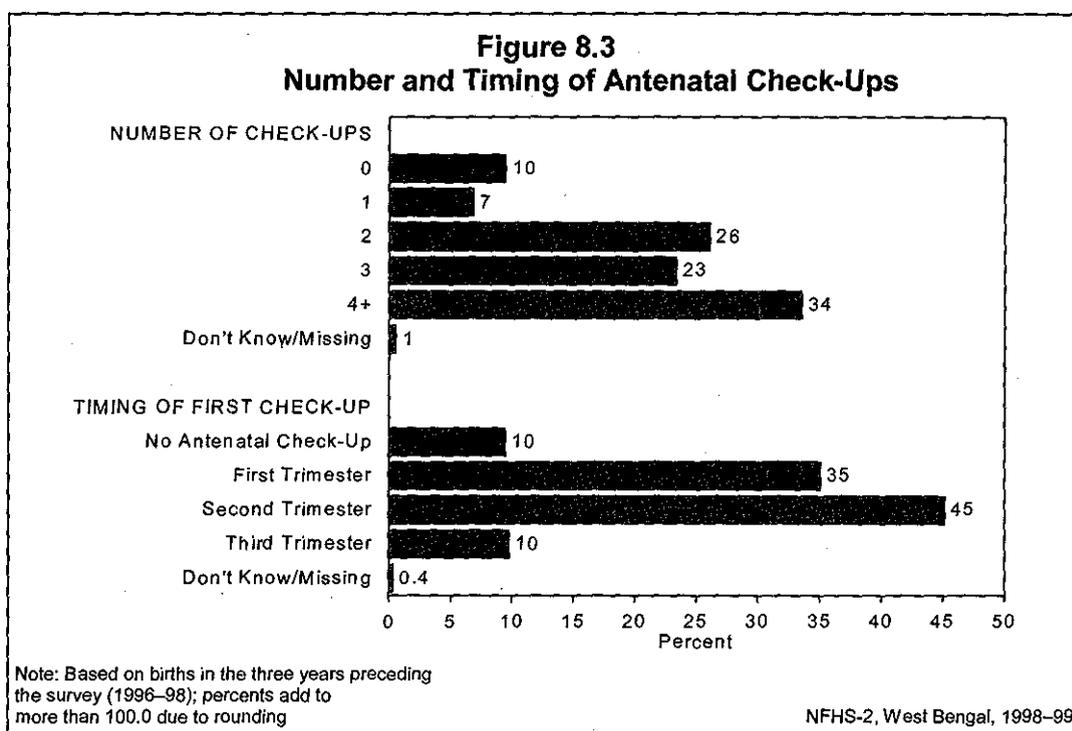
Table 8.4 and Figure 8.3 show the percent distribution of births in the three years preceding the survey by number and timing of antenatal check-ups. In West Bengal, mothers of 57 percent of births received at least three antenatal check-ups and 34 percent had four or more check-ups. The median number of check-ups was 2.5. There are substantial differences in the number of antenatal check-ups by residence. At least three antenatal check-ups were received for 83 percent of births to mothers living in urban areas compared with 51 percent of births to mothers living in rural areas. The median number of check-ups is also much higher in urban areas (5.1) than in rural areas (2.3). The shorter distances to antenatal-care services and the comparative ease of travelling in urban areas, as well as the higher educational attainment of mothers in urban areas, could be important factors for the larger number of check-ups received by mothers in urban areas.

Table 8.4 Number and timing of antenatal check-ups and stage of pregnancy			
Percent distribution of births during the three years preceding the survey by number of antenatal check-ups and by the stage of pregnancy at the time of the first check-up, according to residence, West Bengal, 1998–99			
Number and timing of check-ups	Urban	Rural	Total
Number of antenatal check-ups			
0	3.6	10.8	9.5
1	2.4	7.8	6.9
2	10.9	29.5	26.1
3	12.8	25.8	23.4
4+	69.8	25.5	33.6
Don't know/missing	0.6	0.6	0.6
Total percent	100.0	100.0	100.0
Median number of check-ups (for those who received at least one antenatal check-up)	5.1	2.3	2.5
Stage of pregnancy at the time of the first antenatal check-up			
No antenatal check-up	3.6	10.8	9.5
First trimester	58.4	30.0	35.1
Second trimester	36.3	47.2	45.2
Third trimester	1.6	11.6	9.8
Don't know/missing	0.1	0.5	0.4
Total percent	100.0	100.0	100.0
Median months pregnant at first antenatal check-up (for those who received at least one antenatal check-up)	3.1	4.6	4.5
Number of births	239	1,077	1,316
Note: Table includes only the two most recent births during the three years preceding the survey.			

For one-third (35 percent) of births that took place in the three years preceding the survey, mothers received their first antenatal check-up in the first trimester of pregnancy, and another 45 percent received their first check-up in the second trimester (Table 8.4 and Figure 8.3). Check-ups during the first trimester were much more common in urban areas (58 percent) than in rural areas (30 percent). Ten percent of mothers received antenatal care as late as the third trimester (12 percent in rural areas and 2 percent in urban areas). The median timing of the first antenatal check-up is 4.5 months for West Bengal as a whole, and it is later in rural areas (4.6 months) than in urban areas (3.1 months).

Components of Antenatal Check-Ups

The effectiveness of antenatal check-ups in ensuring safe motherhood depends in part on the tests and measurements done and the advice given during the check-ups. NFHS-2 collected information on this important aspect of antenatal care for the first time by asking mothers who received antenatal check-ups whether they received each of several components of antenatal check-ups at least once during any of their check-ups during pregnancy. For births during the three years preceding the survey for which antenatal check-ups were received, Table 8.5 presents the percentage whose mothers received specific components of check-ups by residence. Except for X-rays (which are not recommended as a standard component of antenatal care), all of the



measurements and tests are part of essential obstetric care or are required for monitoring high-risk pregnancies.

Among all births for which mothers received antenatal check-ups, 62 percent of mothers were weighed, 61 percent had their blood pressure checked, and 55 percent had an abdominal examination as part of the antenatal check-ups. Other common components of antenatal check-ups were blood tests (46 percent), urine tests (38 percent), the measurement of height (21 percent), and internal examinations (20 percent). Mothers of only 7 percent of births had a sonogram or ultrasound. X-rays were performed in only 6 percent of cases, whereas amniocentesis was rarely performed. All of these measurements or procedures were performed more often during antenatal check-ups for mothers in urban than in rural areas. The differences by residence are most pronounced for urine testing (73 percent in urban areas compared with 30 percent in rural areas) and blood testing (80 percent in urban areas compared with 38 percent in rural areas).

Table 8.5 also shows the type of advice received by mothers who had antenatal check-ups for births in the three years preceding the survey. Dietary advice was given to mothers most often (in 73 percent of cases). Mothers were less likely to receive advice on the danger signs of pregnancy (55 percent), on delivery care (44 percent), on newborn care (41 percent), and on family planning (23 percent). Urban-rural differences are most pronounced for the proportions receiving advice on danger signs of pregnancy (70 percent and 51 percent, respectively) and on delivery care (59 percent and 40 percent).

Tetanus Toxoid Vaccination

In India, an important cause of death in infancy is neonatal tetanus, which is caused by newborn infants becoming infected by tetanus organisms, usually at the umbilical stump. Neonatal tetanus

Table 8.5. Components of antenatal check-ups			
Among births during the three years preceding the survey for which an antenatal check-up was received, percentage receiving specific components of antenatal check-ups by residence, West Bengal, 1998-99			
Components of antenatal check-ups	Urban	Rural	Total
Antenatal measurements/tests			
Weight measured	87.6	56.3	62.3
Height measured	35.2	17.2	20.7
Blood pressure checked	84.3	55.6	61.1
Blood tested	80.1	38.2	46.3
Urine tested	72.5	30.2	38.4
Abdomen examined	77.5	49.1	54.6
Internal examination	42.1	14.7	20.0
X-ray	13.6	4.0	5.9
Sonography or ultrasound	23.4	3.2	7.1
Amniocentesis	1.2	0.1	0.3
Antenatal advice			
Diet	83.8	70.0	72.7
Danger signs of pregnancy	70.1	50.9	54.6
Delivery care	58.5	40.3	43.8
Newborn care	49.6	39.2	41.2
Family planning	22.9	23.4	23.3
Number of births for which the mother received at least one antenatal check-up	229	955	1,184
Note: Table includes only the two most recent births during the three years preceding the survey.			

is most common among children who are delivered in unhygienic environments and when unsterilized instruments are used to cut the umbilical cord. Tetanus typically develops during the first or second week of life and is fatal in 70-90 percent of cases (Foster, 1984). If neonatal tetanus infection occurs where expert medical help is not available, as is common in many rural areas in India, death is almost certain. Neonatal tetanus, however, is a preventable disease. Two doses of tetanus toxoid vaccine given one month apart during early pregnancy are nearly 100 percent effective in preventing tetanus among both newborn infants and their mothers. Immunity against tetanus is transferred to the foetus through the placenta when the mother is vaccinated.

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

For each of the two most recent births during the three years preceding the survey, NFHS-2 asked women whether they were given an injection in the arm to prevent them and their

baby from getting tetanus. Women who said they had received a tetanus injection were asked how many times they had received the injection during the pregnancy.

Table 8.6 shows the distribution of births by the number of tetanus toxoid injections given to mothers, according to selected background characteristics. Tetanus toxoid coverage in West Bengal, although quite high, is not yet complete. For births in the three years preceding the survey, 8 percent of the mothers did not receive any tetanus toxoid injections during pregnancy, and another 9 percent received only one injection. The proportion of mothers who received two or more tetanus toxoid injections during their pregnancies rose from 71 percent to 82 percent between NFHS-1 and NFHS-2.

Tetanus toxoid coverage (two or more injections) is slightly higher in urban areas (88 percent) than in rural areas (81 percent). Ninety-three percent of mothers in Kolkata received two or more tetanus toxoid injections. Coverage varies by age of mother and by birth order. It is much higher for births to women under age 35 (82–85 percent) than for the small number of births to older mothers (62 percent). At least two tetanus toxoid injections were received by mothers for 89 percent of first births, compared with 72 percent of fourth and fifth births and 67 percent of higher-order births. Tetanus toxoid coverage also varies substantially by religion, with coverage being higher among Hindus (86 percent) than Muslims (77 percent). Coverage is lower for births to scheduled-tribe women (74 percent) than for births to mothers in other castes/tribes (82–88 percent). The percentage of women who received two or more tetanus toxoid injections is positively correlated with literacy and education. Tetanus toxoid coverage is 77 percent among births to illiterate women, compared with 94 percent among births to women who completed at least high school. Coverage also increases with the standard of living, being 79 percent for mothers with a low standard of living, 84 percent for mothers with a medium standard of living, and 92 percent for mothers with a high standard of living. These results suggest that despite generally improving coverage of tetanus toxoid vaccinations, the coverage for socioeconomically disadvantaged women lags behind the level for the state as a whole.

Iron and Folic Acid Supplementation

Nutritional deficiencies in women are often exacerbated during pregnancy because of the additional nutrient requirements of foetal growth. Iron deficiency anaemia is the most common micronutrient deficiency in the world. It is a major threat to safe motherhood and to the health and survival of infants because it contributes to low birth weight, lowered resistance to infection, impaired cognitive development, and decreased work capacity. Studies in different parts of India have estimated that the proportion of births with a low birth weight (less than 2,500 grams) ranges from 15 percent in Trivandrum to 46 percent in Baroda (Nutrition Foundation of India, 1993). Overall, about one-third of newborn children in India are of low birth weight, indicating that many pregnant women in India suffer from nutritional deficiencies. Improvement in a woman's nutritional status, coupled with proper health care during pregnancy, can substantially increase her child's birth weight (Ramachandran, 1992). To this end, the provision of iron and folic acid (IFA) tablets to pregnant women to prevent nutritional anaemia forms an integral part of the safe-motherhood services offered as part of the Reproductive and Child Health Programme. The programme recommendation is that pregnant women consume 100 tablets of iron and folic acid during pregnancy.

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

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

Background characteristic	Number of tetanus toxoid injections				Total percent	Percent-age given iron and folic acid tablets or syrup	Number of births	Percent-age who received supply for 3+ months ¹	Percent-age who consumed all the supply ¹	Number of births whose mothers received IFA
	None	One	Two or more	Don't know/missing						
Mother's age at birth										
< 20	7.1	6.8	85.3	0.8	100.0	73.7	358	75.6	77.1	264
20-34	7.8	9.9	82.0	0.3	100.0	71.6	924	80.6	81.4	661
35-49	(30.8)	(7.1)	(62.1)	(0.0)	100.0	(48.5)	34	*	*	16
Birth order										
1	4.6	5.6	89.4	0.4	100.0	79.8	454	80.3	82.2	362
2-3	5.6	11.5	82.2	0.7	100.0	74.4	601	77.9	80.0	447
4-5	18.8	9.0	72.2	0.0	100.0	56.0	179	77.1	74.7	100
6+	23.9	9.0	67.1	0.0	100.0	39.4	82	(80.5)	(83.8)	32
Residence										
Urban	4.0	8.3	87.5	0.2	100.0	86.7	239	90.1	85.8	207
Rural	9.1	9.2	81.2	0.5	100.0	68.2	1,077	75.6	78.9	734
Kolkata	2.2	4.1	92.7	0.9	100.0	87.1	52	93.6	91.8	45
Mother's education										
Illiterate	12.9	9.6	77.1	0.4	100.0	61.4	650	76.1	74.4	399
Literate, < middle school complete	5.6	9.5	84.2	0.7	100.0	74.6	407	75.4	80.4	304
Middle school complete	0.0	8.4	91.6	0.0	100.0	89.2	140	84.8	90.8	125
High school complete and above	1.2	4.4	94.3	0.2	100.0	96.3	117	91.0	91.4	112
Religion										
Hindu	6.7	7.3	85.5	0.5	100.0	78.9	879	81.7	80.8	694
Muslim	11.5	11.0	77.4	0.0	100.0	54.6	410	69.4	77.7	224
Caste/tribe										
Scheduled caste	8.2	9.7	81.6	0.4	100.0	75.7	319	80.8	76.3	242
Scheduled tribe	8.7	14.5	73.9	2.9	100.0	73.9	93	86.3	88.3	69
Other backward class	2.8	8.9	88.3	0.0	100.0	84.7	49	(89.3)	(89.4)	42
Other	8.5	8.2	83.1	0.2	100.0	68.7	846	76.6	80.8	582
Standard of living index										
Low	10.7	9.9	78.9	0.4	100.0	64.7	670	76.0	74.9	434
Medium	6.9	8.2	84.3	0.6	100.0	76.8	503	79.9	83.2	386
High	1.2	6.4	92.2	0.2	100.0	90.2	116	88.2	93.7	105
Total	8.2	9.0	82.4	0.4	100.0	71.6	1,316	78.8	80.4	942

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births to mothers with other religions and births with missing information on mother's education, religion, caste/tribe, and the standard of living index, which are not shown separately.

() Based on 25-49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

¹Among births whose mothers received iron and folic acid tables or syrup

For each birth during the three years preceding the survey, NFHS-2 collected information on whether the mother received IFA tablets or syrup during pregnancy. IFA syrup was included in the question along with IFA tablets since IFA syrup is sometimes prescribed in the private sector and may even be prescribed in the public sector when and where tablets are not available.

Table 8.6 shows that mothers in West Bengal received IFA supplements for a large majority (72 percent) of births. For the state as a whole, IFA coverage increased substantially from 57 percent in NFHS-1 to 72 percent in NFHS-2. Births to women who are illiterate, Muslim, age 35 and older, of high parity, and from households with a low standard of living are at a relative disadvantage in terms of IFA coverage. IFA coverage is also lower in rural areas (68 percent) than in urban areas (87 percent).

Not all mothers who received IFA received the recommended three-month supply of tablets or syrup. Among births to women who received IFA during pregnancy, 79 percent received at least a three-month supply and 80 percent consumed all the supplements that were given to them. Consumption of the supply received is lower for mothers in rural areas (79 percent) than those in urban areas (86 percent). In Kolkata, mothers received at least a three-month supply in 94 percent of cases when IFA was given and consumed all the supply in 92 percent of cases. There is not much variation in the consumption of the supply received by mother's age, birth order, or religion. Consumption of IFA supply is positively related to mother's education level and the standard of living. Illiterate mothers were much less likely to have consumed all of their IFA supply (74 percent) than mothers who completed at least middle school (91 percent). Mothers with a low standard of living consumed their supply in only three-fourths of cases, compared with 94 percent of cases whose mother has a high standard of living. Scheduled-caste mothers were less likely than other mothers to consume their entire supply of IFA. These results indicate that, despite a fair amount of success in ensuring that pregnant women receive the recommended dosage of IFA, many women are not actually consuming an adequate amount of IFA during their pregnancies. This suggests that the Reproductive and Child Health Programme needs to do a better job in informing pregnant women about the advantages of IFA, trying to understand why many women do not consume all the IFA they receive, and overcoming resistance to the consumption of IFA.

8.2 Delivery Care

Place of Delivery

Another important thrust of the Reproductive and Child Health Programme is to encourage deliveries under proper hygienic conditions under the supervision of trained health professionals. For each birth during the three years preceding the survey, NFHS-2 asked the mother where she gave birth and who assisted during the delivery. Table 8.7 and Figure 8.4 show that 40 percent of births in West Bengal took place in health facilities, 46 percent took place in the women's own homes, and 13 percent took place in their parents' homes. The NFHS-2 estimate of the percentage of births that took place in health facilities is slightly higher than the 1997 SRS estimate for West Bengal (36 percent). Eight percent of births took place in a private health facility, 32 percent took place in public institutions (such as government-operated district, *taluk*, town, or municipal hospitals and Primary Health Centres), and less than 1 percent took place in facilities operated by nongovernmental organizations or trusts. The proportion of deliveries that took place in health facilities is substantially higher in urban areas (80 percent) than in rural areas (31 percent).

The proportion of births occurring in health facilities is much lower for Muslim mothers (16 percent) than for Hindu mothers (51 percent). Only 20 percent of births to scheduled-tribe mothers are institutional deliveries, compared with 44 percent of births to scheduled-caste

Table 8.7 Place of delivery

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

Background characteristic	Place of delivery						Total percent	Number of births
	Health facility/institution			Home				
	Public	NGO/trust	Private	Own home	Parents' home	Other ¹		
Mother's age at birth								
< 20	36.3	0.7	4.2	33.8	23.4	1.6	100.0	358
20-34	30.6	0.4	9.5	49.3	9.1	1.0	100.0	924
35-49	(9.4)	(0.0)	(4.9)	(85.8)	(0.0)	(0.0)	100.0	34
Birth order								
1	46.8	0.5	14.0	19.4	17.9	1.4	100.0	454
2-3	28.2	0.7	6.0	50.3	13.4	1.4	100.0	601
4-5	14.2	0.0	2.9	79.2	3.7	0.0	100.0	179
6+	10.3	0.3	0.0	89.4	0.0	0.0	100.0	82
Residence								
Urban	51.5	1.6	26.6	16.9	2.4	1.1	100.0	239
Rural	27.2	0.3	3.8	52.5	15.1	1.1	100.0	1,077
Kolkata	58.5	2.4	27.4	8.4	1.4	1.9	100.0	52
Mother's education								
Illiterate	24.5	0.3	1.8	59.2	13.1	1.1	100.0	650
Literate, < middle school complete	33.9	0.4	4.4	43.4	16.5	1.3	100.0	407
Middle school complete	48.6	0.6	16.7	23.3	10.7	0.0	100.0	140
High school complete and above	43.1	1.8	44.1	8.5	0.7	1.9	100.0	117
Religion								
Hindu	40.3	0.4	10.5	38.2	9.3	1.2	100.0	879
Muslim	12.5	0.7	2.7	62.4	21.1	0.7	100.0	410
Caste/tribe								
Scheduled caste	38.5	0.6	4.4	48.0	8.1	0.4	100.0	319
Scheduled tribe	20.2	0.0	0.0	66.8	10.1	2.9	100.0	93
Other backward class	33.7	0.0	20.7	31.0	12.9	1.7	100.0	49
Other	30.2	0.5	9.5	43.6	15.0	1.2	100.0	846
Standard of living index								
Low	23.3	0.1	1.9	60.8	12.8	1.0	100.0	670
Medium	42.2	0.6	8.1	34.1	14.2	0.8	100.0	503
High	33.5	2.4	42.9	13.2	4.7	3.3	100.0	116
Number of antenatal check-ups								
0	13.2	0.0	1.1	71.8	11.8	2.2	100.0	125
1	13.7	0.0	3.0	69.7	13.6	0.0	100.0	90
2	24.4	0.2	3.8	55.1	16.5	0.0	100.0	343
3	29.3	0.0	2.3	50.6	17.3	0.5	100.0	308
4+	48.2	1.0	18.2	24.3	7.1	1.2	100.0	442
Total	31.6	0.5	8.0	46.0	12.8	1.1	100.0	1,316

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 24 births to women belonging to other religions and 2, 3, 8, 26, and 8 births with missing information on mother's education, religion, caste/tribe, the standard of living index, and number of antenatal check-ups, respectively, which are not shown separately.

NGO: Nongovernmental organization

() Based on 25-49 unweighted cases

¹ Includes missing

mothers, 54 percent of births to mothers belonging to other backward classes, and 40 percent of births to mothers from 'other' castes/tribes. The proportion of births that were delivered in a health facility decreases as birth order rises from 1 (61 percent) to 6 and over (11 percent). Institutional deliveries, particularly in private facilities, increase sharply with education and with standard of living. Literate mothers, in particular, those with at least a complete middle school education are much more likely to give birth in a health facility than are illiterate mothers. Only one-quarter of births to mothers with a low standard of living and 79 percent of births to mothers with a high standard of living took place in health facilities.

Institutional deliveries are much more common among births to mothers who had four or more antenatal check-ups (67 percent) than among births whose mothers had fewer antenatal check-ups (32 percent or less). Institutional deliveries are least prevalent among births to mothers who did not receive any antenatal check-ups (14 percent), followed by births whose mothers only received one antenatal check-up (17 percent). Several factors are likely to contribute to the positive relationship between antenatal check-ups and delivery in a health facility. Women who receive antenatal check-ups are more likely than other women to deliver in a health facility because their antenatal care providers advised them to do so. Conversely, women who register themselves with a health facility for delivery may be called for regular check-ups by the facility. Another important factor may be pregnancy complications, because women with complications are more likely than other women to have antenatal check-ups and also to deliver in a health facility. Yet another contributing factor may be the growing awareness of the benefits of professional medical care during both pregnancy and delivery, especially among urban, young, and educated women. In addition, women of higher socioeconomic status may have greater access to health facilities and resources.

With regard to deliveries at home, the proportion of deliveries in a woman's own home increases and the proportion at her parents' home decreases with age and birth order. Mother's education and standard of living are both negatively associated with deliveries at home.

Deliveries in health facilities have increased in West Bengal from 32 percent at the time of NFHS-1 to 40 percent at the time of NFHS-2. This increase has been due primarily to the increased number of births taking place in public health facilities.

Assistance During Delivery

Table 8.8 and Figure 8.4 provide information on assistance during delivery by selected background characteristics. If more than one type of attendant assisted at delivery, only the most qualified attendant is shown. Forty-four percent of births in the last three years were attended by a health professional, including 35 percent by a doctor and 9 percent by an ANM, nurse, midwife, or LHV. Thirty percent of births were attended by a traditional birth attendant, and 26 percent were attended by friends, relatives, and other persons. The proportion of deliveries attended by a health professional increased from 34 percent in NFHS-1 to 44 percent in NFHS-2.

Ninety-three percent of deliveries in private institutions were attended by a doctor, compared with three-fourths of deliveries in public institutions. Among deliveries at home (the respondents' or their parents' homes), one-half were attended by a traditional birth attendant (TBA) and 7 percent were attended by a health professional. The percentage of births attended by a doctor differs substantially between mothers below age 35 (34–37 percent) and mothers age 35 and older (14 percent), although results should be interpreted with caution due to the small

Table 8.8 Assistance during delivery

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

Background characteristic	Attendant assisting during delivery ¹						Total percent	Number of births
	Doctor	ANM/nurse/ midwife/ LHV	Other health professional	Dai (TBA)	Other	Missing		
Mother's age at birth								
< 20	33.8	11.5	0.0	28.4	25.5	0.8	100.0	358
20-34	36.7	8.0	0.2	29.7	25.1	0.3	100.0	924
35-49	(14.2)	(0.0)	(0.0)	(37.4)	(48.3)	(0.0)	100.0	34
Birth order								
1	53.5	14.1	0.3	19.6	12.2	0.4	100.0	454
2-3	30.8	6.9	0.0	33.4	28.2	0.7	100.0	601
4-5	16.1	4.9	0.0	34.0	45.0	0.0	100.0	179
6+	10.6	0.0	0.0	47.3	42.1	0.0	100.0	82
Residence								
Urban	66.3	15.4	0.0	10.4	7.8	0.1	100.0	239
Rural	28.5	7.2	0.1	33.8	29.8	0.5	100.0	1,077
Kolkata	82.7	6.9	0.0	7.6	2.3	0.4	100.0	52
Mother's education								
Illiterate	23.3	7.0	0.2	34.6	34.5	0.4	100.0	650
Literate, < middle school complete	31.2	12.5	0.0	34.8	20.8	0.7	100.0	407
Middle school complete	60.5	8.4	0.0	13.6	17.5	0.0	100.0	140
High school complete and above	86.9	5.8	0.0	3.1	4.2	0.0	100.0	117
Religion								
Hindu	43.5	11.5	0.2	25.0	19.4	0.5	100.0	879
Muslim	17.3	2.9	0.0	40.7	39.1	0.0	100.0	410
Caste/tribe								
Scheduled caste	32.0	13.8	0.4	29.3	24.0	0.4	100.0	319
Scheduled tribe	21.6	2.9	0.0	33.2	39.3	2.9	100.0	93
Other backward class	58.4	6.1	0.0	15.5	20.0	0.0	100.0	49
Other	37.0	7.5	0.0	29.9	25.4	0.2	100.0	846
Standard of living index								
Low	22.5	6.8	0.2	37.8	32.3	0.4	100.0	670
Medium	44.3	11.2	0.0	23.3	20.6	0.6	100.0	503
High	72.5	8.4	0.0	10.1	9.0	0.0	100.0	116
Number of antenatal check-ups								
0	19.7	2.5	0.0	30.3	47.6	0.0	100.0	125
1	11.2	5.5	0.0	44.6	38.7	0.0	100.0	90
2	23.9	6.6	0.4	36.6	32.5	0.0	100.0	343
3	26.4	9.2	0.0	36.9	27.5	0.0	100.0	308
4+	60.1	12.6	0.0	16.3	11.0	0.0	100.0	442
Place of delivery								
Public health facility	75.1	24.3	0.0	0.0	0.5	0.0	100.0	416
Private health facility	93.0	5.7	0.0	1.3	0.0	0.0	100.0	105
Own home	4.9	0.5	0.2	48.6	45.7	0.0	100.0	605
Parents' home	10.7	1.0	0.0	54.8	33.5	0.0	100.0	168
Total	35.3	8.7	0.1	29.6	25.8	0.4	100.0	1,316

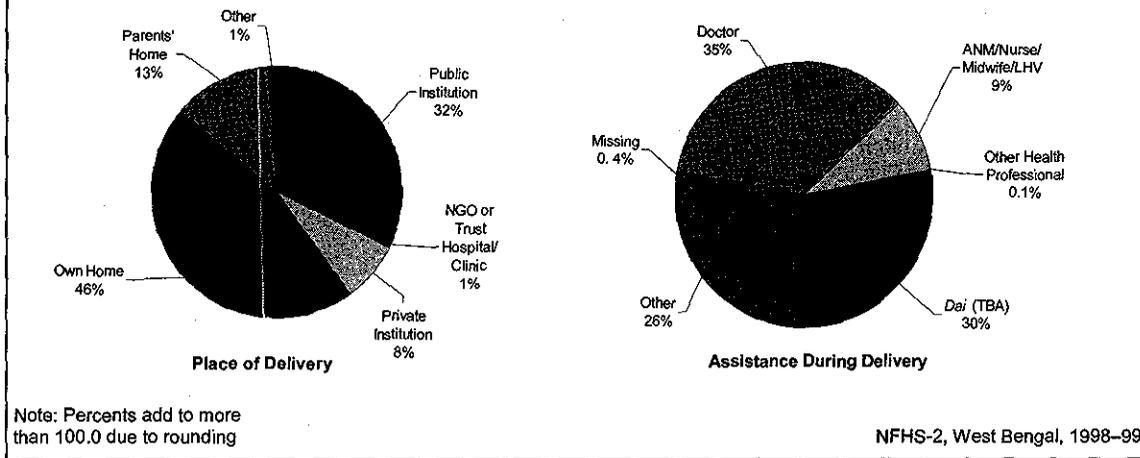
Note: Table includes only the two most recent births during the three years preceding the survey. Total includes 24 births to women belonging to other religions, 7 and 15 births which were delivered in nongovernmental organization or trust hospitals/clinics and 'other' places, respectively, and 2, 3, 8, 26, and 8 births with missing information on mother's education, religion, caste/tribe, the standard of living index, and number of antenatal check-ups, respectively, which are not shown separately.

ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant

() Based on 25-49 unweighted cases

¹ If the respondent mentioned more than one attendant, only the most qualified attendant is shown.

Figure 8.4
Place of Delivery and
Assistance During Delivery



number of births to older mothers. The percentage of births attended by a doctor decreases steadily with increasing birth order. Deliveries are much more likely to be attended by a doctor in urban areas (66 percent) than in rural areas (29 percent). Eighty-three percent of births in Kolkata were attended by a doctor. The proportion of births attended by doctors is almost four times higher for births to mothers who completed at least high school (87 percent) than for births to illiterate mothers (23 percent). Births to mothers with a high standard of living (73 percent) are more than three times as likely to be attended by doctors as births to mothers with a low standard of living (23 percent). Births to Hindu women (44 percent) are much more likely to have been attended by a doctor than births to Muslim women (17 percent). Births to women who belong to other backward classes are more likely to be attended by a doctor (58 percent) than other births. Only 22 percent of births to scheduled-tribe women, 32 percent of births to scheduled-caste women, and 37 percent of births to women who belong to 'other' castes/tribes were attended by a doctor. Twenty percent of births to women who did not have any antenatal check-ups were attended by a doctor compared with 60 percent of births to women who had four or more antenatal check-ups.

Delivery Characteristics

Table 8.9 shows the percentage of births during the three years preceding the survey that were delivered by caesarian section and the percent distribution of births by birth weight and the mother's estimate of the baby's size at birth. Based on mothers' reports, 10 percent of children born in West Bengal in the past three years were delivered by caesarian section. The proportion of deliveries by caesarian section was substantially higher in urban areas (25 percent) than in rural areas (7 percent).

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

Table 8.9 Characteristics of births			
Percentage of births during the three years preceding the survey that were delivered by caesarian section and percent distribution of births by birth weight and by the mother's estimate of the baby's size at birth, according to residence, West Bengal, 1998-99			
Characteristic of births	Urban	Rural	Total
Percentage delivered by caesarian section	25.2	6.9	10.3
Birth weight			
< 2.5 kg	14.9	7.1	8.5
2.5 kg or more	57.3	17.8	24.9
Don't know/missing	6.7	5.8	6.0
Not weighed	21.1	69.3	60.6
Total percent	100.0	100.0	100.0
Size at birth			
Large	20.7	15.5	16.5
Average	61.3	60.5	60.6
Small	15.9	17.1	16.9
Very small	1.8	6.5	5.6
Don't know/missing	0.2	0.5	0.4
Total percent	100.0	100.0	100.0
Number of births	239	1,077	1,316
Note: Table includes only the two most recent births during the three years preceding the survey.			

survey also asked mothers to estimate the size of each baby at birth (large, average, small, or very small).

In West Bengal, 61 percent of babies born in the three years preceding the survey were not weighed at birth. The proportion not weighed is 69 percent in rural areas and 21 percent in urban areas. Even for babies that were weighed, some mothers did not remember the weight. Therefore, the resulting sample of births whose weights are reported is subject to a potentially large selection bias, and the results should be interpreted with caution. Among children for whom birth weights are reported, one-quarter weighed less than 2.5 kilograms. The proportion weighing less than 2.5 kilograms is lower in urban areas (21 percent) than in rural areas (29 percent).

According to mothers' estimates, 61 percent of births in the three years preceding the survey were of average size, 17 percent were large, 17 percent were small, and 6 percent were very small. The proportion of babies reported as small or very small was 18 percent in urban areas and 24 percent in rural areas.

Postnatal Care

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

Table 8.10 gives the percentage of noninstitutional births in the three years preceding the survey that were followed by a postpartum check-up within two months of delivery. Among births that were followed by a postpartum check-up, the table also shows the percentage with a check-up within two days of delivery (which is the most crucial period) and within one week of delivery, and the percentage whose mothers received specific recommended components of care during the check-up.

One-third (32 percent) of noninstitutional births were followed by a check-up within two months of the delivery. Among births that were followed by a check-up, almost one-quarter (23 percent) of check-ups took place within two days and one-third took place within one week of delivery. There are negligible differences in the likelihood of a postpartum check-up by mother's age, place of residence, religion, or standard of living. The likelihood of a postpartum check-up is, however, more strongly related to whether or not the mother received antenatal care. Births to mothers who received at least one antenatal check-up were much more likely to be followed by a postpartum check-up (30–37 percent) than were births to mothers who received no antenatal check-up (18 percent). Births delivered with the assistance of a health professional were also more likely to be followed by a postpartum check-up than were births delivered with the assistance of another individual. These results clearly indicate that women are more likely to have a postpartum check-up if they have had continuous interaction with health providers through their pregnancy and delivery, even if they did not give birth in a health facility.

Mothers who did not deliver in a health facility but who received a postpartum check-up were asked whether they received specific components of postpartum care, including an abdominal examination and advice on family planning, breastfeeding, and baby care. For 28 percent of births, mothers who received a postpartum check-up said that their abdomen was examined during the check-up, and 19 percent said that they received family planning advice. Advice on breastfeeding (47 percent) and advice on baby care (41 percent) were much more common. Because of the small number of births in each category, it is not possible to draw conclusions about the effects of most background characteristics. For women having postpartum check-ups after noninstitutional births, women having their first birth were much less likely than women having second- or third-order births to have an abdominal examination or to receive advice on family planning. Notably, mothers of first births received advice about family planning during postpartum check-ups for only 7 percent of the cases, although these women are particularly likely to need advice on birth spacing and general information on family planning.

Postpartum Complications

Every woman who had a birth in the three years preceding the survey was asked if she had massive vaginal bleeding or a very high fever—both symptoms of possible postpartum complications—at any time during the two months after delivery (Table 8.11). Mothers reported massive vaginal bleeding for 13 percent of births and a very high fever in the postpartum period for 8 percent of births. Urban-rural differences in postpartum complications are small. Fifteen percent of births to mothers who were age 19 or younger at the time of birth were followed by massive vaginal bleeding, and 10 percent were followed by very high fever, compared with 12 and 8 percent, respectively, of births to mothers age 20–34. There are minimal differences in the likelihood of having massive vaginal bleeding or a very high fever in the postpartum period by place of delivery. Mothers of births assisted by a traditional birth attendant were most likely to experience massive vaginal bleeding during the two months after delivery. Massive vaginal

Table 8.10. Postpartum check-ups

Percentage of noninstitutional births during the three years preceding the survey for which a postpartum check-up was received within two months of birth and, among those receiving a postpartum check-up, percentage seen within two days and one week of birth and percentage receiving specific components of check-ups by selected background characteristics, West Bengal, 1998–99

Background characteristic	Percentage with a postpartum check-up within two months of birth	Number of births	Among those with postpartum check-up						Number of births followed by a postpartum check-up
			Percentage seen within two days of birth	Percentage seen within one week of birth	Components of postpartum check-up (%)				
					Abdominal examination	Family planning advice	Breast-feeding advice	Baby care advice	
Mother's age at birth									
< 20	31.1	208	(19.4)	(25.8)	(25.7)	(16.9)	(53.5)	(40.8)	65
20–34	32.2	545	23.9	36.5	28.8	19.2	43.2	40.1	175
Birth order									
1	43.4	173	30.9	40.1	20.0	7.3	47.6	37.8	75
2–3	28.0	387	18.8	28.8	34.8	23.2	45.5	41.3	108
4–5	27.3	149	(23.6)	(36.9)	(23.5)	(18.8)	(42.4)	(38.9)	41
6+	31.6	73	*	*	*	*	*	*	23
Residence									
Urban	30.4	48	*	*	*	*	*	*	15
Rural	31.7	733	23.6	34.8	27.6	18.9	47.9	41.3	232
Mother's education									
Illiterate	28.4	474	26.0	36.4	24.1	21.5	47.6	38.8	135
Literate, < middle school complete	39.7	246	16.8	27.9	31.0	16.2	43.2	42.5	98
Middle school complete	(23.5)	48	*	*	*	*	*	*	11
Religion									
Hindu	33.4	423	24.8	34.3	28.0	15.8	39.5	33.6	141
Muslim	29.4	345	20.6	33.0	30.0	24.9	56.6	51.4	101
Caste/tribe									
Scheduled caste	38.9	179	23.7	31.5	26.6	21.2	42.9	37.1	70
Scheduled tribe	20.9	72	*	*	*	*	*	*	15
Other ¹	31.1	503	23.4	35.7	30.2	19.6	50.9	45.4	156
Standard of living index									
Low	31.2	498	29.1	38.7	26.7	21.1	48.5	42.2	155
Medium	31.7	244	13.7	24.5	29.6	15.5	41.3	35.0	77
Number of antenatal check-ups									
0	18.2	107	*	*	*	*	*	*	19
1	32.0	75	*	*	*	*	*	*	24
2	30.3	246	20.3	36.6	26.4	25.3	48.4	40.0	74
3+	36.6	353	17.8	26.5	35.9	20.2	55.5	48.3	129
Assistance during delivery									
Doctor/nurse/midwife/LHV ²	(55.9)	56	(43.8)	(52.3)	(41.7)	(21.9)	(61.9)	(50.6)	31
Dai (TBA)	35.8	388	23.1	34.1	26.7	23.5	47.5	43.2	139
Other	22.8	338	13.2	23.7	25.9	10.7	39.9	32.7	77
Total	31.6	781	22.6	33.2	28.3	19.3	47.0	40.9	247

Note: Table includes only the two most recent births during the three years preceding the survey. Total includes a small number of births to women age 35–49, women with at least a complete high school education, women belonging to other religions, women from other backward classes, women from households with a high standard of living index, and births with missing information on mother's education, caste/tribe, the standard of living index, and number of antenatal check-ups, which are not shown separately.

LHV: Lady health visitor; TBA: Traditional birth attendant

() Based on 25–49 unweighted cases

*Percentage not shown; based on fewer than 25 unweighted cases

¹Not belonging to a scheduled caste, a scheduled tribe, or an other backward class

²Includes other health professionals

Table 8.11 Symptoms of postpartum complications

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

Background characteristic	Massive vaginal bleeding	Very high fever	Number of births
Residence			
Urban	13.7	6.5	232
Rural	12.8	8.7	1,034
Kolkata	14.8	3.5	51
Mother's age at birth			
< 20	15.4	10.0	345
20–34	11.9	7.5	890
35–49	(16.6)	(13.0)	31
Birth order			
1	16.2	10.0	434
2–3	10.6	6.2	580
4–5	12.3	8.9	176
6+	13.7	13.4	77
Place of delivery			
Public health facility	11.8	8.2	397
Private health facility	13.9	6.5	100
Own home	13.6	9.0	587
Parents' home	14.3	7.2	164
Assistance during delivery			
Doctor	13.7	6.5	444
ANM/nurse/midwife/LHV	12.0	14.0	111
Dai (TBA)	16.1	9.3	372
Other ¹	8.9	7.4	339
Total	13.0	8.3	1,266
<p>Note: Table includes only the two most recent births during the 2–35 months preceding the survey. Total includes 7 births delivered in nongovernmental organization or trust hospitals/clinics, 12 births delivered in 'other' places, and 1 birth assisted by other health professionals, which are not shown separately. ANM: Auxiliary nurse midwife; LHV: Lady health visitor; TBA: Traditional birth attendant () Based on 25–49 unweighted cases ¹ Includes missing</p>			

bleeding in the mother is also more common for deliveries that were assisted by a doctor than for deliveries that were not assisted by a health professional or a traditional birth attendant. This finding is not surprising since some families summon a doctor or other health professional only when delivery complications occur.

8.4 Reproductive Health Problems

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

complications, congenital infections, infertility, and chronic pain. They are also a risk factor for pelvic inflammatory disease and HIV (Population Council, 1999).

A number of studies (Bang et al., 1989; Bang and Bang, 1991; Pachauri and Gittlesohn, 1994; Jeejeebhoy and Rama Rao, 1992) have shown that many Indian women suffer from RTIs. Several researchers have also shown that women in India often bear the symptoms of RTIs silently without seeking health care. RTIs and their sequelae are an important component of programmes for family planning, child survival, women's health, safe motherhood, and HIV prevention. RTIs have profound implications for the success of each of these initiatives, and conversely, these initiatives provide a critical opportunity for the prevention and control of RTIs (Germain et al., 1992). Studies have demonstrated that RTIs are an important reason for the poor acceptance and low continuation rates of contraceptive methods such as the IUD. Bhatia and Cleland (1995) found a higher incidence of gynaecological symptoms among women who had undergone a tubectomy than among other women. The Government of India recognized the importance of RTIs and STIs in undermining the health and welfare of individuals and couples in a policy statement on the Reproductive and Child Health Programme, which states that couples should be 'able to have sexual relations free of fear of pregnancy and contracting diseases' (Ministry of Health and Family Welfare, 1997:2). The Reproductive and Child Health Programme includes the following interventions: establishment of RTI/STI clinics at district hospitals (where not already available), provision of technicians for laboratory diagnosis of RTIs/STIs, and in selected districts, screening and treatment of RTIs/STIs (Ministry of Health and Family Welfare, 1997).

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

Table 8.12 shows the prevalence of different reproductive health problems among women in West Bengal during the three months preceding the survey by background characteristics. Thirty-six percent of ever-married women report at least one type of problem related to vaginal discharge, and 19 percent report symptoms of a urinary tract infection. Overall, 42 percent of women report either problems with vaginal discharge or symptoms of a urinary tract infection. Among problems related to vaginal discharge, severe lower abdominal pain (23 percent) is mentioned most frequently, followed by itching or irritation (18 percent). The prevalence of problems related to vaginal discharge and symptoms of urinary tract infections is the same in currently married women and ever-married women.

Table 8.12 and Figure 8.5 show that almost half of currently married women (45 percent) report that they have one or more reproductive health problems. Fifteen percent report painful

Table 8.12 Symptoms of reproductive health problems

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

Background characteristic	Ever-married women								Number of ever-married women	Currently married women			Number of currently married women
	Any abnormal vaginal discharge	Vaginal discharge accompanied by:					Symptoms of a urinary tract infection ²	Any abnormal vaginal discharge or symptoms of a urinary tract infection ²		Painful intercourse (often)	Bleeding after intercourse (ever) ¹	Any reproductive health problem	
		Itching or irritation	Bad odour	Severe lower abdominal pain ¹	Fever	Other problem							
Age													
15-19	35.2	17.1	14.8	24.4	6.6	2.3	18.1	41.7	383	19.9	4.0	47.5	375
20-24	33.5	16.3	12.6	21.9	7.2	3.4	19.7	41.5	818	17.9	2.8	45.8	791
25-29	37.6	18.9	17.0	25.1	8.3	7.7	17.9	42.3	888	17.6	2.1	46.1	859
30-34	41.9	20.5	17.5	27.7	8.5	8.1	19.1	45.8	746	14.0	1.3	48.5	696
35-39	41.0	22.4	17.9	25.9	8.9	8.5	19.9	46.2	684	15.1	1.6	49.9	617
40-44	32.6	16.2	14.6	20.6	8.8	7.9	18.2	39.6	489	7.6	0.4	41.7	429
45-49	20.6	9.7	8.9	11.2	3.2	3.0	15.3	28.0	400	3.4	1.2	29.4	349
Residence													
Urban	24.2	12.8	8.6	15.2	3.5	3.7	13.9	29.3	1,049	9.0	1.2	31.5	984
Rural	39.4	19.6	17.3	25.8	9.0	7.0	20.0	45.6	3,359	16.4	2.2	49.6	3,132
Kolkata	20.9	10.5	5.6	13.8	1.4	3.7	11.6	26.8	242	6.9	1.5	28.5	226
Education													
Illiterate	38.2	20.1	17.5	25.8	9.0	6.5	20.7	44.6	2,202	16.6	2.2	48.6	1,985
Literate, < middle school complete	37.0	17.1	15.6	23.2	8.4	6.7	18.4	43.1	1,289	13.7	1.6	46.5	1,243
Middle school complete	35.1	17.0	11.8	22.9	5.3	4.8	16.2	39.4	443	14.4	3.0	42.2	429
High school complete and above	21.8	11.2	6.5	11.8	1.9	4.7	11.7	26.7	469	8.6	0.8	30.5	454
Religion													
Hindu	33.4	16.3	13.8	20.8	6.2	6.2	16.5	39.2	3,285	12.1	1.9	42.2	3,077
Muslim	42.7	22.4	19.1	31.0	12.7	6.7	24.9	49.2	1,007	23.0	2.2	54.6	934
Other	40.0	26.8	23.8	23.5	2.6	2.8	22.9	45.9	106	13.7	1.4	49.8	96
Caste/tribe													
Scheduled caste	35.1	16.0	14.9	21.2	7.0	5.3	17.6	40.8	1,038	13.7	2.1	44.2	954
Scheduled tribe	37.9	21.2	19.5	29.3	8.8	3.0	18.9	43.7	319	15.9	2.9	46.7	284
Other backward class	34.2	23.0	15.7	20.6	6.4	6.1	17.1	39.0	196	8.7	0.5	42.7	189
Other	35.8	17.9	14.7	23.4	7.8	6.9	18.8	41.9	2,834	15.3	1.9	45.6	2,672

Contd...

Table 8.12 Symptoms of reproductive health problems (contd.)

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

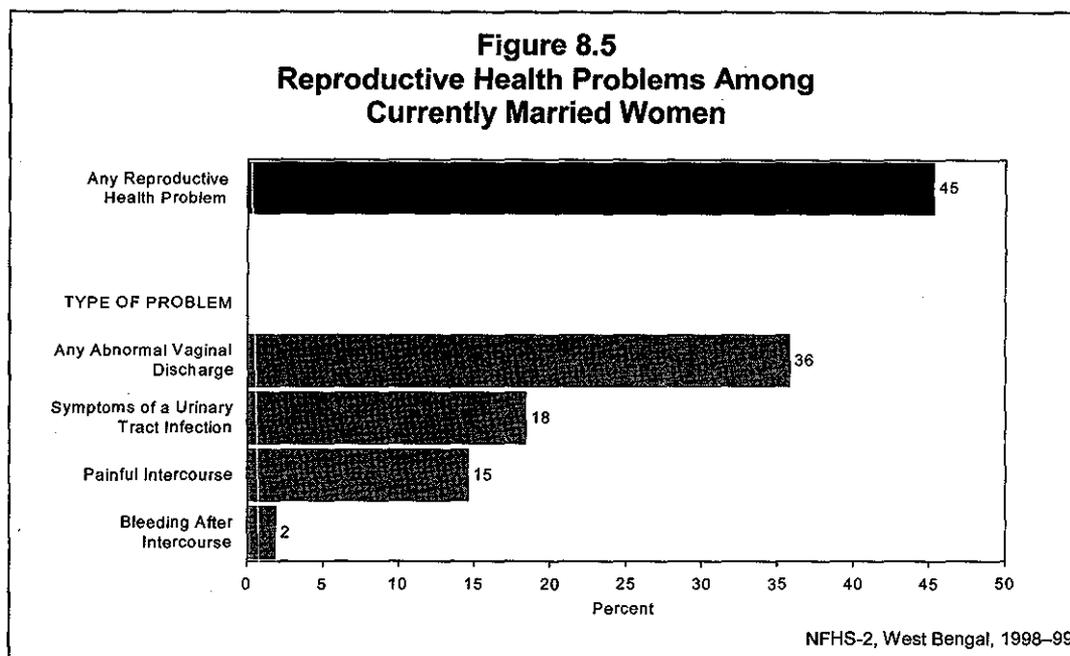
Background characteristic	Ever-married women								Number of ever-married women	Currently married women			Number of currently married women
	Any abnormal vaginal discharge	Vaginal discharge accompanied by:					Symptoms of a urinary tract infection ²	Any abnormal vaginal discharge or symptoms of a urinary tract infection ²		Painful intercourse (often)	Bleeding after intercourse (ever) ¹	Any reproductive health problem	
		Itching or irritation	Bad odour	Severe lower abdominal pain ¹	Fever	Other problem							
Standard of living index													
Low	39.6	19.9	17.5	27.0	10.0	6.2	20.8	46.6	1,906	16.4	1.6	50.3	1,744
Medium	34.8	17.5	15.1	21.6	6.1	6.4	18.1	40.2	1,821	14.5	2.2	43.7	1,721
High	26.0	12.5	7.8	16.4	4.9	5.3	13.4	30.9	605	10.0	2.1	34.8	581
Work status													
Working in family farm/business	36.4	17.2	11.4	20.2	7.7	8.7	18.5	42.1	241	8.4	1.2	44.7	220
Employed by someone else	36.4	17.3	14.9	24.7	6.4	5.1	19.7	43.7	659	14.3	2.8	46.6	560
Self-employed	39.0	23.4	19.4	26.4	9.8	7.7	23.7	45.7	356	19.6	1.1	50.9	282
Not worked in past 12 months	35.3	17.5	15.1	22.8	7.7	6.1	17.8	40.8	3,151	14.7	1.9	44.6	3,053
Number of children ever born													
0	38.9	19.2	14.6	25.8	6.8	6.2	21.3	47.5	471	21.3	4.5	52.5	430
1	30.4	15.8	10.8	20.0	6.8	4.7	17.4	36.3	831	13.4	1.9	38.8	760
2-3	38.0	17.7	15.9	24.6	7.4	6.8	17.8	43.2	1,866	14.5	1.6	46.8	1,773
4-5	36.2	18.5	18.0	24.2	9.4	6.7	18.3	40.9	828	13.6	2.0	45.0	770
6+	32.3	20.9	16.2	18.8	7.9	5.7	22.0	41.2	412	12.1	0.8	43.9	384
All ever-married women	35.8	17.9	15.2	23.3	7.7	6.2	18.6	41.7	4,408	NA	NA	NA	NA
All currently married women	35.8	18.0	15.3	23.1	7.5	6.2	18.4	41.8	4,116	14.6	1.9	45.3	4,116

Note: Total includes a small number of women with missing information on education, religion, caste/tribe, the standard of living index, and work status, who are not shown separately.

NA: Not applicable

¹Not related to menstruation

²Includes pain or burning while urinating or more frequent or difficult urination



intercourse and 2 percent report bleeding after intercourse. Reproductive health problems are more common among currently married women below age 45 (42–50 percent) than among older women (29 percent). Rural women have a higher prevalence of reproductive health problems than urban women. Twenty-nine percent of currently married women in Kolkata report such problems. The prevalence of reproductive health problems also varies by education, being highest for illiterate women (49 percent) and lowest for women who have at least completed high school (31 percent). Muslim women (55 percent) are more likely to have reproductive health problems than Hindu women (42 percent) or ‘other’ women (50 percent). Differences by caste/tribe are small. Women in households with a low standard of living (50 percent) are more likely to have reproductive health problems than women in households with a medium (44 percent) or high standard of living (35 percent). Women who are self employed (51 percent) are more likely to report reproductive health problems than are other women (45–47 percent).

Women with only one child are least likely to have reproductive health problems. Women with no children are much more likely than women with one or more children to have reproductive health problems.

Among women who report any reproductive health problems, 73 percent have not seen anyone for advice or treatment (Table 8.13). The proportion of women who have not obtained advice or treatment is higher in rural areas (76 percent) than in urban areas (60 percent). Among women who have obtained advice or treatment, 53 percent saw a private doctor. A private doctor was seen by two-thirds of these women in urban areas and 48 percent in rural areas. Sixteen percent of women who have obtained advice or treatment were seen by someone in the public medical sector.

NFHS-2 results show that although more than two-fifths of ever-married women in West Bengal report at least one reproductive health problem that could be symptomatic of a more serious reproductive tract infection, the majority of them bear the problems silently without seeking advice or treatment. Moreover, women who seek advice or treatment for reproductive

Table 8.13 Treatment of reproductive health problems

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

Provider	Urban	Rural	Total
Public medical sector	4.8	4.2	4.3
Government doctor	4.0	3.5	3.6
Public health nurse	0.0	0.2	0.1
ANM/LHV	0.5	0.4	0.4
Village health guide	0.0	0.1	0.1
Other public medical sector	0.2	0.2	0.2
NGO worker	0.3	0.0	0.1
Private medical sector	34.8	18.7	21.4
Private doctor	26.2	11.8	14.2
Private nurse	0.3	0.1	0.1
Compounder/pharmacist	0.5	0.2	0.3
Vaidya/hakim/homeopath	7.8	5.9	6.2
Dai (TBA)	0.2	0.0	0.0
Traditional healer	0.3	1.1	0.9
Other private medical sector	0.5	0.3	0.4
Other	0.7	2.0	1.8
None	60.2	75.6	73.0
Number of women	332	1,636	1,968

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

health problems do not usually go to government health professionals. These findings highlight the need to educate women regarding the symptoms and consequences of reproductive health problems and the urgent need to expand counselling and reproductive health services in both rural and urban areas, particularly in the public sector.

CHAPTER 9

QUALITY OF CARE

The historic International Conference on Population and Development in Cairo in 1994 brought about a paradigm shift in population-related policies. The conference helped focus the attention of governments on making programmes more client-oriented with an emphasis on the quality of services and care. In line with the conference recommendations, the Government of India acknowledged the need to abandon the use of targets for monitoring its family welfare programme. It recognized that the top-down target approach does not reflect user needs and preferences and de-emphasizes the quality of care provided (Ministry of Health and Family Welfare, 1998b). Recent research on the different aspects of service delivery, especially at the grass-roots level, including programme coverage, client-provider interactions, and informed choice, also endorses the need to take a different approach to meeting the reproductive and health needs of the Indian population (Koenig and Khan, 1999). This research suggests that inadequate attention to the quality of care has contributed to the inability of the government's family welfare programme to meet its goals.

In 1996, the existing family welfare programme was transformed into the new Reproductive and Child Health (RCH) Programme. This new programme integrates all family welfare and women and child health services with the explicit objective of providing beneficiaries with 'need based, client centred, demand driven, high quality integrated RCH services' (Ministry of Health and Family Welfare, 1998b:6). The strategy for the RCH Programme shifts the policy emphasis from achieving demographic targets to meeting the reproductive needs of individual clients (Ministry of Health and Family Welfare, 1996).

NFHS-2 included several questions on the quality of care of health and family welfare services provided in the public sector and the private sector. In this chapter, sources of health care for households are described first. The chapter then examines different aspects of home visits by health and family planning workers and visits by respondents to health facilities, including frequency of visits, source of care, and quality of care. Finally, information is presented on the quality of care with respect to family planning services.

9.1 Source of Health Care for Households

To examine the role of different health providers in meeting the health-care needs of households, the NFHS-2 Household Questionnaire included the question, 'When members of your household get sick, where do they generally go for treatment?' Table 9.1 shows the main source of health care according to residence and the standard of living index. Sixty percent of households normally use the private medical sector when a household member gets sick; a much smaller proportion (24 percent) use the public medical sector. Another 15 percent of households normally rely on shops, home treatments, or other sources of care when household members get sick. The pattern of service utilization is very different for rural and urban households. Twenty-seven percent of rural households use public-sector services, compared with 15 percent of urban households. A higher proportion of urban households (81 percent) seek treatment from the private medical sector than rural households (53 percent), whereas a higher proportion of rural households (19 percent) than urban households (2 percent) generally use 'other' sources of care.

Table 9.1 Source of health care						
Percent distribution of households by main source of health care when household members get sick, according to residence and the standard of living index, West Bengal, 1998-99						
Source	Residence		Standard of living index			Total
	Urban	Rural	Low	Medium	High	
Public medical sector	15.4	27.4	30.1	21.9	10.7	24.2
Government/municipal hospital	11.9	7.1	7.6	10.0	6.7	8.4
Government dispensary	0.4	0.7	0.4	1.0	0.0	0.6
UHC/UHP/UFWC	0.1	0.0	0.0	0.1	0.0	0.1
CHC/rural hospital/PHC	0.2	17.1	19.1	8.2	2.6	12.6
Sub-centre	0.4	2.2	2.6	1.3	0.0	1.7
Government mobile clinic	0.1	0.0	0.0	0.0	0.0	0.0
Other public medical sector	2.4	0.3	0.2	1.3	1.4	0.8
NGO or trust	0.8	0.3	0.5	0.4	0.5	0.5
Hospital/clinic	0.7	0.3	0.5	0.3	0.5	0.4
NGO worker	0.0	0.0	0.0	0.1	0.0	0.0
Private medical sector	81.2	52.7	51.8	62.9	81.8	60.3
Private hospital/clinic	3.7	2.3	1.7	2.7	5.9	2.6
Private doctor	67.7	33.7	31.3	46.7	69.4	42.8
Private mobile clinic	0.2	0.0	0.1	0.1	0.0	0.1
Private paramedic	0.5	2.8	2.3	2.5	1.2	2.2
Vaidya/hakim/homeopath	5.2	5.7	6.0	5.6	4.1	5.5
Traditional healer	0.0	3.0	2.9	2.0	0.7	2.2
Pharmacy/drugstore	0.9	0.4	0.4	0.7	0.2	0.5
Other private medical sector	3.1	4.7	7.1	2.7	0.2	4.3
Other source	2.4	19.4	17.2	14.7	7.0	14.9
Shop	0.7	0.2	0.4	0.2	0.8	0.3
Home treatment	0.6	0.4	0.1	0.6	1.1	0.4
Other	1.1	18.8	16.8	13.9	5.1	14.1
Missing	0.2	0.2	0.3	0.1	0.0	0.2
Total percent	100.0	100.0	100.0	100.0	100.0	100.0
Number of households	1,259	3,466	2,128	1,913	605	4,725

Note: Total includes 79 households with missing information on the standard of living index, which are not shown separately.
UHC: Urban health centre; UHP: Urban health post; UFWC: Urban family welfare centre; CHC: Community health centre; PHC: Primary Health Centre; NGO: Nongovernmental organization

Within the private medical sector, private doctors are the most popular source of health care for households in both urban and rural areas. However, private doctors are used by a higher proportion of urban households (68 percent) than rural households (34 percent). Within the public medical sector, urban households go primarily to government and municipal hospitals, whereas rural households go to community health centres, rural hospitals, and Primary Health Centres.

The type of health care services used is strongly influenced by the standard of living of the household, although the private sector is the dominant health care source for households at all standards of living. As the standard of living increases, the use of private-sector medical services increases and the use of public-sector medical services decreases. Eighty-two percent of households with a high standard of living generally use the private medical sector, compared with 52 percent of households with a low standard of living. The use of public-sector services declines with the standard of living, from 30 percent of households with a low standard of living to 11 percent of households with a high standard of living. These results point to the

disproportionate importance of the private medical sector and the marginal role of the public medical sector in providing health care to rich as well as poor households and to urban as well as rural households. Use of the public medical sector for health care is slightly lower in West Bengal (24 percent) than in India as a whole (29 percent). Even in households with a low standard of living, use of the public medical sector for health care is lower in West Bengal (30 percent) than in India as a whole (34 percent).

9.2 Contacts at Home with Health and Family Planning Workers

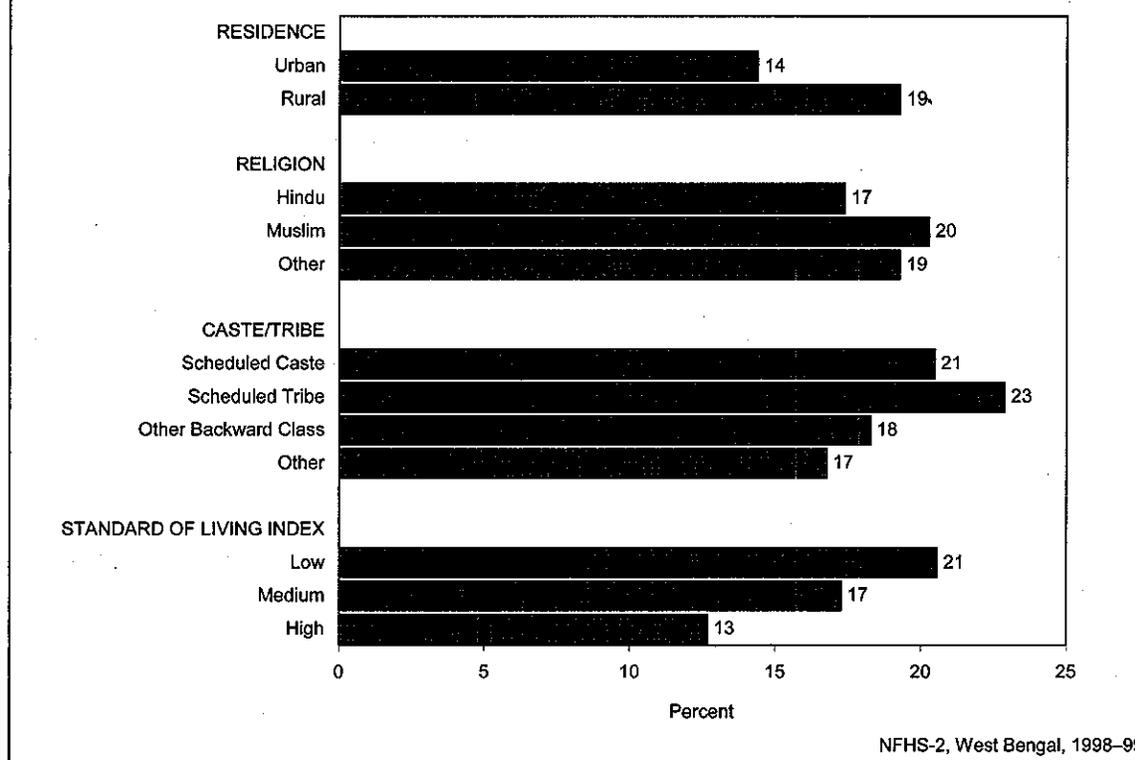
Under the family welfare programme, health or family planning workers are required to regularly visit each household in their assigned area. During these contacts, the female health or family planning worker is supposed to monitor various aspects of the health of women and children, provide information related to health and family planning, counsel and motivate women to adopt appropriate health and family planning practices, and deliver other selected services. These contacts are also important for enhancing the credibility of services and establishing necessary rapport with the clients. Only 18 percent of women in West Bengal, however, report that they received a home visit from a health or family planning worker during the 12 months preceding the survey (Table 9.2). The percentage of women in West Bengal receiving home visits is higher than the percentage for India as a whole (13 percent).

Younger women are much more likely to report a home visit than older women. Twenty-seven percent of women age 15–24 reported at least one home visit, compared with only 8 percent of women age 35 years and older. Rural women (19 percent) are more likely than urban women (14 percent) to report a home visit from a health or family planning worker (Figure 9.1). Notably, only 4 percent of women living in Kolkata reported a home visit. Women who have completed high school (12 percent) and women from households with a high standard of living (13 percent) are less likely than other women to report home visits. There is not much variation by religion or caste/tribe. Women with no children (4 percent) are much less likely than women with one or more children (16–24 percent) to receive a home visit. It is noteworthy, however, that among women who have at least one child, the likelihood of a home visit generally decreases with the increasing number of children ever born. Home visits are less common for sterilized women than for other women.

Women who reported a home visit from a health or family planning worker during the 12 months preceding the survey were asked the frequency of visits during the past 12 months and the number of months since the most recent visit. These women, on average, received less than three home visits during the year, with the median duration since the most recent visit of 1.7 months. The median number of home visits and the duration since the most recent visit did not vary substantially according to any of the background characteristics measured.

Table 9.2 Home visits by a health or family planning worker					
Percentage of ever-married women who had at least one home visit by a health or family planning worker in the 12 months preceding the survey and, among women who had home visits, median number of visits and median number of months since the most recent visit by background characteristics, West Bengal, 1998–99					
Background characteristic	Percentage with at least one visit	Number of Women	Median number of visits ¹	Median months since the most recent visit ¹	Number of women with home visit
Age					
15–24	27.0	1,201	2.7	1.7	324
25–34	21.1	1,634	2.6	1.7	344
35–49	8.3	1,573	2.4	1.8	130
Residence					
Urban	14.4	1,049	3.8	1.5	151
Rural	19.3	3,359	2.5	1.8	647
Kolkata	4.4	242	(2.0)	(2.4)	11
Education					
Illiterate	17.6	2,202	2.9	1.6	388
Literate, < middle school complete	19.9	1,289	2.3	1.8	256
Middle school complete	22.1	443	2.2	1.8	98
High school complete and above	12.1	469	1.9	1.7	57
Religion					
Hindu	17.4	3,285	2.7	1.6	571
Muslim	20.3	1,007	2.3	2.2	204
Other	19.3	106	*	*	21
Caste/tribe					
Scheduled caste	20.5	1,038	3.1	1.4	213
Scheduled tribe	22.9	319	4.2	1.4	73
Other backward class	18.3	196	(2.0)	(1.7)	36
Other	16.8	2,834	2.4	1.9	475
Standard of living index					
Low	20.6	1,906	2.8	1.7	393
Medium	17.3	1,821	2.6	1.7	316
High	12.7	605	1.8	2.0	77
Number of children ever born					
0	4.3	471	*	*	20
1	22.0	831	2.6	1.5	183
2	23.7	1,084	2.4	1.7	256
3	17.9	783	2.9	1.7	140
4	15.6	529	3.1	1.8	83
5+	16.5	711	2.5	1.9	117
Family planning status					
Sterilized	13.9	1,391	2.6	1.6	193
Using method other than sterilization	21.1	1,352	2.5	1.7	286
Non-user	19.2	1,665	2.7	1.9	320
Total	18.1	4,408	2.6	1.7	799
Note: Total includes women with missing information on education, religion, caste/tribe, and the standard of living index, who are not shown separately.					
() Based on 25–49 unweighted cases					
*Median not shown; based on fewer than 25 unweighted cases					
¹ For women who received at least one visit					

Figure 9.1
Home Visit by a Health or Family Planning Worker
by Selected Background Characteristics



9.3 Quality of Home Visits

The quality of the care provided during home visits can be assessed in terms of client satisfaction with the services received during the visit. Each woman who reported that a health or family planning worker had visited her during the 12 months preceding the survey was asked about the quality of the care received. Questions were asked with reference only to the most recent home visit. The questions covered how the worker talked to the woman during the visit and whether the worker spent enough time with her. Table 9.3 provides this information by the type of services received and whether the worker was from the private or public sector.

Among women who received services at home, 87 percent received services related to health and 11 percent received family planning services. Sixty-nine percent of women who received health or family planning services at home were satisfied that the worker had spent enough time with them. Over two-thirds (69 percent) of women reported that the worker talked to them nicely; 29 percent reported that the worker talked to them somewhat nicely, and less than 2 percent said that the worker did not talk to them nicely. Women who received health services gave workers a slightly better assessment than did women who received family planning services.

Table 9.3 Quality of home visit				
Quality of care indicators for the most recent home visit by a health or family planning worker during the 12 months preceding the survey, according to type of services received during the visit, West Bengal, 1998–99				
Quality indicator	Type of services received			
	Family planning	Health	Family planning or health	Neither family planning nor health
Percentage who said worker spent enough time with them	67.3	69.4	68.9	(21.0)
Percentage who said worker talked to them:				
Nicely	63.6	69.8	69.2	(48.1)
Somewhat nicely	34.6	29.0	29.4	(46.5)
Not nicely	1.8	1.2	1.4	(5.4)
Total percent	100.0	100.0	100.0	100.0
Number of women visited at home	79	649	695	51
Note: The number of women receiving family planning and health services add to more than the number receiving any visits because some visits were for both family planning and health. () Based on 25–49 unweighted cases				

9.4 Matters Discussed During Home Visits or Visits to Health Facilities

Women who were visited at home by a health or family planning worker, as well as those who visited a health facility during the 12 months preceding the survey, were asked about the different topics discussed with the workers during any of these visits. Table 9.4 shows the percentage of women who discussed specific topics during home visits or visits to a health facility during the past 12 months.

The topic discussed most often during home visits by health or family planning workers was immunization, which was mentioned by 68 percent of women. Other topics commonly discussed (each mentioned by 14–18 percent of women) were family planning, treatment of health problems, and childcare. Discussions about family planning were mentioned more often by current users of contraception (16 percent) than by current non-users (10 percent) or pregnant women and women with a child less than three years of age (14 percent). As expected, pregnant women and women who had a child less than three years old were much more likely than other women to report that they discussed immunization and antenatal, delivery, or postpartum care with a health or family planning worker. It is noteworthy, however, that the proportion of these women discussing delivery and postpartum care is extremely low. Surprisingly, pregnant women and women who had a child less than three years old were not more likely than other women to discuss childcare. A higher proportion of current contraceptive users (24 percent) discussed childcare during a home visit than did current non-users (15 percent) or pregnant women and women who had a child less than three years of age (15 percent). Moreover, only negligible proportions of pregnant women and women who had a child less than three years of age discussed such topics as delivery care, postpartum care, oral rehydration, and breastfeeding.

Table 9.4 Matters discussed during contacts with a health or family planning worker

Among ever-married women who had at least one contact with a health or family planning worker in the 12 months preceding the survey, percentage who discussed specific topics with the health or family planning worker, West Bengal, 1998–99

Topic discussed	Pregnant women or women with children under age 3	Other women		Total
		Current contraceptive users	Current non-users	
During home visit				
Family planning	13.7	16.1	9.8	14.2
Breastfeeding	0.2	0.5	0.0	0.3
Supplementary feeding	0.6	0.0	0.0	0.3
Immunization	85.0	45.3	39.4	67.9
Nutrition	4.3	2.4	0.0	3.3
Disease prevention	2.2	9.6	12.4	5.5
Treatment of health problem	9.6	22.6	31.9	15.9
Antenatal care	7.3	0.5	1.3	4.5
Delivery care	1.9	0.0	0.0	1.1
Postpartum care	1.1	0.0	0.0	0.6
Childcare	15.1	24.4	14.5	18.2
Sanitation/cleanliness	0.0	2.7	0.0	0.9
Oral rehydration	0.0	0.3	0.0	0.1
Other	2.7	7.3	5.6	4.5
Number of women	465	265	69	799
During visit to health facility				
Family planning	3.7	1.3	0.5	2.4
Breastfeeding	0.1	0.0	0.0	0.1
Immunization	50.8	13.5	4.5	30.8
Nutrition	1.7	0.4	0.5	1.1
Disease prevention	0.9	2.4	2.2	1.6
Treatment of health problem	30.0	69.7	81.0	51.5
Antenatal care	19.9	0.1	2.6	10.2
Delivery care	5.0	0.2	0.6	2.6
Postpartum care	1.8	0.2	0.0	0.9
Childcare	29.0	28.5	17.8	27.3
Sanitation/cleanliness	0.9	1.5	0.5	1.1
Oral rehydration	0.6	0.3	0.0	0.4
Other	0.4	1.8	1.7	1.1
Number of women	1,070	805	283	2,157

Note: Percentages add to more than 100.0 because of multiple responses.

These findings suggest that delivery of health and family planning services in West Bengal is not well integrated. Indeed, in the process of providing health and childcare services, health workers are missing the opportunity to discuss family planning with even the women who may be most in need of such services. It is also evident that the provision of advice and information on safe motherhood practices to pregnant mothers and mothers with young children is very limited. Finally, many important health-related topics (feeding practices, nutrition, disease prevention, sanitation, and oral rehydration) are rarely discussed during either home visits or visits to a health facility.

9.5 Quality of Services Received at the Most Recent Visit to a Health Facility

NFHS-2 asked women who visited a health facility in the 12 months preceding the survey a number of questions to ascertain their perception of the quality of care they received during their most recent visit. Specific dimensions covered were whether women received the service they went for, the waiting time before receiving the service (or before finding out that the service was not available), whether the staff at the health facility spent enough time with them, whether the staff talked nicely to them, and whether the staff respected their privacy, if they needed privacy. Women were also asked to assess the cleanliness of the facility.

Almost all respondents (99 percent) said that they received the services for which they visited the facility (Table 9.5). The median waiting time to receive services was about 30 minutes, and does not vary by place of residence or type of health sector. Satisfaction with the amount of time the staff spent with the woman was generally high (85 percent), but it was much lower in the public sector (75 percent) than in the private sector (95 percent).

Users also rated the private health sector more positively than the public health sector on all of the other indicators of quality. Sixty-six percent of women who received services in a private-sector facility said that the staff talked to them nicely, compared with 61 percent of women who received services in a public-sector facility. The most dissatisfaction on this indicator was expressed by rural women who visited public-sector facilities, but only 3 percent of these women said that the staff did not talk to them nicely. In contrast, 78 percent of urban women who visited private-sector facilities said that the staff talked to them nicely.

Among women who said they needed privacy during their visit, only 24 percent were satisfied that the staff respected their need for privacy (compared with 78 percent at the national level). This percentage was higher for private-sector facilities (34 percent) than for public-sector facilities (16 percent). It was also higher for women living in urban areas (31 percent) than for women living in rural areas (23 percent). Thirty-nine percent of urban women who visited private-sector health facilities said that the staff respected their need for privacy, compared with 32 percent of rural women who visited private-sector health facilities. A higher proportion of urban women (20 percent) than rural women (15 percent) visiting public-sector facilities said that the staff respected their need for privacy.

Only 55 percent of the women rated the health facility they visited most recently as very clean. Both women living in urban areas and women living in rural areas rated private-sector facilities as cleaner than public-sector facilities. Overall, 59 percent of women who visited a private-sector facility said that the facility was very clean, compared with 51 percent of women who visited a public-sector facility. These data indicate that private-sector facilities on average appear to provide better quality services than public-sector facilities and that women living in urban areas receive better quality services than women living in rural areas.

Table 9.5 Quality of care during the most recent visit to a health facility

Among ever-married women, indicators of quality of care during the most recent visit to a health facility in the 12 months preceding the survey by sector of most recent visit and residence, West Bengal, 1998-99

Quality indicator	Public sector			Private sector/NGO/trust			Total		
	Urban	Rural	Total	Urban	Rural	Total	Urban	Rural	Total
Percentage who received the service they went for	99.6	99.2	99.3	99.3	99.6	99.6	99.5	99.4	99.4
Median waiting time (minutes)	29.7	29.9	29.8	29.5	29.9	29.8	29.5	29.9	29.8
Percentage who said the staff spent enough time with them	75.3	75.5	75.4	95.3	94.3	94.5	86.5	84.4	84.8
Percentage who said the staff talked to them:									
Nicely	67.1	59.7	61.1	78.1	62.3	66.4	73.3	60.9	63.7
Somewhat nicely	30.4	37.4	36.0	21.9	37.3	33.3	25.7	37.4	34.7
Not nicely	2.5	3.0	2.9	0.0	0.4	0.3	1.1	1.7	1.6
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Percentage who said the staff respected their need for privacy ¹	20.2	14.6	15.7	39.3	31.8	33.7	30.6	22.7	24.4
Percentage who rated facility as:									
Very clean	65.7	47.3	50.9	76.9	52.9	59.1	72.0	49.9	54.9
Somewhat clean	33.0	50.3	46.9	21.5	46.2	39.8	26.6	48.3	43.4
Not clean	1.2	1.6	1.6	0.3	0.7	0.6	0.7	1.2	1.1
Missing	0.0	0.8	0.7	1.3	0.2	0.5	0.7	0.5	0.6
Total percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Number of women	203	832	1,035	258	742	1,000	461	1,574	2,035
Number of women who said they needed privacy	201	815	1,017	242	718	960	443	1,533	1,976

Note: Cases where the source of service was neither the public sector nor the private sector/NGO/trust are excluded from the table.
 NGO: Nongovernmental organization
¹Among women who said they needed privacy

9.6 Family Planning Information and Advice Received

To gain a better understanding of the information provided to women about different contraceptive methods, women were asked to recollect all the specific methods that had ever been discussed during any of the contacts they had ever had with a health or family planning worker. Overall, 70 percent of women said that they had either no contact or no discussion about any method of family planning with health or family planning personnel (Table 9.6). Among those who discussed contraception, the most frequently discussed method was female sterilization. Ten percent of women mentioned discussing pills. Discussions of the IUD and condom were each mentioned by less than 5 percent of women. Discussions of traditional methods (rhythm or withdrawal) were rare. With the exception of the condom and male sterilization, rural women reported discussions of each method more often than urban women, with a particularly large differential for discussions of female sterilization.

Table 9.6 Family planning discussions with a health or family planning worker			
Percentage of ever-married women who reported ever discussing specific contraceptive methods with health or family planning workers by residence, West Bengal, 1998–99			
Method	Urban	Rural	Total
Pill	7.6	10.8	10.0
Condom	3.5	2.0	2.4
IUD	3.8	5.1	4.8
Female sterilization	15.7	21.7	20.3
Male sterilization	0.5	0.5	0.5
Rhythm/safe period	0.3	0.4	0.4
Withdrawal	0.2	0.3	0.3
Other method	0.0	0.3	0.2
No method/no contact	75.6	68.2	69.9
Number of women	1,049	3,359	4,408

Note: Percentages add to more than 100.0 because more than one method may have been discussed.

9.7 Availability of Pills and Condoms

To explore difficulties faced in the procurement of condoms and pills, NFHS-2 asked current users of these methods if they had been able to get their supply whenever needed. The results are presented in Table 9.7. Only 3 percent of condom users report ever having a problem getting condoms, and only 4 percent of pill users report ever having a problem getting pills. A higher proportion of rural women than urban women had problems getting a supply of condoms or pills.

Table 9.7 Availability of regular supply of condoms/pills		
Percentage of current condom or pill users who ever had a problem getting a supply of condoms/pills by residence, West Bengal, 1998–99		
Method/residence	Percentage who had a problem getting supply	Number of users
Condom		
Urban	1.8	70
Rural	(5.4)	51
Total	3.3	121
Pill		
Urban	2.2	90
Rural	4.8	287
Total	4.1	377

() Based on 25–49 unweighted cases

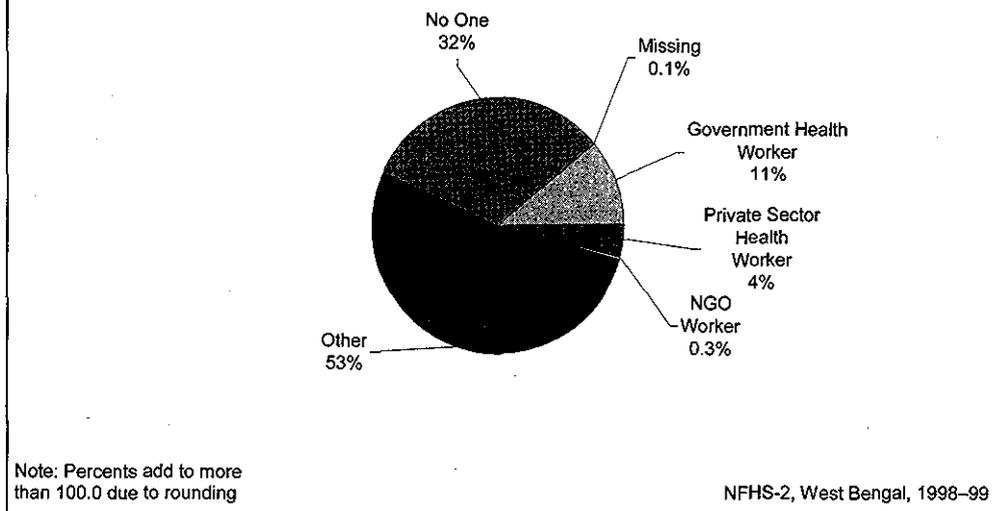
9.8 Person Motivating Users of a Modern Contraceptive Method

To help understand the dynamics of the adoption of contraceptive methods and the roles that different persons play, NFHS-2 asked current users of modern methods who mainly motivated them to use their current method. In West Bengal, one-third (32 percent) of the current users of a modern method said that they were not motivated by anyone; rather they adopted the method on their own (Table 9.8 and Figure 9.2). Only 11 percent said that a government health worker was the person who mainly motivated them and only 4 percent said they were motivated by a private-

Table 9.8 Motivation to use family planning								
Percent distribution of current users of modern contraceptive methods by type of person who motivated them to use the method, according to current method and residence, West Bengal, 1998-99								
Current method	Type of person who motivated the user to use current method						Total percent	Number of users
	Government health worker	Private-sector health worker	NGO worker	Other	No one	Missing		
URBAN								
Pill	10.1	23.0	0.0	49.5	17.4	0.0	100.0	90
Condom	4.7	4.6	0.0	80.4	10.3	0.0	100.0	70
IUD	(5.4)	(12.4)	(0.0)	(61.1)	(21.2)	(0.0)	100.0	19
Female sterilization	11.0	2.7	0.3	49.1	36.6	0.3	100.0	265
Male sterilization	*	*	*	*	*	*	100.0	12
All modern methods	9.3	7.5	0.2	54.0	28.8	0.2	100.0	456
RURAL								
Pill	11.4	11.9	0.5	51.8	24.3	0.0	100.0	287
Condom	(18.8)	(0.0)	(2.7)	(62.3)	(16.2)	(0.0)	100.0	51
IUD	(22.1)	(0.0)	(0.0)	(59.4)	(18.4)	(0.0)	100.0	37
Female sterilization	11.0	1.0	0.3	52.8	35.0	0.0	100.0	1,050
Male sterilization	(6.4)	(2.1)	(0.0)	(27.6)	(61.8)	(2.1)	100.0	64
All modern methods	11.4	3.1	0.4	52.0	33.0	0.1	100.0	1,489
TOTAL								
Pill	11.1	14.6	0.4	51.3	22.7	0.0	100.0	377
Condom	10.6	2.7	1.1	72.8	12.8	0.0	100.0	121
IUD	16.4	4.2	0.0	60.0	19.4	0.0	100.0	56
Female sterilization	11.0	1.4	0.3	52.0	35.3	0.1	100.0	1,315
Male sterilization	5.4	2.9	0.0	28.2	61.8	1.7	100.0	76
All modern methods	10.9	4.1	0.3	52.5	32.0	0.1	100.0	1,945
NGO: Nongovernmental organization () Based on 25-49 unweighted cases *Percentage not shown; based on fewer than 25 unweighted cases								

sector health worker. More than half of current users of modern contraceptive methods reported that the motivator was someone other than a government or private-sector health worker. There are minimal differences between urban and rural women in terms of the type of person who motivated them to use their current method, although a larger proportion of urban women (8 percent) than rural women (3 percent) were motivated by private-sector workers. Users in rural areas are slightly more likely than users in urban areas to be self-motivated (33 percent compared with 29 percent, respectively). It is noteworthy that among the acceptors of female sterilization, 35 percent said that it was their own decision to use the method, and no one else had motivated them. Among women whose husbands had accepted sterilization, 62 percent stated that no one had motivated their husband to get sterilized.

Figure 9.2
Motivator for Current Users of Modern Contraceptive Methods



9.9 Quality of Care of Family Planning Services

NFHS-2 investigated several other aspects of quality of care. Each current user of a modern family planning method was asked whether the person who motivated her to use her current method informed her about alternative methods of family planning; whether she was told by a health or family planning worker about the possible side effects of her current method at the time she accepted the method; and whether she received any follow-up care after accepting the method either at home or in a health facility. Tables 9.9 and 9.10 present the results of this investigation.

An important indicator of the quality of family planning services is whether women are informed about a variety of available methods and are allowed to make an informed choice about the method most suited to their family planning and reproductive health needs. Women who reported that someone had motivated them to use family planning were asked whether the motivator told them about alternative methods that they could use. Overall, only 9 percent of users of modern contraceptive methods who were motivated by someone were informed about at least one alternative method (Table 9.9). Even among women who were motivated by a government health worker, only one-fourth were told about any other method. Users in rural areas were more likely than users in urban areas to be told about other methods when the person who motivated them was a public-sector worker. However, if the person who motivated the woman was a private-sector worker, a higher proportion of users in urban areas were told about other methods than users in rural areas.

Another important element of informed contraceptive choice is being fully informed about any side effects and any other problems associated with the method. Table 9.10 shows the percentage of current users of modern contraception who were told about side effects or other problems by a health or family planning worker at the time they accepted their current method. Women were also asked if they received follow-up services after they accepted the method. In West Bengal, only 10 percent of users of any modern method were informed about possible side effects or problems associated with their current method at the time of adopting the method.

Table 9.9 Discussions about alternative methods of family planning				
Percentage of current users of modern contraceptive methods who were told about at least one other method by the person who motivated them to use the current method, according to the sector of the motivator and residence, West Bengal, 1998-99				
Sector of motivator	Urban	Rural	Total	Number of users
Public health sector	18.9	26.6	25.0	212
Private health sector	19.1	11.8	14.9	81
Other	5.5	4.6	4.8	1,021
Total	8.7	9.1	9.0	1,320

Note: Table excludes women who said that no one motivated them to use their current method. Total includes 6 users of modern methods who were motivated by a worker from a nongovernmental organization, who are not shown separately.

Table 9.10 Information on side effects and follow-up for current method			
Percentage of current users of modern contraceptive methods who were told about side effects or other problems of the current method by a health or family planning worker at the time of accepting the method and percentage who received follow-up services after accepting the method by current method and residence, West Bengal, 1998-99			
Information/follow-up	Urban	Rural	Total
Told about side effects			
Sterilization	10.5	10.0	10.1
Other modern method	6.2	11.7	9.9
Any modern method	8.8	10.4	10.0
Received follow-up			
Sterilization	40.3	38.5	38.8
Other modern method	10.8	13.5	12.6
Any modern method	28.7	32.2	31.4

Even in the case of sterilization, only 10 percent of women were told about possible side effects of the method. These proportions are similar in urban and rural areas. Among users of modern methods other than sterilization, a higher proportion of rural users (12 percent) were informed about side effects than urban users (6 percent). From these results, it is apparent that health or family planning workers in West Bengal are not providing couples with the information they need to make an informed choice about contraceptive methods.

The situation is much better with respect to follow-up services. Overall, 31 percent of users of modern contraceptives received follow-up services (39 percent of those who were sterilized and 13 percent of those using other modern methods). Among sterilization users, 39 percent in rural areas and 40 percent in urban areas received follow-up services. Even so, these results indicate that only two in every five users of sterilization and one in every eight users of other modern methods received follow-up services from any source. Moreover, the extent of follow-up services is much more in West Bengal (where only 31 percent of users of modern methods received follow-up services) than in India as a whole (where 69 percent received follow-up services).

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APPENDIX A

ESTIMATES OF SAMPLING ERRORS

Two types of errors affect the estimates from a sample survey: (1) nonsampling errors and (2) sampling errors. Nonsampling errors are the result of errors committed during data collection and data processing, such as failure to locate and interview the correct household, misunderstanding of the questions on the part of either the interviewer or the respondent, and data entry errors. Although numerous efforts were made during the implementation of NFHS-2 to minimize nonsampling errors, they are impossible to avoid and difficult to evaluate statistically.

Sampling errors, on the other hand, can be evaluated statistically. The sample of women selected in NFHS-2 is only one of many samples that could have been selected from the same population, using the same design and expected sample size. Each of these samples would yield results that differ somewhat from the results of the actual sample selected. The sampling error is a measure of the variability among all possible samples. Although the degree of variability is not known exactly, it can be estimated from the survey results.

The sampling error is usually measured by the *standard error* for a particular statistic (for example, a mean or percentage), which is the square root of the variance. The standard error can be used to calculate confidence intervals within which the true value for the population can reasonably be assumed to fall. For example, for any given statistic calculated from a sample survey, the value of that statistic will fall within a range, calculated as the value of the statistic plus or minus two times the standard error of that statistic, in 95 percent of all possible samples of identical size and design.

If the sample of women had been selected as a simple random sample, it would have been possible, for many statistics, to use straightforward formulas for calculating sampling errors. However, the NFHS-2 sample in West Bengal is the result of a multistage stratified sample design, and it is therefore necessary to use more complex formulas. The computer software used to calculate sampling errors for NFHS-2 is ISSA (the Integrated System for Survey Analysis). The linear Taylor series approximation method for variance estimation is used for estimates of means, proportions, and ratios. The JACKKNIFE repeated replication method is used with ISSA for variance estimation for more complex statistics such as fertility and mortality rates.

The ISSA package treats any percentage or average as a ratio estimate, $r = y/x$, where y represents the sample value for variable y , and x represents the number of cases in the group or subgroup under consideration. The variance of r is computed using the formula given below, with the standard error being the square root of the variance:

$$\text{var}(r) = \frac{1-f}{x^2} \sum_{h=1}^H \left[\frac{m_h}{m_h - 1} \left(\frac{\sum_{i=1}^{m_h} z_{hi}^2}{m_h} - \frac{z_h^2}{m_h} \right) \right]$$

in which

$$z_{hi} = y_{hi} - fx_{hi}$$

$$z_h = y_h - fx_h$$

where

- h = the stratum that varies from 1 to H,
- m_h = the total number of PSUs selected in the h^{th} stratum,
- y_{hi} = the sum of the values of variable y in PSU i in the h^{th} stratum,
- x_{hi} = the sum of the number of cases in PSU i in the h^{th} stratum,
- f = the overall sampling fraction, which is so small that the program ignores it.

In addition to the standard error, ISSA computes the design effect (DEFT) for each estimate, which is defined as the ratio of the standard error using the given sample design to the standard error that would result if a simple random sample had been used. A DEFT value of 1.0 indicates that the sample design is as efficient as a simple random sample, while a value greater than 1.0 indicates the increase in the sampling error due to the use of a more complex and less statistically efficient design. ISSA also computes the relative standard error and confidence limits for each estimate (see Table A.2).

Sampling errors for NFHS-2 are calculated for selected variables considered to be of primary interest. The results in this appendix are presented for the state as a whole and for urban and rural areas separately, except for the variable on salt iodization for which the results are shown separately for large cities, small cities, towns, and rural areas. For each variable, the type of statistic (mean, proportion, ratio, or rate) and the base population are given in Table A.1. Table A.2 presents the value of the statistic (R), its standard error (SE), the relative standard error (SE/R), and the 95 percent confidence limits ($R \pm 2SE$) for each variable. In addition, for all variables except the fertility and mortality rates, the table shows the unweighted number of cases (N), the weighted number of cases (WN), the standard error assuming a simple random sample (SER), and the design effect (DEFT).

Table A.1 List of selected variables for sampling errors, West Bengal, 1998–99

Variable	Estimate	Base population
Sex ratio	Ratio	<i>De facto</i> household population
Illiterate	Proportion	<i>De facto</i> household population age 6 and above
Have tuberculosis	Rate	1,000 <i>de jure</i> household population
Salt iodized at 15 ppm or more	Proportion	Households
Illiterate	Proportion	Ever-married women age 15–49
High school complete and above	Proportion	Ever-married women age 15–49
Currently married	Proportion	Ever-married women age 15–49
Number of children ever born	Mean	Currently married women age 15–49
Number of living children	Mean	Currently married women age 15–49
Have ever used any method	Proportion	Currently married women age 15–49
Currently using any method	Proportion	Currently married women age 15–49
Currently using any modern method	Proportion	Currently married women age 15–49
Currently using pills	Proportion	Currently married women age 15–49
Currently using IUD	Proportion	Currently married women age 15–49
Currently using condoms	Proportion	Currently married women age 15–49
Currently using female sterilization	Proportion	Currently married women age 15–49
Currently using male sterilization	Proportion	Currently married women age 15–49
Currently using rhythm/safe period	Proportion	Currently married women age 15–49
Using public source for modern method	Proportion	Current users of modern methods
Say they do not want any more children	Proportion	Currently married women age 15–49
Want to delay birth at least 2 years	Proportion	Currently married women age 15–49
Ideal number of children	Mean	Ever-married women age 15–49
Ideal number of sons	Mean	Ever-married women age 15–49
Ideal number of daughters	Mean	Ever-married women age 15–49
Visited by health/family planning worker	Proportion	Ever-married women age 15–49
Received no antenatal check-up	Proportion	Births in past 3 years
Received iron and folic acid tablets or syrup	Proportion	Births in past 3 years
Received medical assistance during delivery	Proportion	Births in past 3 years
Received postpartum check-up	Proportion	Noninstitutional births in past 3 years
Had diarrhoea in the past 2 weeks	Proportion	Children under 3 years
Treated with ORS packets	Proportion	Children under 3 with diarrhoea in past 2 weeks
Taken to a health facility/provider for diarrhoea	Proportion	Children under 3 with diarrhoea in past 2 weeks
Showing a vaccination card	Proportion	Children age 12–23 months
Received BCG vaccination	Proportion	Children age 12–23 months
Received DPT vaccination (3 doses)	Proportion	Children age 12–23 months
Received polio vaccination (3 doses)	Proportion	Children age 12–23 months
Received measles vaccination	Proportion	Children age 12–23 months
Fully vaccinated	Proportion	Children age 12–23 months
Received vitamin A	Proportion	Children age 12–35 months
Had reproductive health problem	Proportion	Currently married women age 15–49
Not involved in any decisionmaking	Proportion	Ever-married women age 15–49
Ever beaten or physically mistreated since age 15	Proportion	Ever-married women age 15–49
Not worked in past 12 months	Proportion	Ever-married women age 15–49
Anaemic women	Proportion	Ever-married women age 15–49
Anaemic children	Proportion	Children age 6–35 months
Fertility rates	Rate	All women, population
Mortality rates	Rate	Births, population

Table A.2 Sampling errors, West Bengal, 1998-99

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Sex ratio (<i>De facto</i> household population)									
Urban	912	20.645	5533	3004	13.893	1.486	0.023	871	954
Rural	963	13.785	6097	8843	13.354	1.032	0.014	936	991
Total	950	11.535	11630	11847	9.564	1.206	0.012	927	974
Illiterate (<i>De facto</i> household population age 6 and above)									
Urban	0.167	0.021	9639	5236	0.005	3.968	0.128	0.124	0.209
Rural	0.388	0.015	10329	14980	0.007	2.111	0.038	0.359	0.418
Total	0.331	0.014	19968	20216	0.005	2.937	0.044	0.302	0.360
Have tuberculosis (1,000 <i>de jure</i> household population)									
Urban	3.573	1.124	10678	5836	0.897	1.254	0.315	1.325	5.821
Rural	5.374	0.978	12076	17512	0.983	0.995	0.182	3.417	7.330
Total	4.923	0.788	22754	23349	0.684	1.151	0.160	3.348	6.499
Salt iodized at 15 ppm or more (Households)									
Large city	0.835	0.023	1253	315	0.010	2.153	0.027	0.790	0.880
Small city	0.839	0.036	512	446	0.016	2.246	0.043	0.766	0.912
Town	0.777	0.057	570	498	0.017	3.268	0.073	0.663	0.891
Rural	0.546	0.022	2390	3466	0.010	2.206	0.041	0.501	0.591
Total	0.617	0.020	4725	4725	0.007	2.827	0.032	0.577	0.657
Illiterate (Ever-married women age 15-49)									
Urban	0.261	0.040	1947	1049	0.010	4.055	0.155	0.180	0.341
Rural	0.574	0.019	2461	3359	0.010	1.950	0.034	0.535	0.613
Total	0.500	0.021	4408	4408	0.008	2.722	0.041	0.459	0.541
High school complete and above (Ever-married women age 15-49)									
Urban	0.303	0.035	1947	1049	0.010	3.363	0.116	0.233	0.373
Rural	0.045	0.006	2461	3359	0.004	1.340	0.124	0.034	0.056
Total	0.106	0.012	4408	4408	0.005	2.648	0.116	0.082	0.131
Currently married (Ever-married women age 15-49)									
Urban	0.938	0.006	1947	1049	0.005	1.174	0.007	0.925	0.950
Rural	0.933	0.006	2461	3359	0.005	1.229	0.007	0.920	0.945
Total	0.934	0.005	4408	4408	0.004	1.332	0.005	0.924	0.944
Number of children ever born (Currently married women age 15-49)									
Urban	2.271	0.123	1822	984	0.040	3.056	0.054	2.025	2.518
Rural	2.860	0.061	2295	3132	0.044	1.378	0.021	2.738	2.982
Total	2.719	0.058	4117	4116	0.032	1.812	0.021	2.604	2.835
Number of living children (Currently married women age 15-49)									
Urban	2.074	0.108	1822	984	0.036	3.008	0.052	1.858	2.290
Rural	2.516	0.051	2295	3132	0.037	1.370	0.020	2.415	2.618
Total	2.411	0.048	4117	4116	0.027	1.796	0.020	2.314	2.507
Have ever used any method (Currently married women age 15-49)									
Urban	0.856	0.015	1822	984	0.008	1.779	0.017	0.827	0.885
Rural	0.768	0.015	2295	3132	0.009	1.721	0.020	0.738	0.799
Total	0.789	0.012	4117	4116	0.006	1.947	0.016	0.765	0.814

Table A.2 Sampling errors, West Bengal, 1998-99 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Currently using any method (Currently married women age 15-49)									
Urban	0.734	0.013	1822	984	0.010	1.222	0.017	0.709	0.760
Rural	0.645	0.015	2295	3132	0.010	1.543	0.024	0.614	0.676
Total	0.666	0.012	4117	4116	0.007	1.701	0.019	0.641	0.691
Currently using any modern method (Currently married women age 15-49)									
Urban	0.464	0.020	1822	984	0.012	1.703	0.043	0.424	0.504
Rural	0.475	0.017	2295	3132	0.010	1.599	0.035	0.442	0.509
Total	0.473	0.013	4117	4116	0.008	1.735	0.029	0.446	0.500
Currently using pills (Currently married women age 15-49)									
Urban	0.091	0.010	1822	984	0.007	1.453	0.107	0.072	0.111
Rural	0.092	0.008	2295	3132	0.006	1.339	0.088	0.076	0.108
Total	0.092	0.007	4117	4116	0.004	1.458	0.072	0.078	0.105
Currently using IUD (Currently married women age 15-49)									
Urban	0.020	0.003	1822	984	0.003	1.051	0.174	0.013	0.026
Rural	0.012	0.003	2295	3132	0.002	1.144	0.219	0.007	0.017
Total	0.014	0.002	4117	4116	0.002	1.178	0.156	0.009	0.018
Currently using condoms (Currently married women age 15-49)									
Urban	0.071	0.009	1822	984	0.006	1.452	0.123	0.054	0.089
Rural	0.016	0.003	2295	3132	0.003	1.248	0.203	0.010	0.023
Total	0.029	0.004	4117	4116	0.003	1.417	0.127	0.022	0.037
Currently using female sterilization (Currently married women age 15-49)									
Urban	0.270	0.026	1822	984	0.010	2.483	0.096	0.218	0.321
Rural	0.335	0.017	2295	3132	0.010	1.736	0.051	0.301	0.369
Total	0.320	0.014	4117	4116	0.007	1.989	0.045	0.291	0.348
Currently using male sterilization (Currently married women age 15-49)									
Urban	0.012	0.003	1822	984	0.003	1.261	0.266	0.006	0.019
Rural	0.020	0.004	2295	3132	0.003	1.231	0.178	0.013	0.028
Total	0.018	0.003	4117	4116	0.002	1.370	0.156	0.013	0.024
Currently using rhythm/safe period (Currently married women age 15-49)									
Urban	0.116	0.011	1822	984	0.007	1.482	0.096	0.093	0.138
Rural	0.078	0.008	2295	3132	0.006	1.391	0.100	0.063	0.094
Total	0.087	0.007	4117	4116	0.004	1.501	0.076	0.074	0.100
Using public source for modern method (Current users of modern methods)									
Urban	0.526	0.041	815	456	0.018	2.340	0.078	0.444	0.608
Rural	0.746	0.023	1091	1489	0.013	1.748	0.031	0.700	0.792
Total	0.695	0.021	1906	1945	0.011	1.978	0.030	0.653	0.736
Say they do not want any more children (Currently married women age 15-49)									
Urban	0.494	0.024	1822	984	0.012	2.028	0.048	0.447	0.542
Rural	0.359	0.016	2295	3132	0.010	1.565	0.044	0.328	0.391
Total	0.392	0.014	4117	4116	0.008	1.819	0.035	0.364	0.419
Want to delay birth at least two years (Currently married women age 15-49)									
Urban	0.101	0.008	1822	984	0.007	1.118	0.078	0.085	0.117
Rural	0.145	0.008	2295	3132	0.007	1.104	0.056	0.129	0.161
Total	0.134	0.007	4117	4116	0.005	1.243	0.049	0.121	0.148

Table A.2 Sampling errors, West Bengal, 1998-99 (contd.)									
Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Ideal number of children (Ever-married women age 15-49)									
Urban	2.004	0.069	1879	1019	0.019	3.638	0.034	1.866	2.141
Rural	2.489	0.044	2342	3196	0.021	2.156	0.018	2.400	2.577
Total	2.372	0.040	4221	4215	0.015	2.670	0.017	2.291	2.452
Ideal number of sons (Ever-married women age 15-49)									
Urban	0.884	0.051	1879	1019	0.015	3.352	0.058	0.781	0.986
Rural	1.155	0.027	2340	3194	0.016	1.699	0.023	1.101	1.209
Total	1.089	0.025	4219	4212	0.012	2.163	0.023	1.039	1.140
Ideal number of daughters (Ever-married women age 15-49)									
Urban	0.735	0.038	1879	1019	0.013	2.847	0.052	0.659	0.811
Rural	0.933	0.021	2340	3194	0.013	1.615	0.023	0.890	0.975
Total	0.885	0.019	4219	4212	0.010	1.991	0.022	0.846	0.923
Visited by health/family planning worker (Ever-married women age 15-49)									
Urban	0.144	0.028	1947	1049	0.008	3.524	0.195	0.088	0.200
Rural	0.193	0.012	2461	3359	0.008	1.519	0.063	0.169	0.217
Total	0.181	0.011	4408	4408	0.006	1.942	0.062	0.159	0.204
Received no antenatal check-up (Births in past 3 years)									
Urban	0.036	0.012	435	239	0.009	1.386	0.341	0.011	0.060
Rural	0.108	0.015	789	1077	0.012	1.266	0.138	0.078	0.137
Total	0.095	0.013	1224	1316	0.009	1.474	0.133	0.070	0.120
Received iron and folic acid tablets or syrup (Births in past 3 years)									
Urban	0.867	0.026	435	239	0.016	1.572	0.030	0.816	0.918
Rural	0.682	0.027	789	1077	0.017	1.642	0.040	0.628	0.737
Total	0.716	0.024	1224	1316	0.013	1.856	0.033	0.668	0.764
Received medical assistance during delivery (Births in past 3 years)									
Urban	0.817	0.054	435	239	0.020	2.673	0.066	0.709	0.925
Rural	0.358	0.027	789	1077	0.018	1.524	0.076	0.304	0.413
Total	0.442	0.028	1224	1316	0.014	1.937	0.063	0.386	0.498
Received postpartum check-up (Noninstitutional births in past 3 years)									
Urban	0.304	0.046	75	48	0.053	0.857	0.151	0.212	0.395
Rural	0.317	0.029	537	733	0.020	1.455	0.092	0.258	0.375
Total	0.316	0.028	612	781	0.019	1.467	0.087	0.261	0.371
Had diarrhoea in the past 2 weeks (Children under 3 years)									
Urban	0.069	0.018	423	231	0.012	1.487	0.267	0.032	0.105
Rural	0.086	0.012	747	1019	0.010	1.150	0.138	0.062	0.109
Total	0.083	0.010	1170	1251	0.008	1.258	0.123	0.062	0.103
Treated with ORS packets (Children under 3 with diarrhoea in past 2 weeks)									
Urban	0.654	0.090	24	16	0.088	1.026	0.138	0.474	0.834
Rural	0.360	0.075	64	87	0.061	1.237	0.208	0.210	0.509
Total	0.405	0.066	88	103	0.049	1.354	0.163	0.273	0.537
Taken to a health facility/provider for diarrhoea (Children under 3 with diarrhoea in past 2 weeks)									
Urban	0.777	0.103	24	16	0.077	1.340	0.132	0.571	0.982
Rural	0.499	0.068	64	87	0.063	1.065	0.135	0.364	0.635
Total	0.542	0.060	88	103	0.050	1.215	0.112	0.421	0.663

Table A.2. Sampling errors, West Bengal, 1998-99 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Showing a vaccination card (Children age 12-23 months)									
Urban	0.662	0.055	138	79	0.039	1.401	0.083	0.553	0.772
Rural	0.562	0.044	267	364	0.031	1.434	0.078	0.474	0.650
Total	0.580	0.038	405	443	0.024	1.603	0.065	0.504	0.656
Received BCG vaccination (Children age 12-23 months)									
Urban	0.887	0.024	138	79	0.026	0.905	0.027	0.840	0.934
Rural	0.738	0.039	267	364	0.027	1.418	0.052	0.661	0.815
Total	0.765	0.033	405	443	0.020	1.622	0.043	0.698	0.831
Received DPT vaccination (3 doses) (Children age 12-23 months)									
Urban	0.798	0.041	138	79	0.033	1.232	0.051	0.717	0.880
Rural	0.536	0.044	267	364	0.031	1.422	0.082	0.448	0.623
Total	0.583	0.039	405	443	0.024	1.640	0.066	0.505	0.660
Received polio vaccination (3 doses) (Children age 12-23 months)									
Urban	0.783	0.045	138	79	0.034	1.318	0.057	0.694	0.873
Rural	0.581	0.042	267	364	0.030	1.393	0.073	0.496	0.666
Total	0.617	0.037	405	443	0.023	1.599	0.060	0.543	0.692
Received measles vaccination (Children age 12-23 months)									
Urban	0.674	0.053	138	79	0.039	1.376	0.079	0.568	0.781
Rural	0.491	0.049	267	364	0.031	1.581	0.099	0.393	0.588
Total	0.524	0.042	405	443	0.024	1.765	0.080	0.439	0.608
Fully vaccinated (Children age 12-23 months)									
Urban	0.577	0.056	138	79	0.041	1.374	0.097	0.465	0.689
Rural	0.408	0.044	267	364	0.030	1.467	0.109	0.319	0.497
Total	0.438	0.039	405	443	0.024	1.636	0.088	0.361	0.516
Received vitamin A (Children age 12-35 months)									
Urban	0.568	0.041	286	161	0.029	1.416	0.072	0.486	0.650
Rural	0.402	0.034	503	686	0.022	1.522	0.084	0.335	0.469
Total	0.434	0.030	789	848	0.017	1.724	0.068	0.375	0.493
Had reproductive health problem (Currently married women age 15-49)									
Urban	0.315	0.016	1822	984	0.011	1.468	0.051	0.283	0.347
Rural	0.496	0.016	2295	3132	0.010	1.556	0.033	0.464	0.529
Total	0.453	0.014	4117	4116	0.008	1.846	0.032	0.424	0.482
Not involved in any decisionmaking (Ever-married women age 15-49)									
Urban	0.059	0.010	1947	1049	0.005	1.817	0.165	0.039	0.078
Rural	0.087	0.007	2461	3359	0.006	1.309	0.086	0.072	0.102
Total	0.080	0.006	4408	4408	0.004	1.521	0.078	0.068	0.093
Ever beaten or physically mistreated since age 15 (Ever-married women age 15-49)									
Urban	0.110	0.017	1947	1049	0.007	2.391	0.154	0.076	0.144
Rural	0.196	0.013	2461	3359	0.008	1.618	0.066	0.170	0.222
Total	0.176	0.011	4408	4408	0.006	1.908	0.062	0.154	0.198
Not worked in past 12 months (Ever-married women age 15-49)									
Urban	0.815	0.016	1947	1049	0.009	1.809	0.020	0.783	0.847
Rural	0.684	0.023	2461	3359	0.009	2.489	0.034	0.637	0.730
Total	0.715	0.019	4408	4408	0.007	2.754	0.026	0.677	0.752

Table A.2 Sampling errors, West Bengal, 1998-99 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Number of cases		Standard error assuming SRS (SER)	Design effect (DEFT)	Relative standard error (SE/R)	Confidence limits	
			Unweighted (N)	Weighted (WN)				R-2SE	R+2SE
Anaemic women (Ever-married women age 15-49)									
Urban	0.578	0.021	1607	935	0.012	1.712	0.037	0.535	0.620
Rural	0.642	0.016	2322	2994	0.010	1.615	0.025	0.610	0.674
Total	0.627	0.013	3929	3929	0.008	1.731	0.021	0.600	0.653
Anaemic children (Children age 6-35 months)									
Urban	0.641	0.055	296	172	0.028	1.972	0.086	0.531	0.751
Rural	0.815	0.021	585	758	0.016	1.316	0.026	0.773	0.858
Total	0.783	0.020	881	929	0.014	1.439	0.026	0.743	0.823

Table A.2 Sampling errors, West Bengal, 1998-99 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Relative standard error (SE/R)	Confidence limits	
				R-2SE	R+2SE
Total fertility rate (Women age 15-49)					
Urban	1.687	0.096	0.057	1.495	1.879
Rural	2.489	0.104	0.042	2.282	2.697
Total	2.293	0.080	0.035	2.133	2.454
Age-specific fertility rate (Women age 15-19)					
Urban	0.049	0.007	0.149	0.034	0.063
Rural	0.125	0.008	0.066	0.108	0.141
Total	0.107	0.007	0.061	0.094	0.120
Age-specific fertility rate (Women age 20-24)					
Urban	0.133	0.011	0.086	0.110	0.155
Rural	0.185	0.009	0.048	0.167	0.202
Total	0.173	0.007	0.042	0.158	0.187
Age-specific fertility rate (Women age 25-29)					
Urban	0.102	0.007	0.070	0.088	0.117
Rural	0.112	0.010	0.085	0.093	0.131
Total	0.110	0.007	0.066	0.095	0.124
Age-specific fertility rate (Women age 30-34)					
Urban	0.047	0.008	0.161	0.032	0.062
Rural	0.047	0.007	0.140	0.034	0.060
Total	0.047	0.005	0.112	0.037	0.058
Age-specific fertility rate (Women age 35-39)					
Urban	0.007	0.004	0.530	0.000	0.015
Rural	0.019	0.005	0.261	0.009	0.029
Total	0.015	0.004	0.237	0.008	0.023
Age-specific fertility rate (Women age 40-44)					
Urban	0.000	0.000	NC	0.000	0.000
Rural	0.004	0.002	0.571	0.000	0.009
Total	0.003	0.002	0.573	0.000	0.006
Age-specific fertility rate (Women age 45-49)					
Urban	0.000	0.000	NC	0.000	0.000
Rural	0.006	0.004	0.709	0.000	0.015
Total	0.004	0.003	0.708	0.000	0.010

Table A.2. Sampling errors, West Bengal, 1998-99 (contd.)

Variable/ residence	Value (R)	Standard error (SE)	Relative standard error (SE/R)	Confidence limits	
				R-2SE	R+2SE
Neonatal mortality (5-year period preceding survey)					
Urban	9.942	3.854	0.388	2.235	17.649
Rural	36.743	4.938	0.134	26.867	46.618
Total	31.944	4.210	0.132	23.524	40.363
Infant mortality ${}_1q_0$ (5-year period preceding survey)					
Urban	27.634	7.023	0.254	13.588	41.681
Rural	53.304	6.365	0.119	40.573	66.035
Total	48.699	5.440	0.112	37.820	59.578
Child mortality ${}_4q_1$ (5-year period preceding survey)					
Urban	13.547	5.068	0.374	3.412	23.683
Rural	21.201	3.610	0.170	13.981	28.420
Total	19.918	3.111	0.156	13.697	26.139
Under-five mortality ${}_5q_0$ (5-year period preceding survey)					
Urban	40.807	9.420	0.231	21.967	59.647
Rural	73.375	7.036	0.096	59.302	87.448
Total	67.647	6.100	0.090	55.447	79.847
Crude death rate (Based on Household Questionnaire)					
Urban	7.328	0.701	0.096	5.926	8.731
Rural	8.691	0.737	0.085	7.218	10.165
Total	8.351	0.599	0.072	7.153	9.548
Crude birth rate (Based on women's birth history)					
Urban	15.071	0.801	0.053	13.469	16.672
Rural	22.657	0.885	0.039	20.886	24.427
Total	20.757	0.687	0.033	19.384	22.130
NC: Not calculated because denominator is 0.000					
SRS: Simple random sample					

APPENDIX B

DATA QUALITY TABLES

The purpose of this appendix is to provide the data user with an overview of the general quality of the NFHS-2 data. Whereas Appendix A is concerned with sampling errors and their effects on the survey results, the tables in this appendix refer to possible *nonsampling* errors: for example, rounding or heaping on certain ages or dates; omission of events occurring further in the past; deliberate distortion of information by some interviewers in an attempt to lighten their workload; noncooperation of the respondent in providing information; or refusal to have children measured for height and weight or tested for anaemia. A description of the likely magnitude of such nonsampling errors is provided in the following paragraphs.

The distribution of the *de facto* household population by single years of age and sex is presented in Table B.1. In many (but not all) cases, the respondent was the head of the household. It is well documented that ages are poorly reported in most parts of India. Ages are of little relevance to much of the rural population in particular, and no amount of probing will ensure that ages are properly recorded. In interviewer training for NFHS-2, a great deal of emphasis was placed on obtaining as accurate information as possible on ages and dates of events. Nevertheless, it is clear that age reporting in NFHS-2 shares the same problems inherent in all Indian censuses and surveys. Heaping on ages ending in 0, 2, 5, and 8 is considerable, particularly for persons ages 20 and above.

Another measure of the quality of the NFHS-2 age data is the percentage of persons whose ages were recorded as not known or missing. In West Bengal, information on age was available for all 23,107 persons who stayed in the sample households the night before the interview.

Table B.2 examines the possibility that some eligible women (that is, ever-married women age 15–49 who stayed in the household the night before the interview) were not properly identified in NFHS-2. In some surveys, interviewers may try to reduce their workload by pushing women out of the eligible age range or recording ever-married women as never married so that they will not have to be interviewed. If such practices were being followed to a noticeable extent, Table B.2 would normally show (1) a shortage of ever-married women in the 45–49 age group and an excess in the 50–54 age group or (2) an unusually low proportion of ever-married women by age. Neither of these patterns is evident in the NFHS-2 data. It can, therefore, be concluded that there was no concerted effort to misidentify eligible women in NFHS-2 in West Bengal.

One traditional measure of the quality of data is the extent to which information is missing on key variables. Although completeness of responses does not necessarily indicate that the results are accurate, the existence of missing information for a large number of cases would suggest that data collection was not carried out with sufficient care. In NFHS-2 in West Bengal, the extent of missing information is very low for the month and year of birth, age at death (recorded only for children who died), woman's education, and prevalence of diarrhoea in the two weeks preceding the survey (Table B.3). The percentage of cases with missing information is higher for the month of birth and age at first marriage. Data on height and weight of children are available for 95 percent of children. Missing information is highest for woman's

Table B.1 Household age distribution									
Single-year age distribution of <i>de facto</i> household population by sex (weighted), West Bengal, 1998–99									
Age	Male		Female		Age	Male		Female	
	Number	Percent	Number	Percent		Number	Percent	Number	Percent
< 1	260	2.2	198	1.8	37	82	0.7	124	1.1
1	246	2.1	235	2.1	38	171	1.4	132	1.2
2	237	2.0	221	2.0	39	46	0.4	72	0.6
3	224	1.9	227	2.0	40	401	3.4	218	1.9
4	250	2.1	223	2.0	41	21	0.2	78	0.7
5	313	2.6	257	2.3	42	119	1.0	114	1.0
6	264	2.2	298	2.6	43	50	0.4	62	0.6
7	259	2.2	277	2.5	44	41	0.3	52	0.5
8	325	2.7	315	2.8	45	332	2.8	189	1.7
9	244	2.1	237	2.1	46	42	0.4	78	0.7
10	368	3.1	310	2.8	47	54	0.5	61	0.5
11	201	1.7	219	1.9	48	104	0.9	92	0.8
12	352	3.0	296	2.6	49	36	0.3	26	0.2
13	240	2.0	228	2.0	50	256	2.2	54	0.5
14	271	2.3	249	2.2	51	22	0.2	64	0.6
15	252	2.1	244	2.2	52	79	0.7	110	1.0
16	265	2.2	239	2.1	53	21	0.2	67	0.6
17	218	1.8	191	1.7	54	32	0.3	62	0.6
18	293	2.5	282	2.5	55	197	1.7	263	2.3
19	149	1.3	208	1.8	56	62	0.5	46	0.4
20	224	1.9	324	2.9	57	26	0.2	19	0.2
21	154	1.3	161	1.4	58	63	0.5	53	0.5
22	256	2.2	238	2.1	59	19	0.2	14	0.1
23	161	1.4	179	1.6	60	188	1.6	274	2.4
24	170	1.4	182	1.6	61	17	0.1	12	0.1
25	367	3.1	303	2.7	62	40	0.3	31	0.3
26	203	1.7	200	1.8	63	12	0.1	13	0.1
27	176	1.5	181	1.6	64	14	0.1	9	0.1
28	246	2.1	249	2.2	65	163	1.4	164	1.5
29	72	0.6	114	1.0	66	30	0.3	15	0.1
30	397	3.3	309	2.7	67	21	0.2	12	0.1
31	53	0.4	99	0.9	68	25	0.2	14	0.1
32	235	2.0	176	1.6	69	14	0.1	1	0.0
33	88	0.7	122	1.1	70+	361	3.0	291	2.6
34	82	0.7	141	1.3					
35	443	3.7	294	2.6					
36	127	1.1	146	1.3	Total	11,847	100.0	11,260	100.0

Note: The *de facto* population includes all usual residents and visitors who stayed in the household the night before the interview.

haemoglobin level and child's haemoglobin level. Nevertheless, haemoglobin data are available for at least 92 percent of cases in each of the target groups (ever-married women age 15–49 years and living children age 6–35 months).

Another measure of data quality is the completeness and accuracy of information on births. Table B.4 examines the distribution of births by calendar year to identify any unusual patterns that may indicate that births have been omitted or that the ages of children have been displaced. Overall, 98 percent of living children listed in the birth history had complete birth dates recorded, as did 91 percent of children who had died. The completeness of data on birth dates for both surviving and nonsurviving children is good overall and is excellent in recent years. The annual data on the number of births can be examined to see if there is an abnormally large decline in the number of births after January 1995, the cutoff point for the health questions and measurements made on young children in the survey. It is typical for the annual number of births to fluctuate somewhat, so small annual fluctuations are to be expected. However, the sharp

Table B.2. Age distribution of eligible and interviewed women

Age distribution of the *de facto* household population of women age 10–54 and of interviewed women age 15–49, and percentage of eligible women who were interviewed (weighted), West Bengal, 1998–99

Age	All women	Ever-married women	Interviewed women		
			Number	Percent	Percent interviewed
10–14	1,301	8	NA	NA	NA
15–19	1,164	425	413	8.9	97.2
20–24	1,085	864	849	18.2	98.3
25–29	1,046	964	941	20.2	97.6
30–34	848	819	798	17.1	97.4
35–39	769	749	726	15.6	96.9
40–44	525	517	501	10.7	96.9
45–49	447	446	432	9.3	96.8
50–54	357	354	NA	NA	NA
15–49	5,883	4,783	4,659	100.0	97.4

Note: The *de facto* population includes all usual residents and visitors who stayed in the household the night before the interview. For all columns, the age distribution is taken from ages reported in the Household Questionnaire. The total number of interviewed women in this table differs from the total number in earlier tables because this table uses household weights rather than women's weights for the calculations.

NA: Not applicable

Table B.3. Completeness of reporting

Percentage of observations with missing information for selected demographic and health indicators (weighted), West Bengal, 1998–99

Indicator	Reference group	Percentage missing information	Number of cases
Birth date	Births in past 15 years		
Month only		1.73	7,580
Month and year		0.23	7,580
Age at death	Deaths to births in past 15 years	0.56	646
Age at first marriage	Ever-married women age 15–49	1.85	4,408
Woman's education	Ever-married women age 15–49	0.15	4,408
Anthropometry	Living children age 0–35 months		
Height		5.17	1,267
Weight		5.00	1,267
Height or weight		5.35	1,267
Woman's haemoglobin level	Ever-married women age 15–49	7.94	4,408
Child's haemoglobin level	Living children age 6–35 months	7.31	1,041
Diarrhoea in past 2 weeks	Living children age 1–35 months	0.04	1,251

Table B.4 Births by calendar year

Number of births, percent with complete birth date, sex ratio at birth, and calendar year ratio for children still alive at the time of the survey (L), children who died by the time of the survey (D), and total children (T), by calendar year (weighted), West Bengal, 1998-99

Calendar year	Number of births			Percent with complete birth date ¹			Sex ratio at birth ²			Calendar year ratio ³		
	L	D	T	L	D	T	L	D	T	L	D	T
1999	41	1	42	100.0	100.0	100.0	434	NC	414	NA	NA	NA
1998	442	17	459	99.4	92.0	99.1	780	689	777	NC	NC	NC
1997	423	16	439	99.0	100.0	99.1	1,045	203	994	NC	NC	NC
1996	411	20	431	98.8	79.1	97.9	948	717	936	99.7	84.1	98.8
1995	402	31	433	97.8	100.0	97.9	1,081	1,200	1,089	92.7	90.6	92.5
1994	457	48	505	98.7	94.3	98.3	876	857	874	99.5	128.0	101.6
1993	516	44	560	98.5	100.0	98.6	821	712	812	109.1	99.5	108.3
1992	489	41	530	99.6	100.0	99.6	1,060	1,654	1,097	97.9	95.2	97.7
1991	482	42	525	98.7	100.0	98.8	1,042	588	996	93.1	103.1	93.9
1990	547	41	588	98.8	93.2	98.4	982	1,540	1,012	117.5	103.8	116.4
1989	449	36	485	98.7	92.3	98.2	1,011	1,072	1,015	81.9	74.5	81.3
1988	548	56	604	97.9	95.1	97.6	809	842	812	132.7	109.5	130.2
1993-97	2,209	158	2,368	98.6	95.7	98.4	941	754	927	NA	NA	NA
1988-92	2,515	216	2,731	98.7	96.2	98.5	971	1,040	977	NA	NA	NA
1983-87	2,161	320	2,481	97.9	90.6	96.9	954	823	936	NA	NA	NA
1978-82	1,722	290	2,012	97.1	90.2	96.1	1,014	984	1,010	NA	NA	NA
1977 or earlier	1,469	396	1,865	96.4	88.3	94.6	804	751	793	NA	NA	NA
All	10,559	1,399	11,958	98.0	91.3	97.2	932	852	922	NA	NA	NA

NA: Not applicable

NC: Not calculated because full-year data were not collected for 1998 and 1999 (the survey began during 1998) or the denominator is zero (for children born in 1999 who died).

¹Both year and month of birth given

² $(B_f/B_m) \times 1000$, where B_f and B_m are the numbers of female and male births, respectively

³ $[2B_x / (B_{x-1} + B_{x+1})] \times 100$, where B_x is the number of births in calendar year x

drop in the annual number of births between the years just before the cutoff point and the years just after the cutoff point suggest that there has been some omission of recent births or displacement of birth dates that could result in an underestimation of fertility and mortality rates for recent years.

Many surveys that include both demographic information and health information for children below a specified age have been subject to a substantial amount of age displacement. In particular, there is often a tendency for interviewers to 'age' children out of the eligible period for asking health questions. This problem was well known before NFHS-2 began; therefore, interviewer training stressed this issue to try to reduce the extent of biases due to age displacement. Apparently, the training was not entirely successful in avoiding this type of problem, however.

Table B.5 presents information on the reporting of age at death in days. Results from the table suggest that early infant deaths have not been seriously underreported in West Bengal, because the ratios of deaths under seven days to all neonatal deaths are quite high (a ratio of less than 25 percent is often used as a guideline to indicate underreporting of early neonatal deaths). Although underreporting of early neonatal deaths does not appear to be a problem in the West Bengal NFHS-2, there is some variation in the ratios across time. The ratios are 73 for 0–4 years, 61 for 5–9 years, and 69 for 10–14 years preceding the survey. There is also a tendency to report age at death at 3, 7, 8, 13, 15, and 21 days.

Table B.6 shows the percentage of infant deaths that occurred during the neonatal period. These percentages are also quite high and fairly constant over time, suggesting that there is no major omission of early deaths.

One problem that is inherent in most retrospective surveys is heaping of the age at death on certain digits, e.g., 6, 12, and 18 months. Misreporting of age at death will bias estimates of the age pattern of mortality if the net result of misreporting is the transference of deaths between age segments for which the rates are calculated. For example, 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, which are reported to have occurred after infancy, may have actually occurred during infancy (that is, at ages 0–11 months). In this case, heaping would bias the infant mortality rate downward and the child mortality rate upward.

Examination of the distribution of deaths under age two years during the 15 years before the survey by month of death (Table B.6) indicates that there is some heaping of deaths at 6, 12, 15, and 18 months of age. This is particularly true for deaths during the 5–9 years and 10–14 years preceding the survey. The heaping at age 12 months is considerable despite the strong emphasis on this problem during the training of interviewers for the NFHS-2 fieldwork. Nevertheless, the presence of heaping on age 12 months or age one year has almost no impact on recent infant and child mortality rates based on the NFHS-2 survey in West Bengal.

Table B.5 Reporting of age at death in days

Distribution of reported deaths under 1 month of age by age at death in days and percentage of neonatal deaths reported to occur at age 0–6 days, for births occurring during five-year periods preceding the survey (weighted), West Bengal, 1998–99

Age at death (days)	Years preceding survey			
	0–4	5–9	10–14	0–14
< 1	20	18	22	60
1	8	15	24	47
2	4	6	16	26
3	12	11	17	39
4	5	4	11	21
5	4	2	6	12
6	0	1	8	8
7	1	5	13	19
8	4	6	3	13
9	0	4	4	8
10	1	3	1	5
11	0	1	3	4
12	0	1	0	1
13	0	4	4	9
14	1	0	0	1
15	3	4	4	11
16	0	0	4	4
17	1	1	2	5
18	1	2	0	3
19	0	0	1	1
20	1	0	0	1
21	1	4	4	9
22	2	1	0	4
23	0	0	1	1
24	0	0	0	0
25	1	0	2	3
26	0	0	0	0
27	0	0	0	0
28	0	0	0	0
29	0	0	1	1
30	0	1	0	1
0–30	72	97	149	318
Percent early neonatal ¹	73.1	60.5	68.9	67.3

¹Deaths during the first 6 days divided by deaths during the first 30 days

Table B.6 Reporting of age at death in months

Distribution of reported deaths under two years of age by age at death in months and percentage of infant deaths reported to occur at age under one month, for births occurring during five-year periods preceding the survey (weighted), West Bengal, 1998–99

Age at death (months)	Years preceding survey			
	0–4	5–9	10–14	0–14
< 1	72	97	149	318
1	5	12	13	31
2	5	10	9	25
3	4	10	9	23
4	4	1	5	10
5	1	3	5	9
6	4	4	10	18
7	1	1	5	8
8	3	1	2	6
9	1	1	4	6
10	4	1	1	6
11	0	1	3	4
12	0	9	5	15
13	0	1	1	3
14	1	0	1	2
15	1	4	3	8
16	0	1	0	1
17	1	0	0	1
18	5	3	4	11
19	0	1	0	1
20	0	0	0	0
21	0	0	1	1
1 year	1	4	13	18
0–11 months	104	144	216	464
Percent neonatal ¹	69.1	67.0	69.0	68.4

¹Deaths during the first month divided by deaths during the first year

APPENDIX C

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APPENDIX D

SURVEY INSTRUMENTS

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
HOUSEHOLD QUESTIONNAIRE

CONFIDENTIAL
For Research
Purposes Only

INDIA

IDENTIFICATION																																																	
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td><td></td><td></td></tr> </table>																																																
DISTRICT _____																																																	
TEHSIL/TALUK _____																																																	
CITY/TOWN/VILLAGE _____																																																	
URBAN/RURAL (urban=1, rural=2)																																																	
LARGE CITY/SMALL CITY/TOWN/RURAL AREA..... (large city=1, small city=2, town=3, rural area=4)																																																	
PSU NUMBER.....																																																	
HOUSEHOLD NUMBER.....																																																	
NAME OF HOUSEHOLD HEAD _____																																																	
ADDRESS OF HOUSEHOLD _____																																																	

INTERVIEWER VISITS										
	1	2	3	FINAL VISIT						
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table> MONTH <table border="1"><tr><td></td><td></td></tr></table> YEAR <table border="1"><tr><td>1</td><td>9</td></tr></table>					1	9
1	9									
INTERVIEWER'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>						
RESULT*				RESULT CODE <table border="1"><tr><td></td><td></td></tr></table>						
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td></tr></table>						
*RESULT CODES: 1 COMPLETED 2 NO HOUSEHOLD MEMBER AT HOME OR NO COMPETENT RESPONDENT AT HOME AT THE TIME OF VISIT 3 ENTIRE HOUSEHOLD ABSENT FOR EXTENDED PERIOD 4 POSTPONED 5 REFUSED 6 DWELLING VACANT OR ADDRESS NOT A DWELLING 7 DWELLING DESTROYED 8 DWELLING NOT FOUND 9 OTHER _____ (SPECIFY)				TOTAL PERSONS IN HOUSEHOLD <table border="1"><tr><td></td><td></td></tr></table> TOTAL ELIGIBLE WOMEN <table border="1"><tr><td></td><td></td></tr></table> LINE NO. OF RESP. TO HOUSEHOLD SCHEDULE <table border="1"><tr><td></td><td></td></tr></table>						

DATE	SUPERVISOR <table border="1"><tr><td></td><td></td></tr></table>			FIELD EDITOR <table border="1"><tr><td></td><td></td></tr></table>			OFFICE EDITOR <table border="1"><tr><td></td><td></td></tr></table>			KEYED BY <table border="1"><tr><td></td><td></td></tr></table>		
NAME												

HOUSEHOLD SCHEDULE

1	RECORD THE TIME.	HOUR..... MINUTES.....	<table border="1" style="width: 40px; height: 40px;"> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> <tr><td style="width: 20px; height: 20px;"></td><td style="width: 20px; height: 20px;"></td></tr> </table>				

Now I would like some information about the people who usually live in your household or who are staying with you now.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	RESIDENCE		SEX		AGE	IF AGE 6 YEARS OR OLDER								
								MARITAL STATUS				ELIGIBILITY	EDUCATION			
								What is the current marital status of (NAME)?***					CIRCLE LINE NUMBER OF EVER-MARRIED FEMALES AGE 15-49 (EXCLUDE NG AND NM)	Can (NAME) read and write?	Has (NAME) ever been to school?	IF NEVER ATTENDED SCHOOL What is the main reason (NAME) never went to school?****
Does (NAME) usually live here?		Did (NAME) stay here last night?		Is (NAME) male or female?		How old is (NAME)?**		IF AGE LESS THAN 18 YEARS		IF NOT IN SCHOOL What is the main reason (NAME) is not going to school?*****						
(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)		(12)	(13)	(14)	(15)	(16)	

Please give me the names of the persons who usually live in your household and guests of the household who stayed here last night, starting with the head of the household.

LINE NO.	USUAL RESIDENTS AND VISITORS	RELATIONSHIP TO HEAD OF HOUSEHOLD	RESIDENCE		SEX		AGE	IF AGE 6 YEARS OR OLDER							
			YES NO	YES NO	M F	IN YEARS		CM NG S DS D W NM	YES NO	YES NO	REASON	GRADE	YES NO	REASON	
01			1 2	1 2	1 2			1 2 3 4 5 6 7	01	1 2	1 2			1 2	
02			1 2	1 2	1 2			1 2 3 4 5 6 7	02	1 2	1 2			1 2	
03			1 2	1 2	1 2			1 2 3 4 5 6 7	03	1 2	1 2			1 2	
04			1 2	1 2	1 2			1 2 3 4 5 6 7	04	1 2	1 2			1 2	
05			1 2	1 2	1 2			1 2 3 4 5 6 7	05	1 2	1 2			1 2	
06			1 2	1 2	1 2			1 2 3 4 5 6 7	06	1 2	1 2			1 2	
07			1 2	1 2	1 2			1 2 3 4 5 6 7	07	1 2	1 2			1 2	
08			1 2	1 2	1 2			1 2 3 4 5 6 7	08	1 2	1 2			1 2	

HOUSEHOLD SCHEDULE (CONTINUED)

(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
			YES NO	YES NO	M F	IN YEARS	CM NG S DS D W NM		YES NO	YES NO	REASON	GRADE	YES NO	REASON
09			1 2	1 2	1 2		1 2 3 4 5 6 7	09	1 2	1 2			1 2	
10			1 2	1 2	1 2		1 2 3 4 5 6 7	10	1 2	1 2			1 2	
11			1 2	1 2	1 2		1 2 3 4 5 6 7	11	1 2	1 2			1 2	
12			1 2	1 2	1 2		1 2 3 4 5 6 7	12	1 2	1 2			1 2	
13			1 2	1 2	1 2		1 2 3 4 5 6 7	13	1 2	1 2			1 2	
14			1 2	1 2	1 2		1 2 3 4 5 6 7	14	1 2	1 2			1 2	
15			1 2	1 2	1 2		1 2 3 4 5 6 7	15	1 2	1 2			1 2	
16			1 2	1 2	1 2		1 2 3 4 5 6 7	16	1 2	1 2			1 2	

TICK HERE IF CONTINUATION SHEET USED TOTAL NUMBER OF ELIGIBLE WOMEN

251

* CODES FOR Q.4

- RELATIONSHIP TO HEAD OF HOUSEHOLD:
- 01= HEAD
 - 02= WIFE OR HUSBAND
 - 03= SON OR DAUGHTER
 - 04= SON-IN-LAW OR DAUGHTER-IN-LAW
 - 05= GRANDCHILD
 - 06= PARENT
 - 07= PARENT-IN-LAW
 - 08= BROTHER OR SISTER
 - 09= BROTHER-IN-LAW OR SISTER-IN-LAW
 - 10= NIECE OR NEPHEW
 - 11= OTHER RELATIVE
 - 12= ADOPTED/FOSTER CHILD
 - 13= NOT RELATED

** CODES FOR Q.8

- 00= AGE LESS THAN ONE YEAR
- 95= AGE 95 YEARS OR MORE

*** CODES FOR Q.9

- MARITAL STATUS:
- 1= CURRENTLY MARRIED
 - 2= MARRIED, BUT GAUNA NOT PERFORMED
 - 3= SEPARATED
 - 4= DESERTED
 - 5= DIVORCED
 - 6= WIDOWED
 - 7= NEVER MARRIED

****CODES FOR Q.13

- 01= SCHOOL TOO FAR AWAY
- 02= TRANSPORT NOT AVAILABLE
- 03= EDUCATION NOT CONSIDERED NECESSARY
- 04= REQUIRED FOR HOUSEHOLD WORK
- 05= REQUIRED FOR WORK ON FARM/FAMILY BUSINESS
- 06= REQUIRED FOR OUTSIDE WORK FOR PAYMENT IN CASH OR KIND
- 07= COST TOO MUCH
- 08= NO PROPER SCHOOL FACILITIES FOR GIRLS
- 09= REQUIRED FOR CARE OF SIBLINGS
- 10= NOT INTERESTED IN STUDIES
- 96= OTHER
- 98= DK

*****CODES FOR Q.14

- GRADE:
- 00=LESS THAN 1 YEAR COMPLETED

*****CODES FOR Q.16

- 01= SCHOOL TOO FAR AWAY
- 02= TRANSPORT NOT AVAILABLE
- 03= FURTHER EDUCATION NOT CONSIDERED NECESSARY
- 04= REQUIRED FOR HOUSEHOLD WORK
- 05= REQUIRED FOR WORK ON FARM/FAMILY BUSINESS
- 06= REQUIRED FOR OUTSIDE WORK FOR PAYMENT IN CASH OR KIND
- 07= COST TOO MUCH
- 08= NO PROPER SCHOOL FACILITIES FOR GIRLS
- 09= REQUIRED FOR CARE OF SIBLINGS
- 10= NOT INTERESTED IN STUDIES
- 11= REPEATED FAILURES
- 12= GOT MARRIED
- 96= OTHER
- 98= DK

PSU NO. _____

HH NO. _____

LINE NO.	IF AGE 6 YEARS OR OLDER		AFTER COMPLETING COLUMNS 1-18 FOR ALL LISTED PERSONS, ASK:																
	OCCUPATION		Does anyone listed suffer from:									Does anyone listed:			Has any (other) person listed ever smoked regularly? RECORD FOR CURRENT NONSMOKERS ONLY (27)				
	What kind of work does (NAME) do most of the time? (17)	IF WORKING	Asthma? RECORD FOR EACH PERSON (19)	Tuberculosis? RECORD FOR EACH PERSON (20)	IF SUFFERS FROM TUBERCULOSIS		Did anyone listed suffer from malaria at any time during the last <u>three</u> months? RECORD FOR EACH PERSON (22)	Did anyone listed suffer from jaundice at any time during the last <u>twelve</u> months? RECORD FOR EACH PERSON (23)	Chew paan masala or tobacco? RECORD FOR EACH PERSON (24)	Drink alcohol? RECORD FOR EACH PERSON (25)	Smoke? RECORD FOR EACH PERSON (26)								
Does (NAME) earn cash for this work? (18)		YES			NO	YES						NO	YES	NO		YES	NO	YES	NO
01			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
02			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
03			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
04			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
05			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
06			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
07			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
08			1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3

PSU NO. _____

HH NO. _____

	(17)	(18)		(19)		(20)		(21)		(22)		(23)		(24)		(25)		(26)		(27)		
		YES	NO	DK																		
09	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
10	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
11	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
12	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
13	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
14	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
15	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3
16	<input type="checkbox"/>	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	3

28 Just to make sure that I have a complete listing:

1) Are there any other persons such as small children or infants that we have not listed?

YES → ENTER EACH IN TABLE NO

2) In addition, are there any other people who may not be members of your family, such as domestic servants, lodgers or friends who usually live here?

YES → ENTER EACH IN TABLE NO

3) Do you have any guests or temporary visitors staying here, or anyone else who stayed here last night?

YES → ENTER EACH IN TABLE NO

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
29	<p>When members of your household get sick, where do they generally go for treatment?</p>	<p>PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSPITAL/PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSPITAL/CLINIC.....21 NGO WORKER.....22 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 PVT. PARAMEDIC.....34 VAIDYA/HAKIM/HOMEOPATH.....35 TRADITIONAL HEALER.....36 PHARMACY/DRUGSTORE.....37 DAI (TBA).....38 OTHER PRIVATE SECTOR HEALTH FACILITY.....39 OTHER SHOP.....41 HOME TREATMENT.....42 OTHER _____ 96 (SPECIFY)</p>	
30	<p>What is the main source of drinking water for members of your household?</p>	<p>PIPED WATER PIPED INTO RESIDENCE/YARD/PLOT.....11 → 32 PUBLIC TAP.....12 GROUND WATER HANDPUMP IN RESIDENCE/ YARD/PLOT.....21 → 32 PUBLIC HANDPUMP.....22 WELL WATER WELL IN RESIDENCE/YARD/PLOT COVERED WELL.....31 OPEN WELL.....32 → 32 PUBLIC WELL COVERED WELL.....33 OPEN WELL.....34 SURFACE WATER SPRING.....41 RIVER/STREAM.....42 POND/LAKE.....43 DAM.....44 RAINWATER.....51 TANKER TRUCK.....61 OTHER _____ 96 (SPECIFY)</p>	
31	<p>How long does it take to go there, get water, and come back in one trip?</p>	<p>MINUTES..... <input type="text"/> <input type="text"/> <input type="text"/></p>	
32	<p>What do you do to purify drinking water, if anything? RECORD ALL MENTIONED.</p>	<p>STRAIN BY CLOTH.....A ALUM.....B WATER FILTER.....C BOILING.....D ELECTRONIC PURIFIER.....E NOTHING.....F OTHER _____ X (SPECIFY)</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
33	What kind of toilet facility does your household have?	FLUSH TOILET OWN FLUSH TOILET.....11 SHARED FLUSH TOILET.....12 PUBLIC FLUSH TOILET.....13 PIT TOILET/LATRINE OWN PIT TOILET/LATRINE.....21 SHARED PIT TOILET/LATRINE.....22 PUBLIC PIT TOILET/LATRINE.....23 NO FACILITY/BUSH/FIELD.....31 OTHER _____ 96 (SPECIFY)	
34	What is the main source of lighting for your household?	ELECTRICITY.....1 KEROSENE.....2 GAS.....3 OIL.....4 OTHER _____ 6 (SPECIFY)	
35	How many rooms are there in your household?	ROOMS..... <input type="text"/> <input type="text"/>	
36	Do you have a separate room which is used as a kitchen?	YES.....1 NO.....2	
37	What type of fuel does your household mainly use for cooking?	WOOD.....01 CROP RESIDUES.....02 DUNG CAKES.....03 COAL/COKE/LIGNITE.....04 CHARCOAL.....05 KEROSENE.....06 ELECTRICITY.....07 LIQUID PETROLEUM GAS.....08 BIO-GAS.....09 OTHER _____ 96 (SPECIFY)	
38	What other types of fuel does your household commonly use for cooking or heating? RECORD ALL MENTIONED.	WOOD.....A CROP RESIDUES.....B DUNG CAKES.....C COAL/COKE/LIGNITE.....D CHARCOAL.....E KEROSENE.....F ELECTRICITY.....G LIQUID PETROLEUM GAS.....H BIO-GAS.....I OTHER _____ X (SPECIFY) NO OTHER TYPE.....Y	
39	What is the religion of the head of the household?	HINDU.....01 MUSLIM.....02 CHRISTIAN.....03 SIKH.....04 BUDDHIST/NEO BUDDHIST.....05 JAIN.....06 JEWISH.....07 ZOROASTRIAN/PARSI.....08 NO RELIGION.....09 OTHER _____ 96 (SPECIFY)	
40	What is the caste or tribe of the head of the household?	CASTE _____ 1 (SPECIFY) TRIBE _____ 2 (SPECIFY) NO CASTE/TRIBE.....3 → 42	
41	Is this a scheduled caste, a scheduled tribe, other backward caste, or none of them?	SC.....1 ST.....2 OBC.....3 NONE OF THEM.....4	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																																																															
42	Does this household own this house or any other house?	YES.....1 NO.....2																																																																
43	Does this household own any agricultural land?	YES.....1 NO.....2	→46																																																															
44	_____ (SIZE AND UNIT) How much agricultural land does this household own?	ACRES..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>																																																																
45	_____ (SIZE AND UNIT) Out of this land, how much is irrigated?	ACRES..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> NONE.....9995																																																																
46	Does this household own any livestock?	YES.....1 NO.....2																																																																
47	Does the household own any of the following: A mattress? A pressure cooker? A chair? A cot or bed? A table? A clock or watch? An electric fan? A bicycle? A radio or transistor? A sewing machine? A telephone? A refrigerator? A black and white television? A colour television? A moped, scooter, or motorcycle? A car? A water pump? A bullock cart? A thresher? A tractor?	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr><td>MATTRESS.....</td><td>1</td><td>2</td></tr> <tr><td>PRESSURE COOKER.....</td><td>1</td><td>2</td></tr> <tr><td>CHAIR.....</td><td>1</td><td>2</td></tr> <tr><td>COT/BED.....</td><td>1</td><td>2</td></tr> <tr><td>TABLE.....</td><td>1</td><td>2</td></tr> <tr><td>CLOCK/WATCH.....</td><td>1</td><td>2</td></tr> <tr><td>ELECTRIC FAN.....</td><td>1</td><td>2</td></tr> <tr><td>BICYCLE.....</td><td>1</td><td>2</td></tr> <tr><td>RADIO/TRANSISTOR.....</td><td>1</td><td>2</td></tr> <tr><td>SEWING MACHINE.....</td><td>1</td><td>2</td></tr> <tr><td>TELEPHONE.....</td><td>1</td><td>2</td></tr> <tr><td>REFRIGERATOR.....</td><td>1</td><td>2</td></tr> <tr><td>TELEVISION (B&W).....</td><td>1</td><td>2</td></tr> <tr><td>TELEVISION (COLOUR).....</td><td>1</td><td>2</td></tr> <tr><td>MOPED/SCOOTER/MOTORCYCLE.....</td><td>1</td><td>2</td></tr> <tr><td>CAR.....</td><td>1</td><td>2</td></tr> <tr><td>WATER PUMP.....</td><td>1</td><td>2</td></tr> <tr><td>BULLOCK CART.....</td><td>1</td><td>2</td></tr> <tr><td>THRESHER.....</td><td>1</td><td>2</td></tr> <tr><td>TRACTOR.....</td><td>1</td><td>2</td></tr> </tbody> </table>		YES	NO	MATTRESS.....	1	2	PRESSURE COOKER.....	1	2	CHAIR.....	1	2	COT/BED.....	1	2	TABLE.....	1	2	CLOCK/WATCH.....	1	2	ELECTRIC FAN.....	1	2	BICYCLE.....	1	2	RADIO/TRANSISTOR.....	1	2	SEWING MACHINE.....	1	2	TELEPHONE.....	1	2	REFRIGERATOR.....	1	2	TELEVISION (B&W).....	1	2	TELEVISION (COLOUR).....	1	2	MOPED/SCOOTER/MOTORCYCLE.....	1	2	CAR.....	1	2	WATER PUMP.....	1	2	BULLOCK CART.....	1	2	THRESHER.....	1	2	TRACTOR.....	1	2	
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TABLE.....	1	2																																																																
CLOCK/WATCH.....	1	2																																																																
ELECTRIC FAN.....	1	2																																																																
BICYCLE.....	1	2																																																																
RADIO/TRANSISTOR.....	1	2																																																																
SEWING MACHINE.....	1	2																																																																
TELEPHONE.....	1	2																																																																
REFRIGERATOR.....	1	2																																																																
TELEVISION (B&W).....	1	2																																																																
TELEVISION (COLOUR).....	1	2																																																																
MOPED/SCOOTER/MOTORCYCLE.....	1	2																																																																
CAR.....	1	2																																																																
WATER PUMP.....	1	2																																																																
BULLOCK CART.....	1	2																																																																
THRESHER.....	1	2																																																																
TRACTOR.....	1	2																																																																
48	What is the main type of kitchenware this household uses?	CLAY.....1 ALUMINIUM.....2 CAST IRON.....3 BRASS/COPPER.....4 STAINLESS STEEL.....5 OTHER.....6 (SPECIFY)																																																																

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
51	Did any usual resident of this household die since January 1996?	YES.....1 NO.....2	→ 63

52	How many persons died?	TOTAL DEATHS..... <input type="text"/>
----	------------------------	--

53	54	55	56	57	58	59	60	61	62
What (was/were) the name(s) of the person(s) who died?	Was (NAME) a male or a female?	How old was he/she when he/she died? RECORD DAYS IF LESS THAN ONE MONTH, MONTHS IF LESS THAN TWO YEARS, OR YEARS	In what month and year did (NAME) die?	What did (NAME) die of?	CHECK 54 AND 55: DECEASED WAS FEMALE AGED 15-49 AT THE TIME OF DEATH	Was (NAME) pregnant when she died?	Did (NAME) die during childbirth?	Did (NAME) die within two months after the end of a pregnancy or childbirth?	Was the death of (NAME) due to a complication of the pregnancy or childbirth?

01 _____ (NAME)	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. <input type="text"/> YEAR... <input type="text"/>	<input type="text"/>	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 (GO TO 62) < NO.....2	YES.....1 (GO TO NEXT DEATH) < NO.....2	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2
02 _____ (NAME)	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. <input type="text"/> YEAR... <input type="text"/>	<input type="text"/>	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 (GO TO 62) < NO.....2	YES.....1 (GO TO NEXT DEATH) < NO.....2	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2
03 _____ (NAME)	MALE.....1 FEMALE...2	DAYS....1 MONTHS..2 YEARS...3	MONTH.. <input type="text"/> YEAR... <input type="text"/>	<input type="text"/>	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 (GO TO 62) < NO.....2	YES.....1 (GO TO NEXT DEATH) < NO.....2	YES.....1 NO.....2 (GO TO NEXT DEATH) <	YES.....1 NO.....2

63	RECORD THE TIME.	HOUR..... <input type="text"/> MINUTES..... <input type="text"/>
----	------------------	---

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
WOMAN'S QUESTIONNAIRE

CONFIDENTIAL
For Research
Purposes Only

INDIA

IDENTIFICATION																																	
STATE _____	<table border="1"> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td></td></tr> </table>																																
DISTRICT _____																																	
TEHSIL/TALUK _____																																	
CITY/TOWN/VILLAGE _____																																	
URBAN/RURAL (urban=1, rural=2).....																																	
LARGE CITY/SMALL CITY/TOWN/RURAL AREA..... (large city=1, small city=2, town=3, rural area=4)																																	
PSU NUMBER.....																																	
HOUSEHOLD NUMBER.....																																	
NAME AND LINE NUMBER OF WOMAN _____																																	
ADDRESS OF HOUSEHOLD _____																																	

INTERVIEWER VISITS										
	1	2	3	FINAL VISIT						
DATE				DAY <table border="1"><tr><td></td><td></td></tr></table> MONTH <table border="1"><tr><td></td><td></td></tr></table> YEAR <table border="1"><tr><td>1</td><td>9</td></tr></table>					1	9
1	9									
INTERVIEWER'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr></table>						
RESULT*				RESULT CODE <table border="1"><tr><td></td></tr></table>						
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td></tr></table>						
*RESULT CODES: 1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED 2 NOT AT HOME 4 REFUSED 6 OTHER (SPECIFY) _____										
NATIVE LANGUAGE OF RESPONDENT** <table border="1"><tr><td></td><td></td></tr></table> **LANGUAGE CODES: 01 Assamese 05 Hindi 09 Manipuri 14 Konkani 02 Bengali 06 Kannada 10 Marathi 15 Sindhi 03 English 07 Kashmiri 11 Nepali 16 Tamil 04 Gujarati 08 Malayalam 12 Oriya 17 Telugu 19 Other (SPECIFY) _____ 13 Punjabi 18 Urdu										

DATE	SUPERVISOR <table border="1"><tr><td></td><td></td></tr></table>			FIELD EDITOR <table border="1"><tr><td></td><td></td></tr></table>			OFFICE EDITOR <table border="1"><tr><td></td><td></td></tr></table>			KEYED BY <table border="1"><tr><td></td><td></td></tr></table>		
NAME												

SECTION 1. RESPONDENT'S BACKGROUND

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
101	RECORD THE TIME.	HOUR..... MINUTES.....	<input type="checkbox"/> <input type="checkbox"/>
<p>Namaste. My name is _____ and I am working with (NAME OF THE ORGANISATION). We are conducting a national survey about the health of women and children. We would very much appreciate your participation in this survey.</p> <p>I would like to ask you about your health (and the health of your children). This information will help the government to plan health services. The amount of time needed will be less than one hour. Participation in this survey is voluntary. If you decide to participate, you may stop answering questions at any time. Whatever information you provide will be kept strictly confidential and will not be shown to other persons.</p> <p>We hope that you will participate in the survey since your views are important. Do you want to ask me anything about the survey at this time?</p> <p>Signature of Interviewer: _____ Date: _____</p> <p>RESPONDENT AGREES FOR INTERVIEW.....1 RESPONDENT DOES NOT AGREE FOR INTERVIEW.....2 → END</p>			
102	First I would like to ask some questions about you and your household. For most of the time until you were 12 years old, did you live in a city, a town, or a village?	CITY/TOWN.....1 VILLAGE.....2	
103	How long have you been living continuously in (NAME OF CURRENT PLACE OF RESIDENCE)?	YEARS..... SINCE BIRTH.....95 VISITOR.....96	<input type="checkbox"/> →105
104	Just before you moved here, did you live in a city, a town, or a village?	CITY/TOWN.....1 VILLAGE.....2	
105	In what month and year were you born?	MONTH..... DK MONTH.....98 YEAR..... DK YEAR.....9998	<input type="checkbox"/> <input type="checkbox"/>
106	How old were you at your last birthday? COMPARE AND CORRECT 105 AND/OR 106 IF INCONSISTENT.	AGE IN COMPLETED YEARS.....	<input type="checkbox"/>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
107	What is your current marital status?	CURRENTLY MARRIED.....1 MARRIED BUT GAUNA NOT PERFORMED..2 SEPARATED.....3 DESERTED.....4 DIVORCED.....5 WIDOWED.....6 NEVER MARRIED.....7	→END →110 →END
108	Are you living with your husband now or is he staying elsewhere?	LIVING WITH HUSBAND.....1 STAYING ELSEWHERE.....2	→110
109	For how long have you and your husband not been living together? IF LESS THAN 1 YEAR, RECORD MONTHS; OTHERWISE RECORD COMPLETED YEARS.	MONTHS.....1 YEARS.....2	
110	Now I would like to ask you some questions about your marriage. Have you been married only once or more than once?	ONCE.....1 MORE THAN ONCE.....2	→114
111	How old were you at the time of your <u>first</u> marriage?	AGE IN COMPLETED YEARS.....	
112	How old were you when you started living with your <u>first</u> husband?	AGE IN COMPLETED YEARS..... GAUNA HAD NOT TAKEN PLACE..... 96	
113	How old were you when your <u>first</u> marriage dissolved?	AGE IN COMPLETED YEARS.....	
114	How old were you at the time of your (current) marriage?	AGE IN COMPLETED YEARS.....	
115	How old were you when you started living with your (current) husband?	AGE IN COMPLETED YEARS..... GAUNA HAS NOT TAKEN PLACE.....96	→END

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
116	Have you ever attended school?	YES.....1 NO.....2	→119
117	What is the highest grade you completed?	GRADE.....	
118	CHECK 117: GRADE 0-5 <input type="checkbox"/> GRADE 6 AND ABOVE <input type="checkbox"/>		→120
119	Can you read and write?	YES.....1 NO.....2	→121
120	Do you usually read a newspaper or a magazine at least once a week?	YES.....1 NO.....2	
121	Do you usually listen to a radio at least once a week?	YES.....1 NO.....2	
122	Do you usually watch television at least once a week?	YES.....1 NO.....2	
123	Do you usually go to a cinema hall or theatre to see a movie at least once a month?	YES.....1 NO.....2	
124	How often do you yourself consume the following items: daily, weekly, occasionally, or never:		
	Milk or Curd?	MILK OR CURD..1	DAILY 2 OCCA 3 NEVER 4
	Pulses or beans?	PULSES/BEANS..1	DAILY 2 OCCA 3 NEVER 4
	Green leafy vegetables?	GREEN LEAFY...1	DAILY 2 OCCA 3 NEVER 4
	Other vegetables?	OTH. VEG.....1	DAILY 2 OCCA 3 NEVER 4
	Fruits?	FRUITS.....1	DAILY 2 OCCA 3 NEVER 4
	Eggs?	EGGS.....1	DAILY 2 OCCA 3 NEVER 4
	Chicken, meat, or fish?	CHICKEN/MEAT/ FISH.....1	DAILY 2 OCCA 3 NEVER 4

SECTION 2. REPRODUCTION

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
201	Now I would like to ask about all the births you have had during your life. Have you ever given birth?	YES.....1 NO.....2	→206
202	Do you have any sons or daughters to whom you have given birth who are now living with you?	YES.....1 NO.....2	→204
203	How many sons live with you? And how many daughters live with you? IF NONE, RECORD '00'.	SONS AT HOME..... DAUGHTERS AT HOME.....	<input type="text"/> <input type="text"/>
204	Do you have any sons or daughters to whom you have given birth who are alive but do not live with you?	YES.....1 NO.....2	→206
205	How many sons are alive but do not live with you? And how many daughters are alive but do not live with you? IF NONE, RECORD '00'.	SONS ELSEWHERE..... DAUGHTERS ELSEWHERE.....	<input type="text"/> <input type="text"/>
206	Have you ever given birth to a boy or a girl who was born alive but later died? IF NO, PROBE: Any baby who cried or showed any sign of life but only survived a few hours or days?	YES.....1 NO.....2	→208
207	In all, how many boys have died? And how many girls have died? IF NONE, RECORD '00'.	BOYS DEAD..... GIRLS DEAD.....	<input type="text"/> <input type="text"/>
208	SUM ANSWERS TO 203, 205, AND 207, AND ENTER TOTAL. IF NONE RECORD '00'.	TOTAL.....	<input type="text"/> <input type="text"/>
209	CHECK 208:	Just to make sure that I have this right: you have had in TOTAL ___ births during your life. Is that correct?	
YES <input type="checkbox"/>		NO <input type="checkbox"/> → PROBE AND CORRECT 201-208 AS NECESSARY	
210	CHECK 208:	ONE OR MORE BIRTHS <input type="checkbox"/>	NO BIRTHS <input type="checkbox"/> →225

211

Now I would like to talk to you about all the births in your lifetime, whether currently alive or not, starting with the first one you had.
RECORD NAMES OF ALL THE LIVE BIRTHS IN 212. RECORD TWINS AND TRIPLETS ON SEPARATE LINES.

212	213	214	215	216	217	218	218A	219	220*
What name was given to your (first, next) baby?	Were any of these twins?	Is (NAME) a boy or a girl?	In what month and year was (NAME) born? PROBE: What is his/her birthday?	Is (NAME) still alive?	IF ALIVE: How old was (NAME) at his/her last birthday? RECORD AGE IN COMPLETED YEARS.	IF ALIVE: Is (NAME) living with you?	IF ALIVE: RECORD HOUSEHOLD LINE NUMBER OF CHILD (RECORD '00' IF CHILD NOT LISTED IN HOUSEHOLD)	IF DEAD: How old was (NAME) when he/she died? IF "1 YEAR", PROBE: How many months old was (NAME)? RECORD DAYS IF LESS THAN 1 MONTH, MONTHS IF LESS THAN TWO YEARS, OR YEARS.	Between (NAME OF PREVIOUS BIRTH) and (NAME OF THIS BIRTH) did you have any stillbirth, spontaneous abortion, or induced abortion? (* FOR FIRST CHILD ASK: Before (NAME), did you have any stillbirth, spontaneous abortion, or induced abortion?) IF NONE, RECORD '0'. FOR SECOND TWIN, RECORD '0' IN EACH BOX WITHOUT ASKING.

264

01 <hr/> (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
02 <hr/> (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
03 <hr/> (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
04 <hr/> (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

212	213	214	215	216	217	218	218A	219	220*
05 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
06 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
07 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
08 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
09 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
10 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....
11 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL..2	MONTH..... YEAR..	YES...1 NO....2 v 219	AGE IN YEARS 	YES.....1 NO.....2	LINE NUMBER ↓ (GO TO 220)	DAYS...1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

212	213	214	215	216	217	218	218A	219	220*
12 _____ (NAME)	SING...1 MULT...2	BOY...1 GIRL...2	MONTH..... YEAR..	YES...1 NO...2 v 219	AGE IN YEARS []	YES.....1 NO.....2	LINE NUMBER [] ↓ (GO TO 220)	DAYS....1 MONTHS..2 YEARS...3	NUMBER OF STILLBIRTHS..... NUMBER OF SPON. ABORTIONS..... NUMBER OF INDUCED ABORTIONS.....

221

After the last birth, did you have any stillbirth, spontaneous abortion, or induced abortion?
IF NONE, RECORD '0'

NUMBER OF STILLBIRTHS.....	[]
NUMBER OF SPON. ABORTIONS.....	[]
NUMBER OF INDUCED ABORTIONS.....	[]

222

CHECK 220 AND 221:

Just to make sure that I have this right: you have had in TOTAL _____ STILLBIRTHS, _____ SPONTANEOUS ABORTIONS, and _____ INDUCED ABORTIONS during your life: Is that correct?
YES, NO → PROBE AND CORRECT 220 - 221 AS NECESSARY

223

COMPARE 208 WITH NUMBER OF BIRTHS IN HISTORY ABOVE AND MARK:

NUMBERS ARE SAME NUMBERS ARE DIFFERENT → (PROBE AND RECONCILE)

CHECK: FOR EACH BIRTH: YEAR OF BIRTH IS RECORDED.
FOR EACH LIVING CHILD: CURRENT AGE IS RECORDED.
FOR EACH DEAD CHILD: AGE AT DEATH IS RECORDED.
FOR AGE AT DEATH 12 MONTHS: PROBE TO DETERMINE EXACT NUMBER OF MONTHS.
FOR EACH CALENDAR BIRTH INTERVAL 4 OR MORE YEARS: EXPLANATION IS GIVEN.

224

CHECK 215 AND ENTER THE NUMBER OF BIRTHS SINCE JANUARY 1995.
IF NONE, RECORD '0'.

[]	→229
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266

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
225	Have you ever had a stillbirth?	YES.....1 NO.....2	→227
226	How many stillbirths have you had?	NUMBER OF STILLBIRTHS..... <input type="text"/>	
227	Have you ever had an abortion? PROBE FOR SPONTANEOUS AND INDUCED ABORTIONS.	YES.....1 NO.....2	→229
228	How many abortions have you had? PROBE FOR NUMBER OF SPONTANEOUS AND INDUCED ABORTIONS. IF NONE, RECORD '0'.	NO. OF SPON. ABORTIONS..... <input type="text"/> NO. OF INDUCED ABORTIONS..... <input type="text"/>	
229	CHECK 107: CURRENTLY <input type="checkbox"/> MARRIED SEPARATED DESERTED DIVORCED <input type="checkbox"/> WIDOWED		→301
230	Are you pregnant now?	YES.....1 NO.....2 UNSURE.....6	→233
231	How many months pregnant are you?	MONTHS..... <input type="text"/>	
232	At the time you became pregnant, did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you want <u>no (more) children at all</u> ?	THEN.....1 LATER.....2 NO MORE.....3	→301
233	When did your last menstrual period start? _____ (DATE, IF GIVEN)	DAYS AGO.....1 <input type="text"/> WEEKS AGO.....2 <input type="text"/> MONTHS AGO.....3 <input type="text"/> YEARS AGO.....4 <input type="text"/> IN MENOPAUSE/HYSTERECTOMY.....993 BEFORE LAST BIRTH.....994 NEVER MESTRUATED.....995	

SECTION 3A. QUALITY OF CARE

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
301	During the last 12 months, has a health or family planning worker visited you at home?	YES.....1 NO.....2	→308
302	How many times did a worker visit you in the last 12 months?	NUMBER OF TIMES..... <input type="text"/>	
303	During these visits, what were the different matters talked about? Anything else? RECORD ALL MENTIONED.	FAMILY PLANNING.....A BREASTFEEDING.....B SUPPLEMENTARY FEEDING.....C IMMUNIZATION.....D NUTRITION.....E DISEASE PREVENTION.....F TREATMENT OF HEALTH PROBLEM.....G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J CHILD CARE.....K SANITATION/CLEANLINESS.....L ORAL REHYDRATION.....M OTHER.....X (SPECIFY)	
304	When was the last time a health or family planning worker visited you at home? IF LESS THAN ONE MONTH, RECORD '00' MONTHS.	MONTHS AGO..... <input type="text"/>	
305	Who visited you at that time?	PUBLIC SECTOR WORKER GOVT. DOCTOR.....11 PUBLIC HEALTH NURSE.....12 ANM/LHV.....13 MALE MPW/SUPERVISOR.....14 ANGANWADI WORKER.....15 VILLAGE HEALTH GUIDE.....16 OTHER PUBLIC SECTOR HEALTH WORKER.....17 NGO DOCTOR.....21 NGO WORKER.....22 PRIVATE SECTOR WORKER PRIVATE DOCTOR.....31 PRIVATE NURSE.....32 COMPOUNDER.....33 TRADITIONAL HEALER.....34 DAI (TBA).....35 OTHER PRIVATE SECTOR HEALTH WORKER.....36 OTHER.....96 (SPECIFY)	
305A	What type of services did you receive during this visit? Any other service? RECORD ALL MENTIONED.	PILL SUPPLY.....A CONDOM SUPPLY.....B FOLLOW-UP FOR STERILIZATION.....C FOLLOW-UP FOR IUD INSERTION.....D FAMILY PLANNING ADVICE.....E OTHER FAMILY PLANNING SERVICE...F IMMUNIZATION.....G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J DISEASE PREVENTION.....K MEDICAL TREATMENT FOR SELF.....L TREATMENT FOR SICK CHILD.....M TREATMENT FOR OTHER PERSON.....N OTHER.....X (SPECIFY)	
306	Did she/he spend enough time with you?	YES.....1 NO.....2	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
307	Did she/he talk to you nicely, somewhat nicely, or not nicely?	NICELY.....1 SOMEWHAT NICELY.....2 NOT NICELY.....3	
308	Have you visited a health facility or camp for any reason for yourself (or your children) in the last 12 months?	YES.....1 NO.....2	→317
309	During these visits in the last 12 months, what were the different matters talked about? Anything else? RECORD ALL MENTIONED.	FAMILY PLANNING.....A BREASTFEEDING.....B SUPPLEMENTARY FEEDING.....C IMMUNIZATION.....D NUTRITION.....E DISEASE PREVENTION.....F TREATMENT OF HEALTH PROBLEM....G ANTENATAL CARE.....H DELIVERY CARE.....I POSTPARTUM CARE.....J CHILD CARE.....K SANITATION/CLEANLINESS.....L ORAL REHYDRATION.....M OTHER _____ X (SPECIFY)	
310	What type of health facility did you visit most recently for yourself (or your children)?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSPITAL.....11 GOVT. DISPENSARY.....12 UHC/UHF/UFWC.....13 CHC/RURAL HOSPITAL/PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 CAMP.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSPITAL/CLINIC.....21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC.....31 PVT. MOBILE CLINIC.....32 PHARMACY/DRUGSTORE.....33 OTHER PRIVATE SECTOR HEALTH FACILITY.....34 OTHER _____ 96 (SPECIFY)	
311	What service did you go for? Any other service? RECORD ALL MENTIONED.	PILL SUPPLY.....A CONDOM SUPPLY.....B IUD/LOOP INSERTION.....C STERILIZATION OPERATION.....D FOLLOW-UP FOR STERILIZATION.....E FOLLOW-UP FOR IUD INSERTION....F FAMILY PLANNING ADVICE.....G OTHER FAMILY PLANNING SERVICE...H IMMUNIZATION.....I ANTENATAL CARE.....J DELIVERY CARE.....K POSTPARTUM CARE.....L DISEASE PREVENTION.....M MEDICAL TREATMENT FOR SELF.....N TREATMENT FOR SICK CHILD.....O TREATMENT FOR OTHER PERSON.....P OTHER _____ X (SPECIFY)	
311A	Did you receive the service that you went for?	YES.....1 NO.....2	

SECTION 3B. CONTRACEPTION

318. Now I would like to talk about family planning - the various ways or methods that a couple can use to delay or avoid a pregnancy.

For each method I mention, please tell me if you have ever heard of the method and whether you have ever used the method at any time in your life?

01	<p><u>Pill</u> Women can take a pill daily or weekly.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
02	<p><u>Condom or Nirodh</u> Men can use a rubber sheath during sexual intercourse.</p>	<p>HAS USED1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
03	<p><u>IUD or Loop</u> Women can have a loop or coil placed inside them by a doctor or a nurse.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
04	<p><u>Female sterilization</u> Women can have an operation to avoid having any more children.</p>	<p>Have you ever heard of female sterilization? IF YES: Have you ever had an operation to avoid having any more children?</p> <p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
05	<p><u>Male sterilization</u> Men can have an operation to avoid having any more children.</p>	<p>Have you ever heard of male sterilization? IF YES: Has your husband ever had an operation to avoid having any more children?</p> <p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
06	<p><u>Rhythm or safe period method</u> Couples can avoid having sexual intercourse on certain days of the month when the woman is more likely to become pregnant.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
07	<p><u>Withdrawal</u> Men can be careful and pull out before climax.</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>
08	<p>Have you ever heard of any other ways or methods that women or men can use to delay or avoid pregnancy? IF YES: Have you ever used this method?</p> <p>1 _____ (SPECIFY)</p> <p>2 _____ (SPECIFY)</p>	<p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p> <p>HAS USED.....1 HAS HEARD, BUT HAS NOT USED.....2 HAS NOT HEARD.....3</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
319	CHECK 318: NOT A SINGLE CODE '1' (NEVER USED) <input type="checkbox"/>	AT LEAST ONE CODE '1' (EVER USED) <input type="checkbox"/> → SKIP TO 322	
320	Have you ever used anything or tried in any way to delay or avoid getting pregnant?	YES.....1 NO.....2 → 356	
321	What have you used or done? CORRECT 318 AND 319.		
322	Now I would like to ask you about the time when you first did something or used a method to delay or avoid getting pregnant. How many living children did you have at that time, if any? IF NONE, RECORD '00'.	NUMBER OF CHILDREN..... <input type="text"/> <input type="text"/>	
323	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/>	SEPARATED <input type="checkbox"/> DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/> → 364	
324	CHECK 230: NOT PREGNANT OR UNSURE <input type="checkbox"/>	PREGNANT <input type="checkbox"/> → 358	
325	CHECK 318: NEITHER STERILIZED <input type="checkbox"/>	HE OR SHE STERILIZED <input type="checkbox"/> → 327A	
326	Are you or your husband currently doing something or using any method to delay or avoid getting pregnant?	YES.....1 NO.....2 → 355	
327	Which method are you using? 327A CIRCLE '04' FOR FEMALE STERILIZATION. CIRCLE '05' FOR MALE STERILIZATION.	PILL.....01 CONDOM/NIRODH.....02 IUD/LOOP.....03 → 336 FEMALE STERILIZATION.....04 MALE STERILIZATION.....05 → 339 RHYTHM/SAFE PERIOD.....06 WITHDRAWAL.....07 → 350 OTHER.....96 (SPECIFY)	

328	<p>For how many months have you been using pills/condoms continuously? IF LESS THAN 1 MONTH, RECORD '00'.</p>	<p>MONTHS..... <input style="width: 20px; height: 15px;" type="text"/> <input style="width: 20px; height: 15px;" type="text"/></p> <p>8 YEARS OR LONGER.....96</p>	
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329	<p>Where did you obtain the pills/condoms the last time?</p> <p>IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHF/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>GOVT. PARAMEDIC.....17</p> <p>CAMP.....18</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....19</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>PVT. PARAMEDIC.....34</p> <p>VAIDYA/HAKIM/HOMEOPATH.....35</p> <p>TRADITIONAL HEALER.....36</p> <p>PHARMACY/DRUGSTORE.....37</p> <p>DAI (TBA).....38</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....39</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>HUSBAND.....42</p> <p>FRIEND/OTHER RELATIVE.....43</p> <p>OTHER.....96</p> <p>(SPECIFY)</p>	<p>>331</p> <p>>331</p>
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330	<p>Do you know where this person obtained the pills/condoms the last time?</p> <p>IF SOURCE IS HOSPITAL OR CLINIC, WRITE THE NAME OF THE PLACE. PROBE TO IDENTIFY THE TYPE OF PLACE AND CIRCLE THE APPROPRIATE CODE.</p> <p>_____</p> <p>(NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHF/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>GOVT. PARAMEDIC.....17</p> <p>CAMP.....18</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH FACILITY.....19</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>NGO WORKER.....22</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>PVT. PARAMEDIC.....34</p> <p>VAIDYA/HAKIM/HOMEOPATH.....35</p> <p>TRADITIONAL HEALER.....36</p> <p>PHARMACY/DRUGSTORE.....37</p> <p>DAI (TBA).....38</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH FACILITY.....39</p> <p>OTHER SOURCE</p> <p>SHOP.....41</p> <p>OTHER.....96</p> <p>(SPECIFY)</p> <p>DK.....98</p>	
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NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
331	<p>May I see the packet of pills/condoms you are using now?</p> <p>IF PACKET SEEN, RECORD BRAND NAME.</p>	<p>PACKET SEEN.....1</p> <p>BRAND NAME _____ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> →333</p> <p>PACKET NOT SEEN.....2</p>	
332	<p>Do you know the brand name of the pills/condoms you are using now?</p>	<p>BRAND NAME _____ <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>DK.....998</p>	
333	<p>How much does one packet of pills/condoms cost you?</p>	<p>COST Rs:..... <input type="text"/> <input type="text"/> <input type="text"/></p> <p>FREE.....995</p> <p>DK.....998 →335</p>	
334	<p>For that cost how many condoms/pill cycles do you get?</p>	<p>NUMBER..... <input type="text"/> <input type="text"/></p>	
335	<p>Have you been able to get the supply of pills/condoms whenever you need them?</p>	<p>YES.....1</p> <p>NO.....2 →344</p>	
336	<p>For how many months have you been using the IUD/LOOP continuously?</p> <p>IF LESS THAN 1 MONTH, RECORD '00'.</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>8 YEARS OR LONGER.....96</p>	
337	<p>Who inserted the IUD/LOOP?</p>	<p>GOVERNMENT DOCTOR.....01</p> <p>GOVERNMENT NURSE/PARAMEDIC.....02</p> <p>NGO DOCTOR.....03</p> <p>NGO NURSE/PARAMEDIC.....04</p> <p>PRIVATE DOCTOR.....05</p> <p>PRIVATE NURSE/PARAMEDIC.....06</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>	
338	<p>Where did you go to get the IUD/LOOP inserted?</p> <p>_____ (NAME OF PLACE IF HOSPITAL OR CLINIC)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSPITAL.....11</p> <p>GOVT. DISPENSARY.....12</p> <p>UHC/UHF/UFWC.....13</p> <p>CHC/RURAL HOSPITAL/PHC.....14</p> <p>SUB-CENTRE.....15</p> <p>GOVT. MOBILE CLINIC.....16</p> <p>CAMP.....17</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....18</p> <p>NGO/TRUST HOSPITAL/CLINIC.....21</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC.....31</p> <p>PVT. DOCTOR.....32</p> <p>PVT. MOBILE CLINIC.....33</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....34</p> <p>OTHER _____ 96</p> <p>(SPECIFY)</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
344	Who mainly motivated you to use (CURRENT METHOD)?	GOVT. DOCTOR.....01 PUBLIC HEALTH NURSE.....02 ANM/LHV.....03 MALE MPW/SUPERVISOR.....04 ANGANWADI WORKER.....05 OTHER GOVT. HEALTH WORKER.....06 NGO WORKER.....07 PRIVATE DOCTOR.....08 PRIVATE PARAMEDIC.....09 DAI (TBA).....10 TEACHER.....11 RELIGIOUS LEADER.....12 POLITICAL LEADER.....13 HUSBAND.....14 MOTHER/MOTHER-IN-LAW.....15 OTHER RELATIVE/FRIEND.....16 NO ONE/SELF.....17 OTHER _____ 96 (SPECIFY)	→347
345	Did he/she tell you about any other methods that you might use?	YES.....1 NO.....2	→347
346	Which other methods were you told about? RECORD ALL MENTIONED.	PILL.....A CONDOM/NIRODH.....B IUD/LOOP.....C FEMALE STERILIZATION.....D MALE STERILIZATION.....E RHYTHM/SAFE PERIOD.....F WITHDRAWAL.....G OTHER _____ X (SPECIFY)	
347	At the time when you accepted the (CURRENT METHOD) did any health or family planning worker tell you about side effects or other problems you might have using the (CURRENT METHOD)?	YES.....1 NO.....2	
348	Were you told what to do in case you experienced problems with the method?	YES.....1 NO.....2	
349	Did you receive any follow-up, either at home or in a health facility, after you accepted the (CURRENT METHOD)? PROBE FOR TYPE OF VISIT.	AT HOME ONLY.....1 IN A FACILITY ONLY.....2 BOTH.....3 NEITHER.....4	→351
350	For how long have you been using this method continuously? IF LESS THAN 1 MONTH, RECORD '00'.	MONTHS..... <input type="text"/> <input type="text"/> 8 YEARS OR LONGER.....96	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
351	Have you had any problems related to the use of (CURRENT METHOD)?	YES.....1 NO.....2	→362
352	What problems have you had related to the use of (CURRENT METHOD)? PROBE: Any other problems? RECORD ALL MENTIONED.	WEIGHT GAIN.....A WEIGHT LOSS.....B TOO MUCH BLEEDING.....C HYPERTENSION.....D HEADACHE/BODYACHE/BACKACHE.....E NAUSEA/VOMITING.....F NO MENSTRUATION.....G WEAKNESS/TIREDNESS.....H DIZZINESS.....I FEVER.....J CRAMPS.....K SPOTTING.....L INCONVENIENT TO USE.....M ABDOMINAL PAIN.....N WHITE DISCHARGE.....O IRREGULAR PERIODS.....P BREAST TENDERNESS.....Q ALLERGY.....R EXPULSION.....S REDUCED SEXUAL SATISFACTION.....T OTHER.....X (SPECIFY)	
353	When you first started having these problems, did you talk to anyone about these problems?	YES.....1 NO.....2	→362
354	Who did you talk to about these problems? Any other person? RECORD ALL PERSONS TALKED TO.	GOVT. DOCTOR.....A PUBLIC HEALTH NURSE.....B ANM/LHV.....C ANGANWADI WORKER.....D OTHER GOVT. HEALTH WORKER.....E NGO DOCTOR.....F NGO WORKER.....G PRIVATE DOCTOR.....H PRIVATE PARAMEDIC.....I COMPOUNDER/PHARMACIST.....J TRADITIONAL HEALER.....K HUSBAND.....L FRIEND/OTHER RELATIVE.....M OTHER.....X (SPECIFY)	→362
355	What is the main reason you stopped using family planning?	METHOD FAILED/GOT PREGNANT.....01 LACK OF SEXUAL SATISFACTION.....02 CREATED MENSTRUAL PROBLEM.....03 CREATED HEALTH PROBLEM.....04 INCONVENIENT TO USE.....05 HARD TO GET METHOD.....06 PUT ON WEIGHT.....07 DID NOT LIKE THE METHOD.....08 WANTED TO HAVE A CHILD.....09 WANTED TO REPLACE DEAD CHILD.....10 LACK OF PRIVACY FOR USE.....11 HUSBAND AWAY.....12 COST TOO MUCH.....13 OTHER.....96 (SPECIFY)	→358

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
356	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/> ↓ SEPARATED DESERTED DIVORCED WIDOWED <input type="checkbox"/>	→ 364	
356A	CHECK 230: NOT PREGNANT OR UNSURE <input type="checkbox"/> ↓ PREGNANT <input type="checkbox"/>	→ 358	
357	What is the main reason you are not using a method of contraception to delay or avoid pregnancy?	HUSBAND AWAY.....11 FERTILITY-RELATED REASONS NOT HAVING SEX.....21 INFREQUENT SEX.....22 MENOPAUSAL/HAD HYSTERECTOMY..23 →362 SUBFECUND/INFECUND.....24 POSTPARTUM/BREASTFEEDING.....25 WANTS MORE CHILDREN.....26 OPPOSITION TO USE OPPOSED TO FAMILY PLANNING...31 HUSBAND OPPOSED.....32 OTHER PEOPLE OPPOSED.....33 AGAINST RELIGION.....34 LACK OF KNOWLEDGE KNOWS NO METHOD.....41 KNOWS NO SOURCE.....42 METHOD-RELATED REASONS HEALTH CONCERNS.....51 WORRY ABOUT SIDE EFFECTS....52 HARD TO GET METHOD.....53 COSTS TOO MUCH.....54 INCONVENIENT.....55 AFRAID OF STERILIZATION.....56 DON'T LIKE EXISTING METHODS..57 OTHER _____ 96 (SPECIFY) DK.....98	
358	Do you think you will use a method to delay or avoid pregnancy within the next 12 months?	YES.....1 →360 NO.....2 DK.....8	
359	Do you think you will use a method to delay or avoid pregnancy at any time in the future?	YES.....1 NO.....2 DK.....8 →361	
360	Which method would you prefer to use?	PILL.....01 CONDOM/NIRODH.....02 IUD/LOOP.....03 FEMALE STERILIZATION.....04 MALE STERILIZATION.....05 →362 RHYTHM/SAFE PERIOD.....06 WITHDRAWAL.....07 OTHER _____ 96 (SPECIFY) DK/UNSURE.....98	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																					
361	What is the main reason that you think you will not use a family planning method at any time in the future?	FERTILITY-RELATED REASONS NOT HAVING SEX.....11 INFREQUENT SEX.....12 MENOPAUSAL/HAD HYSTERECTOMY..13 SUBFECUND/INFECUND.....14 WANTS AS MANY CHILDREN AS POSSIBLE.....15 OPPOSITION TO USE OPOSED TO FAMILY PLANNING...21 HUSBAND OPOSED.....22 OTHER PEOPLE OPOSED.....23 AGAINST RELIGION.....24 LACK OF KNOWLEDGE KNOWS NO METHOD.....31 KNOWS NO SOURCE.....32 METHOD-RELATED REASONS HEALTH CONCERNS.....41 WORRY ABOUT SIDE EFFECTS....42 HARD TO GET METHOD.....43 COSTS TOO MUCH.....44 INCONVENIENT.....45 AFRAID OF STERILIZATION.....46 DON'T LIKE EXISTING METHODS..47 OTHER _____ 96 (SPECIFY) DK.....98																						
362	In the last few months, have you discussed the practice of family planning with your husband, friends, neighbours, or relatives?	YES.....1 NO.....2	→364																					
363	With whom? Anyone else? RECORD ALL MENTIONED.	HUSBAND.....A MOTHER.....B SISTER(S).....C DAUGHTER.....D MOTHER-IN-LAW.....E SISTER-IN-LAW.....F FRIEND/NEIGHBOUR.....G OTHER _____ X (SPECIFY)																						
364	In the last few months, have you heard or seen any message about family planning: on radio? on television? in a cinema or film show? in a newspaper or magazine? on a wall painting or hoarding? in a drama, folk dance, or street play?	<table border="0"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>RADIO.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>TELEVISION.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>CINEMA/FILM SHOW.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>NEWSPAPER/MAGAZINE.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>WALL PAINTING/HOARDING... 1</td> <td>2</td> <td></td> </tr> <tr> <td>DRAMA/FOLK DANCE/STREET PLAY.....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	RADIO.....	1	2	TELEVISION.....	1	2	CINEMA/FILM SHOW.....	1	2	NEWSPAPER/MAGAZINE.....	1	2	WALL PAINTING/HOARDING... 1	2		DRAMA/FOLK DANCE/STREET PLAY.....	1	2	
	YES	NO																						
RADIO.....	1	2																						
TELEVISION.....	1	2																						
CINEMA/FILM SHOW.....	1	2																						
NEWSPAPER/MAGAZINE.....	1	2																						
WALL PAINTING/HOARDING... 1	2																							
DRAMA/FOLK DANCE/STREET PLAY.....	1	2																						

SECTION 4A. ANTENATAL, NATAL, AND POSTNATAL CARE

401	CHECK 224 ONE OR MORE BIRTHS SINCE JAN. 1995 <input type="checkbox"/>	NO BIRTHS SINCE JAN. 1995 <input type="checkbox"/> → (SKIP TO 486)	
402	ENTER THE LINE NUMBER, NAME, AND SURVIVAL STATUS OF LAST TWO BIRTHS SINCE JANUARY 1995 IN THE TABLE. ASK THE QUESTIONS ABOUT THESE TWO BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, RECORD ONLY LAST TWO BIRTHS.)		
Now I would like to ask you some questions about the health of your children born since January 1995. (We will talk about one child at a time.)			
	LINE NUMBER FROM Q. 212	LAST BIRTH <input type="text"/>	NEXT-TO-LAST BIRTH <input type="text"/>
	FROM Q. 212 AND Q. 216	NAME ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>	NAME ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/>
403	At the time you became pregnant with (NAME), did you want to become pregnant <u>then</u> , did you want to wait until <u>later</u> , or did you want <u>no (more)</u> children <u>at all</u> ?	THEN.....1 (SKIP TO 405)←	THEN.....1 (SKIP TO 405)←
		LATER.....2	LATER.....2
		NO MORE.....3 (SKIP TO 405)←	NO MORE.....3 (SKIP TO 405)←
404	How much longer would you like to have waited?	MONTHS.....1 <input type="text"/> YEARS.....2 <input type="text"/> DK.....998	MONTHS.....1 <input type="text"/> YEARS.....2 <input type="text"/> DK.....998
405	When you were pregnant with (NAME), did you go for an antenatal check-up?	YES.....1 NO.....2 (SKIP TO 407)←	YES.....1 NO.....2 (SKIP TO 407)←
406	Whom did you see? Anyone else? RECORD ALL PERSONS SEEN.	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFFSNL...C TRADITIONAL BIRTH ATTENDANT (DAI).....D OTHER.....X (SPECIFY)	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFFSNL...C TRADITIONAL BIRTH ATTENDANT (DAI).....D OTHER.....X (SPECIFY)
407	When you were pregnant with (NAME), did any health worker visit you at home for an antenatal check-up?	YES.....1 NO.....2	YES.....1 NO.....2
408	CHECK 405 AND 407:	YES IN EITHER <input type="checkbox"/> NO IN BOTH <input type="checkbox"/> (SKIP TO 413)	YES IN EITHER <input type="checkbox"/> NO IN BOTH <input type="checkbox"/> (SKIP TO 413)

	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
409	MONTHS..... <input type="text"/> <input type="text"/>	MONTHS..... <input type="text"/> <input type="text"/>
How many months pregnant were you when you first received an antenatal check-up?		
410	NO. OF TIMES..... <input type="text"/> <input type="text"/>	NO. OF TIMES..... <input type="text"/> <input type="text"/>
How many times did you receive antenatal check-ups during this pregnancy?		
411	<p>Did you have the following performed at least once during any of your antenatal check-ups for this pregnancy:</p> <p style="text-align: center;">YES NO</p> <p>Weight measured? WEIGHT..... 1 2</p> <p>Height measured? HEIGHT..... 1 2</p> <p>Blood pressure checked? BLOOD PRESSURE.... 1 2</p> <p>Blood test? BLOOD TEST..... 1 2</p> <p>Urine test? URINE TEST..... 1 2</p> <p>Abdomen examined? ABDOMEN EXAMINED.. 1 2</p> <p>Internal exam? INTERNAL EXAM..... 1 2</p> <p>X-ray? X-RAY..... 1 2</p> <p>Sonogram or ultrasound? SONOGRAM/ULTRAS... 1 2</p> <p>Amniocentesis? AMNIOCENTESIS.... 1 2</p>	<p style="text-align: center;">YES NO</p> <p>WEIGHT..... 1 2</p> <p>HEIGHT..... 1 2</p> <p>BLOOD PRESSURE.... 1 2</p> <p>BLOOD TEST..... 1 2</p> <p>URINE TEST..... 1 2</p> <p>ABDOMEN EXAMINED.. 1 2</p> <p>INTERNAL EXAM..... 1 2</p> <p>X-RAY..... 1 2</p> <p>SONOGRAM/ULTRAS... 1 2</p> <p>AMNIOCENTESIS.... 1 2</p>
412	<p>Did you receive advice on any of the following during at least one of your antenatal check-ups for this pregnancy:</p> <p style="text-align: center;">YES NO</p> <p>Diet? DIET..... 1 2</p> <p>Danger signs of pregnancy? DANGER SIGNS..... 1 2</p> <p>Delivery care? DELIVERY CARE..... 1 2</p> <p>Newborn care? NEWBORN CARE..... 1 2</p> <p>Family planning? FAMILY PLANNING... 1 2 (SKIP TO 414) < <input type="checkbox"/> <input type="checkbox"/></p>	<p style="text-align: center;">YES NO</p> <p>DIET..... 1 2</p> <p>DANGER SIGNS..... 1 2</p> <p>DELIVERY CARE..... 1 2</p> <p>NEWBORN CARE..... 1 2</p> <p>FAMILY PLANNING... 1 2 (SKIP TO 414) < <input type="checkbox"/> <input type="checkbox"/></p>
413	<p>What is the main reason you did not receive an antenatal check-up?</p> <p>NOT NECESSARY.....01</p> <p>NOT CUSTOMARY.....02</p> <p>COST TOO MUCH.....03</p> <p>TOO FAR/NO TRANSPORT...04</p> <p>POOR QUALITY SERVICE...05</p> <p>NO TIME TO GO.....06</p> <p>FAMILY DID NOT ALLOW...07</p> <p>LACK OF KNOWLEDGE.....08</p> <p>NO HEALTH WORKER VISITED.....09</p> <p>OTHER _____ 96 (SPECIFY)</p>	<p>NOT NECESSARY.....01</p> <p>NOT CUSTOMARY.....02</p> <p>COST TOO MUCH.....03</p> <p>TOO FAR/NO TRANSPORT...04</p> <p>POOR QUALITY SERVICE...05</p> <p>NO TIME TO GO.....06</p> <p>FAMILY DID NOT ALLOW...07</p> <p>LACK OF KNOWLEDGE.....08</p> <p>NO HEALTH WORKER VISITED.....09</p> <p>OTHER _____ 96 (SPECIFY)</p>

	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
414				
	When you were pregnant with (NAME), did you experience any of the following problems at any time:	YES NO	YES NO	
	Night blindness? (USE LOCAL TERM)	NIGHT BLINDNESS.... 1 2	NIGHT BLINDNESS.... 1 2	
	Blurred vision?	BLURRED VISION..... 1 2	BLURRED VISION..... 1 2	
	Convulsions not from fever?	CONVULSIONS..... 1 2	CONVULSIONS..... 1 2	
	Swelling of the legs, body, or face?	SWELLING..... 1 2	SWELLING..... 1 2	
	Excessive fatigue?	EXCESSIVE FATIGUE.. 1 2	EXCESSIVE FATIGUE.. 1 2	
	Anaemia?	ANAEMIA..... 1 2	ANAEMIA..... 1 2	
	Any vaginal bleeding?	VAGINAL BLEEDING... 1 2	VAGINAL BLEEDING... 1 2	
415	When you were pregnant with (NAME), were you given any iron folic tablets or syrup?	YES.....1 NO.....2 (SKIP TO 418) < <input type="checkbox"/>	YES.....1 NO.....2 (SKIP TO 418) < <input type="checkbox"/>	
416	Did you receive enough iron folic tablets or syrup to last about three months or longer?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8	
417	Did you consume all the iron folic tablets or syrup you were given ?	YES.....1 NO.....2	YES.....1 NO.....2	
418	When you were pregnant with (NAME), were you given an injection in the arm to prevent you and the baby from getting tetanus (USE LOCAL TERM FOR TETANUS)?	YES.....1 NO.....2 (SKIP TO 420) < <input type="checkbox"/> DK.....8	YES.....1 NO.....2 (SKIP TO 420) < <input type="checkbox"/> DK.....8	
419	During this pregnancy, how many times did you get this injection?	TIMES..... <input type="checkbox"/> DK.....8	TIMES..... <input type="checkbox"/> DK.....8	

		LAST BIRTH		NEXT-TO-LAST BIRTH		
		NAME		NAME		
420	Where did you give birth to (NAME)?	HOME YOUR HOME.....11 PARENTS' HOME.....12 OTHER HOME.....13 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP...21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC...24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC..31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96 (SPECIFY) (SKIP TO 422)<		HOME YOUR HOME.....11 PARENTS' HOME.....12 OTHER HOME.....13 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP...21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC...24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC..31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96 (SPECIFY) (SKIP TO 422)<		
421	What is the main reason you did not go to a health facility for delivery?	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 POOR QUALITY SERVICE...05 NO TIME TO GO.....06 FAMILY DID NOT ALLOW...07 BETTER CARE AT HOME...08 LACK OF KNOWLEDGE.....09 OTHER _____ 96 (SPECIFY)		NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 POOR QUALITY SERVICE...05 NO TIME TO GO.....06 FAMILY DID NOT ALLOW...07 BETTER CARE AT HOME...08 LACK OF KNOWLEDGE.....09 OTHER _____ 96 (SPECIFY)		
422	Who assisted with the delivery of (NAME)? Anyone else? PROBE FOR THE TYPE OF PERSON AND RECORD ALL PERSONS WHO ASSISTED.	HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFESSNL..C OTHER PERSON DAI (TBA).....D FRIEND/RELATIVE.....E OTHER _____ X (SPECIFY) NO ONE.....Y		HEALTH PROFESSIONAL DOCTOR.....A ANM/NURSE/MIDWIFE/LHV...B OTHER HEALTH PROFESSNL..C OTHER PERSON DAI (TBA).....D FRIEND/RELATIVE.....E OTHER _____ X (SPECIFY) NO ONE.....Y		
423	CHECK 422:	ANY <input type="checkbox"/> NO <input type="checkbox"/> CODE v CODE A, B, (SKIP TO A, B, OR C 425) OR C		ANY <input type="checkbox"/> NO <input type="checkbox"/> CODE v CODE A, B, (SKIP TO A, B, OR C 425) OR C		
424	What is the main reason you did not take the help of a health professional?	NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 PROFES. NOT AVAI'BLE...05 NO CONFIDENCE IN AVAILABLE PROFESSIONAL.06 NO TIME TO GET HELP...07 FAMILY DID NOT ALLOW...08 OTHER _____ 96 (SPECIFY) (SKIP TO 426)<		NOT NECESSARY.....01 NOT CUSTOMARY.....02 COST TOO MUCH.....03 TOO FAR/NO TRANSPORT...04 PROFES. NOT AVAI'BLE...05 NO CONFIDENCE IN AVAILABLE PROFESSIONAL.06 NO TIME TO GET HELP...07 FAMILY DID NOT ALLOW...08 OTHER _____ 96 (SPECIFY) (SKIP TO 426)<		

	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
425	Was (NAME) delivered by caesarian section? YES.....1 NO.....2	YES.....1 NO.....2
426	When (NAME) was born, was he/she: large, average, small, or very small? LARGE.....1 AVERAGE.....2 SMALL.....3 VERY SMALL.....4	LARGE.....1 AVERAGE.....2 SMALL.....3 VERY SMALL.....4
427	Was (NAME) weighed at birth? YES.....1 NO.....2 (SKIP TO 429) < _____	YES.....1 NO.....2 (SKIP TO 429) < _____
428	How much did (NAME) weigh? GRAMS..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DK.....9998	GRAMS..... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> DK.....9998
429	Now I would like to ask you about the 2-month period after the delivery of (NAME). During that period, did a doctor or other health professional check your health or the health of your baby? YES.....1 NO.....2 (SKIP TO 433) < _____	YES.....1 NO.....2 (SKIP TO 433) < _____
430	How soon after the birth of (NAME) did you first get a check-up? DAYS.....1 <input type="text"/> <input type="text"/> WEEKS.....2 <input type="text"/> <input type="text"/>	DAYS.....1 <input type="text"/> <input type="text"/> WEEKS.....2 <input type="text"/> <input type="text"/>
431	Where did you get the check-up? HOME VISIT.....11 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC.....24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC...31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96 (SPECIFY)	HOME VISIT.....11 PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....21 GOVT. DISPENSARY.....22 UHC/UHP/UFWC.....23 CHC/RURAL HOSP./PHC.....24 SUB-CENTRE.....25 OTHER PUBLIC SECTOR HEALTH FACILITY.....26 NGO/TRUST HOSP./CLINIC...31 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC/ MATERNITY HOME.....41 OTHER PRIVATE SECTOR HEALTH FACILITY.....42 OTHER _____ 96 (SPECIFY)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
432	<p>Did any of the following happen when you had the check-up:</p> <p>Was your abdomen examined?</p> <p>Did you receive advice on family planning?</p> <p>Did you receive advice on breastfeeding?</p> <p>Did you receive advice on baby care?</p>	<p>YES NO</p> <p>ABDOMEN EXAMINED... 1 2</p> <p>FAMILY PLANNING.... 1 2</p> <p>BREASTFEEDING..... 1 2</p> <p>BABY CARE..... 1 2</p>	<p>YES NO</p> <p>ABDOMEN EXAMINED... 1 2</p> <p>FAMILY PLANNING.... 1 2</p> <p>BREASTFEEDING..... 1 2</p> <p>BABY CARE..... 1 2</p>
433	<p>At any time during the two months after the delivery of (NAME), did you have any of the following:</p> <p>Massive vaginal bleeding?</p> <p>Very high fever?</p>	<p>YES NO</p> <p>VAGINAL BLEEDING... 1 2</p> <p>VERY HIGH FEVER... 1 2</p>	<p>YES NO</p> <p>VAGINAL BLEEDING... 1 2</p> <p>VERY HIGH FEVER... 1 2</p>
434	<p>Has your period returned since the birth of (NAME)?</p>	<p>YES1 (SKIP TO 436) <-----1</p> <p>NO.....2 (SKIP TO 437) <-----2</p>	
435	<p>Did your period return between the birth of (NAME) and your next pregnancy?</p>		<p>YES1</p> <p>NO.....2 (SKIP TO 439) <-----2</p>
436	<p>For how many months after the birth of (NAME) did you not have a period?</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>DK.....98</p>	<p>MONTHS..... <input type="text"/> <input type="text"/></p> <p>DK.....98</p>
437	<p>CHECK 230: RESPONDENT PREGNANT?</p>	<p>NOT PREGNANT <input type="checkbox"/> OR PREGNANT <input type="checkbox"/> OR UNSURE <input type="checkbox"/> Q230 NOT ASKED <input type="checkbox"/> (SKIP TO 439) <input type="checkbox"/></p>	
438	<p>Have you resumed sexual relations since the birth of (NAME)?</p>	<p>YES.....1</p> <p>NO.....2 (SKIP TO 440) <-----2</p>	

	NAME	LAST BIRTH	NAME	NEXT-TO-LAST BIRTH
439		MONTHS..... <input type="text"/> <input type="text"/> DK.....98		MONTHS..... <input type="text"/> <input type="text"/> DK.....98
	For how many months after the birth of (NAME) did you not have sexual relations?			
440	Did you ever breastfeed (NAME)?	YES.....1 (SKIP TO 442)<----- NO.....2		YES.....1 (SKIP TO 442)<----- NO.....2
441	Why did you not breastfeed (NAME)?	MOTHER ILL/WEAK.....01 CHILD ILL/WEAK.....02 CHILD DIED.....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.....05 MOTHER WORKING.....06 CHILD REFUSED.....07 OTHER.....96 (SPECIFY) (SKIP TO 448)<-----		MOTHER ILL/WEAK.....01 CHILD ILL/WEAK.....02 CHILD DIED.....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.....05 MOTHER WORKING.....06 CHILD REFUSED.....07 OTHER.....96 (SPECIFY) (SKIP TO 448)<-----
442	How long after birth did you first put (NAME) to the breast? IF LESS THAN 1 HOUR, RECORD '00' HOURS. IF LESS THAN 24 HOURS, RECORD HOURS. OTHERWISE, RECORD DAYS.	IMMEDIATELY.....000 HOURS.....1 <input type="text"/> <input type="text"/> DAYS.....2 <input type="text"/> <input type="text"/>		IMMEDIATELY.....000 HOURS.....1 <input type="text"/> <input type="text"/> DAYS.....2 <input type="text"/> <input type="text"/>
443	Did you squeeze out the milk from the breast before you first put (NAME) to the breast?	YES.....1 NO.....2		YES.....1 NO.....2
444	CHECK 216: CHILD ALIVE?	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (SKIP TO 446)		ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (SKIP TO 446)
445	Are you still breastfeeding (NAME)?	YES.....1 (SKIP TO 449)<----- NO.....2		YES.....1 (SKIP TO 449)<----- NO.....2
446	For how many months did you breastfeed (NAME)?	MONTHS..... <input type="text"/> <input type="text"/> UNTIL DIED.....96 (SKIP TO 452)<-----		MONTHS..... <input type="text"/> <input type="text"/> UNTIL DIED.....96 (SKIP TO 452)<-----
447	Why did you stop breastfeeding (NAME)?	MOTHER ILL/WEAK.....01 CHILD ILL/WEAK.....02 CHILD DIED.....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.....05 MOTHER WORKING.....06 CHILD REFUSED.....07 WEANING AGE.....08 BECAME PREGNANT.....09 STARTED USING CONTRACEPTION.....10 OTHER.....96 (SPECIFY)		MOTHER ILL/WEAK.....01 CHILD ILL/WEAK.....02 CHILD DIED.....03 NIPPLE/BREAST PROBLEM...04 INSUFFICIENT MILK.....05 MOTHER WORKING.....06 CHILD REFUSED.....07 WEANING AGE.....08 BECAME PREGNANT.....09 STARTED USING CONTRACEPTION.....10 OTHER.....96 (SPECIFY)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
448	CHECK 216: CHILD ALIVE?	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (SKIP TO 452)	ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> v (SKIP TO 452)
449	Did (NAME) drink anything from a bottle with a nipple yesterday or last night?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
450	At any time yesterday or last night, was (NAME) given any of the following:	YES NO DK	YES NO DK
	Plain water?	PLAIN WATER..... 1 2 8	PLAIN WATER..... 1 2 8
	Powdered milk?	POWDERED MILK.... 1 2 8	POWDERED MILK.... 1 2 8
	Any other milk (other than breast milk)?	OTHER MILK..... 1 2 8	OTHER MILK..... 1 2 8
	Any other liquid?	ANY OTHER LIQUID. 1 2 8	ANY OTHER LIQUID. 1 2 8
	Green, leafy vegetables?	GREEN/LEAFY VEG.. 1 2 8	GREEN/LEAFY VEG.. 1 2 8
	Fruits?	FRUITS..... 1 2 8	FRUITS..... 1 2 8
	Any other solid or mushy food?	SOLID/MUSHY FOOD. 1 2 8	SOLID/MUSHY FOOD. 1 2 8
451	How often during the last seven days was (NAME) given any of the following:	1 = EVERY DAY 2 = SOME DAYS 3 = NOT AT ALL 8 = DK	1 = EVERY DAY 2 = SOME DAYS 3 = NOT AT ALL 8 = DK
	Plain water?	PLAIN WATER..... <input type="checkbox"/>	PLAIN WATER..... <input type="checkbox"/>
	Powdered milk?	POWDERED MILK..... <input type="checkbox"/>	POWDERED MILK..... <input type="checkbox"/>
	Any other milk (other than breast milk)?	OTHER MILK..... <input type="checkbox"/>	OTHER MILK..... <input type="checkbox"/>
	Any other liquid?	OTHER LIQUID..... <input type="checkbox"/>	OTHER LIQUID..... <input type="checkbox"/>
	Green, leafy vegetables?	GREEN/LEAFY VEG..... <input type="checkbox"/>	GREEN/LEAFY VEG..... <input type="checkbox"/>
	Fruits?	FRUITS..... <input type="checkbox"/>	FRUITS..... <input type="checkbox"/>
	Any other solid or mushy food?	SOLID/MUSHY FOOD..... <input type="checkbox"/>	SOLID/MUSHY FOOD..... <input type="checkbox"/>
452	—————→	GO BACK TO 403 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 453	GO TO 453

SECTION 4B. IMMUNIZATION AND HEALTH

453 ENTER THE LINE NUMBER AND NAME OF LAST TWO BIRTHS SINCE JANUARY 1995 IN THE TABLE. ASK THE QUESTIONS ABOUT THESE TWO BIRTHS. BEGIN WITH THE LAST BIRTH. (IF THERE ARE MORE THAN 2 BIRTHS, RECORD ONLY LAST TWO BIRTHS.)

LINE NUMBER FROM Q. 212	LAST BIRTH	NEXT-TO-LAST BIRTH
FROM Q. 212 AND Q. 216	NAME ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (GO TO NEXT COLUMN, OR IF NO MORE BIRTHS, GO TO 481)	NAME ALIVE <input type="checkbox"/> DEAD <input type="checkbox"/> (GO TO 481)

454

Do you have a card where (NAME'S) vaccinations are written down?
IF YES: May I see it, please?

YES, SEEN.....1 (SKIP TO 456) <-----	YES, SEEN.....1 (SKIP TO 456) <-----
YES, NOT SEEN.....2 (SKIP TO 458) <-----	YES, NOT SEEN.....2 (SKIP TO 458) <-----
NO CARD.....3	NO CARD.....3

455

Did you ever have a vaccination card for (NAME)?

YES.....1 (SKIP TO 458) <-----	YES.....1 (SKIP TO 458) <-----
NO.....2	NO.....2

456

(1) COPY VACCINATION DATES FOR EACH VACCINE FROM THE CARD.
(2) WRITE '44' IN 'DAY' COLUMN IF CARD SHOWS THAT A VACCINATION WAS GIVEN, BUT NO DATE IS RECORDED.

	DAY	MO	YEAR	DAY	MO	YEAR
BCG	BCG			BCG		
POLIO 0	P0			P0		
DPT 1	D1			D1		
DPT 2	D2			D2		
DPT 3	D3			D3		
POLIO 1	P1			P1		
POLIO 2	P2			P2		
POLIO 3	P3			P3		
MEASLES	MEA			MEA		

457

Has (NAME) received any vaccinations that are not recorded on this card?
RECORD 'YES' ONLY IF RESPONDENT MENTIONS BCG, DPT 1-3, POLIO 0-3 AND/OR MEASLES VACCINE(S).

YES.....1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 456) <----- (SKIP TO 460) <-----	YES.....1 (PROBE FOR VACCINATIONS AND WRITE '66' IN THE CORRESPONDING DAY COLUMN IN 456) <----- (SKIP TO 460) <-----
NO.....2	NO.....2
DK.....8 (SKIP TO 460) <-----	DK.....8 (SKIP TO 460) <-----

		LAST BIRTH	NEXT-TO-LAST BIRTH
		NAME _____	NAME _____
458	Did (NAME) ever receive any vaccinations to prevent him/her from getting diseases?	YES.....1 NO.....2 (SKIP TO 462) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 462) <-----> DK.....8
459	Please tell me if (NAME) has received any of the following vaccinations:		
459A	A BCG vaccination against tuberculosis, that is, an injection in the left shoulder that caused a scar?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
459B	A DPT vaccination against diphtheria, whooping cough, and tetanus given as an injection?	YES.....1 NO.....2 (SKIP TO 459D) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 459D) <-----> DK.....8
459C	How many times?	NUMBER OF TIMES..... <input type="checkbox"/>	NUMBER OF TIMES..... <input type="checkbox"/>
459D	Polio vaccine, that is, drops in the mouth?	YES.....1 NO.....2 (SKIP TO 459G) <-----> DK.....8	YES.....1 NO.....2 (SKIP TO 459G) <-----> DK.....8
459E	How many times?	NUMBER OF TIMES..... <input type="checkbox"/>	NUMBER OF TIMES..... <input type="checkbox"/>
459F	When was the first polio vaccine given -- just after birth or later?	JUST AFTER BIRTH.....1 LATER.....2	JUST AFTER BIRTH.....1 LATER.....2
459G	An injection against measles?	YES.....1 NO.....2 DK.....8 (SKIP TO 461) <----->	YES.....1 NO.....2 DK.....8 (SKIP TO 461) <----->
460	CHECK 456: ANY VACCINATIONS RECEIVED?	YES <input type="checkbox"/> NO <input type="checkbox"/> (SKIP TO 462)	YES <input type="checkbox"/> NO <input type="checkbox"/> (SKIP TO 462)

		LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____
461	Where did (NAME) receive most of his/her vaccinations?	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 CAMP.....17 PULSE POLIO LOCATION...18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 NGO/TRUST HOSP./CLINIC...21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....35 OTHER PRIVATE SECTOR HEALTH FACILITY.....36 OTHER _____ 96 (SPECIFY)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC.....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC.....16 CAMP.....17 PULSE POLIO LOCATION...18 OTHER PUBLIC SECTOR HEALTH FACILITY.....19 NGO/TRUST HOSP./CLINIC...21 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC.....33 VAIDYA/HAKIM/HOMEOPATH..34 PHARMACY/DRUGSTORE.....35 OTHER PRIVATE SECTOR HEALTH FACILITY.....36 OTHER _____ 96 (SPECIFY)
462	Was a dose of vitamin A liquid or capsule ever given to (NAME) to protect him/her from night blindness (USE LOCAL TERM)?	YES.....1 NO.....2 (SKIP TO 464) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 464) <----- DK.....8
463	How many months ago did (NAME) receive the last dose of Vitamin A?	MONTHS AGO..... <input type="text"/> <input type="text"/>	MONTHS AGO..... <input type="text"/> <input type="text"/>
464	Has (NAME) been ill with a fever at any time in the last 2 weeks?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
465	Has (NAME) been ill with a cough at any time in the last 2 weeks?	YES.....1 NO.....2 (SKIP TO 469) <----- DK.....8	YES.....1 NO.....2 (SKIP TO 469) <----- DK.....8
466	When (NAME) was ill with a cough, did he/she breathe faster than usual with short, rapid breaths?	YES.....1 NO.....2 DK.....8	YES.....1 NO.....2 DK.....8
467	Did you seek advice or treatment for the cough?	YES.....1 NO.....2 (SKIP TO 469) <-----	YES.....1 NO.....2 (SKIP TO 469) <-----

	LAST BIRTH NAME	NEXT-TO-LAST BIRTH NAME
468	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....A GOVT. DISPENSARY.....B UHC/UHP/UFWC.....C CHC/RURAL HOSP./PHC.....D SUB-CENTRE.....E GOVT. MOBILE CLINIC.....F GOVT. PARAMEDIC.....G CAMP.....H OTHER PUBLIC SECTOR HEALTH FACILITY.....I NGO/TRUST HOSP./CLINIC...J NGO WORKER.....K PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....L PVT. DOCTOR.....M PVT. MOBILE CLINIC.....N PVT. PARAMEDIC.....O VAIDYA/HAKIM/HOMEOPATH...P TRADITIONAL HEALER.....Q PHARMACY/DRUGSTORE.....R OTHER PRIVATE SECTOR HEALTH FACILITY.....S OTHER SOURCE SHOP.....T FRIEND/RELATIVE.....U OTHER _____ X (SPECIFY)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP.....A GOVT. DISPENSARY.....B UHC/UHP/UFWC.....C CHC/RURAL HOSP./PHC.....D SUB-CENTRE.....E GOVT. MOBILE CLINIC.....F GOVT. PARAMEDIC.....G CAMP.....H OTHER PUBLIC SECTOR HEALTH FACILITY.....I NGO/TRUST HOSP./CLINIC...J NGO WORKER.....K PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC....L PVT. DOCTOR.....M PVT. MOBILE CLINIC.....N PVT. PARAMEDIC.....O VAIDYA/HAKIM/HOMEOPATH...P TRADITIONAL HEALER.....Q PHARMACY/DRUGSTORE.....R OTHER PRIVATE SECTOR HEALTH FACILITY.....S OTHER SOURCE SHOP.....T FRIEND/RELATIVE.....U OTHER _____ X (SPECIFY)
	Where did you seek advice or treatment?	
	Anywhere else?	
	RECORD ALL MENTIONED.	
469	YES.....1 NO.....2 (SKIP TO 480)<----- DK.....8	YES.....1 NO.....2 (SKIP TO 480)<----- DK.....8
	Has (NAME) had diarrhoea in the last two weeks?	
470	YES.....1 NO.....2	YES.....1 NO.....2
	Was there any blood in the stools?	
471	SAME.....1 MORE.....2 LESS.....3 DK.....8	SAME.....1 MORE.....2 LESS.....3 DK.....8
	(Including breast milk) Was he/she given the same amount to drink as before the diarrhoea, or more, or less?	
472	SAME.....1 MORE.....2 LESS.....3 STOPPED COMPLETELY.....4 DK.....8	SAME.....1 MORE.....2 LESS.....3 STOPPED COMPLETELY.....4 DK.....8
	Was he/she given the same amount of food as before the diarrhoea, or more, or less?	
473	YES.....1 NO.....2 (SKIP TO 475)<-----	YES.....1 NO.....2 (SKIP TO 475)<-----
	Did you seek advice or treatment for the diarrhoea?	

	LAST BIRTH NAME _____	NEXT-TO-LAST BIRTH NAME _____	
474	<p>Where did you seek advice or treatment?</p> <p>Anywhere else?</p> <p>RECORD ALL MENTIONED.</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UFWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC...J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT./MUNICIPAL HOSP.....A</p> <p>GOVT. DISPENSARY.....B</p> <p>UHC/UHP/UFWC.....C</p> <p>CHC/RURAL HOSP./PHC.....D</p> <p>SUB-CENTRE.....E</p> <p>GOVT. MOBILE CLINIC.....F</p> <p>GOVT. PARAMEDIC.....G</p> <p>CAMP.....H</p> <p>OTHER PUBLIC SECTOR HEALTH FACILITY.....I</p> <p>NGO/TRUST HOSP./CLINIC...J</p> <p>NGO WORKER.....K</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PVT. HOSPITAL/CLINIC....L</p> <p>PVT. DOCTOR.....M</p> <p>PVT. MOBILE CLINIC.....N</p> <p>PVT. PARAMEDIC.....O</p> <p>VAIDYA/HAKIM/HOMEOPATH...P</p> <p>TRADITIONAL HEALER.....Q</p> <p>PHARMACY/DRUGSTORE.....R</p> <p>OTHER PRIVATE SECTOR HEALTH FACILITY.....S</p> <p>OTHER SOURCE</p> <p>SHOP.....T</p> <p>FRIEND/RELATIVE.....U</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p>
475	<p>When (NAME) had diarrhoea, was he/she given any of the following to drink:</p> <p>A fluid made from a special packet called [LOCAL NAME]?</p> <p>Gruel made from rice [OR OTHER LOCAL GRAIN, TUBER, OR PLANTAIN]?</p>	<p>YES NO DK</p> <p>FLUID FROM ORS PACKET..... 1 2 8</p> <p>GRUEL..... 1 2 8</p>	<p>YES NO DK</p> <p>FLUID FROM ORS PACKET..... 1 2 8</p> <p>GRUEL..... 1 2 8</p>
476	<p>CHECK 475:</p> <p>FLUID FROM ORS PACKET GIVEN?</p>	<p>YES <input type="checkbox"/> NO OR DK <input type="checkbox"/></p> <p style="text-align: center;">↓</p> <p>(SKIP TO 478)</p>	<p>YES <input type="checkbox"/> NO OR DK <input type="checkbox"/></p> <p style="text-align: center;">↓</p> <p>(SKIP TO 478)</p>

	LAST BIRTH	NEXT-TO-LAST BIRTH	
	NAME	NAME	
477	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC...31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC....33 PVT. PARAMEDIC.....35 VAIDYA/HAKIM/HOMEOPATH.34 PHARMACY/DRUGSTORE....36 DAI (TBA).....37 OTHER PRIVATE SECTOR HEALTH FACILITY.....38 OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE...43 OTHER _____ 96 (SPECIFY)	PUBLIC MEDICAL SECTOR GOVT./MUNICIPAL HOSP....11 GOVT. DISPENSARY.....12 UHC/UHP/UFWC.....13 CHC/RURAL HOSP./PHC....14 SUB-CENTRE.....15 GOVT. MOBILE CLINIC....16 GOVT. PARAMEDIC.....17 OTHER PUBLIC SECTOR HEALTH FACILITY.....18 NGO/TRUST HOSP./CLINIC...21 NGO WORKER.....22 PRIVATE MEDICAL SECTOR PVT. HOSPITAL/CLINIC...31 PVT. DOCTOR.....32 PVT. MOBILE CLINIC....33 PVT. PARAMEDIC.....35 VAIDYA/HAKIM/HOMEOPATH.34 PHARMACY/DRUGSTORE....36 DAI (TBA).....37 OTHER PRIVATE SECTOR HEALTH FACILITY.....38 OTHER SOURCE SHOP.....41 HUSBAND.....42 FRIEND/OTHER RELATIVE...43 OTHER _____ 96 (SPECIFY)	
478	YES.....1 NO.....2 (SKIP TO 480) < _____ DK.....8	YES.....1 NO.....2 (SKIP TO 480) < _____ DK.....8	
479	What was given to treat the diarrhoea? Anything else? RECORD ALL MENTIONED.	PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E OTHER _____ X (SPECIFY)	PILL OR SYRUP.....A INJECTION.....B INTRAVENOUS (I.V./DRIP/ BOTTLE).....C HOMEMADE SUGAR-SALT- WATER SOLUTION.....D HOME REMEDY/ HERBAL MEDICINE.....E OTHER _____ X (SPECIFY)
480	→ GO BACK TO 454 IN NEXT COLUMN; OR, IF NO MORE BIRTHS, GO TO 481	GO TO 481	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
481	<p>CHECK 475 ALL COLUMNS:</p> <p>ORS FLUID FROM PACKET <input type="checkbox"/> ORS FLUID FROM PACKET NOT GIVEN TO ANY CHILD OR 475 NOT ASKED <input type="checkbox"/></p>		483
482	<p>Have you ever heard of a special product called [LOCAL TERM FOR ORS] you can get for the treatment of diarrhoea?</p> <p>IF SHE NEVER HEARD OF ORS, SHOW GOVERNMENT AND COMMERCIAL ORS PACKETS AND ASK:</p> <p>Have you ever seen a packet like one of these before?</p>	<p>YES, WITHOUT SHOWING PACKETS....1</p> <p>YES, AFTER SHOWING PACKETS.....2</p> <p>NO.....3</p>	
483	<p>When a child has diarrhoea, should he/she be given less to drink than usual, about the same amount, or more than usual?</p>	<p>LESS TO DRINK.....1</p> <p>ABOUT SAME AMOUNT TO DRINK.....2</p> <p>MORE TO DRINK.....3</p> <p>DK.....8</p>	
484	<p>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?</p> <p>Any other signs?</p> <p>RECORD ALL MENTIONED.</p>	<p>REPEATED WATERY STOOLS.....A</p> <p>ANY WATERY STOOLS.....B</p> <p>REPEATED VOMITING.....C</p> <p>ANY VOMITING.....D</p> <p>BLOOD IN STOOLS.....E</p> <p>FEVER.....F</p> <p>MARKED THIRST.....G</p> <p>NOT EATING/NOT DRINKING WELL.....H</p> <p>GETTING SICKER/VERY SICK.....I</p> <p>NOT GETTING BETTER.....J</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>DK.....Z</p>	
485	<p>When a child is sick with a cough, what signs of illness would tell you that he or she should be taken to a health facility or health worker?</p> <p>Any other signs?</p> <p>RECORD ALL MENTIONED.</p>	<p>RAPID BREATHING.....A</p> <p>DIFFICULT BREATHING.....B</p> <p>NOISY BREATHING.....C</p> <p>FEVER.....D</p> <p>UNABLE TO DRINK.....E</p> <p>NOT EATING/NOT DRINKING WELL.....F</p> <p>GETTING SICKER/VERY SICK.....G</p> <p>NOT GETTING BETTER.....H</p> <p>OTHER _____ X</p> <p>(SPECIFY)</p> <p>DK.....Z</p>	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP																		
486	<p>Now I would like to ask you about some health symptoms you yourself may have.</p> <p>During the past three months, have you had any of the following problems with your vaginal discharge:</p> <p>Any itching or irritation in vaginal area with the discharge?</p> <p>A bad odour along with the discharge?</p> <p>Severe lower abdominal pain with the discharge, not related with menstruation?</p> <p>A fever along with the discharge?</p> <p>Any other problem with the discharge?</p>	<table> <tr> <td></td> <td>YES</td> <td>NO</td> </tr> <tr> <td>ITCHING/IRRITATION...</td> <td>1</td> <td>2</td> </tr> <tr> <td>BAD ODOUR.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>ABDOMINAL PAIN.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>FEVER.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER PROBLEM.....</td> <td>1</td> <td>2</td> </tr> </table>		YES	NO	ITCHING/IRRITATION...	1	2	BAD ODOUR.....	1	2	ABDOMINAL PAIN.....	1	2	FEVER.....	1	2	OTHER PROBLEM.....	1	2	
	YES	NO																			
ITCHING/IRRITATION...	1	2																			
BAD ODOUR.....	1	2																			
ABDOMINAL PAIN.....	1	2																			
FEVER.....	1	2																			
OTHER PROBLEM.....	1	2																			
487	<p>During the past three months have you had a problem with pain or burning while urinating, or have you had more frequent or difficult urination?</p>	<p>YES.....1</p> <p>NO.....2</p>																			
488	<p>CHECK 107:</p> <table> <tr> <td>CURRENTLY MARRIED</td> <td>SEPARATED</td> </tr> <tr> <td><input type="checkbox"/></td> <td>DESERTED</td> </tr> <tr> <td></td> <td>DIVORCED</td> </tr> <tr> <td></td> <td>WIDOWED</td> </tr> </table> <p style="text-align: center;">v</p>	CURRENTLY MARRIED	SEPARATED	<input type="checkbox"/>	DESERTED		DIVORCED		WIDOWED	→491											
CURRENTLY MARRIED	SEPARATED																				
<input type="checkbox"/>	DESERTED																				
	DIVORCED																				
	WIDOWED																				
489	<p>Another problem some women have is feeling pain in their abdomen or vagina during intercourse. Do you often experience this kind of pain?</p>	<p>YES.....1</p> <p>NO.....2</p>																			
490	<p>Do you ever see blood after having sex, at times when you are not menstruating?</p>	<p>YES.....1</p> <p>NO.....2</p>																			
491	<p>CHECK 486, 487, 489 and 490: YES TO ANY</p> <table> <tr> <td><input type="checkbox"/></td> <td>OTHER</td> </tr> <tr> <td></td> <td><input type="checkbox"/></td> </tr> </table> <p style="text-align: center;">v</p>	<input type="checkbox"/>	OTHER		<input type="checkbox"/>	→501															
<input type="checkbox"/>	OTHER																				
	<input type="checkbox"/>																				
492	<p>Have you seen anyone for advice or treatment to help you with (this problem/these problems)?</p> <p>IF YES, ASK:</p> <p>Whom did you see?</p> <p>Anyone else?</p> <p>RECORD ALL PERSONS SEEN.</p>	<p>PUBLIC MEDICAL SECTOR</p> <p>GOVT. DOCTOR.....A</p> <p>PUBLIC HEALTH NURSE.....B</p> <p>ANM/LHV.....C</p> <p>MALE MPW/SUPERVISOR.....D</p> <p>ANGANWADI WORKER.....E</p> <p>VILLAGE HEALTH GUIDE.....F</p> <p>OTHER PUBLIC SECTOR</p> <p>HEALTH WORKER.....G</p> <p>NGO WORKER.....H</p> <p>PRIVATE MEDICAL SECTOR</p> <p>PRIVATE DOCTOR.....I</p> <p>PRIVATE NURSE.....J</p> <p>COMPOUNDER/PHARMACIST.....K</p> <p>VAID/HAKIM/HOMEOPATH.....L</p> <p>DAI (TBA).....M</p> <p>TRADITIONAL HEALER.....N</p> <p>OTHER PRIVATE SECTOR</p> <p>HEALTH WORKER.....O</p> <p>OTHER.....X</p> <p>(SPECIFY)</p> <p>NO, NOBODY SEEN.....Y</p>																			

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
506	<p>CHECK 230:</p> <p>NOT PREGNANT OR UNSURE <input type="checkbox"/> PREGNANT <input type="checkbox"/></p> <p>└───┬───┘ └───┬───┘</p> <p> V V</p> <p>Do you think your husband would like to have (a/another) child or do you think he would prefer not have any (more) children?</p> <p>After the child you are expecting, do you think your husband would like to have another child or do you think he would prefer not have any more children?</p>	<p>HAVE A (ANOTHER) CHILD.....1 NO MORE/NONE.....2 UP TO GOD.....3 UNDECIDED.....4 DK.....8</p>	
507	<p>CHECK 216:</p> <p>HAS LIVING CHILD(REN) <input type="checkbox"/> NO LIVING CHILDREN <input type="checkbox"/></p> <p>└───┬───┘ └───┬───┘</p> <p> V V</p> <p>If you could go back to the time you did not have any children and could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>If you could choose exactly the number of children to have in your whole life, how many would that be?</p> <p>RECORD SINGLE NUMBER OR OTHER ANSWER.</p>	<p>NUMBER..... <input type="text"/> <input type="text"/></p> <p>OTHER ANSWER _____ 96 → 509 (SPECIFY)</p>	
508	<p>How many of these children would you like to be boys, how many would you like to be girls, and for how many would the sex not matter?</p>	<p>BOYS GIRLS EITHER</p> <p>NUMBER... <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/></p> <p>OTHER _____ 999996 (SPECIFY)</p>	
509	<p>In your opinion, how much education should be given to <u>girls</u> these days?</p>	<p>NO EDUCATION.....01 LESS THAN PRIMARY.....02 PRIMARY.....03 MIDDLE.....04 HIGH SCHOOL.....05 HIGHER SECONDARY.....06 GRADUATE AND ABOVE.....07 PROFESSIONAL DEGREE.....08 AS MUCH AS SHE DESIRES.....09 DEPENDS.....10 DK.....98</p>	
510	<p>In your opinion, how much education should be given to <u>boys</u> these days?</p>	<p>NO EDUCATION.....01 LESS THAN PRIMARY.....02 PRIMARY.....03 MIDDLE.....04 HIGH SCHOOL.....05 HIGHER SECONDARY.....06 GRADUATE AND ABOVE.....07 PROFESSIONAL DEGREE.....08 AS MUCH AS HE DESIRES.....09 DEPENDS.....10 DK.....98</p>	

SECTION 5B. STATUS OF WOMAN

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
511	<p>Who makes the following decisions in your household:</p> <p>What items to cook?</p> <p>Obtaining health care for yourself?</p> <p>Purchasing jewellery or other major household items?</p> <p>Your going and staying with parents or siblings?</p>	<p>1 = RESPONDENT 2 = HUSBAND 3 = JOINTLY WITH HUSBAND 4 = OTHERS IN HOUSEHOLD 5 = JOINTLY WITH OTHERS IN HOUSEHOLD</p> <p>1 2 3 4 5</p>	
512	<p>Do you need permission to:</p> <p>go to the market?</p> <p>visit relatives or friends?</p>	<p>YES NO NOT ALLOWED TO GO</p> <p>GO TO THE MARKET....1 2 3</p> <p>VISIT RELATIVES/ FRIENDS.....1 2 3</p>	
513	<p>Are you allowed to have some money set aside that you can use as you wish?</p>	<p>YES.....1</p> <p>NO.....2</p>	
514	<p>Sometimes a wife can do things that bother her husband. Please tell me if you think that a husband is justified in beating his wife in each of the following situations:</p> <p>If he suspects her of being unfaithful?</p> <p>If her natal family does not give expected money, jewellery, or other items?</p> <p>If she shows disrespect for in-laws?</p> <p>If she goes out without telling him?</p> <p>If she neglects the house or children?</p> <p>If she doesn't cook food properly?</p>	<p>YES NO DK</p> <p>UNFAITHFUL.....1 2 8</p> <p>MONEY/JEWELLERY/ OTHER ITEMS.....1 2 8</p> <p>DISRESPECT.....1 2 8</p> <p>GOING WITHOUT TELLING.1 2 8</p> <p>NEGLECT.....1 2 8</p> <p>NOT COOK PROPERLY.....1 2 8</p>	
515	<p>Since you completed 15 years of age, have you been beaten or mistreated physically by any person?</p>	<p>YES.....1</p> <p>NO.....2</p>	<p>→601</p>

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
516	<p>Who has beaten you or mistreated you physically?</p> <p>Anyone else?</p> <p>RECORD ALL PERSONS MENTIONED.</p>	MOTHER.....A FATHER.....B STEP MOTHER.....C STEP FATHER.....D SON.....E DAUGHTER.....F BROTHER/SISTER.....G BOYFRIEND.....H HUSBAND.....I EX-HUSBAND.....J SON-IN-LAW.....K DAUGHTER-IN-LAW.....L MOTHER-IN-LAW.....M FATHER-IN-LAW.....N BROTHER-IN-LAW.....O SISTER-IN-LAW.....P OTHER RELATIVE.....Q FRIEND/ACQUAINTANCE.....R TEACHER.....S EMPLOYER.....T STRANGER.....U OTHER.....X (SPECIFY)	
517	<p>How often have you been beaten or mistreated physically in the last 12 months: once, a few times, many times, or not at all?</p>	ONCE.....1 A FEW TIMES.....2 MANY TIMES.....3 NOT BEATEN.....4	

SECTION 6. HUSBAND'S BACKGROUND AND WOMAN'S WORK

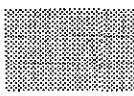
NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
601	CHECK 107: CURRENTLY MARRIED <input type="checkbox"/> ↓ SEPARATED <input type="checkbox"/> DESERTED <input type="checkbox"/> DIVORCED <input type="checkbox"/> WIDOWED <input type="checkbox"/>		603
602	How old was your husband on his last birthday?	AGE IN COMPLETED YEARS..... <input type="text"/>	
603	Did your (last) husband ever attend school?	YES.....1 NO.....2	606
604	What is the highest grade he completed?	GRADE..... <input type="text"/>	
605	CHECK 604: GRADE 0-5 <input type="checkbox"/> ↓ GRADE 6 AND ABOVE <input type="checkbox"/>		607
606	(Can/Could) he read and write?	YES.....1 NO.....2	
607	What kind of work (does/did) your (last) husband mainly do?	<input type="text"/> <input type="text"/> <input type="text"/>	
608	CHECK 607: WORKS (WORKED) ON FARM <input type="checkbox"/> ↓ DOES (DID) NOT WORK ON FARM <input type="checkbox"/>		610
609	(Does/did) your husband work mainly on his own land or family land, or (does/did) he rent land, or (does/did) he work on someone else's land?	HIS LAND.....1 FAMILY LAND.....2 RENTED LAND.....3 SOMEONE ELSE'S LAND.....4	
610	Aside from your own housework, are you currently working?	YES.....1 NO.....2	613
611	As you know, some women take up jobs for which they are paid in cash or kind. Others sell things, have a small business or work on the family farm or in the family business. Are you currently doing any of these things or any other work?	YES.....1 NO.....2	613

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
612	Have you done any work in the last 12 months?	YES.....1 NO.....2	→701
613	What is your occupation, that is, what kind of work do/did you mainly do?	<input type="text"/> <input type="text"/> <input type="text"/>	
614	Do you do this work for your family's farm or business, for someone else, or are you self-employed?	FAMILY FARM/BUSINESS.....1 SOMEONE ELSE.....2 SELF-EMPLOYED.....3	
615	Do you usually work throughout the year, or do you work seasonally, or only once in a while?	THROUGHOUT THE YEAR.....1 SEASONALLY/PART OF THE YEAR.....2 ONCE IN A WHILE.....3	
616	Are you paid in cash or kind for this work, or are you not paid at all?	CASH ONLY.....1 CASH AND KIND.....2 KIND ONLY.....3 NOT PAID.....4	→619
617	Generally, how much do your earnings contribute to the total family earnings: almost none, less than half, about half, more than half, or all?	ALMOST NONE.....1 LESS THAN HALF.....2 ABOUT HALF.....3 MORE THAN HALF.....4 ALL.....5	
618	Who mainly decides how the money you earn will be used?	RESPONDENT DECIDES.....1 HUSBAND DECIDES.....2 JOINTLY WITH HUSBAND.....3 SOMEONE ELSE DECIDES.....4 JOINTLY WITH SOMEONE ELSE.....5	

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	SKIP
619	Do you usually work at home or away from home?	HOME.....1 AWAY.....2	→701
620	CHECK 215/218: HAS CHILD BORN SINCE JAN. 1995 AND LIVING AT HOME? <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> YES <input type="checkbox"/> </div> <div style="display: inline-block; vertical-align: middle; margin-left: 20px;"> NO <input type="checkbox"/> </div>		→701
621	While you are working, do you usually have (NAME OF YOUNGEST CHILD AT HOME) with you, sometimes have him/her with you, or never have him/her with you?	USUALLY.....1 SOMETIMES.....2 NEVER.....3	→701
622	Who usually takes care of (NAME OF YOUNGEST CHILD AT HOME) while you are working?	HUSBAND.....01 OLDER BOYS.....02 OLDER GIRLS.....03 OTHER RELATIVES.....04 NEIGHBOURS.....05 FRIENDS.....06 SERVANTS/HIRED HELP.....07 CHILD IS IN SCHOOL.....08 INSTITUTIONAL CHILDCARE.....09 OTHER _____ 96 (SPECIFY)	

SECTION 7 - AIDS

NO.	QUESTIONS AND FILTERS	CODING CATEGORIES	TO																		
701	Have you ever heard of an illness called AIDS?	YES.....1 NO.....2	705																		
702	From which sources of information have you learned about AIDS? Any other source? RECORD ALL MENTIONED.	RADIO.....A TELEVISION.....B CINEMA.....C NEWSPAPERS/MAGAZINES.....D POSTERS/BOARDINGS.....E EXHIBITION/MELA.....F HEALTH WORKERS.....G ADULT EDUCATION PROGRAMME.....H RELIGIOUS LEADERS.....I POLITICAL LEADERS.....J SCHOOLS/TEACHERS.....K COMMUNITY MEETINGS.....L FRIENDS/RELATIVES.....M WORK PLACE.....N OTHER.....X (SPECIFY)																			
703	Is there anything a person can do to avoid getting AIDS?	YES.....1 NO.....2 DK.....8	705																		
704	What can a person do? Any other ways? RECORD ALL MENTIONED.	ABSTAIN FROM SEX.....A USE CONDOMS.....B HAVE ONLY ONE SEX PARTNER.....C AVOID SEX WITH COMMERCIAL SEX WORKERS.....D AVOID SEX WITH HOMOSEXUALS.....E AVOID BLOOD TRANSFUSIONS.....F AVOID INJECTIONS/USE CLEAN NEEDLES.....G AVOID I.V. DRUG USE.....H AVOID KISSING.....I AVOID HUGGING.....J AVOID HAND SHAKING.....K AVOID SHARING CLOTHES.....L AVOID SHARING UTENSILS.....M AVOID SHARING SHAVING KITS/RAZORS.....N AVOID STEPPING ON URINE/STOOL.....O AVOID MOSQUITO BITES.....P OTHER.....X (SPECIFY) DK.....Z																			
705	RECORD THE TIME	HOUR..... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table> MINUTES..... <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>																			
706	PRESENCE OF OTHERS DURING MOST OF THE INTERVIEW TIME.	<table border="1"> <thead> <tr> <th></th> <th>YES</th> <th>NO</th> </tr> </thead> <tbody> <tr> <td>CHILDREN UNDER 10.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>HUSBAND.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>MOTHER-IN-LAW.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER MALES.....</td> <td>1</td> <td>2</td> </tr> <tr> <td>OTHER FEMALES.....</td> <td>1</td> <td>2</td> </tr> </tbody> </table>		YES	NO	CHILDREN UNDER 10.....	1	2	HUSBAND.....	1	2	MOTHER-IN-LAW.....	1	2	OTHER MALES.....	1	2	OTHER FEMALES.....	1	2	
	YES	NO																			
CHILDREN UNDER 10.....	1	2																			
HUSBAND.....	1	2																			
MOTHER-IN-LAW.....	1	2																			
OTHER MALES.....	1	2																			
OTHER FEMALES.....	1	2																			

HEALTH INVESTIGATOR VISITS												
	1	2	3	FINAL VISIT								
DATE				DAY <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
				MONTH <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
				YEAR <table border="1"><tr><td>1</td><td>9</td><td></td><td></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	1	9						
1	9											
INVESTIGATOR'S NAME				NAME CODE <table border="1"><tr><td></td><td></td></tr><tr><td></td><td></td></tr></table>								
RESULT*				RESULT CODE <table border="1"><tr><td></td></tr><tr><td></td></tr></table>								
NEXT VISIT: DATE TIME				TOTAL NUMBER OF VISITS <table border="1"><tr><td></td></tr></table>								
*RESULT CODES: 1 COMPLETED 3 POSTPONED 5 PARTLY COMPLETED 2 NOT AT HOME 4 REFUSED 6 OTHER (SPECIFY) _____												

SECTION 8: HEIGHT AND WEIGHT

INTERVIEWER: IN 801 (COLUMNS 2-3) RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1995 AND STILL ALIVE. IN 802 AND 803 RECORD THE NAME OF THE RESPONDENT AND ALL HER LIVING CHILDREN BORN SINCE JANUARY 1995, AND THE DATE OF BIRTH OF THE CHILDREN. IN 804 AND 806 RECORD THE HEIGHT AND WEIGHT OF THE RESPONDENT AND LIVING CHILDREN.

(NOTE: IF THERE ARE MORE THAN 2 LIVING CHILDREN BORN SINCE JANUARY 1995, CHECK BOX AND USE ADDITIONAL QUESTIONNAIRE)

	1 RESPONDENT	2 YOUNGEST LIVING CHILD	3 NEXT-TO-YOUNGEST LIVING CHILD
801 LINE NO. FROM Q.212			
802 NAME FROM Q.212 FOR CHILDREN	(NAME)	(NAME)	(NAME)
803 DATE OF BIRTH FROM Q.215 FOR CHILDREN, COPY MONTH AND YEAR OF BIRTH AND ASK FOR DAY OF BIRTH		DAY..... MONTH..... YEAR.....	DAY..... MONTH..... YEAR.....
804 HEIGHT (in centimetres)			
805 WAS HEIGHT/LENGTH OF CHILD MEASURED LYING DOWN OR STANDING UP?		LYING.....1 STANDING.....2	LYING.....1 STANDING.....2
806 WEIGHT (in kilograms)		0	0
807 DATE WEIGHED AND MEASURED	DAY..... MONTH..... YEAR.....	DAY..... MONTH..... YEAR.....	DAY..... MONTH..... YEAR.....
808 RESULT	COMPLETED.....1 NOT PRESENT.....2 REFUSED.....3 OTHER.....6 (SPECIFY)	COMPLETED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.5 OTHER.....6 (SPECIFY)	COMPLETED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.5 OTHER.....6 (SPECIFY)
809 NAME OF MEASURER:		NAME OF ASSISTANT:	

SECTION 9. ANAEMIA

901

As a part of this survey, we are studying anaemia among women and children. We request your co-operation in this regard. This will assist the Government of India to develop programmes to prevent and treat anaemia.

Anaemia is a serious health problem in India, which results from poor nutrition. However, if a person is found to have anaemia, the person can be given iron folic tablets to cure the disease.

If you decide to be tested for anaemia, we will request that you give a drop of blood from your finger for the test. (Also, if you have a child under 3 years old, please allow me to take a (few) drop(s) of blood from him/her for anaemia testing). We will use disposable sterile instruments that are clean and completely safe. Your child will feel a slight pinch when the blood is drawn. There is essentially no risk to your child from this procedure. The blood will be analyzed with new equipment provided by the United Nations. The result(s) of the test(s) will be given to you right after the blood is taken. The results of the tests will be kept confidential and will not be shown to other persons. Are there any questions about the blood testing that you would like to ask me now?

May I ask you now to give your consent to have the test(s) done. If you decide not to have the test(s), it is your right, and we will respect your decision. Now please tell me whether you agree to have the test(s) (and allow me to test your child).

AFTER EXPLAINING THE ABOVE, I HAVE FOUND THAT _____ AGREED TO GIVE
(NAME OF RESPONDENT)

A (FEW) DROP(S) OF BLOOD FOR HERSELF [AND FOR HER CHILD(REN) NAMED _____
_____] (NAME OF CHILD(REN))

Signature of Interviewer: _____ Date : _____

RESPONDENT AGREES TO TESTING OF
HERSELF AND/OR HER CHILD(REN)...1

RESPONDENT DOES NOT AGREE
TO TESTING.....2 →END

Signature of Witness: _____ Date : _____

902

RESPONDENT'S HAEMOGLOBIN
LEVEL (G/DL)

--	--	--

903	RESULT	MEASURED.....1
		REFUSED.....2
		OTHER _____ 6 (SPECIFY)
904	CHECK 215/216:	
	ONE OR MORE LIVING CHILDREN BORN SINCE JANUARY 1995	<input type="checkbox"/> NO LIVING CHILDREN BORN SINCE JANUARY 1995 <input type="checkbox"/> →910

IN 905 RECORD THE LINE NUMBER FOR EACH CHILD BORN SINCE JANUARY 1995 AND STILL ALIVE.
 IN 906 RECORD THE NAMES OF THE LIVING CHILDREN.
 IN 907 RECORD THE HAEMOGLOBIN LEVEL IN THE BLOOD OF THE LIVING CHILDREN.

(NOTE: IF THERE ARE MORE THAN 2 LIVING CHILDREN BORN SINCE JANUARY 1995, CHECK BOX AND USE ADDITIONAL QUESTIONNAIRE)

		YOUNGEST LIVING CHILD	NEXT-TO-YOUNGEST LIVING CHILD
905	LINE NUMBER FROM Q. 212	<input type="text"/>	<input type="text"/>
906	NAME FROM Q.212	NAME _____	NAME _____
907	HAEMOGLOBIN LEVEL IN THE BLOOD (G/DL)	<input type="text"/> . <input type="text"/>	<input type="text"/> . <input type="text"/>
908	RESULT	MEASURED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.....5 OTHER _____ 6 (SPECIFY)	MEASURED.....1 CHILD SICK.....2 CHILD NOT PRESENT.....3 CHILD DID NOT ALLOW.....4 MOTHER REFUSED.....5 OTHER _____ 6 (SPECIFY)

909	NAME OF MEASURER	_____ <input type="text"/>
-----	------------------	----------------------------

910	CHECK 902 AND 907:	
	NO VALUES BELOW 7 G/DL	<input type="checkbox"/> → GIVE MOTHER RESULT OF HAEMOGLOBIN MEASUREMENT AND END THE INTERVIEW
	ANY VALUE BELOW 7 G/DL FOR MOTHER AND/OR CHILD(REN)	<input type="checkbox"/> → GIVE MOTHER RESULT OF HAEMOGLOBIN MEASUREMENT AND CONTINUE WITH 911.

911	<p>CHECK COLUMN (5) OF HOUSEHOLD SCHEDULE:</p> <p>RESPONDENT IS USUAL RESIDENT <input type="checkbox"/></p> <p>RESPONDENT IS VISITOR <input type="checkbox"/> → END</p>
912	<p>We detected a low level of haemoglobin in your (your child's) blood. This indicates you (your child) have developed severe anaemia, which is a serious health problem. We would like to inform the doctor at _____ about your (your child's) condition. This will assist you to obtain appropriate treatment of your (your child's) condition.</p> <p>Do you agree that the information about the level of haemoglobin in your (your child's) blood may be given to the doctor.</p> <p>AFTER EXPLAINING THE ABOVE, I HAVE FOUND THAT _____ AGREED FOR (NAME OF RESPONDENT)</p> <p>REFERRAL FOR HERSELF [AND FOR HER CHILD(REN) NAMED _____] (NAME OF CHILD(REN))</p> <p>Signature of Interviewer: _____ Date : _____</p> <p>RESPONDENT AGREES FOR REFERRAL FOR HERSELF AND/OR HER CHILD(REN)....1</p> <p>RESPONDENT DOES NOT AGREE FOR REFERRAL.....2 → END</p>
913	<p>RECORD NAMES OF WOMAN AND CHILD(REN) WITH HAEMOGLOBIN LEVEL LESS THAN 7 G/DL ON REFERRAL FORM.</p>

INTERVIEWER'S OBSERVATIONS
(To be filled in after completing interview)

Comments About Respondent:

Comments on Specific Questions:

Any Other Comments:

SUPERVISOR'S OBSERVATIONS/COMMENTS

Name of Supervisor: _____ Date: _____

EDITOR'S OBSERVATIONS/COMMENTS

Name of Editor: _____ Date: _____

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
INTERNATIONAL INSTITUTE FOR POPULATION SCIENCES, MUMBAI

RESULTS OF HAEMOGLOBIN MEASUREMENT IN THE BLOOD:

Date: _____

Haemoglobin level in the blood (G/DL)	Woman NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> . <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> </div> You have	Child NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> . <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> </div> Your child has	Child NAME _____ <div style="text-align: center;"> <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> . <input style="width: 20px; height: 15px; border: 1px solid black;" type="text"/> </div> Your child has
WHO CLASSIFICATION OF ANAEMIA	NORMAL LEVEL HB LEVEL ABOVE 11 G/DL MILD ANAEMIA HB (10-10.9 G/DL) MODERATE ANAEMIA HB (7-9.9 G/DL) SEVERE ANAEMIA HB (LESS THAN 7 G/DL)	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA	NORMAL LEVEL MILD ANAEMIA MODERATE ANAEMIA SEVERE ANAEMIA

In case of severe anaemia (Hb less than 7 G/DL), we recommend that you immediately contact your doctor.

NATIONAL FAMILY HEALTH SURVEY, 1998-99 (NFHS-2)
 VILLAGE QUESTIONNAIRE

CONFIDENTIAL
 For Research
 Purpose only

INDIA

IDENTIFICATION																										
STATE _____	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																									
DISTRICT _____																										
TEHSIL/TALUK _____																										
VILLAGE _____																										
PSU NUMBER.....																										
TOTAL POPULATION OF THE VILLAGE ACCORDING TO THE 1991 CENSUS.....	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td><td> </td><td> </td><td> </td></tr> </table>																									

INTERVIEWER'S NAME _____	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>		
DATE OF INTERVIEW _____	DATE.....		
	MONTH.....		
	YEAR.....		

RESULT:	
BOTH VILLAGE SCHEDULE AND VILLAGE HEAD SCHEDULE COMPLETED.....	1
ONLY VILLAGE SCHEDULE COMPLETED.....	2
OTHER _____	6
(SPECIFY)	

	SUPERVISOR	FIELD EDITOR	OFFICE EDITOR	KEYED BY								
DATE	<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>			<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>			<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>			<table border="1" style="width: 100%; height: 100%; border-collapse: collapse;"> <tr><td> </td><td> </td></tr> </table>		
NAME	_____	_____	_____	_____								

VILLAGE SCHEDULE

NO.	QUESTIONS	CODING CATEGORIES						
1	Current population of the village:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
2	Area of the village (in Hectares):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
3	Total number of households in the village:	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
4	Total arable land in the village (in Hectares):	IRRIGATED LAND..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> NON-IRRIGATED LAND..... <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
5	Main source of irrigation in the village:	RAIN WATER.....01 TANK/POND.....02 STREAM/RIVER.....03 CANAL.....04 WELL.....05 TUBE WELL.....06 OTHER _____ 96 (SPECIFY)						
6	Major crops grown in the village:	1 _____ <table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table> 2 _____ 3 _____						
7	Distance to the nearest town (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
8	Distance to the District Headquarters (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
9	Distance to the nearest railway station (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
10	Distance to available transport service to other place (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
11	Distance of the village from all-weather road in connection to other place (in kilometres):	<table border="1" style="display: inline-table; vertical-align: middle;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						
12	Village Electrification:	NOT ELECTRIFIED..... 1 ELECTRIFIED, BUT IRREGULAR SUPPLY..... 2 ELECTRIFIED AND REGULAR SUPPLY..... 3						

NO.	QUESTIONS	CODING CATEGORIES
13	<p>Educational Facilities:</p> <p>Primary School</p> <p>Middle School</p> <p>Secondary School</p> <p>Higher Secondary School</p> <p>College</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>PRIMARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>MIDDLE SCHOOL..... <input type="text"/> <input type="text"/></p> <p>SECONDARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>HIGHER SECONDARY SCHOOL..... <input type="text"/> <input type="text"/></p> <p>COLLEGE..... <input type="text"/> <input type="text"/></p>
14	<p>Health Facilities:</p> <p>Sub-Centre</p> <p>Primary Health Centre</p> <p>Community Health Centre/Rural Hospital</p> <p>Government Dispensary</p> <p>Government Hospital</p> <p>Private Clinic</p> <p>Private Hospital</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>SUB-CENTRE..... <input type="text"/> <input type="text"/></p> <p>PRIMARY HEALTH CENTRE..... <input type="text"/> <input type="text"/></p> <p>COMMUNITY HEALTH CENTRE/RURAL HOSPITAL..... <input type="text"/> <input type="text"/></p> <p>GOVERNMENT DISPENSARY..... <input type="text"/> <input type="text"/></p> <p>GOVERNMENT HOSPITAL..... <input type="text"/> <input type="text"/></p> <p>PRIVATE CLINIC..... <input type="text"/> <input type="text"/></p> <p>PRIVATE HOSPITAL..... <input type="text"/> <input type="text"/></p>
15	<p>Other facilities:</p> <p>Post Office</p> <p>Telegraph Office</p> <p>STD Booth</p> <p>Bank</p> <p>IF DISTANCE MORE THAN 90 KILOMETRES, RECORD 90; IF FACILITY IS AVAILABLE IN THE VILLAGE, RECORD 95</p>	<p>DISTANCE TO THE NEAREST FACILITY AVAILABLE (IN KILOMETRES):</p> <p>POST OFFICE..... <input type="text"/> <input type="text"/></p> <p>TELEGRAPH OFFICE..... <input type="text"/> <input type="text"/></p> <p>STD BOOTH..... <input type="text"/> <input type="text"/></p> <p>BANK..... <input type="text"/> <input type="text"/></p>

NO.	QUESTIONS	CODING CATEGORIES																																																									
16	Availability of health provider in the village: Private doctor Visiting doctor Village health guide (VHG) Traditional birth attendant (dai) Mobile health unit/visit	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr> <td>PRIVATE DOCTOR.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>VISITING DOCTOR.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>VHG.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>TBA (DAI).....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> <tr> <td>MOBILE HEALTH UNIT.....</td> <td style="text-align: center;">1</td> <td style="text-align: center;">2</td> </tr> </tbody> </table>		YES	NO	PRIVATE DOCTOR.....	1	2	VISITING DOCTOR.....	1	2	VHG.....	1	2	TBA (DAI).....	1	2	MOBILE HEALTH UNIT.....	1	2																																							
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17	Other facilities: Mills/small scale industries (M/SSI) Credit cooperative society (CCS) Agricultural cooperative society (ACS) Fishermen's cooperative society (FCS) Milk cooperative society (MCS) Kirana/General Market Shop (K/GMS) Weekly market Fair price shop Paan shop Pharmacy/Medical shop Mahila Mandal Youth club Anganwadi centre Community centre Adult education centre Community television set Cable connection	<table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="3" style="text-align: center;">AVAILABLE IN THE VILLAGE</th> </tr> <tr> <th style="width: 80%;"></th> <th style="width: 10%; text-align: center;">YES</th> <th style="width: 10%; text-align: center;">NO</th> </tr> </thead> <tbody> <tr><td>M/SSI.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>CCS.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>ACS.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>FCS.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>MCS.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>K/GMS.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>WEEKLY MARKET.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>FAIR PRICE SHOP.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>PAAN SHOP.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>PHARMACY/MEDICAL SHOP....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>MAHILA MANDAL.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>YOUTH CLUB.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>ANGANWADI CENTRE.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>COMMUNITY CENTRE.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>ADULT EDUCATION CENTRE... 1</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>COMMUNITY TV SET.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> <tr><td>CABLE CONNECTION.....</td><td style="text-align: center;">1</td><td style="text-align: center;">2</td></tr> </tbody> </table>	AVAILABLE IN THE VILLAGE				YES	NO	M/SSI.....	1	2	CCS.....	1	2	ACS.....	1	2	FCS.....	1	2	MCS.....	1	2	K/GMS.....	1	2	WEEKLY MARKET.....	1	2	FAIR PRICE SHOP.....	1	2	PAAN SHOP.....	1	2	PHARMACY/MEDICAL SHOP....	1	2	MAHILA MANDAL.....	1	2	YOUTH CLUB.....	1	2	ANGANWADI CENTRE.....	1	2	COMMUNITY CENTRE.....	1	2	ADULT EDUCATION CENTRE... 1	1	2	COMMUNITY TV SET.....	1	2	CABLE CONNECTION.....	1	2
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18	Total number of television sets in the village:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																																																									
19	Total number of households having telephone connection:	<table border="1" style="display: inline-table; border-collapse: collapse;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> </tr> </table>																																																									
20	The type of drainage facility in the village:	<table style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 80%;">UNDERGROUND DRAINAGE.....</td> <td style="width: 10%; text-align: center;">1</td> <td style="width: 10%;"></td> </tr> <tr> <td>OPEN DRAINAGE.....</td> <td style="text-align: center;">2</td> <td></td> </tr> <tr> <td>NO.....</td> <td style="text-align: center;">3</td> <td></td> </tr> </tbody> </table>	UNDERGROUND DRAINAGE.....	1		OPEN DRAINAGE.....	2		NO.....	3																																																	
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NO.	QUESTIONS	CODING CATEGORIES
21	Any epidemic in the village during the last one year:	1. _____ <input type="checkbox"/> <input type="checkbox"/> 2. _____ <input type="checkbox"/> <input type="checkbox"/>
22	Number of health or family welfare camps in the last one year?	<input type="checkbox"/> <input type="checkbox"/>
23	Any beneficiaries in the village from the following programmes:	BENEFICIARIES
	Integrated Rural Development Programme (IRDP)	IRDP..... <input type="checkbox"/> <input type="checkbox"/>
	National Rural Employment Programme (NREP)	NREP..... <input type="checkbox"/> <input type="checkbox"/>
	Training Rural Youth for Self Employment (TRYSEM)	TRYSEM..... <input type="checkbox"/> <input type="checkbox"/>
	Employment Guarantee Scheme (EGS)	EGS..... <input type="checkbox"/> <input type="checkbox"/>
	Development of Women and Children of Rural Areas (DWARCA)	DWARCA..... <input type="checkbox"/> <input type="checkbox"/>
	Indira Awas Yojana (IAY)	IAY..... <input type="checkbox"/> <input type="checkbox"/>
	Sanjay Gandhi Niradhar Yojana (SGNY)	SGNY..... <input type="checkbox"/> <input type="checkbox"/>
24	Community level IEC activities for health and family welfare during the last one year:	YES NO
	Film show	FILM SHOW..... 1 2
	Exhibition	EXHIBITION..... 1 2
	Drama/song/dance performance	DRAMA/SONG/DANCE PERFORM. 1 2
	Puppet show	PUPPET SHOW..... 1 2
	Group meeting	GROUP MEETING..... 1 2
25	Persons providing information for the village schedule:	SARPANCH.....A PATWARI.....B GRAM SEVAK.....C SCHOOL TEACHER.....D HEALTH PERSONNEL.....E
	RECORD ALL THE SOURCES.	OTHERS _____ X (SPECIFY)

