HEALTH AND DEMOGRAPHIC SURVEILLANCE SYSTEM MATLAB

VOLUME THIRTY FIVE

REGISTRATION OF HEALTH AND DEMOGRAPHIC EVENTS 2002

Scientific Report No. 91 – September 2004

ICDDR,B: Centre for Health and Population Research
Mohakhali, Dhaka 1212, Bangladesh

HEALTH AND DEMOGRAPHIC SURVEILLANCE SYSTEM—MATLAB

Volume Thirty Five

Registration of Health and Demographic Events 2002

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SUMMARY

This report presents the vital registration and maternal and child health data gathered from Matlab, Bangladesh, in 2002. The data were collected by the Health and Demographic Surveillance System of ICDDR,B: Centre for Health and Population Research. The surveillance area is divided into a ICDDR,B area and a Government area which receives Government services.

In the surveillance area, as a whole, fertility decreased in 2002 compared to 2001. The crude birth rate (CBR) was 25.6 per 1,000 population, and the total fertility rate (TFR) was 3.0 births per woman in the ICDDR,B area, whereas CBR and TFR were 25.3 and 3.2 respectively in the Government area. The crude death rate was 6.9 per 1,000 population in the ICDDR,B area, while in the Government area it was 7.3.

In the ICDDR,B area, infant mortality was 47.9 per 1,000 live births, and in the Government area it was 54.5. The mortality rate among children aged less than 5 years, in the ICDDR,B area was 61.1 per 1,000 live births, and in the Government area it was 73.6.

The rate of in-migration increased to 45.7 per 1,000 population in 2002 from 34.0 in 2001, and the rate of out-migration also increased to 52.4 per 1,000 in 2002 from 46.2 in 2001. The net out-migration rate was 6.7 per 1,000 population, thereby offsetting the rate of natural increase, which amounted to 18.5 per 1,000 in 2002. The overall annual population growth rate was 1.2%. The marriage rate was 15.0 per 1,000 population, and the divorce rate was 124.2 per 1,000 marriages.

CHAPTER 1

INTRODUCTION

Since 1963, the ICDDR,B: Centre for Health and Population Research, formerly Cholera Research Laboratory, has been implementing a health-related research programme in Matlab, Bangladesh. Matlab is located about 55 km southeast of Dhaka, the capital city of Bangladesh (Fig. 1.1). The Health and Demographic Surveillance System (HDSS), formerly Demographic Surveillance System (DSS), is one of the major components of this field programme. Since 1966, the HDSS has been maintaining the registration of births, deaths, and migrations, in addition to carrying out periodical censuses.

Recording of changes in household headship and household splits started in 1993. The Community Health Research Workers (CHRWs) obtain this information by visiting each household monthly in their assigned areas and fill out the event registration forms. The activities of CHRWs are supervised by Field Research Assistants (FRAs). A detailed description of the DSS and its operation appears in the CRL Scientific Report No. 9 (1978), ICDDR,B Special Publication No. 35 (1994), and ICDDR,B Special Publication No. 72 (1998).

In October 1977, the surveillance area was reduced from 233 to 149 villages, and a Maternal and Child Health and Family Planning (ICDDR,B service) Programme was initiated in 70 villages. The remaining 79 villages were treated as a Government area (Fig. 1.2). Since the introduction of the ICDDR,B service programme, the CHRWs have been collecting data on child and reproductive health. This system of collecting data is known as the Record-Keeping System (RKS). The changes have been described in the ICDDR,B Scientific Report No. 47 (1981) and ICDDR,B Special Publication No. 72 (1998). Due to river erosion, 7 villages disappeared from the Government area in 1987, leaving 142 villages in the HDSS. In 2000, 3 of the 70 villages of ICDDR,B area were transferred to the Government area.

This is the thirty-fifth volume of a series of scientific reports of the Health and Demographic Surveillance System produced by ICDDR,B. Data obtained from the Matlab HDSS in 2002, along with brief notes and explanations of the tables, are presented in this volume.

Fig. 1.1. Map of Bangladesh showing the study area

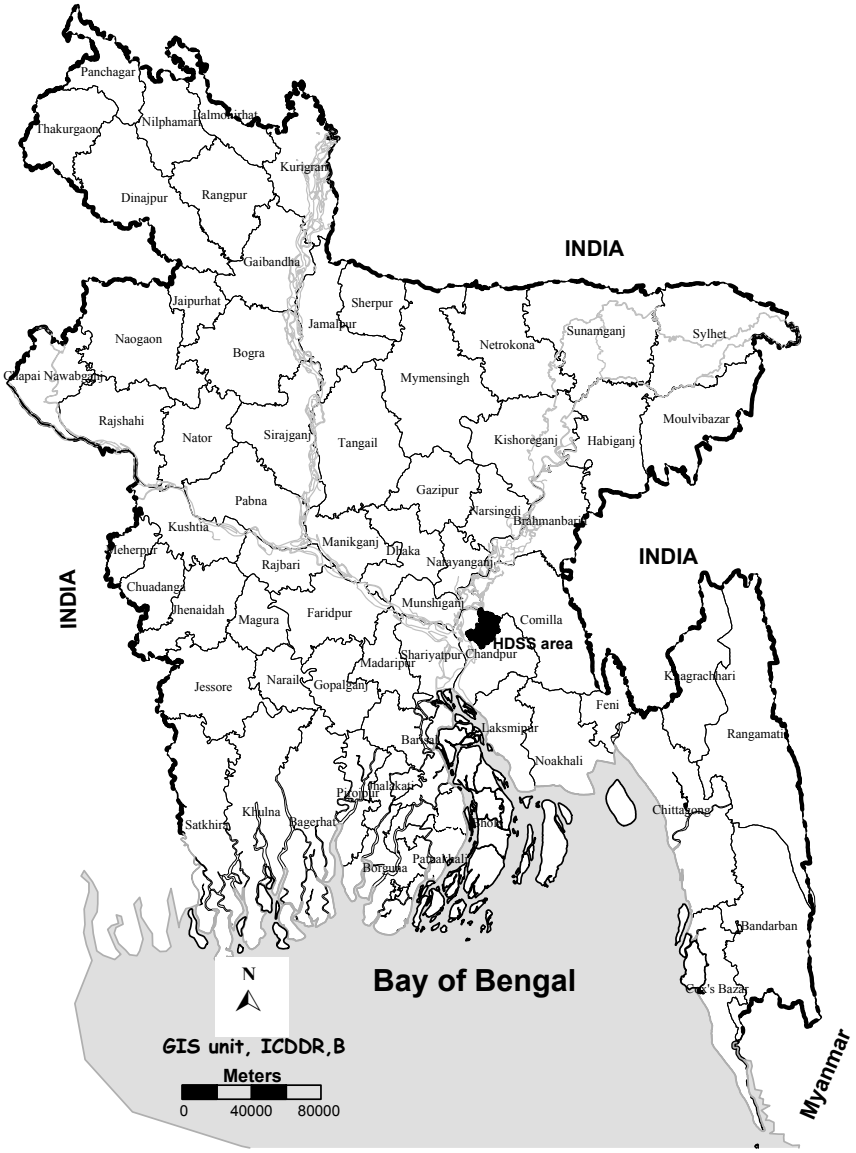
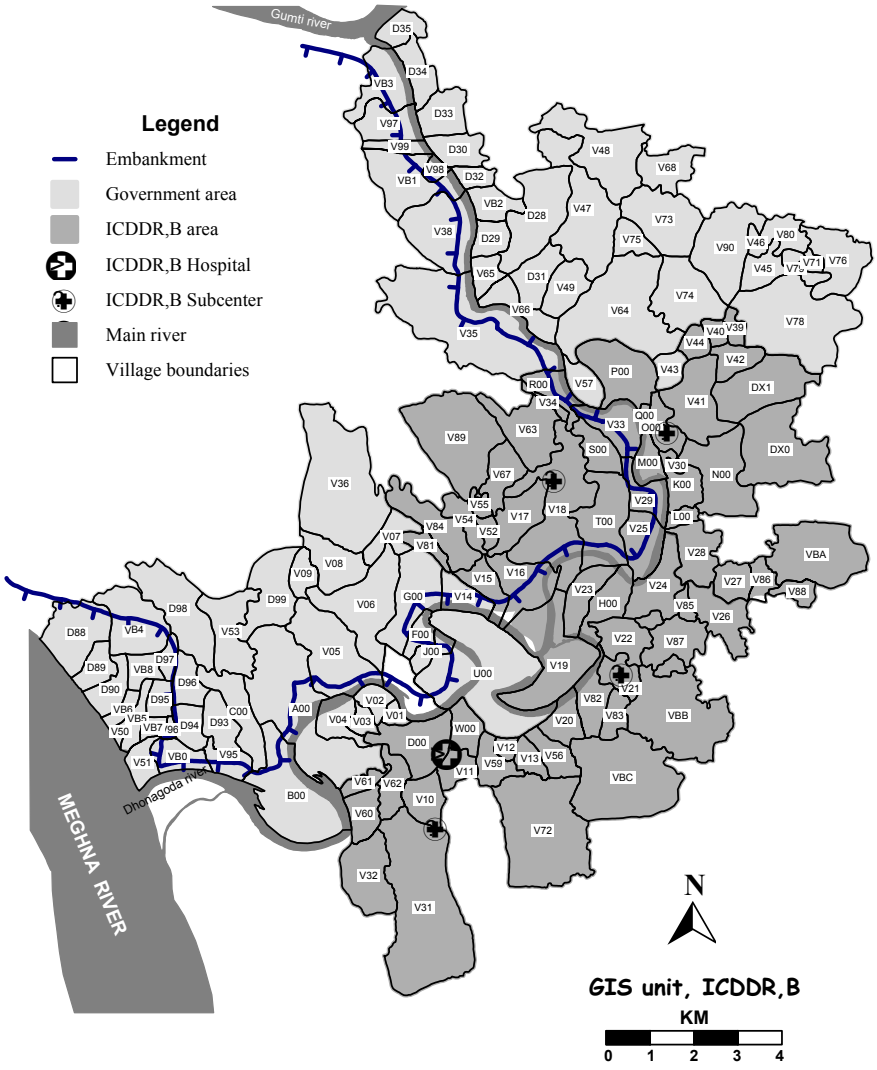


Fig. 1.2. Map of Matlab showing villages of the HDSS area



CHAPTER 2

POPULATION CHANGES

The principal vital statistics of the ICDDR,B and Government areas from 1991 through 2002 are summarized in Table 2.1. The number of mid-year population and the demographic events registered in 2002 in both ICDDR,B and Government areas are shown for both sexes in Table 2.2. The age-sex distribution of the mid-year population of the HDSS villages is shown in Tables 2.3, 2.4 and Appendix A.1. Appendix B shows the mid-year population, number of births, and deaths by village.

In 2002, the crude birth rate decreased to 25.8 in the ICDDR,B area and also decreased to 25.3 in the Government area from the 2001 level of 26.4 in the ICDDR,B area and 27.1 in the Government area respectively. In the ICDDR,B area, the crude death rate increased to 6.9 in 2002 compared to 6.5 in 2001, and in the Government area it was 7.3 in 2002 up from 7.0 in 2001. In both the ICDDR,B and Government areas, the total fertility rate (TFR) fell to 3.0 in 2002 from 3.1 in 2001 and 3.2 in 2002 from 3.4 in 2001 respectively. The trends in the TFR in both the areas are illustrated in Figure 2.1.

The rate of infant mortality increased to 47.9 in 2002 from 43.7 in 2001 in the ICDDR,B area whereas it decreased to 54.9 in 2002 from 56.9 in 2001 in the Government area. Mortality of children aged 1-4 years slight decreased in the ICDDR,B area but increased in the Government area. As a result of these changes, mortality of children aged less than 5 years increased in the Government area from 71.2 in 2001 to 73.6 in 2002 per 1,000 live births. The trends in fertility and mortality of children aged less than 5 years are illustrated in Figure 2.1.

The numbers of in- and out-migrants registered in 2002 were 10,161 and 11,640 respectively, giving an in-migration rate of 45.7, out-migration rate of 52.4, and a net migration rate of 6.7 per 1,000 population leaving the area. Out-migrants continued to outnumber in-migrants, thus offsetting the rate of natural increase and reducing the overall annual population growth rate to 1.2%.

The age-sex distribution of the mid-year population is illustrated by the population pyramid (Fig. 2.2). The fertility decline in the surveillance area in the 1978-2002 period caused a significant change in the age structure of the population. Children aged less than 15 years constituted 43.4% of the total population in the ICDDR,B area at the beginning of the ICDDR,B service project in 1978. By 2002, this proportion had fallen to 34.0%. In the Government area, the change in age distribution was less than that in the ICDDR,B area. Children aged less than 15 years in the Government area comprised 43.3% of the total population in 1978, which decreased to 36.9% in 2002. This difference in age distribution was due to the difference in fertility decline in the two areas. On the other hand, the number of elderly population (60 years and over) has increased from 5.8% in 1978 to 8.0% in 2002 (remained same of 2001) due to the decline in both fertility and mortality. The net population increase was 7.8 per 1000 in 2001. It increased to 11.8 per 1000 in 2002. This increase in population growth was due to 34 and 13 percent increase in the rate of in-migration and out-migration respectively, 4 percent increase in death rate, and a decrease in the birth rate of 4 percent.

Table 2.1. Vital statistics of ICDDR,B and Government areas, 1991-2002

Vital rate (per 1,000)	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Crude birth rate												
ICDDR,B area	25.4	25.4	25.7	25.9	25.2	22.4	23.7	25.8	24.5	24.9	26.4	25.8
Government area	32.7	31.1	29.4	29.4	27.8	26.7	26.8	28.3	25.9	27.7	27.1	25.3
Both areas	29.0	28.2	27.0	27.6	26.5	24.5	25.2	27.0	25.2	26.3	26.8	25.6
Total fertility rate*												
ICDDR,B area	3.0	3.0	2.9	3.0	2.9	2.7	2.8	3.0	2.9	2.9	3.1	3.0
Government area	4.3	4.0	3.8	3.8	3.6	3.5	3.4	3.6	3.3	3.5	3.4	3.2
Both areas	3.6	3.5	3.3	3.4	3.2	3.0	3.1	3.3	3.1	3.2	3.3	3.1
Crude death rate												
ICDDR,B area	8.1	8.3	7.7	8.0	7.3	7.6	6.6	7.0	6.4	6.8	6.5	6.9
Government area	10.2	9.8	10.2	9.2	8.4	7.9	8.0	8.1	7.4	7.2	7.0	7.3
Both areas	9.1	9.0	8.9	8.6	7.9	7.7	7.3	7.5	6.9	7.0	6.8	7.1
Neonatal mortality**												
ICDDR,B area	47.7	49.6	42.8	36.4	30.6	39.5	33.1	36.8	25.4	32.3	26.4	34.4
Government area	63.2	53.3	64.5	56.4	50.3	42.1	50.0	44.0	38.6	43.6	42.4	36.4
Both areas	56.3	51.6	54.4	46.9	40.8	40.9	41.9	40.5	32.0	38.4	34.7	35.4
Post-neonatal mortality**												
ICDDR,B area	32.3	30.8	20.3	27.3	20.6	26.6	16.4	13.8	19.1	11.8	17.2	13.5
Government area	51.7	37.0	34.8	30.8	28.3	24.8	28.6	26.0	22.2	14.4	14.5	18.1
Both areas	43.0	34.1	28.0	29.2	24.6	25.7	22.7	20.1	20.6	13.2	15.9	15.9
Infants Mortality**												
ICDDR,B area	80.0	80.5	63.1	63.7	51.1	66.2	49.5	50.6	44.5	44.0	43.7	47.9
Government area	114.9	90.2	99.3	87.2	78.6	67.0	78.6	70.0	60.8	58.0	56.9	54.5
Both areas	99.2	85.7	82.4	76.0	65.3	66.6	64.7	60.6	52.7	51.6	50.5	51.2
Child mortality (1 - 4yrs) †												
ICDDR,B area	7.0	5.9	5.9	5.3	6.7	6.0	4.5	4.7	4.1	3.9	3.9	3.5
Government area	9.1	10.4	10.0	7.0	8.4	8.0	7.0	5.8	7.5	6.4	3.8	5.2
Both areas	8.1	8.3	8.1	6.2	7.6	7.1	5.8	5.2	5.8	5.2	3.9	4.4
Under five mortality**												
ICDDR,B area	105.7	102.0	86.1	83.6	76.7	87.9	66.7	68.3	60.0	58.6	58.4	61.1
Government area	146.2	127.1	135.1	113.1	109.5	96.4	104.4	91.3	88.6	81.1	71.2	73.6
Both areas	128.1	115.7	112.5	99.1	93.8	92.3	86.3	80.1	74.4	70.7	65.0	67.5
Rate of natural increase												
ICDDR,B area	17.3	17.1	17.0	17.9	17.9	14.8	17.1	18.8	18.1	18.1	19.9	18.9
Government area	22.5	21.2	19.2	20.2	19.4	18.8	18.7	20.2	18.5	20.5	20.1	18.0
Both areas	19.9	19.1	18.1	19.1	18.6	16.8	17.9	19.5	18.3	19.3	20.0	18.5
In-migration	26.9	33.6	25.5	26.5	27.0	25.1	34.6	30.3	34.8	35.1	34.0	45.7
Out-migration	41.9	48.5	36.1	41.4	37.4	35.0	41.7	36.9	48.0	48.5	46.2	52.4
Growth (%)	0.5	0.4	0.8	0.4	0.8	0.7	1.1	1.3	0.5	0.6	0.8	1.2

*Per woman

**Per 1,000 live births

†Per 1,000 children aged 1-4 years

Fig. 2.1. Trends in fertility and under five mortality by area, 1991-2002

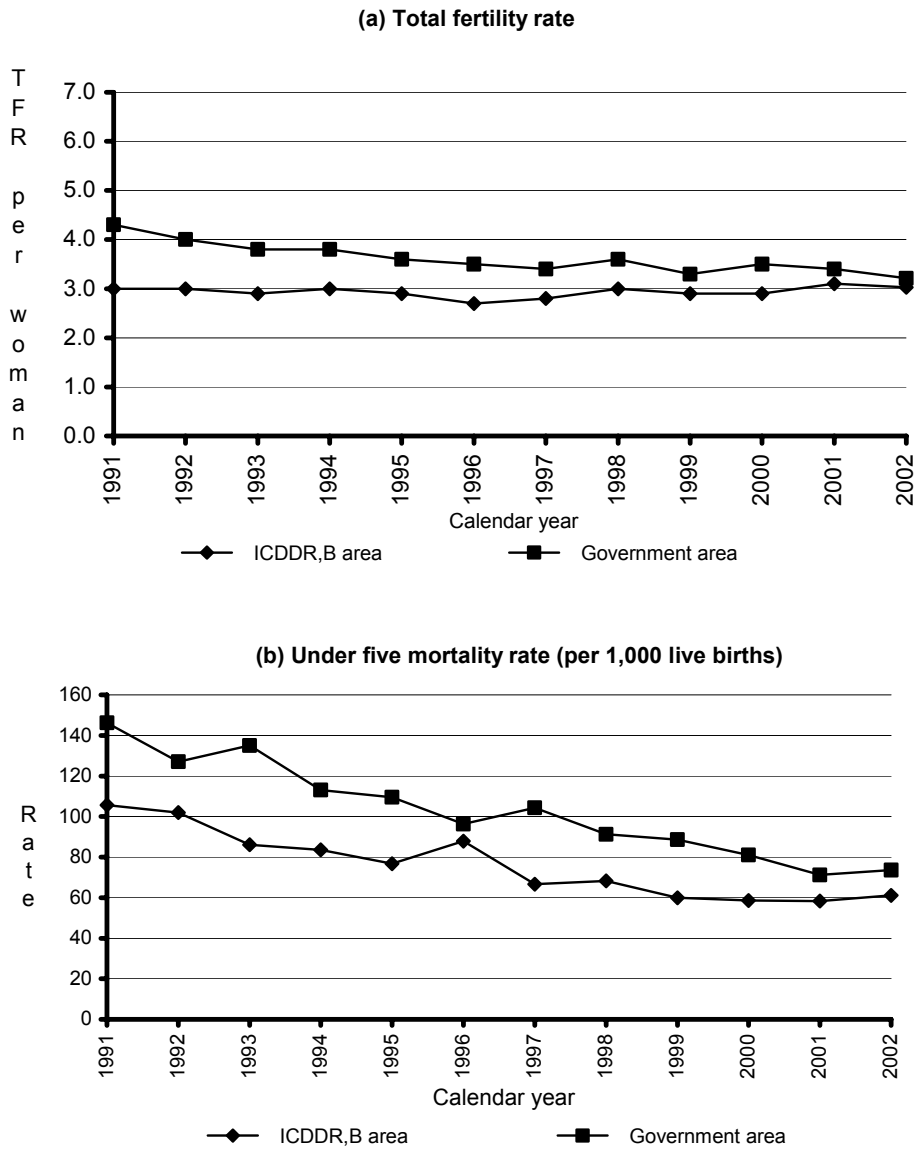


Table 2.2. Mid-year population, events registered, and population changes, 2002

Demographic Indicator	Number			Rate per 1,000		
	Total	Male	Female	Total	Male	Female
Total Population (30 June 2002)						
ICDDR,B area	109248	52508	56740	-	-	-
Government area	112953	54832	58121	-	-	-
Both areas	222201	107340	114861	-	-	-
Events registered (Jan-Dec. 2002)						
Births						
ICDDR,B area	2820	1391	1429	25.8	-	-
Government area	2861	1452	1409	25.3	-	-
Both areas	5681	2843	2838	25.6	-	-
Deaths						
Infants*						
ICDDR,B area	135	75	60	47.9	53.9	42.0
Government area	156	78	78	54.5	53.7	55.4
Both areas	291	153	138	51.2	53.8	48.6
All deaths						
ICDDR,B area	755	434	321	6.9	8.3	5.7
Government area	825	450	375	7.3	8.2	6.5
Both areas	1580	884	696	7.1	8.2	6.1
In-migration	10161	5043	5118	45.7	47.0	44.6
Out-migration	11640	6158	5482	52.4	57.4	47.7
Marriage	3343	-	-	15.0	-	-
Divorce**	328	-	-	98.1	-	-
Population change (Jan-Dec. 2002)						
Net migration	-1479	-1115	-364	-6.7	-10.4	-3.2
Natural increase						
ICDDR,B area	2065	957	1108	18.9	18.2	19.5
Government area	2036	1002	1034	18.0	18.3	17.8
Both areas	4101	1959	2142	18.5	18.3	18.6
Net increase	2622	844	1778	11.8	7.9	15.5

*Rate per 1000 live births
**Rate per 1000 marriages

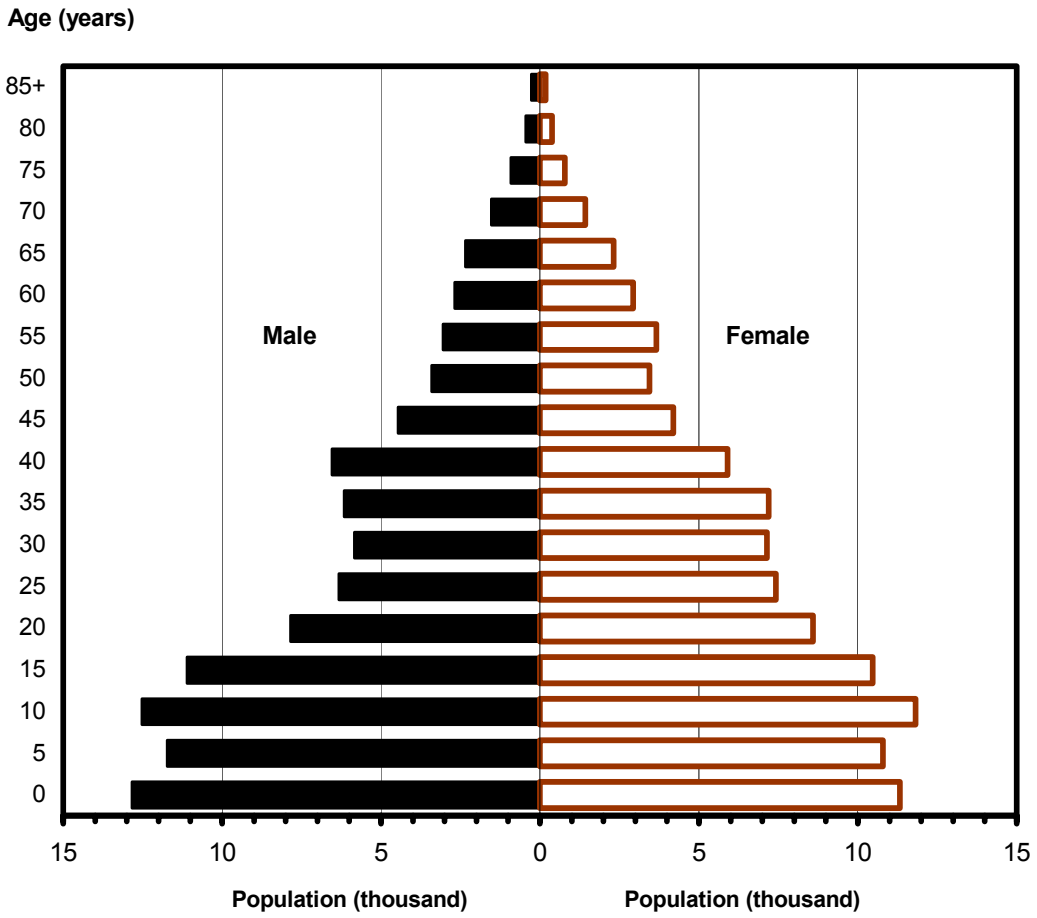
Table 2.3. Mid-year population by age and sex, 2002

Age (years)	Number			Percentage		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	222201	107340	114861	100.0	100.0	100.0
<1 year	5764	2943	2821	2.6	2.7	2.5
1 – 4	21024	10828	10196	9.5	10.1	8.9
1	*5484*	*2793*	*2691*	*2.5*	*2.6*	*2.3*
2	*5112*	*2640*	*2472*	*2.3*	*2.5*	*2.2*
3	*5288*	*2746*	*2542*	*2.4*	*2.6*	*2.2*
4	*5140*	*2649*	*2491*	*2.3*	*2.5*	*2.2*
5 - 9	24985	12592	12393	11.2	11.7	10.8
10-14	27024	13447	13577	12.2	12.5	11.8
15-19	23944	11921	12023	10.8	11.1	10.5
20-24	18299	8424	9875	8.2	7.8	8.6
25-29	15325	6798	8527	6.9	6.3	7.4
30-34	14473	6270	8203	6.5	5.8	7.1
35-39	14882	6608	8274	6.7	6.2	7.2
40-44	13807	7020	6787	6.2	6.5	5.9
45-49	9601	4786	4815	4.3	4.5	4.2
50-54	7606	3648	3958	3.4	3.4	3.4
55-59	7472	3269	4203	3.4	3.0	3.7
60-64	6246	2871	3375	2.8	2.7	2.9
65-69	5183	2520	2663	2.3	2.3	2.3
70-74	3288	1646	1642	1.5	1.5	1.4
75-79	1869	978	891	0.8	0.9	0.8
80-84	912	480	432	0.4	0.4	0.4
85+	497	291	206	0.2	0.3	0.2

Table 2.4. Mid-year population by age, sex, and area, 2002

Age (years)	ICDDR,B area			Government area		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	109248	52508	56740	112953	54832	58121
<1 year	2865	1415	1450	2899	1528	1371
1 – 4	10146	5149	4997	10878	5679	5199
1	*2622*	*1330*	*1292*	*2862*	*1463*	*1399*
2	*2479*	*1258*	*1221*	*2633*	*1382*	*1251*
3	*2559*	*1291*	*1268*	*2729*	*1455*	*1274*
4	*2486*	*1270*	*1216*	*2654*	*1379*	*1275*
5 - 9	11892	6007	5885	13093	6585	6508
10-14	12228	6080	6148	14796	7367	7429
15-19	11483	5567	5916	12461	6354	6107
20-24	9053	4107	4946	9246	4317	4929
25-29	8082	3593	4489	7243	3205	4038
30-34	7386	3195	4191	7087	3075	4012
35-39	7714	3459	4255	7168	3149	4019
40-44	7007	3583	3424	6800	3437	3363
45-49	4842	2449	2393	4759	2337	2422
50-54	3781	1808	1973	3825	1840	1985
55-59	3749	1646	2103	3723	1623	2100
60-64	3120	1438	1682	3126	1433	1693
65-69	2523	1265	1258	2660	1255	1405
70-74	1627	823	804	1661	823	838
75-79	1012	510	502	857	468	389
80-84	468	248	220	444	232	212
85+	270	166	104	227	125	102

Fig. 2.2. Age pyramid of the 2002 mid-year population



CHAPTER 3

MORTALITY

The distributions of 1,580 deaths by age at death and sex for the whole study area and for the ICDDR,B and Government areas is shown in Tables 3.1 and 3.2. Of the 1,580 deaths, 18% were infants, 6% were of children age 1-4 years, and 53% were aged 60 years and above in 2002.

Tables 3.3 and 3.4 show the corresponding age-sex-specific mortality rates for the study area and for the ICDDR,B and Government areas. Block-wise deaths in the ICDDR,B area by age and sex are shown in Appendix A.2. In 2002, the male infant mortality rate was 53.8 and the female infant mortality rate was 48.6 per 1,000 live births, whereas in 2001, the male infant mortality rate was 53.5 and the female infant mortality rate was 47.3. In 2002, the overall death rate for males and females was 8.2 and 6.2 respectively. In most age groups, the death rates were higher in the Government area than in the ICDDR,B area.

Table 3.5 shows the abridged life tables for males and females derived from these rates, and the l_x values are plotted in Figure 3.1. The expectation of life at birth decreased as a whole compared to 2001. The expectation of life at birth was 65.6 years for males and 69.7 for females. The difference in the expectation of life between the two areas was more pronounced for females (2.6) than for males (0.7). Expectation of life at each age in each area was higher for females than for males (Appendices A.3 and A.4), except for only few age groups.

The levels of adult (15-59 years) mortality increased in the surveillance area as a whole in 2002 compared to 2001. The probability of dying for males aged 15-60 years ($_{45}q_{15}$) was 187, and for females it was 105 per 1,000 population in 2002. In the age group of 60 years and above, expectation of life is longer for female than male in 2002.

Table 3.6 and Figure 4.1 show the distribution of deaths by age and month of occurrence. Deaths of those aged 5 years and above tend to peak in the winter months. Neonatal deaths were also most frequent in winter months. Post-neonatal deaths, on the other, tend to peak in winter and summer. Distributions of deaths by sex, cause, and age and by ICDDR,B and Government areas are shown in Appendix A.5–A.8.

Table 3.7 gives the age-standardized mortality rates by causes of death, using the WHO standard world population age structure in Appendix D (WHO, 2000). It was found that cardio-vascular disease, malignant neoplasm, chronic obstructive pulmonary disease (COPD), and diarrhoea were the more prominent causes of death among males of both the areas. On the other hand, female mortality due to acute respiratory infection (ARI), pneumonia, influenza and nutritional causes were higher in the Government area than in the ICDDR,B area. Comparison of the ICDDR,B area with the Government area revealed that the main reason for the higher overall mortality rates for both sexes in the latter area was due to higher mortality from diarrhoea, respiratory infections, and other

infectious disease. The mortality rate from diarrhoea, dysentery and ARI were lower in the ICDDR,B area than the government area. Since these are the major causes of death in infancy and childhood, the differentials so revealed help to explain why the under five mortality has been consistently lower in the ICDDR,B area than Government area. Maternal mortality rate was also lower in the ICDDR,B area than Government area due to maternal and child health intervention program in the area since 1978. Other differences between the two areas varied by sex especially malignant neoplasm, gastro-intestinal and COPD. When compared with 2001 the most observable change was the apparent fall in the mortality rate attributed to malignant neoplasm and rise in the rate of cardio-vascular disease and COPD.

A striking feature of Table 3.7 and Appendix A.5-A.8 is the large number of deaths classified in the older age groups under senility, other causes of death (not elsewhere classified), and unknown. This pattern shows that the quality of cause-of-death data in these age groups is still unsatisfactory. HDSS introduced structured verbal autopsy (VA) questionnaires for neonatal deaths, child (29 days – 11 years) deaths and adolescent and adult (age 12 years +) deaths in 2003. The VA tools are designed in light of the tools developed by INDEPTH and WHO and tools used by number of special studies. The tools contain open-ended death history question; leading questions on history of chronic illness; symptoms and signs of the illness that led to death; medical consultations prior to death; health records, etc.

Table 3.1. Deaths by age and sex in both areas, 2002

Age	Both sexes	Male	Female
All ages	1580	884	696
<1 year	291	153	138
<1 month	*201*	*114*	*87*
1- 5 months	*60*	*28*	*32*
6-11 months	*30*	*11*	*19*
1 - 4 years	93	52	41
1	*63*	*34*	*29*
2	*10*	*5*	*5*
3	*7*	*3*	*4*
4	*13*	*10*	*3*
5 – 9	27	20	7
10-14	15	9	6
15-19	17	9	8
20-24	21	6	15
25-29	15	6	9
30-34	28	16	12
35-39	19	10	9
40-44	49	36	13
45-49	36	24	12
50-54	61	45	16
55-59	74	41	33
60-64	142	87	55
65-69	147	89	58
70-74	162	87	75
75-79	173	91	82
80-84	130	60	70
85+	80	43	37

Table 3.2. Deaths by area, age, and sex, 2002

	ICDDR,B area			Government area		
Age	Both sexes	Male	Female	Both sexes	Male	Female
All ages	755	434	321	825	450	375
<1 year	135	75	60	156	78	78
<1 month	*97*	*59*	*38*	*104*	*55*	*49*
1- 5 months	*23*	*13*	*10*	*37*	*15*	*22*
6-11 months	*15*	*3*	*12*	*15*	*8*	*7*
1 - 4 years	36	25	11	57	27	30
1	*22*	*14*	*8*	*41*	*20*	*21*
2	*4*	*3*	*1*	*6*	*2*	*4*
3	*3*	*2*	*1*	*4*	*1*	*3*
4	*7*	*6*	*1*	*6*	*4*	*2*
5 – 9	12	9	3	15	11	4
10-14	8	4	4	7	5	2
15-19	7	3	4	10	6	4
20-24	11	4	7	10	2	8
25-29	6	2	4	9	4	5
30-34	13	8	5	15	8	7
35-39	9	5	4	10	5	5
40-44	19	13	6	30	23	7
45-49	17	10	7	19	14	5
50-54	35	25	10	26	20	6
55-59	39	24	15	35	17	18
60-64	66	45	21	76	42	34
65-69	71	41	30	76	48	28
70-74	81	44	37	81	43	38
75-79	88	48	40	85	43	42
80-84	59	28	31	71	32	39
85+	43	21	22	37	22	15

Table 3.3. Death rates by age and sex, 2002
(per 1,000 population)

Age	Both sexes	Male	Female
All ages	7.1	8.2	6.1
<1 year*	51.2	53.8	48.6
*<1 month**	*35.4*	*40.1*	*30.7*
*1- 5 months**	*10.6*	*9.8*	*11.3*
*6-11 months**	*5.3*	*3.9*	*6.7*
1 - 4 years	4.4	4.8	4.0
1	*11.5*	*12.2*	*10.8*
2	*2.0*	*1.9*	*2.0*
3	*1.3*	*1.1*	*1.6*
4	*2.5*	*3.8*	*1.2*
5 - 9	1.1	1.6	0.6
10-14	0.6	0.7	0.4
15-19	0.7	0.8	0.7
20-24	1.1	0.7	1.5
25-29	1.0	0.9	1.1
30-34	1.9	2.6	1.5
35-39	1.3	1.5	1.1
40-44	3.5	5.1	1.9
45-49	3.7	5.0	2.5
50-54	8.0	12.3	4.0
55-59	9.9	12.5	7.9
60-64	22.7	30.3	16.3
65-69	28.4	35.3	21.8
70-74	49.3	52.9	45.7
75-79	92.6	93.0	92.0
80-84	142.5	125.0	162.0
85+	161.0	147.8	179.6

*Rate per 1,000 live births

Table 3.4. Death rates by area, age, and sex, 2002 (per 1,000 population)

	ICDDR,B area			Government area		
Age	Both sexes	Male	Female	Both sexes	Male	Female
All ages	6.9	8.3	5.7	7.3	8.2	6.5
<1 year*	47.9	53.9	42.0	54.5	53.7	55.4
*<1 month**	*34.4*	*42.4*	*26.6*	*36.4*	*37.9*	*34.8*
*1- 5 months**	*8.2*	*9.3*	*7.0*	*12.9*	*10.3*	*15.6*
*6-11 months**	*5.3*	*2.2*	*8.4*	*5.2*	*5.5*	*5.0*
1 - 4 years	3.5	4.9	2.2	5.2	4.8	5.8
1	*8.4*	*10.5*	*6.2*	*14.3*	*13.7*	*15.0*
2	*1.6*	*2.4*	*0.8*	*2.3*	*1.4*	*3.2*
3	*1.2*	*1.5*	*0.8*	*1.5*	*0.7*	*2.4*
4	*2.8*	*4.7*	*0.8*	*2.3*	*2.9*	*1.6*
5 - 9	1.0	1.5	0.5	1.1	1.7	0.6
10-14	0.7	0.7	0.7	0.5	0.7	0.3
15-19	0.6	0.5	0.7	0.8	0.9	0.7
20-24	1.2	1.0	1.4	1.1	0.5	1.6
25-29	0.7	0.6	0.9	1.2	1.2	1.2
30-34	1.8	2.5	1.2	2.1	2.6	1.7
35-39	1.2	1.4	0.9	1.4	1.6	1.2
40-44	2.7	3.6	1.8	4.4	6.7	2.1
45-49	3.5	4.1	2.9	4.0	6.0	2.1
50-54	9.3	13.8	5.1	6.8	10.9	3.0
55-59	10.4	14.6	7.1	9.4	10.5	8.6
60-64	21.2	31.3	12.5	24.3	29.3	20.1
65-69	28.1	32.4	23.8	28.6	38.2	19.9
70-74	49.8	53.5	46.0	48.8	52.2	45.3
75-79	87.0	94.1	79.7	99.2	91.9	108.0
80-84	126.1	112.9	140.9	159.9	137.9	184.0
85+	159.3	126.5	211.5	163.0	176.0	147.1

*Rate per 1,000 live births

Table 3.5. Abridged life table by sex, 2002

Age (years)	Male				Female			
	$_nq_x$	l_x	L_x	e^o_x	$_nq_x$	l_x	L_x	e^o_x
0	53.8	100000	96104	65.6	48.6	100000	96479	69.7
1	12.1	94618	93943	68.3	10.7	95137	94536	72.3
2	1.9	93473	93385	68.1	2.0	94118	94022	72.0
3	1.1	93297	93246	67.3	1.6	93927	93854	71.2
4	3.8	93195	93019	66.3	1.2	93780	93723	70.3
5	7.9	92844	462524	65.6	2.8	93667	467726	69.4
10	3.3	92109	459836	61.1	2.2	93403	466538	64.6
15	3.8	91801	458209	56.3	3.3	93196	465269	59.7
20	3.6	91455	456527	51.5	7.6	92887	462814	54.9
15	4.4	91130	454725	46.7	5.3	92184	459801	50.3
30	12.7	90729	450988	41.9	7.3	91699	456952	45.5
35	7.5	89578	446332	37.4	5.4	91030	454013	40.9
40	25.3	88902	439302	32.6	9.5	90536	450691	36.1
45	24.8	86650	428281	28.4	12.4	89673	445802	31.4
50	60.0	84502	410716	24.0	20.0	88562	438712	26.7
55	60.9	79435	385909	20.4	38.6	86788	426184	22.2
60	141.4	74595	348032	16.6	78.5	83442	401911	18.0
65	162.9	64049	295455	13.9	103.6	76893	365763	14.3
70	234.4	53614	237758	11.0	205.8	68926	310620	10.7
75	377.6	41047	166556	8.6	374.3	54738	222603	7.8
80	473.4	25550	96757	7.4	567.5	34252	119953	5.9
85+	1000.0	13455	91058	6.8	1000.0	14815	82484	5.6

Fig. 3.1. Probability of survival from birth to age(x) by sex, 2002

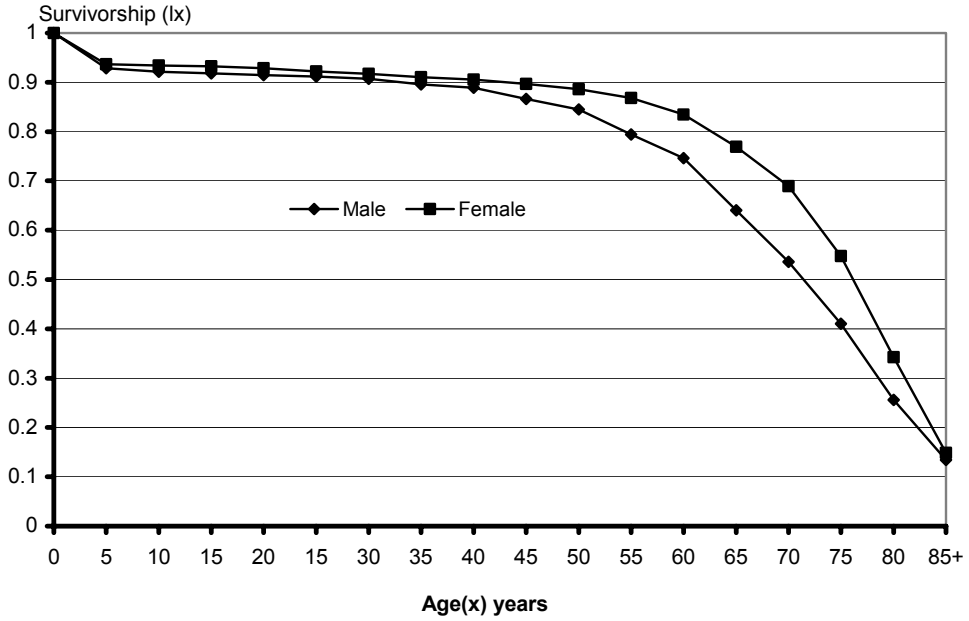


Table 3.6. Deaths by month and age, 2002

Month	All ages	Age at death			
		Under 1 month	1-11 months	1-4 years	5 years and above
January	155	17	10	4	124
February	123	8	10	5	100
March	130	16	10	12	92
April	124	13	5	13	93
May	133	17	11	9	96
June	114	6	9	9	90
July	123	18	5	11	89
August	135	25	9	9	92
September	112	18	4	9	81
October	138	20	5	8	105
November	144	22	7	3	112
December	149	21	5	1	122
Total	1580	201	90	93	1196

Table 3.7: Age-standardized mortality rates by cause of death, 2002 (per 100,000 population)*

Cause of death	Male		Female	
	ICDDR,B area	Govt. area	ICDDR,B area	Govt. Area
Diarrhoea	25.98	68.92	59.45	57.31
Dysentery	(7.01)	(7.93)	0.0	(7.23)
Tuberculosis	38.60	46.05	(2.19)	(6.10)
Tetanus (non-neonatal)	0.0	(1.32)	0.0	0.0
Other infectious diseases	(5.49)	11.92	16.03	28.81
Malignant neoplasms	76.37	69.80	26.47	24.60
Nutritional	26.62	25.63	12.68	25.64
Cardio-vascular diseases	201.70	147.06	156.19	166.15
ARI, pneumonia, influenza	31.37	35.58	21.79	49.43
COPD**	123.66	149.64	79.95	61.57
Gastrointestinal	49.54	65.49	26.00	36.80
Maternal death	NA	NA	(5.08)	16.42
Neonatal tetanus	0.0	0.0	0.0	0.0
Other neonatal	61.06	44.76	38.48	43.33
Suicide	(5.72)	(4.97)	9.93	(1.39)
Homicide	(5.64)	0.0	0.0	(4.40)
Drowning	28.99	28.26	13.77	23.50
Other accidents	16.10	21.75	(10.80)	(14.58)
Senility	55.43	106.44	147.88	106.13
Other causes n.e.c.†	216.39	173.19	168.34	223.81
Unknown	58.33	82.37	26.66	35.61
Total	1034.00	1091.10	821.69	932.82

*Age distribution of standard population is given in appendix D

**Chronic obstructive pulmonary disease

( )Less than 5 deaths

†Not elsewhere classified

CHAPTER 4

FERTILITY

In 2002, there were 5,681 live births in the HDSS as the outcome of 6,810 pregnancies recorded. Table 4.1 shows the number of pregnancies and their outcomes in 2002. The number of live births decreased, overall, by 199, or 3.4 %, in 2002 compared to 2001. In the study area as a whole, 83% of pregnancies resulted in a live birth, a proportion that remains almost constant from year to year and also pregnancies' resulting in fetal wastages has no definite trend. Among the pregnancies resulting in live births, 72 were multiple confinements.

Table 4.2 and Figure 4.1 show the distribution of pregnancies by outcome, and live births by sex and month of occurrence. The data show the usual marked seasonal variation of births, peaking in September-December. The sex ratio of live births was 100 males per 100 females. Though the ratio is less than last few years but there is no definite trend over the period.

Table 4.3 shows the age-specific fertility rates for the study area, together with the total fertility rate, general fertility rate, and gross and net reproduction rates. Figure 4.2 shows the age-specific fertility rates for both ICDDR,B and Government areas. In all age groups except age groups 15-19 and 35-39, the fertility rates were higher in the Government area compared to the ICDDR,B area. The age-specific fertility rates and indices for the ICDDR,B area by blocks are shown in Appendix A.9.

The breakdown by birth order facilitates a more detailed and sensitive analysis of fertility trends and differentials. Thus the totals of the order-specific rates represent the components by birth order of the TFR. In the same way TFR represents the average number of children that would be borne by a woman if she goes through life having children at the current rates, so the total for birth order N represents the proportion of women who would have at least N children.

Thus, the tables (Appendices A.10 and A.11) highlight the differences between the ICDDR,B area and the Government area. There is comparatively little difference between the two areas for birth orders 1, 2 and 3 but thereafter they widen dramatically. For example, the ratio (ICDDR,B vs Government) of birth order 1 was 106 and in birth order 4, 5 and 6 it was 82, 76 and 55 per 100 respectively.

Table 4.1. Number and rates of pregnancy outcomes by type and area, 2002

Type of pregnancy Outcome	Both areas		ICDDR,B area		Government area	
	Number	Rate	Number	Rate	Number	Rate
Total pregnancies*	6810	116.4	3306	111.6	3504	121.3
Live birth pregnancies**	5623	825.7	2793	844.8	2830	807.6
Foetal wastage**	1187	174.3	513	155.2	674	192.4
Early (miscarriage)†	1010	148.3	433	131.0	577	164.7
Induced	*429*	*63.0*	*138*	*41.7*	*291*	*83.0*
Spontaneous	*581*	*85.3*	*295*	*89.2*	*286*	*81.6*
Late (still birth)	177	26.0	80	24.2	97	27.7
Multiple birth pregnancies	72		31		41	
Multiple live birth pregnancies	65		29		36	
Three live births	*0*		*0*		*0*	
Two live births	*58*		*27*		*31*	
One live birth	*7*		*2*		*5*	
Still birth pregnancies	2		0		2	
Three still births	0		0		0	
Two still births	2		0		2	
Miscarriage pregnancies	5		2		3	

*Rate per 1,000 women of age 15-49 years (GFR)

**Rate per 1,000 total pregnancies

†Less than 28 weeks

Table 4.2. Pregnancy outcomes by month, 2002

	Pregnancy outcome					No. of live born children			
		Miscarriage		Still	Live	Both			
Months	All	Induced	Spon.	birth	birth*	sexes	Male	Female	Ratio
All months	6810	429	581	177	5623	5681	2843	2838	1.00
January	531	21	32	13	465	468	237	231	1.03
February	489	24	36	9	420	425	201	224	0.90
March	495	42	51	12	390	395	192	203	0.95
April	525	37	59	16	413	418	225	193	1.17
May	514	44	71	6	393	397	186	211	0.88
June	480	44	55	15	366	368	176	192	0.92
July	501	42	58	10	391	397	202	195	1.04
August	560	43	50	20	447	450	224	226	0.99
September	662	46	49	20	547	553	286	267	1.07
October	695	37	52	20	586	591	308	283	1.09
November	717	25	36	20	636	645	324	321	1.01
December	641	24	32	16	569	574	282	292	0.97

*For any multiple birth pregnancy, the outcome is recorded as live birth, if at least one of the issue is live born

Fig. 4.1. Number of births and deaths by month, 2002

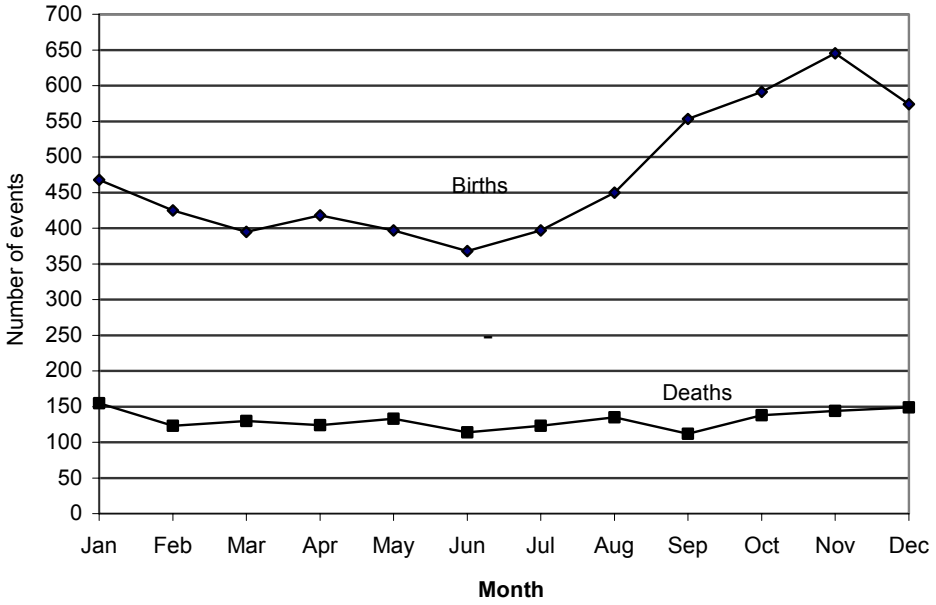
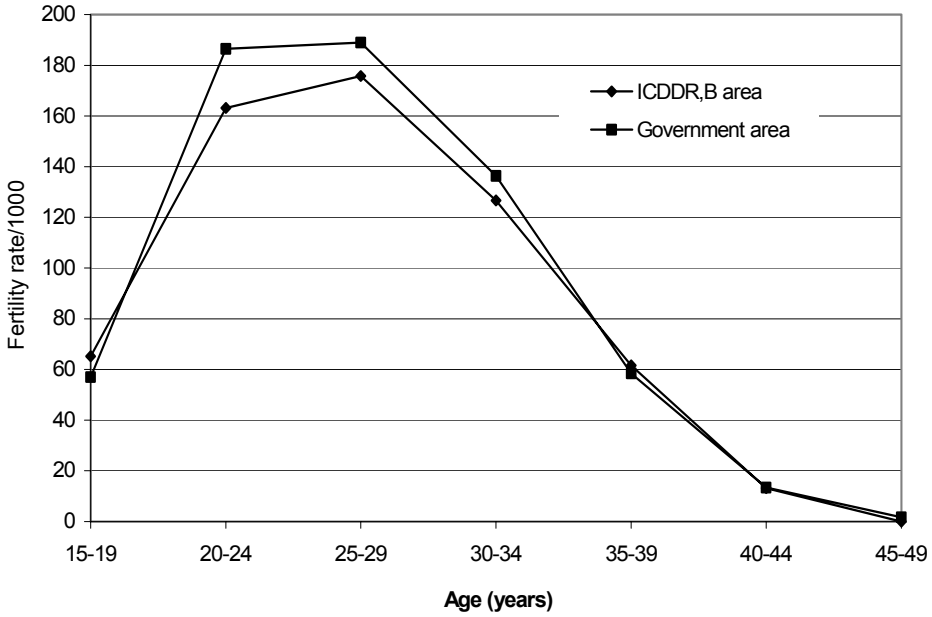


Table 4.3. Age-specific fertility rates (per 1000 women) and indices by area, 2002

Age (years)	Both areas		ICDDR,B area		Govt. area	
	Births	Rate	Births	Rate	Births	Rate
All ages	5681	97.1	2820	95.2	2861	99.0
15-19*	734	61.0	386	65.3	348	57.0
20-24	1726	174.8	807	163.2	919	186.4
25-29	1552	182.0	789	175.8	763	189.0
30-34	1078	131.4	531	126.7	547	136.3
35-39	497	60.1	262	61.6	235	58.5
40-44	90	13.3	45	13.1	45	13.4
45-49**	4	0.8	0	0.00	4	1.7
Total fertility rate	3117		3028		3211	
General fertility rate	97		95		99	
Gross reproduction rate	1557		1534		1581	
Net reproduction rate	1432		1431		1434	

*Births to mothers under age 15 were included in this group
**Births to mothers age 50 and above were included in this group

Fig.4.2. Age-specific fertility rates by area, 2002



CHAPTER 5

MARRIAGE AND DIVORCE

The definitions adopted by the HDSS specify that if either partner in a marriage is resident in the study area, the marriage should be registered. The number of marriages registered in 2002 was 3,343, giving a crude marriage rate of 15.0 per 1,000 population. This figure shows an increase over that of 2001, which was 14.2.

Tables 5.1 and 5.2 show the distribution of grooms and brides by age at marriage and previous marital status. The mean ages at marriage--27.7 and 19.9 for all grooms and brides respectively and 26.7 and 19.3 (29% was less than 18 years) for those marrying for the first time—are similar to those of 2001. The mean age for females has been over 18 years for every year since 1984, while prior to that date it was consistently below 18 years.

Table 5.3 shows the marriage rates by age and sex. Among males, the marriage rate was 41.3 per 1,000 persons and for females, the rate was 37.4 per 1,000 aged 10 years and above. For females, the highest rate is 144.5 per 1,000 in the 15-19 year age group, while for males the highest rate is 176.1 the age group of 25-29 years. Table 5.4 shows distribution of current marital status of the study population by age and sex, 2002. Among the population 43 percent were currently married and higher for females than males (46% vs 41%). Widows were 10% for females which is much higher than males (1%). This may be due to the difference in remarriage, which is more common among males than females.

The number of divorces was 328 in 2002 (Appendix A.12). The number of divorces was more than 500 each year during 1978-1981. Since 1981, this figure has been less than 500. In general, the incidence of divorce in Matlab has fallen. Table 5.5 shows the mean and median durations in months of marriage at divorce by age and sex. The average duration of marriage of all divorcing husbands at the time of divorce was 40 months.

Figure 5.1 shows the distribution of marriages and divorces by month. There has been no strong seasonal pattern for marriages or divorces in 2002 but marriages were high in March and low in November.

Table 5.1. Groom's age at marriage by previous marital status, 2002

Age (years)	All grooms	Previous marital status (%)			
		Single	Married	Divorced	Widowed
	100.0	88.8	2.6	6.7	1.9
All ages	100.0 (n=3343)	100.0 (n=2969)	100.0 (n=87)	100.0 (n=224)	100.0 (n=63)
10-14	0.1	0.1	0.0	0.0	0.0
15-19	5.1	5.5	2.3	2.2	0.0
20-24	27.5	29.1	9.2	19.2	6.3
25-29	35.8	37.6	11.5	28.6	9.5
30-34	22.2	22.0	29.9	25.0	11.1
35-39	5.8	4.7	14.9	14.7	15.9
40-44	1.6	0.6	17.2	5.8	12.7
45-49	0.5	0.1	5.7	1.8	9.5
50-54	0.4	0.0	5.7	0.4	12.7
55-59	0.3	0.0	1.1	1.3	7.9
60-64	0.2	0.0	1.1	0.4	6.3
65+	0.2	0.0	1.1	0.4	7.9
Unknown	0.2	0.2	0.0	0.0	0.0
Median age*	27	26	34	29½	42
Mean age*	27.7	26.7	35.8	30.6	44.1
Standard deviation*	6.2	4.8	9.6	7.7	14.0

*Mean and median ages and standard deviation were calculated from ungrouped age data

Table 5.2. Bride's age at marriage by previous marital status, 2002

Age (years)	All brides	Previous marital status (%)		
		Single	Divorced	Widowed
	100.0	91.6	7.6	0.8
All ages	100.0 (n=3343)	100.0 (n=3063)	100.0 (n=253)	100.0 (n=27)
10 - 14	4.2	4.6	0.4	0.0
15 - 19	52.0	54.7	23.7	3.7
20 - 24	32.5	32.6	32.4	18.5
25 - 29	7.4	6.5	17.4	22.2
30 - 34	2.5	1.4	13.4	18.5
35 - 39	0.7	0.1	6.7	11.1
40 - 44	0.4	0.0	3.6	18.5
45 - 49	0.2	0.0	1.6	3.7
50 - 54	0.1	0.0	0.4	3.7
55 - 59	0.0	0.0	0.0	0.0
60 - 64	0.0	0.0	0.0	0.0
65+	0.0	0.0	0.0	0.0
Unknown	0.0	0.0	0.4	0.0
Median age*	19	19	23	30
Mean age*	19.9	19.3	25.2	31.7
Standard deviation*	4.4	3.5	7.4	8.5

*Mean and median ages and standard deviation were calculated from ungrouped age data

Table 5.3. Marriage rates by age and sex, 2002

Age (years)	Male			Female		
	Marriages	Population	Rate*	Marriages	Population	Rate*
All ages (10+ yrs)	3343	80977	41.3	3343	89451	37.4
10-14	4	13447	0.3	142	13577	10.5
15-19	170	11921	14.3	1737	12023	144.5
20-24	919	8424	109.1	1086	9875	110.0
25-29	1197	6798	176.1	249	8527	29.2
30-34	741	6270	118.2	82	8203	10.0
35-39	195	6608	29.5	24	8274	2.9
40-44	55	7020	7.8	14	6787	2.1
45+	56	20489	2.7	8	22185	0.4
Unknown	6	-	-	1	-	-

*Rates per 1000 population irrespective of previous marital status

Table 5.4. Distribution of current marital status (%) of the study population by age and sex, 2002

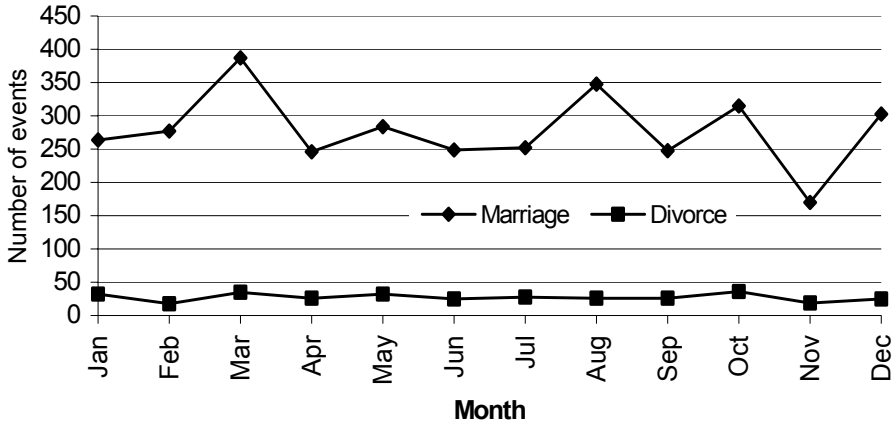
Age (years)	Male					Female				
	NM	PM	WID	DIV	Total	NM	PM	WID	DIV	Total
0-4	100.0	0.0	0.0	0.0	13766	100.0	0.0	0.0	0.0	13022
5-9	100.0	0.0	0.0	0.0	12592	100.0	0.0	0.0	0.0	12398
10-14	100.0	0.0	0.0	0.0	13447	98.8	1.2	0.0	0.0	13579
15-19	98.0	1.9	0.0	0.1	11921	72.2	26.9	0.0	0.9	12018
20-24	78.3	21.3	0.0	0.4	8422	24.1	74.4	0.2	1.3	9869
25-29	40.2	59.0	0.1	0.7	6794	6.3	91.6	0.7	1.4	8524
30-34	13.1	85.9	0.1	0.8	6267	1.4	95.9	1.5	1.2	8199
35-39	3.1	96.3	0.1	0.6	6605	0.6	94.3	3.6	1.6	8273
40-44	0.8	98.4	0.4	0.4	7016	0.2	90.2	7.7	1.8	6785
45-49	0.5	98.5	0.6	0.4	4784	0.2	83.8	14.1	1.9	4815
50-54	0.1	98.7	1.0	0.2	3648	0.1	72.3	26.3	1.4	3957
55-59	0.4	97.4	2.1	0.2	3269	0.0	59.3	39.4	1.3	4199
60-64	0.2	95.2	4.4	0.3	2870	0.1	42.8	56.2	0.9	3375
65-69	0.1	92.9	6.8	0.3	2519	0.1	27.9	71.5	0.6	2662
70-74	0.1	87.7	11.9	0.3	1646	0.1	15.7	83.7	0.5	1642
75-79	0.0	81.0	18.8	0.2	977	0.0	9.4	90.3	0.2	890
80-84	0.2	72.9	26.3	0.6	479	0.0	3.2	96.1	0.7	432
85+	0.0	59.0	40.3	0.7	290	0.0	1.0	98.0	1.0	205
All (%)	57.7	41.2	0.8	0.2	100.0	44.1	45.5	9.6	0.9	100.0
Total population	61951	44211	892	258	107312	50613	52263	10985	983	114844

NM= Never married, PM= Presently married, WID=Widowed, DIV=Divorced

Table 5.5. Mean and median duration (months) of all marriages at divorce by age and sex, 2002

Age (years) at divorce	Male				Female			
	No.	Mean	Median	SD	No.	Mean	Median	SD
<20	12	15.8	12	8.4	122	20.1	13	27.7
20 - 24	71	23.5	15	29.3	114	30.0	23	36.9
25 - 29	75	28.5	24	22.1	46	57.8	48	57.8
30 - 34	90	41.8	23½	56.4	24	72.5	60	67.9
35 - 39	37	52.6	26	52.6	15	100.2	96	88.0
40 - 49	30	72.3	36½	85.8	6	194.3	228	108.9
50+	13	82.5	8	122.1	1	180.0	180	0.0
All ages	328	40.0	22	54.9	328	40.0	22	54.9

Fig. 5.1: Marriages and divorces by month, 2002



CHAPTER 6

MIGRATION

An out-migrant is defined as a person originally listed on a HDSS census as a resident, or a person who became a resident by birth or immigration, who subsequently moved out of the surveillance (HDSS) area permanently. Likewise, an in-migrant is an individual neither recorded in the last census nor born or lived in the HDSS area after the census who has permanently moved into the surveillance area. Those who stay in the area continuously for at least 6 months in a year, or come home at least once a month to stay overnight, are treated as permanent residents. These definitions are used in the surveillance area as a whole.

The number of in-migrants in 2002 was 10,161, giving a crude rate of in-migration of 45.7 per 1000 population. Out-migrants numbered 11,640, and the out-migration rate was 52.4 per 1000 (Appendix A.13). Both in-migration and out-migration rates increased over those of 2001. The net loss of migrants was 6.7 per 1,000 in 2002, which is lower than that in 2001.

Table 6.1 presents the age-specific migration rates, which are illustrated in Figure 6.1. The tables and figures show the bi-modal distribution of age commonly found for migrant populations, with a primary peak of young adults and a secondary peak of young children moving with their parents. Male out-migrants were rather younger than male in-migrants, while for females the pattern of age distribution was more similar. Table 6.2 and Figure 6.2 show the numbers moving in and out by month. January is the preferred month for migration followed by February and March. Numbers of in- and out-migration by age, sex, and cause of movement are shown in Appendix A.16 through A.19.

Roughly, an equal number of men and women move into and out of rural areas, female for marriage and male for seeking job. There is a net loss of both men and women to urban Dhaka, primarily of young adults. Migration to the Middle East and other Asian locations is heavily concentrated among out-migrating males aged 15-44 years (Appendices A.20 and A.21).

Table 6.1. Age and sex-specific migration rates by direction, 2002 (per 1,000 population)

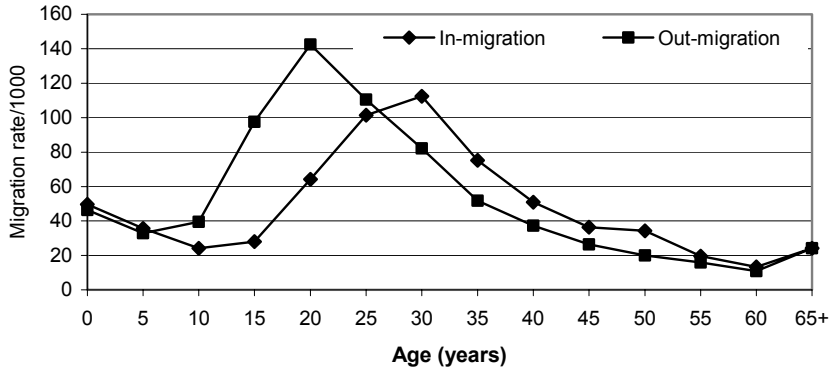
Age (years)	Both Sexes		Male		Female	
	In	Out	In	Out	In	Out
All ages	45.7	52.4	47.0	57.4	44.6	47.7
0 - 4	52.5	48.3	49.6	46.3	55.6	50.4
5 - 9	35.6	30.4	35.7	32.9	35.6	27.9
10-14	27.1	37.6	24.2	39.5	29.9	35.8
15-19	58.8	104.9	28.0	97.6	89.3	112.2
20-24	88.3	130.0	64.2	142.6	108.8	119.3
25-29	81.3	87.8	101.5	110.5	65.2	69.8
30-34	68.3	56.9	112.4	82.1	34.5	37.5
35-39	46.0	31.4	75.2	51.8	22.7	15.2
40-44	33.7	26.4	50.9	37.2	15.9	15.3
45-49	25.0	19.7	36.4	26.3	13.7	13.1
50-54	22.0	16.2	34.3	20.0	10.6	12.6
55-59	13.4	14.7	19.6	15.9	8.6	13.8
60-64	12.0	14.1	13.2	10.8	11.0	16.9
65+	27.8	32.2	24.2	24.2	31.2	39.8

Table 6.2. In- and out-migration by sex and month, 2002

	In-migration			Out-migration		
Month	Both sexes	Male	Female	Both sexes	Male	Female
All months	10161	5043	5118	11640	6158	5482
January	1628	838	790	1641	894	747
February	1157	558	599	1167	636	531
March	934	427	507	1321	692	629
April	871	439	432	1014	559	455
May	636	324	312	737	390	347
June	769	421	348	965	498	467
July	721	366	355	899	480	419
August	905	453	452	950	479	471
September	702	332	370	806	424	382
October	693	339	354	833	436	397
November	533	262	271	562	305	257
December	612	284	328	745	365	380

Fig. 6.1. Rates of in- and out-migration by sex and age, 2002

(a) Male



(b) Female

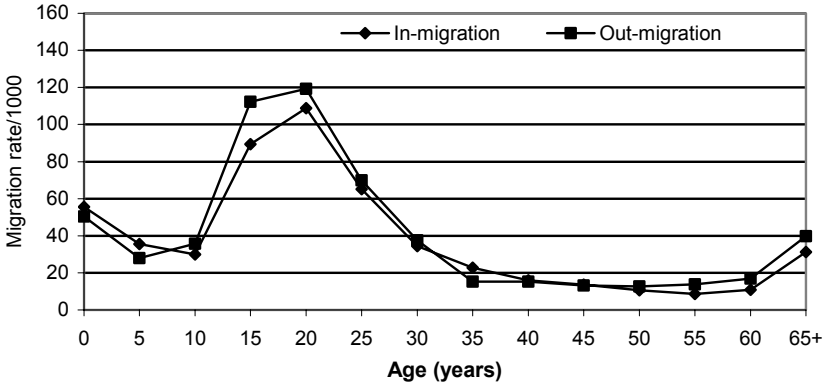
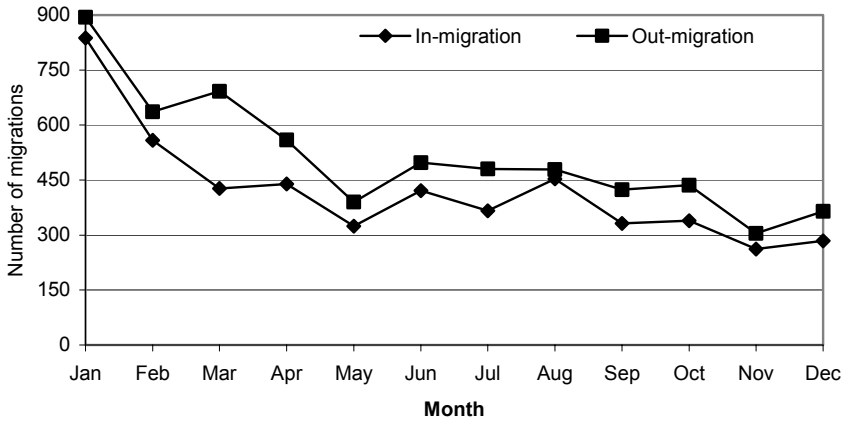
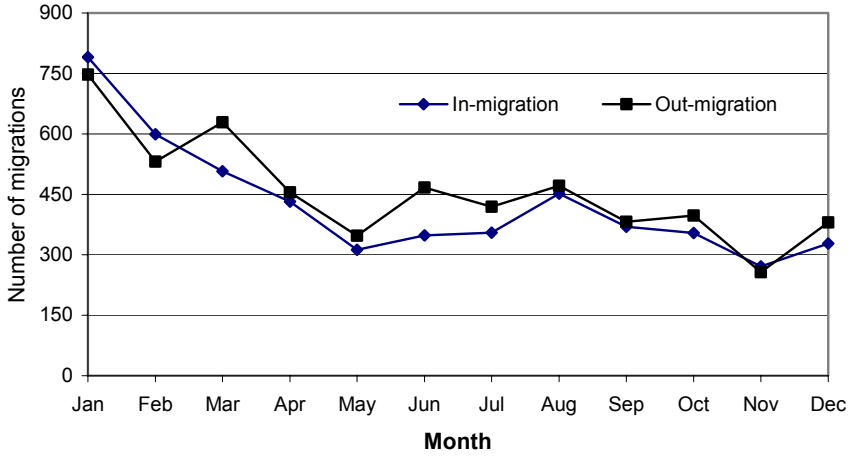


Fig. 6.2. Number of in- and out-migrations by sex and month, 2002

(a) Male



(b) Female



CHAPTER 7

FERTILITY REGULATION

In the ICDDR,B area, the CHRWs have been providing maternal and child health and family planning (MCH-FP) services from the fixed-sites (usually in one room of their houses) since 2001, and maintain records of MCH-FP services they provide. ICDDR,B switched from the door-to-door service delivery system to the fixed-site service delivery system in 2001, perhaps to be comparable with the Government fixed-site service delivery system. The fixed-site is the Community Clinic (CC) for every 6,000 population for delivering the Essential Services Package, including MCH-FP services. The Government, under the Health and Population Sector Programme 1998-2003, planned to construct and equip about 13,364 CCs nationwide. Up to December 2002, 64% were functional.

The CHRWs in both ICDDR,B and Government areas record family planning methods used by couples in the previous month by asking eligible women about family planning during their monthly home visits. They also motivate couples for adopting family planning; advise pregnant women for antenatal care, safe delivery, and use of safe-delivery kit; advise parents for immunization of children timely; make them aware of symptoms of common childhood morbidity; and advise them to treat sick children by formally trained providers. The motivation activities are more intensive and extensive in the ICDDR,B area than in the Governments area.

Contraceptive-use rate (table 7.1) increased to 70.5 in 2002 from 69.7 in 2001 in the ICDDR,B area, and in the Government area it was 51.4 which is close to the national level. Table 7.2 shows the difference in contraceptive method-mix between the ICDDR,B and Government areas and the national-level estimates for selected years. At the national level and in the Government area, pill is the most widely-used method, followed by injectables and tubectomy, while in the ICDDR,B area, injectables are the most widely-used method, followed by pill, condom, and tubectomy. Changes in the method-mix in the ICDDR,B area during 1986-2002 are shown in Table 7.3. The use of pill, condom and vasectomy has increased at the expense of tubectomy and injectables over the years. The contraceptive-use rate increases with the increase in women's age in the ICDDR,B area (Table 7.4). In the ICDDR,B area, women aged 25 years or more are more likely to use injectables, undergo tubectomy, and adopt traditional methods than women aged less than 25 years, whereas in the Government area (table 7.5), pill is the most popular method in all age groups except age group 45 years and over. Tubectomy, and traditional methods are more popular in the age group 45 years and over.

Table 7.1. Contraceptive use rate (%) of currently married women aged 15-49 years by area, 1982-2002

Year	Matlab		National**
	ICDDR,B area	Government area*	
1982	36.7	-	-
1983	40.3	-	19.1
1984	46.4	15.8	-
1985	46.2	-	-
1986	47.4	-	25.3
1987	51.3	-	-
1988	52.5	-	-
1989	58.8	-	31.4
1990	60.6	27.9	-
1991	61.1	-	39.9
1992	61.1	30.2	-
1993	62.7	-	44.6
1994	65.6	-	-
1995	68.6	-	-
1996	68.1	46.9	49.2
1997	67.4	-	-
1998	68.8	-	-
1999	69.9	-	53.8
2000	69.5	-	-
2001	69.7	-	50.8
2002	70.5	51.4	-

*Sources: In-depth and KAP surveys, 1984 and 1990 respectively; MDHS 1992 and HDSS census 1996 and HDSS 2002

**Sources: Contraceptive prevalence survey (CPS), Bangladesh fertility survey (BFS), Bangladesh demographic and health survey (BDHS), and Bangladesh maternal health services and maternal mortality survey (BMMS)

Table 7.2. Contraceptive method mix (%) in different surveys and surveillance areas

Method	BFS (Rural) 1989	BDHS 1999/2000	BMMS 2001	Matlab ICDDR,B area 1989	Matlab ICDDR,B area 2002	Matlab Government area 2002
Pill	31.1	42.8	51.2	22.9	32.0	45.8
Condom	5.8	8.0	6.4	2.6	10.7	3.1
Injectables	1.9	13.4	15.7	47.5	42.7	18.5
IUD	4.5	2.2	1.6	6.7	1.8	0.2
Tubectomy	27.6	12.5	10.6	16.1	7.3	13.0
Vasectomy	3.9	0.9	1.0	0.6	1.5	0.4
Foam	0.3	0.0	0.0	0.5	0.0	0.0
Norplant	N	0.9	1.0	N	U	U
Others*	24.7	19.2	12.5	3.1	4.0	19.0
Total	100.0	100.0	100.0	100.0	100.0	100.0

BDHS=Bangladesh demographic and health survey
BFS=Bangladesh fertility survey
BMMS=Bangladesh maternal health services and maternal mortality survey
N=Was none at that time, U=Included in others

Table 7.3. Contraceptive method mix* (%) in the ICDDR,B area, 1988-2002

Method	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Pill	21.3	23.3	25.4	26.1	27.3	28.1	25.7	25.8	25.4	26.0	29.7	28.7	30.6	31.9	33.3
Condom	2.6	2.5	2.3	2.4	2.7	3.2	3.9	4.7	6.2	7.7	7.1	7.7	9.5	10.8	11.1
Injectables	47.4	50.2	50.8	51.3	51.4	50.2	52.9	54.3	54.4	53.1	50.0	50.4	47.8	45.7	44.5
IUD	8.8	6.3	5.2	4.2	3.6	3.6	3.1	2.7	2.2	1.8	2.3	3.3	2.4	1.9	1.8
Tubectomy	18.4	16.5	15.3	15.1	14.5	14.5	14.0	12.2	11.5	11.1	10.6	9.8	9.1	8.6	7.7
Vasectomy	0.7	0.6	0.5	0.5	0.4	0.4	0.4	0.3	0.3	0.3	0.3	0.1	0.6	1.1	1.5
Foam	0.8	0.6	0.5	0.4	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Currently married women using any modern method

Table 7.4. Method specific contraceptive use rate among currently married women by Age in ICDDR,B area, 2002

Age (years)	Not using	Any method used	Method used							No. of eligible women
			Pill	IUD	Injectables	Condom	Tubectomy	Vasectomy	Others*	
Less 20	52.1	47.9	22.5	1.5	15.1	7.2	0.0	0.0	1.6	1229
20 - 24	43.4	56.6	22.7	1.9	26.0	5.1	0.0	0.1	0.8	3371
25 - 29	35.7	64.3	24.2	1.5	29.8	7.3	0.4	0.3	0.8	4067
30 - 34	30.2	69.8	22.0	1.1	34.2	8.2	2.1	1.2	1.0	3919
35 - 39	21.9	78.1	23.7	1.0	34.7	8.4	6.0	1.8	2.5	3871
40 - 44	15.1	84.9	21.8	1.0	31.1	8.5	12.9	2.3	7.3	3011
45 - 49	12.9	87.1	18.1	0.4	28.6	7.9	21.6	1.1	9.4	1771
Total	29.5	70.5	22.5	1.2	30.1	7.5	5.2	1.0	2.8	21239

*Others include periodic abstinence, withdrawal, and other traditional methods

Table 7.5. Method specific contraceptive use rate among currently married women by age in Government area, 2002

Age (years)	Not using	Any method used	Method used							No. of eligible women
			Pill	IUD	Injectables	Condom	Tubectomy	Vasectomy	Others*	
Less 20	69.7	30.3	17.2	0.1	2.4	4.3	0.0	0.0	6.2	1160
20 - 24	65.0	35.0	22.3	0.0	6.1	2.0	0.0	0.0	4.5	3408
25 - 29	56.5	43.5	27.7	0.0	9.6	1.3	0.3	0.0	4.6	3704
30 - 34	46.6	53.4	28.6	0.1	12.5	1.7	2.7	0.2	7.7	3843
35 - 39	34.4	65.6	27.9	0.2	14.4	1.5	9.3	0.2	12.1	3711
40 - 44	33.5	66.5	20.1	0.1	9.6	1.2	15.9	0.5	19.2	2971
45 - 49	45.7	54.3	7.6	0.2	4.0	0.6	24.5	0.4	17.0	1817
Total	48.6	51.4	23.6	0.1	9.5	1.6	6.7	0.2	9.8	20614

*Others include norplant, periodic abstinence, withdrawal, and other traditional methods

CHAPTER 8

USE OF MATERNAL AND CHILD HEALTH SERVICES

Immunization

In the ICDDR,B area, CHRWs used to provide house to house immunization services to both pregnant women and children till end of 2000. Since 2001 these services are being provided from fixed sites basis, i.e. from the houses of CHRWs, and have been maintaining vaccination records. In contrast, the CHRWs in the Government area record only vaccination status either by checking the vaccination card or by asking mothers about vaccination of children if the vaccination card was missing. For full protection of newborns against tetanus, it is recommended that pregnant women receive two doses of tetanus toxoid (TT). However, if a woman has been vaccinated during her previous pregnancy, she may require only one booster dose during her subsequent pregnancy. A woman requires 5 doses of TT for life-long protection. The rate of TT coverage is presented (Table 8.1) for women whose latest pregnancies terminated in live births.

The World Health Organization recommends that all children receive a BCG vaccination against tuberculosis; three doses of DPT vaccine for the prevention of diphtheria, pertussis (whooping cough), and tetanus; three doses of polio vaccine; and a vaccination against measles before their first birthday. Therefore, vaccination of children aged 12-23 months is presented to allow comparison of results across the surveys.

Table 8.1 shows the rates of coverage of different vaccines among women who produced a live birth and among children aged 12-23 months by area in 1987-2002. In 2002, the coverage of TT with at least two doses was 97% in the ICDDR,B area and 61% in the Government area. The 1999/2000 Bangladesh Demographic and Health Survey (BDHS) estimated the national coverage of TT with two or more doses to be 64%. In the ICDDR,B area, in 2002, immunization of children was universal: 99% received BCG, 99% received three doses of DPT and polio, and 96% received measles vaccines. These rates are higher than the estimates of 97% for BCG, 91% for DPT and polio and 85% for measles in the Government area. The BDHS estimates of immunization coverage were 91% for BCG, 72% for DPT and polio, and 71% for measles in 1999/2000. Table 8.2 shows the coverage of DPT and polio among children aged 12-23 months by number of doses in the ICDDR,B and Government areas in 2002. The coverage of one or two dose(s) is 6% in the Government area as opposed to 1% in the ICDDR,B area.

Child Morbidity and Health Service Use

Diarrhoea and pneumonia are the two leading causes of infant and child mortality in Bangladesh. The CHRWs in the ICDDR,B area have long experience in recording child health information, and they asked mothers if their children had symptoms of diarrhoea, i.e. three or more loose stools per 24 hours with or without mucus or blood in 24 hours preceding the date of monthly visit.

An episode was termed bloody diarrhoea if blood was present in the stool, otherwise it was termed watery diarrhoea. For recording pneumonia, they asked mothers if their children had symptoms of pneumonia, such as fever, cough, rapid breathing or breathing difficulty and chest indrawing (or inability to suck the breast if child is aged less than 2 months) in the preceding one month. An episode of pneumonia was termed severe if chest indrawing was present in addition to other symptoms, otherwise it was termed simply pneumonia. The estimate of the prevalence may be upward biased in longitudinal monthly surveys; for example, episodes that lasted for more than 30 days are counted in subsequent visits as child-months with pneumonia.

Diarrhoea causes dehydration, and oral rehydration solution (ORS) is the most simple and inexpensive tool to combat dehydration. The CHRWs in the ICDDR,B area, during their home visits, provide ORS packets free of charge if they encounter any diarrhoea patients, provide treatment for minor illnesses of women and children, and refer severe illnesses to the ICDDR,B sub-centres or hospital in Matlab. If a child had diarrhoea in the preceding 24 hours, the mother was asked whether ORS (either packets or home-made sugar, salt and water solution) or IV fluids were administered to prevent dehydration. It may be mentioned that use of ORS or IV for diarrhoea episode includes episodes still continuing on the visit date. For the still-continuing episodes, the CHRWs may have made home visits before ORS or IV was administered (i.e. right-censoring) and thus, ORS or IV use may be under-estimated. However, they did not record additional fluids given from a green coconut or rice water to combat dehydration.

Similarly, if a child had pneumonia in the past month, the CHRWs asked mothers about health actions taken to combat pneumonia. They recorded most recent treatment taken, particularly type of medicine used and type of health providers consulted. As mentioned before, treatment taken against pneumonia may also be under-estimated because of right-censoring (home visit before use of health service).

(a) Prevalence of Diarrhoea and Use of ORS and Health Providers

Table 8.3 shows the prevalence of diarrhoea in past 24 hours per 100 child-months in the ICDDR,B area in 2002. The overall prevalence of diarrhoea was 2.5%, and it was highest in the age group of 6-11 months and higher for boys than for girls. Education of mother was not related to the prevalence of diarrhoea. Table 8.4 shows that use of ORS for children having diarrhoea in the preceding 24 hours was comparable for watery (44%) and bloody diarrhoea (45%). The longer the duration of episodes, the higher was the use of ORS. Younger children (aged less than 6 months) were given ORS less often than older children. Neither sex of the child nor mother's education was related to the use of ORS to manage diarrhoea.

Use of health providers for treating diarrhoea of under-five children showed a marked difference by diarrhoea type (Table 8.5). Parents adopted home-treatment at a higher rate for watery diarrhoea than for bloody diarrhoea, and consulted untrained village doctors more often for bloody diarrhoea than for watery diarrhoea for treatment. They consulted traditional healers, particularly homeopaths at a higher rate for treating diarrhoea of children aged less than 6 months than children aged 6 months and above. ICDDR,B field workers were consulted more frequently for watery diarrhoea than for

bloody diarrhoea. Gender of child and maternal education were not related to type of health providers used for treating diarrhoea episodes.

(b) Prevalence of Pneumonia and Service Uptake

Table 8.6 shows the monthly prevalence of pneumonia per 100 child-months by illness and child's characteristics of children in 2002. The overall prevalence of pneumonia was 3.3% and severe pneumonia accounted for 15%. The prevalence was higher for children aged 6-23 months than for children aged 24-59 months. Also it was higher for boys than for girls, and for children of mothers with no education and incomplete primary education than for children with complete and at least secondary education.

Table 8.7 shows the difference in type of medicines used for treating pneumonia in the ICDDR,B area by illness and child's characteristics. Antibiotics were used for combating 81% of the pneumonia episodes, and type of pneumonia did not make any difference in use of antibiotics. The younger the child the higher was the use of antibiotics. Boys and girls with pneumonia were treated with antibiotics equally. The educational differential in the use of antibiotics was relatively small.

Table 8.8 shows the treatment pattern of pneumonia by illness and characteristics of children in the ICDDR,B area. The well-trained providers (doctors or paramedics, including ICDDR,B ones) treated 12% of the pneumonia episodes. Untrained village doctors and traditional healers treated 24% and 4% respectively of the pneumonia episodes. The severity of illness triggered the choice of well-trained providers. Parents may have bypassed field workers for well-trained providers for severe pneumonia.

Age of child influenced the choice of treatment provider to combat pneumonia. Infants with pneumonia were more likely to be treated by well-trained providers than their older counterparts. Services of well-trained providers were used more often by children of educated mothers than by children of uneducated mothers.

Table 8.1. Immunization coverage (%) in ICDDR,B area, 1987-2002 and Government area, 2000-2002

Year	TT* coverage during last pregnancy of women giving live birth		Vaccination coverage rate of children aged 12-23 months							
			BCG (1 dose)		DPT & Polio (3 doses)		Measles (1 dose)		All**	
	ICDDR,B area	Govt. area	ICDDR,B area	Govt. area	ICDDR,B area	Govt. area	ICDDR,B area	Govt. area	ICDDR,B area	Govt. area
1987	86.1	-	88.4	-	76.1	-	85.2	-	69.3	-
1988	89.7	-	93.3	-	82.8	-	87.9	-	77.2	-
1989	91.3	-	94.6	-	88.4	-	92.0	-	84.0	-
1990	95.3	-	98.7	-	95.7	-	96.4	-	93.8	-
1991	97.1	-	98.6	-	95.6	-	97.0	-	94.1	-
1992	98.6	-	99.1	-	96.9	-	97.8	-	96.0	-
1993	98.8	-	99.5	-	97.6	-	98.1	-	96.6	-
1994	99.3	-	99.5	-	97.7	-	97.0	-	95.7	-
1995	98.8	-	99.3	-	96.8	-	97.0	-	95.0	-
1996	99.3	-	99.5	-	98.0	-	97.9	-	96.7	-
1997	98.6	-	99.3	-	98.5	-	98.0	-	97.3	-
1998	98.3	-	99.2	-	97.7	-	96.1	-	95.4	-
1999	97.7	-	99.0	-	97.7	-	94.8	-	94.1	-
2000†	97.0	-	99.2	73.6	97.7	67.8	95.9	50.2	95.1	48.5
2001	98.1	-	99.1	89.8	98.2	80.0	96.0	74.1	95.4	71.0
2002	97.1	60.7	99.3	96.7	98.5	90.6	95.7	84.5	95.4	83.1

*At least two doses received during the last pregnancy that terminated in live birth
**Children fully vaccinated (i.e. those who received BCG, measles and three doses of DPT and polio)
†Immunization coverage rate is about 20% under reported in the Government area due to not checking of vaccination cards during the initial months of 2000

Table 8.2. DPT and polio coverage (%) among children aged 12-23 months by number of doses and area, 2002

No. of doses	ICDDR,B area	Government area
None	0.7	3.1
1	0.3	1.9
2	0 .5	4.4
3	98.5	90.6
All (%)	100.0	100.0
No. of children	2736	2864

Table 8.3. Prevalence* (%) of childhood diarrhoea in past 24 hours by child's characteristics, 2002

Child's characteristics	ICDDR,B area			BDHS** 1999/2000
	Watery diarrhoea	Bloody diarrhoea	Both types	
Child's age (months)				
<6	1.4	0.1	1.5	3.4
6-11	4.3	0.3	4.5	11.9
12-23	3.1	0.3	3.3	11.8
24-35	2.1	0.3	2.5	5.6
36-47	1.7	0.2	1.9	3.8
48-59	1.3	0.1	1.4	2.3
Sex				
Male	2.4	0.2	2.7	6.4
Female	2.1	0.2	2.2	5.8
Mother's education				
No education	2.4	0.2	2.6	6.2
Primary incomplete	2.2	0.2	2.4	5.9
Primary complete	2.5	0.2	2.7	6.6
Secondary+	2.1	0.2	2.3	6.1
All (%)	2.2	0.2	2.5	6.1
No. of diarrhoea episodes†	3459	328	3787	392

*Whether or not diarrhoea episodes started or ended within 24 hours
**Percentage of children experiencing diarrhoea in past two weeks irrespective of date of onset
†Equivalent to number of 24-hour periods of observation in which children had had diarrhoea
BDHS=Bangladesh Demographic and Health Survey

Table 8.4. Distribution (%) of diarrhoea episodes among under five children by ORS and IV-saline use, illness, and child's characteristics in ICDDR,B area, 2002

Illness and child's characteristics	No ORS	Home made ORS	Packet ORS	IV-saline	Total
Types of diarrhoea					
Watery	56.4	0.3	43.0	0.3	100.0
Bloody	54.9	2.1	42.4	0.6	100.0
Duration of diarrhoea (days)					
1-3	63.4	0.4	35.9	0.3	100.0
4-6	49.4	0.7	49.8	0.1	100.0
7+	45.0	0.5	54.0	0.5	100.0
Child's age (months)					
<6	69.3	1.2	29.6	0.0	100.0
6-11	57.7	0.1	41.6	0.5	100.0
12-23	53.2	0.3	46.0	0.5	100.0
24-35	57.8	0.7	41.5	0.0	100.0
36-47	54.5	0.4	44.8	0.4	100.0
48-59	52.8	0.9	46.2	0.0	100.0
Sex					
Male	55.1	0.5	44.0	0.3	100.0
Female	57.6	0.4	41.7	0.2	100.0
Mother's education					
No education	56.8	0.4	42.7	0.1	100.0
Primary incomplete	58.5	0.2	41.0	0.4	100.0
Primary complete	57.0	0.7	41.8	0.6	100.0
Secondary+	54.3	0.6	44.8	0.3	100.0
All (%)	56.2	0.5	43.0	0.3	100.0
No. of diarrhoea episodes*	2130	18	1628	11	3787

*Equivalent to number of 24-hour periods of observation in which children had had diarrehoa
ORS=Oral rehydration solution

Table 8.5. Distribution (%) of diarrhoea episodes among under five children by type of treatment providers, illness, and child's characteristics in ICDDR,B area, 2002

Illness and child's characteristics	Home treatment	Traditional healer	Village doctor	Hospital	Field worker	Total
Types of diarrhoea						
Watery	44.9	4.2	17.4	1.4	32.1	100.0
Bloody	31.7	7.0	31.7	4.0	25.6	100.0
Child's age (months)						
<6	42.0	16.0	24.5	1.2	16.3	100.0
6-11	43.9	4.8	21.4	1.0	28.9	100.0
12-23	41.3	3.9	19.3	2.1	33.5	100.0
24-35	47.2	2.8	16.9	1.9	31.2	100.0
36-47	46.4	2.7	14.7	1.4	34.8	100.0
48-59	41.5	3.1	16.6	1.9	37.0	100.0
Sex						
Male	42.3	3.9	20.3	1.5	31.9	100.0
Female	45.5	5.0	16.6	1.8	31.0	100.0
Mother's education						
No education	45.1	4.3	16.4	1.1	33.1	100.0
Primary incomplete	46.9	3.9	17.1	0.7	31.3	100.0
Primary complete	46.8	3.3	17.9	1.2	30.8	100.0
Secondary+	39.2	5.4	22.0	2.9	30.4	100.0
All (%)	43.8	4.4	18.6	1.7	31.5	100.0
No. of diarrhoea episodes*	1657	167	706	63	1194	3787

*Equivalent to number of 24-hour periods of observation in which children had had diarrhoea

Table 8.6. Monthly prevalence* (%) of pneumonia among under-five children by child's characteristics, 2002

Child's characteristics	ICDDR,B area			BDHS** 1999/2000
	Pneumonia	Severe pneumonia	Both types	
Child's age (months)				
<6	2.4	1.2	3.6	23.4
6-11	4.4	0.8	5.2	22.6
12-23	4.3	0.7	4.9	23.5
24-35	3.0	0.4	3.4	17.1
36-47	1.9	0.4	2.3	14.7
48-59	1.2	0.2	1.4	12.9
Sex				
Male	3.1	0.6	3.7	19.0
Female	2.5	0.4	2.9	17.7
Mother's education				
No education	3.2	0.6	3.7	19.3
Primary incomplete	3.3	0.6	3.9	18.8
Primary complete	2.7	0.5	3.2	18.1
Secondary+	2.2	0.5	2.7	16.3
All (%)	2.8	0.5	3.3	18.3
No. of pneumonia episodes†	4297	828	5125	1176

*Percentage of child-months with reported pneumonia irrespective of date of onset
**Prevalence in previous two-weeks
†Equivalent to number of months of observation in which children had experienced pneumonia
BDHS=Bangladesh demographic and health survey

Table 8.7. Distribution (%) of childhood pneumonia by type of medicine used, illness, and child's characteristics in ICDDR,B area, 2002

Illness and child's characteristics	Antibiotics	Other drug	No drug	Total
Types of pneumonia				
Mild	80.9	7.0	12.1	100.0
Severe	83.3	5.8	10.9	100.0
Child's age (months)				
<6	90.4	6.0	3.7	100.0
6-11	89.2	6.4	4.5	100.0
12-23	85.8	5.8	8.4	100.0
24-35	75.3	8.3	16.4	100.0
36-47	71.1	7.5	21.4	100.0
48-59	65.4	8.1	26.5	100.0
Sex				
Male	81.9	6.9	11.2	100.0
Female	80.5	6.6	12.9	100.0
Mother's education				
No education	78.5	6.2	15.3	100.0
Primary incomplete	82.9	4.3	12.7	100.0
Primary complete	79.2	8.9	11.9	100.0
Secondary+	85.0	7.8	7.2	100.0
All (%)	81.3	6.8	11.9	100.0
No. of pneumonia episodes* 4166	349	610	5125	

*Equivalent to number of months of observation in which children had experienced pneumonia

Table 8.8. Distribution (%) of pneumonia episodes among under five children by type of treatment providers, illness and child's characteristics in ICDDR,B area, 2002

Illness and child's characteristics	Home treatment	Traditional healer	Village doctor	Hospital	Field worker	Total
Types of pneumonia						
Mild	8.9	4.1	23.4	4.4	59.1	100.0
Severe	8.6	3.0	28.6	48.7	11.1	100.0
Child's age (months)						
<6	2.3	4.7	17.6	27.9	47.5	100.0
6-11	2.9	3.9	22.0	14.4	56.8	100.0
12-23	5.8	3.1	24.6	10.2	56.3	100.0
24-35	12.5	4.3	24.7	7.8	50.7	100.0
36-47	16.3	5.0	28.6	6.8	43.3	100.0
48-59	21.6	3.7	29.4	3.9	41.4	100.0
Sex						
Male	8.2	3.3	26.6	12.2	49.8	100.0
Female	9.7	4.7	21.3	10.8	53.4	100.0
Mother's education						
No education	12.2	4.2	21.4	9.8	52.4	100.0
Primary incomplete	8.8	4.1	20.4	11.4	55.4	100.0
Primary complete	9.6	3.1	26.4	10.4	50.4	100.0
Secondary+	4.3	4.0	28.8	14.6	48.3	100.0
All (%)	8.9	3.9	24.3	11.6	51.4	100.0
No. of pneumonia episodes*	454	202	1244	593	2632	5125

*Equivalent to number of months of observation in which children had experienced pneumonia

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APPENDICES

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Appendix A.1. Mid-year population in ICDDR,B area by age, sex, and block, 2002

Age (years)	Block A			Block B		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	32885	15596	17289	30213	14370	15843
Under 1	846	416	430	872	416	456
1 - 4	3126	1584	1542	2905	1457	1448
1	*792*	*413*	*379*	*742*	*376*	*366*
2	*750*	*370*	*380*	*715*	*366*	*349*
3	*807*	*408*	*399*	*728*	*351*	*377*
4	*777*	*393*	*384*	*720*	*364*	*356*
5 - 9	3652	1851	1801	3408	1687	1721
10-14	3839	1868	1971	3433	1748	1685
15-19	3354	1519	1835	3279	1636	1643
20-24	2663	1155	1508	2489	1093	1396
25-29	2440	1018	1422	2111	911	1200
30-34	2237	947	1290	1979	860	1119
35-39	2422	1082	1340	2037	849	1188
40-44	2069	1055	1014	1858	954	904
45-49	1500	764	736	1238	606	632
50-54	1115	555	560	1037	480	557
55-59	1140	499	641	988	416	572
60-64	852	439	413	846	366	480
65-69	688	369	319	722	350	372
70-74	425	211	214	501	260	241
75-79	298	153	145	294	152	142
80-84	130	58	72	128	71	57
85+	89	53	36	88	58	30

(continued)

Appendix A.1 (contd.). Mid-year population in ICDDR,B area by age, sex, and block, 2002

Age (years)	Block C			Block D		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	23821	11673	12148	22329	10869	11460
Under 1	586	311	275	561	272	289
1 - 4	2091	1055	1036	2024	1053	971
1	*545*	*280*	*265*	*543*	*261*	*282*
2	*505*	*250*	*255*	*509*	*272*	*237*
3	*527*	*276*	*251*	*497*	*256*	*241*
4	*514*	*249*	*265*	*475*	*264*	*211*
5 - 9	2464	1266	1198	2368	1203	1165
10-14	2517	1249	1268	2439	1215	1224
15-19	2619	1330	1289	2231	1082	1149
20-24	2146	1027	1119	1755	832	923
25-29	1820	862	958	1711	802	909
30-34	1706	753	953	1464	635	829
35-39	1640	765	875	1615	763	852
40-44	1549	784	765	1531	790	741
45-49	1073	534	539	1031	545	486
50-54	843	411	432	786	362	424
55-59	848	392	456	773	339	434
60-64	693	317	376	729	316	413
65-69	549	269	280	564	277	287
70-74	319	166	153	382	186	196
75-79	207	98	109	213	107	106
80-84	106	57	49	104	62	42
85+	45	27	18	48	28	20

Appendix A. 2. Deaths in ICDDR,B area by age, sex, and block, 2002

	Block A			Block B		
Age	Both sexes	Male	Female	Both sexes	Male	Female
All ages	221	130	91	202	110	92
<1 year	41	22	19	40	23	17
<1 month	*26*	*13*	*13*	*32*	*22*	*10*
1- 5 months	*9*	*8*	*1*	*5*	*1*	*4*
6-11 months	*6*	*1*	*5*	*3*	*0*	*3*
1 - 4 years	15	12	3	7	5	2
1	*7*	*6*	*1*	*5*	*4*	*1*
2	*2*	*2*	*0*	*1*	*0*	*1*
3	*2*	*1*	*1*	*0*	*0*	*0*
4	*4*	*3*	*1*	*1*	*1*	*0*
5 - 9	5	3	2	2	1	1
10-14	0	0	0	2	2	0
15-19	2	1	1	2	2	0
20-24	5	1	4	2	1	1
25-29	2	1	1	1	0	1
30-34	4	2	2	2	1	1
35-39	3	1	2	2	1	1
40-44	3	3	0	6	4	2
45-49	7	5	2	4	0	4
50-54	11	8	3	13	8	5
55-59	12	9	3	7	4	3
60-64	21	16	5	17	11	6
65-69	14	8	6	23	11	12
70-74	22	12	10	18	9	9
75-79	26	14	12	26	16	10
80-84	12	5	7	16	5	11
85+	16	7	9	12	6	6

(continued)

Appendix A.2 (contd.). Death in ICDDR,B area by age, sex, and block, 2002

	Block C			Block D		
Age	Both sexes	Male	Female	Both sexes	Male	Female
All ages	171	106	65	161	88	73
<1 year	26	14	12	28	16	12
<1 month	*16*	*11*	*5*	*23*	*13*	*10*
1- 5 months	*6*	*3*	*3*	*3*	*1*	*2*
6-11 months	*4*	*0*	*4*	*2*	*2*	*0*
1 – 4 years	8	4	4	6	4	2
1	*7*	*3*	*4*	*3*	*1*	*2*
2	*1*	*1*	*0*	*0*	*0*	*0*
3	*0*	*0*	*0*	*1*	*1*	*0*
4	*0*	*0*	*0*	*2*	*2*	*0*
5 - 9	1	1	0	4	4	0
10-14	3	1	2	3	1	2
15-19	2	0	2	1	0	1
20-24	2	1	1	2	1	1
25-29	0	0	0	3	1	2
30-34	5	3	2	2	2	0
35-39	3	3	0	1	0	1
40-44	5	2	3	5	4	1
45-49	5	4	1	1	1	0
50-54	5	5	0	6	4	2
55-59	12	6	6	8	5	3
60-64	14	11	3	14	7	7
65-69	20	13	7	14	9	5
70-74	24	15	9	17	8	9
75-79	15	9	6	21	9	12
80-84	16	10	6	15	8	7
85+	5	4	1	10	4	6

Appendix A. 3. Abridged life table for ICDDR,B area by sex, 2002

Age (years)	Male				Female			
	$_nq_x$	l_x	L_x	e^o_x	$_nq_x$	l_x	L_x	e^o_x
0	53.9	100000	96096	66.0	42.0	100000	96960	71.0
1	10.5	94608	94024	68.7	6.2	95801	95452	73.1
2	2.4	93617	93506	68.4	0.8	95210	95171	72.6
3	1.5	93394	93322	67.6	0.8	95132	95094	71.7
4	4.7	93250	93030	66.7	0.8	95057	95018	70.7
5	7.5	92810	462455	66.0	2.5	94979	474337	69.8
10	3.3	92117	459891	61.5	3.2	94737	472976	64.9
15	2.7	91815	458506	56.7	3.4	94429	471412	60.1
20	4.9	91568	456814	51.8	7.1	94111	469023	55.3
15	2.8	91123	455031	47.1	4.4	93447	466276	50.7
30	12.4	90870	451738	42.2	5.9	93031	463881	45.9
35	7.2	89739	447203	37.7	4.7	92478	461390	41.2
40	18.0	89092	441759	33.0	8.7	92044	458368	36.4
45	20.2	87489	433358	28.5	14.5	91241	453145	31.7
50	67.0	85720	415216	24.0	25.0	89915	444368	27.1
55	70.5	79978	386739	20.6	35.1	87663	431190	22.7
60	145.7	74339	346061	16.9	60.7	84588	410992	18.4
65	150.5	63510	294901	14.4	112.9	79456	376184	14.5
70	236.8	53952	238930	11.5	207.2	70485	317400	11.0
75	381.0	41178	166696	9.2	332.9	55879	233477	8.1
80	438.8	25489	99066	8.3	515.9	37275	136463	5.9
85+	1000.0	14304	113071	7.9	1000.0	18046	85308	4.7

Appendix A. 4. Abridged life tables for Government area by sex, 2002

Age (years)	Male				Female			
	$_nq_x$	l_x	L_x	e^o_x	$_nq_x$	l_x	L_x	e^o_x
0	53.7	100000	96111	65.2	55.4	100000	95992	68.4
1	13.6	94628.1	93870	67.9	14.9	94464	93634	71.4
2	1.4	93343.15	93276	67.8	3.2	93057	92908	71.4
3	0.7	93208.16	93176	66.9	2.4	92760	92650	70.7
4	2.9	93144.12	93009	66.0	1.6	92541	92469	69.8
5	8.3	92874.33	462590	65.2	3.1	92396	461328	68.9
10	3.4	92101.59	459789	60.7	1.3	92113	460278	64.1
15	4.7	91789.53	457951	55.9	3.3	91989	459251	59.2
20	2.3	91357.09	456299	51.1	8.1	91688	456731	54.4
15	6.2	91145.69	454421	46.2	6.2	90947	453440	49.8
30	12.9	90578.55	450190	41.5	8.7	90385	450116	45.1
35	7.9	89407.33	445406	37.0	6.2	89600	446719	40.5
40	32.9	88700.11	436732	32.3	10.4	89044	443094	35.7
45	29.5	85777.55	423022	28.3	10.3	88122	438521	31.1
50	53.0	83243.4	405959	24.1	15.0	87217	433061	26.4
55	51.1	78830.8	384788	20.3	42.0	85908	421163	21.7
60	137.1	74800.37	349776	16.2	95.9	82298	392989	17.6
65	175.3	64548.74	295798	13.4	95.2	74405	355426	14.2
70	232.0	53235.36	236399	10.7	204.5	67322	303615	10.4
75	373.8	40884.03	166316	8.1	424.1	53554	210373	7.4
80	508.2	25602.82	94325	6.5	615.7	30841	103214	6.0
85+	1000.0	12592.52	71548	5.7	1000.0	11853	80600	6.8

Appendix A.5. Male deaths by cause and age, 2002

Cause	All ages	Age at death (years)																			
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
DIARRHOEAL																					
Diarrhoea	36	5	3	2	0	0	0	0	1	0	0	0	1	5	1	3	4	5	1	5
Dysentery	6	0	0	1	0	0	0	0	0	0	0	0	1	0	2	0	2	0	0	0
INFECTIOUS																					
Tuberculosis	32	0	0	0	0	0	0	0	2	0	4	3	3	3	6	3	4	1	1	2
Tetanus (non-neonatal)	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	8	2	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	1	0	0
MALIGNANT NEOPLASM	60	0	2	2	3	1	0	1	1	2	5	4	5	5	6	10	7	4	2	0
NUTRITIONAL	25	8	2	0	1	0	0	0	0	0	1	1	1	1	2	1	3	4	0	0
CARDIO-VASCULAR	123	0	0	0	0	1	1	0	1	1	6	1	14	8	23	13	18	15	15	6
RESPIRATORY																					
ARI, pneumonia, influenza	46	34	3	1	0	0	0	0	0	1	1	0	0	0	1	1	1	3	0	0
COPD	95	0	0	0	0	1	0	1	2	0	1	3	7	8	10	16	11	21	10	4
GASTRO-INTESTINAL	45	3	0	1	0	0	0	0	2	0	4	4	2	2	4	10	4	4	3	2
MATERNAL DEATH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEONATAL																					
Tetanus (neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	86	86	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																					
Suicide	6	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Homicide	3	0	1	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0
Drowning	41	1	32	5	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	1
Other accidents, etc.	17	0	1	1	0	1	0	0	2	2	3	2	0	0	1	1	2	0	0	1
OTHER AND UNSPECIFIED																					
Senility	45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	7	10	14	13
Other causes n.e.c.*	149	7	4	3	3	2	3	1	4	1	7	3	7	7	20	19	20	19	12	7
Unknown	60	7	4	3	1	1	0	0	1	1	3	2	4	2	10	9	4	4	2	2
TOTAL	884	153	52	20	9	9	6	6	16	10	36	24	45	41	87	89	87	91	60	43

ARI=Acute respiratory infection

COPD=Chronic obstructive pulmonary disease

*n.e.c.=Not elsewhere classified

Appendix A.6. Female deaths by cause and age, 2002

Cause	All ages	Age at death (years)																		
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
DIARRHOEAL																				
Diarrhoea	45	13	2	0	1	0	1	0	0	0	0	1	0	2	3	2	6	4	7	3
Dysentery	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
INFECTIOUS																				
Tuberculosis	4	0	0	0	0	0	0	1	0	0	1	0	0	1	1	0	0	0	0	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	20	5	2	0	0	0	1	0	0	0	1	0	1	1	1	1	3	3	1	0
MALIGNANT NEOPLASM	21	0	0	0	1	0	1	2	0	1	0	3	2	2	2	3	0	4	0	0
NUTRITIONAL	19	6	1	1	0	0	1	0	0	1	1	0	0	1	2	0	3	1	1	0
CARDIO-VASCULAR	104	0	0	0	0	0	0	0	0	2	0	1	5	7	14	16	20	15	15	9
RESPIRATORY																				
ARI, pneumonia, influenza	48	40	3	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	2	0
COPD	53	0	0	1	0	1	1	0	3	2	1	2	2	6	8	3	9	6	7	1
GASTRO-INTESTINAL	25	2	0	0	0	0	0	0	3	1	0	0	1	3	3	5	2	2	3	0
MATERNAL DEATH	12	0	0	0	0	0	5	1	5	0	1	0	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus (neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	64	64	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	7	0	0	0	0	2	3	2	0	0	0	0	0	0	0	0	0	0	0	0
Homicide	3	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	27	2	23	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Other accidents, etc.	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	2	2	0
OTHER AND UNSPECIFIED																				
Senility	65	0	0	0	0	0	0	0	0	0	0	0	0	0	1	5	8	21	16	14
Other causes n.e.c.*	140	4	5	3	2	3	0	1	1	1	8	5	5	5	18	17	16	22	15	9
Unknown	29	1	3	1	2	1	1	1	0	0	0	0	0	5	2	5	4	2	1	0
TOTAL	696	138	41	7	6	8	15	9	12	9	13	12	16	33	55	58	75	82	70	37

ARI=Acute respiratory infection
COPD=Chronic obstructive pulmonary disease
*n.e.c.=Not elsewhere classified

Appendix A.7. Male deaths by cause, age, and area, 2002

	All ages		<1		1-4		5-14		15-44		45-64		65-84		85+	
Cause	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.
DIARRHOEAL																
Diarrhoea	11	25	2	3	1	2	1	1	0	1	2	5	4	9	1	4
Dysentery	3	3	0	0	0	0	1	0	0	0	2	1	0	2	0	0
INFECTIOUS																
Tuberculosis	14	18	0	0	0	0	0	0	2	4	8	7	2	7	2	0
Tetanus (non-neonatal)	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Other infectious	3	5	1	1	0	0	0	0	1	0	0	2	1	2	0	0
MALIGNANT NEOPLASM	31	29	0	0	2	0	1	4	3	7	11	9	14	9	0	0
NUTRITIONAL	14	11	6	2	1	1	1	0	0	1	3	2	3	5	0	0
CARDIO-VASCULAR	71	52	0	0	0	0	0	0	4	6	27	19	36	25	4	2
RESPIRATORY																
ARI, pneumonia, influenza	19	27	12	22	1	2	0	1	2	0	1	0	3	2	0	0
COPD	43	52	0	0	0	0	0	0	1	4	15	13	25	33	2	2
GASTRO-INTESTINAL	20	25	2	1	0	0	1	0	3	3	4	8	8	13	2	0
MATERNAL DEATH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
NEONATAL																
Tetanus (neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	48	38	48	38	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	3	3	0	0	0	0	0	1	3	2	0	0	0	0	0	0
Homicide	3	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0
Drowning	19	22	1	0	12	20	4	1	1	1	0	0	0	0	1	0
Other accidents, etc.	7	10	0	0	1	0	0	1	3	5	1	2	1	2	1	0
OTHER & UNSPECIFIED																
Senility	17	28	0	0	0	0	0	0	0	0	0	0	12	20	5	8
Other causes n.e.c.	83	66	2	5	3	1	3	3	8	10	23	14	41	29	3	4
Unknown	25	35	1	6	3	1	1	3	2	4	7	11	11	8	0	2
TOTAL	434	450	75	78	25	27	13	16	35	48	104	93	161	166	21	22

ARI=Acute respiratory infection
COPD=Chronic obstructive pulmonary disease
n.e.c.=Not elsewhere classified

Appendix A.8. Female deaths by cause, age, and area, 2002

	All ages		<1		1-4		5-14		15-44		45-64		65-84		85+	
Cause	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.	ICDDR,B	Govt.
DIARRHOEAL																
Diarrhoea	24	21	8	5	1	1	0	1	0	1	4	2	9	10	2	1
Dysentery	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	1
INFECTIOUS																
Tuberculosis	1	3	0	0	0	0	0	0	0	2	1	1	0	0	0	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	8	12	3	2	0	2	0	0	1	1	2	1	2	6	0	0
MALIGNANT NEOPLASM	11	10	0	0	0	0	1	0	0	4	6	3	4	3	0	0
NUTRITIONAL	8	11	3	3	0	1	1	0	3	0	1	2	0	5	0	0
CARDIO-VASCULAR	54	50	0	0	0	0	0	0	2	0	14	13	35	31	3	6
RESPIRATORY																
ARI, pneumonia, influenza	13	35	9	31	1	2	0	0	0	1	0	0	3	1	0	0
COPD	30	23	0	0	0	0	0	1	4	4	9	9	17	8	0	1
GASTRO-INTESTINAL	11	14	0	2	0	0	0	0	3	1	3	4	5	7	0	0
MATERNAL DEATH	3	9	0	0	0	0	0	0	3	9	0	0	0	0	0	0
NEONATAL																
Tetanus (neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	31	33	31	33	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	6	1	0	0	0	0	0	0	6	1	0	0	0	0	0	0
Homicide	0	3	0	0	0	1	0	0	0	2	0	0	0	0	0	0
Drowning	10	17	2	0	7	16	1	0	0	1	0	0	0	0	0	0
Other accidents, etc.	4	4	1	0	0	0	0	0	0	0	0	0	3	4	0	0
OTHER & UNSPECIFIED																
Senility	35	30	0	0	0	0	0	0	0	0	0	1	23	27	12	2
Other causes n.e.c.*	61	79	2	2	2	3	3	2	7	7	12	21	30	40	5	4
Unknown	11	18	1	0	0	3	1	2	1	2	1	6	7	5	0	0
TOTAL	321	375	60	78	11	30	7	6	30	36	53	63	138	147	22	15

ARI=Acute respiratory infection

COPD=Chronic obstructive pulmonary disease

*n.e.c.=Not elsewhere classified

Appendix A.9. Age-specific fertility rates and indices for ICDDR,B area by block, 2002

Age (years)	Block A		Block B		Block C		Block D	
	Births	Rate	Births	Rate	Births	Rate	Births	Rate
All ages	852	93.2	794	98.2	626	96.3	548	93.1
15-19*	129	70.3	115	70.0	83	64.4	59	51.3
20-24	246	163.1	242	173.4	189	168.9	130	140.8
25-29	236	166.0	198	165.0	182	190.0	173	190.3
30-34	161	124.8	136	121.5	113	118.6	121	146.0
35-39	65	48.5	88	74.1	56	64.0	53	62.2
40-44	15	14.8	15	16.6	3	3.9	12	16.2
45-49**	0	0.0	0	0.0	0	0.0	0	0.0
Total fertility rate		2937		3103		3049		3034
General fertility rate		93		98		96		93
Gross reproduction rate		1555		1618		1437		1489

*Births to mothers under aged less than 15 were included in this group
**Births to mothers aged 50 and above were included in this group

Appendix A.10. Births by mothers' age, live birth order, and area, 2002

Age (years)	Total women	Total births	Live birth order									
			1	2	3	4	5	6	7	8	9	10+
Both areas												
<15	13577	3	3	0	0	0	0	0	0	0	0	0
15-19	12023	731	629	87	14	1	0	0	0	0	0	0
20-24	9875	1726	784	683	201	47	7	3	1	0	0	0
25-29	8527	1552	184	445	526	288	79	20	7	2	0	1
30-34	8203	1078	28	107	265	285	209	110	45	21	7	1
35-39	8274	497	6	13	52	101	100	103	69	29	11	13
40-44	6787	90	0	4	6	15	10	12	11	10	11	11
45-49	4815	4	0	0	0	1	0	0	2	0	0	1
Total		5681	1634	1339	1064	738	405	248	135	62	29	27
ICDDR,B area												
<15	6148	0	0	0	0	0	0	0	0	0	0	0
15-19	5916	386	344	34	8	0	0	0	0	0	0	0
20-24	4946	807	377	334	81	11	2	1	1	0	0	0
25-29	4489	789	101	257	267	123	33	4	2	1	0	1
30-34	4191	531	18	56	168	137	91	43	11	4	3	0
35-39	4255	262	3	8	32	63	60	55	24	11	3	3
40-44	3424	45	0	0	4	8	7	7	6	5	4	4
45-49	2393	0	0	0	0	0	0	0	0	0	0	0
Total		2820	843	689	560	342	193	110	44	21	10	8
Government area												
<15	7429	3	3	0	0	0	0	0	0	0	0	0
15-19	6107	345	285	53	6	1	0	0	0	0	0	0
20-24	4929	919	407	349	120	36	5	2	0	0	0	0
25-29	4038	763	83	188	259	165	46	16	5	1	0	0
30-34	4012	547	10	51	97	148	118	67	34	17	4	1
35-39	4019	235	3	5	20	38	40	48	45	18	8	10
40-44	3363	45	0	4	2	7	3	5	5	5	7	7
45-49	2422	4	0	0	0	1	0	0	2	0	0	1
Total		2861	791	650	504	396	212	138	91	41	19	19

Appendix A.11. Age-order-specific fertility rates by area, 2002

Age (years)	Total	Live-birth order									
		1	2	3	4	5	6	7	8	9	10+
Both areas											
<15	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0608	0.0523	0.0072	0.0012	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1748	0.0794	0.0692	0.0204	0.0048	0.0007	0.0003	0.0001	0.0000	0.0000	0.0000
25-29	0.1820	0.0216	0.0522	0.0617	0.0338	0.0093	0.0023	0.0008	0.0002	0.0000	0.0001
30-34	0.1314	0.0034	0.0130	0.0323	0.0347	0.0255	0.0134	0.0055	0.0026	0.0009	0.0001
35-39	0.0601	0.0007	0.0016	0.0063	0.0122	0.0121	0.0124	0.0083	0.0035	0.0013	0.0016
40-44	0.0133	0.0000	0.0006	0.0009	0.0022	0.0015	0.0018	0.0016	0.0015	0.0016	0.0016
45-49	0.0008	0.0000	0.0000	0.0000	0.0002	0.0000	0.0000	0.0004	0.0000	0.0000	0.0002
Total	3.1170	0.7882	0.7190	0.6134	0.4399	0.2451	0.1514	0.0839	0.0389	0.0190	0.0182
ICDDR,B area											
<15	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0652	0.0581	0.0057	0.0014	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1632	0.0762	0.0675	0.0164	0.0022	0.0004	0.0002	0.0004	0.0000	0.0000	0.0000
25-29	0.1758	0.0225	0.0573	0.0595	0.0274	0.0074	0.0009	0.0025	0.0002	0.0000	0.0002
30-34	0.1267	0.0043	0.0134	0.0401	0.0327	0.0217	0.0103	0.0026	0.0010	0.0007	0.0000
35-39	0.0616	0.0007	0.0019	0.0075	0.0148	0.0141	0.0129	0.0056	0.0026	0.0007	0.0007
40-44	0.0131	0.0000	0.0000	0.0012	0.0023	0.0020	0.0020	0.0018	0.0015	0.0012	0.0012
45-49	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	3.0279	0.8094	0.7288	0.6299	0.3973	0.2281	0.1316	0.0644	0.0261	0.0129	0.0105
Government area											
<15	0.0004	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0565	0.0467	0.0087	0.0010	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1864	0.0826	0.0708	0.0243	0.0073	0.0010	0.0004	0.0000	0.0000	0.0000	0.0000
25-29	0.1890	0.0206	0.0466	0.0641	0.0409	0.0114	0.0040	0.0012	0.0002	0.0000	0.0000
30-34	0.1363	0.0025	0.0127	0.0242	0.0369	0.0294	0.0167	0.0085	0.0042	0.0010	0.0002
35-39	0.0585	0.0007	0.0012	0.0050	0.0095	0.0100	0.0119	0.0112	0.0045	0.0020	0.0025
40-44	0.0134	0.0000	0.0012	0.0006	0.0021	0.0009	0.0015	0.0015	0.0015	0.0021	0.0021
45-49	0.0017	0.0000	0.0000	0.0000	0.0004	0.0000	0.0000	0.0008	0.0000	0.0000	0.0004
Total	3.2107	0.7672	0.7059	0.5961	0.4858	0.2633	0.1725	0.1161	0.0523	0.0253	0.0262

Appendix A.12. Marriages and divorces by month, 2002

	Marriage		Divorce	
Month	No.	Percentage	No.	Percentage
January	264	7.9	32	9.8
February	277	8.3	18	5.5
March	387	11.6	35	10.7
April	246	7.4	26	7.9
May	284	8.5	32	9.8
June	249	7.4	25	7.6
July	252	7.5	28	8.5
August	348	10.4	26	7.9
September	248	7.4	26	7.9
October	315	9.4	36	11.0
November	170	5.1	19	5.8
December	303	9.1	25	7.6
Total	3343	100.0	328	100.0

Appendix A.13. In- and out-migrations by age and sex, 2002

Age (years)	In-migration			Out-migration		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	10161	5043	5118	11640	6158	5482
<5	1407	683	724	1293	637	656
5 - 9	890	449	441	760	414	346
10-14	731	325	406	1017	531	486
15-19	1408	334	1074	2512	1163	1349
20-24	1615	541	1074	2379	1201	1178
25-29	1246	690	556	1346	751	595
30-34	988	705	283	823	515	308
35-39	685	497	188	468	342	126
40-44	465	357	108	365	261	104
45-49	240	174	66	189	126	63
50-54	167	125	42	123	73	50
55-59	100	64	36	110	52	58
60-64	75	38	37	88	31	57
65+	144	61	83	167	61	106

Appendix A.14. In-migration by age, sex, and area, 2002

Age (years)	ICDDR,B area			Government area		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	5313	2633	2680	4848	2410	2438
<5	702	344	358	705	339	366
5 - 9	470	238	232	420	211	209
10-14	402	170	232	329	155	174
15-19	784	177	607	624	157	467
20-24	770	255	515	845	286	559
25-29	663	352	311	583	338	245
30-34	531	387	144	457	318	139
35-39	359	262	97	326	235	91
40-44	246	192	54	219	165	54
45-49	119	87	32	121	87	34
50-54	100	77	23	67	48	19
55-59	59	36	23	41	28	13
60-64	36	21	15	39	17	22
65+	72	35	37	72	26	46

Appendix A.15. Out-migration by age, sex, and area, 2002

Age (years)	ICDDR,B area			Government area		
	Both sexes	Male	Female	Both sexes	Male	Female
All ages	5535	2893	2642	6105	3265	2840
<5	630	326	304	663	311	352
5 - 9	354	201	153	406	213	193
10-14	476	244	232	541	287	254
15-19	1162	517	645	1350	646	704
20-24	1096	521	575	1283	680	603
25-29	713	389	324	633	362	271
30-34	402	256	146	421	259	162
35-39	208	146	62	260	196	64
40-44	177	131	46	188	130	58
45-49	87	57	30	102	69	33
50-54	56	35	21	67	38	29
55-59	48	27	21	62	25	37
60-64	44	13	31	44	18	26
65+	82	30	52	85	31	54

Appendix A.16. Male out-migration by cause of movement and age, 2002

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	6158	637	414	531	1163	1201	751	515	342	261	126	73	52	31	61
Work/Economic/Educational															
-acquired/seeking job	3514	0	4	168	742	945	616	394	273	198	88	39	25	14	8
-job completion/retirement	21	0	0	0	3	3	4	2	3	3	1	0	0	2	0
-to acquire education	514	4	57	110	185	119	28	5	2	3	0	0	1	0	0
-educ. completed/interrupted	4	0	0	1	2	1	0	0	0	0	0	0	0	0	0
-student lodging	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	355	7	3	14	17	26	39	64	36	28	31	22	20	10	38
-river erosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marriage/Familial															
-marriage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-separation/divorce/widow	6	0	0	0	0	3	0	0	0	0	1	1	1	0	0
-move with or join spouse/ parents	1643	625	350	235	205	88	43	35	16	20	3	7	3	3	10
-adoption	3	1	0	0	0	0	1	0	1	0	0	0	0	0	0
-family friction/breakdown	44	0	0	0	5	9	9	9	5	4	0	2	0	1	0
-health or old age care	11	0	0	0	0	2	2	1	0	1	0	0	1	0	4
Legal Problems	21	0	0	0	1	4	6	2	4	4	0	0	0	0	0
Other and Not Stated															
-others n.e.c.*	19	0	0	2	3	0	2	3	2	0	2	2	1	1	1
-unknown or not stated	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0

*n.e.c.=Not elsewhere classified

Appendix A.17. Female out-migration by cause of movement and age, 2002

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	5482	656	346	486	1349	1178	595	308	126	104	63	50	58	57	106
Work/Economic/Educational															
-acquired/seeking job	589	0	4	87	278	111	52	25	12	11	5	1	2	1	0
-job completion/retirement	2	0	0	0	0	2	0	0	0	0	0	0	0	0	0
-to acquire education	184	2	33	59	55	27	6	1	0	1	0	0	0	0	0
-educ. Completed/ interrupted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	495	6	6	28	71	109	56	39	18	19	10	11	30	31	61
-river erosion	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Marriage/Familial															
-marriage	871	0	0	31	427	299	81	26	3	1	2	1	0	0	0
-separation/divorce/widow	70	0	0	1	24	24	13	5	2	1	0	0	0	0	0
-move with or join spouse/ parents	3146	638	303	276	461	575	373	204	89	69	43	33	23	23	36
-adoption	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	69	0	0	1	20	27	10	4	2	1	2	0	0	1	1
-health or old age care	18	0	0	2	1	1	1	2	0	0	0	1	2	1	7
Legal Problems	8	0	0	0	5	1	0	0	0	0	1	1	0	0	0
Other and Not Stated															
-others n.e.c.*	19	0	0	1	7	2	2	2	0	1	0	2	1	0	1
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*n.e.c.=Not elsewhere classified

Appendix A.18. Male in-migration by cause of movement and age, 2002

		Age (years)													
Cause of movement	Total	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	5043	683	449	325	334	541	690	705	497	357	174	125	64	38	61
Work/Economic/Educational															
-acquired/seeking job	672	0	0	24	64	131	139	125	83	44	22	20	10	4	6
-job completion/retirement	1110	0	0	2	21	83	228	252	198	153	83	48	21	13	8
-to acquire education	219	3	65	89	42	17	3	0	0	0	0	0	0	0	0
-educ. completed/ interrupted	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0
-student lodging	18	0	0	1	5	3	2	3	1	1	0	1	0	1	0
Housing/Environmental															
-acquired/seeking new land/house	515	0	0	11	26	80	90	86	69	58	29	22	15	6	23
-river erosion	8	0	0	0	0	0	3	1	1	3	0	0	0	0	0
Marriage/Familial															
-marriage	2	0	0	0	0	1	0	1	0	0	0	0	0	0	0
-separation/divorce/widow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-move with or join spouse/ parents	2344	670	383	194	164	202	199	209	136	86	30	29	15	11	16
-adoption	12	10	1	0	0	1	0	0	0	0	0	0	0	0	0
-family friction/breakdown	25	0	0	0	1	8	6	4	2	2	1	0	0	0	1
-health or old age care	58	0	0	2	1	5	6	13	5	4	7	4	2	3	6
Legal Problems	11	0	0	0	0	2	2	4	0	3	0	0	0	0	0
Other and Not Stated															
-others n.e.c.*	45	0	0	2	10	7	9	7	2	3	2	1	1	0	1
-unknown or not stated	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0

*n.e.c.=Not elsewhere classified

Appendix A.19. Female in-migration by cause of movement and age, 2002

		Age (years)													
Cause of movement	Total	<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	5118	724	441	406	1074	1074	556	283	188	108	66	42	36	37	83
Work/Economic/Educational															
-acquired/seeking job	128	0	0	39	16	17	25	11	9	3	2	3	2	0	1
-job completion/retirement	68	0	0	0	16	22	9	8	4	5	3	0	1	0	0
-to acquire education	207	3	70	86	36	9	3	0	0	0	0	0	0	0	0
-educ. completed/ interrupted	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	386	0	0	14	61	91	79	34	20	13	10	6	6	16	36
-river erosion	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0
Marriage/Familial															
-marriage	656	0	0	17	367	229	27	6	5	1	3	0	0	1	0
-separation/divorce/widow	93	0	0	2	19	22	17	11	6	5	6	1	2	0	2
-move with or join spouse/ parents	3458	701	371	241	539	666	385	201	142	78	37	30	22	19	26
-adoption	22	20	0	1	1	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	42	0	0	3	9	10	7	6	2	3	1	0	0	0	1
-health or old age care	34	0	0	0	4	6	3	1	0	0	2	0	2	1	15
Legal Problems	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other and Not Stated															
-others n.e.c.*	22	0	0	3	6	2	1	4	0	0	2	2	0	0	2
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*n.e.c.=Not elsewhere classified

Appendix A.20. Male migration by destination or origin, 2002

		Out-migration						In-migration					
		Age (years)						Age (years)					
Destination	Rural/urban	0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
Dhaka	Rural	204	280	124	52	47	707	247	133	143	91	60	674
	Urban	611	1165	459	198	113	2546	472	362	440	259	142	1675
Chittagong	Rural	534	263	167	97	103	1164	558	198	237	127	99	1219
	Urban	125	182	83	28	27	445	76	67	63	45	24	275
Sylhet	Rural	10	11	3	6	3	33	14	6	2	3	3	28
	Urban	37	69	24	15	4	149	38	22	23	13	15	111
Khulna	Rural	5	6	0	0	1	12	8	6	8	1	2	25
	Urban	8	17	9	0	8	42	9	4	4	5	7	29
Rajshahi	Rural	3	3	2	0	0	8	8	4	5	1	1	19
	Urban	15	10	7	4	2	38	5	1	6	4	3	19
Barisal	Rural	1	2	0	0	0	3	8	3	1	5	2	19
	Urban	7	4	4	0	0	15	1	4	5	1	2	13
India		17	16	10	12	11	66	4	10	3	2	3	22
Asia		0	31	43	16	2	92	1	27	284	174	42	528
Middle East		3	301	327	171	21	823	1	26	165	121	56	369
Others		1	0	0	2	0	3	0	0	1	0	0	1
Unknown		1	4	4	2	1	12	7	2	5	2	1	17
Total		1582	2364	1266	603	343	6158	1457	875	1395	854	462	5043

Appendix A.21. Female migration by destination or origin, 2002

		Out-migration						In-migration					
		Age (years)						Age (years)					
Destination	Rural/urban	0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
Dhaka	Rural	160	263	106	29	42	600	236	216	125	52	41	670
	Urban	489	757	299	93	135	1773	503	453	291	108	83	1438
Chittagong	Rural	591	1179	368	79	96	2313	620	1283	329	93	91	2416
	Urban	133	218	71	14	27	463	116	115	44	19	20	314
Sylhet	Rural	7	14	1	1	5	28	17	8	6	1	3	35
	Urban	22	28	8	3	6	67	28	25	14	4	8	79
Khulna	Rural	1	2	0	0	1	4	6	7	5	2	0	20
	Urban	13	12	6	1	3	35	18	4	3	5	3	33
Rajshahi	Rural	2	4	2	1	0	9	3	5	4	0	2	14
	Urban	21	12	10	2	2	47	7	1	5	1	0	14
Barisal	Rural	1	0	2	0	0	3	7	12	3	2	1	25
	Urban	5	6	4	0	1	16	1	2	0	0	1	4
India		31	14	15	5	14	79	3	4	2	0	7	16
Asia		1	0	1	0	0	2	3	3	2	2	2	12
Middle East		3	13	9	2	0	27	0	4	3	4	1	12
Other		0	1	0	0	1	2	0	0	0	0	1	1
Unknown		8	4	1	0	1	14	3	6	3	3	0	15
Total		1488	2527	903	230	334	5482	1571	2148	839	296	264	5118

Appendix B

Mid-year population, births, and deaths by village, 2002

Village code*	Population	Live births	Deaths	Birth rate	Death rate
ICDDR,B area					
D	2273	66	12	29.0	5.3
W	5475	116	33	21.2	6.0
V10	1838	35	13	19.0	7.1
V11	2441	46	18	18.8	7.4
V31	9020	261	69	28.9	7.6
V32	3096	87	25	28.1	8.1
V60	961	23	5	23.9	5.2
V61	665	15	3	22.6	4.5
V62	896	20	1	22.3	1.1
V72	6220	183	42	29.4	6.8
Block A	32885	852	221	25.9	6.7
H	1314	24	14	18.3	10.7
V12	617	17	6	27.6	9.7
V13	743	21	6	28.3	8.1
V19	2942	80	19	27.2	6.5
V20	1298	24	4	18.5	3.1
V21	530	15	3	28.3	5.7
V22	591	12	4	20.3	6.8
V23	560	10	6	17.9	10.7
V24	2947	86	21	29.2	7.1
V26	2904	69	14	23.8	4.8
V56	1541	33	7	21.4	4.5
V59	1465	32	12	21.8	8.2
V82	1618	40	17	24.7	10.5
V83	561	15	3	26.7	5.3
V85	464	12	3	25.9	6.5
V87	682	22	4	32.3	5.9
VBB	4483	133	25	29.7	5.6
VBC	4953	149	34	30.1	6.9
Block B	30213	794	202	26.3	6.7
K00	905	31	6	34.3	6.6
L00	552	18	3	32.6	5.4
M00	194	6	0	30.9	0.0
N00	2083	47	19	22.6	9.1
O00	1733	31	11	17.9	6.3
P00	2157	51	19	23.6	8.8

Village code*	Population	Live births	Deaths	Birth rate	Death rate
Q00	301	4	2	13.3	6.6
V27	942	23	4	24.4	4.2
V28	1521	48	15	31.6	9.9
V30	564	13	4	23.0	7.1
V39	351	9	2	25.6	5.7
V40	735	27	6	36.7	8.2
V41	1745	45	13	25.8	7.4
V42	752	15	5	19.9	6.6
V44	616	12	4	19.5	6.5
V86	871	20	5	23.0	5.7
V88	491	10	4	20.4	8.1
VBA	2446	61	21	24.9	8.6
DX0	3485	114	22	32.7	6.3
DX1	1377	41	8	29.8	5.8
Block C	23821	626	173	26.3	7.3
R00	1439	42	7	29.2	4.9
S00	950	21	9	22.1	9.5
T00	1613	45	15	27.9	9.3
V15	709	21	9	29.6	12.7
V16	837	30	2	35.8	2.4
V17	1128	27	6	23.9	5.3
V18	3983	102	23	25.6	5.8
V25	1266	27	9	21.3	7.1
V29	479	6	8	12.5	16.7
V33	456	12	5	26.3	11.0
V34	794	20	4	25.2	5.0
V52	232	7	4	30.2	17.2
V54	619	15	12	24.2	19.4
V55	517	21	7	40.6	13.5
V63	2116	35	17	16.5	8.0
V67	668	16	5	24.0	7.5
V81	704	19	8	27.0	11.4
V84	2347	47	14	20.0	6.0
V89	1472	35	7	23.8	4.8
Block D	22329	548	171	24.5	7.7
ICDDR,B area Total	**109248**	**2820**	**767**	**25.8**	**7.0**

Village code*	Population	Live births	Deaths	Birth rate	Death rate
Government area					
A	3274	93	24	28.4	7.3
B	2096	57	18	27.2	8.6
C	3911	112	36	28.6	9.2
F	1479	45	5	30.4	3.4
G	2902	75	14	25.8	4.8
J	727	14	2	19.3	2.8
U	8803	222	54	25.2	6.1
V01	437	12	2	27.5	4.6
V02	512	12	1	23.4	2.0
V03	639	18	5	28.2	7.8
V04	330	5	3	15.2	9.1
V05	3311	88	34	26.6	10.3
V06	2444	67	18	27.4	7.4
V07	320	11	2	34.4	6.3
V08	1192	31	5	26.0	4.2
V09	1181	23	9	19.5	7.6
V14	830	23	8	27.7	9.6
V35	3985	95	24	23.8	6.0
V36	5562	125	29	22.5	5.2
V38	1656	47	12	28.4	7.2
V43	966	31	4	32.1	4.1
V45	1093	20	4	18.3	3.7
V46	387	14	5	36.2	12.9
V47	1909	55	15	28.8	7.9
V48	623	11	3	17.7	4.8
V49	1311	41	10	31.3	7.6
V50	67	0	0	0.0	0.0
V51	540	15	1	27.8	1.9
V53	3070	70	4	22.8	1.3
V57	1048	23	23	21.9	21.9
V64	4450	117	8	26.3	1.8
V65	823	18	33	21.9	40.1
V66	888	19	5	21.4	5.6
V68	1037	30	4	28.9	3.9
V71	510	13	3	25.5	5.9
V73	857	16	3	18.7	3.5
V74	1434	39	10	27.2	7.0
V75	370	3	20	8.1	54.1
V76	1811	43	1	23.7	0.6
V78	266	4	19	15.0	71.4

Village code*	Population	Live births	Deaths	Birth rate	Death rate
V79	346	15	2	43.4	5.8
V80	1236	41	2	33.2	1.6
V90	1201	15	5	12.5	4.2
V95	2103	50	13	23.8	6.2
V96	712	15	16	21.1	22.5
V97	409	11	4	26.9	9.8
V98	134	2	4	14.9	29.9
V99	587	10	1	17.0	1.7
VB1	1099	26	5	23.7	4.5
VB2	1051	29	6	27.6	5.7
VB3	3061	76	17	24.8	5.6
VB4	3764	89	30	23.6	8.0
VB5	910	21	8	23.1	8.8
VB6	536	11	4	20.5	7.5
VB7	333	9	2	27.0	6.0
VB8	1400	36	9	25.7	6.4
VB0	3004	101	26	33.6	8.7
D28	1130	29	8	25.7	7.1
D29	219	0	0	0.0	0.0
D30	785	24	1	30.6	1.3
D31	1110	22	4	19.8	3.6
D32	775	31	9	40.0	11.6
D33	1159	29	6	25.0	5.2
D34	1416	31	14	21.9	9.9
D35	624	19	8	30.4	12.8
D88	1546	39	5	25.2	3.2
D89	1278	39	9	30.5	7.0
D90	955	24	9	25.1	9.4
D93	1338	37	8	27.7	6.0
D94	1524	34	16	22.3	10.5
D95	622	20	22	32.2	35.4
D96	1048	21	4	20.0	3.8
D97	788	13	2	16.5	2.5
D98	3556	78	6	21.9	1.7
D99	2143	57	18	26.6	8.4
Government area Total	**112953**	**2861**	**783**	**25.3**	**6.9**

*See village name in Appendix E

Appendix C
Life table equations

1. $$ {}_nq_x = \frac{{}_nm_x}{{}^1/_n + {}_nm_x\,[\,{}^1/_2 + {}^n/_{12}\,({}_nm_x - \ln C)\,]} $$

2. $l_0 = 100{,}000$

   $l_x = (1 - {}_nq_{x-n})\, l_{x-n}$

3. $L_0 = 0.276\, l_0 + 0.724\, l_1$

   $L_1 = 0.410\, l_1 + 0.590\, l_2$

   $L_i = {}^1/_2\,(l_i + l_{i+1}),\ i = 2, 3, 4$

   $$ {}_nL_x = \frac{{}_nd_x}{{}_nm_x} \quad \text{for } 5 \le x \le 80 $$

   $$ {}_\infty L_{85} = \frac{l_{85}}{{}_\infty m_{85}} \quad \text{for the last age group 85+} $$

4. $$ e_x = \frac{T_x}{l_x} \quad \text{where } T_x = \sum_{y=x}^{\infty} L_y $$

Note: Greville's method, as suggested in: Shryock HS, Seigel JS, et al. The methods and materials of demography (revised), v. II. Washington DC: Bureau of the Census, 1975: 414, 444-5.
(ln C assumed to be 0.095; separation factors in Equation 3 correspond to an infant mortality rate of 100.)

Appendix D

WHO standard world population age structure

Age group (years)	World population	Percentage
0	1800	1.8
1-4	7000	7.0
5-9	8700	8.7
10-14	8600	8.6
15-19	8500	8.5
20-24	8200	8.2
25-29	7900	7.9
30-34	7600	7.6
35-39	7200	7.2
40-44	6600	6.6
45-49	6000	6.0
50-54	5400	5.4
55-59	4600	4.6
60-64	3700	3.7
65-69	3000	3.0
70-74	2200	2.2
75-79	1500	1.5
80-84	900	0.9
85+	600	0.6
Total	100000	100.0

Source: Age standardization of rates: a new WHO standard (www.who.int/whosis/statistics/discussion_papers/pdf/paper31.pdf)

Appendix E

Names and codes of villages in the HDSS area, 2002

Village code	Village Name	Village code	Village name
ICDDR,B area			
	Block A		
D	Charmukundi	V32	Mobarakdi
W	Kaladi	V60	Suvankardi
V10	Dhakirgaon	V61	Munsabdi
V11	Nabakalash	V62	Shilmondi
V31	Dighaldi	V72	Upadi
	Block B		
H	Lamchari	V26	Narayanpur
V12	Bhangerpar	V56	Palipara
V13	Baburpara	V59	Doshpara
V19	Lakshmipur	V82	Dhanarpar
V20	Dagorpur	V83	Padmapal
V21	Khadergaon	V85	Bhanurpara
V22	Beloti	V87	Hurmaisha
V23	Baluchar	VB12	Nagda
V24	Machuakhal	VB13	Naogaon
	Block C		
K	Shahpur	V39	Gobindapur
L	Tatkhana	V40	Masunda
M	Char Nayergaon	V41	Paton
N	Aswinpur	V42	Adhara (South)
O	Nayergaon	V44	Panchdona
P	Titerkandi	V86	Adhara
Q	Char Shibpur	V88	Datikara
V27	Panchghoria	VB11	Mehron
V28	Khidirpur	D100	Barogaon
V30	Harion	D101	Naojan
	Block D		
R	Nandalalpur	V34	Satparia
S	Tatua	V52	Nayakandi
T	Amuakanda	V54	Balakandi
V15	Bhati Rasulpur	V55	Induria
V16	Binandapur	V63	Islamabad (East)
V17	Hatighata	V67	Majlishpur
V18	Torkey	V81	Sonaterkandi
V25	Char Pathalia	V84	Shanbajkandi
V29	Shibpur (South)	V89	Islamabad (Middle)
V33	Shibpur (North)		

Village code	Village name	Village code	Village name
Government area			
A	Uddamdi	V75	Mukundia
B	Charmasua	V76	Chosoi
C	Sarderkandi	V78	Soladana
F	Sepoykandi	V79	Pitambordi
G	Thatalia	V80	Daribond
J	Char Harigope	V90	Narinda
U	Baispur	V95	Baluchar
V01	Kadamtali	V96	Rampur
V02	Nilokhi	V97	Dhanagoda
V03	Char Nilokhi	V98	Santoshpur
V04	Char Pathalia	V99	Baluakandi
V05	Gazipur	VB1	Taltoli
V06	Fatepur	VB2	Sree Rayerchar
V07	Nayakandi	VB3	Rayerkandi
V08	Goalbhar	VB4	Ramdaspur
V09	Naburkandi	VB5	Thakurpara
V14	Enayetnagar	VB6	Sarkerpara
V35	Durgapur	VB7	Mirpur
V36	Ludhua	VB8	Farazikandi
V37**	Charputia	VB9**	Ramanathgonj
V38	Galimkha	VB10	South Rampur
V43	Kanachak	D28	Bazarkhola
V45	Bakchar	D29	Kirtonkhola
V46	Silinda	D30	Banuakandi
V47	Tulatali	D31	Harina Bazarkhola
V48	Gangkandi	D32	Khalisha
V49	Harina Bhabanipara	D33	Nayanagar
V50	Bakharpur	D34	Saidkharkandi
V51	Induriakandi	D35	Mollah Kandi
V53	Chhoto Haldia	D88	Sankibhanga
V57	Baluchar	D89	Sankibhanga Namapara
V58**	Mohishmari	D90	Zahirabaj
V64	Kawadi	D91**	North Joypur
V65	Nayachar	D92**	West Joypur
V66	Thatalia	D93	Maizkandi
V68	Sobahan	D94	Hazipur
V69**	Naobangha	D95	Tapaderpara
V70**	South Joypur	D96	Sakharipara
V71	Khamarpara	D97	Nayakandi
V73	Sadardia	D98	Bara Haldia
V74	Ketundia	D99	Mandertoli

*Division by block applies only to the ICDDR,B area
**Lost due to river erosion in 1987

Appendix F

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Note: Besides these, 91 Community Health Research Workers (CHRWs) contributed to the HDSS data collection.

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