HEALTH AND DEMOGRAPHIC SURVEILLANCE SYSTEM–MATLAB

VOLUME THIRTY ONE

Registration of Demographic Events and Contraceptive Use 1998

Scientific Report No. 87
August 2000

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

ICDDR,B: Centre for Health and Population Research (the Centre) is a large, non-profit International health research organization with headquarters in Dhaka, Bangladesh. It conducts research and provides service and training in a variety of the most important health problems, which the developing countries face. Initially focused on cholera and diarrhoeal diseases, the mandate of the Centre has broadened considerably, and the Centre is a world leader in studies of and solutions for common conditions prevalent in the developing nations and associated with poverty, including infectious diseases, malnutrition, high fertility, microbial and chemical contamination of the environment and need for better health services.

The Centre's activities are supported by donors, including governments, UN specialized agencies, non-government organizations, foundations, research institutes, and private sector organizations and companies, and governed by an international Board of Trustees.

The Centre is expanding its mandate to address some of the most critical global health needs facing humanity as we enter into the 21st century, and is composed of four scientific divisions, training, and administrative offices.

The **Clinical Sciences Division (CSD)** provides clinical services and undertake clinical and community research in diarrhoeal diseases, respiratory tract infections, and nutrition. The CSD also provides preventive strategies, such as immunizations for mothers and children, education for mothers on the management of diarrhoeal diseases, nutrition, and other childhood illnesses, with special emphasis on children aged less than five years. The Clinical Research and Service Centre of the Dhaka hospital provides treatment to 120,000-140,000 patients annually, of whom 80% are children, aged less than five years, suffering from diarrhoea, malnutrition, and pneumonia.

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(see inside of the back cover)

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ICDDR,B. Health and Demographic Surveillance System – Matlab: Registration of Demographic Events and Contraceptive Use 1998. Dhaka, Bangladesh, 2000.

This report was prepared by the staff of the Health and Demographic Surveillance System, Dhaka and Matlab.

Printing and publication:
Sentu B. Gomes
Health & Demographic Surveillance Programme
Public Health Sciences Division

ISBN 984-551-219-4

Scientific Report No. 87

August 2000

Published by:
ICDDR,B: Centre for Health and Population Research
GPO Box 128, Dhaka 1000, Bangladesh
Telephone: 8811751-60 (10 lines); Fax: (880-2)8826050
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Printed by: Impression Printing House, Dhaka

ACKNOWLEDGEMENTS

This research was supported by Department for International Development and the ICDDR,B: Centre for Health and Population Research. The Centre is supported by the following countries, donor agencies and others which share its concern for the health and population problems of developing countries:

The aid agencies of the Governments of Australia, Bangladesh, Belgium, Canada, European Union, Japan, the Netherlands, Norway, Saudi Arabia, Sweden, Switzerland, the United Kingdom, and the United States of America;

UN Agencies: United Nations Development Programme (UNDP), UNICEF, and World Health Organization (WHO);

International Organizations: International Atomic Energy Agency (IAEA), International Centre for Research on Women (ICRW), International Development Research Centre (IDRC), Population Council, Swiss Red Cross, and the World Bank;

Foundations: Aga Khan Foundation, Child Health Foundation, Ford Foundation, George Mason Foundation, and Rockefeller Foundation;

Medical Research Organizations: International Life Sciences Institute (ILSI), National Institutes of Health (NIH), New England Medical Centre, Northfield Laboratories, Procter and Gamble, Rhône Poulenc Rorer, and Thrasher Research Fund;

Universities: Johns Hopkins University, Karolinska Institute, Loughborough University, London School of Hygiene & Tropical Medicine; University of Alabama at Birmingham, University of Goteborg, University of Pennsylvania, and University of Virginia;

Others: American Express Bank, Helen Keller International, Lederle Praxis, NRECA International Ltd., The Rand Corporation, Save the Children Fund-USA, Social Development Center of the Philippines, UCB Osmotics Ltd., and Wander A.G.

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SUMMARY

This report presents the vital registration data and Contraceptive Prevalence Rates of 1998 in Matlab, Bangladesh. These data were collected by the Health and Demographic Surveillance System of the International Center for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). The surveillance area is divided into a Maternal and Child Health and Family Planning (MCH-FP) intervention area and a Comparison area, which receives government services.

In 1998, fertility increased in both areas as compared to 1997. The crude birth rate was 25.8 per 1,000 and the total fertility rate was 3.0 births per woman in the MCH-FP area and 28.3 and 3.6 respectively in the Comparison area.

In the MCH-FP area, the crude death rate was 7.0 per 1,000 and in the Comparison area it was 8.1. In the MCH-FP area, infant mortality was 50.6 per 1,000 live births and in the Comparison area it was 70.0.

Child mortality between 1 to 4 years of age showed a slight increase in the MCH-FP area, from 4.5 in 1997 to 4.7 in 1998, and in the comparison area it dropped to 5.8. Under-5 mortality in the MCH-FP area was 68.3 and in the Comparison area it was 91.3. The trends in under-5 mortality are illustrated in Figure 2.1(b).

The rate of in-migration for the surveillance area decreased to a level of 30.2 per 1,000 in 1998, and out-migration decreased to 36.9 per 1,000. The net out-migration was 6.6 per 1,000, thus offsetting the rate of natural increase, which amounted to 19.5 per 1,000 in 1998. The overall rate of population growth was 1.3 percent per annum. The marriage rate was 11.8 per 1,000 population and the divorce rate was 108.7 per 1,000 marriages.

CHAPTER 1

INTRODUCTION

Since 1963, the International Center for Diarrhoeal Disease Research, Bangladesh (ICDDR,B), formerly the Cholera Research Laboratory, has been conducting a health- related research program near the town of Matlab, in rural Bangladesh. Matlab is located about 55 kilometers southeast of the country's capital, Dhaka (Figure 1.1). The Health and Demographic Surveillance System (HDSS), formerly Demographic Surveillance System (DSS), is one of the major components of this field program. Since 1966, the HDSS has maintained the registration of births, deaths, and migrations, in addition to carrying out periodical censuses. In 1975 the system was augmented to include marriages and divorces. The recording of changes in household headship and household splits started in 1993. This information is gathered by Community Health Workers and Health Assistants, who visit each household in their assigned areas regularly and fill out the event registration forms. A detailed description of the DSS and its operation appears in CRL Scientific Report No. 9 (March 1978).

In October 1977, the surveillance area was reduced from 233 to 149 villages and a Maternal Child Health and Family Planning (MCH-FP) Program was initiated in 70 villages. The remaining 79 villages were treated as a Comparison area (Figure 1.2). Since the introduction of MCH-FP programme, CHWs have been collecting data on child and reproductive health. This system is known as the Record Keeping System (RKS). These changes are described in detail in the ICDDR,B Scientific Report No. 47 (May 1981). Due to river erosion 7 villages disappeared from the Comparison area in 1987, leaving 142 villages in the HDSS, Matlab.

This is the thirty first volume of a series of scientific reports of the Health and Demographic Surveillance System (Demographic Surveillance System) produced by ICDDR,B. Presented here are results obtained from the Matlab HDSS in 1998, along with brief notes and explanations of the tables.

Figure 1.1: Map of Bangladesh Showing the Study Area

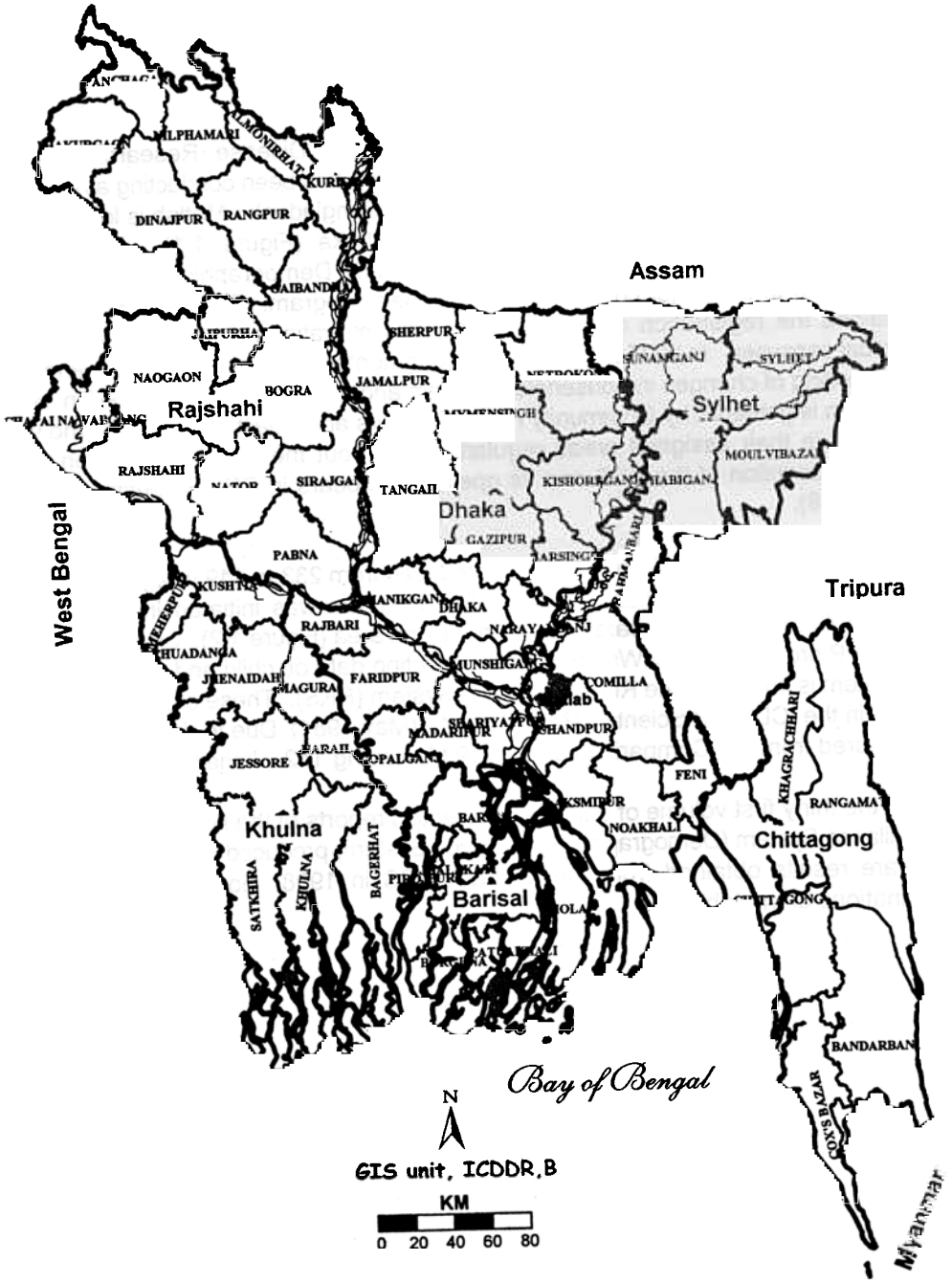
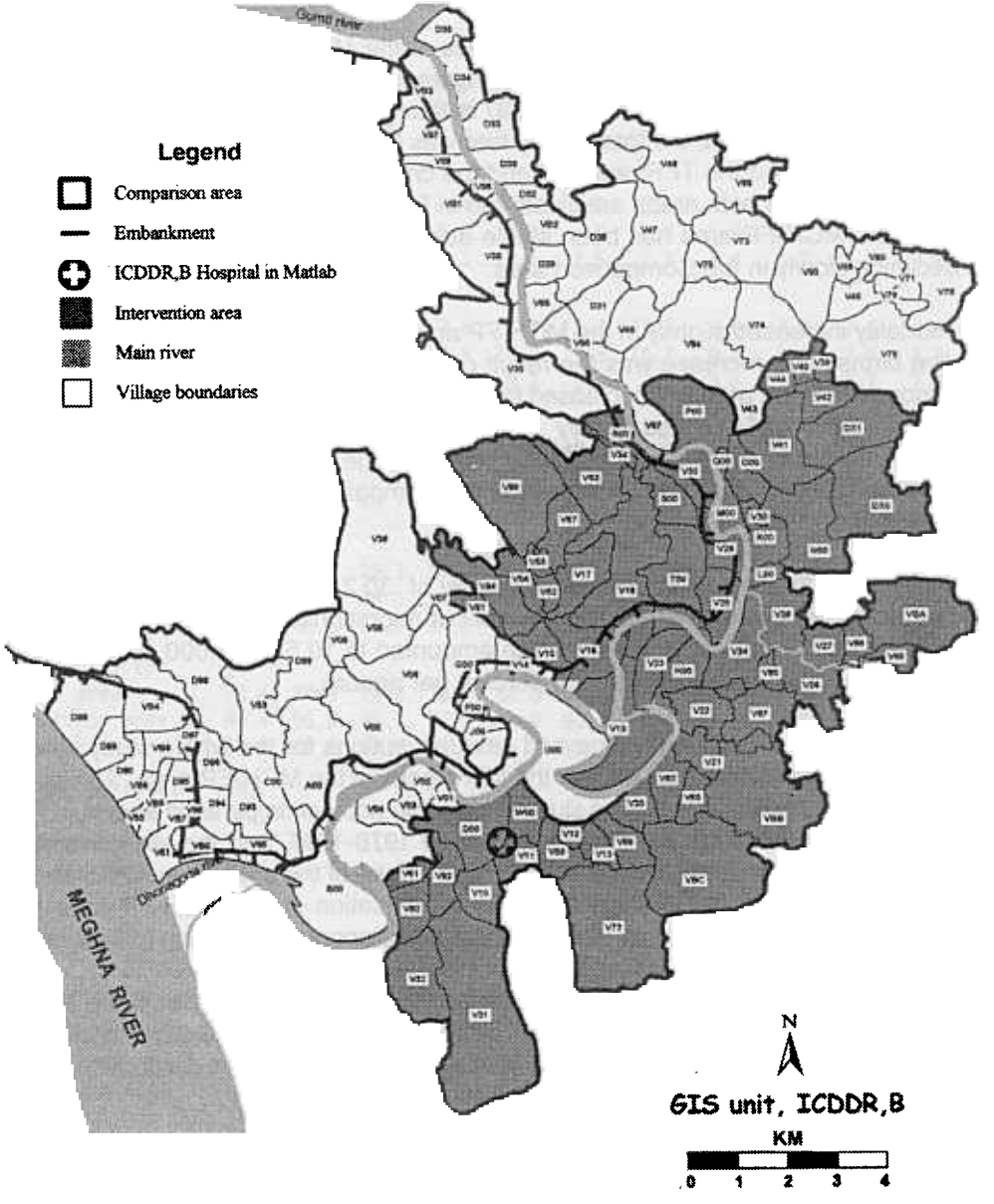


Figure 1.2: Matlab Study Area Showing Villages of Demographic Surveillance System



CHAPTER 2

POPULATION CHANGES

Table 2.1 summarizes the principal vital statistics of the MCH-FP and Comparison areas separately from 1987 through 1998. Other key figures for 1998, including by sex are shown in Table 2.2. A substantial difference with 1997 is the rise in the number of births (5,825 vs. 5,365). In the MCH-FP area, the total fertility rate was 3.0 and the crude birth rate was 25.8. In the Comparison area the TFR was 3.6 and the crude birth rate was 28.3. The trends in the total fertility rate in both areas are illustrated in Figure 2.1(a). The figure indicates that the TFR in the MCH-FP area has been stable during the last eight years, although it has been declining slowly in the Comparison area.

Infant mortality increased slightly in the MCH-FP area from 49.5 in 1997 to 50.6 in 1998 per 1,000 live births. This increase was the result of an increase in neonatal mortality. In the Comparison area infant mortality decreased from 78.6 in 1997 to 70.0 in 1998. Child mortality between 1 to 4 years of age also slightly increased in the MCH-FP area and decreased in the comparison area. As a result of these changes, the under five mortality increased slightly in the MCH-FP area and decreased in the Comparison area. The trends in under-5 mortality are illustrated in Figure 2.1(b).

In 1998, the in-migration rate decreased to a level of 30.2 and the out-migration rate also decreased to a level of 36.9 per 1,000. The net out-migration rate was 6.6 per 1,000, thus offsetting the rate of natural increase, which amounted to 19.5 per 1,000 population. The overall rate of population growth was 1.3 percent per annum.

Tables 2.3, 2.4, and 2.5 show the age and sex distributions for the whole study area, the MCH-FP and Comparison areas, and for the four blocks of the MCH-FP area. The age-sex distribution for the whole study area is illustrated by the population pyramid shown in Figure 2.2. The decline in fertility in the area in the period 1978-1997, and the slight increase in 1998, has caused a significant change in the age structure of the population. Children under 15 years of age constituted 43.4 percent of the population in the MCH-FP area at the beginning of the MCH-FP project in 1978; by 1998 this proportion had fallen to 35.3 percent.

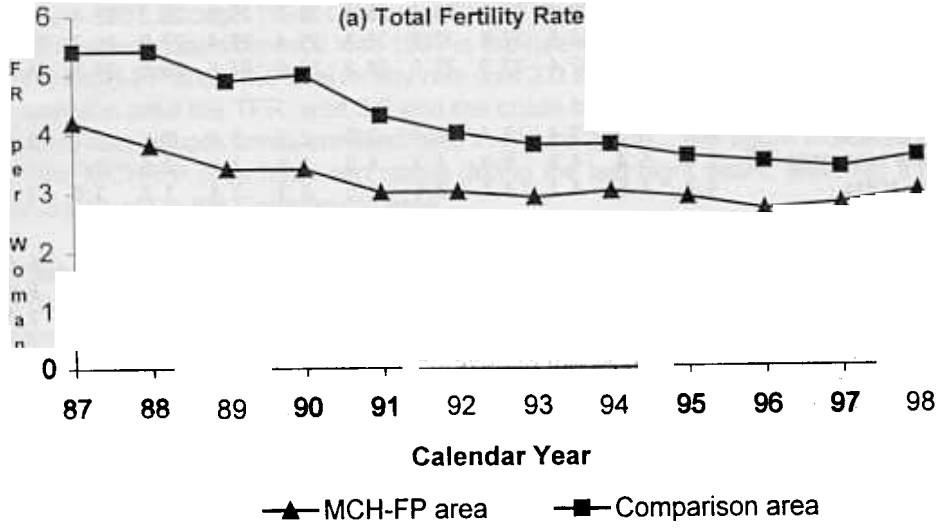
In the Comparison area, the change in age distribution was less than that in the MCH-FP area. Children under 15 years of age in the Comparison area were 43.3 percent of the total population in 1978, falling to 39.4 percent in 1998. This difference in age distribution was due to a difference in fertility decline in the two areas.

Table 2.1 Vital Statistics of the Matlab MCH-FP and Comparison Areas, 1987-1998

Vital rates (per 1000)	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Crude birth rate												
MCH-FP area	33.6	30.9	28.4	28.3	25.4	25.4	24.7	25.9	25.2	22.4	23.7	25.8
Comparison area	39.2	40.4	36.6	37.8	32.7	31.1	29.4	29.4	27.8	26.7	26.8	28.3
Both areas	36.4	35.5	32.4	32.9	29.0	28.2	27.0	27.6	26.5	24.5	25.2	27.0
Total fertility rate**												
MCH-FP area	4.2	3.8	3.4	3.4	3.0	3.0	2.9	3.0	2.9	2.7	2.8	3.0
Comparison area	5.4	5.4	4.9	5.0	4.3	4.0	3.8	3.8	3.6	3.5	3.4	3.6
Both areas	4.8	4.5	4.1	4.1	3.6	3.5	3.3	3.4	3.2	3.0	3.1	3.3
Crude death rate												
MCH-FP area	9.3	8.7	8.0	7.6	8.1	8.3	7.7	8.0	7.3	7.6	6.6	7.0
Comparison area	11.2	11.0	9.5	9.4	10.2	9.8	10.2	9.2	8.4	7.9	8.0	8.1
Both areas	10.2	9.9	8.7	8.5	9.1	9.0	8.9	8.6	7.9	7.7	7.3	7.5
Neonatal mortality*												
MCH-FP area	43.8	42.8	46.0	47.8	47.7	49.6	42.8	36.4	30.6	39.5	33.1	36.8
Comparison area	54.9	57.7	52.7	53.3	63.2	53.3	64.5	56.4	50.3	42.1	50.0	44.0
Both areas	49.7	51.1	49.7	50.9	56.3	51.6	54.4	46.9	40.8	40.9	41.9	40.5
Post-neonatal mortality*												
MCH-FP area	34.6	38.0	28.3	27.4	32.3	30.8	20.3	27.3	20.6	26.6	16.4	13.8
Comparison area	39.5	39.0	38.0	34.1	51.7	37.0	34.8	30.8	28.3	24.8	28.6	26.0
Both areas	37.2	38.6	33.6	31.2	43.0	34.1	28.0	29.2	24.6	25.7	22.7	20.1
Infant mortality*												
MCH-FP area	78.4	80.8	74.3	75.2	80.0	80.5	63.1	63.7	51.1	66.2	49.5	50.6
Comparison area	94.4	96.6	90.7	87.5	114.9	90.2	99.3	87.2	78.6	67.0	78.6	70.0
Both areas	86.9	89.6	83.3	82.1	99.2	85.7	82.4	76.0	65.3	66.6	64.7	60.6
Child mortality (1-4 yrs)												
MCH-FP area	9.9	7.6	6.4	5.3	7.0	5.9	5.9	5.3	6.7	6.0	4.5	4.7
Comparison area	15.0	14.4	11.5	9.3	9.1	10.4	10.0	7.0	8.4	8.0	7.0	5.8
Both areas	12.6	11.1	9.0	7.4	8.1	8.3	8.1	6.2	7.6	7.1	5.8	5.2
Under five mortality***												
MCH-FP area	113.1	107.4	97.5	94.8	105.7	102.0	86.1	83.6	76.7	87.9	66.7	68.3
Comparison area	145.2	146.1	131.1	120.4	146.2	127.1	135.1	113.1	109.5	96.4	104.4	91.3
Both areas	130.2	128.3	115.7	108.7	128.1	115.7	112.5	99.1	93.8	92.3	86.3	80.1
Rate of natural increase												
MCH-FP area	24.3	22.1	20.4	20.7	17.3	17.1	17.0	17.9	17.9	14.8	17.1	18.8
Comparison area	28.0	29.4	27.1	28.4	22.5	21.2	19.2	20.2	19.4	18.8	18.7	20.2
Both areas	26.1	25.7	23.6	24.4	19.9	19.1	18.1	19.1	18.6	16.8	17.9	19.5
In-migration	33.6	26.5	29.3	26.0	26.9	33.6	25.5	26.5	27.0	25.1	34.6	30.2
Out-migration	44.3	41.5	43.9	42.4	41.9	48.5	36.1	41.4	37.4	35.0	41.7	36.9
Growth (%)	1.5	1.1	0.9	0.8	0.5	0.4	0.8	0.4	0.8	0.7	1.1	1.3

*Per 1000 live births.
**Per woman.
***Calculated from life table.

Figure 2.1: Trends in Fertility and Under Five Mortality by Area, 1987-1998



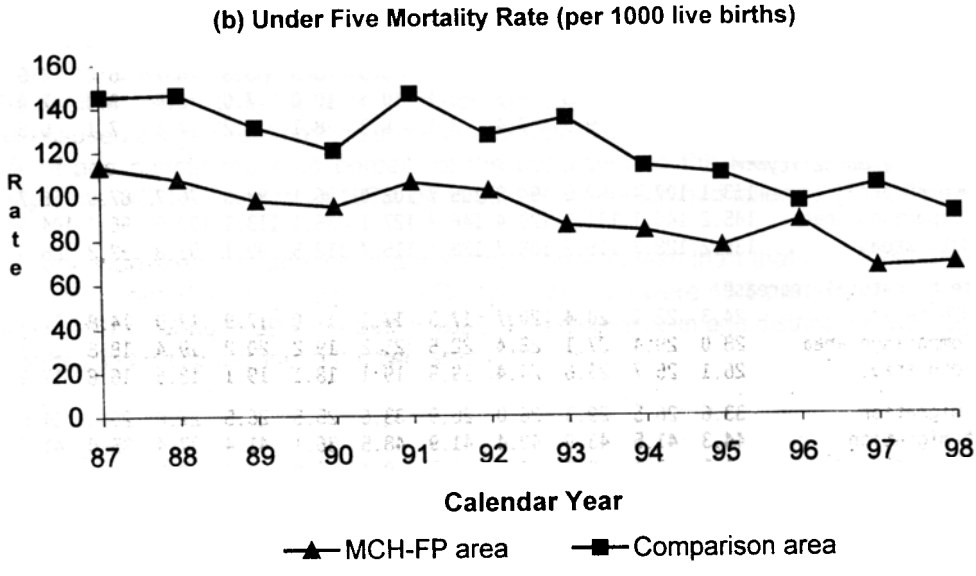


Table 2.2: Mid-year Population, Events Registered, and Population Changes in 1998

	Number			Rate per 1000		
	Total	Males	Females	Total	Males	Females
Total population as of 30 June 1998:						
MCH-FP area	109573	53733	55840			
Comparison area	105900	52061	53839			
Both areas	215473	105794	109679			
Events Registered (Jan - Dec. 1998)						
Births:						
MCH-FP area	2827	1404	1423	25.8		
Comparison area	2998	1565	1433	28.3		
Both areas	5825	2969	2856	27.0		
Deaths:						
-Infant*						
MCH-FP area	143	64	79	50.6	45.6	55.5
Comparison area	210	98	112	70.0	62.6	78.2
Both areas	353	162	191	60.6	54.6	66.9
-All deaths						
MCH-FP area	764	392	372	7.0	7.3	6.7
Comparison area	857	453	404	8.1	8.7	7.5
Both areas	1621	845	776	7.5	8.0	7.1
In-migration	6517	3081	3436	30.2	29.1	31.3
Out-migration	7948	3933	4015	36.9	37.2	36.6
Marriage	2548	-	-	11.8		
Divorce**	277			108.7		
Population change (Jan - Dec. 1998)						
Net migration	-1431	852	579	-6.6	8.1	5.3
Natural increase:						
MCH-FP area	2063	1012	1051	18.8	18.8	18.8
Comparison area	2141	1112	1029	20.2	21.4	19.1
Both areas	4204	2124	2080	19.5	20.1	19.0
Net increase	2773	1272	1501	12.9	12.0	13.7

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

Table 2.3: Mid-year Population by Age and Sex, 1998

Age (years)	Number			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	215473	105794	109679	100.0	100.0	100.0
Under 1	5319	2728	2591	2.5	2.6	2.4
1 - 4	20141	10128	10013	9.3	9.6	9.1
1	4998	2501	2497	2.3	2.4	2.3
2	4878	2444	2434	2.3	2.3	2.2
3	5167	2651	2516	2.4	2.5	2.3
4	5098	2532	2566	2.4	2.4	2.3
5 - 9	27150	13671	13479	12.6	12.9	12.3
10-14	27864	14165	13699	12.9	13.4	12.5
15-19	23165	12312	10853	10.8	11.6	9.9
20-24	18596	9003	9593	8.6	8.5	8.7
25-29	15391	6857	8534	7.2	6.5	7.9
30-34	14468	6121	8347	6.7	5.8	7.6
35-39	14164	6954	7210	6.6	6.6	6.6
40-44	10663	5285	5378	4.9	5.0	4.9
45-49	7962	3880	4082	3.7	3.7	3.7
50-54	7597	3402	4195	3.5	3.2	3.8
55-59	7037	3154	3883	3.3	3.0	3.5
60-64	6119	2999	3120	2.8	2.8	2.8
65-69	4299	2182	2117	2.0	2.1	1.9
70-74	2738	1408	1330	1.3	1.3	1.2
75-79	1622	860	762	0.8	0.8	0.7
80-84	751	437	314	0.3	0.4	0.3
85+	427	248	179	0.2	0.2	0.2

Table 2.4: Mid-year Population by Age, Sex, and Area, 1998

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	109573	53733	55840	105900	52061	53839
Under 1	2576	1308	1268	2743	1420	1323
1 - 4	9885	4973	4912	10256	5155	5101
1	2426	1230	1196	2572	1271	1301
2	2390	1181	1209	2488	1263	1225
3	2596	1325	1271	2571	1326	1245
4	2473	1237	1236	2625	1295	1330
5 - 9	12608	6397	6211	14542	7274	7268
10-14	13654	6870	6784	14210	7295	6915
15-19	11581	6166	5415	11584	6146	5438
20-24	10031	4908	5123	8565	4095	4470
25-29	8111	3614	4497	7280	3243	4037
30-34	7634	3172	4462	6834	2949	3885
35-39	7525	3675	3850	6639	3279	3360
40-44	5606	2779	2827	5057	2506	2551
45-49	4262	2084	2178	3700	1796	1904
50-54	4002	1789	2213	3595	1613	1982
55-59	3719	1678	2041	3318	1476	1842
60-64	3165	1557	1608	2954	1442	1512
65-69	2245	1166	1079	2054	1016	1038
70-74	1496	761	735	1242	647	595
75-79	828	454	374	794	406	388
80-84	417	247	170	334	190	144
85+	228	135	93	199	113	86

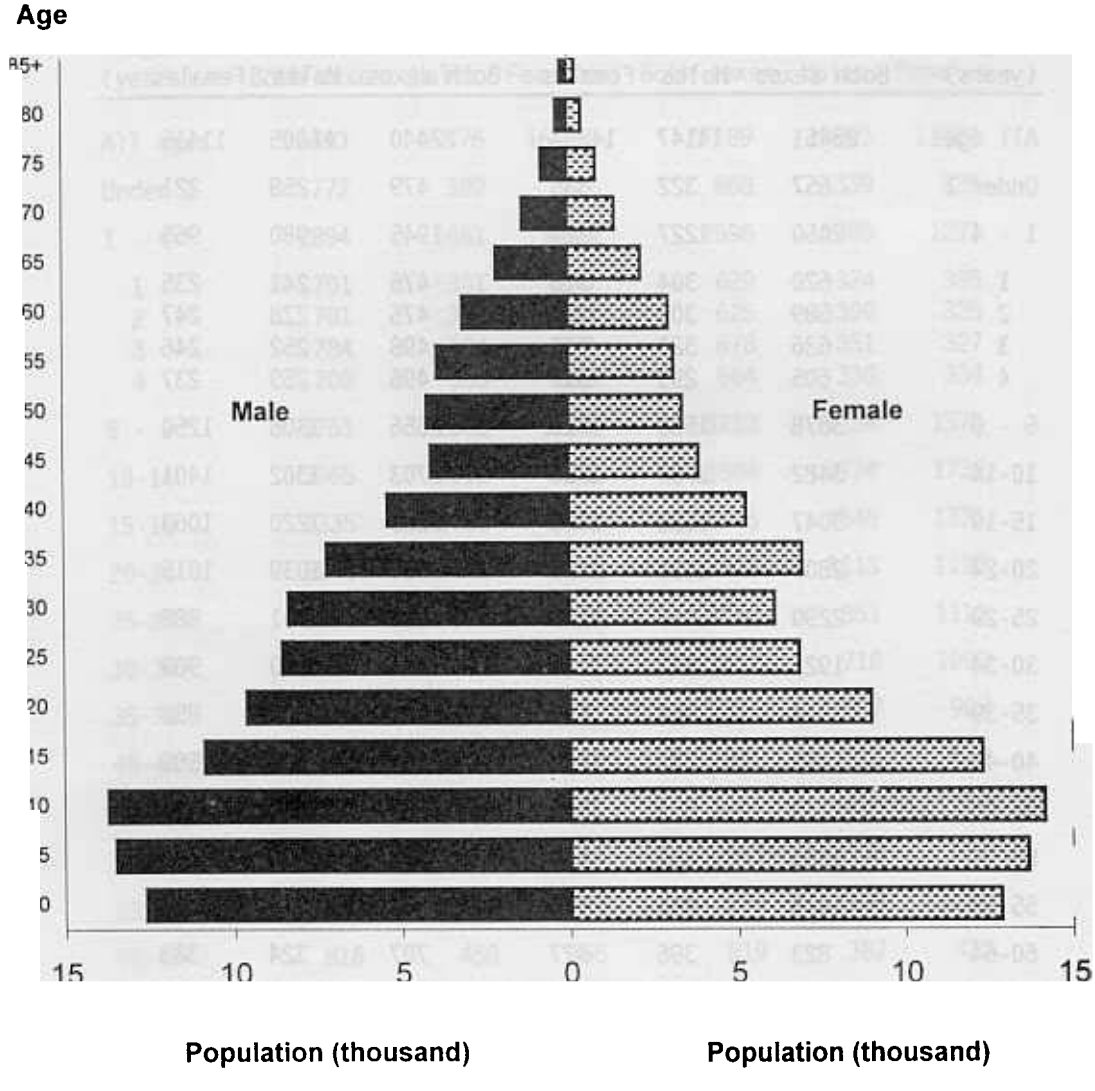
Table 2.5: Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1998

Age (years)	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	31493	15376	16117	27189	13205	13984
Under 1	772	389	383	668	339	329
- 4	2894	1461	1433	2596	1305	1291
1	701	361	340	629	324	305
2	701	353	348	625	300	325
3	784	394	390	678	351	327
4	708	353	355	664	330	334
5 - 9	3761	1885	1876	3213	1638	1575
10-14	3965	2012	1953	3504	1774	1730
15-19	3335	1763	1572	2916	1545	1371
20-24	2858	1322	1536	2310	1113	1197
25-29	2273	994	1279	1962	851	1111
30-34	2319	943	1376	1817	718	1099
35-39	2179	1044	1135	1774	867	907
40-44	1639	817	822	1291	613	678
45-49	1201	600	601	1061	499	562
50-54	1161	517	644	951	390	561
55-59	966	469	497	899	390	509
60-64	816	450	366	819	387	432
65-69	567	290	277	602	320	282
70-74	402	213	189	422	217	205
75-79	195	99	96	200	117	83
80-84	128	71	57	112	77	35
85+	62	37	25	72	45	27

Table 2.5 (cont.): Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1998

Age (years)	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	28451	14147	14304	22440	11005	11435
Under 1	657	322	335	479	258	221
1 - 4	2450	1227	1223	1945	980	965
	620	304	316	476	241	235
2	589	300	289	475	228	247
3	636	328	308	498	252	246
4	605	295	310	496	259	237
5 - 9	3078	1568	1510	2556	1306	1250
10-14	3482	1782	1700	2703	1302	1401
15-19	3047	1638	1409	2283	1220	1063
20-24	2809	1434	1375	2054	1039	1015
25-29	2290	1068	1222	1586	701	885
30-34	1925	841	1084	1573	670	903
35-39	1914	964	950	1658	800	858
40-44	1495	727	768	1181	622	559
45-49	1133	553	580	867	432	435
50-54	1035	489	546	855	393	462
55-59	1018	463	555	836	356	480
60-64	823	396	427	707	324	383
65-69	564	304	260	512	252	260
70-74	336	164	172	336	167	169
75-79	244	123	121	189	115	74
80-84	98	56	42	79	43	36
85+	53	28	25	41	25	16

Figure 2.2: Age Pyramid of the 1998 Mid-year Population



CHAPTER 3

MORTALITY

Tables 3.1 to 3.3 show the distribution of deaths by age and sex for the whole study area, for the MCH-FP and Comparison areas, and for the four blocks of the MCH-FP area. Tables 3.4 and 3.5 show the corresponding age-sex-specific mortality rates for the study area and for the MCH-FP and Comparison areas. Tables 3.6 to 3.10 show the abridged life tables derived from these rates.

As already noted in Chapter 2, a conspicuous feature of the 1998 results was the increase in infant mortality in the MCH-FP area, from 49.5 in 1997 to 50.6 in 1998. This was the result of increase in neonatal mortality. In the Comparison area both infant mortality and mortality of children aged 1-4 years dropped in comparison with the previous year.

Tables 3.6 and 3.7 show the basic life table parameters; the l_x values are plotted in Figure 3.1. The expectation of life at birth was 65.3 years for males and 66.1 for females (Table 3.7). Overall expectation of life was higher in the MCH-FP area (67.3) than in the Comparison area (64.4) (Table 3.8). The difference in the expectation of life between the two areas was more pronounced for males (3.5) than for females (2.3) (Tables 3.9 and 3.10).

The expectation of life at birth slightly increased as a whole compared to 1997, although it declined slightly in the MCH-FP area and increased in the Comparison area. This increase in the life expectancy was, therefore, the result of the compensating trends in both areas and both sexes. Although there was no remarkable difference between male and female mortality up to age 25 except age under one year, male mortality was higher in each age group from 35 to 69. For 70 and higher age groups, it was higher for females (Table 3.7). Infant mortality was much lower in MCH-FP area than in the Comparison area (50.6 vs. 70.0) (Table 3.8). Expectation of life at each age in each area was higher for females than males except age 60 and over in the MCH-FP area and age 70 and over in the Comparison area (Tables 3.9 and 3.10).

The levels of adult mortality also increased in comparison with 1997. The probability of dying between the ages of 15 and 60 ($_{45}q_{15}$) rose from 158 per thousand in 1997, to 165 in 1998 for the study area as a whole. This change is caused due to higher adult mortality in the MCH-FP area compared to 1997. In the Comparison area this mortality fell slightly. There was no important change in the expectation of life at age 60.

Table 3.11 and Figure 4.1 show the distribution of deaths by age and month of occurrence. Deaths of those aged five or more tend to peak in the winter months. Neonatal deaths were most frequent in September through January, undoubtly reflecting the seasonal variation in births as described in Chapter 4. Post-neonatal deaths, on the other hand, generally tend to be distributed fairly regularly throughout the year.

Tables 3.12 to 3.15 show the distribution of deaths by age, sex, area, and cause, and Table 3.16 gives the age-standardized mortality rates by cause of death, using the WHO "World Standard" age distribution shown in Appendix-D (WHO 1992). When compared with the corresponding figures for 1997, there was an upsurge in the mortality from diarrhoea, especially in the Comparison area. The most conspicuous change was the fall in the mortality rates attributed to "senility", which may reflect improved standards of diagnosis. In the MCH-FP area the standardized rate for gastro-intestinal cause increased for both sexes. Comparing the MCH-FP area with the Comparison area, the main reason that the later had higher overall mortality rates for both sexes was higher mortality from diarrhoea and respiratory infections. Other differences between the two areas varied by sex.

A striking feature of Table 3.16 as well as Tables 3.12 - 3.15 is the large number of deaths classified in the older age groups under senility, other causes of death (not elsewhere classified, and unknown). This shows that the quality of cause of death data in these age groups is still unsatisfactory. Plans are currently being formulated to change the procedure of classification of causes of death. The percentage of deaths in the age groups below 5 classified as other causes and unknown is in general small, indicating that the quality of data on causes of death in these age groups is better.

Table 3.1: Deaths by Age, and Sex, 1998

Age	Both sexes	Males	Females
All ages	1621	845	776
Under 1 year	353	162	191
Under 1 month	236	114	122
1-5 months	86	31	55
6-11 months	31	17	14
1 - 4 years	105	51	54
1	50	24	26
2	25	15	10
3	20	9	11
4	10	3	7
5 - 9	26	18	8
10-14	26	13	13
15-19	20	12	8
20-24	23	6	17
25-29	15	7	8
30-34	29	8	21
35-39	30	16	14
40-44	39	23	16
45-49	26	17	9
50-54	61	34	27
55-59	98	62	36
60-64	133	82	51
65-69	155	85	70
70-74	148	75	73
75-79	151	77	74
80-84	95	51	44
85+	88	46	42

Table 3.2: Deaths by Area, Age, and Sex, 1998

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	764	392	372	857	453	404
Under 1 year	143	64	79	210	8	112
Under 1 month	104	47	57	132	67	65
1-5 months	29	11	18	57	20	37
6-11 months	10	6	4	21	11	10
1 - 4 years	46	20	26	59	31	28
1	24	10	14	26	14	12
2	10	5	5	15	10	5
3	6	4	2	14	5	9
4	6	1	5	4	2	2
5 - 9	12	9	3	14	9	5
10-14	10	4	6	16	9	7
15-19	9	5	4	11	7	4
20-24	10	3	7	13	3	10
25-29	6	2	4	9	5	4
30-34	16	4	12	13	4	9
35-39	12	4	8	18	12	6
40-44	19	12	7	20	11	9
45-49	17	11	6	9	6	3
50-54	32	20	12	29	14	15
55-59	57	34	23	41	28	13
60-64	64	39	25	69	43	26
65-69	83	41	42	72	44	28
70-74	76	39	37	72	36	36
75-79	71	33	38	80	44	36
80-84	42	26	16	53	25	28
85+	39	22	17	49	24	25

Table 3.3: Deaths in MCH-FP Area by Age, Sex, and Block 1998

Age	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	190	108	82	227	107	120
Under 1 year	46	25	21	42	19	23
Under 1 month	35	19	16	30	15	15
1-5 months	7	2	5	10	3	7
6-11 months	4	4	0	2	1	1
1 - 4 years	12	6	6	16	5	11
1	8	4	4	7	2	5
2	2	2	0	3	1	2
3	1	0	1	2	1	1
4	1	0	1	4	1	3
5 - 9	1	1	0	2	2	0
10-14	3	2	1	2	1	1
15-19	1	0	1	2	0	2
20-24	3	0	3	1	0	1
25-29	1	0	1	1	0	1
30-34	4	1	3	6	2	4
35-39	2	1	1	4	2	2
40-44	5	4	1	4	2	2
45-49	4	2	2	6	3	3
50-54	5	4	1	10	5	5
55-59	14	9	5	20	9	11
60-64	11	10	1	20	10	10
65-69	17	7	10	26	13	13
70-74	18	8	10	25	13	12
75-79	15	9	6	17	8	9
80-84	13	10	3	11	8	3
85+	15	9	6	12	5	7

(continued)

Table 3.3 (cont.): Deaths in MCH-FP Area by Age, Sex, and Block, 1998

Age	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	193	97	96	154	80	74
Under 1 year	30	12	18	25	8	17
Under 1 month	18	7	11	21	6	15
1-5 months	8	4	4	4	2	2
6-11 months	4	1	3	0	0	0
1 - 4 years	11	4	7	7	5	2
1	7	3	4	2	1	1
2	2	0	2	3	2	1
3	1	1	0	2	2	0
4	1	0	1	0	0	0
5 - 9	5	4	1	4	2	2
10-14	2	0	2	3	1	2
15-19	5	4	1	1	1	0
20-24	6	3	3	0	0	0
25-29	3	1	2	1	1	0
30-34	3	0	3	3	1	2
35-39	4	1	3	2	0	2
40-44	7	3	4	3	3	0
45-49	4	4	0	3	2	1
50-54	8	7	1	9	4	5
55-59	13	7	6	10	9	1
60-64	19	15	4	14	4	10
65-69	24	13	11	16	8	8
70-74	15	4	11	18	14	4
75-79	19	8	11	20	8	12
80-84	9	3	6	9	5	4
85+	6	4	2	6	4	2

Table 3.4: Death Rates by Age and Sex, 1998
(per 1000 population)

Age	Both sexes	Males	Females
All ages	7.5	8.0	7.1
Under 1 year*	60.6	54.6	66.9
Under 1 month*	40.5	38.4	42.7
1-5 months*	14.8	10.4	19.3
6-11 months*	5.3	5.7	4.9
1 - 4 years	5.2	5.0	5.4
1	10.0	9.6	10.4
2	5.1	6.1	4.1
3	3.9	3.4	4.4
4	2.0	1.2	2.7
5 - 9	1.0	1.3	0.6
10-14	0.9	0.9	0.9
15-19	0.9	1.0	0.7
20-24	1.2	0.7	1.8
25-29	1.0	1.0	0.9
30-34	2.0	1.3	2.5
35-39	2.1	2.3	1.9
40-44	3.7	4.4	3.0
45-49	3.3	4.4	2.2
50-54	8.0	10.0	6.4
55-59	13.9	19.7	9.3
60-64	21.7	27.3	16.3
65-69	36.1	39.0	33.1
70-74	54.1	53.3	54.9
75-79	93.1	89.5	97.1
80-84	126.5	116.7	140.1
85+	206.1	185.5	234.6

*Rate per 1000 live births.

Table 3.5: Death Rates by Area, Age, and Sex, 1998
(per 1000 population)

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	7.0	7.3	6.7	8.1	8.7	7.5
Under 1 year*	50.6	45.6	55.5	70.0	62.6	78.2
Under 1 month*	36.8	33.5	40.1	44.0	42.8	45.4
1-5 months*	10.3	7.8	12.6	19.0	12.8	25.8
6-11 months*	3.5	4.3	2.8	7.0	7.0	7.0
1 - 4 years	4.7	4.0	5.3	5.8	6.0	5.5
1	9.9	8.1	11.7	10.1	11.0	9.2
2	4.2	4.2	4.1	6.0	7.9	4.1
3	2.3	3.0	1.6	5.4	3.8	7.2
4	2.4	0.8	4.0	1.5	1.5	1.5
5 - 9	1.0	1.4	0.5	1.0	1.2	0.7
10-14	0.7	0.6	0.9	1.1	1.2	1.0
15-19	0.8	0.8	0.7	0.9	1.1	0.7
20-24	1.0	0.6	1.4	1.5	0.7	2.2
25-29	0.7	0.6	0.9	1.2	1.5	1.0
30-34	2.1	1.3	2.7	1.9	1.4	2.3
35-39	1.6	1.1	2.1	2.7	3.7	1.8
40-44	3.4	4.3	2.5	4.0	4.4	3.5
45-49	4.0	5.3	2.8	2.4	3.3	1.6
50-54	8.0	11.2	5.4	8.1	8.7	7.6
55-59	15.3	20.3	11.3	12.4	19.0	7.1
60-64	20.2	25.0	15.5	23.4	29.8	17.2
65-69	37.0	35.2	38.9	35.1	43.3	27.0
70-74	50.8	51.2	50.3	58.0	55.6	60.5
75-79	85.7	72.7	101.6	100.8	108.4	92.8
80-84	100.7	105.3	94.1	158.7	131.6	194.4
85+	171.1	163.0	182.8	246.2	212.4	290.7

*Rate per 1000 live births

Table 3.6: Abridged Life Table, 1998

Age (years)	$_nq_x$	l_x	L_x	e^0
0	60.6	100000	95612	65.8
1	10.0	93940	93388	69.0
2	5.1	93005	92767	68.7
3	3.9	92529	92351	68.0
4	2.0	92172	92082	67.3
5	4.8	91991	458943	66.4
10	4.7	91552	456776	61.7
15	4.3	91125	454723	57.0
20	6.2	90733	452375	52.2
25	4.9	90173	449857	47.5
30	10.0	89735	446610	42.8
35	10.5	88840	442039	38.2
40	18.1	87903	435836	33.5
45	16.2	86309	428318	29.1
50	39.4	84911	416793	24.6
55	67.4	81564	394997	20.5
60	103.4	76063	361854	16.7
65	166.0	68198	314072	13.4
70	239.1	56874	251539	10.5
75	377.7	43278	175587	8.0
80	477.5	26931	101662	6.3
85+	1000.0	14071	68277	4.9

Figure 3.1: Probability of Survival from Birth to Age (x) by Sex, 1998

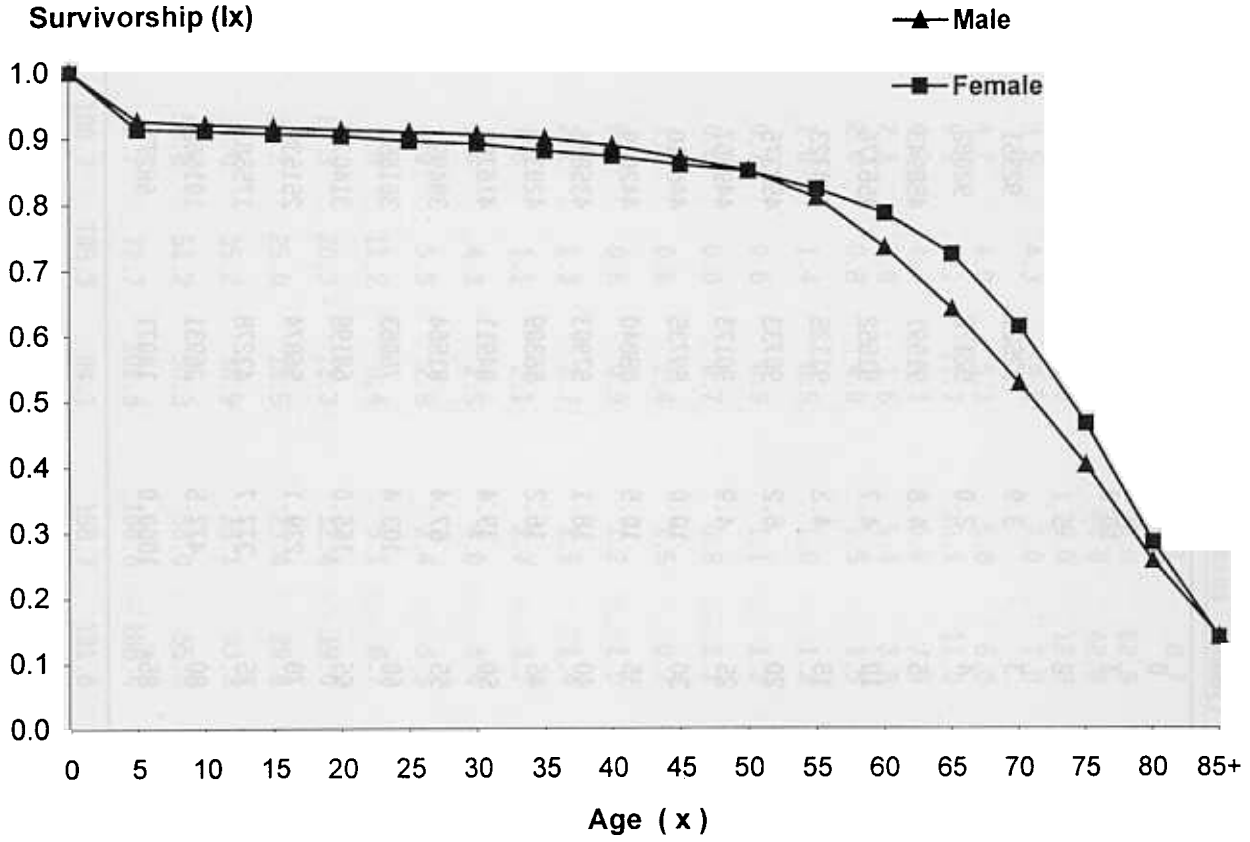


Table 3.7: Abridged Life Tables by Sex, 1998

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	54.6	100000	96050	65.3	66.9	100000	95158	66.1
1	9.6	94544	94011	68.0	10.4	93312	92742	69.9
2	6.1	93641	93354	67.7	4.1	92346	92156	69.6
3	3.4	93068	92910	67.1	4.4	91967	91766	68.9
4	1.2	92752	92697	66.3	2.7	91566	91441	68.2
5	6.6	92642	461810	65.4	3.0	91316	455959	67.4
10	4.6	92034	459201	60.8	4.7	91046	454236	62.5
15	4.9	91613	457038	56.1	3.7	90615	452305	57.8
20	3.3	91167	455139	51.4	8.8	90281	449569	53.0
25	5.1	90864	453254	46.5	4.7	89485	446459	48.5
30	6.5	90401	450650	41.7	12.5	89066	442760	43.7
35	11.4	89812	446691	37.0	9.7	87952	437800	39.2
40	21.5	88785	439503	32.4	14.8	87102	432540	34.6
45	21.7	86872	430005	28.1	11.0	85815	426905	30.1
50	48.8	84988	415298	23.6	31.7	84874	418138	25.4
55	94.0	80837	386390	19.7	45.4	82183	402256	21.1
60	128.4	73242	344019	16.5	78.7	78453	377838	17.0
65	178.2	63836	292063	13.5	153.3	72277	335114	13.2
70	236.0	52458	232417	10.9	242.3	61196	270151	10.1
75	366.1	40078	163876	8.4	390.6	46369	186487	7.5
80	449.9	25405	97936	6.8	513.9	28258	103624	5.7
85+	1000.0	13976	75348	5.4	1000.0	13738	58548	4.3

Table 3.8: Abridged Life Table by Area, 1998

Age (years)	MCH-FP area				Comparison area			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	50.6	100000	96338	67.3	70.0	100000	94929	64.4
1	9.8	94942	94390	69.8	10.1	92995	92443	68.2
2	4.2	94007	93811	69.5	6.0	92060	91783	67.9
3	2.3	93614	93506	68.8	5.4	91507	91258	67.3
4	2.4	93398	93285	68.0	1.5	91010	90940	66.7
5	4.7	93172	464840	67.1	4.8	90871	453349	65.8
10	3.7	92730	462867	62.4	5.6	90435	451003	61.1
15	3.9	92391	461127	57.7	4.7	89927	448652	56.4
20	5.0	92032	459106	52.9	7.6	89501	445943	51.7
25	3.7	91575	457094	48.1	6.2	88824	442857	47.0
30	10.4	91236	453987	43.3	9.5	88276	439454	42.3
35	7.9	90285	449771	38.7	13.5	87440	434484	37.7
40	16.8	89568	444360	34.0	19.6	86262	427407	33.2
45	19.8	88062	436287	29.5	12.1	84572	420500	28.8
50	39.3	86321	423750	25.1	39.6	83549	410075	24.1
55	74.0	82933	400344	21.0	60.1	80241	389988	20.0
60	96.5	76797	366607	17.5	110.7	75422	357482	16.1
65	169.9	69384	318872	14.1	161.8	67072	309586	12.8
70	226.3	57595	256587	11.4	254.2	56220	246481	9.7
75	353.5	44560	183718	9.0	402.0	41931	167311	7.2
80	401.9	28806	114949	7.5	559.6	25074	88428	5.3
85+	1000.0	17229	100721	5.8	1000.0	11042	44844	4.1

Table 3.9: Abridged Life Tables for MCH-FP Area by Sex, 1998

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	45.6	100000	96700	67.1	55.5	100000	95981	67.3
1	8.1	95442	94986	69.3	11.6	94448	93800	70.3
2	4.2	94669	94469	68.8	4.1	93349	93156	70.1
3	3.0	94269	94127	68.1	1.6	92964	92891	69.4
4	0.8	93985	93947	67.3	4.0	92818	92630	68.5
5	7.0	93909	468026	66.4	2.4	92443	461701	67.8
10	2.9	93250	465627	61.8	4.4	92220	460162	62.9
15	4.0	92979	464029	57.0	3.7	91813	458285	58.2
20	3.1	92603	462363	52.2	6.8	91474	455936	53.4
25	2.8	92320	461013	47.4	4.4	90851	453328	48.8
30	6.3	92065	458991	42.5	13.4	90448	449452	44.0
35	5.4	91486	456287	37.8	10.3	89239	444069	39.5
40	21.4	90990	450453	33.0	12.3	88317	439075	34.9
45	26.1	89045	439852	28.6	13.7	87230	433392	30.3
50	54.5	86723	422627	24.3	26.8	86036	424849	25.7
55	96.7	81998	391399	20.6	54.9	83732	407968	21.3
60	118.3	74068	349715	17.5	75.0	79134	381815	17.4
65	162.3	65308	301368	14.5	178.1	73198	334922	13.6
70	228.1	54711	243495	11.7	224.5	60161	268299	11.0
75	308.4	42232	179202	9.5	404.7	46655	185817	8.4
80	415.9	29206	115403	7.5	381.0	27775	112440	7.4
85+	1000.0	17059	104679	6.1	1000.0	17193	94055	5.5

Table 3.10: Abridged Life Tables for Comparison Area by Sex, 1998

Age (years)	Males				Females			
	$_nq_x$	l_x	L_x	e^0	$_nq_x$	l_x	L_x	e^0
0	62.6	100000	95466	63.6	78.2	100000	94341	65.0
1	11.0	93738	93132	66.9	9.2	92184	91685	69.5
2	7.9	92711	92345	66.6	4.1	91338	91152	69.2
3	3.8	91980	91807	66.1	7.2	90966	90638	68.4
4	1.5	91634	91563	65.4	1.5	90310	90243	67.9
5	6.2	91492	456161	64.5	3.4	90175	450161	67.0
10	6.2	90928	453350	59.9	5.0	89865	448280	62.3
15	5.7	90369	450660	55.2	3.7	89411	446300	57.6
20	3.7	89855	448519	50.5	11.1	89083	443128	52.8
25	7.7	89527	446048	45.7	4.9	88092	439455	48.3
30	6.8	88839	442811	41.0	11.5	87656	435951	43.6
35	18.1	88238	437494	36.3	8.9	86646	431455	39.0
40	21.7	86637	428836	31.9	17.5	85876	425909	34.4
45	16.6	84755	420531	27.6	7.8	84373	420339	29.9
50	42.5	83350	408523	23.0	37.2	83711	411339	25.1
55	90.8	79804	382050	18.9	34.7	80598	396506	21.0
60	139.3	72557	338892	15.5	82.7	77800	373964	16.7
65	196.2	62451	282941	12.6	126.8	71369	335502	12.9
70	245.2	50198	221225	10.0	263.8	62319	271681	9.4
75	425.3	37888	148704	7.4	376.7	45881	186276	6.9
80	491.3	21773	81304	6.1	636.9	28598	93677	4.5
85+	1000.0	11075	52144	4.7	1000.0	10383	35716	3.4

Table 3.11: Deaths by Age and Month, 1998

Month	All ages	Age at death			
		Under 1 month	1-11 months	1-4 years	5 years and over
January	181	34	21	2	124
February	98	15	5	5	73
March	116	19	8	7	82
April	147	14	12	7	114
May	139	12	11	11	105
June	105	19	6	10	70
July	107	12	5	9	81
August	110	14	8	6	82
September	125	24	9	7	85
October	147	25	10	19	93
November	163	26	8	9	120
December	183	22	14	13	134
Total	1621	236	117	105	1163

Table 3.12: Male Deaths by Cause and Age, 1998

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																				
Diarrhoeal	60	14	4	2	1	0	1	0	0	1	1	0	0	1	6	6	10	5	3	5
Dysentery	6	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	0	2	1	0
INFECTIOUS																				
Tuberculosis	25	0	0	0	0	0	0	1	0	1	5	0	1	5	1	3	3	2	2	1
Tetanus (non-neonatal)	3	0	0	1	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0
Other infectious	15	2	1	2	0	0	1	1	0	0	1	0	0	1	1	1	2	1	0	1
MALIGNANT NEOPLASMS	59	0	1	1	1	1	0	1	0	4	2	4	6	9	11	9	4	3	2	0
NUTRITIONAL	19	10	2	4	0	0	0	0	0	0	0	0	1	0	1	0	1	0	0	0
CARDIO-VASCULAR	85	0	1	0	1	1	0	0	1	0	1	2	6	9	15	13	6	16	5	8
RESPIRATORY																				
ARI,pneum,influenza	66	48	4	1	1	0	0	0	0	0	0	0	1	3	2	0	0	3	2	1
COPD*	55	0	0	0	0	0	0	0	0	0	1	2	4	7	7	12	7	6	8	1
GASTRO-INTESTINAL	63	1	0	2	2	1	0	1	1	4	5	1	3	11	9	10	5	6	1	0
DIRECT OBSTETRICT	0	0	0	0	0	0	0	0	0	0	0	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	81	81	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	1	1	1	1	1	0	0	0	1	0	0	0	1	0	0
Homicide	2	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Drowning	37	0	29	2	0	1	0	0	1	0	1	1	0	0	1	0	1	0	0	0
Other accidents, etc.	28	0	1	0	1	5	2	1	2	2	0	1	2	1	2	2	2	1	1	2
OTHER AND UNSPECIFIED																				
Senility	72	0	0	0	0	0	0	0	0	0	0	0	0	0	9	9	12	11	15	16
Other causes n.e.c.**	120	2	4	2	3	2	1	0	0	1	4	3	5	8	11	17	17	18	11	11
Unknown	42	4	2	1	3	0	0	1	1	1	2	3	4	6	4	3	5	2	0	0
TOTAL	845	162	51	18	13	12	6	7	8	16	23	17	34	62	82	85	75	77	51	46

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

Table 3.13: Female Deaths by Cause and Age, 1998

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																				
Diarrhoeal	72	15	15	0	2	0	0	0	0	0		0	2	7	1	6	7	8		
Dysentery	17	3	0	0	1	0	0	0	0	1	0	0	0	1	3	1	2	3		
INFECTIOUS																				
Tuberculosis	10	0	0	0	1	1	0	0	0	1	0	1	2	1	2	1	0	0	0	0
Tetanus (non-neonatal)	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	19	4	2	0	1	0	0	2	1	0	0	0	0	2	3	1	1	1	0	1
MALIGNANT NEOPLASMS	30	0	1	0	0	0	1	0	1	3	6	1	2	5	3	4	_	2	0	0
NUTRITIONAL	16	10	1	1	0	0	0	0	0	0	0	0	0	1	1	0	1	0	1	0
CARDIO-VASCULAR	79	1	0	0	1	1	2	1	2	1	5	1	5	4	5	13	13	9	8	7
RESPIRATORY																				
ARI,pneum,influenza	59	49	3	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	2	0
COPD*	33	0	0	0	1	0	1	0	2	1	1	0	0	2	3	7	7	1	4	3
GASTRO-INTESTINAL	24	0	0	0	0	0	2	0	0	2	1	0	8	2	1	3	3	1	0	1
DIRECT OBSTETRIC	11	0	0	0	0	0	2	1	7	0	1	0	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus (neonatal)	1	_	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	92	92	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	0	0	3	1	2	0	0	0	0	0	0	0	0	0	0	0
Homicide	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	26	1	23	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
Other accidents, etc.	14	0	0	0	1	0	3	0	1	1	0		0	0		3	2	0	0	1
OTHER AND UNSPECIFIED																				
Senility	100	0	0	0	0	0	0	0	0	0	0	0	0	0	8	17	15	32	12	16
Other causes n.e.c.**	128	4	4	3	2	4	1	2	5	4		4	4	10	17	11	17	15	15	5
Unknown	35	8	5	3	3	1	2	1	0	0	0	1	3	1	3	2	1	1	0	0
TOTAL	776	191	54	8	13	8	17	8	21	14	16	9	27	36	51	70	73	74	44	42

*Chronic obstructive pulmonary disease.
**Not elsewhere classified

Table 3.14: Male Deaths by Cause, Age, and Area, 1998

Cause	Age at death (years)															
	All ages		<1		1-4		5-14		15-44		45-64		65-84		85+	
	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
DIARRHOEAL																
Diarrhoeal	20	40	7	7	1	3	0	3	1	2	2	5	6	18	3	2
Dysentery	3	3	0	0	1	0	0	0	0	0	0	2	2	1	0	0
INFECTIOUS																
Tuberculosis	10	15	0	0	0	0	0	0	4	3	2	5	3	7		0
Tetanus(non-neonatal)	0	3	0	0	0	0	0	1	0	1	0	1	0	0	0	0
Other infectious	7	8	0	2	0	1	0	2	3	0	0	2	3	1		0
MALIGNANT NEOPLASMS	33	26	0	0	1	0	1	1	1	7	21	9	9	9	0	0
NUTRITIONAL	8	11	3	7	0	2	2	2	0	0	2	0	1	0	0	0
CARDIO-VASCULAR	44	41	0	0	1	0	0	1	2	1	16	16	22	18	3	5
RESPIRATORY																
ARI, pneum, influenza	20	46	14	34	1	3	1	1	0	0	2	4	2	3	0	1
COPD*	25	30	0	0	0	0	0	0	1	0	11	9	12	21	1	0
GASTRO-INTESTINAL	34	29	0	1	0	0	3	1	3	9	17	7	11	11	0	0
DIRECT OBSTETRIC	0	0	0	0	0	0	0	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
Other neonatal	37	44	37	44	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	2	5	0	0	0	0	0	0	0	5	1	0	1	0	0	0
Homicide		1	0	0	0	1	0	0	1	0	0	0	0	0	0	0
Drowning	18	19	0	0	12	17	2	0	1	2	2	0	1	0	0	^
Other accidents, etc.	17	11	0	0	0		1	0	9	3	4	2	3	3	0	
OTHER AND UNSPECIFIED																
Senility	31	41	0	0	0	0	0	0	0	0	4	5	21	26	6	10
Other causes n.e.c.**	68	52	2	0	2	2	3	2	3	5	14	13	37	26	7	4
Unknown	14	28	1	3	1	1	0	4	1	4	6	11	5	5	0	0
TOTAL	392	453	64	98	20	31	13	18	30	42	104	91	139	149	22	24

*Chronic obstructive pulmonary disease.
**Not elsewhere classified.

Table 3.15: Female Deaths by Cause, Age, and Area, 1998

Cause	All ages		Age at death (years) <1		1-4		5-14		15-44		45-64		65-84		85+	
	M	C	M	C	M	C	M	C	M	C	M	C	M	C	M	C
DIARRHOEAL																
Diarrhoeal	28	44	6	9	4	11	0	2	0	-	6	4	9	13	3	4
Dysentery	5	12	1	2	0	0	1	0	1	0	2	2	0	7	0	1
INFECTIOUS																
Tuberculosis	5	5	0	0	0	0	1	0	1	1	3	3	0	1	0	0
Tetanus (non-neonatal)	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
Other infectious	12	7	2	2	2	0	1	0	3	0	2	3	1	2	1	0
MALIGNANT NEOPLASMS	19	11	0	0	0	1	0	0	6	5	9	2	4	3	0	0
NUTRITONAL	9	7	4	6	1	0	1	0	0	0	2	0	1	1	0	0
CARDIO-VASCULAR	39	40	1	0	0	0	0	1	5	7	6	9	23	20	4	3
RESPIRATORY																
ARI,pneum,influenza	14	45	12	37	2	1	0	0	0	0	0	1	0	6	0	0
COPD*	17	16	0	0	0	0	0	1	3	2	2	3	11	8	1	2
GASTRO-INTESTINAL	13	11	0	0	0	0	0	0	3	2	5	6	5	2	0	1
DIRECT OBSTETRIC	3	8	0	0	0	0	0	0	3	8	0	0	0	0	0	0
NEONTAL																
Tetanus (neonatal)	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	46	46	46	46	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	3	3	0	0	0	0	0	0	3	3	0	0	0	0	0	0
Homicide	1	2	1	2	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	14	12	1	0	12	11	0	1	0	0	0	0	1	0	0	0
Other accidents, etc.	6	8	0	0	0	0	0	1	3	2	0	2	3	2	0	1
OTHER AND UNSPECIFIED																
Senility	56	44	0	0	0	0	0	0	0	0	7	1	44	32	5	11
Other causes n.e.c.**	70	58	2	2	3	1	4	1	10	7	19	16	29	29	3	2
Unknown	11	24	3	5	2	3	1	5	0	4	3	5	2	2	0	0
TOTAL								9								

*Chronic obstructive pulmonary disease.
**Not elsewhere classified

Table 3.16: Age-standardized Mortality Rates by Cause of Death 1998 (per 100,000 population)*

Cause of death	Males		Females	
	MCH-FP area	Comparison area	MCH-FP area	Comparison area
Diarrhoea	38.12	81.77	71.21	118.45
Dysentery	5.76	6.86	9.00	39.01
Tuberculosis	19.15	34.14	8.68	10.69
Tetanus (non-neonatal)		6.00	1.78	
Other infectious	13.88	15.01	26.78	16.61
Malignant neoplasms	66.01	55.38	38.60	24.38
Nutritional	15.23	19.28	17.60	16.86
Cardio-vascular	86.34	90.10	117.63	122.03
ARI, pneumonia, influenza	38.61	86.32	27.14	96.56
COPD**	48.51	67.56	47.23	52.22
Gastro-intestinal	66.04	62.45	26.41	28.50
Direct obstetric			5.00	15.37
Neonatal Tetanus				1.87
Other neonatal	72.36	79.26	89.64	85.92
Suicide		11.05	5.39	5.93
Homicide				3.74
Drowning	34.48	35.12	27.00	21.35
Other accidents	32.25	23.60	12.45	21.86
Senility	55.88	90.55	187.32	187.41
Other cause n.e.c.***	131.79	112.49	178.97	181.63
Unknown	27.91	58.15	21.48	46.78
Total				

*Age distribution of standard population is given in Appendix D
**Chronic obstructive pulmonary disease.
***Not elsewhere classified.

CHAPTER 4

FERTILITY

Table 4.1 shows the number of pregnancies and their outcomes in 1998. Compared with 1997, the number of live births rose overall by 460 or 8.6 percent. In the MCH-FP area, the number of live births was 262 more than in 1997, and in the Comparison area there were 198 more than in 1997. In the study area as a whole, 89.0 percent of pregnancies resulted in a live birth, a proportion that remains remarkably constant from year to year.

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 October-January. The sex ratio of the live births was 104 males per 100 females.

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. Table 4.4 shows the corresponding rates for the MCH-FP and Comparison areas, which are also illustrated in Figure 4.2. Table 4.5 shows the rates for the four blocks of the MCH-FP area.

Table 4.6 shows the distribution of births by mother's age and live birth order, and Table 4.7 shows the age-order-specific fertility rates derived from these figures. The totals of the order-specific rates represent the components by birth order of the total fertility rates. Just as the TFR represents the average number of children borne by a woman who has children at the current rates, the total for birth order N represents the proportion of women who would have at least N children.

Thus the tables highlight the differences between the MCH-FP and Comparison areas. There is comparatively little difference between the two areas for birth orders 1 and 3, but thereafter they widen dramatically: for birth orders 7 and 8 the comparison area rates are twice as high as those of the MCH-FP area, and for birth order 9 and more, they are more than three times as great.

Table 4.1: Number and Rates of Pregnancy Outcomes by Type and Area, 1998

Type of pregnancy outcome	Both areas		MCH-FP area		Comp. area	
	No.	Rate	No.	Rate	No.	Rate
Total pregnancies*	6486	120.1	3067	108.2	3419	133.3
Live birth preg.**	5776	890.5	2801	913.3	2975	870.1
Fetal wastage**	710	109.5	266	86.7	444	129.9
Early (miscarriage)	525	80.9	193	62.9	332	97.1
Late (Stillbirths)	185	28.5	73	23.8	112	32.8
Multiple birth pregnancies	59		33		26	
Live birth pregnancies	54		30		24	
Two live births	49		26		23	
One live birth	5		4		1	
Still birth pregnancies	1		0		1	
Miscarriage pregnancies	4		3		1	

*Rates per 1000 women of age 15-49 years.
**Ratio per 1000 total pregnancies.

Table 4.2: Pregnancy Outcomes by Month, 1998

Months	Pregnancy outcome					No.of live born children			
	All	Miscarriage		Still birth	Live birth*	Both sexes	Males	Females	Ratio
		Induced	Spon.						
All months	6486	227	298	185	5776	5825	2969	2856	1.0396
January	674	16	29	13	616	619	306	313	0.9776
February	446	27	20	11	388	392	202	190	1.0632
March	491	32	23	13	423	427	207	220	0.9409
April	458	36	38	18	366	367	188	179	1.0503
May	417	20	28	14	355	361	180	181	0.9945
June	397	19	27	11	340	343	191	152	1.2566
July	490	20	32	16	422	427	213	214	0.9953
August	551	20	34	12	485	488	257	231	1.1126
September	541	12	17	20	492	497	236	261	0.9042
October	740	9	17	19	695	705	367	338	1.0858
November	684	10	18	26	630	632	329	303	1.0858
December	597	6	15	12	564	567	293	274	1.0693

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

Figure 4 1 Number of Births and Deaths by Month 1998

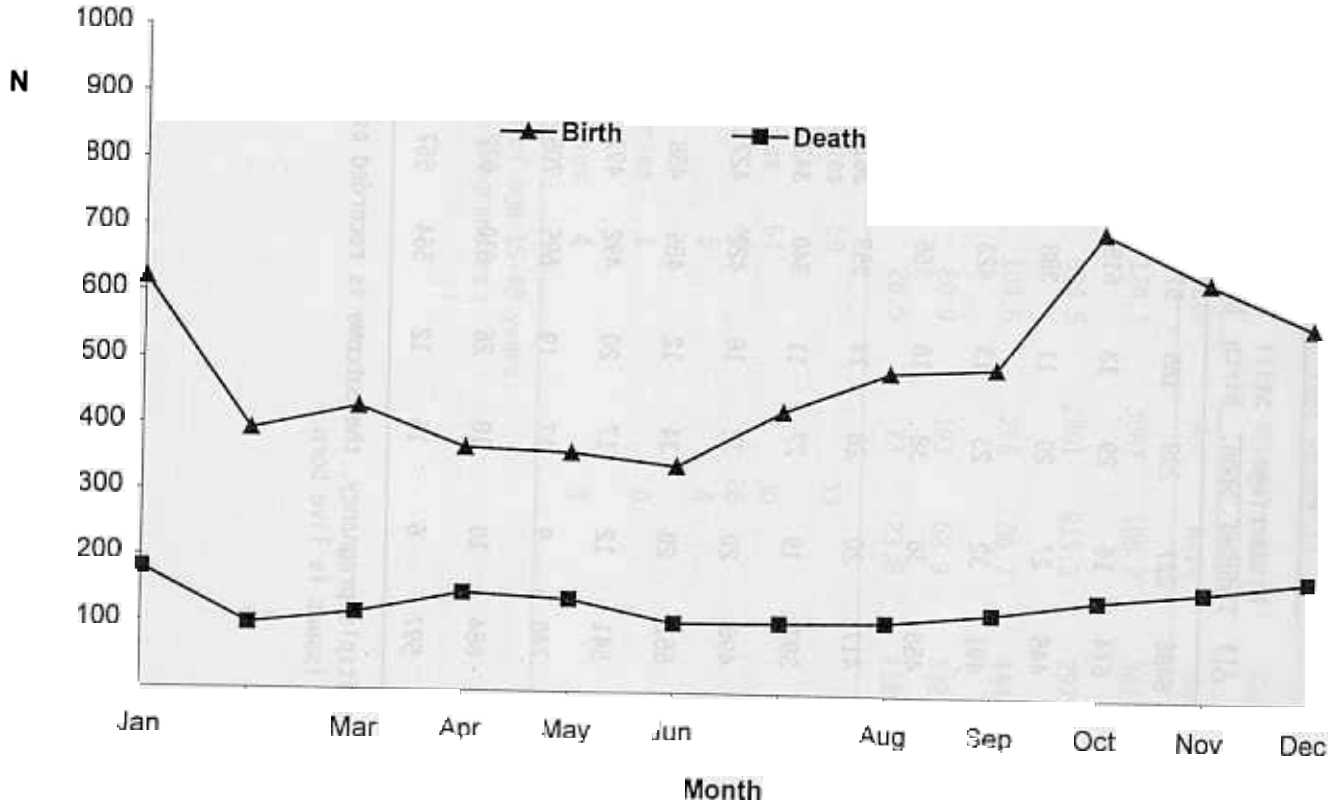


Table 4.3: Age-specific Fertility Rates and Indices 1998

Age (years)	Number of live births	Number of women	ASFR (per 1000)
All ages	5825	53997	107.9
15-19*	636	10853	58.6
20-24	1836	9593	191.4
25-29	1648	8534	193.1
30-34	1149	8347	137.7
35-39	466	7210	64.6
40-44	79	5378	14.7
45-49**	11	4082	2.7

Total Fertility Rate (TFR)	=	3314
General Fertility Rate (GFR)	=	108
Gross Reproduction Rate (GRR)	=	1625
Net Reproduction Rate (NRR)	=	1449

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

Table 4.4: Age-specific Fertility Rates and Indices by Area, 1998

Age (years)	MCH-FP area			Comparison area		
	Births	Women	Rate	Births	Women	Rate
All ages	2827	28352	99.7	2998	25645	116.9
15-19*	302	5415	55.8	334	5438	61.4
20-24	903	5123	176.3	933	4470	208.7
25-29	796	4497	177.0	852	4037	211.0
30-34	584	4462	130.9	565	3885	145.4
35-39	198	3850	51.4	268	3360	79.8
40-44	38	2827	13.4	41	2551	16.1
45-49**	6	2178	2.8	5	1904	2.6
	TFR = 3038			TFR = 3625		
	GFR = 100			GFR = 117		
	GRR = 1529			GRR = 1733		
	NRR = 1384			NRR = 1522		

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

Figure 4.2: Age-specific Fertility Rates by Area, 1998

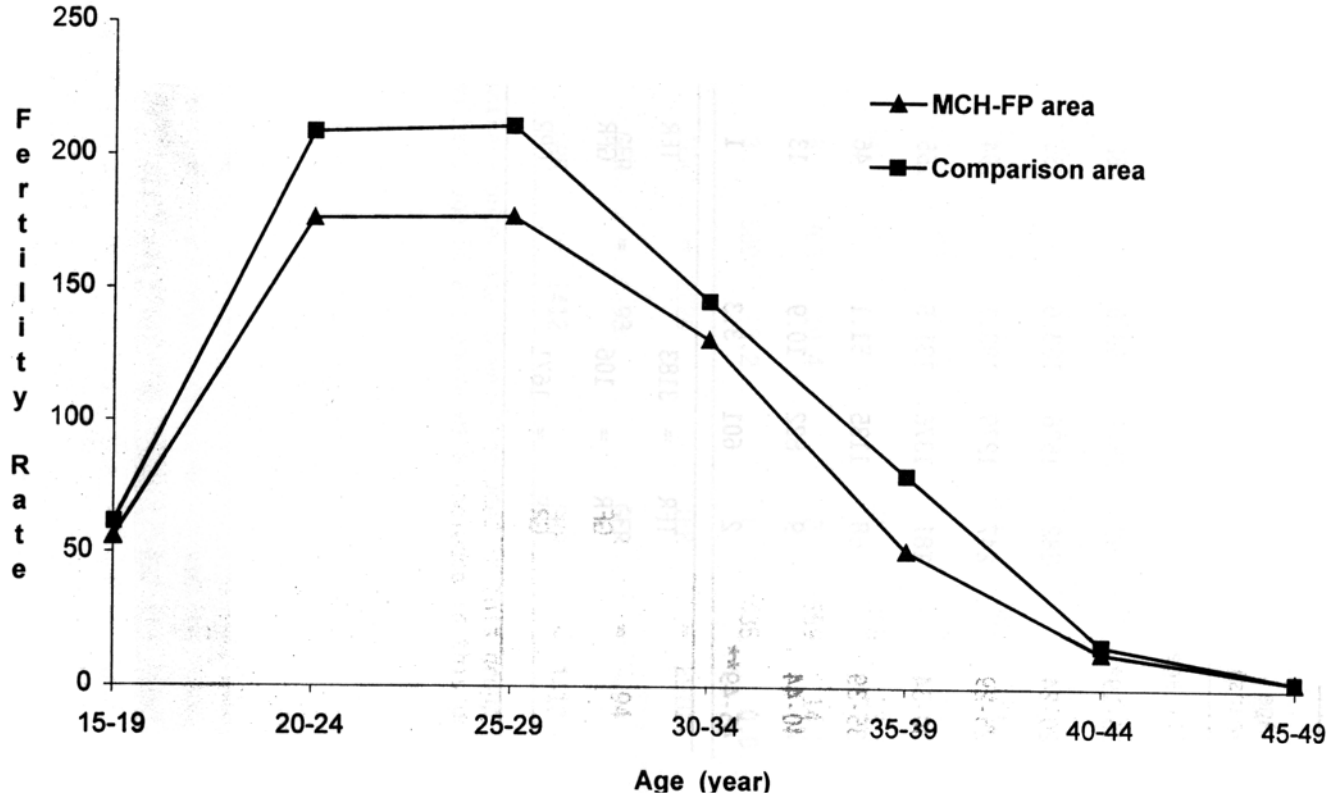


Table 4.5: Age-specific Fertility Rates and Indices for MCH-FP Area by Block, 1998

Age (years)	Block A			Block B		
	Births	Women	Rate	Births	Women	Rate
All ages	878	8321	105.5	724	6925	104.5
15-19*	99	1572	63.0	82	1371	59.8
20-24	282	1536	183.6	233	1197	194.7
25-29	247	1279	193.1	194	1111	174.6
30-34	181	1376	131.5	155	1099	141.0
35-39	58	1135	51.1	46	907	50.7
40-44	9	822	10.9	13	678	19.2
45-49**	2	601	3.3	1	562	1.8
	TFR = 3183			TFR = 3209		
	GFR = 106			GFR = 105		
	GRR = 1671			GRR = 1582		

(continued)

Table 4.5 (cont.): Age-specific Fertility Rates and Indices for MCH-FP Area by Block, 1998

Age (years)	Block C			Block D		
			Rate	Births	Women	Rate
All ages	685	7388	92.7	540	5718	94.4
15-19*	72	1409	51.1	49	1063	46.1
20-24	227	1375	165.1	161	1015	158.6
25-29	192	1222	157.1	163	885	184.2
30-34	135	1084	124.5	113	903	125.1
35-39	48	950	50.5	46	858	53.6
40-44	8	768	10.4	8	559	14.3
45-49**	3	580	5.2	0	435	0.0
	TFR	=	2820	TFR	=	2910
	GFR	=	93	GFR	=	94
	GRR	=	1412	GRR	=	1412

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

Table 4.6: Births by Mother's Age, Live-birth Order and Area, 1998

Age (years)	Total women	Total births	Live-birth order									
			1	2	3	4	5	6	7	8	9	10+
Both areas												
<15	13699	3	3	0	0	0	0	0	0	0	0	0
15-19	10853	633	567	62	3	1	0	0	0	0	0	0
20-24	9593	1836	911	726	173	24	1	1	0	0	0	0
25-29	8534	1648	179	513	576	259	93	23	4	1	0	0
30-34	8347	1149	34	95	279	312	241	124	42	18	4	0
35-39	7210	466	6	12	42	82	87	106	49	51	19	12
40-44	5378	79	1	2	3	5	13	10	8	17	10	10
45-49	4082	11	1	0	1	0	1	0	2	2	0	4
MCH-FP area												
<15	6784	2	2	0	0	0	0	0	0	0	0	0
15-19	5415	300	273	26	1	0	0	0	0	0	0	0
20-24	5123	903	486	350	62	5	0	0	0	0	0	0
25-29	4497	796	94	288	293	84	30	5	2	0	0	0
30-34	4462	584	18	59	173	166	113	40	11	2	2	0
35-39	3850	198	3	8	22	46	53	39	8	15	3	1
40-44	2827	38	0	2	1	3	12	5	6	4	2	3
45-49	2178	6	0	0	0	0	1	0	0	2	0	3
Comparison area												
<15	6915	1	1	0	0	0	0	0	0	0	0	0
15-19	5438	333	294	36	2	1	0	0	0	0	0	0
20-24	4470	933	425	376	111	19	1	1	0	0	0	0
25-29	4037	852	85	225	283	175	63	18	2	1	0	0
30-34	3885	565	16	36	106	146	128	84	31	16	2	0
35-39	3360	268	3	4	20	36	34	67	41	36	16	11
40-44	2551	41	1	0	2	2	1	5	2	13	8	7
45-49	1904	5	1	0	1	0	0	0	2	0	0	1

Table 4.7: Age-order-specific Fertility Rates by Area, 1998

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	0.0583	0.0522	0.0057	0.0003	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1914	0.0950	0.0757	0.0180	0.0025	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000
25-29	0.1931	0.0210	0.0601	0.0675	0.0303	0.0109	0.0027	0.0005	0.0001	0.0000	0.0000
30-34	0.1377	0.0041	0.0114	0.0334	0.0374	0.0289	0.0149	0.0050	0.0022	0.0005	0.0000
35-39	0.0646	0.0008	0.0017	0.0058	0.0114	0.0121	0.0147	0.0068	0.0071	0.0026	0.0017
40-44	0.0147	0.0002	0.0004	0.0006	0.0009	0.0024	0.0019	0.0015	0.0032	0.0019	0.0019
45-49	0.0027	0.0002	0.0000	0.0002	0.0000	0.0002	0.0000	0.0005	0.0005	0.0000	0.0010
Total	3.3136	0.8687	0.7746	0.6293	0.4131	0.2730	0.1711	0.0714	0.0650	0.0249	0.0225
MCH-FP area											
<15	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0554	0.0504	0.0048	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1763	0.0949	0.0683	0.0121	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.1770	0.0209	0.0640	0.0652	0.0187	0.0067	0.0011	0.0004	0.0000	0.0000	0.0000
30-34	0.1309	0.0040	0.0132	0.0388	0.0372	0.0253	0.0090	0.0025	0.0004	0.0004	0.0000
35-39	0.0514	0.0008	0.0021	0.0057	0.0119	0.0138	0.0101	0.0021	0.0039	0.0008	0.0003
40-44	0.0134	0.0000	0.0007	0.0004	0.0011	0.0042	0.0018	0.0021	0.0014	0.0007	0.0011
45-49	0.0028	0.0000	0.0000	0.0000	0.0000	0.0005	0.0000	0.0000	0.0009	0.0000	0.0014
Total	3.0374	0.8565	0.7659	0.6114	0.3493	0.2523	0.1099	0.0356	0.0334	0.0097	0.0135
Comparison area											
<15	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0612	0.0541	0.0066	0.0004	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.2087	0.0951	0.0841	0.0248	0.0043	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000
25-29	0.2110	0.0211	0.0557	0.0701	0.0433	0.0156	0.0045	0.0005	0.0002	0.0000	0.0000
30-34	0.1454	0.0041	0.0093	0.0273	0.0376	0.0329	0.0216	0.0080	0.0041	0.0005	0.0000
35-39	0.0798	0.0009	0.0012	0.0060	0.0107	0.0101	0.0199	0.0122	0.0107	0.0048	0.0033
40-44	0.0161	0.0004	0.0000	0.0008	0.0008	0.0004	0.0020	0.0008	0.0051	0.0031	0.0027
45-49	0.0026	0.0005	0.0000	0.0005	0.0000	0.0000	0.0000	0.0011	0.0000	0.0000	0.0005
Total	3.6252	0.8814	0.7846	0.6492	0.4843	0.2964	0.2410	0.1126	0.1009	0.0421	0.0327

CHAPTER 5

MARRIAGE AND DIVORCE

The number of marriages registered in 1998 was 2,548, giving a crude marriage rate of 11.8 per thousand. These figures show a sharp decline over those of 1997.

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 -- 27.5 and 19.8 for all grooms and brides respectively; 26.5 and 19.2 for those marrying for the first time -- is almost similar to those of 1997. In general there appears to be a rise in age at marriage of females in Matlab. The mean age has been over 18 for every year since 1984, while prior to that date it was consistently below that age.

Table 5.3 shows marriage rates by age and sex and clearly shows that some changes occurred compared to 1997. Marriages increased for both men and women in all the age groups except among men aged 45+ years old. Table 5.4 presents data on a cross-tabulation of marriages by groom's and bride's age.

Table 5.5 shows that divorces numbered 277 in 1998. In general, the incidence of divorce in Matlab appears to have fallen. The number of divorces was more than 500 each year during 1978-81. Since 1981 this figure has been less than 500. Table 5.5 also presents data on the number of divorces by partner's age, indicating that the peak ages of divorce for men were 25-29, compared to 15-19 for women.

Table 5.6 and Figure 5.1 show the distribution of marriages and divorces by month. There has been no strong seasonal pattern for marriages or divorces in 1998.

Table 5.7 gives data on divorces by marriage duration, age and sex. The largest percentage of divorces occurs among couples married 12-23 months.

It may be noted that the HDSS definitions specify that if either partner in a marriage has been resident in the study area, the marriage should be registered. Thus if a bride from the study area marries a groom from outside the area, the marriage will be included in the marriage statistics but because of her move out of the area, all her subsequent childbearing goes unrecorded by the DSS. This leads to an imbalance between the numbers of marriages and the numbers of births, and caution is needed if, for any reason, the two data sets have to be related.

Table 5.1: Groom's Age at Marriage by Previous Marital Status, 1998

Age (years)	All grooms		Previous marital status							
			Single		Married		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2548	100.0	2198	100.0	60	100.0	204	100.0	86	100.0
10-14	1	0.0	1	0.0	0	0.0	0	0.0	0	
15-19	117	4.6	115	5.2	0	0.0	2	1.0	0	
20-24	637	25.0	589	26.8	3	5.0	43	21.1	2	
25-29	1117	43.8	1028	46.8	11	18.3	66	32.4	12	
30-34	438	17.2	366	16.7	10	16.7	47	23.0	15	17.3
35-39	147	5.8	89	4.1	22	36.7	25	12.2	11	
40-44	44	1.7	9	0.4	6	10.0	12	5.8	17	
45-49	19	0.7	0	0.0	5	8.3	3	1.5	11	12.8
50-54	9	0.4	1	0.0	2	3.3	2	1.0	4	4.7
55-59	8	0.3	0	0.0	0	0.0	1	0.5	7	8.1
60-64	7	0.3	0	0.0	1	1.7	2	1.0	4	4.7
65+	4	0.2	0	0.0	0	0.0	1	0.5	3	3.5
Median age*	27.0		27.0		35.0		29.0		41.0	
Mean age*	27.5		26.5		35.6		30.3		41.5	
Standard dev.*	6.1		4.4		7.8		7.8		11.2	

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

Table 5.2: Bride's Age at Marriage by Previous Marital Status, 1998

Age (years)	All brides		Previous marital status					
			Single		Divorced		Widowed	
	No.	Percent	No.	Percent	No	Percent	No	Percent
All ages	2548	100.0	2293	100.0	226	100.0	29	100.0
10-14	71	2.8	70	3.1	1	0.4	0	0.0
15-19	1349	52.9	1304	56.9	45	19.9	0	0.0
20-24	846	33.3	757	33.0	83	36.8	6	20.7
25-29	207	8.1	147	6.4	51	22.6	9	31.0
30-34	52	2.0	14	0.6	31	13.7	7	24.1
35-39	17	0.7	1	0.0	11	4.9	5	17.3
40-44	5	0.2	0	0.0	3	1.3	2	6.9
45-49	1	0.0	0	0.0	1	0.4	0	0.0
50-54	0	0.0	0	0.0	0	0.0	0	0.0
55-59	0	0.0	0	0.0	0	0.0	0	0.0
60-64	0	0.0	0	0.0	0	0.0	0	0.0
65+	0	0.0	0	0.0	0	0.0	0	0.0
Median age*	19.8		19.0		24.0		29.0	
Mean age*	19.8		19.2		24.5		29.4	
Standard dev.*	4.0		3.3		5.9		5.7	

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

Table 5.3: Marriage Rates by Age and Sex, 1998

Age (years)	Males			Females		
	Marriages	Population	Rate*	Marriages	Population	Rate*
10-14	1	14165	0.1	71	13699	5.2
15-19	117	12312	9.5	1349	10853	124.3
20-24	637	9003	70.8	846	9593	88.2
25-29	1117	6857	162.9	207	8534	24.3
30-34	438	6121	71.6	52	8347	6.2
35-39	147	6954	21.1	17	7210	2.4
40-44	44	5285	8.3	5	5378	0.9
45+	47	18570	2.5	1	19982	0.1

*Rates per 1000 population irrespective of previous marital status.

Table 5.4: Number of Marriages by Groom's and Bride's Age at Marriage, 1998

Groom's age (years)	Bride's age (years)								
	All	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45+
All ages	2548	71	1349	846	207	52	17	5	
10-14	1	0	1	0	0	0	0	0	0
15-19	117	7	92	13	4	1	0	0	0
	637	31	432	158	14	2	0	0	0
	1117	26	601	421	64	4	1	0	0
	438	7	169	171	78	13	0	0	0
35-39	147	0	45	62	29	7	3	1	0
40-44	44	0	8	16	6	10	4	0	0
45-49	19	0	0	3	5	6	3	2	0
50-54	9	0	1	1	1	4	2	0	0
55-59	8	0	0	1	2	3	1	1	0
60-64	7	0	0	0	2	1	3	1	0
65+	4	0	0	0	2	1	0	0	1

Table 5.5: Number of Divorces by Partners' Age at Divorce, 1998

Male's age (years)	All	Female's age (years)								
		10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+
All ages	277	3	95	94	54	18	9	1	2	1
10-14	0	0	0	0	0	0	0	0	0	0
15-19	4	0	1	3	0	0	0	0	0	0
20-24	53	1	34	14	3	1	0	0	0	0
25-29	104	2	37	40	24	1	0	0	0	0
30-34	54	0	16	19	14	5	0	0	0	0
35-39	30	0	4	13	10	2	0	0	1	0
40-44	14	0	1	4	2	2	5	0	0	0
45-49	8	0	0	0	0	5	2	1	0	0
50-54	3	0	1	0	1	1	0	0	0	0
55-59	2	0	1	1	0	0	0	0	0	0
60-64	2	0	0	0	0	0	1	0	1	0
65+	3	0	0	0	0	1	1	0	0	1

Table 5.6: Marriages and Divorces by Month, 1998

Month	Marriage		Divorce	
	Number	Percent	Number	Percent
January	134	5.3	18	6.5
February	296	11.6	23	8.3
March	291	11.4	25	9.0
April	237	9.3	34	12.3
May	245	9.6	25	9.0
June	214	8.4	26	9.4
July	265	10.4	25	9.0
August	176	6.9	28	10.1
September	103	4.0	11	4.0
October	176	6.9	19	6.9
November	199	7.8	32	11.5
December	212	8.3	11	4.0
Total	2548	100.0	277	100.0

Figure 5.1 Marriages and Divorces by Month, 1998

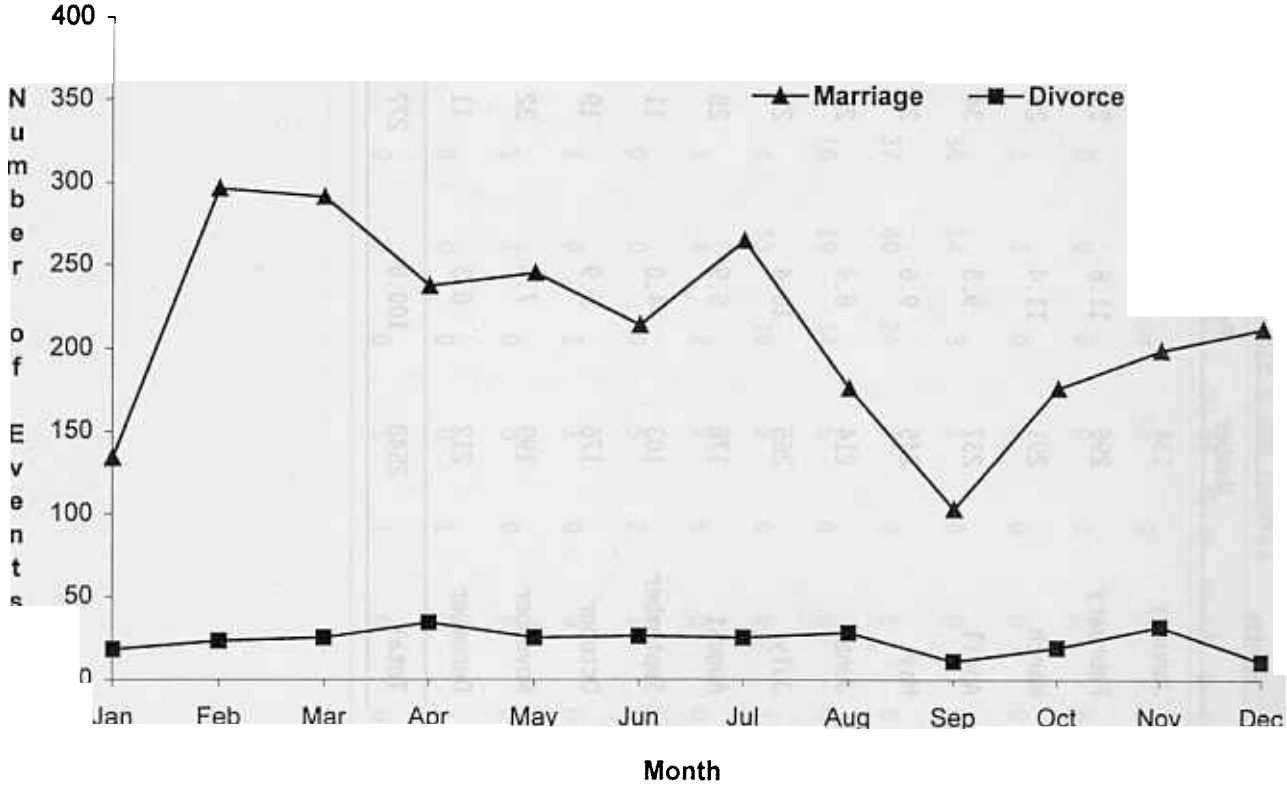


Table 5.7: Number of Divorces by Sex, Age, and Duration of Marriage, 1998

Age at divorce	All duration		Duration of marriage (months)													
			Under 6		6-11		12-23		24-35		36-47		48-59		60+	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
All ages	277	277	55	55	44	44	57	57	49	49	13	13	12	12	47	47
Under 20	4	98	0	35	1	18	2	30	0	10	1	3	0	2	0	0
20-24	53	94	19	11	8	20	18	16	6	28	1	3	1	4	0	12
25-29	104	54	17	5	17	3	22	5	26	10	4	4	3	4	15	23
30-34	54	18	9	2	10	1	7	4	9	1	3	2	4	1	12	7
35-39	30	9	3	1	4	2	5	2	6	0	2	0	2	0	8	4
40-44	22	3	4	1	2	0	2	0	1	0	1	1	1	1	11	0
50+	10	1	3	0	2	0	1	0	1	0	1	0	1	0	1	1

CHAPTER 6

MIGRATION

An "out-migrant" is defined as a person originally listed on a DSS census as a resident, or a person who became a resident after the census by birth or immigration, who subsequently moved out of the surveillance (HDSS) area permanently. Likewise, an "in-migrant" is an individual not recorded in the last census who has permanently moved into the surveillance area. Those who stay in the area continuously for at least six months in a year or come home at least once a month to stay overnight are treated as permanent residents. It may be noted that these definitions refer to the surveillance area as a whole. People who move from the Comparison area into the MCH-FP area, or vice versa, do not feature in the tables which show the numbers of migrants in the two areas.

Table 6.1 shows that the number of in-migrants in 1998 was 6,517 giving a crude rate of in-migration of 30.2 per thousand. Out-migrants numbered 7,948 and the out-migration rate was 36.9 per thousand. Both in-migration and out-migration rates decreased over those of 1997. The net loss of migrants was 6.6 per 1,000 in 1998 which is lower than in 1997. There were more female in- and out-migrants than male. The numbers for the MCH-FP and Comparison areas, shown in Tables 6.2 and 6.3 by age and sex, are fairly evenly distributed between the two areas.

Table 6.4 shows the age-specific migration rates, which are illustrated in Figure 6.1. They show the bi-modal age distribution commonly found for migrant populations, with a primary peak of young adults and a secondary peak of young children moving with their parents. For males the ages of the out-migrants tended to be rather younger than those of the in-migrants, while for females the shapes of the distributions were more similar.

Tables 6.5 to 6.8 show the distributions of in- and out-migrants by age, sex and the cause of the movement. Table 6.9 and Figure 6.2 show the numbers moving in and out by month. January seems to be the preferred month for migration.

Tables 6.10 and 6.11 show the number of males and females migrating in and out of the Matlab HDSS area by location of origin or destination. For locations in Bangladesh the Division and whether the location is rural or urban are given. For numerically important origins or destinations the District is also shown. Roughly equal numbers of men and women move into and out of rural areas of Chandpur district, neighboring Matlab, probably due to marriage. There is a net loss of both men and women to urban Dhaka, primarily of young adults. There is also a net loss to India more evenly distributed across age groups. Migration to the Middle East and other Asian locations is heavily concentrated among out-migrating males age 15-44.

Table 6.1: In- and Out-migration by Age and Sex

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	6517	3081	3436	7948	3933	4015
Under 5	1027	507	520	977	496	481
0	302	147	155	230	117	113
1	192	101	91	223	122	101
2	186	79	107	201	85	116
3	195	100	95	164	78	86
4	152	80	72	159	94	65
5 - 9	641	308	333	630	303	327
10-14	401	170	231	646	315	331
15-19	828	176	652	1411	547	864
20-24	1008	270	738	1632	731	901
25-29	889	471	418	1113	606	507
30-34	648	436	212	598	347	251
35-39	435	327	108	368	259	109
40-44	223	170	53	209	154	55
45-49	125	92	33	87	59	28
50-54	95	57	38	78	34	44
55-59	77	40	37	63	31	32
60-64	41	26	15	52	24	28
65+	79	31	48	84	27	57

Table 6.2: In-migration by Age, Sex, and Area, 1998

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	3101	1405	1696	3416	1676	1740
Under 5	515	261	254	512	246	266
0	167	81	86	135	66	69
1	98	53	45	94	48	46
2	91	40	51	95	39	56
3	100	54	46	95	46	49
4	59	33	26	93	47	46
5 9	319	160	159	322	148	174
10-14	180	75	105	221	95	126
15-19	397	54	343	431	122	309
20-24	474	107	367	534	163	371
25-29	407	191	216	482	280	202
30-34	312	197	115	336	239	97
35-39	215	162	53	220	165	55
40-44	107	80	27	116	90	26
45-49	62	51	11	63	41	22
50-54	39	24	15	56	33	23
55-59	27	18	9	50	22	28
60-64	18	11	7	23	15	8
65+	29	14	15	50	17	33

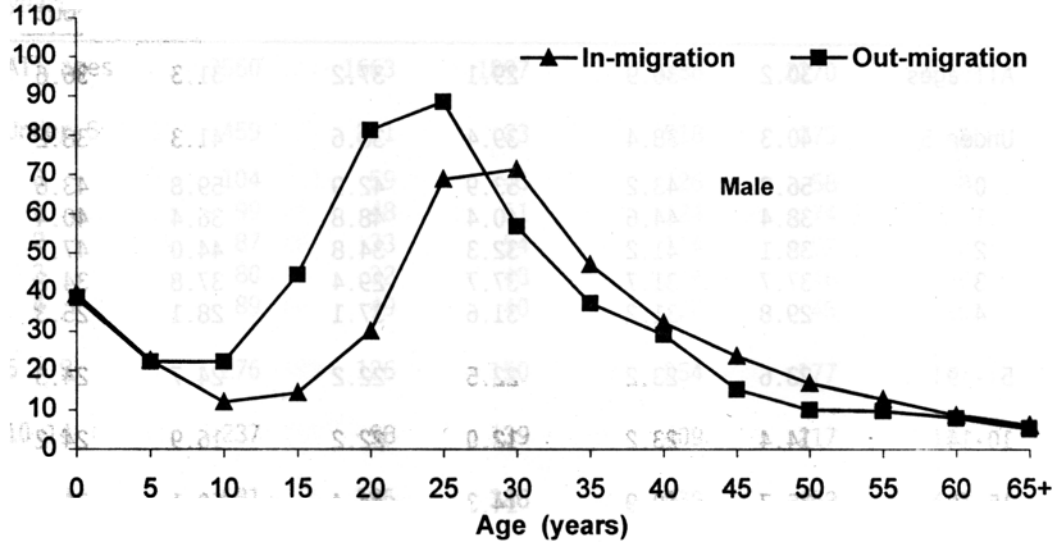
Table 6.3: Out-migration by Age, Sex, and Area

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	3560	1663	1897	4388	2270	2118
Under 5	459	221	23	518	275	243
0	104	59	45	126	58	68
1	99	48	51	124	74	50
2	87	33	54	114	52	62
3	80	32	48	84	46	38
4	89	49	40	70	45	25
5 - 9	276	126	150	354	177	177
10-14	237	98	139	409	217	192
15-19	581	195	386	830	352	478
20-24	764	320	444	868	411	457
25-29	547	275	272	566	331	235
30-34	281	157	124	317	190	127
35-39	158	119	39	210	140	70
40-44	99	67	32	110	87	23
45-49	39	27	12	48	32	16
50-54	37	19	18	41	15	26
55-59	32	18	14	31	13	18
60-64	22	8	14	30	16	14
65+	28	13	15	56	14	42

Table 6.4: Age and Sex-specific Migration Rates by Direction, 1998
(per 1000 population)

Age (years)	Both sexes		Males		Females	
	In	Out	In	Out	In	Out
All ages	30.2	36.9	29.1	37.2	31.3	36.6
Under 5	40.3	38.4	39.4	38.6	41.3	38.2
0	56.8	43.2	53.9	42.9	59.8	43.6
1	38.4	44.6	40.4	48.8	36.4	40.4
2	38.1	41.2	32.3	34.8	44.0	47.7
3	37.7	31.7	37.7	29.4	37.8	34.2
4	29.8	31.2	31.6	37.1	28.1	25.3
5 9	23.6	23.2	22.5	22.2	24.7	24.3
10-14	14.4	23.2	12.0	22.2	16.9	24.2
15-19	35.7	60.9	14.3	44.4	60.1	79.6
20-24	54.2	87.8	30.0	81.2	76.9	93.9
25-29	57.8	72.3	68.7	88.4	49.0	59.4
30-34	44.8	41.3	71.2	56.7	25.4	30.1
35-39	30.7	26.0	47.0	37.2	15.0	15.1
40-44	20.9	19.6	32.2	29.1	9.9	10.2
45-49	15.7	10.9	23.7	15.2	8.1	6.9
50-54	12.5	10.3	16.8	10.0	9.1	10.5
55-59	10.9	9.0	12.7	9.8	9.5	8.2
60-64	6.7	8.5	8.7	8.0	4.8	9.0
65+	8.0	8.5	6.0	5.3	10.2	12.1

Figure 6.1: Rate of In- and Out-migration by Sex and Age, 1998



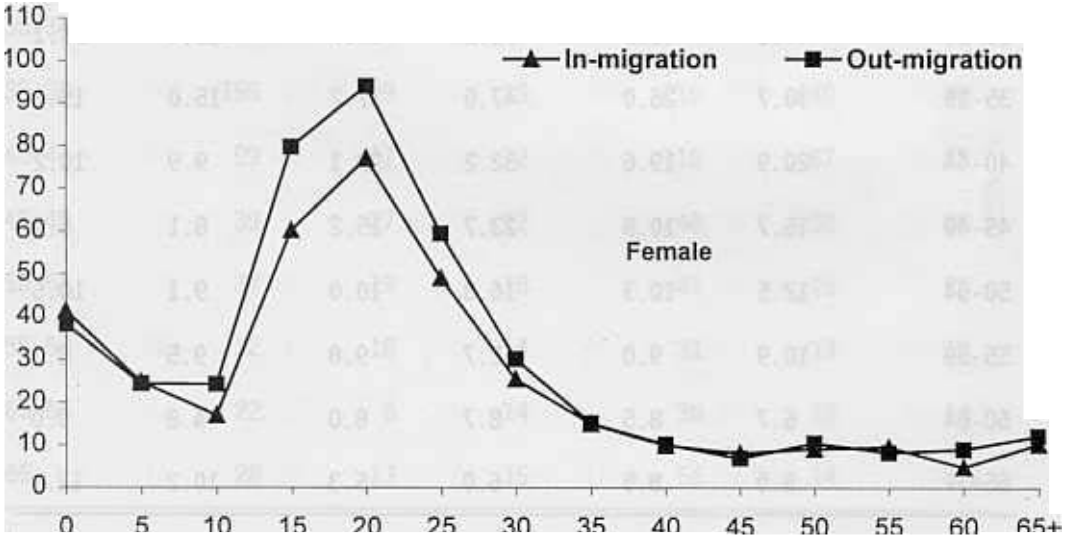


Table 6.5: Male Out-migration by Cause of Movement and Age, 1998

Cause of movement	Age (years)														
	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	3933	496	303	315	547	731	606	347	259	154	59	34	31	24	27
Work/Economic/Educational															
-acquired/seeking job	2256	0	1	68	356	582	526	294	205	128	43	23	17	8	5
-job completion/retirement	13	0	0	0	2	0	3	1	3	0	0	2	1	1	0
-to acquire education	226	1	8	43	70	70	24	5	3	1	1	0	0	0	0
-educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	2	0	0	0	0	0	0	0	0	2	0	0	0	0	0
-student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	123	0	0	1	2	12	17	19	23	14	11	4	8	6	6
-river erosion	7	1	2	0	0	0	0	0	1	1	0	0	0	0	2
Marriage/Familial															
-marriage	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
-separation/divorce/widow	3	0	0	0	0	1	0	1	1	0	0	0	0	0	0
-move with or join spouse/parents	1238	490	291	199	115	55	25	20	12	6	2	2	5	7	9
-adoption	5	4	0	1	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	23	0	0	2	1	6	5	4	3	1	0	0	0	1	0
-health or old age care	6	0	0	0	0	0	0	0	0	0	0	1	0	1	4
Legal problems	10	0	0	0	0	1	4	2	1	0	1	1	0	0	0
Other and not stated															
-other n.e.c.*	20	0	1	1	1	4	1	1	7	1	1	1	0	0	1
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Not elsewhere classified

Table 6.6 Female Out-migration by Cause of Movement and Age, 1998

Cause of movement	Age (years)														
	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			327	331	864	901	507	251	109	55	28	44	32	28	57
Work/Economic/Educational															
-acquired/seeking job	483	0	4	57	199	105	62	30	20	3	1	0	0	0	
-job completion/retirement	14	0	0	1	4	3	3	2	0	0	1	0	0	0	0
-to acquire education	102	2	16	25	24	25	8	2	0	0	0	0	0	0	0
-educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	38	0	0	1	1	8	9	6	3	4	4	0	1	1	0
-river erosion	9		1	2	0	0	0	1	0	0	1	2	0	1	0
Marriage/Familial															
-marriage	576	0	0	15	277	208	64	10	2	0	0	0	0	0	0
-separation/divorce/widow	102	0	0	1	21	43	20	9	3	1	0	2	0	0	2
-move with or join spouse/parents	2628	470	306	226	331	494	331	186	80	45	20	40	30	24	45
-adoption	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	32	0	0	1	5	11	9	3	1	1	0	0		0	0
-health or old age care	11	0	0	0	0	0	0	0	0	0	1	0	0	2	8
Legal problems	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0
Other and not stated															
-other n.e.c.*	11	-	0	1	2	3	1	2	0	1	0	0	0	0	
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	

*Not elsewhere classified

Table 6.7: Male In-migration by Cause of Movement and Age, 1998

Cause of movement	Age (years)														
	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			308	170	176	270	471	436	327	170	92	57	40	26	31
Work/Economic/Educational															
-acquired/seeking job	320	0	0	2	17	33	75	75	54	30	11	14	6	1	2
-job completion/retirement	798	0	0	1	16	77	197	187	155	75	44	18	12	7	9
-to acquire education	97	2	28	18	29	13	4	2	1	0	0	0	0	0	0
-educ. completed/interrupt	3	0	0	0	0	0	2	1	0	0	0	0	0	0	0
-student lodging	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	274	0	0	0	13	28	59	56	46	19	15	7	12	7	12
-river erosion	41	4	4	1	2	3	4	7	6	5	1	1	0	1	2
Marriage/Familial															
-marriage	9	0	0	0	2	2	4	1	0	0	0	0	0	0	
-separation/divorce/widow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
-move with or join spouse/parents	1484	495	276	148	95	109	119	97	56	37	18	15	7	6	6
-adoption	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	16	0	0	0	2	1	5	4	2	1	0	0	0	1	0
-health or old age care	20	0	0	0	0	1	1	4	4	1	2	2	3	2	0
Legal problems	4	0	0	0	0	0	0	2	2	0	0	0	0	0	0
Other and not stated															
-other n.e.c.*	9	0	0	0	0	3	1	0	1	2	1	0	0	1	0
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Not elsewhere classified.

Table 6.8: Female In-migration by Cause of Movement and Age, 1998

Cause of movement	Age (years)														
	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			333	231	652	738	418	212	108	53	33	38	37	15	48
Work/Economic/Educational															
-acquired/seeking job	56	0	0	7	4	10	13	12	4	2	3	1	0	0	0
-job completion/retirement	54	0	0	7	11	17	6	4	4	4	0	0	0	0	1
-to acquire education	116	4	34	38	22	14	4	0	0	0	0	0	0	0	0
-educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	67	2	0	0	2	8	14	14	7	4	3	6	1	1	5
-river erosion	29	4	3	1	3	2	3	5	0	1	0	2	3	1	1
Marriage/Familial															
-marriage	639	0	0	4	338	228	45	11	8	3	1	0	1	0	0
-separation/divorce/widow	115	0	0	0	21	35	24	14	14	3	0	1	2	0	1
-move with or join spouse/parents	2283	494	296	172	243	402	297	148	70	36	26	28	27	13	31
-adoption	17	16	0	1	0	0	0	0	0	0	0	0	0	0	n
-family friction/breakdown	30	0	0	0	4	14	6	3	1	0	0	0	1	0	
-health or old age care	13	0	0	0	0	1	1	1	0	0	0	0	2	0	
Legal problems	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other and not stated															
-other n.e.c.*	17	0	0	1	4	7	5	0	0	0	0	0	0	0	0
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Not elsewhere classified

Table 6.9: In- and Out-migration by Sex and Month, 1998

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
January	969	474	495	965	491	474
February	507	232	275	687	309	378
March	397	166	231	486	225	261
April	581	278	303	729	355	374
May	430	208	222	600	278	322
June	438	214	224	735	334	401
July	521	241	280	649	296	353
August	712	334	378	859	440	419
September	553	267	286	587	328	259
October	612	307	305	664	379	285
November	411	205	206	516	267	249
December	386	155	231	471	231	240
All months	6517	3081	3436	7948	3933	4015

Figure 6.2: Number of In- and Out-migration by Sex and Month, 1998

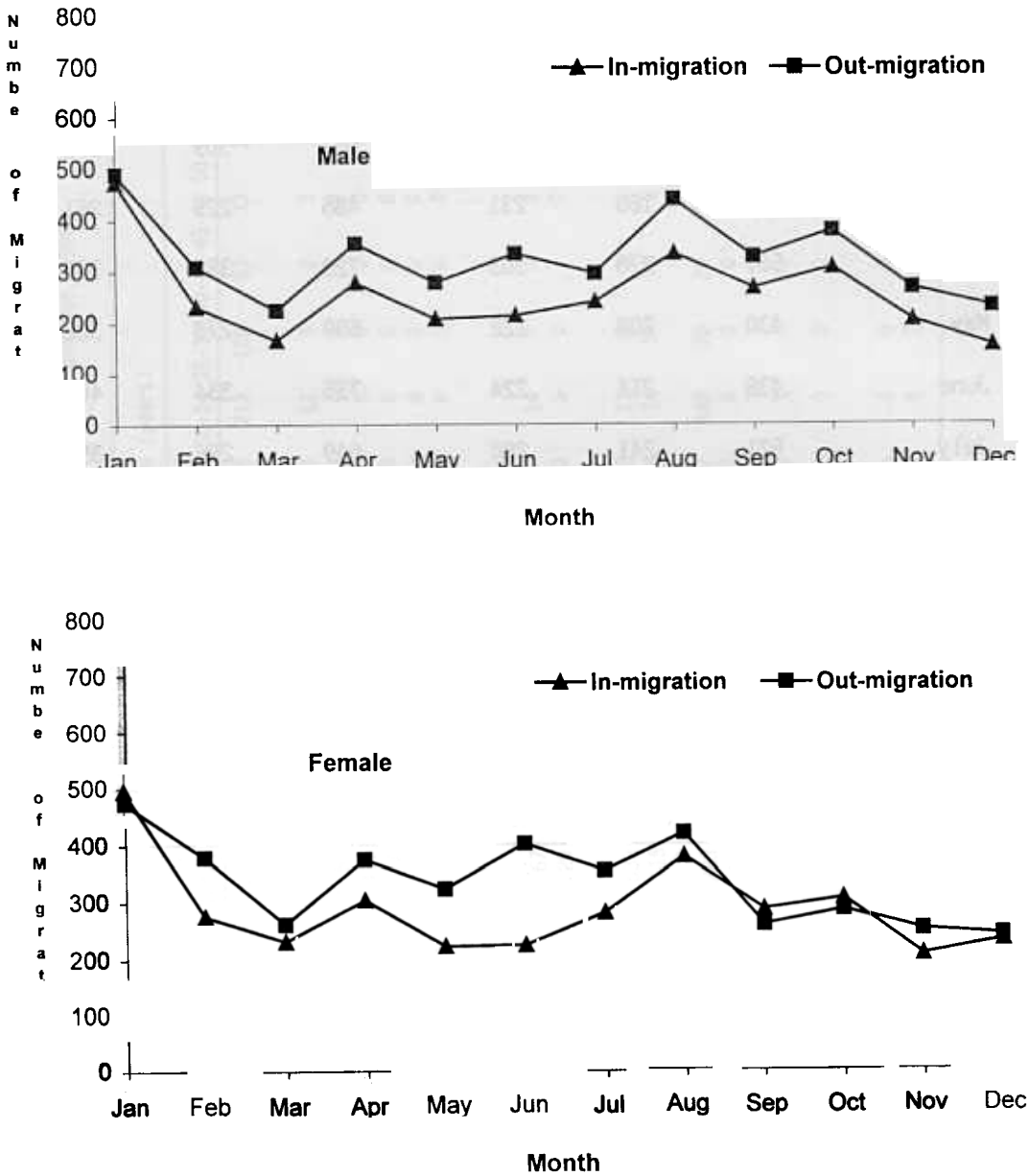


Table 6.10 Male Migration by Destination or Origin, 1998

Destination/origin			Out-Migration						In-Migration					
			Age (years)						Age (years)					
Division	rural/ urban	District	0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
All migrants			1114	1278	953	413	175	3933	985	448	906	499	243	3081
Rajshahi	rural		1	0	2	1	0	4	1	0	1	1	0	3
	urban		4	8	4	0	3	19	2	3	3	1	3	12
Khulna	rural		1	1	1	1	0	4	4	1	0	0	1	6
	urban		16	14	5	4	3	42	14	9	13	3	11	50
Dhaka	rural	Dhaka	2	2	0	1	0	5	3	0	1	2		7
	rural	N'gonj	11	2	3	2	1	19	3	0	1	1	1	6
	rural	Narsingdi	4	0	2	2	0	8	3	0	1	2	0	6
	rural	rest	12	6	2	3	2	25	11	2	6	5	1	25
	urban	Dhaka	464	514	312	101	59	1450	314	159	227	96	67	863
	urban	N'gonj	87	83	55	19	14	258	78	38	65	24	20	225
	urban	Narsingdi	7	9	2	2	0	20	8	1	3	3	3	18
	urban	Gazipur	13	14	9	1	6	43	14	3	8	4	4	33
	urban	rest	7	9	3	0	2	21	16	6	6	5	2	35
Chittagong	rural	Comilla	54	22	7	6	3	92	42	24	26	8	5	105
	rural	Chandpur	218	102	70	51	42	483	290	62	91	68	24	535
	rural	rest	0	1	0	0	0	1	3	2	1	1	0	7
	urban	Sylhet	40	22	16	9	3	90	53	17	23	10	13	116
	urban	Comilla	20	17	12	9	3	61	26	12	9	10	3	60
	urban	Chandpur	17	6	9	9	6	47	12	6	8	4	5	35
	urban	Chittagong	92	90	37	15	7	241	49	24	29	20	16	138
	urban	rest	19	12	10	6	3	50	25	6	5	4	[illegible]	[illegible]
India			16	7	5	4	2	34	11	6	7	3	6	33
Other Asia			2	105	114	41	3	265	1	56	283	156	31	527
Middle-East			2	231	273	121	12	639	2	11	88	67	23	191
Other			0	0	0	0	0	0	0	0	1	1	0	
Unknown			5	1	0	5	1	12	0	0	0	0	0	0

Table 6.11 Female Migration by Destination or Origin, 1998

Destination/origin			Out-Migration						In-Migration					
			Age (years)						Age (years)					
Division	rural/ urban	District	0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
All migrants			1139	1765	758	164	189	4015	1084	1390	630	161	171	3436
Rajshahi	rural		3	1	1	0	0	5	5	2	0	1	0	8
	urban		6	9	5	1	0	21	2	3	1	1	2	9
Khulna	rural		2	4	2	0	0	8	2	8	0	0	0	10
	urban		18	15	8	2	7	50	18	12	6	4	5	45
Dhaka	rural	Dhaka	4	5	0	1	0	10	3	5	1	0	1	10
	rural	N'gonj	8	11	6	1	0	26	5	3	3	0	0	11
	rural	Narsingdi	2	7	1	1	0	11	3	4	1	1	1	10
	rural	rest	4	19	8	2	0	33	19	15	8	3	0	45
	urban	Dhaka	436	556	289	64	75	1420	347	258	207	55	67	934
	urban	N'gonj	81	113	51	13	21	279	93	65	44	16	15	233
	urban	Narsingdi	5	8	6	0	0	19	10	4	5	1	0	20
	urban	Gazipur	18	11	5	6	4	44	19	9	8	2	1	39
	urban	rest	9	14	5	4	0	32	16	9	7	5	1	38
Chittagong	rural	Comilla	62	125	47	5	3	242	71	160	31	9	6	277
	rural	Chandpur	255	599	206	36	49	1145	313	696	205	33	39	1286
	rural	rest	1	8	2	0	1	12	3	8	2	1	2	16
	urban	Sylhet	29	30	19	0	4	82	45	24	24	2	14	109
	urban	Comilla	11	17	14	3	1	46	20	15	15	7	4	61
	urban	Chandpur	25	14	11	2	3	55	8	13	8	1	1	31
	urban	Chittagong	111	157	52	12	4	336	59	52	29	11	5	156
	urban	rest	31	20	10	4	4	69	10	13	11	3	0	37
India			11	15	7	2	11	46	10	4	8	0	5	27
Other Asia			2	1	2	1	0	6	1	6	2	2	0	11
Middle-East			4	4	1	3	2	14	2	2	4	3	2	13
Other			0	0	0	0	0	0	0	0	0	0	0	0
Unknown			1	2	0	1	0	4	0	0	0	0	0	0

CHAPTER 7

FERTILITY REGULATION IN THE MCH-FP AREA

Since the introduction of the family planning and health services program in 1977, CHWs have been maintaining registers to record use of contraception. In fact, CHWs are responsible to provide services to the client at the door-step as well as to maintain the record of their use status. However, contraception obtained from other sources is also recorded. During the monthly visit, the CHW asks the eligible women (currently married and aged under 50 years) about the status of contraceptive use, type of method, date of termination, and method switching.

Table 7.1 shows the contraceptive use rates in both the MCH-FP and the Comparison area, along with national level estimate. Contraceptive use continues to increase in both the areas. In the MCH-FP area in 1996 the contraceptive use rate was 68.1%, which is much higher than that in the comparison area (46.9%) and the National level estimate (49.2%).

Table 7.2 shows the contraceptive method mix in the MCH-FP area and other surveys. Results indicate that in Bangladesh, the "pill" is the most popular method followed by "female sterilization" and "injectable", whereas in the MCH-FP area of Matlab, "injection" is the most popular method followed by "pill" and "female sterilization". Table 7.3 shows the trends in contraceptive method mix in the MCH-FP area. The use of injectables and pills have increased, while use of permanent methods and IUD have decreased.

Table 7.4 illustrates currently married women in different age groups by current contraceptive method use in the MCH-FP area. Overall use of contraceptives has increased almost linearly with age, and use of permanent methods is confined to the higher age group (30+), as expected. Younger women tend to use pills and IUDs, with injectables becoming more popular among older women.

Table 7.1: Contraceptive Use Rates (% of married women age 15-49)

Year	MCH-FP area	Comparison area	National CPS/BSP/BBHS
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	-	-

Table 7.2: Contraceptive Method Mix (%)*

Method	CPS (Rural)		BDHS		Matlab MCH-FP
	1989	1991	1993/94	1996/97	1998
Pill	35.4	43.7	48.1	50.1	28.5
Condom	5.4	6.7	8.2	9.5	2.2
Injectable	4.5	8.7	12.3	14.9	48.1
IUD	6.7	5.6	6.1	4.3	6.8
Tubectomy	40.4	31.0	22.3	18.5	10.2
Vasectomy	7.2	4.0	3.0	2.7	0.3
Others	0.4	0.3	0.0	0.0	3.9
Total	100.0	100.0	100.0	100.0	100.0

*Women using any modern method.

7.3: Trends in Contraceptive Method Mix in the MCH-FP Area, 1986-1998

Method	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Pill	19.6	21.2	21.7	22.9	24.7	25.8	26.3	27.1	24.9	24.3	24.4	25.1	28.5
IUD	12.5	11.6	8.1	6.7	5.0	4.1	3.5	3.5	3.2	2.7	2.1	1.8	2.2
Injectable	38.7	41.1	45.8	47.5	48.8	49.1	49.6	48.4	50.7	52.5	52.4	51.0	48.1
Condom	2.9	2.9	2.6	2.6	2.2	2.3	2.6	3.0	3.8	4.6	6.0	7.4	6.8
Foam	0.8	0.5	0.6	0.5	0.5	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Tubectomy	21.0	18.6	17.4	16.1	14.9	14.5	14.0	14.0	13.4	11.9	11.2	10.7	10.2
Vasectomy	0.9	0.7	0.6	0.6	0.5	0.5	0.4	0.3	0.3	0.3	0.3	0.3	0.3
Others	3.6	3.4	3.2	3.1	3.4	3.4	3.5	3.7	3.7	3.7	3.6	3.7	3.9
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

Table 7.4: Percentage Distribution of Currently Married Women by Contraceptive Method Currently Used According to Age in the MCH-FP Area, 1998

Age group	Any method	Pill	IUD	Injectable	Condom	Foam	Tubectomy	Vasectomy	Others	Currently not using	Total	No.of eligible women
Less 20	37.3	17.1	1.4	16.5	1.9	0.0	0.0	0.0	0.4	62.7	100	514
20-24	53.8	18.1	2.7	29.4	3.1	0.0	0.0	0.0	0.5	46.2	100	2860
25-29	59.5	21.1	1.8	32.2	3.6	0.0	0.4	0.0	0.4	40.5	100	3943
30-34	66.5	20.6	1.3	36.5	5.0	0.0	2.2	0.0	0.9	33.5	100	4144
35-39	76.9	19.8	1.4	37.5	5.6	0.0	9.5	0.3	2.8	23.1	100	3954
40-44	85.0	18.7	1.1	35.6	6.2	0.0	16.6	0.3	6.5	15.0	100	2441
45+	85.5	14.9	0.8	30.2	5.2	0.0	24.5	0.8	9.1	14.5	100	2055
Total	68.8	19.3	1.5	33.5	4.6	0.0	7.0	0.2	2.6	31.2	100	19911

Appendix A

Names and Codes of Villages in the DSS Area, 1998

MCH-FP area				Comparison area			
Village code	Village name	Village code	Village name	Village code	Village name	Village code	Village name
Block A:							
D	Charmukundi	V59	Doshpara	A	Uddamdi	V78	Soladana
W	Kaladi	V60	Suvankardi	B	Charmasua	V79	Pitambordi
V10	Dhakirgaon	V61	Munsabdi	C	Sarderkandi	V80	Daribond
V11	Nabakalash	V62	Shilmondi	F	Sepoykandi	V90	Narinda
V31	Dighaldi	V72	Upadi	G	Thatalia	V95	Baluchar
V32	Mobarakdi			J	Char Harigope	V96	Rampur
				U	Baispur	V97	Dhanagoda
Block B:							
H	Lamchari	V26	Narayanpur	V01	Kadamtali	V98	Santoshpur
V12	Bhangerpar	V56	Palipara	V02	Nilokhi	V99	Baluakandi
V13	Baburpara	V82	Dhanarpar	V03	Char Nilokhi	VB1	Taltoli
V19	Lakshmipur	V83	Padmapal	V04	Char Pathalia	VB2	Sree Rayerchar
V20	Dagorpur	V85	Bhanurpara	V05	Gazipur	VB3	Rayerkandi
V21	Khadergaon	V87	Hurmaisha	V06	Fatepur	VB4	Ramdaspur
V22	Beloti	VB12	Nagda	V07	Nayakandi	VB5	Thakurpara
V23	Baluchar	VB13	Naogaon	V08	Goalbhar	VB6	Sarkerpara
V24	Machuakhal			V09	Naburkandi	VB7	Mirpur
				V14	Enayetnagar	VB8	Farazikandi
Block C:				V35	Durgapur	VB9**	Ramanathgonj
K	Shahpur	V40	Masunda	V36	Ludhua	VB10	South Rampur
	Tatkhana	V41	Paton	V37**	Charputia	D28	Bazarkhola
M	Char Nayergaon	V42	Adhara (South)	V38	Galimkha	D29	Kirtonkhola
N	Aswinpur	V43	Kanachak	V45	Bakchar	D30	Banuakandi
O	Nayergaon	V44	Panchdona	V46	Silinda	D31	Harina
P	Titerkandi	V64	Kawadi	V47	Tulatali		Bazarkhola
Q	Char Shibpur	V86	Adhara	V48	Gangkandi	D32	Khalisha
V27	Panchghoria	V88	Datikara	V49	Harina	D33	Nayanagar
V28	Khidirpur	VB11	Mehron		Bhabanipara	D34	Saidkharkandi
V30	Harion	D100	Barogaon	V50	Bakharpur	D35	Mollah Kandi
V39	Gobindapur	D101	Naojan	V51	Induriakandi	D88	Sankibhanga
						D89	Sankibhanga
Block D:				V53	Chhoto Haldia		Namapara
R	Nandalalpur	V52	Nayakandi	V58**	Mohishmari	D90	Zahirabaj
S	Tatua	V54	Balakandi	V65	Nayachar	D91**	North Joypur
T	Amuakanda	V55	Induria	V66	Thatalia	D92**	West Joypur
V15	Bhati Rasulpur	V57	Baluchar	V68	Sobahan	D93	Maizkandi
V16	Binandapur	V63	Islamabad	V69**	Naobangha	D94	Hazipur
V17	Hatighata		(East)	V70**	South Joypur	D95	Tapaderpara
V18	Torkey	V67	Majlishpur	V71	Khamarpara	D96	Rampur
V25	Char Pathalia	V81	Sonaterkandi	V73	Sadardia	D97	Nayakandi
V29	Shibpur(South)	V84	Shanbajkandi	V74	Ketundia	D98	Bara Haldia
V33	Shibpur(North)	V89	Islamabad	V75	Mukundia	D99	Mandertoli
V34	Satparia		(Middle)	V76	Chosoi		

*Division by block applies only to the MCH-FFP area.
**Lost due to river erosion.

Appendix B

Mid-year Population, Births, and Deaths by Village, 1998

Village code*	Population	Live birth	Death	Birth rate	Death rate
MCH-FP area					
D	1964	53	10	27.0	5.1
W	4242	89	14	21.0	3.3
V10	1738	44	7	25.3	4.0
V11	2058	64	8	31.1	3.9
V31	8743	253	72	28.9	8.2
V32	2772	91	18	32.8	6.5
V59	1272	46	6	36.2	4.7
V60	933	22	4	23.6	4.3
V61	614	16	6	26.1	9.8
V62	882	17	8	19.3	9.1
V72	6275	183	37	29.2	5.9
Block A	31493	878	190	27.9	6.0
H	1352	38	13	28.1	9.6
V12	558	14	0	25.1	0.0
V13	724	15	7	20.7	9.7
V19	2723	79	22	29.0	8.2
V21	480	12	3	25.0	6.3
V22	530	15	5	28.3	9.4
V23	516	5	4	9.7	7.8
V24	2798	89	26	31.8	9.3
V26	2634	82	22	31.1	8.4
V56	1514	35	12	23.1	7.9
V82	1520	39	12	25.7	7.9
V83	545	11	4	20.2	7.3
V85	474	11	7	23.2	14.8
V87	667	24	7	36.0	10.5
VBB	4236	119	38	28.1	9.0
VBC	4698	103	35	21.9	7.4
Block B	27189	723	227	26.6	8.3

(continued)

Appendix B (cont.)

Village code*	Popula-tion	Live birth	Death	Birth rate	Death rate
K	898	18	5	20.0	5.6
L	511	9	2	17.6	3.9
M	184	2	2	10.9	10.9
N	2089	42	14	20.1	4.4
P	1981	40	15	20.2	7.6
Q	362	7	2	19.3	5.5
V27	862	26	6	30.2	7.0
V28	1483	45	14	30.3	9.4
V30	589	12	8	20.4	13.6
V39	332	11	1	33.1	3.0
V40	726	27	1	37.2	1.4
V41	1691	49	15	29.0	8.9
V42	741	11	6	14.8	8.1
V43	857	15	4	25.5	6.8
V64	4515	95	24	21.0	5.3
V86	812	16	4	19.7	4.9
V88	518	14	6	27.0	11.6
VBA	2524	58	23	28.0	6.6
DX1	1278	36	9	28.2	7.0
Block C	28451	686	193	24.1	6.8
R	1425	35	13	24.6	9.1
S	924	16	3	17.3	3.2
T	1567	52	8	33.2	5.1
V15	648	13	1	20.1	1.5
V16	810	17	2	21.0	2.5
V17	1058	33	9	31.2	8.5
V18	3782	95	21	25.1	5.6
V25	1209	37	15	30.6	12.4
V29	494	9	2	18.2	4.0
V33	464	7	3	15.1	6.5
V34	759	14	4	18.4	5.3
V52	193	1	3	5.2	15.5
V54	655	17	7	26.0	10.7
V55	499	13	4	26.1	8.0
V57	1040	20	8	19.2	7.7
V63	2004	33	14	16.5	7.0
V67	611	15	5	24.5	8.2
V81	679	18	2	26.5	2.9
V84	2247	54	18	24.0	8.0
V89	1372	41	12	29.9	8.7
MCH-FP area	109573	2827	764	25.8	7.0

(continued)

Appendix B (cont.)

Village code*	Population	Live birth	Death	Birth rate	Death rate
Comparison area					
A	3101	93	29	30.0	9.4
B	2151	64	18	29.8	8.4
C	3948	109	25	27.6	6.3
F	1415	44	21	31.1	14.8
G	2644	86	30	32.5	11.3
J	629	14	6	22.3	9.5
U	8647	246	65	28.4	7.5
V01	559	13	3	23.3	5.4
V02	543	17	5	31.3	9.2
V03	633	17	6	26.9	9.5
V04	316	10	1	31.6	3.2
V05	3314	101	34	30.5	10.3
V06	2429	61	23	25.1	9.5
V07	373	11	3	29.5	8.0
V08	1261	31	11	24.6	8.7
V09	1186	21	7	17.7	5.9
V14	811	17	4	21.0	4.9
V35	3840	98	27	25.5	7.0
V36	5450	154	45	28.3	8.3
V38	1700	44	13	25.9	7.6
V45	1126	32	9	28.4	8.0
V46	427	15	5	35.1	11.7
V47	1868	59	8	31.6	4.3
V48	623	15	4	24.1	6.4
V49	1332	47	5	35.3	3.8
V50	169	4	0	23.7	0.0
V51	913	28	8	30.7	8.8
V53	3195	95	18	29.7	5.6
V65	810	17	7	21.0	8.6
V66	863	15	7	17.4	8.1
V68	997	41	10	41.1	10.0
V71	478	13	2	27.2	4.2
V73	810	16	4	19.8	4.9
V74	1405	26	13	18.5	9.3
V75	396	7	3	17.7	7.6
V76	1760	50	19	28.4	10.8
V78	261	4	1	15.3	3.8

(continued)

Appendix B (cont.)

Village code*	Population	Live birth	Death	Birth rate	Death rate
V79	334	13	4	38.9	12.0
V80	1146	33	5	28.8	4.4
V90	1193	28	9	23.5	7.5
V95	1970	69	22	35.0	11.2
V96	605	17	3	28.1	5.0
V97	421	15	6	35.6	14.3
V98	179	5	3	27.9	16.8
V99	622	17	6	27.3	9.6
VB0	2846	80	22	28.1	7.7
VB1	1171	37	11	31.6	9.4
VB2	1085	29	6	26.7	5.5
VB3	3098	95	29	30.7	9.4
VB4	3889	118	31	30.3	8.0
VB5	1002	27	8	26.9	8.0
VB6	617	12	2	19.4	3.2
VB7	354	15	3	42.4	8.5
VB8	1439	29	21	20.2	14.6
D28	1170	35	6	29.9	5.1
D29	198	5	1	25.3	5.1
D30	767	21	4	27.4	5.2
D31	1061	42	9	39.6	8.5
D32	725	33	7	45.5	9.7
D33	1132	28	7	24.7	6.2
D34	1406	47	11	33.4	7.8
D35	620	11	7	17.7	11.3
D88	1506	46	15	30.5	10.0
D89	1289	38	10	29.5	7.8
D90	1036	20	8	19.3	7.7
D93	1279	41	11	32.1	8.6
D94	1527	52	10	34.1	6.5
D95	520	6	3	11.5	5.8
D96	945	29	10	30.7	10.6
D97	811	19	4	23.4	4.9
D98	3414	91	23	26.7	6.7
D99	2140	60	21	28.0	9.8
Comp. area	105900	2998	857	28.3	8.1

*See village name in Appendix A.

Appendix C

Life Table Equations

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

2. $$\ell_0 = 100{,}000$$

$$\ell_x = (1 - {}_nq_{x-n})\,\ell_{x-n}$$

3. $$L_0 = 0.276\,\ell_0 + 0.724\,\ell_1$$

$$L_1 = 0.410\,\ell_1 + 0.590\,\ell_2$$

$$L_i = {}^1/_2\,(\ell_i + \ell_{i+1}) \qquad i = 2, 3, 4$$

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

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

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

Note: Greville's method, as suggested in Shryock, H.S., Seigel, J.S., and Associates, The Methods and Materials of Demography (revised), U.S. Dept. of Commerce, Bureau of the Census, 1975, Vol. II p.414 and pp. 444-5.

(ln C assumed to be 0.095; separation factors in Equation 3 correspond to an infant mortality rate of 100.)

Appendix D

New Standard Populations

Age group (years)	Males	Females	Both sexes combined
0	2,558	2,471	2,396
1-4	9,513	9,231	9,490
5-9	10,824	10,472	10,649
10-14	9,954	9,609	9,783
15-19	9,989	9,627	9,809
20-24	9,477	9,137	9,308
25-29	8,458	8,204	8,332
30-34	7,355	7,175	7,266
35-39	6,585	6,476	6,531
40-44	5,326	5,253	5,290
45-49	4,341	4,335	4,338
50-54	3,994	4,061	4,027
55-59	3,486	3,604	3,544
60-64	2,912	3,179	3,045
65-69	2,167	2,591	2,378
70-74	1,424	1,837	1,629
75-79	958	1,406	1,181
80-84	429	814	602
85+	250	518	402
Total	100,000	100,000	100,000

Appendix E

List of DSS Staff - 1998

Project Director
Jeroen K. van Ginneken

Matlab Field Station

Supervisory Staff

Mr. A.M. Sarder, Manager
Mr. A.K.M. Nurul Islam, SFRO
Mr. Liaquat Ali Mondal, FRO
Mr. Md. Ismail, FRO

Senior Health Assistants

Mr. Md. Sirajul Hoque
Mr. K.J.M. Mannan Pathan
Mr. M.A. Mannan Bakaul
Mr. Monoranjan Das
Mr. Md. Aftekharuzzaman
Mr. Md. Mozammel Haque

Paramedic

Mr. M. Monirul Alam Bhuiyan

Admin. Assistant:
Mr. Md. Anisur Rahman

Health Assistants

Mr. M. Idris Ali Miah I
Mr. M. Abul Kashem
Mr. M. Idris Ali Miah II
Mr. Zahirul Hoque
Mr. Md. Nurul Haque
Mr. Fazlur Rahman
Mr. Golam Hossain
Mr. P.C. Chakraborty
Mr. Md. Jasimuddin
Mr. Nasir Ahmed
Mr. Alfaz Uddin A. Chowdhury
Mr. Md. Sadiquzzaman
Mr. Shah Mostafa Kamal
Mr. Sheikh Abdul Jabber
Mr. Md. A. Malek Patwari
Mr. Md. Monirul Hoque
Mr. Jabed Ali

Recorders:
Ms. Shahana Ahmed, HA
Ms. Monowara Begum HA

Note: Besides these, 110 CHWs contributed to the DSS data collection.

Dhaka-based Staff

Dr. M. A. Kashem Shaikh
Dr. Abdur Razzaque
Mr. Saker A. Chowdhury
Ms. Lutfun Nahar
Mr. Md. Golam Mostafa
Mr. Sentu B. Gomes
Mr. M.A. Jalil Sarker
Ms. Rahima Mazhar
Mr. A.B.M. Delwar Hossain
Mr. ABM Delwar Hossain
Mr. M. Kapil Ahmed
Mr. Sajal K. Saha
Mr. Harun-ur-Rashid
Ms. Habiba Rahman
Mr. Md. Arifur Rahim
Ms. Nasrin Aktar
Mr. Birendra Nath Adhikary
Ms. Ayesha Siddiqua

In the 40 years of its existence, ICDDR,B has evolved into a multidisciplinary research centre whose scientists have wide-ranging expertise. Future research will be directed toward developing cost-effective and sustainable solutions to health and population problems for Bangladesh and for other developing countries. While the Centrs's Divisions will continue to operate as key administrative units, the Centre is undertaking a reorganization and restructuring of its research, service and training activities along the lines of its scientific themes which include: Child Health, Nutrition Research, Emerging and Re-emerging Infectious Diseases, Vaccine Evaluation and Development, Reproductive Health, and Health Systems Research.

Child Health: Although the health of children cannot be separated from the health of the rest of the family especially of their mothers, children do have a special priority for the Center's research. Their vulnerability and their high risk from disease and injury enforces the need for special programmes to help them during this critical stage. The research in child health has interlinks with nutrition, infectious diseases, vaccines, reproductive health, and health services, and in this way the child health agenda are truly an interdisciplinary effort. Only by incorporating the benefits of other areas does the health of children improve. We have seen it happen in our field areas. And it does not have to wait for overall economic improvement, it can be accomplished with available resources.

Nutrition Research: In Bangladesh, over 80% of children, aged less then five years, suffer from malnutrition, including many whose malnutrition is severe. Malnutrition is a factor addressed in the Centre's research in child-survival strategies and maternal health and in the treatment of most medical problems with which the Centre deals, including case management of diarrhoea, efficacy of vaccines, micronutrient interventions, hospital-based clinical trials, and community-based operations research. By itself, malnutrition is a major cause of mortality in Bangladesh. The Centre will continue to conduct research, service and training activities aimed at reducing the level of malnutrition, addressing the problems of low birth-weight, adolescent nutrition, and implementing life-cycle approaches to nutrition interventions.

Emerging and Re-emerging Infectious Diseases: Studies on emerging infections began long before the current name "emerging diseases" became popular and the Centre was among the first to describe many of the agents that have "emerged" over the last 30 years. The world faces a major problem with antimicrobial resistance among common infectious diseases. The Centre is now undertaking surveillance for the identification of and resistance among respiratory pathogens, tuberculosis, and agents of reproductive tract infections and sexually transmitted diseases. The Centre has also become a regional resource for strengthening laboratories through training and collaboration with regard to antimicrobial-resistant pathogens. As a research environment, the Centre offers opportunities for scientists, and plans to conduct new clinical and field trials on prevention and treatment of infectious diseases.

Vaccine and Evaluation and Development: The Matlab field area was established in the 1960s as an area to evaluate vaccines for cholera. Since then, the goals and capabilities of the Centre have greatly expanded. In addition to Matlab, our primary vaccine testing area, other geographic areas are now being developed to increase the capability for carrying out vaccine evaluations for both diarrhoeal and non-diarrhoeal diseases. Further, the Centre has an infrastructure to facilitate high-quality and ethical research on vaccines, and will continue to expand its capabilities to carry out vaccine research.

Reproductive Health: As part of its mission since its internationalization in 1978, the Centre has developed a reputation as a field site and an operations-research centre for family planning and reproductive health activities. The reproductive health portfolio has unique attributes, including rural-based family-planning interventions in Matlab which provides a model for maternal and child health family-planning programmes throughout the world; the Matlab International Training Facility which frequently hosts visitors and conferences and conducts courses on family planning and reproductive health and maternal-child health; the Operations Research Project of the HEPD that works in collaboration with the Government of Bangladesh. The Centre plans to continue its activities that include: implementing strategies developed at the Centre to improve family planning, reduce population growth, and promote safe motherhood; integrating family planning and child health programmes that improve child-survival outcomes, as wells as lower fertility rates; and incorporating male contraceptive use and safe-motherhood strategies as new components into the overall Matlab-based family-planning strategy.

Health System Research: Research findings need to be translated into programmes and policies which can be used by the government and NGO programmes. Health systems research is ultimately concerned with improving the health of a community by enhancing the efficiency and effectiveness of the health system as an integral part of the overall process of socioeconimic development. Thus, the ICDDR,B works closely with the national programme to identify priority problems and to design, implement and evaluate health and population sector strategies and policies, making optimal use of the available resources. The Centre is also part of national and international networks of institutions dedicated to health systems research.

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