

DEMOGRAPHIC SURVEILLANCE SYSTEM – MATLAB

139

VOLUME TWENTY SEVEN

REGISTRATION OF DEMOGRAPHIC EVENTS-1995

Golam Mostafa
Kapil Ahmed
M.A. Kashem Shaikh
Jeroen K. van Ginneken
A. M. Sarder

**SCIENTIFIC REPORT NO. 79
DECEMBER 1996**



**INTERNATIONAL CENTRE FOR DIARRHOEAL
DISEASE RESEARCH, BANGLADESH**

CENTRE

**FOR HEALTH AND
POPULATION RESEARCH**

What is the Centre for Health and Population Research (ICDDR,B) ?



ICDDR,B, or "The Centre", was established in 1978 as the successor to the Cholera Research Laboratory, which was created in 1960 to study the epidemiology, treatment, and prevention of cholera. The Centre is an independent, international, non-profit organization for research, education, training, and clinical services. Located in Dhaka, the capital of Bangladesh, the Centre is the only truly international health research institution based in a developing country. The results of research conducted over the years at the Centre provide, today, guidelines for policy-makers, implementing agencies, and health professionals in Bangladesh and around the globe. Researchers at the Centre have made major scientific achievements in diarrhoeal disease control, maternal and child health, nutrition, and population sciences. These significant contributions have been recognized worldwide.

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The **Training and Education Department** coordinates efforts to provide a broad-based training programme that aims at contributing toward the development of global human resources in child survival and population programme research, planning, and implementation.

(see inside of the back cover....)

DEMOGRAPHIC SURVEILLANCE SYSTEM - MATLAB

Volume Twenty Seven

Registration of Demographic Events - 1995

With a Special Supplement

**Mortality Trends by Area, Age and Sex in Matlab
During 1978-1995: Preliminary Findings**

Golam Mostafa
Kapil Ahmed
M.A. Kashem Shaikh
Jeroen K. van Ginneken
A. M. Sarder



CENTRE

For Health and
Population Research

**International Centre for
Diarrhoeal Disease Research, Bangladesh**

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PREFACE

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) is an autonomous, international, philanthropic, non-profit centre for research, education, training, and clinical service. The Centre is derived from the Cholera Research Laboratory (CRL). Its aims and objectives are to undertake and promote study, research, and dissemination of knowledge in diarrhoeal diseases and the directly related subjects of nutrition and fertility, with a view to developing improved health care methods and to prevent and control diarrhoeal diseases and improve public health programmes, especially in developing countries.

The ICDDR,B issues an annual report, working papers, scientific reports, special publications, monographs, theses, dissertations, an international journal on diarrhoeal diseases, and a bi-monthly newsletter which demonstrates the type of research activities currently in progress. The views expressed in these publications are those of the authors, and do not necessarily represent the views of the ICDDR,B.

The Centre has two major objectives:

1. To undertake and promote study, research, and dissemination of knowledge in diarrhoeal diseases and directly related subjects of nutrition and fertility with a view to developing improved methods of health care and the prevention and control of diarrhoeal diseases and improvement of public health programmes with special relevance to developing countries.
2. To provide facilities for training to Bangladeshi and other nationals in areas of the Centre's competence in collaboration with national and international institutions.

ACKNOWLEDGEMENTS

The Demographic Surveillance System (DSS) of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) during the past few years received financial support from UNFPA, the Overseas Development Administration (ODA) of the United Kingdom, the Netherlands government, and ICDDR,B. The ICDDR,B is supported by countries and agencies which share its concern for the health problems of developing countries. Current donors include: the aid agencies of the Governments of Australia, Bangladesh, Belgium, Canada, China, Denmark, Germany, Japan, the Netherlands, Norway, Republic of Korea, Saudi Arabia, Sri Lanka, Sweden, Switzerland, Thailand, the United Kingdom, and the United States; international organizations, including Arab Gulf Fund, Asian Development Bank, European Union, the United Nations Children's Fund (UNICEF), the United Nations Development Programme (UNDP), the United Nations Population Fund (UNFPA), and the World Health Organization (WHO); private foundations including Aga Khan Foundation, Child Health Foundation, Ford Foundation, Population Council, Rockefeller Foundation and the Sasakawa Foundation; and private organizations including American Express Bank, Bayer A.G., CARE, Family Health International, Helen Keller International, the Johns Hopkins University, Macro International, New England Medical Centre, Procter Gamble, RAND Corporation, SANDOZ, Swiss Red Cross, and the University of Alabama at Birmingham, the University of Iowa, and others.

Publication of this Report was made possible by grant number 514 "Updating the Demographic Surveillance System", by the Overseas Development Administration of the United Kingdom. The ICDDR,B is grateful for this generous grant which funded the completion of this report. Mr. Sentu B. Gomes, DSS Project Office Manager, was in-charge of the different phases of production and publication of the report.

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SUMMARY

This report presents the vital registration data for events taking place in 1995 in Matlab, Bangladesh. These data were collected by the Demographic Surveillance System of the International Center for Diarrhoeal Disease Research, Bangladesh. The surveillance area is divided into a Maternal and Child Health and Family Planning (MCH-FP) intervention area and a Comparison area receiving government services.

In 1995 fertility decreased a little in the MCH-FP area; the crude birth rate fell slightly to 25.2 per 1,000 and the total fertility rate to 2.9 births per woman. Fertility also fell in the Comparison area, where the crude birth rate was 27.8 and the total fertility rate 3.6 births per woman.

In the MCH-FP area the crude death rate declined to 7.3 per 1,000 and in the Comparison area to 8.4. In the MCH-FP area the infant mortality showed a considerable decline from 63.7 in 1994 to 51.1 per 1,000 live births in 1995. In the Comparison area infant mortality also declined from 87.2 in 1994 to 78.6 per 1,000 live birth in 1995, which was the lowest level recorded ever. On the other hand, child mortality between 1 and 4 years of age, increased in both MCH-FP and Comparison areas. The net result of the contrasting developments in infant and child mortality is a decrease in under-five mortality in 1995 compared to 1994 in both the areas. This trend is illustrated in Figure 2.1(b).

The data presented in Chapters 2 and 3 show a substantial decline in infant and child mortality during the most recent years. This raises the question if this decrease is genuine or also to some extent due to underreporting of deaths in particular in infancy. To find out if underreporting has occurred, several checks were carried out, but they did not show any indication in this direction. The possibility can, nevertheless, not be excluded and, therefore, a more thorough and rigorous inquiry will be undertaken in the coming year.

The rate of in-migration for the surveillance area remained at the level of 27.0 per 1,000 in 1995 and out-migration decreased to 37.4 per 1,000, leaving a net out-migration of 10.3 per 1,000, thus partially offsetting the rate of natural increase, which amounted to 18.6 per 1,000 in 1995. This means that the overall rate of population growth in 1995 amounted to 0.8 percent.

The report also presents a Special Supplement (in Chapter 7) with data on trends in mortality by age and sex in the MCH-FP and Comparison areas and is a continuation of the Special Supplement presented in the 1994 Annual Report.

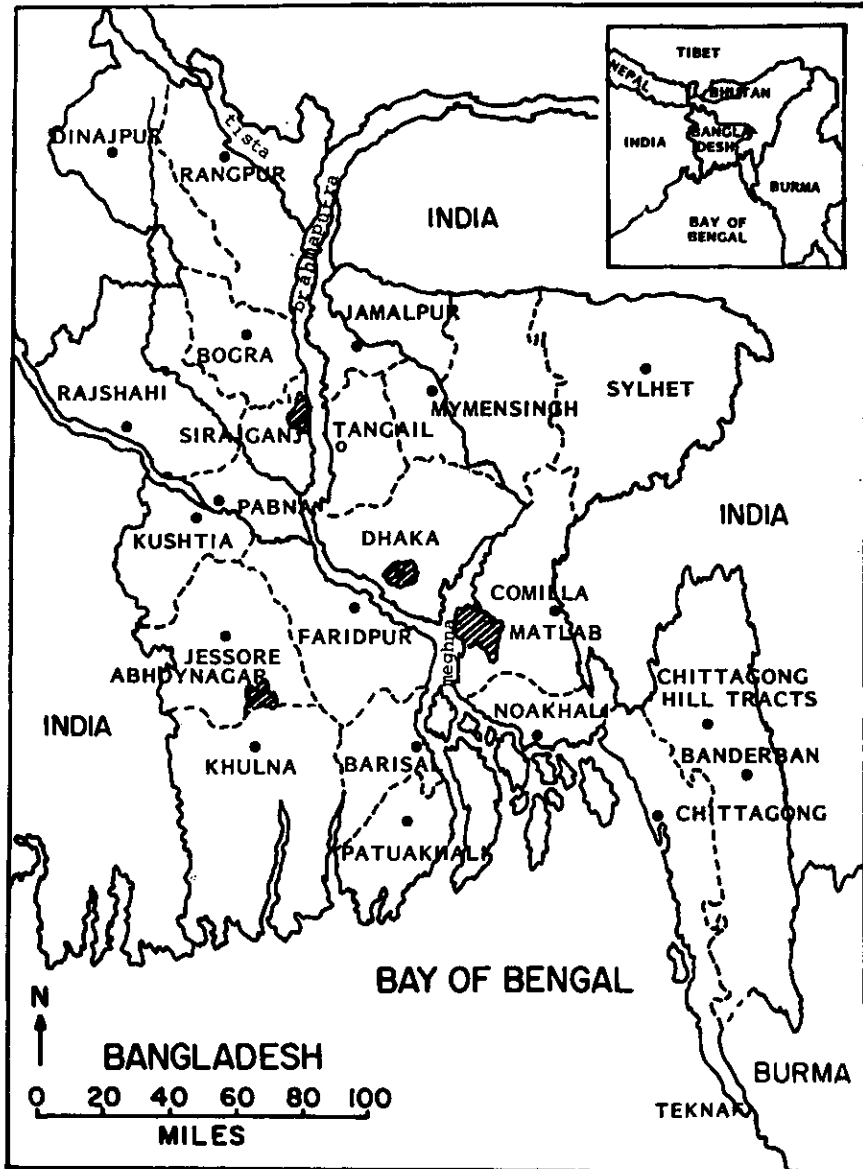
CHAPTER 1

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 Demographic Surveillance System (DSS) is one of the components of this field program. Since 1966 the DSS has maintained the registration of births, deaths, and migrations, in addition to carrying out occasional censuses. In 1975 the system was augmented to include marriages and divorces. 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 begun in 70 villages. The remaining 79 villages were treated as a Comparison area (Figure 1.2). These changes are described in detail in the ICDDR,B Scientific Report No. 47 (May 1981).

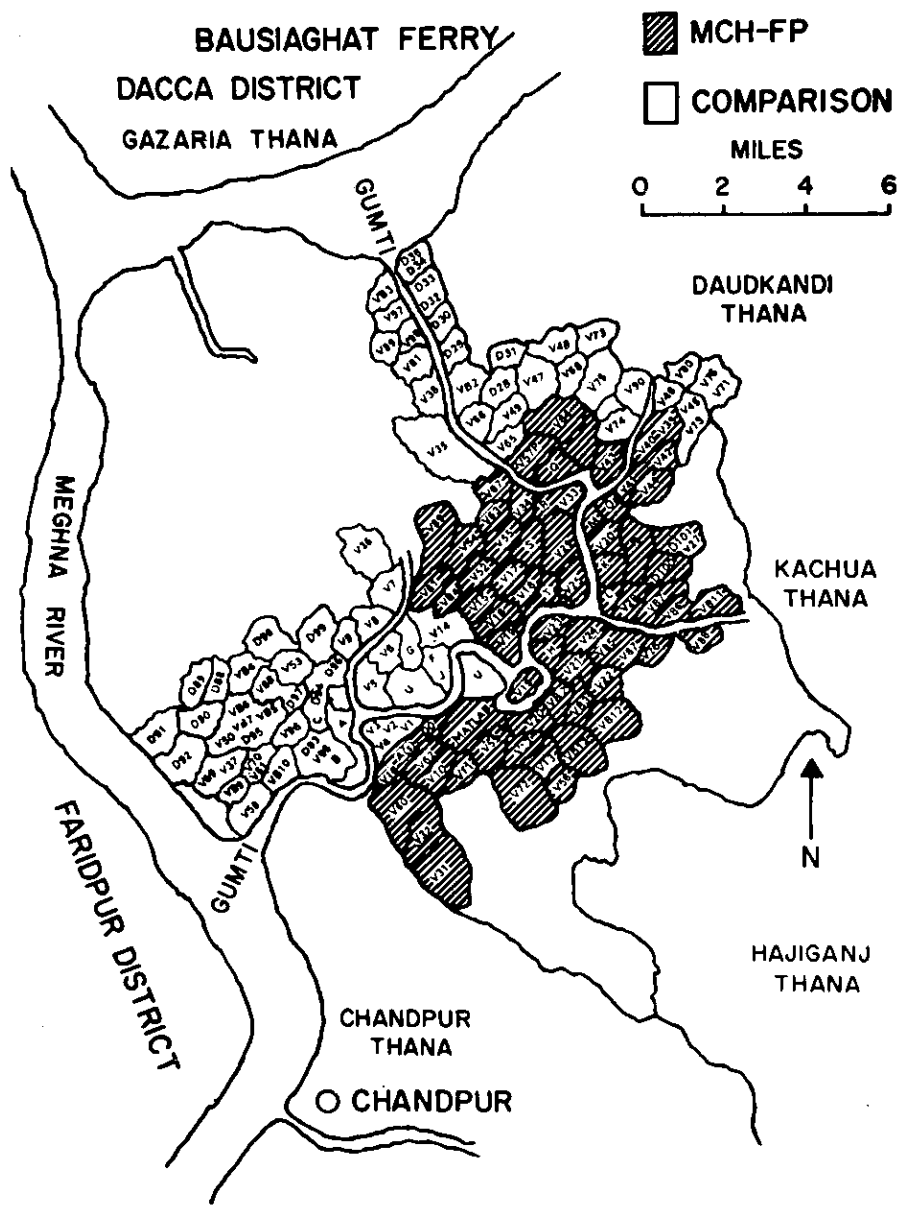
This is the twenty-seventh volume of a series of scientific reports of the Demographic Surveillance System produced by the ICDDR,B. Presented here are results obtained from the Matlab DSS in 1995, along with brief notes and explanations of the tables.

Figure 1.1: Map of Bangladesh Showing the Study Area



Key: Study areas

Figure 1.2: Matlab 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 from 1984 through 1995 and the basic 1995 figures by sex are shown in Table 2.2. The 1995 fertility rate declined slightly compared to the preceding year in the MCH-FP area, with a total fertility rate (TFR) of 2.9 and a crude birth rate (CBR) of 25.2 per 1,000 population. In the Comparison area the TFR fell from 3.8 to 3.6 and the crude birth rate from 29.4 to 27.8 per 1,000. The trends in the total fertility rate in both areas are illustrated in Figure 2.1(a).

The infant mortality declined considerably in the MCH-FP area, 63.7 to 51.1 from 1994 to 1995. This decrease was the net result of decrease in both the neonatal mortality and the post-neonatal mortality rate. In the Comparison area infant mortality decreased from 87.2 to 78.6 per 1,000 from 1994 to 1995. On the other hand child mortality between 1 and 4 years of age increased in both areas. The trends in under-five mortality are illustrated in Figure 2.1(b).

In 1995 in-migration rate remained at the level 27.0 per 1,000 and out-migration rate decreased to 37.4 per 1,000, leaving a net out migration of 10.3 per 1,000, thus offsetting the rate of natural increase, which amounted to 18.6 per 1,000 population. This means that the overall rate of population growth was 0.8 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 study area is illustrated by the population pyramid shown in Figure 2.2. The decline in fertility in the MCH-FP area in the period 1978-1995 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 at the beginning of the MCH-FP project in 1978; by 1995 this proportion had fallen to 36.9 percent. In the Comparison area, on the other hand, the proportion under 15 showed only minimal change, from 43.3 percent in 1978 to 41.3 percent in 1995.

Table 2.1: Vital Statistics of the Matlab MCH-FP and Comparison Areas, 1984-1995

Vital rates per 1000)	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
Crude birth rate												
MCH-FP area	30.7	34.6	33.6	33.6	30.9	28.4	28.3	25.4	25.4	24.7	25.9	25.2
Comparison area	37.3	42.6	39.6	39.2	40.4	36.6	37.8	32.7	31.1	29.4	29.4	27.8
Both areas	34.0	38.5	36.5	36.4	35.5	32.4	32.9	29.0	28.2	27.0	27.6	26.5
Total fertility rate**												
MCH-FP area	4.0	4.5	4.3	4.2	3.8	3.4	3.4	3.0	3.0	2.9	3.0	2.9
Comparison area	5.1	6.0	5.5	5.4	5.4	4.9	5.0	4.3	4.0	3.8	3.8	3.6
Both areas	4.5	5.2	4.9	4.8	4.5	4.1	4.1	3.6	3.5	3.3	3.4	3.2
Crude death rate												
MCH-FP area	13.4	10.2	9.9	9.3	8.7	8.0	7.6	8.1	8.3	7.7	8.0	7.3
Comparison area	17.3	14.2	12.2	11.2	11.0	9.5	9.4	10.2	9.8	10.2	9.2	8.4
Both areas	15.3	12.2	11.0	10.2	9.9	8.7	8.5	9.1	9.0	8.9	8.6	7.9
Neonatal mortality*												
MCH-FP area	57.9	52.5	45.4	43.8	42.8	46.0	47.8	47.7	49.6	42.8	36.4	30.6
Comparison area	71.4	69.4	53.0	54.9	57.7	52.7	53.3	63.2	53.3	64.5	56.4	50.3
Both areas	65.3	61.7	49.4	49.7	51.1	49.7	50.9	56.3	51.6	54.4	46.9	40.8
Post-neonatal mortality*												
MCH-FP area	56.9	33.8	36.4	34.6	38.0	28.3	27.4	32.3	30.8	20.3	27.3	20.6
Comparison area	55.7	49.1	39.7	39.5	39.0	38.0	34.1	51.7	37.0	34.8	30.8	28.3
Both areas	56.2	42.1	38.2	37.2	38.6	33.6	31.2	43.0	34.1	28.0	29.2	24.6
Infant mortality*												
MCH-FP area	114.8	86.4	81.8	78.4	80.8	74.3	75.2	80.0	80.5	63.1	63.7	51.1
Comparison area	127.1	118.4	92.7	94.4	96.6	90.7	87.5	114.9	90.2	99.3	87.2	78.6
Both areas	121.5	103.8	87.6	86.9	89.6	83.3	82.1	99.2	85.7	82.4	76.0	65.3
Child mortality (1-4 yrs)												
MCH-FP area	23.1	16.4	13.4	9.9	7.6	6.4	5.3	7.0	5.9	5.9	5.3	6.7
Comparison area	39.2	24.6	20.7	15.0	14.4	11.5	9.3	9.1	10.4	10.0	7.0	8.4
Both areas	31.6	20.7	17.2	12.6	11.1	9.0	7.4	8.1	8.3	8.1	6.2	7.6
Under five mortality*												
MCH-FP area	192.0	143.9	129.8	113.1	107.4	97.5	94.8	105.7	102.0	87.8	85.1	78.3
Comparison area	252.7	200.1	164.0	145.2	146.1	131.1	120.4	146.2	127.1	139.7	116.1	112.6
Both areas	224.8	174.4	148.0	130.2	128.3	115.7	108.7	128.1	115.7	115.6	101.3	96.0
Rate of natural increase												
MCH-FP area	17.3	24.4	23.7	24.3	22.1	20.4	20.7	17.3	17.1	17.0	17.9	17.9
Comparison area	20.0	28.4	27.4	28.0	29.4	27.1	28.4	22.5	21.2	19.2	20.2	19.4
Both areas	18.6	26.3	25.5	26.1	25.7	23.6	24.4	19.9	19.1	18.1	19.1	18.6
In-migration	24.2	23.9	28.3	33.6	26.5	29.3	26.0	26.9	33.6	25.5	26.5	27.0
Out-migration	42.7	42.1	41.7	44.3	41.5	43.9	42.4	41.9	48.5	36.1	41.4	37.4
Growth (%)	0.0	0.8	1.2	1.5	1.1	0.9	0.8	0.5	0.4	0.8	0.4	0.8

*Per 1000 live births.

**Per woman.

Note: Numbers have been rounded.

Figure 2.1 Trends in Fertility and Under Five Mortality by Area, in 1984-1995

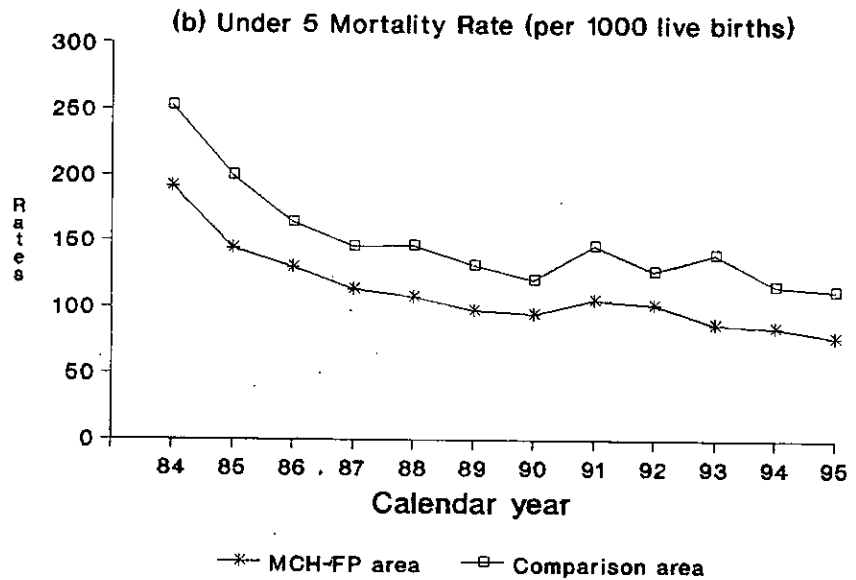
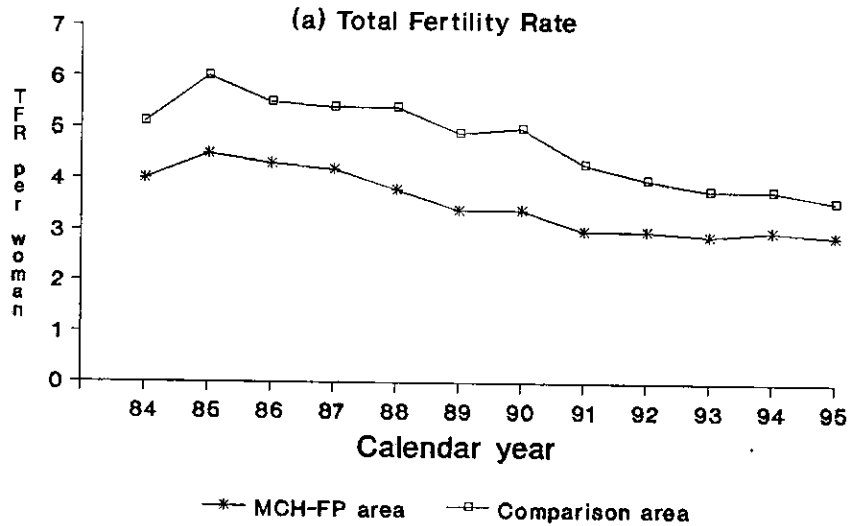


Table 2.2: Mid-year Population, Events Registered, and Population Changes in 1995

	Number			Rate per 1000		
	Total	Males	Females	Total	Males	Females
Total population as of 30 June 1995:						
MCH-FP area	106477	52687	53790	-	-	-
Comparison area	102917	50956	51961	-	-	-
Both areas	209394	103643	105751	-	-	-
<u>Events registered</u> (Jan - Dec. 1995)						
Births						
MCH-FP area	2679	1384	1295	25.2	-	-
Comparison area	2861	1487	1374	27.8	-	-
Both areas	5540	2871	2669	26.5	-	-
Deaths						
-Infant*						
MCH-FP area	137	65	72	51.1	47.0	55.6
Comparison area	225	135	90	78.6	90.8	65.5
Both areas	362	200	162	65.3	69.7	60.7
-All deaths						
MCH-FP area	778	425	353	7.3	8.1	6.6
Comparison area	868	462	406	8.4	9.1	7.8
Both areas	1646	887	759	7.9	8.6	7.2
In-migration	5660	2579	3081	27.0	24.9	29.1
Out-migration	7822	3962	3860	37.4	38.2	36.5
Marriage	2502	-	-	11.9	-	-
Divorce**	319	-	-	127.5	-	-
<u>Population change</u> (Jan - Dec. 1995)						
Net migration	-2162	-1383	-779	-10.3	-13.3	-7.4
Natural increase						
MCH-FP area	1901	959	942	17.9	18.2	17.5
Comparison area	1993	1025	968	19.4	20.1	18.6
Both areas	3894	1984	1910	18.6	19.1	18.1
Net increase	1732	601	1131	8.3	5.8	10.7

*Rate per 1000 live births.

**Rate per 1000 marriages.

Table 2.3: Mid-year Population by Age and Sex, 1995

Age (years)	Number			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	209394	103643	105751	100.0	100.0	100.0
Under 1	5281	2698	2583	2.5	2.6	2.4
1 - 4	21035	10637	10398	10.0	10.3	9.8
1	5215	2603	2612	2.5	2.5	2.5
2	5261	2681	2580	2.5	2.6	2.4
3	4848	2456	2392	2.3	2.4	2.3
4	5711	2897	2814	2.7	2.8	2.7
5 - 9	29390	14828	14562	14.0	14.3	13.8
10-14	26061	13648	12413	12.4	13.2	11.7
15-19	21950	11643	10307	10.5	11.2	9.7
20-24	17740	8748	8992	8.5	8.4	8.5
25-29	15563	6591	8972	7.4	6.4	8.5
30-34	15113	6933	8180	7.2	6.7	7.7
35-39	11996	6057	5939	5.7	5.8	5.6
40-44	8822	4310	4512	4.2	4.2	4.3
45-49	7598	3492	4106	3.6	3.4	3.9
50-54	7740	3367	4373	3.7	3.2	4.1
55-59	6500	3141	3359	3.1	3.0	3.2
60-64	5759	2888	2871	2.8	2.8	2.7
65-69	3784	1988	1796	1.8	1.9	1.7
70-74	2570	1339	1231	1.2	1.3	1.2
75-79	1354	707	647	0.6	0.7	0.6
80-84	752	407	345	0.4	0.4	0.3
85+	386	221	165	0.2	0.2	0.2

Table 2.4: Mid-year Population by Area, Age, and Sex, 1995

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	106477	52687	53790	102917	50956	51961
Under 1	2620	1321	1299	2661	1377	1284
1 - 4	9839	4985	4854	11196	5652	5544
1	2520	1258	1262	2695	1345	1350
2	2472	1271	1201	2789	1410	1379
3	2223	1108	1115	2625	1348	1277
4	2624	1348	1276	3087	1549	1538
5 - 9	14012	7102	6910	15378	7726	7652
10-14	12833	6621	6212	13228	7027	6201
15-19	11335	6029	5306	10615	5614	5001
20-24	9456	4706	4750	8284	4042	4242
25-29	8281	3543	4738	7282	3048	4234
30-34	7994	3594	4400	7119	3339	3780
35-39	6263	3187	3076	5733	2870	2863
40-44	4750	2324	2426	4072	1986	2086
45-49	4011	1842	2169	3587	1650	1937
50-54	4105	1813	2292	3635	1554	2081
55-59	3375	1624	1751	3125	1517	1608
60-64	2925	1497	1428	2834	1391	1443
65-69	2016	1066	950	1768	922	846
70-74	1341	718	623	1229	621	608
75-79	705	368	337	649	339	310
80-84	407	223	184	345	184	161
85+	209	124	85	177	97	80

Table 2.5: Mid-year Population in MCH-FP Area by
Age, Sex, and Block, 1995

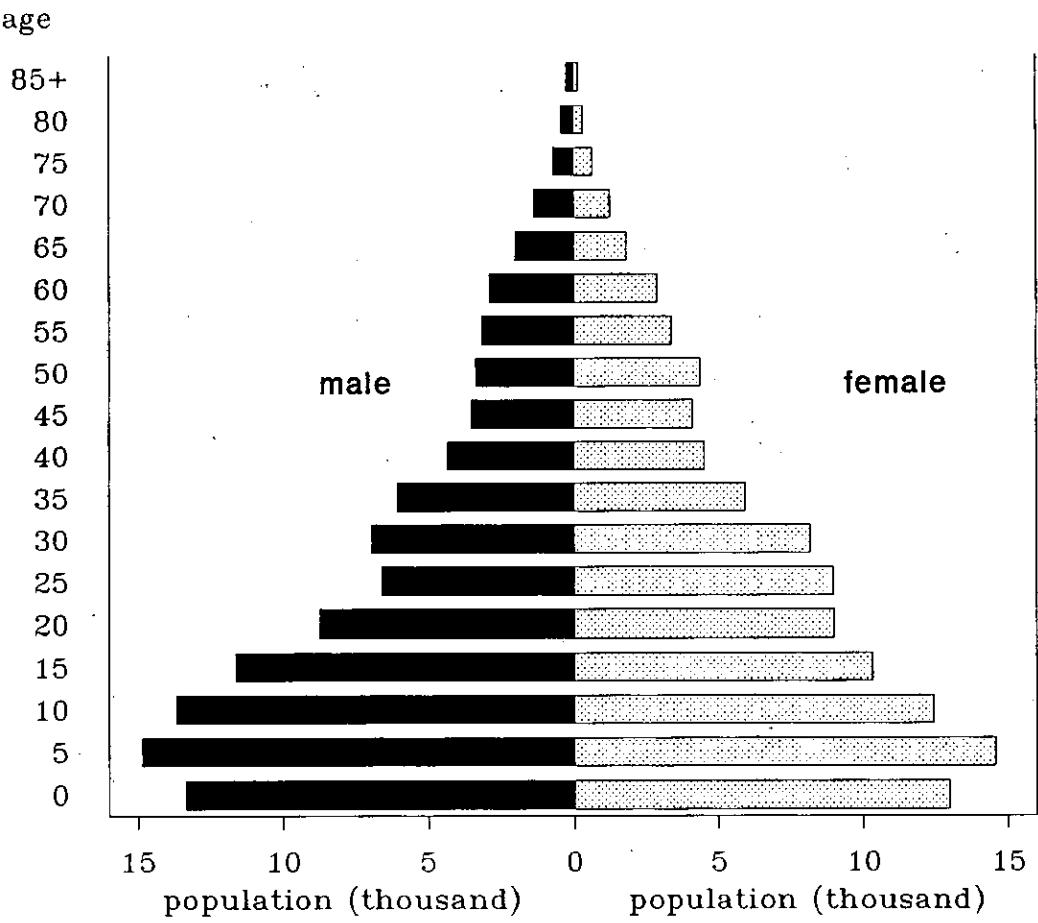
Age (years)	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	30001	14764	15237	26485	12945	13540
Under 1	792	389	403	681	344	337
1 - 4	2798	1414	1384	2548	1278	1270
1	702	351	351	695	345	350
2	704	362	342	628	321	307
3	649	311	338	553	285	268
4	743	390	353	672	327	345
5 - 9	4085	2045	2040	3637	1867	1770
10-14	3658	1912	1746	3326	1715	1611
15-19	3178	1635	1543	2743	1445	1298
20-24	2611	1277	1334	2293	1117	1176
25-29	2417	1019	1398	1945	790	1155
30-34	2286	981	1305	1899	830	1069
35-39	1805	913	892	1422	711	711
40-44	1275	632	643	1155	536	619
45-49	1164	544	620	994	422	572
50-54	1116	510	606	971	405	566
55-59	854	456	398	863	407	456
60-64	733	384	349	746	384	362
65-69	527	289	238	553	284	269
70-74	329	177	152	353	190	163
75-79	192	87	105	180	113	67
80-84	118	62	56	109	65	44
85+	63	38	25	67	42	25

(continued)

Table 2.5 (cont.): Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1995

Age (years)	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	27872	14011	13861	22119	10967	11152
Under	637	320	317	510	268	242
1 - 4	2477	1272	1205	2016	1021	995
1	622	305	317	501	257	244
2	628	319	309	512	269	243
3	576	307	269	445	205	240
4	651	341	310	558	290	268
5 - 9	3471	1761	1710	2819	1429	1390
10-14	3305	1738	1567	2544	1256	1288
15-19	3141	1695	1446	2273	1254	1019
20-24	2578	1333	1245	1974	979	995
25-29	2238	1006	1232	1681	728	953
30-34	2093	976	1117	1716	807	909
35-39	1664	861	803	1372	702	670
40-44	1288	620	668	1032	536	496
45-49	1020	493	527	833	383	450
50-54	1136	509	627	882	389	493
55-59	877	413	464	781	348	433
60-64	795	413	382	651	316	335
65-69	463	251	212	473	242	231
70-74	358	177	181	301	174	127
75-79	184	96	88	149	72	77
80-84	101	53	48	79	43	36
85+	46	24	22	33	20	13

Figure 2.2: Age Pyramid of the 1995 Mid-year Population



CHAPTER 3

MORTALITY

Tables 3.1 to 3.3 show the distribution of deaths by sex and age 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 1995 results was the drop in infant mortality in the MCH-FP area, where it fell from 63.7 in 1994 to 51.1 in 1995. This was the result of declines in both neonatal and post-neonatal mortality. The Comparison area also recorded a fall in infant mortality compared with 1994. Mortality of children aged 1-4 years rose in both the areas.

The abridged life tables in Table 3.6 to 3.10 show that expectation of life at birth continued to increase for both sexes in the MCH-FP and Comparison areas compared to 1994.

The levels of adult mortality decreased in 1995, and there was little difference between the two areas. The probability of dying between the ages of 15 and 60 ($_{45}q_{15}$) decreased a little from 188 per thousand in 1994 to 181 in 1995 for the study area as a whole, but there were compensating movements between the two areas and between the sexes. The rate for men rose in the MCH-FP area and fell in the Comparison area and the rate fell for women in the MCH-FP area and rose in the Comparison area. However, male adult mortality remained consistently higher than female in both areas, and the differential appears to be widening.

Table 3.11 shows the distribution of deaths by age and month of occurrence. Adult deaths tend to peak in the winter months. Neonatal deaths were also most frequent in these months, doubtless reflecting the seasonal variation in births, described in Chapter 4. Post-neonatal deaths on the other hand generally tend to be highest in March and May.

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 W.H.O. "World Standard" age distribution shown in Appendix-D (WHO 1992).

The age-standardised mortality rates by cause of death in Table 3.16, when compared with the corresponding rates for 1994, shows that the biggest decreases for the MCH-FP area males were for cardio-vascular and "other neonatal" causes and for females diarrhoea and "senility", which tells us little. The latter term can in fact be regarded as

a residual category of ill defined causes of death among old people. In the Comparison area the biggest decreases in the rate for males were diarrhoea and malignant neoplasms. The decreases in the rate of Comparison area females were diarrhoea, other infection, malignant neoplasms, ARI, other neonatal and senility. Deaths due to drowning increased in 1995 for both sexes in MCH-FP and Comparison areas.

A comparison of trends in life expectancy at birth in recent years with the age-standardised mortality rates show that they do not always run parallel as one would expect. For the reason for this the reader is referred to the explanation provided in chapter 3 of the 1993 Annual Report.

Table 3.1: Deaths by Age and Sex, 1995

Age	Both sexes	Males	Females
All ages	1646	887	759
Under 1 year	362	200	162
Under 1 month	226	126	100
1-5 months	89	53	36
6-11 months	47	21	26
1 - 4 years	160	71	89
1	60	30	30
2	45	18	27
3	38	16	22
4	17	7	10
5 - 9	36	19	17
10-14	16	12	4
15-19	17	7	10
20-24	26	8	18
25-29	22	8	14
30-34	33	14	19
35-39	23	13	10
40-44	36	24	12
45-49	44	24	20
50-54	64	26	38
55-59	91	59	32
60-64	124	68	56
65-69	161	92	69
70-74	140	74	66
75-79	122	62	60
80-84	91	61	30
85+	78	45	33

Table 3.2: Deaths by Area, Age, and Sex, 1995

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	778	425	353	868	462	406
Under 1 year	137	65	72	225	135	90
Under 1 month	82	41	41	144	85	59
1-5 months	31	14	17	58	39	19
6-11 months	24	10	14	23	11	12
1 - 4 years	36	29	37	94	42	52
1	27	11	16	33	19	14
2	14	7	7	31	11	20
3	21	9	12	17	7	10
4	4	2	2	13	5	8
5 - 9	19	11	8	17	8	9
10-14	4	2	2	12	10	2
15-19	10	5	5	7	2	5
20-24	8	2	6	18	6	12
25-29	11	5	6	11	3	8
30-34	17	8	9	16	6	10
35-39	16	8	8	7	5	2
40-44	18	13	5	18	11	7
45-49	28	16	12	16	8	8
50-54	31	13	18	33	13	20
55-59	48	33	15	43	26	17
60-64	58	34	24	66	34	32
65-69	76	50	26	85	42	43
70-74	66	32	34	74	42	32
75-79	69	38	31	53	24	29
80-84	46	30	16	45	31	14
85+	50	31	19	28	14	14

Table 3.3: Deaths in MCH-FP Area by Age, Sex, and Block, 1995

Age	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	203	117	86	183	102	81
Under 1 year	30	15	15	33	13	20
Under 1 month	16	9	7	21	9	12
1-5 months	7	3	4	8	3	5
6-11 months	7	3	4	4	1	3
1 - 4 years	21	8	13	17	8	9
1	9	1	8	6	2	4
2	2	1	1	7	3	4
3	8	6	2	3	2	1
4	2	0	2	1	1	0
5 - 9	5	4	1	4	1	3
10-14	2	2	0	1	0	1
15-19	1	1	0	2	1	1
20-24	1	1	0	3	0	3
25-29	1	0	1	1	0	1
30-34	3	3	0	2	0	2
35-39	2	0	2	6	4	2
40-44	7	5	2	3	1	2
45-49	13	11	2	6	1	5
50-54	11	7	4	8	2	6
55-59	11	7	4	11	10	1
60-64	15	7	8	13	8	5
65-69	23	16	7	16	11	5
70-74	16	8	8	15	9	6
75-79	14	9	5	14	9	5
80-84	14	6	8	12	11	1
85+	13	7	6	16	13	3

(continued)

Table 3.3 (cont.): Deaths in MCH-FP Area by Age, Sex, and Block, 1995

Age	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	212	111	101	180	95	85
Under 1 year	39	18	21	35	19	16
Under 1 month	24	12	12	21	11	10
1-5 months	8	3	5	8	5	3
6-11 months	7	3	4	6	3	3
1 - 4 years	19	9	10	9	4	5
1	6	6	0	6	2	4
2	3	2	1	2	1	1
3	10	1	9	0	0	0
4	0	0	0	1	1	0
5 - 9	6	4	2	4	2	2
10-14	1	0	1	0	0	0
15-19	4	1	3	3	2	1
20-24	2	1	1	2	0	2
25-29	5	2	3	4	3	1
30-34	8	4	4	4	1	3
35-39	5	2	3	3	2	1
40-44	4	4	0	4	3	1
45-49	4	2	2	5	2	3
50-54	7	2	5	5	2	3
55-59	14	8	6	12	8	4
60-64	13	9	4	17	10	7
65-69	20	14	6	17	9	8
70-74	19	7	12	16	8	8
75-79	19	11	8	22	9	13
80-84	10	6	4	10	7	3
85+	13	7	6	8	4	4

Table 3.4: Death Rates by Age and Sex, 1995
(per 1000 population)

Age	Both sexes	Males	Females
All ages	7.9	8.6	7.2
Under 1 year*	65.3	69.7	60.7
Under 1 month*	40.8	43.9	37.5
1-5 months*	16.1	18.5	13.5
6-11 months*	8.5	7.3	9.7
1 - 4 years	7.6	6.7	8.6
1	11.5	11.5	11.5
2	8.6	6.7	10.5
3	7.8	6.5	9.2
4	3.0	2.4	3.6
5 - 9	1.2	1.3	1.2
10-14	0.6	0.9	0.3
15-19	0.8	0.6	1.0
20-24	1.5	0.9	2.0
25-29	1.4	1.2	1.6
30-34	2.2	2.0	2.3
35-39	1.9	2.1	1.7
40-44	4.1	5.6	2.7
45-49	5.8	6.9	4.9
50-54	8.3	7.7	8.7
55-59	14.0	18.8	9.5
60-64	21.5	23.5	19.5
65-69	42.5	46.3	38.4
70-74	54.5	55.3	53.6
75-79	90.1	87.7	92.7
80-84	121.0	149.9	87.0
85+	202.1	203.6	200.0

*Rate per 1000 live births.

Table 3.5: Death Rates by Area, Age, and Sex, 1995
(per 1000 population)

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	7.3	8.1	6.6	8.4	9.1	7.8
Under 1 year*	51.1	47.0	55.6	78.6	90.8	65.5
Under 1 month*	30.6	29.6	31.7	50.3	57.2	42.9
1-5 months*	11.6	10.1	13.1	20.3	26.2	13.8
6-11 months*	9.0	7.2	10.8	8.0	7.4	8.7
1 - 4 years	6.7	5.8	7.6	8.4	7.4	9.4
1	10.7	8.7	12.7	12.2	14.1	10.4
2	5.7	5.5	5.8	11.1	7.8	14.5
3	9.4	8.1	10.8	6.5	5.2	7.8
4	1.5	1.5	1.6	4.2	3.2	5.2
5 - 9	1.4	1.5	1.2	1.1	1.0	1.2
10-14	0.3	0.3	0.3	0.9	1.4	0.3
15-19	0.9	0.8	0.9	0.7	0.4	1.0
20-24	0.8	0.4	1.3	2.2	1.5	2.8
25-29	1.3	1.4	1.3	1.5	1.0	1.9
30-34	2.1	2.2	2.0	2.2	1.8	2.6
35-39	2.6	2.5	2.6	1.2	1.7	0.7
40-44	3.8	5.6	2.1	4.4	5.5	3.4
45-49	7.0	8.7	5.5	4.5	4.8	4.1
50-54	7.6	7.2	7.9	9.1	8.4	9.6
55-59	14.2	20.3	8.6	13.8	17.1	10.6
60-64	19.8	22.7	16.8	23.3	24.4	22.2
65-69	37.7	46.9	27.4	48.1	45.6	50.8
70-74	49.2	44.6	54.6	60.2	67.6	52.6
75-79	97.9	103.3	92.0	81.7	70.8	93.5
80-84	113.0	134.5	87.0	130.4	168.5	87.0
85+	239.2	250.0	223.5	158.2	144.3	175.0

*Rate per 1000 live births.

Table 3.6: Abridged Life Table, 1995

Age (years)	nq_x	l_x	L_x	e^0
0	65.3	100000	95269	64.2
1	11.4	93466	92835	67.7
2	8.5	92396	92003	67.4
3	7.8	91609	91252	67.0
4	3.0	90894	90759	66.5
5	6.1	90624	451844	65.7
10	3.1	90070	449716	61.1
15	3.9	89794	448172	56.3
20	7.3	89447	445731	51.5
25	7.0	88794	442528	46.9
30	10.9	88168	438633	42.2
35	9.5	87211	434134	37.6
40	20.2	86378	427857	33.0
45	28.6	84632	417566	28.6
50	40.6	82214	403336	24.3
55	67.8	78879	381930	20.3
60	102.5	73532	349975	16.5
65	193.1	65997	299516	13.1
70	240.7	53253	235302	10.6
75	368.0	40435	165130	8.2
80	462.2	25556	97611	6.5
85+	1000.0	13744	68016	4.9

Figure 3.1: Probability of Survival from Birth to Age (x)
by Sex, 1995

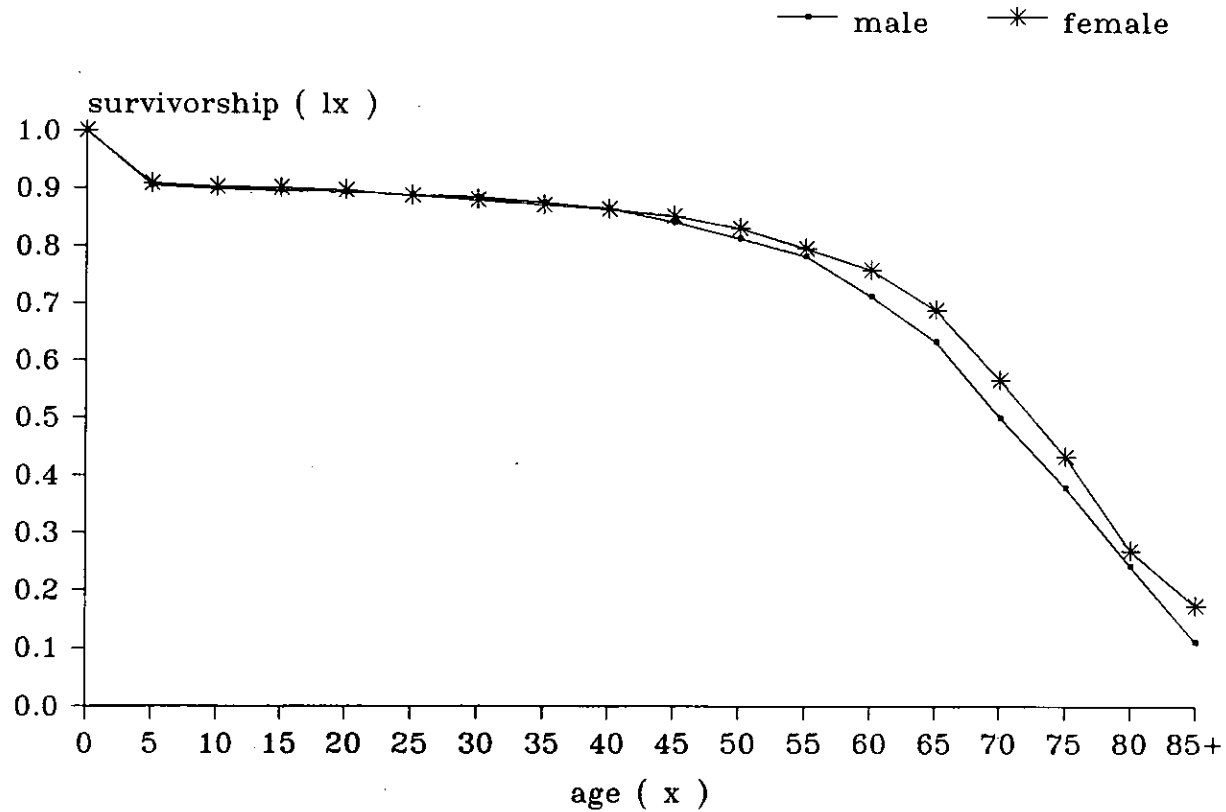


Table 3.7: Abridged Life Tables by Sex, 1995

Age (years)	Males				Females			
	nq_x	l_x	L_x	e^0	nq_x	l_x	L_x	e^0
0	69.7	100000	94956	63.3	60.7	100000	95606	65.2
1	11.5	93034	92405	67.0	11.4	93930	93297	68.4
2	6.7	91968	91660	66.8	10.4	92858	92374	68.2
3	6.5	91352	91056	66.2	9.2	91891	91470	67.9
4	2.4	90759	90649	65.6	3.5	91049	90888	67.5
5	6.4	90540	451367	64.8	5.8	90726	452415	66.8
10	4.4	89962	448898	60.2	1.6	90198	450657	62.2
15	3.0	89567	447215	55.4	4.8	90053	449261	57.3
20	4.6	89298	445551	50.6	10.0	89617	446027	52.5
25	6.1	88891	443213	45.8	7.8	88724	442032	48.0
30	10.0	88353	439715	41.1	11.6	88035	437827	43.4
35	10.7	87465	435169	36.5	8.4	87018	433406	38.9
40	27.5	86531	427150	31.8	13.2	86288	428808	34.2
45	33.8	84152	414167	27.7	24.1	85147	420996	29.6
50	37.9	81306	399379	23.5	42.6	83097	407273	25.2
55	90.0	78222	374633	19.4	46.6	79558	389180	21.3
60	111.6	71185	337253	16.0	93.3	75850	362678	17.2
65	208.3	63244	284626	12.7	176.0	68776	315047	13.7
70	243.8	50072	220856	10.4	237.4	56672	250892	11.0
75	360.0	37866	155457	7.9	376.5	43221	175494	8.6
80	538.4	24234	87057	5.9	357.6	26946	110804	7.3
85+	1000.0	11186	54934	4.9	1000.0	17311	86555	5.0

Table 3.8: Abridged Life Tables by Area, 1995

Age (years)	MCH-FP area				Comparison area			
	${}_nq_x$	l_x	L_x	e^0	${}_nq_x$	l_x	L_x	e^0
0	51.1	100000	96298	65.6	78.6	100000	94306	62.9
1	10.7	94886	94289	68.2	12.2	92136	91474	67.2
2	5.6	93875	93610	67.9	11.1	91014	90511	67.0
3	9.4	93345	92906	67.3	6.5	90008	89718	66.8
4	1.5	92467	92397	66.9	4.2	89427	89239	66.2
5	6.8	92326	460192	66.0	5.5	89051	444125	65.5
10	1.6	91702	458182	61.4	4.5	88560	441878	60.8
15	4.4	91559	456868	56.5	3.3	88159	440128	56.1
20	4.2	91156	454895	51.8	10.8	87869	437155	51.3
25	6.6	90771	452472	47.0	7.5	86919	433088	46.8
30	10.6	90170	448651	42.3	11.2	86265	429101	42.1
35	12.7	89216	443467	37.7	6.1	85301	425306	37.6
40	18.8	88083	436595	33.2	21.9	84781	419620	32.8
45	34.3	86429	425267	28.7	22.1	82926	410401	28.5
50	37.1	83460	410122	24.7	44.5	81096	397112	24.0
55	68.8	80363	388918	20.5	66.7	77491	375414	20.0
60	94.7	74832	357545	16.8	110.4	72325	342856	16.3
65	173.0	67742	310815	13.3	215.5	64340	288394	13.0
70	220.0	56025	250480	10.6	262.7	50475	220192	10.8
75	393.0	43697	175452	7.8	339.7	37217	154827	8.8
80	439.2	26525	103066	6.2	488.3	24573	91986	7.0
85+	1000.0	14876	62183	4.2	1000.0	12575	79493	6.3

Table 3.9: Abridged Life Tables for MCH-FP Area by Sex, 1995

Age (years)	Males				Females			
	nq_x	l_x	L_x	e^0	nq_x	l_x	L_x	e^0
0	47.0	100000	96600	64.8	55.6	100000	95975	66.6
1	8.7	95303	94814	67.0	12.6	94440	93738	69.5
2	5.5	94474	94214	66.6	5.8	93250	92979	69.4
3	8.1	93955	93575	65.9	10.7	92708	92212	68.8
4	1.5	93195	93126	65.5	1.6	91716	91644	68.5
5	7.7	93057	463627	64.6	5.8	91572	456643	67.7
10	1.5	92338	461371	60.0	1.6	91043	454880	63.0
15	4.1	92199	460116	55.1	4.7	90897	453501	58.1
20	2.1	91817	458638	50.3	6.3	90470	451035	53.4
25	7.0	91623	456627	45.4	6.3	89900	448192	48.7
30	11.1	90978	452567	40.7	10.2	89332	444565	44.0
35	12.5	89971	447263	36.2	12.9	88423	439478	39.4
40	27.6	88848	438564	31.6	10.3	87280	434336	34.9
45	42.6	86395	423440	27.4	27.3	86385	426466	30.2
50	35.3	82717	406825	23.5	38.6	84025	412615	26.0
55	97.0	79800	380854	19.3	42.0	80785	396054	22.0
60	107.8	72061	342051	16.1	80.9	77392	372336	17.8
65	210.8	64292	288936	12.7	128.5	71134	334101	14.1
70	201.3	50740	229230	10.4	241.1	61991	273849	10.8
75	409.8	40523	160815	7.3	374.1	47045	191336	8.4
80	499.2	23917	88753	5.7	357.6	29445	121079	7.0
85+	1000.0	11977	47909	4.0	1000.0	18916	84625	4.5

Table 3.10: Abridged Life Tables for Comparison Area by Sex, 1995

Age (years)	Males				Females			
	nq_x	l_x	L_x	e^0	nq_x	l_x	L_x	e^0
0	90.8	100000	93427	62.0	65.5	100000	95258	63.9
1	14.0	90921	90169	67.1	10.3	93450	92881	67.4
2	7.8	89646	89297	67.1	14.4	92486	91820	67.1
3	5.2	88949	88719	66.6	7.8	91154	90798	67.0
4	3.2	88488	88346	65.9	5.2	90443	90208	66.5
5	5.2	88203	439966	65.1	5.9	89973	448651	65.9
10	7.1	87748	437304	60.5	1.6	89446	446897	61.3
15	1.8	87125	435270	55.9	5.0	89302	445482	56.4
20	7.4	86970	433368	51.0	14.1	88856	441399	51.6
25	4.9	86327	430658	46.3	9.4	87608	436138	47.3
30	8.9	85903	427743	41.6	13.1	86784	431285	42.7
35	8.7	85134	423969	36.9	3.5	85643	427525	38.3
40	27.3	84396	416640	32.2	16.6	85344	423439	33.4
45	24.0	82088	405891	28.0	20.5	83923	415648	28.9
50	41.0	80120	392976	23.7	47.0	82206	402059	24.5
55	82.4	76833	369364	19.6	51.6	78342	382317	20.5
60	115.6	70502	333339	16.1	105.4	74300	353113	16.5
65	205.3	62354	281081	12.8	226.4	66470	296107	13.2
70	290.2	49550	212621	10.5	233.5	51419	228138	11.2
75	301.7	35170	149862	8.7	379.2	39412	159745	8.9
80	582.2	24560	84868	6.4	357.6	24468	100614	7.8
85+	1000.0	10262	71102	6.9	1000.0	15719	89823	5.7

Table 3.11: Deaths by Age and Month, 1995

Month	All ages	Age at death			
		Under 1 month	1-11 months	1-4 years	5 years and over
January	161	27	12	7	115
February	150	18	13	9	110
March	135	15	15	14	91
April	144	14	13	16	101
May	136	18	20	16	82
June	126	22	8	13	83
July	123	14	10	21	78
August	115	21	7	11	76
September	128	20	12	15	81
October	144	18	8	15	103
November	137	19	10	14	94
December	147	20	8	9	110
Total	1646	226	136	160	1124

Table 3.12: Male Deaths by Cause and Age, 1995

Cause	All ages	Age at death (years)																		
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
DIARRHOEAL																				
Diarrhoea	75	27	9	1	1	0	0	0	0	0	2	1	0	1	1	10	7	5	3	7
Dysentery	20	1	6	3	0	0	0	0	0	0	0	0	1	2	2	1	2	1	1	0
INFECTIOUS																				
Tuberculosis	33	0	0	0	0	0	0	0	3	1	3	2	2	5	4	2	6	4	1	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	22	2	0	2	2	0	0	2	0	1	1	0	1	0	4	2	2	1	2	0
MALIGNANT NEOPLASMS	43	0	0	1	0	0	1	2	1	1	1	1	3	7	8	8	2	5	1	1
NUTRITIONAL	24	9	8	0	0	1	0	0	0	1	1	0	1	1	1	0	0	1	0	0
CARDIO-VASCULAR	54	0	0	0	0	0	0	0	0	0	0	3	8	3	5	12	6	4	9	4
RESPIRATORY																				
ARI, pneum, influenza	55	39	11	1	0	0	0	0	0	0	0	0	0	0	0	1	1	1	0	1
COPD*	53	1	1	0	0	0	0	0	0	1	1	2	2	6	7	11	7	5	6	3
GASTRO-INTESTINAL	49	2	1	0	0	0	0	2	0	4	5	2	2	9	6	9	3	1	1	2
DIRECT OBSTETRIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus (neonatal)	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	101	101	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	3	0	0	0	0	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0
Homicide	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
Drowning	38	2	26	5	0	0	1	0	0	0	1	0	0	0	2	0	0	0	0	0
Other accidents, etc.	29	0	1	2	5	4	2	1	3	1	0	4	0	2	2	1	1	0	0	0
OTHER AND UNSPECIFIED																				
Senility	90	0	0	0	0	0	0	0	0	0	0	0	0	0	3	12	19	21	19	16
Other causes n.e.c.**	137	4	4	2	4	0	1	1	1	1	6	6	2	14	16	18	17	12	18	10
Unknown	58	10	4	2	0	1	1	0	5	2	3	3	4	9	7	5	1	1	0	0
TOTAL	887	200	71	19	12	7	8	8	14	13	24	24	26	59	68	92	74	62	61	45

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.13: Female Deaths by Cause and Age, 1995

Cause	All ages	Age at death (years)																			
		<1	1-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+	
DIARRHOEAL																					
Diarrhoea	76	12	32	5	0	1	1	0	0	0	0	0	0	1	4	6	4	3	1	6	
Dysentery	18	2	7	1	0	0	0	0	0	0	0	1	1	0	1	0	2	0	2	1	
INFECTIOUS																					
Tuberculosis	12	0	0	0	0	0	0	1	1	0	1	3	3	0	2	0	1	0	0	0	
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other infectious	13	2	3	1	0	0	0	2	0	0	0	0	0	0	2	1	2	0	0	0	
MALIGNANT NEOPLASM	27	0	0	0	0	0	2	2	1	2	2	0	7	2	4	3	1	0	1	0	
NUTRITIONAL	29	15	9	0	0	0	1	0	1	0	0	1	1	0	1	0	0	0	0	0	
CARDIO-VASCULAR	54	0	0	0	0	0	0	0	1	1	1	1	7	3	9	8	6	12	2	3	
RESPIRATORY																					
ARI, pneum. influenza	47	38	5	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2	0	0	
COPD*	45	1	1	0	0	1	0	1	2	0	1	3	4	3	7	9	3	7	2	0	
GASTRO-INTESTINAL	28	1	0	0	0	0	1	1	3	1	0	4	1	6	2	2	3	2	1	0	
DIRECT OBSTETRIC	19	0	0	0	0	4	5	1	5	1	3	0	0	0	0	0	0	0	0	0	
NEONATAL																					
Tetanus (neonatal)	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other neonatal	77	77	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ACCIDENTS, INJURIES																					
Suicide	12	0	0	0	0	3	4	4	0	0	0	1	0	0	0	0	0	0	0	0	
Homicide	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Drowning	34	1	25	2	0	0	1	0	1	0	0	0	0	0	0	2	0	1	1	0	
Other accidents, etc.	20	2	0	1	2	1	2	1	1	1	1	0	0	1	1	1	3	2	0	0	
OTHER AND UNSPECIFIED																					
Senility	88	0	0	0	0	0	0	0	0	0	0	0	0	1	7	18	25	16	5	16	
Other causes n.e.c.**	118	3	6	4	0	0	1	1	2	1	3	3	10	9	12	14	14	15	13	7	
Unknown	38	5	1	1	2	0	0	0	1	3	0	3	4	6	4	4	2	0	2	0	
TOTAL	759	162	89	17	4	10	18	14	19	10	12	20	38	32	56	69	66	60	30	33	

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.14: Male Deaths by Cause, Age, and Area, 1995

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																
Diarrhoea	30	45	9	18	3	6	1	1	0	2	1	2	11	14	5	2
Dysentery	7	13	0	1	0	6	2	1	0	0	1	4	4	1	0	0
INFECTIOUS																
Tuberculosis	16	17	0	0	0	0	0	0	0	7	7	6	9	4	0	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	15	7	1	1	0	0	3	1	4	0	4	1	3	4	0	0
MALIGNANT NEOPLASMS	28	15	0	0	0	0	0	1	4	2	10	9	13	3	1	0
NUTRITIONAL	13	11	3	6	5	3	0	0	3	0	2	1	0	1	0	0
CARDIO-VASCULAR	33	21	0	0	0	0	0	0	0	0	12	7	19	12	2	2
RESPIRATORY																
ARI, pneum, influenza	16	39	8	31	5	6	1	0	0	0	0	0	2	1	0	1
COPD*	26	27	0	1	1	0	0	0	1	1	9	8	12	17	3	0
GASTRO-INTESTINAL	28	21	0	2	1	0	0	0	7	4	10	9	8	6	2	0
DIRECT OBSTETRIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEONATAL																
Tetanus (neonatal)	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	35	66	35	66	0	0	0	0	0	0	0	0	0	0	0	0
Suicide	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0
Homicide	1	2	0	0	0	0	0	0	1	2	0	0	0	0	0	0
Drowning	17	22	2	0	12	14	2	3	0	3	1	1	0	0	0	1
Other accidents, etc.	16	10	0	0	1	0	1	6	8	0	5	3	1	1	0	0
OTHER AND UNSPECIFIED																
Senility	49	41	0	0	0	0	0	0	0	0	2	1	33	38	14	2
Other causes n.e.c.**	64	73	3	1	0	4	2	4	5	5	19	19	31	34	4	6
Unknown	30	28	4	6	1	3	1	1	7	5	13	10	4	3	0	0
TOTAL	425	462	65	135	29	42	13	18	41	33	96	81	150	139	31	14

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.15: Female Deaths by Cause, Age, and Area, 1995

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																
Diarrhoea	28	48	7	5	11	21	1	4	1	1	1	4	4	10	3	3
Dysentery	4	14	0	2	1	6	0	1	0	0	2	1	1	3	0	1
INFECTIOUS																
Tuberculosis	5	7	0	0	0	0	0	0	0	3	5	3	0	1	0	0
Tetanus (non-neonatal)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	9	4	1	1	2	1	1	0	2	0	1	1	2	1	0	0
MALIGNANT NEOPLASMS	11	16	0	0	0	0	0	0	4	5	6	7	1	4	0	0
NUTRITIONAL	10	19	7	8	2	7	0	0	0	2	1	2	0	0	0	0
CARDIO-VASCULAR	31	23	0	0	0	0	0	0	2	1	10	10	16	12	3	0
RESPIRATORY																
ARI, pneum, influenza	25	22	21	17	1	4	1	0	0	0	0	0	2	1	0	0
COPD*	19	26	0	1	0	1	0	0	1	4	7	10	11	10	0	0
GASTRO-INTESTINAL	15	13	1	0	0	0	0	0	2	4	6	7	6	2	0	0
DIRECT OBSTETRIC	8	11	0	0	0	0	0	0	8	11	0	0	0	0	0	0
NEONATAL																
Tetanus (neonatal)	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	31	46	31	46	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	5	7	0	0	0	0	0	0	5	6	0	1	0	0	0	0
Homicide	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
Drowning	19	15	0	1	15	10	1	1	1	1	0	0	2	2	0	0
Other accidents, etc.	11	9	1	1	0	0	2	1	5	2	1	1	2	4	0	0
OTHER AND UNSPECIFIED																
Senility	47	41	0	0	0	0	0	0	0	0	4	4	33	31	10	6
Other causes n.e.c.**	56	64	3	1	4	2	2	3	4	4	16	18	24	32	3	4
Unknown	18	18	0	4	1	0	1	1	4	0	9	8	3	5	0	0
TOTAL	353	406	72	90	37	52	10	11	39	44	69	77	107	118	19	14

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.16: Age-standardized Mortality Rates by Cause of Death, 1995
(per 100,000 population)

Cause of death	Males		Females	
	MCH-FP area	Comparison area	MCH-FP area	Comparison area
Diarrhoea	60.09	94.22	69.31	117.18
Dysentery	13.12	25.24	10.55	34.73
Tuberculosis	34.70	40.68	9.99	15.48
Other infectious	29.60	15.17	18.81	8.86
Malignant neoplasms	59.42	35.40	22.58	39.32
Nutritional	25.72	21.11	18.89	35.54
Cardio-vascular	69.67	50.17	99.93	68.22
ARI, pneumonia, influenza	31.19	72.56	50.26	43.91
COPD*	54.81	63.00	54.59	68.27
Gastro-intestinal	59.37	48.69	38.79	29.65
Direct obstetric	-	-	14.83	23.09
Tetanus (neonatal)	-	-	-	3.85
Other neonatal	67.77	122.61	58.97	88.52
Suicide	-	4.69	8.93	14.49
Homicide	-	-	-	1.92
Drowning	38.84	37.46	38.82	31.36
Other accidents, etc.	27.55	26.17	23.95	23.45
Senility	105.28	101.74	182.54	155.02
Other cause n.e.c.**	134.84	164.07	157.24	209.57
Unknown	62.17	56.88	42.65	41.75
Total	877.84	983.58	923.14	1054.18

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

CHAPTER 4

FERTILITY

Table 4.1 shows the number of pregnancies and their outcomes in 1995. Compared with 1994, the number of live births fell by 223 or 4.0 percent. In the MCH-FP area the number of live births was 68 less than in 1994, and in the Comparison area there were 155 less than in 1994. In the study area as a whole, 88.8 percent of pregnancies resulted in a live birth; a proportion which remains remarkably constant from year to year.

Table 4.2 shows the distribution of pregnancies by outcome, and live births by sex and month of occurrence. The data show the usual marked seasonal variation, peaking in October-December. The sex ratio of the live births was 107.6 males per 100 females.

Variations in live births by month of occurrence are also shown in Figure 4.2 which also contains data on variations in deaths by month.

Table 4.3 shows the age-specific fertility rates for the study area, together with the total fertility rate, crude birth 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. Comparison of age-specific rates with those for 1994 show that the rate declined for all age groups of women in both areas, except the 35-39 age group.

Table 4.6 shows the distribution of births by mother's age and live birth order, and Table 4.7 the age-order-specific fertility rates derived from these figures. These tables were included from 1992 in the DSS reports, and their production has been made possible by the up-dating of the pregnancy history files. The breakdown by birth order facilitates a more detailed and sensitive analysis of fertility trends and differentials. Thus the totals of the order-specific rates represent the components by birth order of the total fertility rates. In the same way as the TFR represents the average number of children which would be borne by a woman who go through life having children at the current rates, so the total for birth order N represents the proportion of women who would have at least N children.

Thus the tables highlight the differences between the MCH-FP and Comparison areas. There is comparatively little difference between the two areas for birth orders 1 and 2, but thereafter they widen dramatically: for birth orders 6,7 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, 1995

Type of pregnancy outcome	Both areas		MCH-FP area		Comparison area	
	No.	Rate	No.	Rate	No.	Rate
Total pregnancies*	6184	121.2	2878	107.1	3306	136.9
Live birth preg.**	5495	888.6	2658	923.6	2837	858.1
Fetal wastage	689	111.4		76.4	469	141.9
Early (miscarriage)	505	81.7	178	61.8	327	98.9
Late (stillbirths)	184	29.8	42	14.6	142	43.0
Multiple birth pregnancies	61		26		35	
Live birth pregnancies	54		24		30	
Three live births	1		1		0	
Two live births	43		19		24	
One live birth	10		4		6	
Still birth pregnancies	3		1		2	
Miscarriage pregnancies	4		1		3	

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

**Ratio per 1000 total pregnancies.

Table 4.2: Pregnancy Outcomes by Month, 1995

Months	Pregnancy outcome					No. of live born children			
	All	Miscarriage		Still birth	Live* birth	Both sexes	Males	Females	Ratio
		Induced	Spon.						
All months	6184	187	318	184	5495	5540	2871	2669	1.0757
January	538	17	23	17	481	483	256	227	1.1278
February	553	14	31	24	484	485	270	215	1.2558
March	400	14	20	12	354	359	173	186	0.9301
April	394	16	32	10	336	341	186	155	1.2000
May	419	16	27	9	367	370	200	170	1.1765
June	404	15	27	7	355	359	188	171	1.0994
July	507	16	33	13	445	449	240	209	1.1483
August	567	21	39	18	489	492	244	248	0.9839
September	524	14	26	21	463	469	256	213	1.2019
October	596	16	21	12	547	551	265	286	0.9266
November	651	17	21	22	591	597	310	287	1.0801
December	631	11	18	19	583	585	283	302	0.9371

*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, 1995

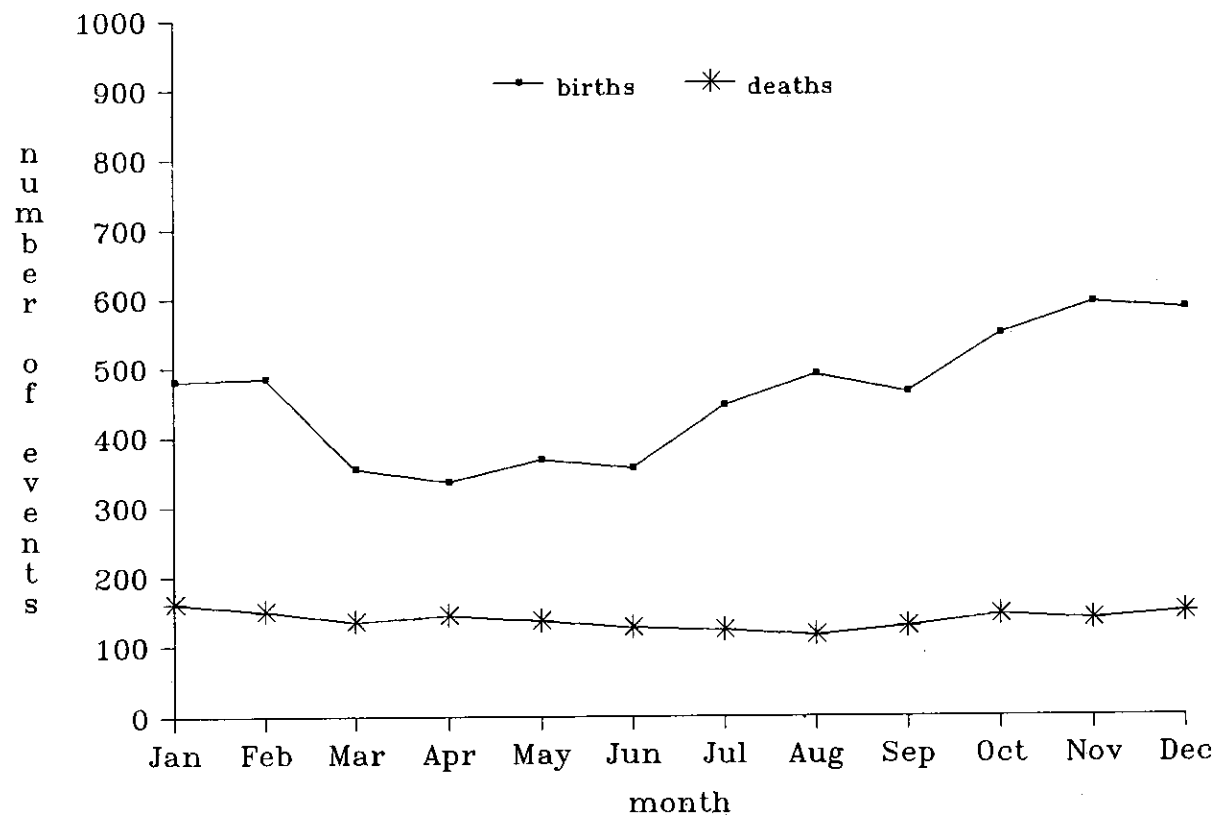


Table 4.3: Age-specific Fertility Rates and Indices, 1995

Age (years)	Number of live births	Number of women	ASFR (per 1000)
All ages	5540	51008	108.6
15-19*	631	10307	61.2
20-24	1745	8992	194.1
25-29	1725	8972	192.3
30-34	1008	8180	123.2
35-39	349	5939	58.8
40-44	69	4512	15.3
45-49**	13	4106	3.2

Total Fertility Rate (TFR) = 3240

General Fertility Rate (GFR) = 109

Gross Reproduction Rate (GRR) = 1561

Net Reproduction Rate (NRR) = 1380

*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, 1995

Age (years)	MCH-FP area			Comparison area		
	Births	Women	Rate	Births	Women	Rate
All ages	2679	26865	99.5	2861	24143	118.5
15-19*	313	5306	59.0	318	5001	63.6
20-24	828	4750	174.3	917	4242	216.2
25-29	845	4738	178.3	880	4234	207.8
30-34	505	4400	114.8	503	3780	133.1
35-39	154	3076	50.1	195	2863	68.1
40-44	29	2426	12.0	40	2086	19.2
45-49**	5	2169	2.3	8	1937	4.1
	TFR	=	2954	TFR	=	3560
	GFR	=	100	GFR	=	119
	GRR	=	1428	GRR	=	1710
	NRR	=	1279	NRR	=	1472

*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, 1995

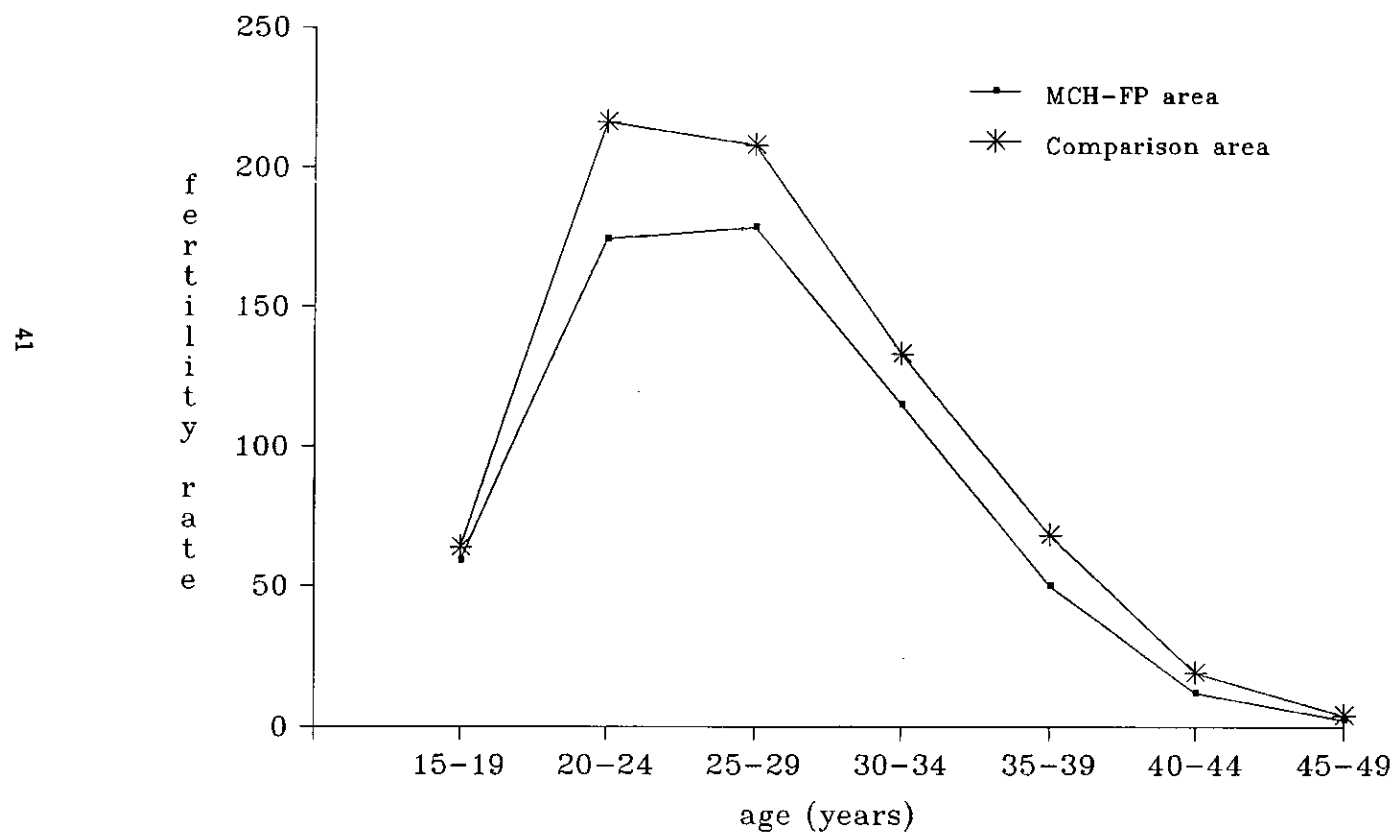


Table 4.5: Age-specific Fertility Rates and Indices for
MCH-FP Area by Block, 1995

Age (years)	Block A			Block B		
	Births	Women	Rate	Births	Women	Rate
All ages	752	7735	97.2	717	6600	108.6
15-19*	92	1543	59.6	79	1298	60.9
20-24	219	1334	164.2	219	1176	186.2
25-29	248	1398	177.4	222	1155	192.2
30-34	141	1305	108.0	150	1069	140.3
35-39	44	892	49.3	36	711	50.6
40-44	8	643	12.4	8	619	12.9
45-49**	0	620	0.0	3	572	5.2
	TFR	=	2855	TFR	=	3242
	GFR	=	97	GFR	=	109
	GRR	=	1352	GRR	=	1560

(continued)

Table 4.5 (cont.): Age-specific Fertility Rates and Indices for
MCH-FP Area by Block, 1995

Age (years)	Block C			Block D		
	Births	Women	Rate	Births	Women	Rate
All ages	664	7038	94.3	546	5492	99.4
15-19*	77	1446	53.3	65	1019	63.8
20-24	215	1245	172.7	175	995	175.9
25-29	210	1232	170.5	165	953	173.1
30-34	112	1117	100.3	102	909	112.2
35-39	41	803	51.1	33	670	49.3
40-44	8	668	12.0	5	496	10.1
45-49**	1	527	1.9	1	450	2.2
	TFR	=	2808	TFR	=	2933
	GFR	=	94	GFR	=	99
	GRR	=	1315	GRR	=	1520

*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, 1995

Age (years)	Total women	Total births	Live-birth order									
			1	2	3	4	5	6	7	8	9	10+
Both areas												
<15	12413	6	6	0	0	0	0	0	0	0	0	0
15-19	10307	625	566	57	2	0	0	0	0	0	0	0
20-24	8992	1745	840	691	177	32	5	0	0	0	0	0
25-29	8972	1725	175	459	541	364	140	36	8	2	0	0
30-34	8180	1008	29	55	174	252	248	150	67	25	5	3
35-39	5939	349	3	8	23	33	70	72	61	46	16	17
40-44	4512	69	0	2	2	4	4	11	11	12	10	13
45-49	4106	13	0	0	1	0	4	0	2	0	0	6
MCH-FP area												
<15	6212	3	3	0	0	0	0	0	0	0	0	0
15-19	5306	310	294	16	0	0	0	0	0	0	0	0
20-24	4750	828	434	329	57	7	1	0	0	0	0	0
25-29	4738	845	91	281	274	137	50	11	1	0	0	0
30-34	4400	505	18	34	102	149	118	54	20	8	2	0
35-39	3076	154	2	3	12	18	41	34	25	15	3	1
40-44	2426	29	0	1	1	3	1	8	7	4	2	2
45-49	2169	5	0	0	1	0	2	0	0	0	0	2
Comparison area												
<15	6201	3	3	0	0	0	0	0	0	0	0	0
15-19	5001	315	272	41	2	0	0	0	0	0	0	0
20-24	4242	917	406	362	120	25	4	0	0	0	0	0
25-29	4234	880	84	178	267	227	90	25	7	2	0	0
30-34	3780	503	11	21	72	103	130	96	47	17	3	3
35-39	2863	195	1	5	11	15	29	38	36	31	13	16
40-44	2086	40	0	1	1	1	3	3	4	8	8	11
45-49	1937	8	0	0	0	0	2	0	2	0	0	4

Table 4.7: Age-order-specific Fertility Rates by Area, 1995

Age (years)	Total	Live-birth order									
		1	2	3	4	5	6	7	8	9	10+
Both areas											
<15	0.0005	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0605	0.0548	0.0055	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1942	0.0935	0.0768	0.0197	0.0036	0.0006	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.1924	0.0196	0.0512	0.0603	0.0406	0.0156	0.0040	0.0009	0.0002	0.0000	0.0000
30-34	0.1232	0.0035	0.0067	0.0213	0.0308	0.0303	0.0183	0.0082	0.0031	0.0006	0.0004
35-39	0.0588	0.0005	0.0013	0.0039	0.0056	0.0118	0.0121	0.0103	0.0077	0.0027	0.0029
40-44	0.0153	0.0000	0.0004	0.0004	0.0009	0.0009	0.0024	0.0024	0.0027	0.0022	0.0029
45-49	0.0029	0.0000	0.0000	0.0002	0.0000	0.0007	0.0000	0.0005	0.0000	0.0000	0.0015
Total	3.2389	0.8625	0.7102	0.5300	0.4069	0.2994	0.1846	0.1114	0.0684	0.0276	0.0379
MCH-FP area											
<15	0.0005	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0582	0.0552	0.0030	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1743	0.0914	0.0693	0.0120	0.0015	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.1783	0.0192	0.0593	0.0578	0.0289	0.0106	0.0023	0.0002	0.0000	0.0000	0.0000
30-34	0.1148	0.0041	0.0077	0.0232	0.0339	0.0268	0.0123	0.0045	0.0018	0.0005	0.0000
35-39	0.0501	0.0007	0.0010	0.0039	0.0059	0.0133	0.0111	0.0081	0.0049	0.0010	0.0003
40-44	0.0120	0.0000	0.0004	0.0004	0.0012	0.0004	0.0033	0.0029	0.0016	0.0008	0.0008
45-49	0.0023	0.0000	0.0000	0.0005	0.0000	0.0009	0.0000	0.0000	0.0000	0.0000	0.0009
Total	2.9524	0.8551	0.7035	0.4889	0.3567	0.2612	0.1447	0.0788	0.0417	0.0113	0.0104
Comparison area											
<15	0.0005	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0630	0.0544	0.0082	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.2164	0.0959	0.0853	0.0283	0.0059	0.0009	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.2081	0.0201	0.0420	0.0631	0.0536	0.0213	0.0059	0.0017	0.0005	0.0000	0.0000
30-34	0.1331	0.0029	0.0056	0.0190	0.0272	0.0344	0.0254	0.0124	0.0045	0.0008	0.0008
35-39	0.0681	0.0003	0.0017	0.0038	0.0052	0.0101	0.0133	0.0126	0.0108	0.0045	0.0056
40-44	0.0192	0.0000	0.0005	0.0005	0.0005	0.0014	0.0014	0.0019	0.0038	0.0038	0.0053
45-49	0.0036	0.0000	0.0000	0.0000	0.0000	0.0005	0.0000	0.0010	0.0000	0.0000	0.0021
Total	3.5596	0.8708	0.7168	0.5756	0.4624	0.3434	0.2301	0.1481	0.0982	0.0458	0.0686

CHAPTER 5

MARRIAGE AND DIVORCE

The number of marriages registered in 1995 was 2,502, giving a crude marriage rate of 11.9 per thousand. These figures show a decrease on those of 1994.

Tables 5.1 and 5.2 show the distributions of grooms and brides by age at marriage and previous marital status. The mean ages at marriage -- 27.3 and 19.7 for all grooms and brides; 25.9 and 18.9 for those marrying for the first time -- is almost similar to that of 1994. In general there appears to be a rise in age at marriage of males and females in Matlab: the mean age for females has been over 18 for every year since 1984, while prior to that date it was consistently below that age.

Table 5.3 which shows marriage rates by age and sex makes it clear that there were some changes compared to 1994. Marriages decreased for men in the age group 25-29 years old and for women in the age group 15-19 years old. Table 5.4 is a cross-tabulation of marriages by groom's and bride's age.

Table 5.5 shows that divorces numbered 319 in 1995, which is less than the 1994 figure of 333. In general, the incidence of divorce in Matlab appears to have fallen: during the first four years of the present study, from 1978 to 1981, the number of divorces were consistently over 500; since 1981 they have been below that figure.

Table 5.5, showing the number of divorces by partner's age, indicates that the peak ages of divorce for men are 25-29, compared to 20-24 for women. This reflects the sex difference in age at marriage.

Table 5.6 and Figure 5.1 show the distributions of marriages and divorces by month. March appears to be a peak month for marriages, but no regular seasonal pattern is discernible in the number of divorces.

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

It may be noted that the DSS 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, though she immediately moves out of the area and all here subsequent childbearing goes unrecorded by the DSS. These procedures lead 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, 1995

Age (years)	Previous marital status									
	All grooms		Single		Married		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2502	100.0	2090	100.0	72	100.0	249	100.0	91	100.0
10-14	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
15-19	106	4.2	106	5.1	0	0.0	0	0.0	0	0.0
20-24	725	29.0	666	31.9	5	6.9	51	20.5	3	3.3
25-29	1008	40.3	908	43.4	10	13.9	81	32.5	9	9.9
30-34	446	17.8	346	16.6	18	25.0	67	26.9	15	16.5
35-39	122	4.9	56	2.7	17	23.6	29	11.6	20	22.0
40-44	27	1.1	6	0.3	6	8.3	8	3.2	7	7.7
45-49	24	1.0	2	0.1	6	8.3	7	2.8	9	9.9
50-54	12	0.5	0	0.0	2	2.8	2	0.8	8	8.8
55-59	12	0.5	0	0.0	4	5.6	1	0.4	7	7.7
60-64	9	0.4	0	0.0	1	1.4	0	0.0	8	8.8
65+	11	0.4	0	0.0	3	4.2	3	1.2	5	5.5
Median age*	26.0		26.0		35.0		29.0		38.0	
Mean age*	27.3		25.9		37.8		30.3		42.7	
Standard dev.*	6.7		4.1		11.6		7.9		12.6	

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

Table 5.2: Bride's Age at Marriage by Previous Marital Status, 1995

Age (years)	Previous marital status							
	All brides		Single		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2502	100.0	2168	100.0	308	100.0	26	100.0
10-14	85	3.4	84	3.9	1	0.3	0	0.0
15-19	1403	56.1	1345	62.0	56	18.2	2	7.7
20-24	749	29.9	626	28.9	116	37.7	7	26.9
25-29	170	6.8	98	4.5	67	21.8	5	19.2
30-34	60	2.4	10	0.5	45	14.6	5	19.2
35-39	19	0.8	1	0.0	15	4.9	3	11.5
40-44	5	0.2	1	0.0	3	1.0	1	3.8
45+	11	0.4	3	0.1	5	1.6	3	11.5
Median age*	19.0		18.0		23.0		27.0	
Mean age*	19.7		18.9		24.9		28.8	
Standard dev.*	4.7		3.6		6.5		8.1	

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

Table 5.3: Marriage Rates by Age and Sex, 1995

Age (years)	Males			Females		
	Marriages	Population	Rate*	Marriages	Population	Rate*
10-14	0	13648	0.0	85	12413	6.8
15-19	106	11643	9.1	1403	10307	136.1
20-24	725	8748	82.9	749	8992	83.3
25-29	1008	6591	152.9	170	8972	18.9
30-34	446	6933	64.3	60	8180	7.3
35-39	122	6057	20.1	19	5939	3.2
40-44	27	4310	6.3	5	4512	1.1
45+	68	17550	3.9	11	18893	0.6

*Rates per 1000 population irrespective of previous marital status.

Table 5.4: Number of Marriages by Groom's and Bride's
Age at Marriage, 1995

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	2502	85	1403	749	170	60	19	5	11
10-14	0	0	0	0	0	0	0	0	0
15-19	106	9	80	12	4	1	0	0	0
20-24	725	41	531	137	15	0	0	0	1
25-29	1008	29	574	366	37	1	1	0	0
30-34	446	6	183	180	63	12	0	0	2
35-39	122	0	34	37	33	14	2	0	2
40-44	27	0	1	11	2	10	2	0	1
45-49	24	0	0	1	9	8	4	1	1
50-54	12	0	0	2	2	5	2	1	0
55-59	12	0	0	3	2	3	1	2	1
60-64	9	0	0	0	3	3	3	0	0
65+	11	0	0	0	0	3	4	1	3

Table 5.5: Number of Divorces by Partners' Age at Divorce, 1995

Male's age (years)	Female's age (years)									
	All	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50+
All ages	319	4	105	124	53	17	7	2	3	4
10-14	0	0	0	0	0	0	0	0	0	0
15-19	4	1	3	0	0	0	0	0	0	0
20-24	63	2	35	24	2	0	0	0	0	0
25-29	93	1	45	37	8	2	0	0	0	0
30-34	79	0	15	35	25	2	0	0	2	0
35-39	46	0	4	18	14	8	1	1	0	0
40-44	16	0	3	7	2	2	2	0	0	0
45-49	8	0	0	3	2	2	1	0	0	0
50-54	3	0	0	0	0	1	1	1	0	0
55-59	1	0	0	0	0	0	0	0	0	1
60-64	0	0	0	0	0	0	0	0	0	0
65+	6	0	0	0	0	0	2	0	1	3

Table 5.6: Marriages and Divorces by Months, 1995

Month	Marriage		Divorce	
	Number	Percent	Number	Percent
January	244	9.8	36	11.3
February	112	4.5	22	6.9
March	349	13.9	30	9.4
April	99	4.0	24	7.5
May	244	9.8	35	11.0
June	202	8.1	31	9.7
July	243	9.7	30	9.4
August	199	8.0	25	7.8
September	181	7.2	26	8.2
October	229	9.2	20	6.3
November	175	7.0	21	6.6
December	225	9.0	19	6.0
Total	2502	100.0	319	100.0

Figure 5.1: Marriages and Divorces by Month, 1995

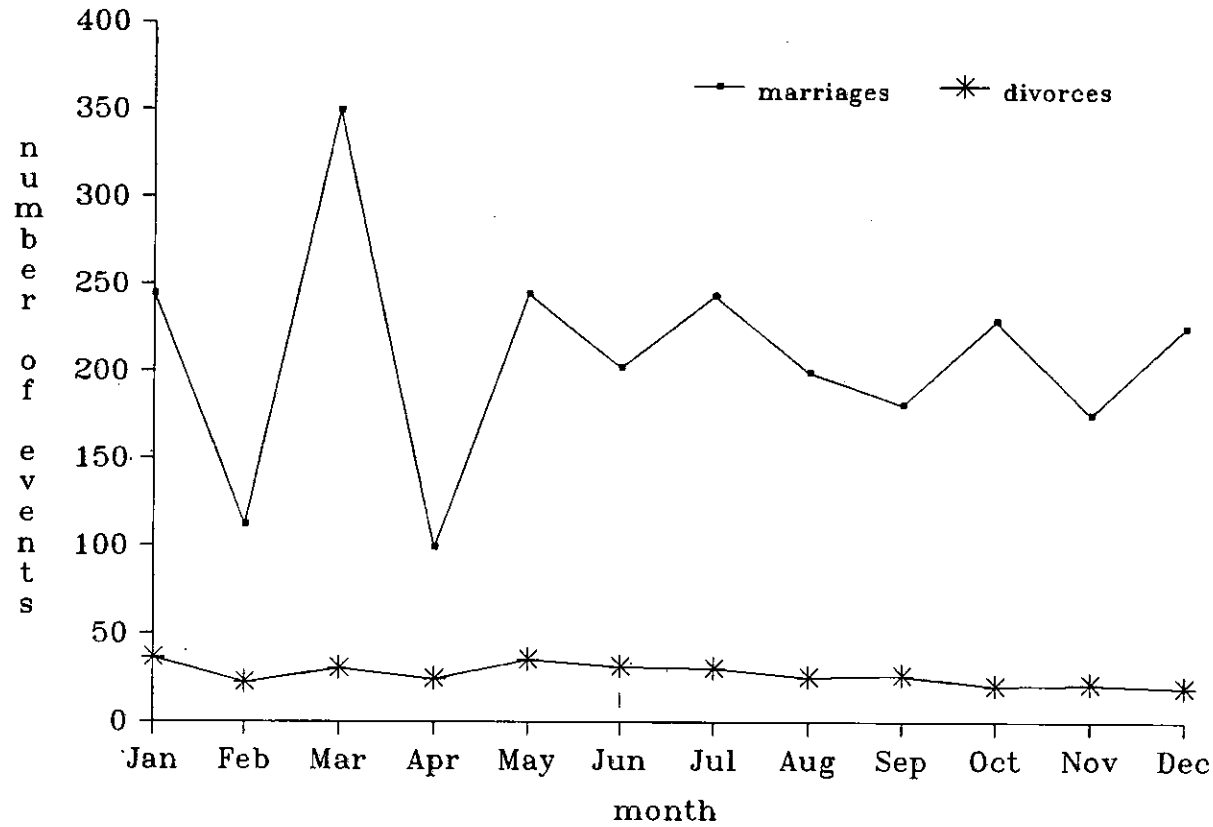


Table 5.7: Number of Divorces by Sex, Age, and Duration of Marriage, 1995

Age at divorce	Duration of marriage (months)															
	All duration		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	319	319	47	47	49	49	77	77	40	40	35	35	18	18	53	53
Under 20	4	109	0	27	2	23	2	37	0	8	0	10	0	0	0	4
20-24	63	124	11	10	13	23	22	30	6	20	7	17	1	10	3	14
25-29	93	53	18	8	16	1	26	5	17	8	8	5	4	8	4	18
30-34	79	17	10	0	9	1	16	2	7	3	11	3	8	0	18	8
35-39	46	7	3	1	4	1	6	1	7	0	8	0	4	0	14	4
40-49	24	5	5	1	4	0	4	2	2	0	1	0	1	0	7	2
50+	10	4	0	0	1	0	1	0	1	1	0	0	0	0	7	3

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 (DSS) 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 areas as a whole. People who move from the Comparison area into the MCH-FP area, or vice versa, do not feature in the tables in this chapter.

Table 6.1 shows that the number of in-migrants in 1995 was 5,660 giving a crude rate of in-migration of 27.0 per thousand. Out-migrants numbered 7,822 and the out-migration rate 37.2 per thousand. The in-migration rate was at the same level as that of 1994 and the out-migration rate was lower than that of 1994. The net loss of migrants decreased from 3,120 in 1994 to 2,162 in 1995. Female in-migrants once again outnumbered male, but there are more male out-migrants than female. 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.

Tables 6.4 shows the age-specific migration rates, which are illustrated in Figure 6.1. They show the bi-modal age distributions 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 on average to be rather younger than those of the in-migrants, while for females the shapes of the distributions were more similar.

Table 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 and to a lesser extent February and March were the preferred months for such moves, while there are the fewest movements in November and December.

Tables 6.10 and 6.11 show the number of males and females migrating in and out of the Matlab DSS area by location of origin or destination. For locations in Bangladesh the Division and whether the location is rural or urban is 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, but more evenly distributed across age groups. Migration to the Middle-East and other Asian locations is heavily concentrated among out-migrating males age 15-34.

Table 6.1: In- and Out-migration by Age and Sex, 1995

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	5660	2579	3081	7822	3962	3860
Under 5	916	453	463	978	510	468
0	302	140	162	231	113	118
1	167	85	82	229	119	110
2	164	82	82	192	104	88
3	129	64	65	160	87	73
4	154	82	72	166	87	79
5 - 9	547	276	271	667	334	333
10-14	419	205	214	608	281	327
15-19	848	183	665	1295	466	829
20-24	870	240	630	1615	774	841
25-29	699	316	383	1077	567	510
30-34	554	375	179	644	430	214
35-39	310	221	89	372	282	90
40-44	137	103	34	171	121	50
45-49	107	71	36	100	67	33
50-54	77	50	27	72	35	37
55-59	56	34	22	62	31	31
60-64	47	20	27	53	17	36
65+	73	32	41	108	47	61

Table 6.2: In-migration by Age, Sex, and Area, 1995

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	2742	1201	1541	2918	1378	1540
Under 5	460	226	234	456	227	229
0	166	81	85	136	59	77
1	83	42	41	84	43	41
2	79	35	44	85	47	38
3	53	26	27	76	38	38
4	79	42	37	75	40	35
5 - 9	256	121	135	291	155	136
10-14	176	92	84	243	113	130
15-19	416	69	347	432	114	318
20-24	446	109	337	424	131	293
25-29	344	145	199	355	171	184
30-34	263	181	82	291	194	97
35-39	132	94	38	178	127	51
40-44	77	61	16	60	42	18
45-49	49	31	18	58	40	18
50-54	38	28	10	39	22	17
55-59	24	16	8	32	18	14
60-64	21	11	10	26	9	17
65+	40	17	23	33	15	18

Table 6.3: Out-migration by Age, Sex, and Area, 1995

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	3982	1996	1986	3840	1966	1874
Under 5	485	252	233	493	258	235
0	134	67	67	97	46	51
1	101	53	48	128	66	62
2	90	49	41	102	55	47
3	78	47	31	82	40	42
4	82	36	46	84	51	33
5 - 9	300	153	147	367	181	186
10-14	294	137	157	314	144	170
15-19	691	241	450	604	225	379
20-24	856	408	448	759	366	393
25-29	564	287	277	513	280	233
30-34	323	215	108	321	215	106
35-39	178	134	44	194	148	46
40-44	85	59	26	86	62	24
45-49	63	42	21	37	25	12
50-54	39	19	20	33	16	17
55-59	25	13	12	37	18	19
60-64	26	11	15	27	6	21
65+	53	25	28	55	22	33

Table 6.4: Age and Sex-specific Migration Rates by Direction, 1995
(per 1000 population)

Age (years)	Both sexes		Males		Females	
	In	Out	In	Out	In	Out
All ages	27.0	37.4	24.9	38.2	29.1	36.5
Under 5	34.8	37.2	34.0	38.2	35.7	36.1
0	57.2	43.7	51.9	41.9	62.7	45.7
1	32.0	43.9	32.7	45.7	31.4	42.1
2	31.2	36.5	30.6	38.8	31.8	34.1
3	26.6	33.0	26.1	35.4	27.2	30.5
4	27.0	29.1	28.3	30.0	25.6	28.1
5 - 9	18.6	22.7	18.6	22.5	18.6	22.9
10-14	16.1	23.3	15.0	20.6	17.2	26.3
15-19	38.6	59.0	15.7	40.0	64.5	80.4
20-24	49.0	91.0	27.4	88.5	70.1	93.5
25-29	44.9	69.2	47.9	86.0	42.7	56.8
30-34	36.7	42.6	54.1	62.0	21.9	26.2
35-39	25.8	31.0	36.5	46.6	15.0	15.2
40-44	15.5	19.4	23.9	28.1	7.5	11.1
45-49	14.1	13.2	20.3	19.2	8.8	8.0
50-54	9.9	9.3	14.9	10.4	6.2	8.5
55-59	8.6	9.5	10.8	9.9	6.5	9.2
60-64	8.2	9.2	6.9	5.9	9.4	12.5
65+	8.3	12.2	6.9	10.1	9.8	14.6

**Figure 6.1: Rate of In- and Out-migration
by Sex and Age, 1995**

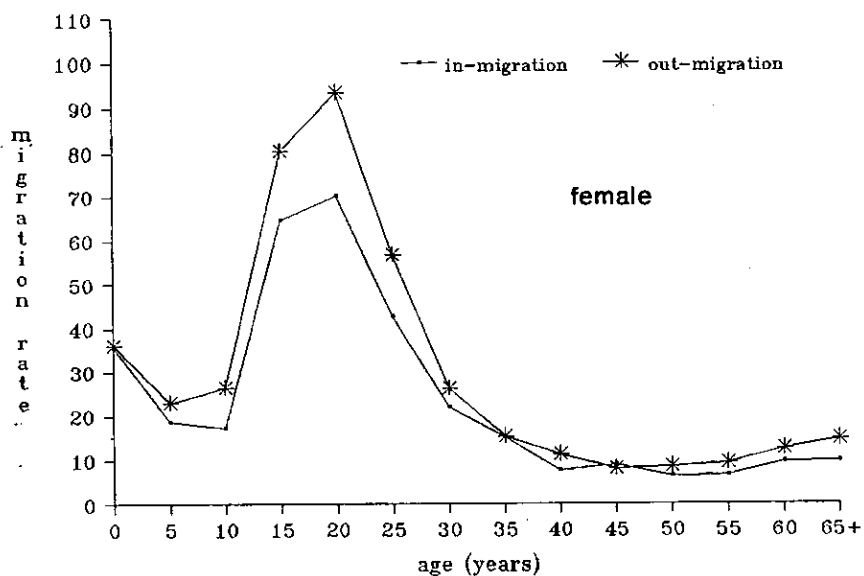
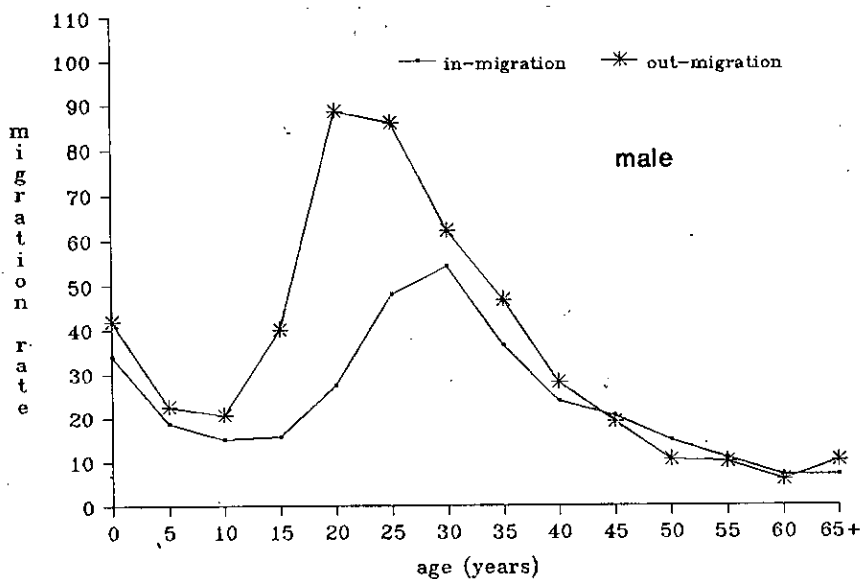


Table 6.5: Male Out-migration by Cause of Movement and Age, 1995

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	3962	510	334	281	466	774	567	430	282	121	67	35	31	17	47
Work/Economic/Educational															
-acquired/seeking job	2242	0	1	55	275	622	485	361	243	95	58	23	13	8	3
-job completion/retirement	14	0	0	0	0	2	0	3	3	0	1	1	3	0	1
-to acquire education	282	2	15	45	100	84	30	6	0	0	0	0	0	0	0
-educ. completed/interrupt	0														
-student lodging	3	0	0	0	0	2	0	0	0	0	1	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	98	0	1	2	4	5	10	18	15	14	5	4	6	4	10
-river erosion	5	1	0	1	0	0	0	0	1	2	0	0	0	0	0
Marriage/Familial															
-marriage	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
-separation/divorce/widow	5	0	0	0	1	2	1	0	0	1	0	0	0	0	0
-move with or join spouse/parents	1251	504	317	175	83	50	33	28	15	6	2	6	7	4	21
-adoption	3	3	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	23	0	0	1	3	1	3	9	2	2	0	1	0	0	1
-health or old age care	9	0	0	0	0	0	0	0	0	0	0	0	0	0	9
Legal problems	9	0	0	0	0	1	3	4	1	0	0	0	0	0	0
Other and not stated															
-other n.e.c.*	16	0	0	2	0	4	2	0	2	1	0	0	2	1	2
-unknown or not stated	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0

Table 6.6: Female Out-migration by Cause of Movement and Age, 1995

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	3860	468	333	327	829	841	510	214	90	50	33	37	31	36	61
Work/Economic/Educational															
-acquired/seeking job	508	0	7	74	186	106	62	42	14	7	3	5	0	1	1
-job completion/retirement	7	0	0	0	3	1	3	0	0	0	0	0	0	0	0
-to acquire education	86	0	6	35	28	11	6	0	0	0	0	0	0	0	0
-educ. completed/interrupt	0														
-student lodging	0														
-student	0														
Housing/Environmental															
-acquired/seeking new land/house	39	0	1	2	2	0	9	9	6	2	1	2	4	0	1
-river erosion	4	0	1	1	1	0	0	1	0	0	0	0	0	0	0
Marriage/Familial															
-marriage	559	0	0	22	284	199	35	15	2	2	0	0	0	0	0
-separation/divorce/widow	112	0	0	0	23	52	24	4	3	2	1	1	1	1	0
-move with or join spouse/parents	2481	457	318	192	297	458	364	143	64	37	26	26	21	27	51
-adoption	11	11	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	17	0	0	0	2	9	6	0	0	0	0	0	0	0	0
-health or old age care	23	0	0	0	0	2	0	0	0	0	1	2	5	6	7
Legal problems	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other and not stated															
-other n.e.c.*	13	0	0	1	3	3	1	0	1	0	1	1	0	1	1
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 6.7: Male In-migration by Cause of Movement and Age, 1995

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	2579	453	276	205	183	240	316	375	221	103	71	50	34	20	32
Work/Economic/Educational															
-acquired/seeking job	358	0	0	2	20	47	78	94	53	30	12	14	4	0	4
-job completion/retirement	467	0	1	2	19	43	90	121	69	40	33	16	13	9	11
-acquire education	144	1	20	38	43	32	8	2	0	0	0	0	0	0	0
-educ. completed/interrupt	2	0	0	0	1	0	0	1	0	0	0	0	0	0	0
-student lodging	8	0	0	0	4	1	1	2	0	0	0	0	0	0	0
-student	0														
Housing/Environmental															
-acquired/seeking new land/house	193	0	0	2	8	31	37	39	25	13	7	12	7	4	8
-river erosion	7	0	0	0	0	0	2	0	1	0	1	1	1	1	0
Marriage/Familial															
-marriage	10	0	0	0	0	0	3	2	2	1	0	2	0	0	0
-separation/divorce/widow	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
-move with or join spouse/parents	1291	446	255	159	81	71	82	85	62	14	15	5	7	2	7
-adoption	8	6	0	0	2	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	11	0	0	0	0	0	2	4	3	0	1	0	1	0	0
-health or old age care	15	0	0	0	1	2	1	3	1	2	1	0	1	2	1
Legal problems	15	0	0	0	0	2	4	4	2	0	1	0	0	1	1
Other and not stated															
-other n.e.c.*	49	0	0	2	4	11	8	18	3	3	0	0	0	0	0
-unknown or not stated	0														

Table 6.8: Female In-migration by Cause of Movement and Age, 1995

Cause of movement	Total	Age (years)													
		<5	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65+
All migrants	3081	463	271	214	665	630	383	179	89	34	36	27	22	27	41
Work/Economic/Educational															
-acquired/seeking job	90	0	4	7	7	20	31	11	7	2	0	0	0	0	1
-job completion/retirement	59	0	0	6	24	9	12	5	3	0	0	0	0	0	0
-to acquire education	92	0	18	38	24	10	0	1	1	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	41	0	0	0	2	5	10	6	6	2	2	4	1	2	1
-river erosion	7	0	0	0	2	4	0	0	0	0	1	0	0	0	0
Marriage/Familial															
-marriage	644	0	0	10	354	201	48	19	6	2	1	1	0	2	0
-separation/divorce/widow	128	0	0	0	35	39	27	15	5	2	2	0	3	0	0
-move with or join spouse/parents	1960	447	246	153	212	334	244	116	60	26	30	21	17	18	36
-adoption	18	16	2	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	16	0	0	0	4	6	3	2	0	0	0	0	0	0	0
-health or old age care	9	0	0	0	1	0	2	0	0	0	0	1	1	4	0
Legal problems															
Other and not stated															
-other n.e.c.*	17	0	1	0	0	2	6	4	1	0	0	0	0	1	2
-unknown or not stated	0														

Table 6.9: In- and Out-migration by Sex and Month, 1995

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
January	1009	457	552	1311	697	614
February	521	249	272	718	406	312
March	572	249	323	878	436	442
April	401	183	218	521	273	248
May	546	235	311	733	365	368
June	509	229	280	820	413	407
July	410	193	217	699	338	361
August	500	223	277	639	305	334
September	349	166	183	487	254	233
October	401	196	205	475	223	252
November	266	121	145	309	146	163
December	176	78	98	232	106	126
All months	5660	2579	3081	7822	3962	3860

Figure 6.2: Number of In- and Out-migrants by Sex and Month, 1995

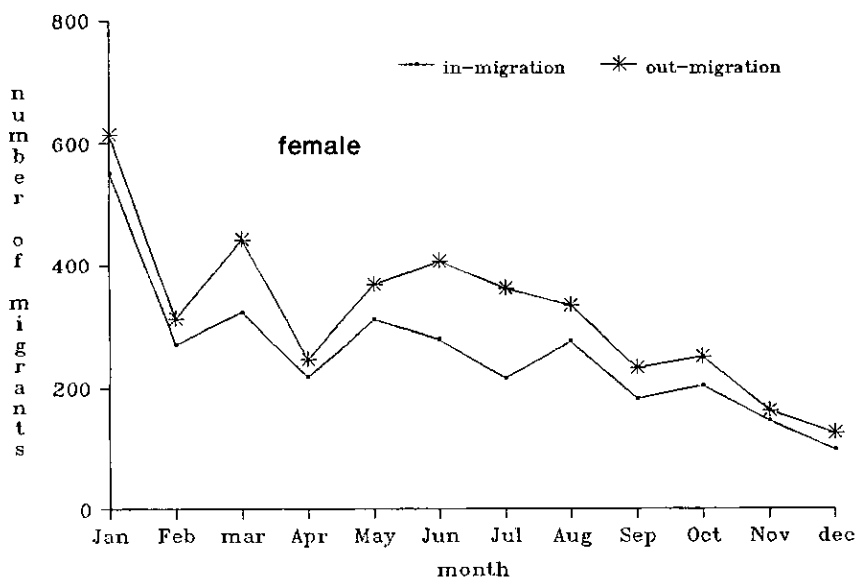
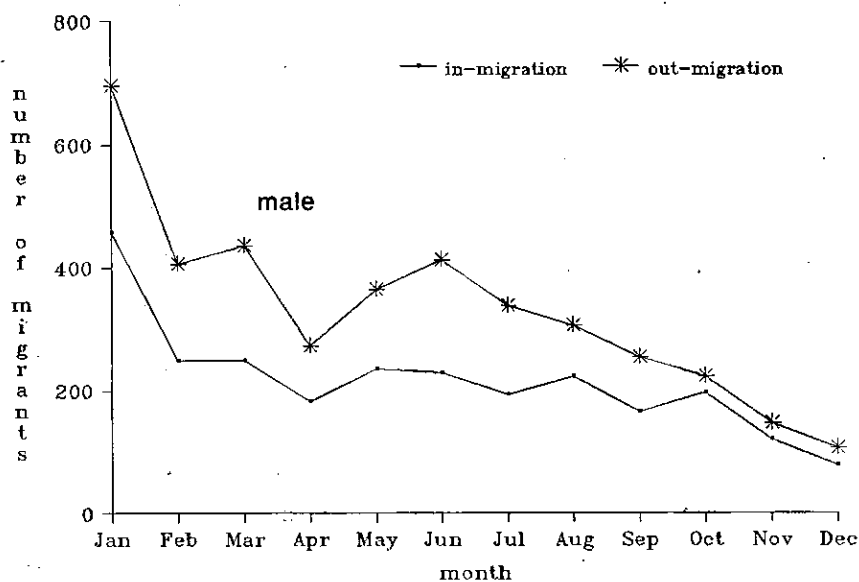


Table 6.10: Male Migration by Destination or Origin, 1995

Destination/origin			Out-Migration						In-Migration					
			Age (years)						Age (years)					
			0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
All migrants			1125	1240	997	403	197	3962	934	423	691	324	207	2579
Rajshahi	rural		0	0	0	0	0	0	0	1	0	0	1	2
	urban		3	3	1	0	2	9	6	1	1	2	7	17
Khulna	rural		6	3	1	2	1	13	10	4	2	3	0	19
	urban		13	14	8	1	5	41	27	9	9	8	15	68
Dhaka	rural	Dhaka	0	4	1	0	0	5	7	3	4	2	1	17
	rural	Narayangonj	1	3	3	2	0	9	12	4	5	7	7	35
	rural	Narsindhi	5	4	2	2	2	15	4	3	1	4	3	15
	rural	rest	8	5	3	1	1	18	11	4	7	0	2	24
	urban	Dhaka	459	519	278	97	62	1415	292	147	212	95	58	804
	urban	Narayangonj	83	73	50	16	11	233	57	28	40	16	8	149
	urban	Narsindhi	7	5	5	2	1	20	15	6	10	11	3	45
	urban	Gazipur	18	16	7	4	4	49	10	4	11	4	4	33
	urban	rest	10	4	6	5	0	25	18	4	7	6	2	37
Chittagong	rural	Comilla	33	13	19	9	3	77	53	13	20	10	6	102
	rural	Chandpur	286	82	96	64	43	571	225	80	112	46	25	488
	rural	rest	6	2	1	1	0	10	10	5	3	0	2	20
	urban	Sylhet	41	46	20	10	9	126	61	23	22	15	17	138
	urban	Comilla	20	12	15	3	3	53	14	4	12	4	3	37
	urban	Chandpur	8	4	3	4	2	21	3	6	8	0	4	21
	urban	Chittagong	62	83	39	19	13	216	72	27	46	17	21	183
	urban	rest	25	27	13	6	4	75	11	5	3	1	1	21
India			28	17	7	7	8	67	15	15	9	4	3	46
Other Asia			1	212	274	98	12	597	1	18	72	23	5	119
Middle-East			1	86	142	49	11	289	0	9	74	45	9	137
Other			0	1	2	1	0	4	0	0	1	1	0	2
Unknown			1	2	1	0	0	4	0	0	0	0	0	0

Table 6.11: Female Migration by Destination or Origin, 1995

Destination/origin			Out-Migration						In-Migration					
			Age (years)						Age (years)					
			0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
All migrants			1128	1670	724	140	198	3860	950	1293	562	123	153	3081
Rajshahi	rural		1	1	1	0	0	3	19	8	8	7	9	51
	urban		4	4	3	1	1	13	6	8	2	2	0	18
Khulna	rural		4	4	1	2	0	11	8	4	5	0	2	19
	urban		11	10	5	1	5	32	1	0	0	0	0	1
Dhaka	rural	Dhaka	2	6	1	0	1	10	2	7	5	0	0	14
	rural	Narayanganj	6	14	4	0	0	24	8	7	6	5	0	26
	rural	Narsindhi	3	6	2	1	0	12	6	1	3	1	1	12
	rural	rest	5	19	6	0	0	30	14	25	7	1	3	50
	urban	Dhaka	444	549	275	60	81	1409	309	273	177	37	45	841
	urban	Narayanganj	79	93	41	13	11	237	54	36	37	5	7	139
	urban	Narsindhi	8	8	3	1	1	21	12	4	7	3	0	26
	urban	Gazipur	25	14	12	2	7	60	16	8	6	1	1	32
	urban	rest	9	21	9	0	2	41	12	12	6	2	1	33
	urban													
Chittagong	rural	Comilla	51	116	30	7	5	209	75	133	37	5	9	259
	rural	Chandpur	291	590	208	29	35	1153	248	649	161	19	32	1109
	rural	rest	2	3	2	0	0	7	6	9	4	2	0	21
	urban	Sylhet	30	29	18	3	12	92	50	30	21	17	17	135
	urban	Comilla	21	26	15	1	7	70	11	11	11	0	4	37
	urban	Chandpur	10	7	7	1	1	26	5	5	3	0	0	13
	urban	Chittagong	84	103	49	8	8	252	65	45	42	12	11	175
	urban	rest	21	22	11	1	7	62	12	6	6	0	2	26
India			14	15	9	7	14	59	10	8	5	4	9	36
Other Asia			1	5	4	0	0	10	0	1	0	0	0	1
Middle-East			1	4	8	2	0	15	1	3	3	0	0	7
Other			0	0	0	0	0	0	0	0	0	0	0	0
Unknown			1	1	0	0	0	2	0	0	0	0	0	0

CHAPTER 7

Special Supplement

MORTALITY TRENDS BY AREA, AGE AND SEX IN MATLAB DURING 1978-1995: PRELIMINARY FINDINGS

INTRODUCTION

In this chapter, we will provide information on levels and trends of mortality with emphasis on differentials by area, age and sex. It is a continuation of Chapter 7 of the 1994 Annual Report which described trends in mortality in general since 1966 (Mostafa, et al., 1996).

A number of studies have been conducted using Matlab DSS data and focusing on differences in mortality by sex: D'Souza and Chen, 1986; Bairagi, 1986; Koenig and D'Souza, 1986; Strong, 1992; and Bairagi and Chowdhury, 1994. In this chapter, we will provide more recent data than in the studies cited above and we will focus in particular on differences by sex since 1978 in the MCH-FP and Comparison areas.

METHODS AND PROCEDURES

As already explained in Chapter 7 of the previous Annual Report, we have used three common mortality indicators to describe the levels and trends in mortality: a) the expectation of life at birth calculated with the life table method; b) the infant mortality rate defined here as the probability of dying below 1 calculated with the life table method; and c) the age-specific mortality rates per 1,000 mid-year population. For analytical purposes, the age-specific mortality rates were grouped into broad age categories (1-4, 5-14, 15-44, 45-64 and 65 and more). In order to control for changes in the age composition of the population over time, age-adjusted mortality rates are preferable to unadjusted mortality rates. It is likely that age adjustment will only lead to minor changes in trends in mortality to be observed in the age groups 15-44, 45-64 and 65 years and older.

The results of this analysis are summarized in a series of 14 graphs while actual figures are provided in Appendix S.1 and S.2.

It should be noted that the figures on infant mortality and life expectancy at birth to be presented in this chapter do not exactly match those of the Supplement of the 1994 Annual Report. The reason for this is that the figures in the 1995 Supplement are the values which were published in the various Annual Reports (and calculated with the formulas of Appendix C) while the figures in the 1994 Supplement were calculated starting with the central death rates and using the MORTPAK package developed by the United Nations.

RESULTS

Figures S.1a and S.1b show a very erratic pattern in life expectancy at birth for both areas of the Matlab DSS population until the late eighties. This is due to the dramatic political and ecological events that took place during this period. In 1984, life expectancy dropped because of a Shigellosis epidemic in Matlab (Bennish and Wojtyniak, 1991). Since the mid-eighties, life expectancy has increased significantly for both sexes. The improvement in life expectancy for women is more impressive than for men.

Excepting the year 1979, life expectancy in the MCH-FP area was considerably higher for males than for females till 1984. At the beginning of the 1980s, life expectancy was about three to four years higher for males than females. Since 1987, this pattern was almost reversed. The differences were rather small in 1988-89 and 1993-94 periods (Figure S.1a). These results are a clear indication of improved health conditions for women in the MCH-FP area of Matlab. In the Comparison area, life expectancy at birth was continuously higher for males than for females until 1988. From 1989 onwards, life expectancy at birth was higher for females than males but the gap between the sexes has narrowed (Figures S.1a and S.1b).

The changing distribution of infant mortality by sex during the period 1978-95 for the MCH-FP and the Comparison area of Matlab is shown in Figure S.2a and S.2b. Throughout the observation period, infant mortality was found to be declining sharply in the MCH-FP area but somewhat less in the Comparison area of Matlab. In 1995, the infant mortality rate was 47.0 per 1,000 live births for boys and 55.6 for girls in the MCH-FP area but in the Comparison area 90.6 and 65.5 respectively (see Appendix S.1 and S.2). This reduction in infant mortality is to some extent due to improvements in neonatal conditions in Matlab but for the most part to improvements in conditions in the post-neonatal period (DSS reports, 1978-94). In most of the years since 1984, infant mortality rates are higher for boys than girls in the MCH-FP area with the exception of the year 1995 (Figure S.2a). The difference between boys and girls has fluctuated over the whole period in the Comparison area (Figure S.2b).

Figures S.3a and S.3b show the mortality rates among children aged 1-4 years by sex in both areas of Matlab. From these graphs we found that child mortality also declined dramatically in the Matlab DSS area irrespective of sex and area. In the period 1978-90, child mortality was found to be consistently higher for girls than boys in both areas of Matlab. Since 1995 differences by sex have become small. Differences between boys and girls were in general small in the MCH-FP and Comparison areas in 1978 and 1995. In 1978, the male and female mortality rates among children 1-4 years old in the MCH-FP area were respectively 17.3 and 28.6 per 1,000 population and this has declined to 5.8 per 1,000 for boys and 7.6 per 1,000 for girls in 1995 (see Appendix S.1). In contrast in the Comparison area, child mortality rates for boys and girls were respectively 16.4 and 28.3 per 1,000 in 1978 and this went down to 7.4 per 1,000 for boys and 9.4 per 1,000 for girls in 1995 (see Appendix S.2).

In the period between 1978 and 1995 there were, however, substantial differences in the pattern of mortality between the two areas with much higher rates in 1982-1984 in the Comparison area than in the MCH-FP area. The already mentioned 1984 Shigellosis epidemic affected apparently the Comparison area more strongly than the MCH-FP area.

Mortality rates for elder children (5-14 years old) are shown in Figures S.4a and S.4b. In the MCH-FP area, a gradual decline in mortality rates for both sexes occurred since 1982. In 1978, male and female mortality rates were respectively 2.0 and 4.1 per 1,000 population. By 1995, these levels had come down to 1.0 and 0.8 per 1,000 for boys and girls (see Appendix S.1). Since the mid eighties, the decline in mortality among elder children has been more pronounced in the Comparison area than in the MCH-FP area. In the Comparison area the difference between males and females was wider during the period 1978-87 than in the period 1987-95.

Mortality rates in the age group 15-44 old were in most of the years between 1978 and 1995 higher for women than men in the MCH-FP area and nearly always higher in the Comparison area. It can also be seen that mortality in this age group has on the whole declined between 1978-1981 and 1993-1995 for both men and women in the MCH-FP area and in the Comparison area (Figures S.5a and S.5b). A question which can be raised in this connection is if the graphs and figures presented here give an indication of a possible impact of the Maternity Care Program that has been in operation in the MCH-FP area since a number of years (Fauveau, et al., 1991; Maine, et al., 1996). The reply to this question is that the DSS data as presented here do not show such an influence on total mortality (all causes) of women in the age group 15-44 years old in the MCH-FP area. This does not mean that the Maternity Care Program did not have an impact on maternal mortality; the only thing we can say is that the data which we have presented here and which are limited to total mortality, do not provide evidence of an impact of this program.

Mortality rates for the age group 45-64 years old are shown in Figures S.6a and S.6b. In the MCH-FP area, despite some fluctuations, male and female mortality between 45 and 65 years old has remained almost stable during the observation period. The same situation was observed in the Comparison area. In both areas, female mortality was always lower than male mortality.

Figures S.7a and S.7b show the mortality rates of the elderly population in the Matlab DSS area (age 65 years and above). In the MCH-FP area, from 1978 until 1982 mortality rates for older women were higher than for older men but since 1985 male rates were higher than female rates. In the Comparison area, mortality rates of older men have nearly always been higher than rates of older women.

CONCLUSIONS

In this chapter, we have presented data on mortality differentials by area and sex in Matlab in 1978-1995. During the observation period, a strong reduction in mortality can be seen in the younger age groups with the exception of 1983 and 1984 when a Shigellosis

epidemic occurred in both areas of Matlab (Bennish, and Wojtyniak, 1991). This means that life expectancy at birth has increased significantly both in the MCH-FP and Comparison areas of Matlab during the past 17 years.

Sex differentials in mortality have changed dramatically in both areas of Matlab. Life expectancy at birth used to be much lower for females than males in the past. Since the late eighties, however, life expectancy at birth for women in the MCH-FP area of Matlab is about two years higher than for men. Similar results has been found in the Comparison area.

REFERENCES

- Bairagi, R. "Food crisis, nutrition, and female children in rural Bangladesh", Population and Development Review, 1986; 12(2):307-315.
- Bairagi, R, and Chowdhury, MK. "Effects of parental gender preference on fertility and mortality in Matlab. In: V. Fauveau (ed.) Matlab: Women, Children and Health, 1994. ICDDR,B Special Publication No. 35. ICDDR,B, Dhaka.
- Bennish, ML, and Wojtyniak, BJ. "Mortality due to Shigellosis: community and hospital data", Review of Infectious Disease, 1991; 13(4):S245-51.
- D'Souza, S, and Chen, LC. "Sex differentials in mortality in rural Bangladesh", Population and Development Review, 1980; 6:257-70.
- Fauveau, V, Stewart, K, Khan, SA, and Chakraborty, J. Effect on mortality of a community-based maternity care programme in rural Bangladesh. The Lancet, 1996; 338:1183-1186.
- ICDDR,B. "Demographic Surveillance System - Matlab. Vital events and migration 1978-95", ICDDR,B, Dhaka: Various Scientific Reports, Nos. 55-56, 58-59, 62, 64, 67-77.
- Koenig, MA, and D'Souza, S. "Sex differences in childhood mortality in rural Bangladesh", Social Science and Medicine, 1986; 22:15-22.
- Maine, D, Akalin, MZ, Chakraborty, J, de Francisco, A, and Strong, M. Why did maternal mortality decline in Matlab? Studies in Family Planning, 1996; 27(4):179-187.
- Mostafa, G, Shaikh, K, Ahmed, K, and van Ginneken, J. Demographic Surveillance System - Matlab. Demographic Events 1994. Volume 25. ICDDR,B, Dhaka: Scientific Report No. 77, October 1996.
- Strong, MA. "The health of adults in the developing world: the view from Bangladesh," Health Transition Review, 1992; 2(2):215-224.

Figure S.1a: Life Expectancy at Birth in MCH-FP Area

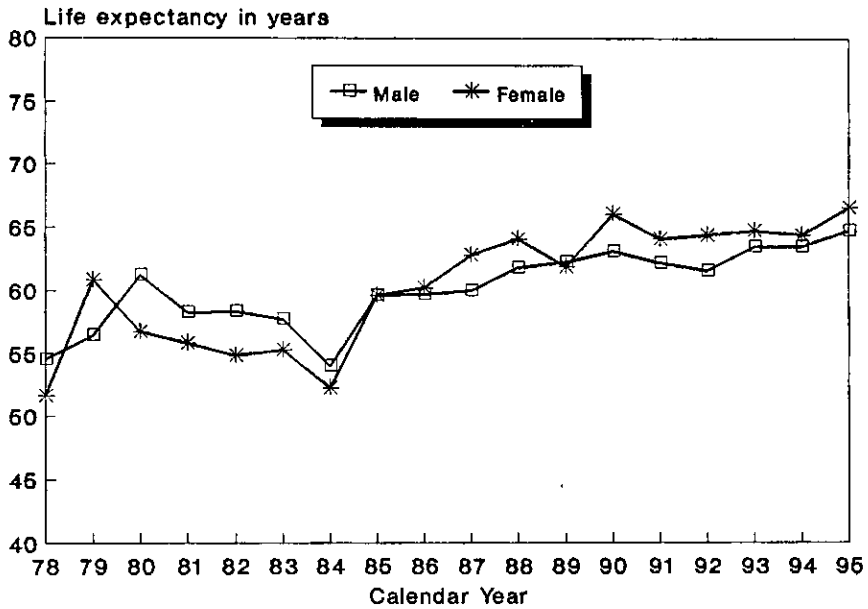


Figure S.1b: Life Expectancy at Birth in Comparison Area

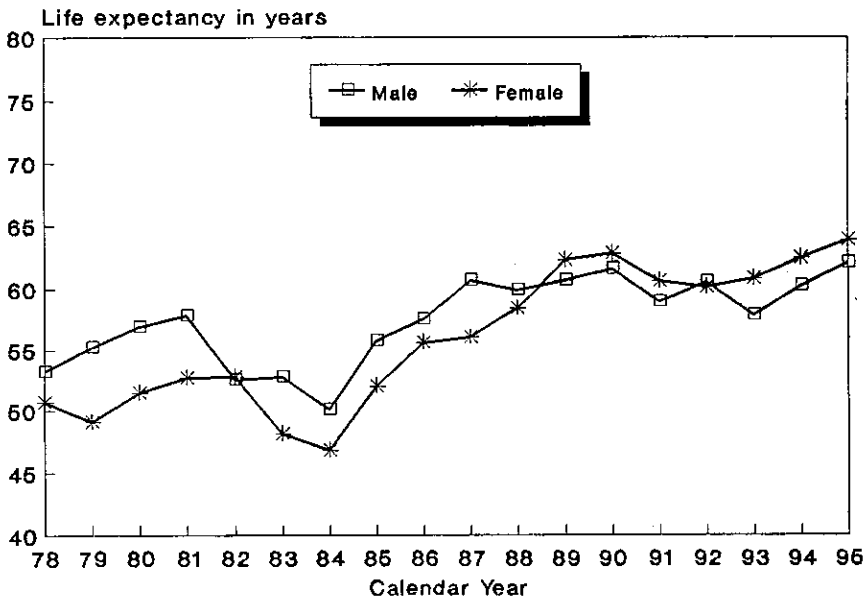


Figure S.2a: Infant Mortality Rate in MCH-FP Area

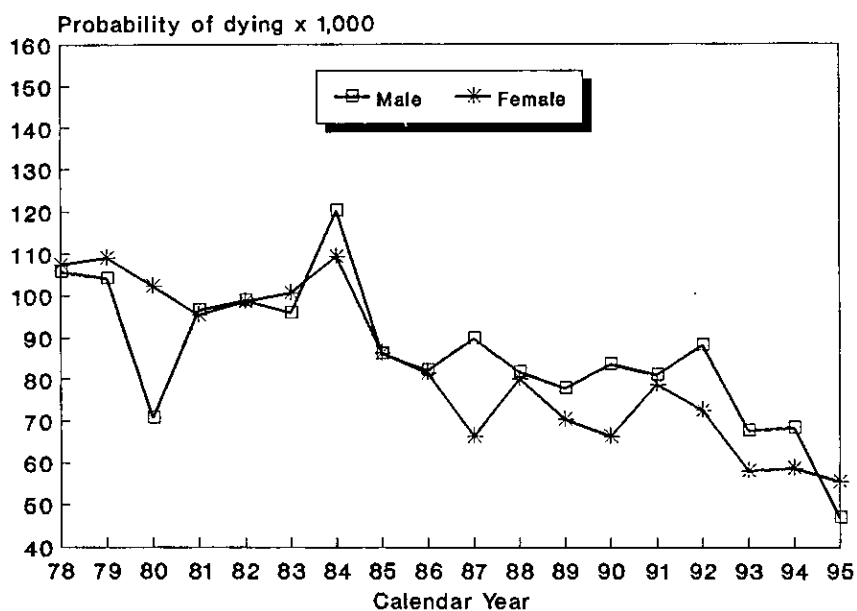


Figure S.2b: Infant Mortality Rate in Comparison Area

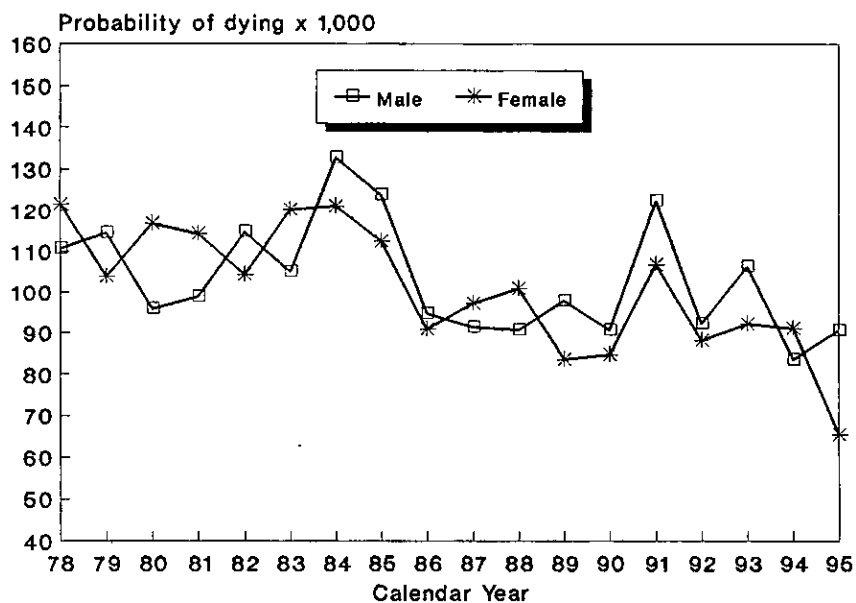


Figure S.3a: Child (1-4 years old) Mortality Rate in MCH-FP Area

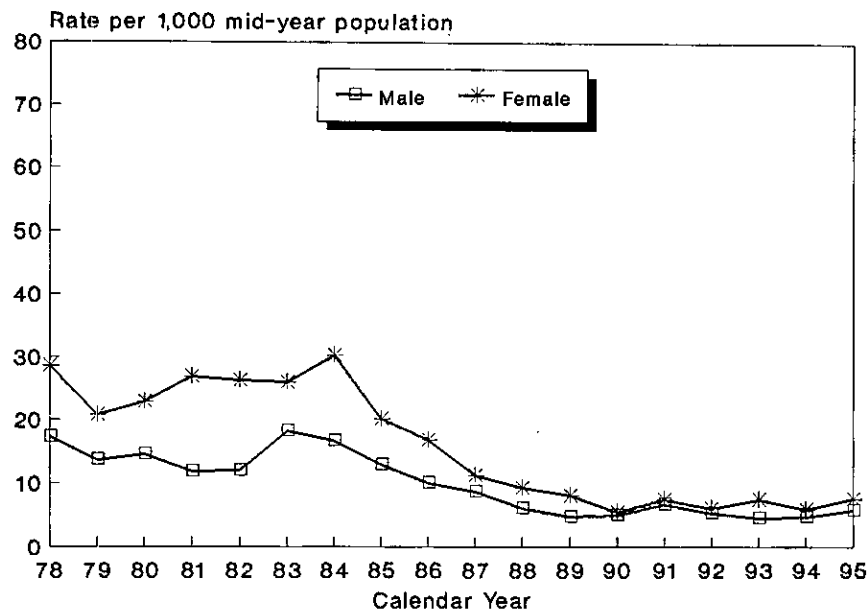


Figure S.3b: Child (1-4 years old) Mortality Rate in Comparison Area

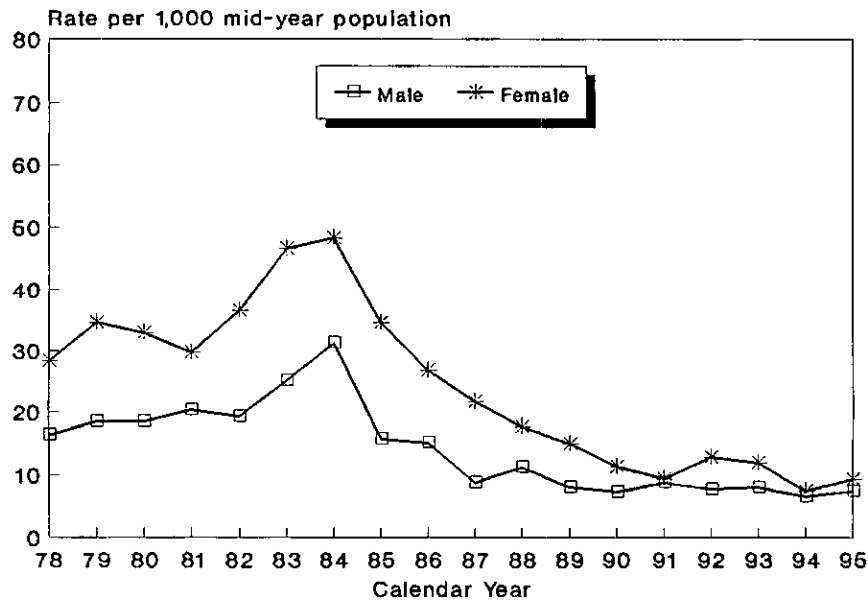


Figure S.4a: Elder Child (5-14 years old) Mortality Rate in MCH-FP Area

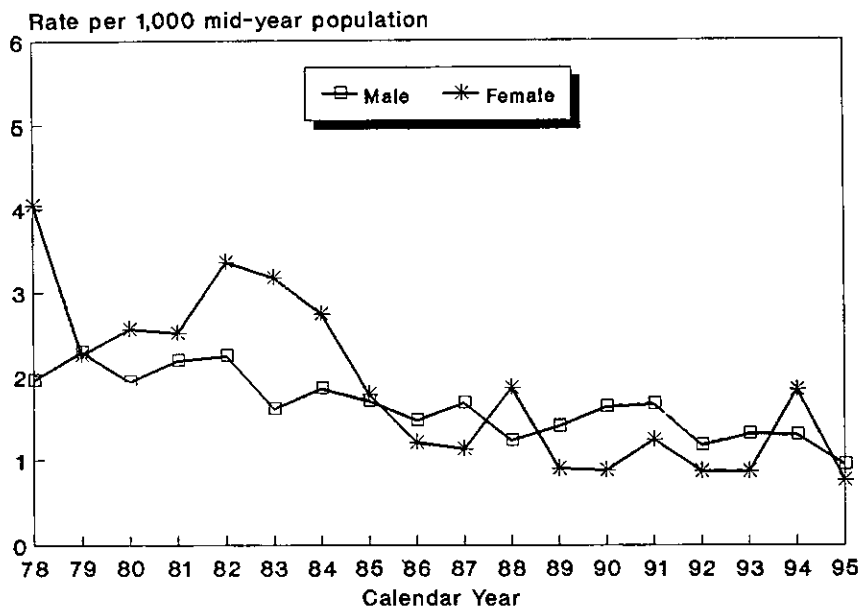


Figure S.4b: Elder Child (5-14 years old) Mortality Rate in Comparison Area

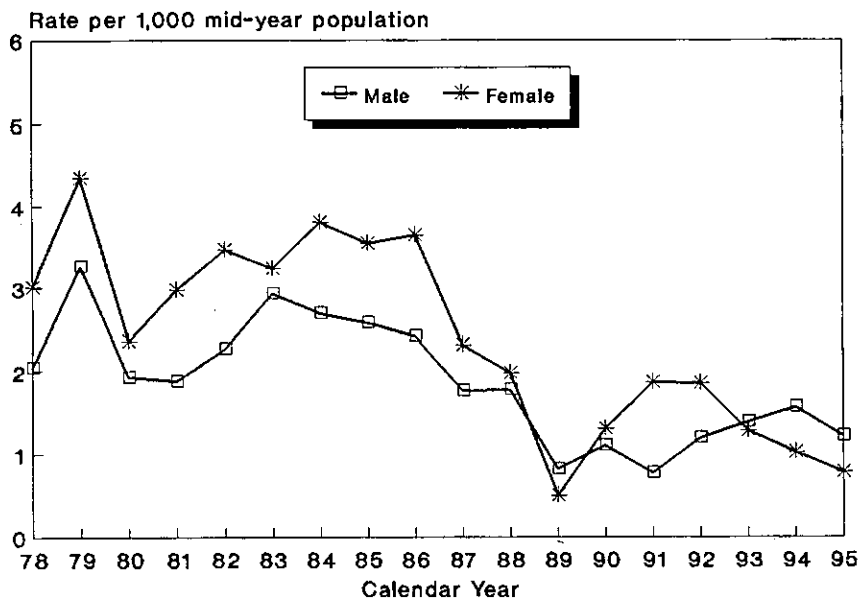


Figure S.5a: Adult (15-44 years old) Mortality Rate in MCH-FP Area

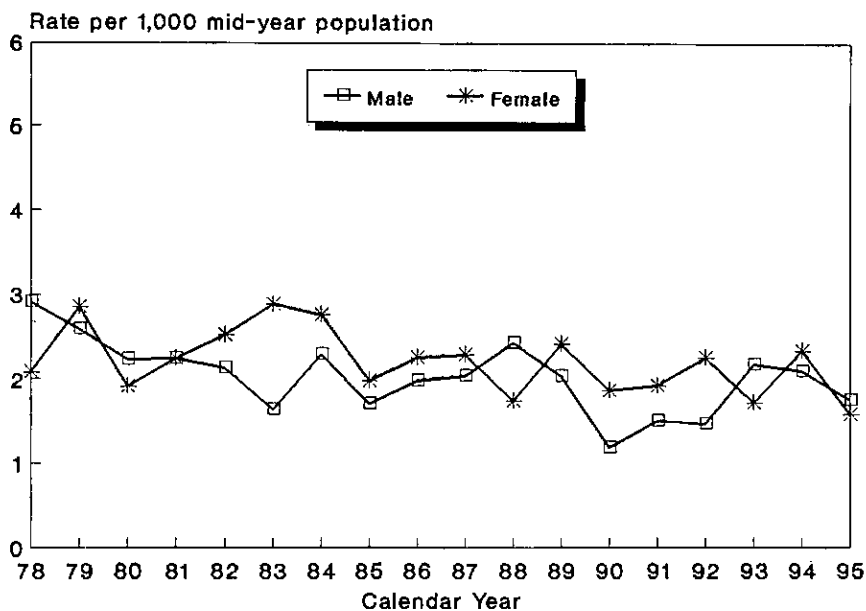


Figure S.5b: Adult (15-44 years old) Mortality Rate in Comparison Area

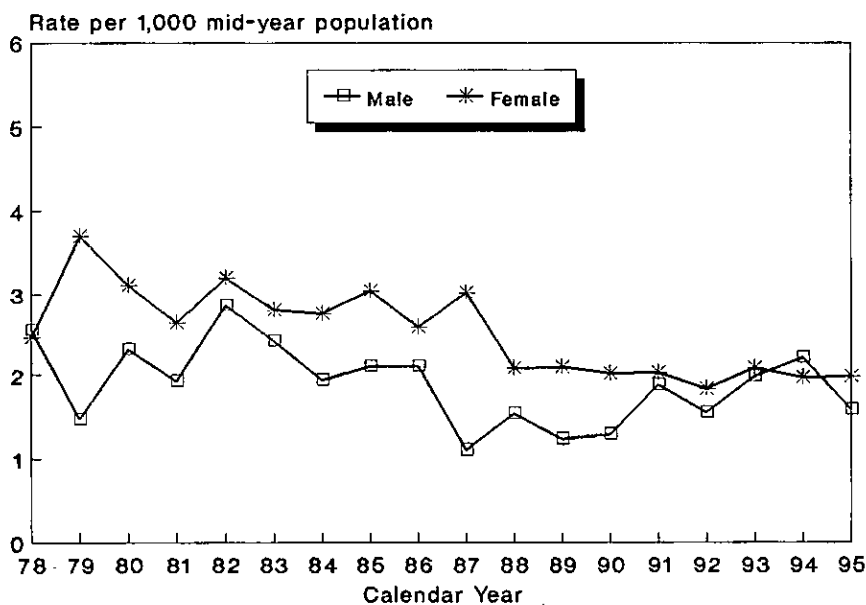


Figure S.6a: Mortality Rate in Age Group 45-64 Years Old in
MCH-FP Area

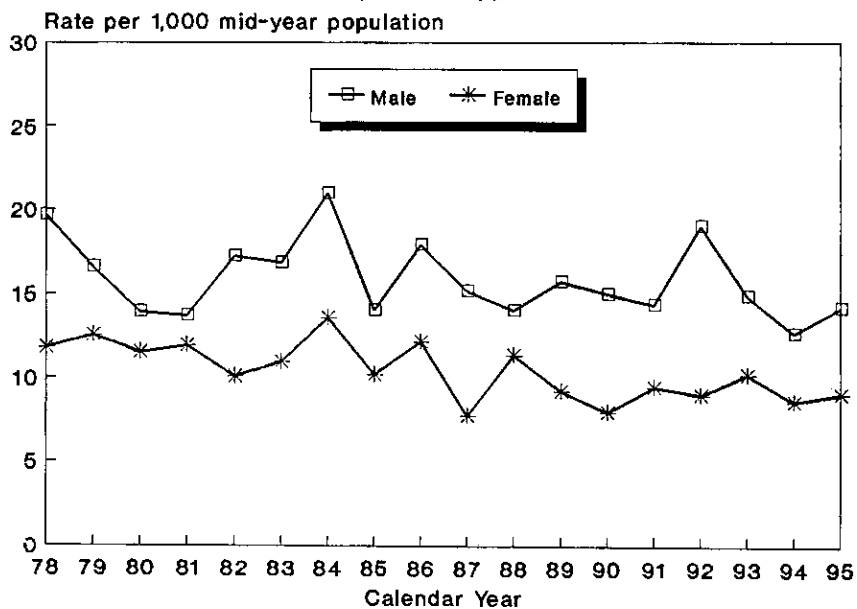


Figure S.6b: Mortality Rate in Age Group 45-64 Years Old in
Comparison Area

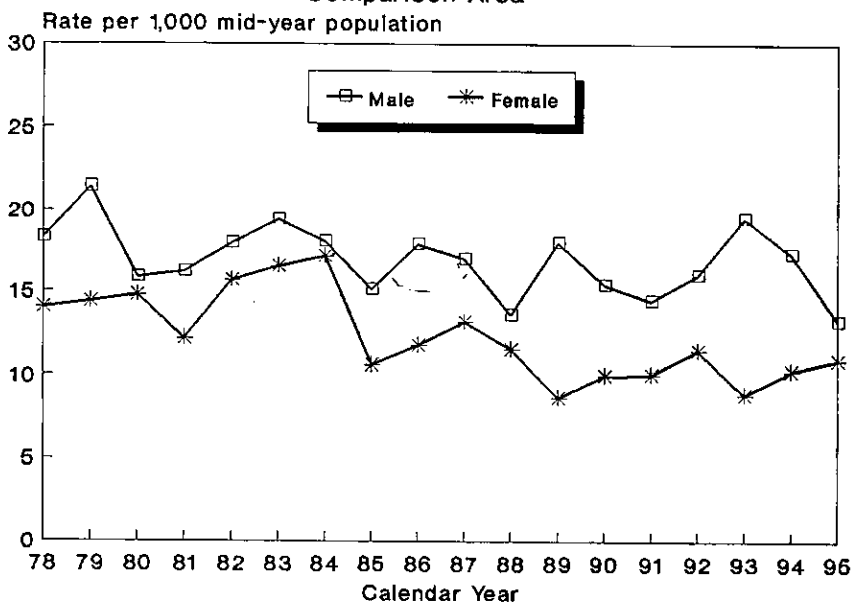


Figure S.7a: Old Age (65 years and older) Mortality Rate in
MCH-FP Area

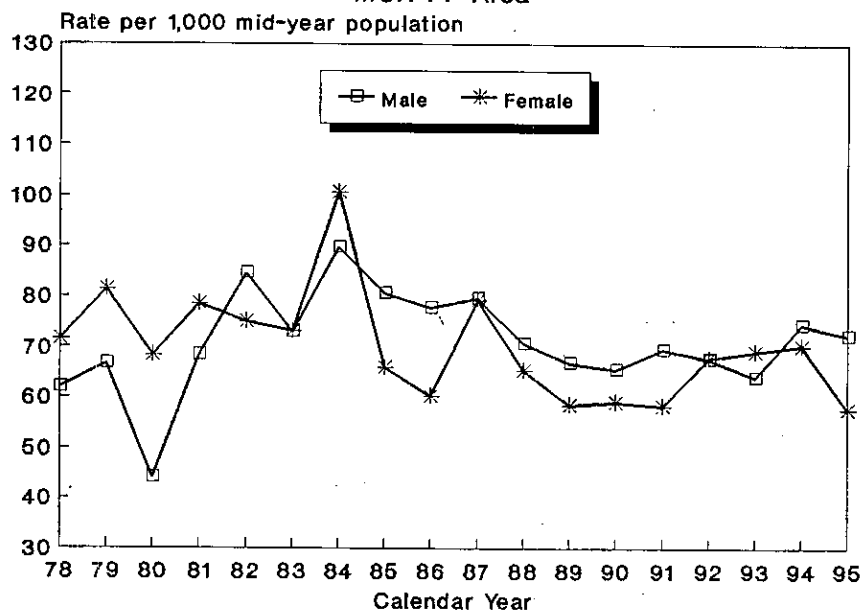
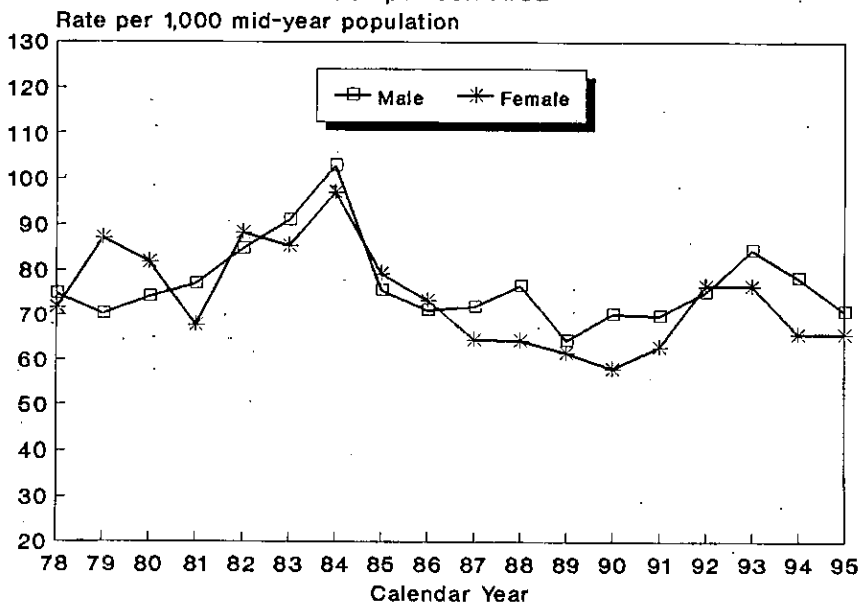


Figure S.7b: Old Age (65 years and older) Mortality Rate in
Comparison Area



Appendix-S.1

Age-specific Mortality and Life Expectancy at Birth in Matlab MCH-FP Area, 1978-95 (per 1,000 mid-year population)

	Age (years)						e ⁰ (years)
Year	<1*	1-4	5-14	15-44	45-64	65+	
Male							
1978	105.6	17.3	2.0	2.9	19.7	61.9	54.5
1979	104.0	13.7	2.3	2.6	16.6	66.6	56.4
1980	70.8	14.5	1.9	2.2	13.9	44.1	61.2
1981	96.6	11.8	2.2	2.2	13.7	68.4	58.2
1982	98.9	12.0	2.2	2.1	17.2	84.5	58.3
1983	95.8	18.3	1.6	1.6	16.8	72.9	57.7
1984	120.3	16.7	1.9	2.3	21.0	89.7	54.0
1985	86.0	12.8	1.7	1.7	14.0	80.4	59.6
1986	82.2	10.0	1.5	2.0	17.9	77.8	59.7
1987	89.7	8.6	1.7	2.0	15.2	79.5	60.0
1988	81.6	6.0	1.2	2.4	14.0	70.6	61.8
1989	77.8	4.8	1.0	2.0	15.7	66.8	62.3
1990	83.6	5.0	1.6	1.9	15.0	65.6	63.1
1991	81.1	6.6	1.7	1.5	14.4	69.5	62.2
1992	88.1	5.3	1.2	1.5	19.1	67.7	61.6
1993	67.7	4.5	1.3	2.2	14.9	63.9	63.5
1994	68.5	4.7	1.3	2.1	12.7	74.5	63.5
1995	47.0	5.8	1.0	1.8	14.2	72.4	64.8
Female							
1978	107.4	28.6	4.1	2.1	11.8	71.6	51.6
1979	109.0	20.9	2.3	2.6	12.5	81.3	60.8
1980	102.3	22.9	2.6	1.9	11.5	68.3	56.7
1981	95.3	26.8	2.5	2.2	11.9	78.4	55.8
1982	98.5	26.4	3.4	2.5	10.1	75.1	54.8
1983	100.7	25.9	3.2	2.9	10.9	73.2	55.3
1984	109.2	30.3	2.7	2.8	13.5	100.7	52.2
1985	86.8	20.1	1.8	2.0	10.2	65.9	59.6
1986	81.4	16.9	1.2	2.3	12.1	60.3	60.2
1987	66.5	11.0	1.1	2.3	7.8	79.2	62.8
1988	80.0	9.3	1.9	1.7	11.4	65.4	64.1
1989	70.6	8.0	0.9	2.4	9.3	58.6	61.9
1990	66.5	5.5	0.9	1.9	8.0	59.0	66.1
1991	78.8	7.4	1.2	1.9	9.5	58.2	64.1
1992	72.7	6.1	0.9	2.3	9.0	67.9	64.4
1993	58.3	7.4	0.9	1.7	10.2	69.1	64.8
1994	59.0	5.9	1.8	2.3	8.6	70.2	64.4
1995	55.6	7.6	0.8	1.6	9.0	57.8	66.6

*Probability of dying before completing first year of life
(${}_1q_0 \times 1,000$)

Appendix-S.2

Age-specific Mortality and Life Expectancy at Birth
in Matlab Comparison Area, 1978-95
(per 1,000 mid-year population)

	Age (years)						e ⁰ (years)
Year	<1*	1-4	5-14	15-44	45-64	65+	
Male							
1978	110.6	16.4	2.0	2.6	18.3	74.7	53.2
1979	114.5	18.5	3.3	1.5	21.4	70.2	55.2
1980	95.9	18.5	1.9	2.3	15.8	74.2	56.9
1981	98.9	20.3	1.9	1.9	16.2	77.0	57.8
1982	114.7	19.3	2.3	2.9	17.9	84.7	52.5
1983	105.0	25.0	2.9	2.4	19.4	91.0	52.8
1984	132.9	31.1	2.7	1.9	18.1	103.1	50.1
1985	124.0	15.8	2.6	2.1	15.1	75.6	55.7
1986	94.6	15.2	2.4	2.1	17.9	70.9	57.5
1987	91.3	8.8	1.8	1.1	17.0	71.8	60.7
1988	90.5	11.2	1.8	1.5	13.5	76.6	59.9
1989	98.0	8.1	0.8	1.2	18.0	64.3	60.7
1990	90.5	7.3	1.1	1.3	15.4	70.2	61.6
1991	122.5	8.8	0.8	1.9	14.4	69.8	58.9
1992	92.3	7.7	1.2	1.6	16.0	75.1	60.5
1993	106.4	8.0	1.4	2.0	19.6	84.6	57.8
1994	83.6	6.6	1.6	2.2	17.3	78.5	60.2
1995	90.6	7.4	1.2	1.6	13.3	70.7	62.0
Female							
1978	121.6	28.3	3.0	2.5	14.0	71.7	50.7
1979	103.9	34.6	4.4	3.7	14.4	87.1	49.1
1980	116.8	32.9	2.4	3.1	14.8	82.0	51.5
1981	114.3	29.6	3.0	2.7	12.3	67.7	52.7
1982	104.3	36.5	3.5	3.2	15.7	88.3	52.8
1983	120.3	46.6	3.2	2.8	16.6	85.4	48.1
1984	121.1	48.4	3.8	2.8	17.2	97.2	46.8
1985	112.5	34.5	3.6	3.0	10.6	79.4	52.0
1986	90.8	26.7	3.7	2.6	11.7	73.2	55.6
1987	97.3	21.8	2.3	3.0	13.2	64.6	56.0
1988	100.9	17.7	2.0	2.1	11.5	64.3	58.4
1989	83.5	15.0	0.5	2.1	8.6	61.6	62.3
1990	84.6	11.4	1.3	2.0	10.0	58.0	62.8
1991	106.7	9.3	1.9	2.0	10.0	62.9	60.6
1992	88.0	12.9	1.9	1.8	11.4	76.6	60.1
1993	92.2	12.0	1.3	2.1	8.8	76.6	60.8
1994	91.0	7.5	1.0	2.0	10.3	65.8	62.4
1995	65.5	9.4	0.8	2.0	10.9	65.8	63.9

*Probability of dying before completing first year of life
(${}_1q_0 \times 1,000$)

Appendix-A

Names and Codes of Villages in the DSS Area, 1995

Block*	MCH-FP area				Comparison area			
	Village code	Village name	Village code	Village name	Village code	Village name	Village code	Village name
A	D	Charmukundi	V59	Doshpara	A	Uddamdi	V78	Soladana
	W	Kaladi	V60	Suvankardi	B	Charmasua	V79	Pitambordi
	V10	Dhakingaon	V61	Munsabdi	C	Sarderkandi	V80	Daribond
	V11	Nabakalash	V62	Shilmondi	F	Sepoykandi	V90	Narinda
	V31	Dighaldi	V72	Upadi	G	Thatalia	V95	Baluchar
B	V32	Mobarakdi			J	Char Harigope	V96	Rampur
					U	Baispur	V97	Dhanagoda
	H	Lamchhari	V26	Narayanpur	V01	Kadamtali	V98	Santoshpur
	V12	Bhangerpar	V56	Palipara	V02	Nilokhi	V99	Baluakandi
	V13	Baburpara	V82	Dhanarpar	V03	Char Nilokhi	V81	Taitoli
	V19	Lakshmipur	V83	Padmapal	V04	Char Pathalia	V82	Sree Rayerchar
	V20	Dagorpur	V85	Bhanurpara	V05	Gazipur	V83	Rayerkandi
	V21	Khadergaon	V87	Hurmaisha	V06	Fatepur	V84	Ramdaspur
	V22	Beloti	V812	Nagda	V07	Nayakandi	V85	Thakurpara
	V23	Baluchar	V813	Naogaon	V08	Goalbhar	V86	Sarkerpara
C	V24	Machuaakhal			V09	Naburkandi	V87	Mirpur
	K	Shahpur	V40	Masunda	V14	Enayetnagar	V88	Farazikandi
	L	Tatkhana	V41	Paton	V35	Durgapur	V89**	Ramanathgonj
	M	Char Nayergaon	V42	Adhara (South)	V36	Ludhua	V810	South Rampur
	N	Aswinpur	V43	Kanachak	V37**	Charputia	D28	Bazarkhola
	O	Nayergaon	V44	Panchdona	V38	Galimkha	D29	Kirtankhola
	P	Titerkandi	V64	Kawadi	V45	Bakchar	D30	Banuakandi
	Q	Char Shibpur	V86	Adhara	V46	Silinda	D31	Harina Bazarkhola
	V27	Panchghoria	V88	Datikara	V47	Tulatali	D32	Khalisha
	V28	Khidirpur	V811	Mehron	V48	Gangkandi	D33	Nayanagar
	V30	Harion	D100	Barogaon	V49	Harina	D34	Saidkharkandi
	V39	Gobindapur	D101	Naojan		Bhabanipara	D35	Molla Kandi
D	R	Nandalalpur	V52	Nayakandi	V50	Bakharpur	D88	Sankibhanga
	S	Tatua	V54	Balakandi	V51	Induriakandi	D89	Sankibangha
	T	Amuakanda	V55	Induria	V53	Chhoto Haldia		Namapara
	V15	Bhati Rasulpur	V57	Baluchar	V58**	Mohishmari	D90	Zahirabaj
	V16	Binandapur	V63	Islamabad	V65	Nayachar	D91**	North Joypur
	V17	Hatighata		(East)	V66	Thatalia	D92**	West Joypur
	V18	Torkey	V67	Majlishpur	V68	Sobahan	D93	Maizkandi
	V25	Char Pathalia	V81	Sonaterkandi	V69**	Naobangha	D94	Hazipur
	V29	Shibpur(South)	V84	Shanbajkandi	V70**	South Joypur	D95	Tapaderpara
	V33	Shibpur(North)	V89	Islamabad	V71	Khamarpara	D96	Rampur
	V34	Satparia		(Middle)	V73	Sadardia	D97	Nayakandi
					V74	Ketundia	D98	Bara Haldia
					V75	Mukundia	D99	Mandertoli
					V76	Chosot		

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

Appendix-B

Mid-year Population, Birth, and Deaths by Village, 1995

Village code*	Popula- tion	Live births	Deaths	Birth rate	Death rate
D	1870	43	13	23.0	7.0
W	3955	62	12	15.7	3.0
V10	1581	51	11	32.3	7.0
V11	1865	37	10	19.8	5.4
V31	8663	240	62	27.7	7.2
V32	2659	89	19	33.5	7.1
V59	1070	20	9	18.7	8.4
V60	876	22	9	25.1	10.3
V61	658	22	5	33.4	7.6
V62	847	20	11	23.6	13.0
V72	5957	146	42	24.5	7.1
Block A	30001	752	203	25.1	6.8
H	1253	24	4	19.2	3.2
V12	527	16	6	30.4	11.4
V13	691	15	5	21.7	7.2
V19	2823	82	18	29.0	6.4
V20	1219	23	8	18.9	6.6
V21	488	9	5	18.4	10.2
V22	532	9	4	16.9	7.5
V23	489	9	6	18.4	12.3
V24	2665	67	18	25.1	6.8
V26	2623	69	9	26.3	3.4
V56	1446	36	8	24.9	5.5
V82	1487	48	16	32.3	10.8
V83	532	10	3	18.8	5.6
V85	445	16	3	36.0	6.7
V87	610	25	4	41.0	6.6
VB12	4110	121	34	29.4	8.3
VB13	4545	138	32	30.4	7.0
Block B	26485	717	183	27.1	6.9

(continued)

Appendix-B (cont.)

Village code	Population	Live births	Deaths	Birth rate	Death rate
K	888	19	5	21.4	5.6
L	518	18	3	34.7	5.8
M	176	1	1	5.7	5.7
N	2053	63	11	30.7	5.4
O	1502	34	7	22.6	4.7
P	1953	31	16	15.9	8.2
Q	350	12	2	34.3	5.7
V27	846	14	7	16.5	8.3
V28	1441	40	13	27.8	9.0
V30	563	16	7	28.4	12.4
V39	325	10	1	30.8	3.1
V40	759	12	7	15.8	9.2
V41	1579	44	16	27.9	10.1
V42	737	23	4	31.2	5.4
V43	852	21	11	24.6	12.9
V44	588	12	9	20.4	15.3
V64	4545	103	33	22.7	7.3
V86	784	18	3	23.0	3.8
V88	484	10	2	20.7	4.1
VB11	2503	59	18	23.6	7.2
D100	3154	78	26	24.7	8.2
D101	1272	26	10	20.4	7.9
Block C	27872	664	212	23.8	7.6
R	1355	36	15	26.6	11.1
S	923	16	7	17.3	7.6
T	1541	45	11	29.2	7.1
V15	632	10	3	15.8	4.7
V16	768	16	8	20.8	10.4
V17	1050	24	11	22.9	10.5
V18	3736	104	29	27.8	7.8
V25	1202	32	7	26.6	5.8
V29	433	6	4	13.9	9.2
V33	475	10	9	21.1	18.9
V34	796	16	9	20.1	11.3
V52	222	3	2	13.5	9.0
V54	634	8	4	12.6	6.3
V55	520	16	6	30.8	11.5
V57	1045	22	8	21.1	7.7
V63	1975	43	12	21.8	6.1
V67	589	21	2	35.7	3.4
V81	637	11	3	17.3	4.7
V84	2197	63	20	28.7	9.1
V89	1389	44	10	31.7	7.2
Block D	22119	546	180	24.7	8.1
MCH-FP area	106477	2679	778	25.2	7.3

(continued)

Appendix-B (cont.)

Village code	Popula- tion	Live births	Deaths	Birth rate	Death rate
A	3005	85	27	28.3	9.0
B	2068	60	11	29.0	5.3
C	3879	113	34	29.1	8.8
F	1405	34	20	24.2	14.2
G	2598	57	20	21.9	7.7
J	604	17	6	28.1	9.9
U	8211	256	55	31.2	6.7
V01	570	9	5	15.8	8.8
V02	515	14	7	27.2	13.6
V03	650	21	8	32.3	12.3
V04	314	11	2	35.0	6.4
V05	3296	99	34	30.0	10.3
V06	2378	44	12	18.5	5.0
V07	375	12	4	32.0	10.7
V08	1289	30	11	23.3	8.5
V09	1139	21	9	18.4	7.9
V14	829	28	5	33.8	6.0
V35	3748	98	25	26.1	6.7
V36	5172	144	37	27.8	7.2
V37	0	0	0	0	0
V38	1690	47	17	27.8	10.1
V45	1098	32	5	29.1	4.6
V46	409	15	5	36.7	12.2
V47	1808	49	17	27.1	9.4
V48	595	8	2	13.4	3.4
V49	1331	39	11	29.3	8.3
V50	131	3	2	22.9	15.3
V51	851	17	7	20.0	8.2
V53	3122	80	30	25.6	9.6
V58	0	0	0	0	0
V65	763	23	7	30.1	9.2
V66	856	24	5	28.0	5.8
V68	929	32	6	34.4	6.5
V69	0	0	0	0	0
V70	0	0	0	0	0
V71	475	10	3	21.1	6.3
V73	787	24	8	30.5	10.2
V74	1418	38	13	26.8	9.2
V75	386	10	6	25.9	15.5
V76	1687	50	10	29.6	5.9
V78	258	4	0	15.5	0.0
V79	345	8	5	23.2	14.5
V80	1164	36	7	30.9	6.0
V90	1191	39	13	32.7	10.9
V95	1871	60	13	32.1	6.9
V96	624	15	5	24.0	8.0
V97	421	12	4	28.5	9.5
V98	181	4	0	22.1	0.0
V99	638	15	13	23.5	20.4

(continued)

Appendix-B (cont.)

Village code	Population	Live births	Deaths	Birth rate	Death rate
VB1	1145	32	13	27.9	11.4
VB2	1052	33	10	31.4	9.5
VB3	2995	76	19	25.4	6.3
VB4	3832	122	27	31.8	7.0
VB5	971	19	1	19.6	1.0
VB6	613	17	12	27.7	19.6
VB7	314	11	3	35.0	9.6
VB8	1396	44	14	31.5	10.0
VB9	0	0	0	0	0
VB10	2692	94	25	34.9	9.3
D28	1203	32	12	26.6	10.0
D29	165	5	0	30.3	0.0
D30	698	26	9	37.2	12.9
D31	1064	32	19	30.1	17.9
D32	693	25	8	36.1	11.5
D33	1128	33	8	29.3	7.1
D34	1378	40	8	29.0	5.8
D35	683	16	5	23.4	7.3
D88	1353	38	14	28.1	10.3
D89	1247	34	9	27.3	7.2
D90	1027	20	9	19.5	8.8
D91	0	0	0	0	0
D92	0	0	0	0	0
D93	1266	38	9	30.0	7.1
D94	1359	46	20	33.8	14.7
D95	472	9	3	19.1	6.4
D96	859	21	8	24.4	9.3
D97	825	15	8	18.2	9.7
D98	3318	80	31	24.1	9.3
D99	2095	56	18	26.7	8.6
Comparison area	102917	2861	868	27.8	8.4

*See village name in Appendix-A.

Appendix-C **Life Table Equations**

$$1. \quad {}_nq_x = \frac{{}_nm_x}{\frac{1}{n} + {}_nm_x \left[\frac{1}{2} + \frac{n}{12} ({}_nm_x - \ln C) \right]}$$

$$2. \quad \ell_0 = 100,000$$

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

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

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

$$L_i = \frac{1}{2} (\ell_i + \ell_{i+1}), \quad i = 2, 3, 4$$

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

$${}_nL_{85} = \frac{\ell_{85}}{{}_nm_{85}} \quad \text{for the last age group 85+}$$

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

Note: Greville's method, as suggested in Shryock, H.S., Siegel, 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

Project Director

Dr. 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
Mr. Md. Khalilur Rahman I, Asst. Supvr.

Senior Health Assistants:

Mr. Md. Sirajul Hoque
Mr. K.J.M. Mannan Pathan
Mr. M. Abdur Rashid Mia
Mr. M.A. Latif Patwari
Mr. A.F.M. Aminul Islam Khan
Mr. M.A. Mannan Bakaul
Mr. Monoranjan Das
Mr. Md. Aftekharuzzaman
Mr. Md. Mozammel Haque

Paramedic:

Mr. M. Monirul Alam Bhuiyan

Admin. Assistant:

Mr. A.K.M. Mozibul Hoque

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. Golam Hossain
Mr. P.C. Chakraborty
Mr. Md. Jasimuddin
Mr. Nasir Ahmed
Mr. Md. Shahidur Rahman
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. Javed 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
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. Md. Kapil Ahmed
Mr. Sajal K. Saha
Mr. Harun-ur-Rashid
Ms. Habiba Rahman
Mr. Md. Khayrul Alam Khan
Mr. Md. Arifur Rahim
Ms. Nasrin Aktar
Mr. Birendra Nath Adhikary

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Computing Facilities: The Centre operates an IBM 4361 mainframe computer with eight megabytes (MB) of real memory and an on-line storage capacity of 3,000 MB. It is connected to 25 terminals. This system provides the capacity to analyze large data sets and is complemented by over 300 personal computers and a few Local Area Network (LANs) throughout the Centre. New e-mail facilities have been established in the Centre. A new information technology (IT) strategy is in the process of implementation.

Dissemination and Information Services Centre: The Dissemination and Information Services Centre (DISC) provides access to the scientific literature on diarrhoeal diseases, nutrition, population studies, health, environmental, and behavioural studies in general by means of Current Contents (Life Sciences and Clinical Medicine), MEDLINE, AIDS and POPLINE databases, books, bound journals, some four hundred current periodicals, etc. DISC publishes the quarterly Journal of Diarrhoeal Diseases Research (and bibliography on diarrhoeal diseases within the Journal), two quarterly newsletters Glimpse (in English) and Shasthya Sanglap (in Bangla), a bimonthly bilingual staff news bulletin--the ICDDR,B News, working papers, scientific reports, special publications, and monographs.

Staff: The Centre currently has over 200 researchers and medical staff from more than ten countries doing research and providing expertise in many disciplines related to the Centre's areas of research. One thousand two hundred personnel are working in the Centre.

What is the Centre's Plan for the Future ?

In the 36 years of its existence, ICDDR,B has evolved into a busy cosmopolitan research centre whose scientists have wide-ranging expertise. Future research will be directed toward finding cost-effective solutions to the health and population problems of the most disadvantaged people in the world. The Centre's Strategic Plan: "To The Year 2000" outlines work in the following key areas:

Child Survival: Diarrhoeal diseases are responsible for deaths of 3 million children every year. Acute and persistent diarrhoea and dysentery will remain priority areas for research on strategies for prevention, including modifications in personal and domestic hygiene behaviours, provision of appropriate water supply to and sanitation for the households, and the development of effective vaccines. The Centre's scientists will contribute to the improvement of the case management of diarrhoea based on better understanding of basic mechanisms, and national and international responses to epidemics. Risk factors for low birth rate and potential interventions, acute respiratory infections, nutritional deficiency states (including micro-nutrients), and immunization-preventable infectious diseases will also be examined, particularly as they interact with diarrhoea.

Population and Reproductive Health: The Centre has a long history of conducting pioneering research in the areas of population and family planning. The Centre played a key role in raising the contraceptive use rate among women of reproductive age in Bangladesh to almost 45% through technical assistance and operations research. So much so that the 1994 Cairo Conference hailed Bangladesh as a family planning success story. Matlab is now the model for MCH-FP programmes throughout the world, and the Centre is poised to make important contributions to maternal health and safe motherhood. In addition to continuing work in these areas, the Centre has initiated community-based research on STD/RTI/HIV infections.

Application and Policy: The Centre will continue to play a major part in improving both supply of and demand for existing health technologies, and in replicating the successful interventions piloted in its projects through health systems research. The Centre will increase its communication, dissemination and training efforts to influence international and national health policies in the areas of its expertise. ICDDR,B recognizes, and has given a high priority to, the need to transform research findings into actions.



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