

DEMOGRAPHIC SURVEILLANCE SYSTEM MATLAB

1113

VOLUME TWENTY FIVE

REGISTRATION OF DEMOGRAPHIC EVENTS- 1994

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

SCIENTIFIC REPORT NO. 77
October 1996



CENTRE
FOR HEALTH AND
POPULATION RESEARCH

INTERNATIONAL CENTRE FOR DIARRHOEAL
DISEASE RESEARCH, BANGLADESH

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



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

DEMOGRAPHIC SURVEILLANCE SYSTEM - MATLAB

Volume Twenty Five

Registration of Demographic Events - 1994

With a Special Supplement

**Mortality Trends in Matlab during 1966-1994:
Preliminary Findings**

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



CENTRE

For Health and
Population Research

International Centre for
Diarrhoeal Disease Research, Bangladesh

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ISBN 984-551-069-8

Cover design: Asem Ansari

October 1996

Scientific Report No. 77

Published by:

International Centre for Diarrhoeal Disease Research, Bangladesh

GPO Box 128, Dhaka 1000, Bangladesh

Telephone: 871751-60 (10 lines); Cable: CHOLERA DHAKA;

Telex: 675612 ICDD BJ; Fax: 880-2-883116 and 880-2-886050

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.

We also thank Prof. R. Fernando of the University of Western Ontario, London, Canada for his suggestion to improve one of the graphs and Dr. F. Eelens of the Netherlands Interdisciplinary Demographic Institute in the Hague for assistance to the Supplement. Mr. Sentu B. Gomes, Project Office Manager, DSS, provided valuable assistance throughout the various stages of production of the report.

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SUMMARY

This report presents the vital registration data for events taking place in 1994 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 1994 fertility increased a little in the MCH-FP area; the crude birth rate rose slightly to 25.9 per thousand and the total fertility rate to 3.0 births per woman. In the Comparison area, however, the crude birth rate and total fertility rate remained virtually unchanged from 1993 levels.

The infant mortality showed little change in comparison with the previous year in the MCH-FP area, where a rate of 63.7 per thousand was recorded in 1994; in the Comparison area, after the sharp upsurge in 1993, it fell back to 87.2; which was the lowest level recorded since 1990. The crude death rates were 8.0 and 9.2 in the MCH-FP and Comparison areas respectively. Child (1-4 years old) mortality and under-five mortality declined in both the areas.

Rates of both in- and out-migration for the surveillance area as a whole increased in 1994, with in-migration rate at 26.5 per thousand and out-migration at 41.4 per thousand, leaving a net out-migration of 14.9 per thousand, thus offsetting the rate of natural increase of 19.1 and reducing the overall rate of population growth to 0.4 percent per annum.

This report also presents a Special Supplement with results of a study describing trends in mortality by age, sex and area in Matlab, in 1966-1994.

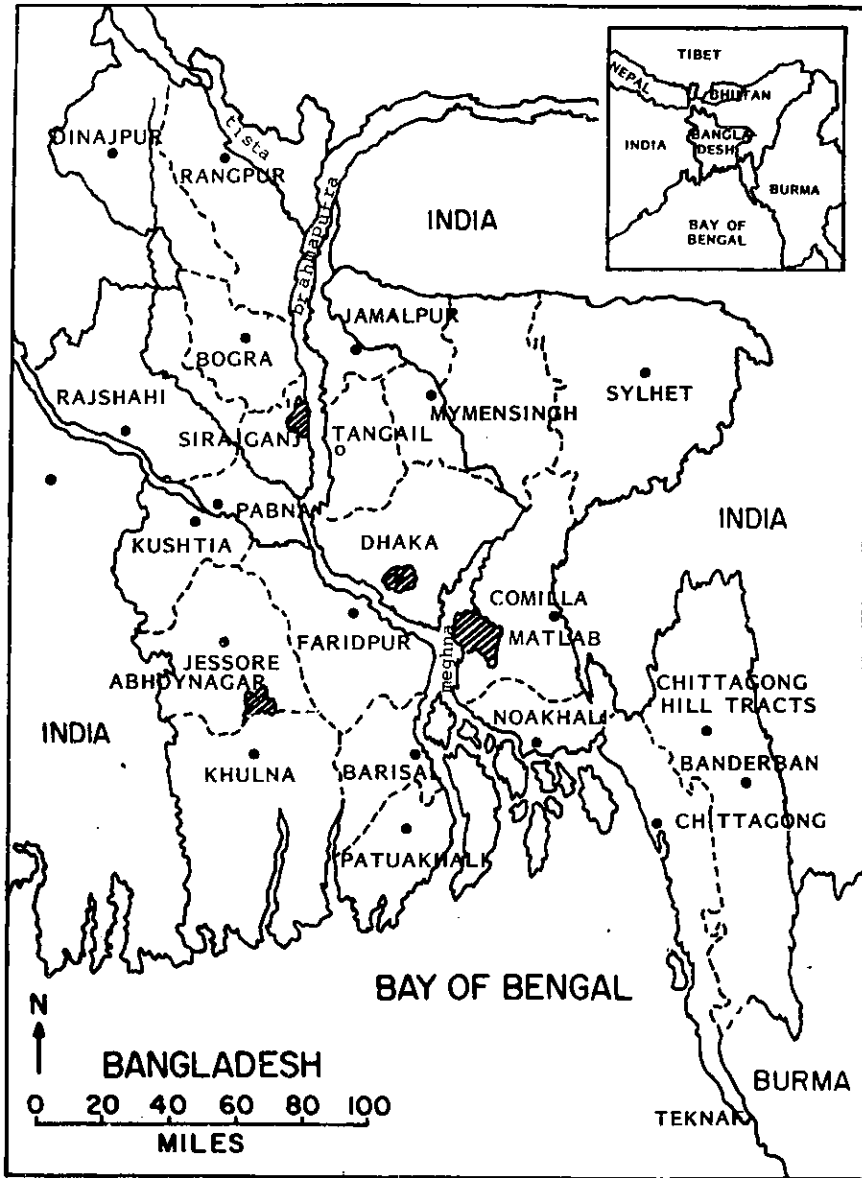
CHAPTER 1

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).

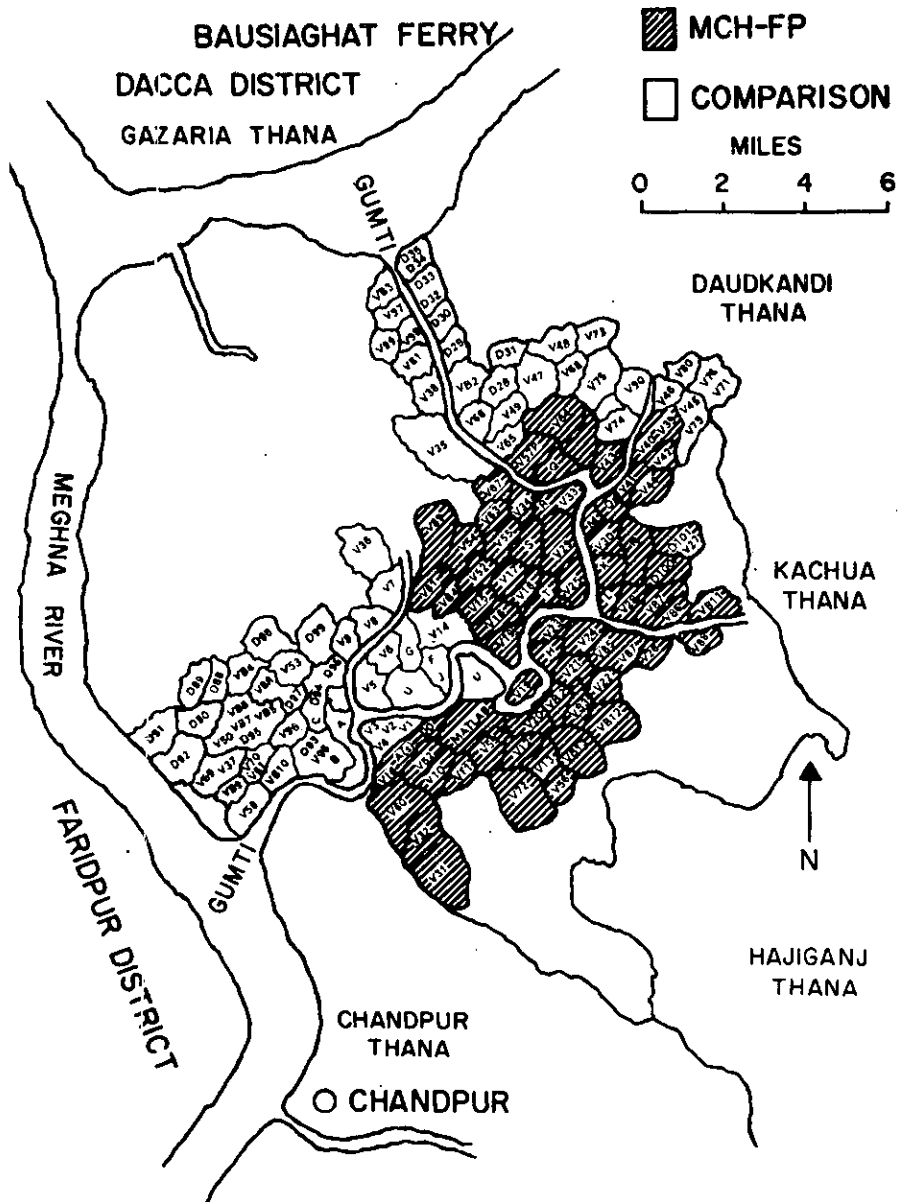
This is the twenty-fifth volume of a series of scientific reports of the Demographic Surveillance System produced by the ICDDR,B. Presented here are results obtained from the Matlab DSS in 1994, along with brief notes and explanations of the tables. This volume also includes a Special Supplement describing trends in mortality by age, sex and area in Matlab, in 1966-1994.

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 1983 through 1994 and the basic 1994 figures by sex are shown in Table 2.2. The 1994 fertility rate slightly increased compared to the preceding year in the MCH-FP area, with a total fertility rate (TFR) of 3.0 and a crude birth rate (CBR) of 25.9 per 1,000 population. In the Comparison area the TFR remained unchanged at 3.8 while the CBR was 29.4 per 1,000. The trends in the total fertility rate in both areas are illustrated in Figure 2.1(a).

The infant mortality in the MCH-FP area remained at the same level in 1994 compared to 1993 at 63.7 per 1,000 live births; neonatal mortality and child mortality continued to fall and hence the under-five mortality dropped to 85.1 deaths in the first 5 years of life per 1,000 live births. In Comparison area both infant and under-five mortality declined in 1994 and reached at 87.2 and 116.1 per 1,000 respectively. The trends in under-five mortality are illustrated in Figure 2.1(b).

Migration figures, both in and out of the surveillance area as a whole, increased in 1994. Out-migrants continued to outnumber in-migrants, thus offsetting the rate of natural increase, which amounted to 19.1 per thousand in 1994, so that the overall rate of population growth was reduced to 0.4 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 1978-1994 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 1994 this proportion had fallen to 37.3 percent. In the Comparison area, on the other hand, the proportion under 15 showed only minimal change, from 43.3 percent in 1978 to 41.8 percent in 1994.

Table 2.1: Vital Statistics of the Matlab MCH-FP and Comparison Areas, 1983-1994

Vital rates (per 1000)	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Crude birth rate												
MCH-FP area	34.2	30.7	34.6	33.6	33.6	30.9	28.4	28.3	25.4	25.4	24.7	25.9
Comparison area	42.6	37.3	42.6	39.6	39.2	40.4	36.6	37.8	32.7	31.1	29.4	29.4
Both areas	38.3	34.0	38.5	36.5	36.4	35.5	32.4	32.9	29.0	28.2	27.0	27.6
Total fertility rate**												
MCH-FP area	4.5	4.0	4.5	4.3	4.2	3.8	3.4	3.4	3.0	3.0	2.9	3.0
Comparison area	6.1	5.1	6.0	5.5	5.4	5.4	4.9	5.0	4.3	4.0	3.8	3.8
Both areas	5.3	4.5	5.2	4.9	4.8	4.5	4.1	4.1	3.6	3.5	3.3	3.4
Crude death rate												
MCH-FP area	11.9	13.4	10.2	9.9	9.3	8.7	8.0	7.6	8.1	8.3	7.7	8.0
Comparison area	16.7	17.3	14.2	12.2	11.2	11.0	9.5	9.4	10.2	9.8	10.2	9.2
Both areas	14.3	15.3	12.2	11.0	10.2	9.9	8.7	8.5	9.1	9.0	8.9	8.6
Neonatal mortality*												
MCH-FP area	56.4	57.9	52.5	45.4	43.8	42.8	46.0	47.8	47.7	49.6	42.8	36.4
Comparison area	70.3	71.4	69.4	53.0	54.9	57.7	52.7	53.3	63.2	53.3	64.5	56.4
Both areas	64.0	65.3	61.7	49.4	49.7	51.1	49.7	50.9	56.3	51.6	54.4	46.9
Post-neonatal mortality*												
MCH-FP area	41.8	56.9	33.8	36.4	34.6	38.0	28.3	27.4	32.3	30.8	20.3	27.3
Comparison area	42.2	55.7	49.1	39.7	39.5	39.0	38.0	34.1	51.7	37.0	34.8	30.8
Both areas	42.0	56.2	42.1	38.2	37.2	38.6	33.6	31.2	43.0	34.1	28.0	29.2
Infant mortality*												
MCH-FP area	98.2	114.8	86.4	81.8	78.4	80.8	74.3	75.2	80.0	80.5	63.1	63.7
Comparison area	112.5	127.1	118.4	92.7	94.4	96.6	90.7	87.5	114.9	90.2	99.3	87.2
Both areas	106.0	121.5	103.8	87.6	86.9	89.6	83.3	82.1	99.2	85.7	82.4	76.0
Child mortality (1-4 yrs)												
MCH-FP area	21.9	23.1	16.4	13.4	9.9	7.6	6.4	5.3	7.0	5.9	5.9	5.3
Comparison area	35.3	39.2	24.6	20.7	15.0	14.4	11.5	9.3	9.1	10.4	10.0	7.0
Both areas	29.1	31.6	20.7	17.2	12.6	11.1	9.0	7.4	8.1	8.3	8.1	6.2
Under five mortality*												
MCH-FP area	172.3	192.0	143.9	129.8	113.1	107.4	97.5	94.8	105.7	102.0	87.8	85.1
Comparison area	227.0	252.7	200.1	164.0	145.2	146.1	131.1	120.4	146.2	127.1	139.7	116.1
Both areas	202.1	224.8	174.4	148.0	130.2	128.3	115.7	108.7	128.1	115.7	115.6	101.3
Rate of natural increase												
MCH-FP area	22.3	17.3	24.4	23.7	24.3	22.1	20.4	20.7	17.3	17.1	17.0	17.9
Comparison area	25.8	20.0	28.4	27.4	28.0	29.4	27.1	28.4	22.5	21.2	19.2	20.2
Both areas	24.1	18.6	26.3	25.5	26.1	25.7	23.6	24.4	19.9	19.1	18.1	19.1
In-migration	24.6	24.2	23.9	28.3	33.6	26.5	29.3	26.0	26.9	33.6	25.5	26.5
Out-migration	35.8	42.7	42.1	41.7	44.3	41.5	43.9	42.4	41.9	48.5	36.1	41.4
Growth (%)	1.3	0.0	0.8	1.2	1.5	1.1	0.9	0.8	0.5	0.4	0.8	0.4

*Per 1000 live births.

**Per woman.

Note: Numbers have been rounded.

Figure 2.1 Trends in Fertility and Under Five Mortality by Area, in 1982-1994

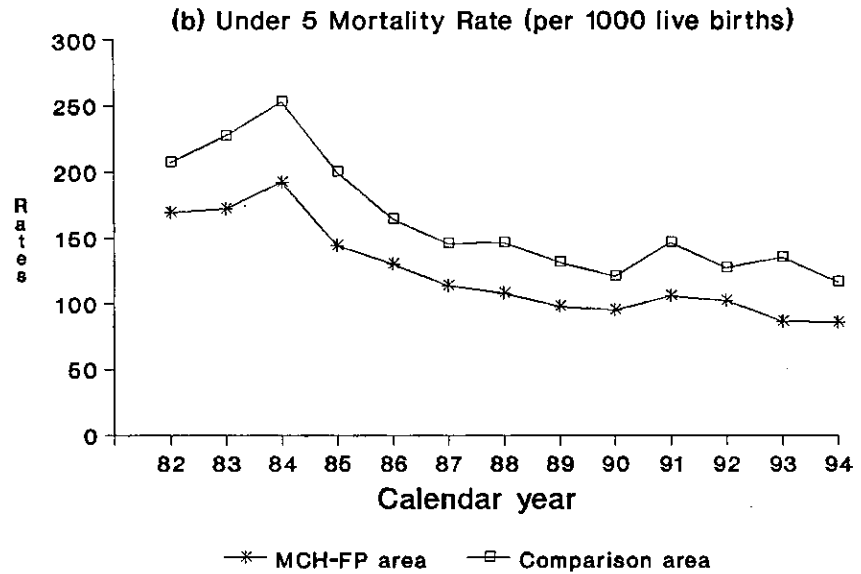
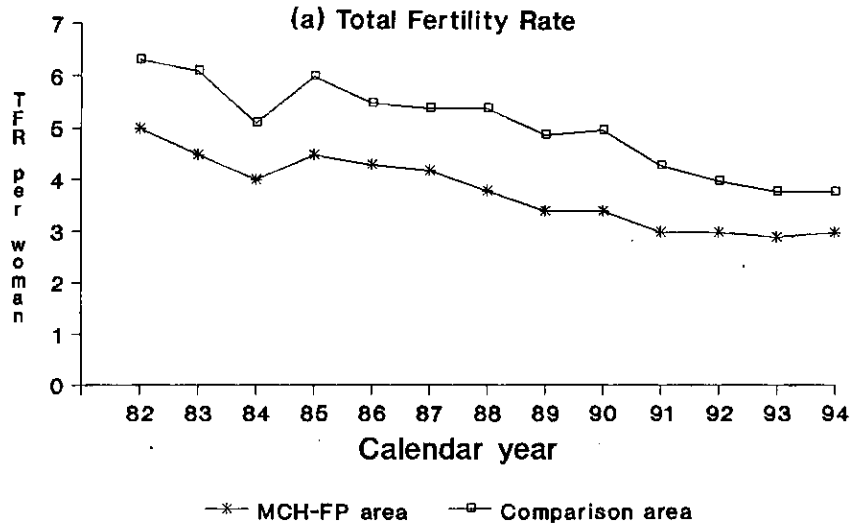


Table 2.2: Mid-year Population, Events Registered, and Population Changes in 1994

	Number			Rate per 1000		
	Total	Males	Females	Total	Males	Females
<u>Total population as of 30 June 1994:</u>						
MCH-FP area	106000	52681	53319	-	-	-
Comparison area	102552	51000	51552	-	-	-
Both areas	208552	103681	104871	-	-	-
<u>Events registered (Jan - Dec. 1994)</u>						
<u>Births</u>						
MCH-FP area	2747	1357	1390	25.9	-	-
Comparison area	3016	1532	1484	29.4	-	-
Both areas	5763	2889	2874	27.6	-	-
<u>Deaths</u>						
<u>-Infant*</u>						
MCH-FP area	175	93	82	63.7	68.5	59.0
Comparison area	264	128	136	87.2	83.6	91.0
Both areas	438	221	217	76.0	76.5	75.5
<u>-All deaths</u>						
MCH-FP area	848	447	401	8.0	8.5	7.5
Comparison area	940	506	434	9.2	9.9	8.4
Both areas	1788	953	835	8.6	9.2	8.0
In-migration	5517	2513	3004	26.5	24.2	28.6
Out-migration	8637	4438	4199	41.4	42.8	40.0
Marriage	2794	-	-	13.4	-	-
Divorce**	333	-	-	119.2	-	-
<u>Population change (Jan - Dec. 1994)</u>						
Net migration	-3120	-1925	-1195	-15.0	-18.6	-11.4
<u>Natural Increase</u>						
MCH-FP area	1899	910	989	17.9	17.3	18.5
Comparison area	2076	1026	1050	20.2	20.1	20.4
Both areas	3975	1936	2039	19.06	18.7	19.4
Net Increase	855	11	844	4.1	0.1	8.0

*Rate per 1000 live births.

**Rate per 1000 marriages.

Table 2.3: Mid-year Population by Age and Sex, 1994

Age (years)	Number			Percent		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	208552	103681	104871	100.0	100.0	100.0
Under 1	5419	2713	2706	2.6	2.6	2.6
1 - 4	21724	11059	10665	10.4	10.7	10.2
1	5372	2758	2614	2.6	2.7	2.5
2	4924	2505	2419	2.4	2.4	2.3
3	5749	2930	2819	2.8	2.8	2.7
4	5679	2866	2813	2.7	2.8	2.7
5 - 9	29185	14744	14441	14.0	14.2	13.8
10-14	26129	13766	12363	12.5	13.3	11.8
15-19	21038	11103	9935	10.1	10.7	9.5
20-24	18658	9173	9485	8.9	8.8	9.0
25-29	15685	6765	8920	7.5	6.5	8.5
30-34	14826	7092	7734	7.1	6.8	7.4
35-39	11556	5814	5742	5.5	5.6	5.5
40-44	8561	4235	4326	4.1	4.1	4.1
45-49	7710	3425	4285	3.7	3.3	4.1
50-54	7447	3257	4190	3.6	3.1	4.0
55-59	6807	3322	3485	3.3	3.2	3.3
60-64	5323	2708	2615	2.6	2.6	2.5
65-69	3724	1939	1785	1.8	1.9	1.7
70-74	2406	1259	1147	1.2	1.2	1.1
75-79	1289	705	584	0.6	0.7	0.6
80-84	702	385	317	0.3	0.4	0.3
85+	363	217	146	0.2	0.2	0.1

Table 2.4: Mid-year Population by Area, Age, and Sex, 1994

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	106000	52681	53319	102552	51000	51552
Under 1	2584	1278	1306	2835	1435	1400
1 - 4	10032	5135	4897	11692	5924	5768
1	2518	1303	1215	2854	1455	1399
2	2263	1148	1115	2661	1357	1304
3	2642	1359	1283	3107	1571	1536
4	2609	1325	1284	3070	1541	1529
5 - 9	14007	7082	6925	15178	7662	7516
10-14	12953	6750	6203	13176	7016	6160
15-19	11070	5882	5188	9968	5221	4747
20-24	9885	4890	4995	8773	4283	4490
25-29	8339	3579	4760	7346	3186	4160
30-34	7765	3670	4095	7061	3422	3639
35-39	6069	3073	2996	5487	2741	2746
40-44	4570	2236	2334	3991	1999	1992
45-49	4105	1835	2270	3605	1590	2015
50-54	3937	1748	2189	3510	1509	2001
55-59	3527	1712	1815	3280	1610	1670
60-64	2716	1420	1296	2607	1288	1319
65-69	1957	1025	932	1767	914	853
70-74	1220	657	563	1186	602	584
75-79	681	377	304	608	328	280
80-84	374	207	167	328	178	150
85+	209	125	84	154	92	62

Table 2.5: Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1994

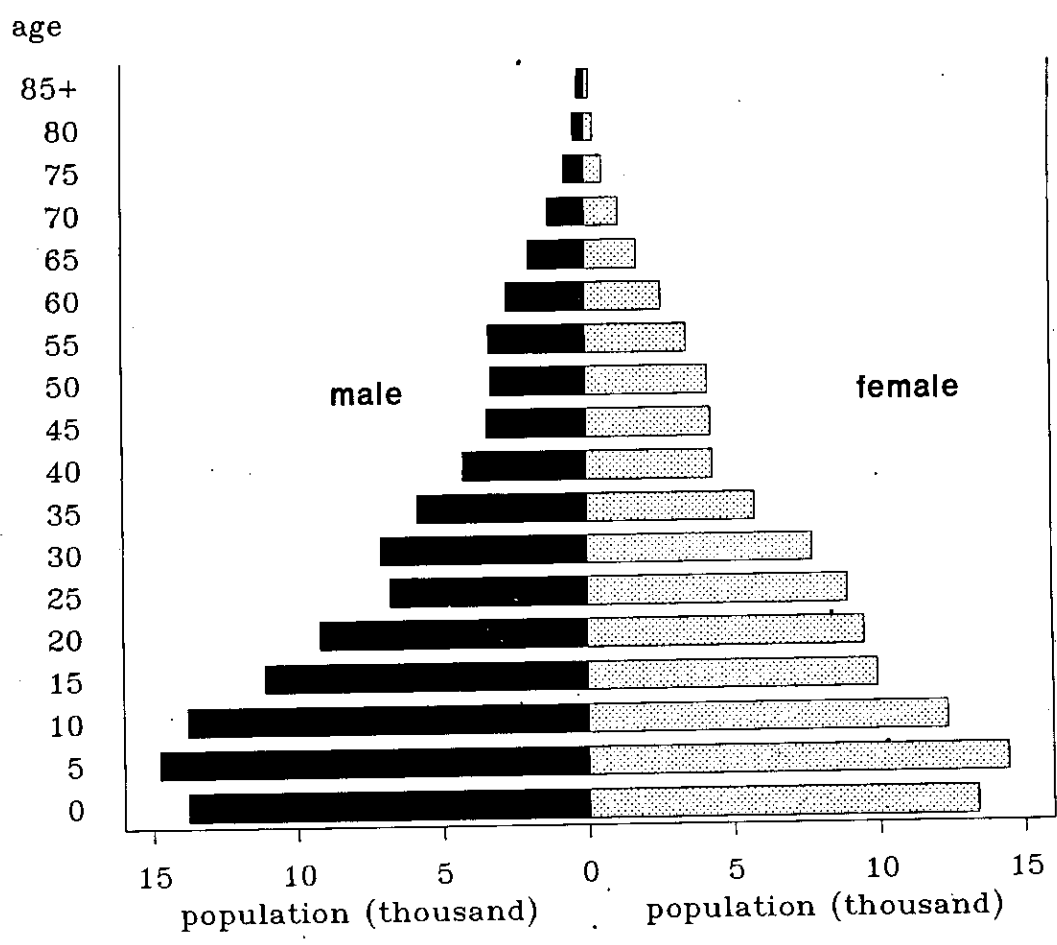
Age (years)	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	29665	14674	14991	26417	13006	13411
Under 1	751	364	387	689	341	348
1 - 4	2897	1461	1436	2581	1325	1256
1	714	368	346	648	333	315
2	666	331	335	566	298	268
3	748	394	354	677	331	346
4	769	368	401	690	363	327
5 - 9	4028	2042	1986	3620	1857	1763
10-14	3642	1922	1720	3372	1753	1619
15-19	3088	1588	1500	2674	1425	1249
20-24	2710	1299	1411	2408	1151	1257
25-29	2431	1011	1420	1990	823	1167
30-34	2193	1019	1174	1837	847	990
35-39	1733	874	859	1384	684	700
40-44	1233	607	626	1141	525	616
45-49	1197	556	641	981	404	577
50-54	1027	468	559	959	410	549
55-59	889	477	412	873	408	465
60-64	659	348	311	725	385	340
65-69	530	288	242	533	272	261
70-74	302	159	143	302	176	126
75-79	188	97	91	180	117	63
80-84	107	59	48	103	59	44
85+	60	35	25	65	44	21

(continued)

Table 2.5 (cont.): Mid-year Population in MCH-FP Area by Age, Sex, and Block, 1994

Age (years)	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	27700	13967	13733	22218	11034	11184
Under 1	631	312	319	513	261	252
1 - 4	2503	1304	1199	2051	1045	1006
1	629	323	306	527	279	248
2	578	309	269	453	210	243
3	652	343	309	565	291	274
4	644	329	315	506	265	241
5 - 9	3531	1797	1734	2828	1386	1442
10-14	3336	1724	1612	2603	1351	1252
15-19	3025	1631	1394	2283	1238	1045
20-24	2713	1414	1299	2054	1026	1028
25-29	2187	982	1205	1731	763	968
30-34	2016	982	1034	1719	822	897
35-39	1644	835	809	1308	680	628
40-44	1227	599	628	969	505	464
45-49	1063	497	566	864	378	486
50-54	1085	487	598	866	383	483
55-59	937	453	484	828	374	454
60-64	710	386	324	622	301	321
65-69	447	229	218	447	236	211
70-74	338	165	173	278	157	121
75-79	170	96	74	143	67	76
80-84	82	44	38	82	45	37
85+	55	30	25	29	16	13

Figure 2.2: Age Pyramid of the 1994 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, the MCH-FP area infant mortality rate of 63.7 showed little change in comparison with the previous year, as a result of compensating movements in the neonatal and post-neonatal rates. The Comparison area recorded a significant fall in infant mortality compared with 1993, where there had been a sudden upsurge. Mortality of children aged 1-4 years fell in both areas.

The abridged life tables in Table 3.9 and 3.10 show that the difference in expectation of life at birth by sex was only one year in the MCH-FP area while increases were recorded for both sexes in the Comparison area compared to 1993.

The age-standardised mortality rates by cause of death in Table 3.16, when compared with the corresponding table for 1993, shows that the biggest increases for the MCH-FP area males were in the rates for cardio-vascular causes 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.

The levels of adult mortality decreased in 1994, and there was little difference between the two areas. The probability of dying between the ages of 15 and 60 (${}_{45}q_{15}$) decreased from 204 per thousand in 1993 to 188 in 1994, for the study area as a whole, but there were compensating movements between the two areas and between sexes; the rate fell for both sexes and in both areas except female in MCH-FP area where the rate rose 157 to 161. However, male adult mortality remained consistently higher than female in both areas, and the differential appears to be increasing.

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 January and June.

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).

Comparisons with the corresponding table for 1993 reveal little changes, other than those noted above.

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 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, 1994

Age	Both sexes	Males	Females
All ages	1788	953	835
Under 1 year	438	221	217
Under 1 month	270	147	123
1-5 months	122	54	68
6-11 months	46	20	26
1 - 4 years	135	63	72
1	63	31	32
2	37	13	24
3	23	12	11
4	12	7	5
5 - 9	61	34	27
10-14	18	7	11
15-19	27	15	12
20-24	24	12	12
25-29	26	9	17
30-34	43	19	24
35-39	29	11	18
40-44	46	29	17
45-49	35	16	19
50-54	65	38	27
55-59	91	59	32
60-64	135	76	59
65-69	173	99	74
70-74	156	85	71
75-79	113	55	58
80-84	82	50	32
85+	91	55	36

Table 3.2: Deaths by Area, Age, and Sex, 1994

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	848	447	401	940	506	434
Under 1 year	175	93	82	263	128	135
Under 1 month	100	60	40	170	87	83
1-5 months	55	24	31	67	30	37
6-11 months	20	9	11	26	11	15
1 - 4 years	53	24	29	82	39	43
1	22	11	11	41	20	21
2	15	6	9	22	7	15
3	10	4	6	13	8	5
4	6	3	3	6	4	2
5 - 9	32	15	17	29	19	10
10-14	10	3	7	8	4	4
15-19	21	11	10	6	4	2
20-24	12	6	6	12	6	6
25-29	10	4	6	16	5	11
30-34	24	11	13	19	8	11
35-39	13	4	9	16	7	9
40-44	26	13	13	20	16	4
45-49	18	10	8	17	6	11
50-54	31	14	17	34	24	10
55-59	42	28	14	49	31	18
60-64	59	33	26	76	43	33
65-69	81	48	33	92	51	41
70-74	81	44	37	75	41	34
75-79	55	27	28	58	28	30
80-84	51	27	24	31	23	8
85+	54	32	22	37	23	14

Table 3.3: Deaths in MCH-FP Area by Age, Sex, and Block, 1994

Age	Block A			Block B		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	225	120	105	206	116	90
Under 1 year	53	26	27	40	23	17
Under 1 month	32	18	14	27	17	10
1-5 months	16	5	11	10	4	6
6-11 months	5	3	2	3	2	1
1 - 4 years	16	8	8	18	10	8
1	6	3	3	9	6	3
2	5	3	2	6	2	4
3	3	0	3	3	2	1
4	2	2	0	0	0	0
5 - 9	10	6	4	10	5	5
10-14	1	1	0	2	0	2
15-19	4	3	1	6	3	3
20-24	3	1	2	3	1	2
25-29	3	0	3	4	2	2
30-34	5	2	3	7	3	4
35-39	3	1	2	4	0	4
40-44	9	4	5	8	3	5
45-49	3	2	1	5	3	2
50-54	6	4	2	7	3	4
55-59	5	4	1	10	8	2
60-64	10	9	1	18	11	7
65-69	18	8	10	16	12	4
70-74	26	15	11	14	11	3
75-79	17	9	8	15	10	5
80-84	16	8	8	9	3	6
85+	17	9	8	10	5	5

(continued)

Table 3.3 (cont.): Deaths in MCH-FP Area by Age, Sex, and Block, 1994

Age	Block C			Block D		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	227	118	109	190	93	97
Under 1 year	50	26	24	32	18	14
Under 1 month	23	12	11	18	13	5
1-5 months	21	12	9	8	3	5
6-11 months	6	2	4	6	2	4
1 - 4 years	6	1	5	13	5	8
1	2	0	2	5	2	3
2	1	1	0	3	0	3
3	1	0	1	3	2	1
4	2	0	2	2	1	1
5 - 9	7	4	3	5	0	5
10-14	3	1	2	4	1	3
15-19	4	2	2	7	3	4
20-24	3	2	1	3	2	1
25-29	2	2	0	1	0	1
30-34	5	2	3	7	4	3
35-39	3	2	1	3	1	2
40-44	6	4	2	3	2	1
45-49	7	3	4	3	2	1
50-54	13	5	8	5	2	3
55-59	18	12	6	9	4	5
60-64	15	8	7	16	5	11
65-69	21	11	10	26	17	9
70-74	20	9	11	21	9	12
75-79	15	5	10	8	3	5
80-84	13	9	4	13	7	6
85+	16	10	6	11	8	3

Table 3.4: Death Rates by Age and Sex, 1994
(per 1000 population)

Age	Both sexes	Males	Females
All ages	8.6	9.2	8.0
Under 1 year*	76.0	76.5	75.5
Under 1 month*	46.9	50.9	42.8
1-5 months*	21.2	18.7	23.7
6-11 months*	8.0	6.9	9.0
1 - 4 years	6.2	5.7	6.8
1	11.7	11.2	12.2
2	7.5	5.2	9.9
3	4.0	4.1	3.9
4	2.1	2.4	1.8
5 - 9	2.1	2.3	1.9
10-14	0.7	0.5	0.9
15-19	1.3	1.4	1.2
20-24	1.3	1.3	1.3
25-29	1.7	1.3	1.9
30-34	2.9	2.7	3.1
35-39	2.5	1.9	3.1
40-44	5.4	6.8	3.9
45-49	4.5	4.7	4.4
50-54	8.7	11.7	6.4
55-59	13.4	17.8	9.2
60-64	25.4	28.1	22.6
65-69	46.5	51.1	41.5
70-74	64.8	67.5	61.9
75-79	87.7	78.0	99.3
80-84	116.8	129.9	100.9
85+	250.7	253.5	246.6

*Rate per 1000 live births.

Table 3.5: Death Rates by Area, Age, and Sex, 1994
(per 1000 population)

Age	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	8.0	8.5	7.5	9.2	9.9	8.4
Under 1 year*	63.7	68.5	59.0	87.2	83.6	91.0
Under 1 month*	36.4	44.2	28.8	56.4	56.8	55.9
1-5 months*	20.0	17.7	22.3	22.2	19.6	24.9
6-11 months*	7.3	6.6	7.9	8.6	7.2	10.1
1 - 4 years	5.3	4.7	5.9	7.0	6.6	7.5
1	8.7	8.4	9.1	14.4	13.7	15.0
2	6.6	5.2	8.1	8.3	5.2	11.5
3	3.8	2.9	4.7	4.2	5.1	3.3
4	2.3	2.3	2.3	2.0	2.6	1.3
5 - 9	2.3	2.1	2.5	1.9	2.5	1.3
10-14	0.8	0.4	1.1	0.6	0.6	0.6
15-19	1.9	1.9	1.9	0.6	0.8	0.4
20-24	1.2	1.2	1.2	1.4	1.4	1.3
25-29	1.2	1.1	1.3	2.2	1.6	2.6
30-34	3.1	3.0	3.2	2.7	2.3	3.0
35-39	2.1	1.3	3.0	2.9	2.6	3.3
40-44	5.7	5.8	5.6	5.0	8.0	2.0
45-49	4.4	5.4	3.5	4.7	3.8	5.5
50-54	7.9	8.0	7.8	9.7	15.9	5.0
55-59	11.9	16.4	7.7	14.9	19.3	10.8
60-64	21.7	23.2	20.1	29.2	33.4	25.0
65-69	41.4	46.8	35.4	52.1	55.8	48.1
70-74	66.4	67.0	65.7	63.2	68.1	58.2
75-79	80.8	71.6	92.1	95.4	85.4	107.1
80-84	136.4	130.4	143.7	94.5	129.2	53.3
85+	258.4	256.0	261.9	240.3	250.0	225.8

*Rate per 1000 live births.

Table 3.6: Abridged Life Table, 1994

Age (years)	${}_nq_x$	l_x	L_x	e^0
0	76.0	100000	94497	62.6
1	11.7	92400	91764	66.7
2	7.5	91322	90981	66.5
3	4.0	90639	90458	66.0
4	2.1	90277	90182	65.2
5	10.4	90086	448270	64.4
10	3.4	89149	445040	60.0
15	6.4	88843	442904	55.2
20	6.4	88274	440067	50.5
25	8.3	87708	436872	45.8
30	14.4	86984	432028	41.2
35	12.5	85731	426188	36.8
40	26.5	84662	418111	32.2
45	22.5	82415	407796	28.0
50	42.8	80564	394823	23.6
55	64.8	77118	373940	19.5
60	119.7	72119	340270	15.7
65	209.0	63489	285615	12.5
70	280.0	50220	216837	10.1
75	359.9	36161	148466	8.0
80	450.2	23146	89206	6.0
85+	1000.0	12726	50763	4.0

Figure 3.1: Probability of Survival from Birth to Age (x)
by Sex, 1994

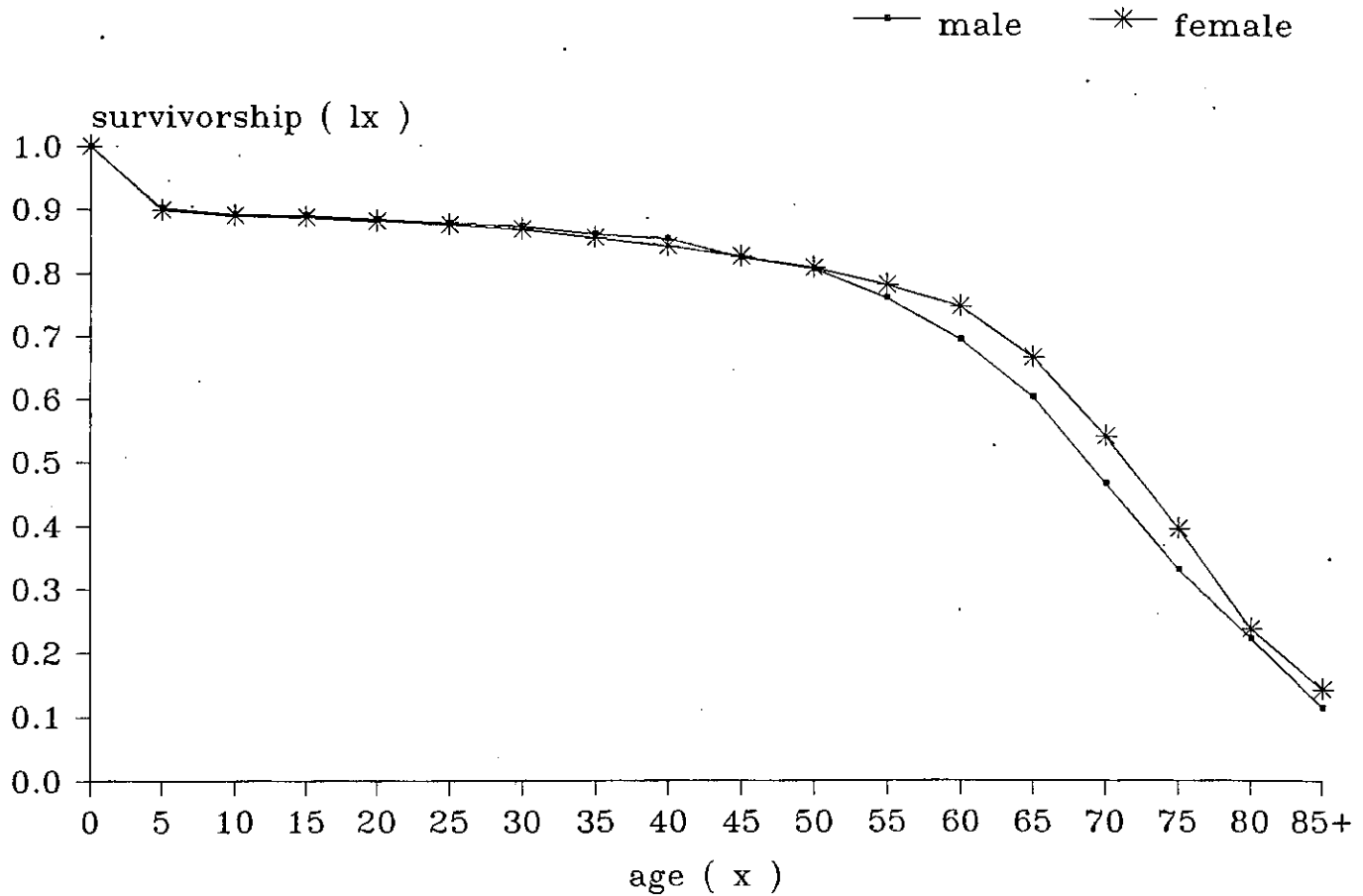


Table 3.7: Abridged Life Tables by Sex, 1994

Age (years)	Males				Females			
	${}_nq_x$	l_x	L_x	e^0	${}_nq_x$	l_x	L_x	e^0
0	76.5	100000	94462	61.8	75.5	100000	94533	63.3
1	11.2	92350	91741	65.9	12.2	92450	91786	67.4
2	5.2	91318	91082	65.7	9.9	91325	90874	67.3
3	4.1	90845	90660	65.0	3.9	90423	90247	66.9
4	2.4	90474	90364	64.3	1.8	90071	89991	66.2
5	11.5	90253	448878	63.4	9.3	89911	447624	65.3
10	2.5	89218	445569	59.1	4.4	89074	444458	60.9
15	6.7	88992	443577	54.3	6.0	88678	442161	56.1
20	6.5	88392	440633	49.6	6.3	88144	439441	51.5
25	6.6	87816	437737	44.9	9.5	87588	436026	46.8
30	13.3	87234	433488	40.2	15.4	86757	430702	42.2
35	9.4	86072	428491	35.7	15.6	85421	424036	37.8
40	33.7	85261	419651	31.0	19.5	84092	416675	33.4
45	23.1	82388	407538	27.0	21.9	82454	408089	29.0
50	56.8	80484	391786	22.6	31.7	80645	397295	24.6
55	85.3	75913	364426	18.8	45.0	78085	382275	20.3
60	131.6	69441	325631	15.3	107.1	74574	354104	16.1
65	227.3	60302	268493	12.2	188.6	66585	302930	12.7
70	289.8	46593	199985	10.0	269.0	54027	234800	10.1
75	327.2	33092	138775	8.1	397.5	39492	158073	7.9
80	486.7	22265	83446	5.8	402.6	23793	94899	6.4
85+	1000.0	11428	45089	3.9	1000.0	14214	57644	4.1

Table 3.8: Abridged Life Tables by Area, 1994

Age (years)	MCH-FP area				Comparison area			
	nq_x	l_x	L_x	e^0	nq_x	l_x	L_x	e^0
0	63.7	100000	95388	64.0	87.2	100000	93687	61.3
1	8.7	93629	93149	67.3	14.3	91280	90512	66.1
2	6.6	92815	92508	66.9	8.2	89978	89607	66.0
3	3.8	92202	92027	66.3	4.2	89237	89051	65.6
4	2.3	91853	91748	65.6	2.0	88864	88778	64.8
5	11.4	91642	455809	64.7	9.5	88691	441508	64.0
10	3.9	90601	452201	60.4	3.0	87847	438623	59.6
15	9.4	90252	449294	55.7	3.0	87581	437298	54.7
20	6.1	89400	445751	51.2	6.8	87318	435216	49.9
25	6.0	88858	443068	46.5	10.8	86722	431444	45.2
30	15.3	88327	438507	41.7	13.4	85783	426266	40.7
35	10.7	86972	432721	37.3	14.5	84636	420349	36.2
40	28.1	86045	424634	32.7	24.8	83410	412272	31.7
45	21.7	83629	413950	28.6	23.3	81344	402333	27.4
50	38.7	81814	401735	24.1	47.4	79447	388494	23.0
55	57.9	78651	382650	20.0	72.2	75683	365671	19.0
60	103.3	74094	352496	16.1	136.4	70221	328477	15.3
65	188.3	66437	302300	12.6	231.3	60645	269411	12.3
70	285.7	53924	232028	9.9	274.0	46618	201999	10.2
75	336.7	38519	160562	7.9	385.1	33844	136625	8.1
80	504.1	25552	94450	5.6	382.3	20810	84172	6.6
85+	1000.0	12672	49046	3.9	1000.0	12855	53505	4.2

Table 3.9: Abridged Life Tables for MCH-FP Area by Sex, 1994

Age (years)	Males				Females			
	nq_x	l_x	L_x	e^0	nq_x	l_x	L_x	e^0
0	68.5	100000	95038	63.5	59.0	100000	95729	64.4
1	8.4	93147	92685	67.2	9.0	94101	93600	67.4
2	5.2	92364	92123	66.7	8.0	93253	92878	67.0
3	2.9	91882	91747	66.1	4.7	92503	92287	66.5
4	2.3	91612	91508	65.3	2.3	92071	91964	65.8
5	10.5	91405	454802	64.4	12.2	91856	456695	65.0
10	2.2	90442	451745	60.1	5.6	90735	452499	60.8
15	9.3	90241	449266	55.2	9.6	90225	449127	56.1
20	6.1	89401	445742	50.7	6.0	89359	445561	51.6
25	5.6	88854	443127	46.0	6.3	88824	442832	46.9
30	14.9	88358	438756	41.2	15.8	88265	438116	42.2
35	6.5	87043	433915	36.8	14.9	86875	431382	37.8
40	28.7	86479	426652	32.0	27.5	85579	422450	33.3
45	26.9	83998	414761	27.9	17.5	83226	412769	29.2
50	39.3	81738	401237	23.6	38.1	81771	401625	24.7
55	78.8	78524	378171	19.5	37.9	78652	386352	20.6
60	110.2	72339	342961	15.9	95.8	75672	361367	16.3
65	210.5	64369	289331	12.5	163.3	68422	315565	12.7
70	287.8	50820	218388	10.2	283.2	57249	246701	9.7
75	304.6	36194	153944	8.2	374.5	41036	166852	7.5
80	488.3	25169	94215	5.7	523.0	25668	93415	5.5
85+	1000.0	12880	50312	3.9	1000.0	12243	46746	3.8

Table 3.10: Abridged Life Tables for Comparison Area by Sex, 1994

Age (years)	Males				Females			
	${}_nq_x$	l_x	L_x	e^0	${}_nq_x$	l_x	L_x	e^0
0	83.6	100000	93951	60.2	91.0	100000	93414	62.4
1	13.7	91645	90907	64.7	14.9	90903	90104	67.6
2	5.1	90394	90161	64.6	11.4	89548	89036	67.6
3	5.1	89929	89700	63.9	3.2	88524	88380	67.4
4	2.6	89472	89356	63.2	1.3	88236	88179	66.6
5	12.3	89240	443661	62.4	6.6	88121	439259	65.7
10	2.8	88140	440120	58.1	3.2	87537	437030	61.1
15	3.8	87889	438669	53.3	2.1	87253	435842	56.3
20	7.0	87553	436354	48.5	6.7	87069	434010	51.4
25	7.8	86941	433140	43.8	13.1	86489	429824	46.7
30	11.6	86262	428994	39.1	15.0	85353	423807	42.3
35	12.7	85259	423796	34.6	16.3	84072	417201	37.9
40	39.3	84176	413213	30.0	10.0	82704	411615	33.5
45	18.7	80869	400851	26.1	27.0	81878	404283	28.8
50	76.7	79356	382573	21.5	24.7	79671	393803	24.5
55	92.1	73272	350549	18.1	52.6	77703	379018	20.1
60	154.7	66522	308207	14.7	118.1	73618	347613	16.1
65	245.8	56232	247733	11.9	215.5	64921	291003	12.9
70	291.9	42409	181788	9.9	255.1	50933	223179	10.7
75	352.3	30028	123910	7.9	421.6	37940	149304	8.5
80	484.9	19451	73000	5.8	236.3	21943	97206	7.8
85+	1000.0	10018	40073	4.0	1000.0	16759	74218	4.4

Table 3.11: Deaths by Age and Month, 1994

Month	Age at death				
	All ages	Under 1 month	1-11 months	1-4 years	5 years and over
January	177	32	17	15	113
February	152	29	12	4	107
March	139	22	16	12	89
April	124	14	14	11	85
May	118	12	15	8	83
June	131	13	19	13	86
July	136	16	13	10	97
August	154	20	16	10	108
September	147	18	10	19	100
October	168	32	13	16	107
November	165	25	9	7	124
December	177	37	14	10	116
Total	1788	270	168	135	1215

Table 3.12: Male Deaths by Cause and Age, 1994

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	91	23	17	4	0	0	0	0	0	0	0	1	6	11	5	9	5	5	5	
Dysentery	25	4	5	3	1	1	0	0	0	0	1	0	2	2	1	3	0	2	0	
INFECTIOUS																				
Tuberculosis	34	0	2	1	0	0	0	1	3	1	1	2	6	3	8	2	2	1	0	
Tetanus (non-neonatal)	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
Other infectious	25	6	0	2	0	3	1	0	0	1	1	1	1	1	3	0	0	1	2	
MALIGNANT NEOPLASMS	46	0	1	1	0	2	0	0	1	3	4	3	5	2	8	7	6	2	0	
NUTRITIONAL	18	8	6	0	0	0	1	0	0	0	1	0	1	1	0	0	0	0	0	
CARDIO-VASCULAR	64	0	0	0	0	0	0	0	0	1	2	7	8	8	8	12	9	5	4	
RESPIRATORY																				
ARI, pneum. influenza	57	46	4	0	0	1	0	0	1	0	0	0	0	1	2	0	0	0	2	
COPD*	61	1	0	0	1	0	1	0	1	0	1	6	7	12	12	9	4	3	3	
GASTRO-INTESTINAL	42	0	0	1	0	1	1	2	2	1	4	2	4	3	7	8	4	2	0	
DIRECT OBSTETRIC	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	
Other neonatal	115	115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
ACCIDENTS, INJURIES																				
Suicide	8	0	0	0	0	2	2	0	2	0	1	1	0	0	0	0	0	0	0	
Homicide	2	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	
Drowning	32	0	21	8	0	0	0	0	0	0	0	1	0	0	1	1	0	0	0	
Other accidents, etc.	27	3	1	0	1	3	2	4	1	1	5	0	0	0	1	2	1	1	1	
OTHER AND UNSPECIFIED																				
Senility	101	0	0	0	0	0	0	0	0	0	0	0	0	4	17	20	19	20	21	
Other causes n.e.c.**	120	2	2	8	0	2	3	1	3	3	2	2	5	10	12	14	9	12	15	
Unknown	82	11	4	5	4	0	1	1	5	1	8	1	6	12	6	12	2	0	1	
TOTAL	953	221	63	34	7	15	12	9	19	11	29	16	38	59	76	99	85	55	50	

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.13: Female Deaths by Cause and Age, 1994

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	98	26	23	3	1	1	1	0	5	0	1	0	4	3	4	8	5	6	4	3
Dysentery	14	3	3	1	0	0	0	0	1	0	0	0	0	1	1	1	0	2	1	0
INFECTIOUS																				
Tuberculosis	14	0	1	0	1	1	0	2	2	2	0	0	1	1	1	1	0	0	0	0
Tetanus (non-neonatal)	4	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other infectious	23	2	1	1	1	0	0	3	3	2	2	1	2	1	2	1	0	1	0	0
MALIGNANT	22	0	0	1	0	0	1	0	1	1	5	1	7	1	1	2	0	1	0	0
NUTRITION	36	21	12	1	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0
CARDIO-VASCULAR	57	0	0	0	0	0	0	0	0	1	2	2	2	6	11	9	13	6	2	3
RESPIRATORY																				
ARI, pneum, influenza	67	53	8	1	0	0	0	0	0	0	0	0	1	0	1	0	2	1	0	0
COPD*	31	0	0	1	0	1	0	0	0	1	1	1	2	1	7	4	7	2	1	2
GASTRO-INTESTINAL	30	0	1	2	0	1	1	2	0	2	1	6	3	1	4	4	1	0	1	0
DIRECT OBSTETRIC	18	0	0	0	0	2	3	7	3	3	0	0	0	0	0	0	0	0	0	0
NEONATAL																				
Tetanus	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	98	98	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																				
Suicide	6	0	0	0	1	2	0	0	1	1	1	0	0	0	0	0	0	0	0	0
Homicide	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	16	0	9	6	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
Other accidents, etc.	13	0	0	0	2	1	1	1	2	0	0	0	0	1	0	2	2	0	0	1
OTHER AND UNSPECIFIED																				
Senility	113	0	0	0	0	0	0	0	0	0	0	0	0	10	22	26	19	16	20	
Other causes n.e.c.**	122	3	7	3	4	1	1	2	3	3	1	6	3	9	13	19	12	18	7	7
Unknown	51	9	4	7	1	1	3	0	3	2	3	2	2	6	4	1	1	2	0	0
TOTAL	835	217	72	27	11	12	12	17	24	18	17	19	27	32	59	74	71	58	32	36

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.14: Male Deaths by Cause, Age, and Area, 1994

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	35	56	12	11	5	12	3	1	0	0	5	13	10	14	0	5
Dysentery	8	17	0	4	1	4	1	3	2	0	0	4	4	2	0	0
INFECTIOUS																
Tuberculosis	17	17	0	0	1	1	1	0	3	3	5	7	7	6	0	0
Tetanus (non-neonatal)	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
Other infectious	13	12	2	4	0	0	1	1	4	2	3	2	3	1	0	2
MALIGNANT	24	22	0	0	1	0	1	0	5	5	9	9	8	7	0	1
NUTRITION	10	8	4	4	4	2	0	0	1	0	1	2	0	0	0	0
CARDIO-VASCULAR	41	23	0	0	0	0	0	0	0	1	14	11	25	9	2	2
RESPIRATORY																
ARI, pneum, influenza	15	42	12	34	0	4	0	0	2	0	0	1	0	2	1	1
COPD*	31	30	1	0	0	0	1	0	1	1	11	15	14	14	3	0
GASTRO-INTESTINAL	21	21	0	0	0	0	1	0	6	5	8	8	6	8	0	0
DIRECT OBSTETRIC	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
NEONATAL																
Tetanus	0	2	0	2	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	52	63	52	63	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	4	4	0	0	0	0	0	0	4	3	0	1	0	0	0	0
Homicide	1	1	0	0	0	0	0	0	0	1	1	0	0	0	0	0
Drowning	14	18	0	0	9	12	3	5	0	0	0	1	2	0	0	0
Other accidents, etc.	16	11	2	1	1	0	1	0	8	8	0	0	3	2	1	0
OTHER AND UNSPECIFIED																
Senility	55	46	0	0	0	0	0	0	0	0	4	0	35	41	16	5
Other causes n.e.c.**	55	65	2	0	1	1	3	5	4	10	13	16	24	26	8	7
Unknown	35	47	6	5	1	3	2	7	9	7	11	14	5	11	1	0
TOTAL	447	506	93	128	24	39	18	23	49	46	85	104	146	143	32	23

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.15: Female Deaths by Cause, Age, and Area, 1994

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	39	59	11	15	8	15	2	2	5	3	6	5	7	16	0	3
Dysentery	5	9	1	2	1	2	0	1	1	0	1	1	1	3	0	0
INFECTIOUS																
Tuberculosis	6	8	0	0	1	0	1	0	2	5	1	2	1	1	0	0
Tetanus (non-neonatal)	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0
Other infectious	13	11	0	2	1	0	0	2	7	4	4	2	1	1	0	0
MALIGNANT NEOPLASM	16	6	0	0	0	0	0	1	7	1	7	3	2	1	0	0
NUTRITION	15	21	11	10	4	8	0	1	0	1	0	0	0	1	0	0
CARDIO-VASCULAR	36	21	0	0	0	0	0	0	2	1	12	9	20	10	2	1
RESPIRATORY																
ARI, pneum, influenza	28	39	24	29	2	6	0	1	0	0	2	0	0	3	0	0
COPD*	13	18	0	0	0	0	0	1	2	1	3	8	7	7	1	1
GASTRO-INTESTINAL	15	15	0	0	1	0	1	1	5	2	4	10	4	2	0	0
DIRECT OBSTETRIC	6	12	0	0	0	0	0	0	6	12	0	0	0	0	0	0
NEONATAL																
Tetanus	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0
Other neonatal	29	69	29	69	0	0	0	0	0	0	0	0	0	0	0	0
ACCIDENTS, INJURIES																
Suicide	5	1	0	0	0	0	1	0	4	1	0	0	0	0	0	0
Homicide	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
Drowning	11	5	0	0	5	4	5	1	0	0	1	0	0	0	0	0
Other accidents, etc.	9	4	0	0	0	0	2	0	3	2	1	0	2	2	1	0
OTHER AND UNSPECIFIED																
Senility	60	53	0	0	0	0	0	0	0	0	3	7	45	38	12	8
Other causes n.e.c.**	68	54	1	2	5	2	5	2	8	3	14	17	29	27	6	1
Unknown	26	25	4	5	1	3	7	1	5	7	6	8	3	1	0	0
TOTAL	401	434	82	135	29	43	24	14	57	43	65	72	122	113	22	14

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

Table 3.16: Age-standardized Mortality Rates by Cause of Death, 1994
(per 100,000 population)

Cause of death	Males		Females	
	MCH-FP area	Comparison area	MCH-FP area	Comparison area
Diarrhoea	70.30	118.35	90.48	155.34
Dysentery	15.89	31.38	12.61	23.77
Tuberculosis	35.64	39.84	12.57	17.85
Tetanus (non-neonatal)	-	1.41	-	-
Other infectious	25.55	26.41	28.64	26.83
Malignant neoplasms	50.97	53.64	34.16	14.86
Nutritional	19.72	14.77	28.35	37.03
Cardio-vascular	89.09	58.18	112.39	65.35
ARI, pneumonia, influenza	29.72	76.75	53.49	73.49
C.O.P.D.*	65.28	71.61	41.88	54.17
Gastro-intestinal	44.53	51.36	35.48	33.47
Direct obstetric	-	-	10.61	25.00
Neonatal tetanus	-	-	-	1.77
Other neonatal	104.08	112.30	54.87	121.79
Suicide	-	9.07	9.17	2.64
Homicide	-	-	-	-
Drowning	25.54	28.98	18.97	7.79
Other accidents	32.57	26.91	22.70	10.13
Senility	118.16	116.59	255.69	229.31
Other cause n.e.c.**	114.89	152.79	211.89	168.47
Unknown	73.71	99.46	54.90	51.54
Total	925.77	1096.01	1090.73	1120.61

*Chronic obstructive pulmonary disease.

**Not elsewhere classified.

CHAPTER 4

FERTILITY

Table 4.1 shows the number of pregnancies and their outcomes in 1994. Compared with 1993, the number of live births rose by 156 or 2.8 percent. In the MCH-FP area the number of live births was 132 more than in 1993, and in the Comparison area they were 24 more than in 1993. In the study area as a whole, 87.9 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 100.5 males per 100 females.

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. Although the total fertility rate in the MCH-FP area changed a little from 1993, the shape of the age-specific fertility distribution changed. More births were concentrated in the 20-24 age group, with correspondingly fewer at older ages. In the Comparison area the age-specific rates remain virtually unchanged for all groups.

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 to 4, but thereafter they widen dramatically: for birth orders 6 and 7, the Comparison area rates are twice as high as those of the MCH-FP area, and for birth order 8 and more, they are more than three times as great.

Table 4.1: Number and Rates of Pregnancy Outcomes
by Type and Area, 1994

Type of pregnancy outcome	Both areas		MCH-FP area		Comparison area	
	No.	Rate	No.	Rate	No.	Rate
Total pregnancies*	6477	128.4	3016	113.2	3461	145.5
Live birth preg.**	5699	879.9	2721	902.2	2978	860.4
Fetal wastage	778	120.1	295	97.8	483	139.6
Early (miscarriages)	562	86.8	208	69.0	354	102.3
Late (stillbirths)	216	33.3	87	28.8	129	37.3
Multiple birth pregnancies	77		32		45	
Live birth pregnancies	71		28		43	
Three live births	0		0		0	
Two live births	64		26		38	
One live birth	7		2		5	
Still birth pregnancies	2		1		1	
Miscarriage pregnancies	4		3		1	

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

**Ratio per 1000 total pregnancies.

Table 4.2: Pregnancy Outcomes by Month, 1994

Months	Pregnancy outcome					No. of live born children			
	All	Miscarriage		Still birth	Live* birth	Both sexes	Males	Females	Ratio
		Induced	Spon.						
All months	6477	219	343	216	5699	5763	2889	2874	1.0052
January	588	12	31	24	521	525	255	270	0.9444
February	552	14	19	15	504	510	256	254	1.0079
March	483	18	27	11	427	435	207	228	0.9079
April	408	18	20	17	353	357	189	168	1.1250
May	464	24	40	13	387	392	201	191	1.0524
June	394	22	41	11	320	326	159	167	0.9521
July	463	31	41	19	372	380	184	196	0.9388
August	498	29	29	17	423	429	202	227	0.8899
September	622	17	32	23	550	555	283	272	1.0404
October	632	9	24	19	580	586	292	294	0.9932
November	650	14	19	25	592	594	313	281	1.1139
December	723	11	20	22	670	674	348	326	1.0675

*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, 1994

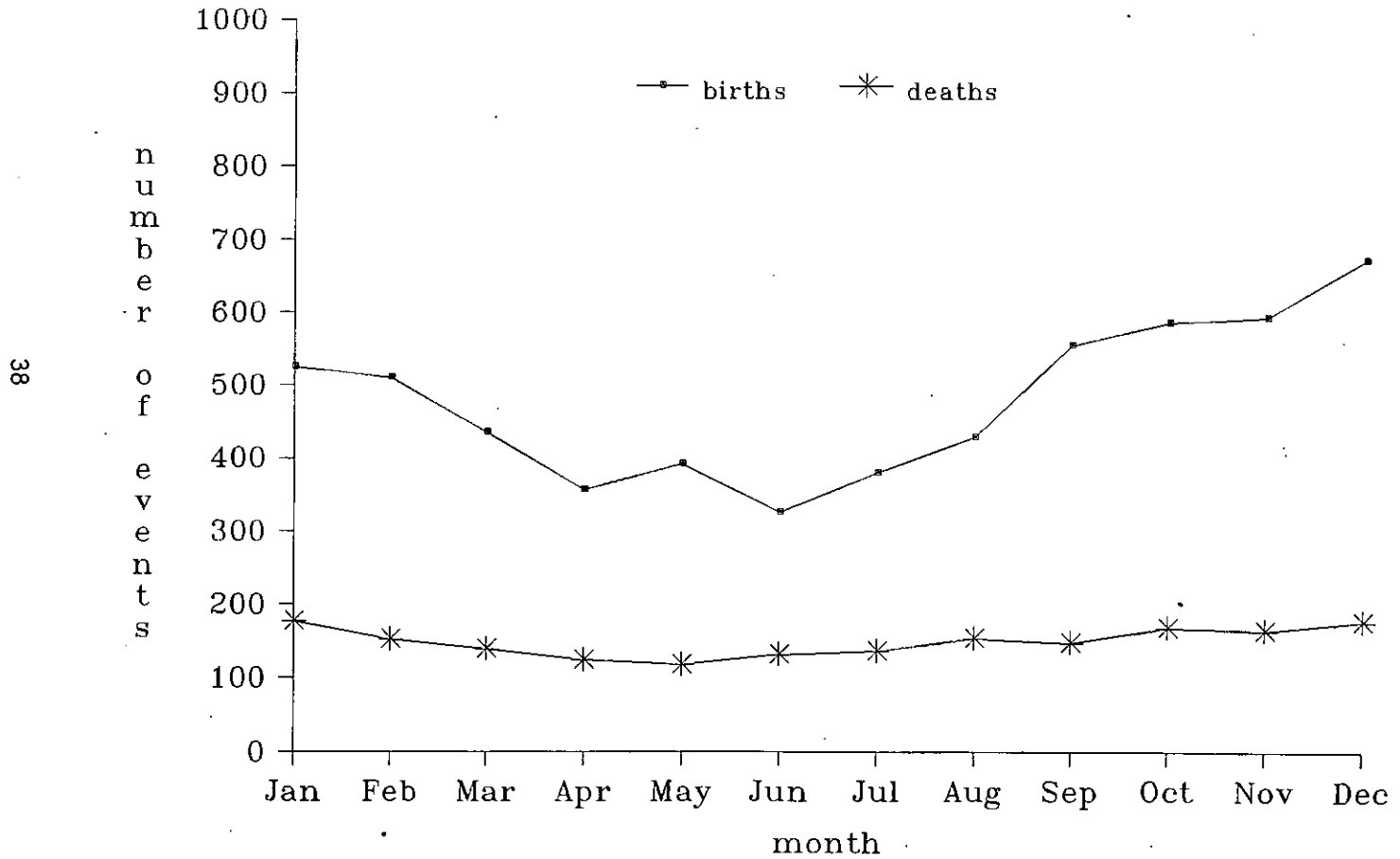


Table 4.3: Age-specific Fertility Rates and Indices, 1994

Age (years)	Number of live births	Number of women	ASFR (per 1000)
All ages	5763	50427	114.3
15-19*	677	9935	68.1
20-24	1908	9485	201.2
25-29	1737	8920	194.7
30-34	1040	7734	134.5
35-39	294	5742	51.2
40-44	91	4326	21.0
45-49**	16	4285	3.7

Total Fertility Rate (TFR) = 3372

General Fertility Rate (GFR) = 114

Gross Reproduction Rate (GRR) = 1682

Net Reproduction Rate (NRR) = 1463

*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, 1994

Age (years)	MCH-FP area			Comparison area		
	Births	Women	Rate	Births	Women	Rate
All ages	2747	26638	103.1	3016	23789	126.8
15-19*	332	5188	64.0	345	4747	72.7
20-24	901	4995	180.4	1007	4490	224.3
25-29	859	4760	180.5	878	4160	211.1
30-34	502	4095	122.6	538	3639	147.8
35-39	116	2996	38.7	178	2746	64.8
40-44	31	2334	13.3	60	1992	30.1
45-49**	6	2270	2.6	10	2015	5.0
	TFR	=	3010	TFR	=	3779
	GFR	=	103	GFR	=	127
	GRR	=	1523	GRR	=	1859
	NRR	=	1347	NRR	=	1593

*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, 1994

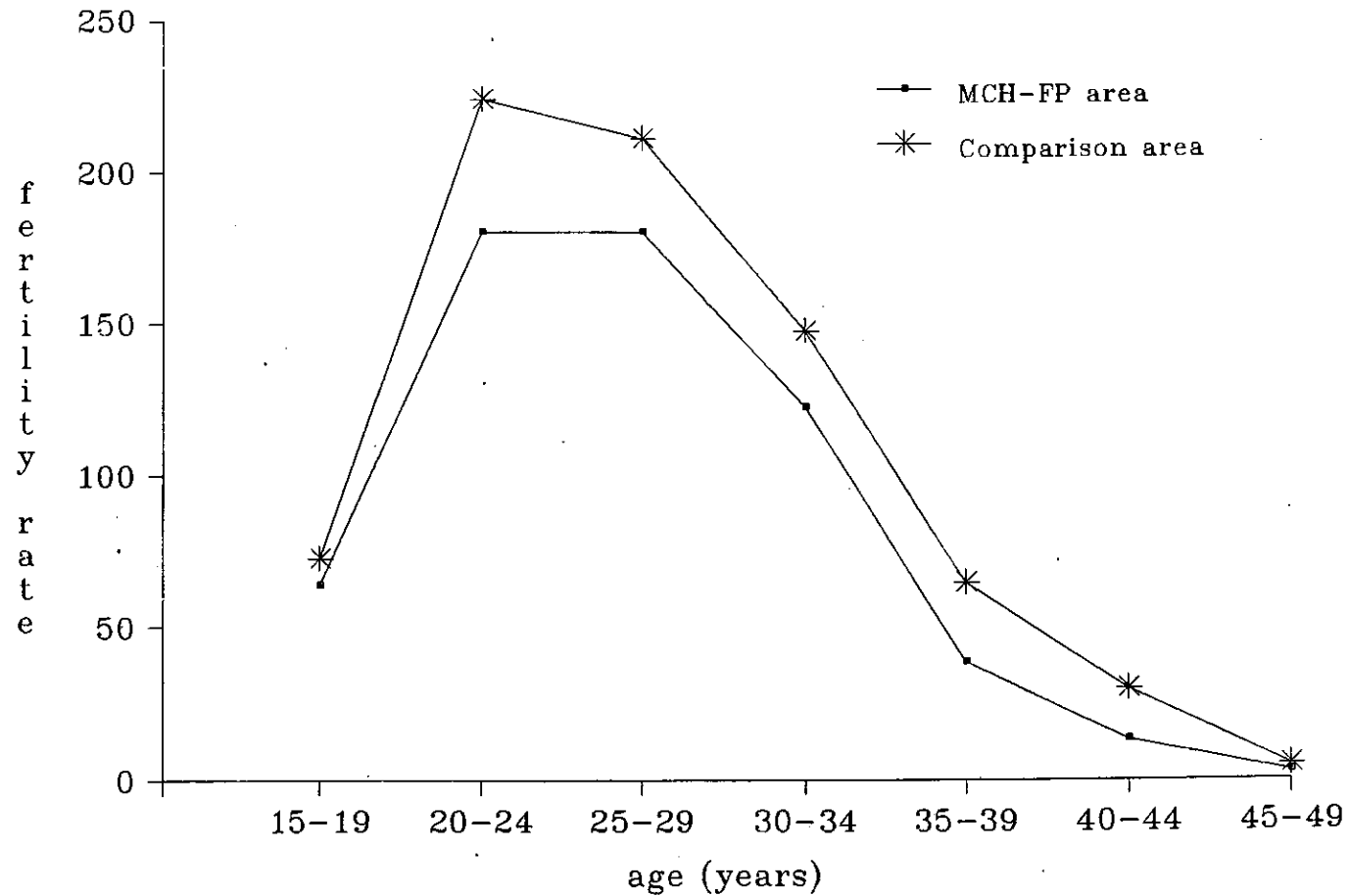


Table 4.5: Age-specific Fertility Rates and Indices for
MCH-FP Area by Block, 1994

Age (years)	Block A			Block B		
	Births	Women	Rate	Births	Women	Rate
All ages	822	7631	107.7	731	6556	111.5
15-19*	89	1500	59.3	87	1249	69.7
20-24	283	1411	200.6	232	1257	184.6
25-29	267	1420	188.0	223	1167	191.1
30-34	135	1174	115.0	137	990	138.4
35-39	37	859	43.1	40	700	57.1
40-44	8	626	12.8	9	616	14.6
45-49**	3	641	4.7	3	577	5.2
	TFR	=	3117	TFR	=	3303
	GFR	=	108	GFR	=	112
	GRR	=	1638	GRR	=	1762

(continued)

Table 4.5 (cont.): Age-specific Fertility Rates and Indices for
MCH-FP Area by Block, 1994

Age (years)	Block C			Block D		
	Births	Women	Rate	Births	Women	Rate
All ages	658	6935	94.9	536	5516	97.2
15-19*	81	1394	58.1	75	1045	71.8
20-24	205	1299	157.8	181	1028	176.1
25-29	218	1205	180.9	151	968	156.0
30-34	123	1034	119.0	107	897	119.3
35-39	22	809	27.2	17	628	27.1
40-44	9	628	14.3	5	464	10.8
45-49**	0	566	0.0	0	486	0.0
	TFR	=	2787	TFR	=	2805
	GFR	=	95	GFR	=	97
	GRR	=	1385	GRR	=	1261

*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, 1994

Age (years)	Total women	Total births	Live-birth order									
			1	2	3	4	5	6	7	8	9	10+
Both areas												
<15	12363	3	3	0	0	0	0	0	0	0	0	0
15-19	9935	674	598	69	7	0	0	0	0	0	0	0
20-24	9485	1908	865	725	252	58	7	1	0	0	0	0
25-29	8920	1737	143	440	538	383	164	56	13	0	0	0
30-34	7734	1040	25	67	175	233	229	179	76	32	19	5
35-39	5742	294	2	2	15	30	36	65	54	48	24	18
40-44	4326	91	0	0	2	5	7	7	13	19	13	25
45-49	4285	16	1	1	0	0	0	0	3	2	3	6
MCH-FP area												
<15	6203	2	2	0	0	0	0	0	0	0	0	0
15-19	5188	330	305	23	2	0	0	0	0	0	0	0
20-24	4995	901	450	350	87	13	1	0	0	0	0	0
25-29	4760	859	73	254	287	174	51	18	2	0	0	0
30-34	4095	502	16	39	112	131	105	61	23	8	3	4
35-39	2996	116	1	1	8	19	21	31	17	7	7	4
40-44	2334	31	0	0	1	3	3	4	4	6	5	5
45-49	2270	6	0	0	0	0	0	0	1	1	1	3
Comparison area												
<15	6160	1	1	0	0	0	0	0	0	0	0	0
15-19	4747	344	293	46	5	0	0	0	0	0	0	0
20-24	4490	1007	415	375	165	45	6	1	0	0	0	0
25-29	4160	878	70	186	251	209	113	38	11	0	0	0
30-34	3639	538	9	28	63	102	124	118	53	24	16	1
35-39	2746	178	1	1	7	11	15	34	37	41	17	14
40-44	1992	60	0	0	1	2	4	3	9	13	8	20
45-49	2015	10	1	1	0	0	0	0	2	1	2	3

Table 4.7: Age-order-specific Fertility Rates by Area, 1994

Age (years)	Total	Live-birth order										
		1	2	3	4	5	6	7	8	9	10+	
Both areas												
<15	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0678	0.0602	0.0069	0.0007	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.2012	0.0912	0.0764	0.0266	0.0061	0.0007	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.1947	0.0160	0.0493	0.0603	0.0429	0.0184	0.0063	0.0015	0.0000	0.0000	0.0000	0.0000
30-34	0.1345	0.0032	0.0087	0.0226	0.0301	0.0296	0.0231	0.0098	0.0041	0.0025	0.0006	0.0006
35-39	0.0512	0.0003	0.0003	0.0026	0.0052	0.0063	0.0113	0.0094	0.0084	0.0042	0.0031	0.0031
40-44	0.0210	0.0000	0.0000	0.0005	0.0012	0.0016	0.0016	0.0030	0.0044	0.0030	0.0058	0.0058
45-49	0.0037	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000	0.0007	0.0005	0.0007	0.0014	0.0014
Total	3.3721	0.8574	0.7098	0.5664	0.4278	0.2831	0.2123	0.1220	0.0868	0.0517	0.0548	0.0548
MCH-FP area												
<15	0.0003	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0636	0.0588	0.0044	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.1804	0.0901	0.0701	0.0174	0.0026	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.1805	0.0153	0.0534	0.0603	0.0366	0.0107	0.0038	0.0004	0.0000	0.0000	0.0000	0.0000
30-34	0.1226	0.0039	0.0095	0.0274	0.0320	0.0256	0.0149	0.0056	0.0020	0.0007	0.0010	0.0010
35-39	0.0387	0.0003	0.0003	0.0027	0.0063	0.0070	0.0103	0.0057	0.0023	0.0023	0.0013	0.0013
40-44	0.0133	0.0000	0.0000	0.0004	0.0013	0.0013	0.0017	0.0017	0.0026	0.0021	0.0021	0.0021
45-49	0.0026	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0004	0.0004	0.0004	0.0013	0.0013
Total	3.0100	0.8439	0.6886	0.5427	0.3939	0.2243	0.1537	0.0693	0.0365	0.0283	0.0289	0.0289
Comparison area												
<15	0.0002	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
15-19	0.0725	0.0617	0.0097	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20-24	0.2243	0.0924	0.0835	0.0367	0.0100	0.0013	0.0002	0.0000	0.0000	0.0000	0.0000	0.0000
25-29	0.2111	0.0168	0.0447	0.0603	0.0502	0.0272	0.0091	0.0026	0.0000	0.0000	0.0000	0.0000
30-34	0.1478	0.0025	0.0077	0.0173	0.0280	0.0341	0.0324	0.0146	0.0066	0.0044	0.0003	0.0003
35-39	0.0648	0.0004	0.0004	0.0025	0.0040	0.0055	0.0124	0.0135	0.0149	0.0062	0.0051	0.0051
40-44	0.0301	0.0000	0.0000	0.0005	0.0010	0.0020	0.0015	0.0045	0.0065	0.0040	0.0100	0.0100
45-49	0.0050	0.0005	0.0005	0.0000	0.0000	0.0000	0.0000	0.0010	0.0005	0.0010	0.0015	0.0015
Total	3.7786	0.8724	0.7324	0.5925	0.4665	0.3502	0.2784	0.1810	0.1427	0.0780	0.0845	0.0845

CHAPTER 5

MARRIAGE AND DIVORCE

The number of marriages registered in 1994 was 2,794, giving a crude marriage rate of 13.4 per thousand. These figures show a small increase on those of 1993.

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 -- 27.0 and 19.6 for all grooms and brides; 25.9 and 18.8 for those marrying for the first time -- show small increases on 1993. In general there appears to be rise in age at marriage of females in Matlab: the mean age has been over 18 for every year since 1984, while prior to that date it was consistently below that age.

Table 5.5 shows that divorces numbered 333 in 1994, which is almost similar to that of the 1993 figure of 334. 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 numbers 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 shows the distributions of marriages and divorces by month. August appears to be a peak month for marriages, but no regular seasonal pattern is discernible in the number of divorces.

Table 5.7 and figure 5.1 give 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 on 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, 1994

Age (years)	Previous marital status									
	All grooms		Single		Married		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2794	100.0	2344	100.0	88	100.0	254	100.0	108	100.0
10-14	1	0.0	1	0.0	0	0.0	0	0.0	0	0.0
15-19	120	4.3	111	4.7	0	0.0	8	3.1	1	0.9
20-24	808	28.9	756	32.3	8	9.1	42	16.5	2	1.9
25-29	1196	42.8	1062	45.3	18	20.5	103	40.6	13	12.0
30-34	471	16.9	360	15.4	23	26.1	63	24.8	25	23.1
35-39	99	3.5	46	2.0	17	19.3	17	6.7	19	17.6
40-44	45	1.6	7	0.3	14	15.9	10	3.9	14	13.0
45-49	54	1.9	1	0.0	8	9.1	11	4.3	34	31.5
50-54	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
55-59	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
60-64	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
65+	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Median age*	26.0		26.0		33.5		28.0		38.0	
Mean age*	27.0		25.9		34.3		29.6		40.7	
Standard dev.*	6.2		4.2		7.4		7.9		11.9	

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

Table 5.2: Bride's Age at Marriage by Previous Marital Status, 1994

Age (years)	Previous marital status							
	All brides		Single		Divorced		Widowed	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent
All ages	2794	100.0	2451	100.0	309	100.0	34	100.0
10-14	100	3.6	100	4.1	0	0.0	0	0.0
15-19	1565	56.0	1501	61.2	62	20.1	2	5.9
20-24	853	30.5	717	29.3	132	42.7	4	11.8
25-29	195	7.0	119	4.9	67	21.7	9	26.5
30-34	48	1.7	11	0.4	31	10.0	6	17.6
35-39	19	0.7	3	0.1	12	3.9	4	11.8
40-44	7	0.3	0	0.0	3	1.0	4	11.8
45-49	7	0.3	0	0.0	2	0.6	5	14.7
50-54	0	0.0	0	0.0	0	0.0	0	0.0
55-59	0	0.0	0	0.0	0	0.0	0	0.0
60-64	0	0.0	0	0.0	0	0.0	0	0.0
65+	0	0.0	0	0.0	0	0.0	0	0.0
Median age*	19.0		18.0		23.0		32.5	
Mean age*	19.6		18.8		24.0		33.3	
Standard dev.*	4.2		3.1		5.5		9.2	

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

Table 5.3: Marriage Rates by Age and Sex, 1994

Age (years)	Males			Females		
	Marriages	Population	Rate*	Marriages	Population	Rate*
10-14	1	13766	0.1	100	12363	8.1
15-19	120	11103	10.8	1565	9935	157.5
20-24	808	9173	88.1	853	9485	89.9
25-29	1194	6765	176.5	195	8920	21.9
30-34	471	7092	66.4	48	7734	6.2
35-39	99	5814	17.0	19	5742	3.3
40-44	45	4235	10.6	7	4326	1.6
45+	56	17217	3.3	7	18554	0.4

*Rates per 1000 population irrespective of previous marital status.

Table 5.4: Number of Marriages by Groom's and Bride's Age at Marriage, 1994

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	2794	100	1565	853	195	48	19	7	7
10-14	1	1	0	0	0	0	0	0	0
15-19	120	10	84	20	6	0	0	0	0
20-24	808	52	562	174	16	3	1	0	0
25-29	1196	27	686	420	59	3	1	0	0
30-34	471	9	199	179	68	13	1	2	0
35-39	99	1	21	44	18	12	2	1	0
40-44	45	0	11	7	14	8	4	0	1
45-49	19	0	0	3	5	4	6	1	0
50-54	11	0	2	3	2	2	0	1	1
55-59	7	0	0	0	3	0	1	2	1
60-64	9	0	0	2	2	2	1	0	2
65+	8	0	0	1	2	1	2	0	2

Table 5.5: Number of Divorces by Partners' Age at Divorce, 1994

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	333	3	101	130	59	25	5	4	2	4
10-14	0	0	0	0	0	0	0	0	0	0
15-19	12	0	11	1	0	0	0	0	0	0
20-24	64	2	36	24	1	1	0	0	0	0
25-29	115	1	41	54	18	1	0	0	0	0
30-34	73	0	9	31	25	8	0	0	0	0
35-39	33	0	3	11	12	6	1	0	0	0
40-44	10	0	0	4	0	3	1	1	0	1
45-49	12	0	1	1	1	4	3	1	1	0
50-54	2	0	0	0	0	1	0	0	1	0
55-59	2	0	0	0	0	1	0	0	0	1
60-64	4	0	0	1	0	0	0	1	0	2
65+	1	0	0	0	0	0	0	1	0	0
Unknown	5	0	0	3	2	0	0	0	0	0

Table 5.6: Marriages and Divorces by Months, 1994

Month	Marriage		Divorce	
	Number	Percent	Number	Percent
January	236	8.4	35	10.5
February	204	7.3	28	8.4
March	282	10.1	25	7.5
April	193	6.9	28	8.4
May	219	7.8	24	7.2
June	260	9.3	29	8.7
July	269	9.6	49	14.7
August	270	9.7	32	9.6
September	249	8.9	26	7.8
October	245	8.8	22	6.6
November	158	5.7	16	4.8
December	209	7.5	19	5.7
Total	2794	100.0	333	100.0

Figure 5.1: Marriages and Divorces by Month, 1994

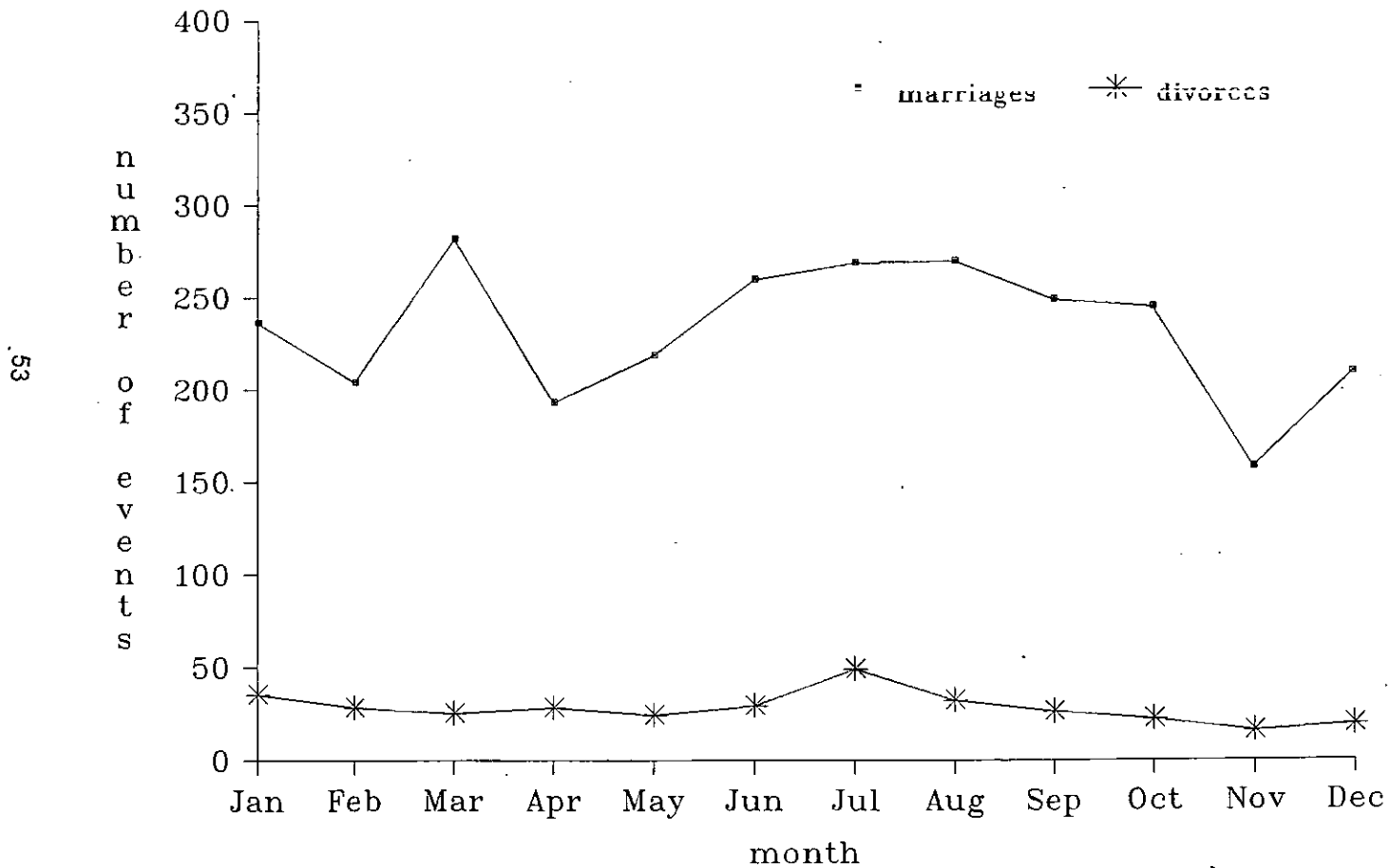


Table 5.7: Number of Divorces by Sex, Age, and Duration of Marriage, 1994

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	333	333	55	55	37	37	78	78	45	45	41	41	20	20	57	57
Under 20	12	104	4	25	3	22	5	36	0	9	0	8	0	3	0	1
20-24	64	130	13	18	8	9	26	35	10	26	6	20	1	9	0	13
25-29	115	59	15	5	18	4	29	5	18	9	20	9	6	6	9	21
30-34	73	25	9	4	2	2	11	1	12	0	8	4	8	1	23	13
35-39	33	5	2	0	5	0	5	0	3	1	5	0	3	0	10	4
40-44	22	6	3	1	0	0	2	1	2	0	2	0	2	1	11	3
50+	9	4	4	2	1	0	0	0	0	0	0	0	0	0	4	2
Unknown	5	0	5	0	0	0	0	0	0	0	0	0	0	0	0	0

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 which show the numbers of migrants in the two areas.

Table 6.1 shows that the number of in-migrants in 1994 was 5,517 giving a crude rate of in-migration of 26.5 per thousand. Out-migrants numbered 8,637 and the out-migration rate 41.4 per thousand. Both these figures are appreciably higher on those of 1993. The net loss of migrants increased from 2,200 in 1993 to 3,120 in 1994. 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 b-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 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 are 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, 1994

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	5517	2513	3004	8637	4438	4199
Under 5	857	420	437	1037	527	510
0	270	131	139	242	129	113
1	160	76	84	234	111	123
2	142	64	78	191	94	97
3	138	75	63	210	115	95
4	147	74	73	160	78	82
5 - 9	587	307	280	677	336	341
10-14	454	236	218	696	357	339
15-19	875	179	696	1590	620	970
20-24	834	219	615	1888	933	955
25-29	610	290	320	1130	632	498
30-34	485	322	163	677	446	231
35-39	280	184	96	350	264	86
40-44	150	112	38	172	136	36
45-49	117	78	39	110	54	56
50-54	81	55	26	80	40	40
55-59	70	39	31	73	33	40
60-64	47	34	13	63	27	36
65+	70	38	32	94	33	61

Table 6.2: In-migration by Age, Sex, and Area, 1994

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	2500	1100	1400	3017	1413	1604
Under 5	387	198	189	470	222	248
0	130	66	64	140	65	75
1	73	37	36	87	39	48
2	59	24	35	83	40	43
3	57	34	23	81	41	40
4	68	37	31	79	37	42
5 - 9	266	134	132	321	173	148
10-14	178	92	86	276	144	132
15-19	420	62	358	455	117	338
20-24	390	84	306	444	135	309
25-29	293	135	158	317	155	162
30-34	215	141	74	270	181	89
35-39	129	87	42	151	97	54
40-44	66	52	14	84	60	24
45-49	53	42	11	64	36	28
50-54	34	25	9	47	30	17
55-59	28	19	9	42	20	22
60-64	17	14	3	30	20	10
65+	24	15	9	46	23	23

Table 6.3: Out-migration by Age, Sex, and Area, 1994

Age (years)	MCH-FP area			Comparison area		
	Both sexes	Males	Females	Both sexes	Males	Females
All ages	4111	2089	2022	4526	2349	2177
Under 5	488	247	241	549	280	269
0	125	63	62	117	66	51
1	114	55	59	120	56	64
2	88	46	42	103	48	55
3	92	54	38	118	61	57
4	69	29	40	91	49	42
5 - 9	312	159	153	365	177	188
10-14	287	152	135	409	205	204
15-19	760	275	485	830	345	485
20-24	938	456	482	950	477	473
25-29	557	303	254	573	329	244
30-34	311	202	109	366	244	122
35-39	172	132	40	178	132	46
40-44	92	69	23	80	67	13
45-49	45	26	19	65	28	37
50-54	37	20	17	43	20	23
55-59	35	15	20	38	18	20
60-64	28	14	14	35	13	22
65+	49	19	30	45	14	31

Table 6.4: Age and Sex-specific Migration Rates by Direction, 1994
(per 1000 population)

Age (years)	Both sexes		Males		Females	
	In	Out	In	Out	In	Out
All ages	26.5	41.4	24.2	42.8	28.6	40.0
Under 5	31.6	38.2	30.5	38.3	32.7	38.1
0	49.8	44.7	48.3	47.5	51.4	41.8
1	29.8	43.6	27.6	40.2	32.1	47.1
2	28.8	38.8	25.5	37.5	32.2	40.1
3	24.0	36.5	25.6	39.2	22.3	33.7
4	25.9	28.2	25.8	27.2	26.0	29.2
5 - 9	20.1	23.2	20.8	22.8	19.4	23.6
10-14	17.4	26.6	17.1	25.9	17.6	27.4
15-19	41.6	75.6	16.1	55.8	70.1	97.6
20-24	44.7	101.2	23.9	101.7	64.8	100.7
25-29	38.9	72.0	42.9	93.4	35.9	55.8
30-34	32.7	45.7	45.4	62.9	21.1	29.9
35-39	24.2	30.3	31.6	45.4	16.7	15.0
40-44	17.5	20.1	26.4	32.1	8.8	8.3
45-49	15.2	14.3	22.8	15.8	9.1	13.1
50-54	10.9	10.7	16.9	12.3	6.2	9.5
55-59	10.3	10.7	11.7	9.9	8.9	11.5
60-64	8.8	11.8	12.6	10.0	5.0	13.8
65+	8.3	11.1	8.4	7.3	8.0	15.3

Figure 6.1: Rate of In- and Out-migration by Sex and Age, 1994

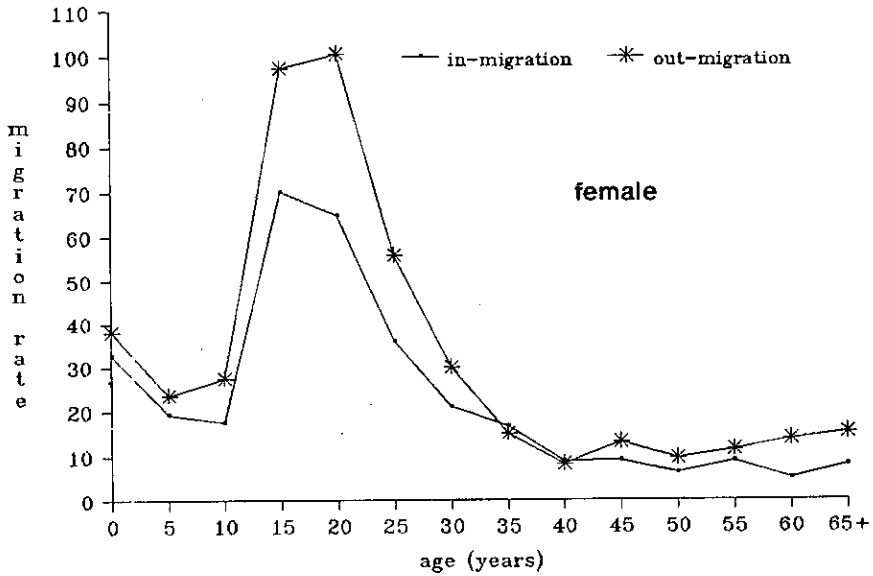
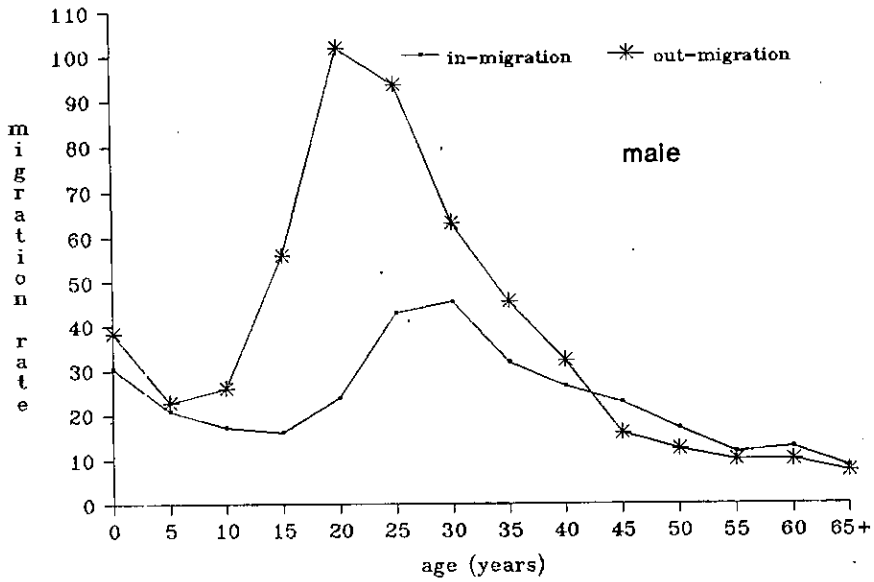


Table 6.5: Male Out-migration by Cause of Movement and Age, 1994

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	4438	527	336	357	620	933	632	446	264	136	54	40	33	27	33
Work/Economic/Educational															
-acquired/seeking job	2564	1	1	97	400	731	529	374	222	111	40	29	10	12	7
-job completion/retirement	17	0	0	0	2	6	1	1	1	0	2	0	1	1	2
-to acquire education	321	1	20	67	95	99	33	2	3	1	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	2	0	0	1	0	1	0	0	0	0	0	0	0	0	0
-student	2	0	0	0	0	0	0	0	0	1	0	1	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	126	1	1	1	3	6	13	27	19	11	7	7	14	6	10
-river erosion	4	0	1	0	0	0	0	0	1	0	0	0	0	1	1
Marriage/Familial															
-marriage	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-separation/divorce/widow	2	0	0	0	0	1	1	0	0	0	0	0	0	0	0
-move with or join spouse/parents	1334	520	313	188	119	73	45	31	13	9	3	1	4	5	10
-adoption	4	4	0	0	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	25	0	0	2	1	8	6	4	3	1	0	0	0	0	0
-health or old age care	5	0	0	0	0	0	0	0	0	0	0	1	2	1	1
Legal problems	14	0	0	0	0	5	2	2	0	0	1	0	2	1	1
Other and not stated															
-other n.e.c.*	14	0	0	1	0	3	2	3	1	2	0	1	0	0	1
-unknown or not stated	4	0	0	0	0	0	0	2	1	0	1	0	0	0	0

*Not elsewhere classified.

Table 6.6: Female Out-migration by Cause of Movement and Age, 1994

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	4199	510	341	339	970	955	498	231	86	36	56	40	40	36	61
Work/Economic/Educational															
-acquired/seeking job	519	0	5	81	205	118	60	30	8	6	1	2	2	0	1
-job completion/retirement	3	0	0	3	0	0	0	0	0	0	0	0	0	0	0
-to acquire education	97	0	13	30	25	25	3	1	0	0	0	0	0	0	0
-educ. completed/interrupt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student lodging	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-student	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Housing/Environmental															
-acquired/seeking new land/house	40	0	2	3	2	6	4	5	2	4	1	6	1	1	3
-river erosion	4	1	0	0	0	0	1	1	0	0	0	0	1	0	0
Marriage/Familial															
-marriage	718	0	0	22	371	244	57	16	7	0	1	0	0	0	0
-separation/divorce/widow	104	1	0	0	30	43	17	7	0	1	1	1	0	3	0
-move with or join spouse/parents	2642	496	318	196	333	508	346	170	67	23	52	27	33	26	47
-adoption	15	12	1	2	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	10	0	0	0	2	4	2	1	0	0	0	1	0	0	0
-health or old age care	20	0	0	0	0	2	0	0	0	1	0	1	3	3	10
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.*	26	0	2	2	2	5	7	0	2	1	0	2	0	3	0
-unknown or not stated	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0

*Not elsewhere classified.

Table 6.7: Male In-migration by Cause of Movement and Age, 1994

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	2513	420	307	236	179	219	290	322	184	112	78	55	39	34	38
Work/Economic/Educational															
-acquired/seeking job	359	0	0	9	21	57	82	87	41	24	10	13	6	6	3
-job completion/retirement	427	0	0	0	21	40	68	92	68	34	44	19	18	12	11
-to acquire education	162	1	26	61	39	28	7	0	0	0	0	0	0	0	0
-educ. completed/interrupt	3	0	0	0	0	0	3	0	0	0	0	0	0	0	0
-student lodging	4	0	0	0	1	0	3	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	167	0	0	1	1	17	31	35	19	23	9	12	6	6	7
-river erosion	15	0	0	0	1	0	3	3	2	1	2	1	1	0	1
Marriage/Familial															
-marriage	6	0	0	0	0	0	3	1	1	1	0	0	0	0	0
-separation/divorce/widow	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
-move with or join spouse/parents	1297	410	281	163	89	73	76	91	46	27	12	7	7	5	10
-adoption	9	8	0	0	1	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	10	0	0	0	1	0	4	4	0	1	0	0	0	0	0
-health or old age care	19	1	0	1	1	2	3	1	1	0	0	1	0	3	5
Legal problems	15	0	0	0	0	0	2	7	3	0	0	2	0	1	0
Other and not stated															
-other n.e.c.*	20	0	0	1	3	2	5	1	3	1	1	0	1	1	1
-unknown or not stated	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Not elsewhere classified.

Table 6.8: Female In-migration by Cause of Movement and Age, 1994

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	3004	437	280	218	696	615	320	163	96	38	39	26	31	13	32
Work/Economical/Educational															
-acquired/seeking job	86	0	0	16	11	13	24	12	6	1	1	1	1	0	0
-job completion/retirement	34	0	0	1	15	7	6	3	1	0	0	0	1	0	0
-to acquire education	82	1	13	36	23	8	1	0	0	0	0	0	0	0	0
-educ. completed/interrupt	1	0	0	0	1	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 job	39	0	0	1	1	10	10	6	4	1	1	0	1	2	2
-river erosion	2	0	0	0	0	0	0	1	0	0	0	0	1	0	0
Marriage/Familial															
-marriage	672	0	0	5	404	209	37	6	5	0	6	0	0	0	0
-separation/divorce/widow	122	0	0	2	33	48	15	14	5	3	1	0	0	0	1
-move with or join spouse/parents	1889	423	266	153	201	306	217	117	74	32	32	24	21	7	16
-adoption	15	13	1	1	0	0	0	0	0	0	0	0	0	0	0
-family friction/breakdown	19	0	0	0	4	6	5	1	0	1	1	0	0	0	1
-health or old age care	24	0	0	0	1	1	1	2	1	0	0	1	5	2	10
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.*	19	0	0	3	2	7	4	1	0	0	0	0	0	0	2
-unknown	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

*Not elsewhere classified.

Table 6.9: In- and Out-migration by Sex and Month, 1994

Age (years)	In-migration			Out-migration		
	Both sexes	Males	Females	Both sexes	Males	Females
January	1015	514	501	1260	652	608
February	607	292	315	794	399	395
March	443	197	246	725	364	361
April	429	207	222	541	278	263
May	488	221	267	797	403	394
June	532	234	298	833	427	406
July	450	181	269	754	387	367
August	449	209	240	763	383	380
September	339	149	190	700	358	342
October	441	191	250	742	380	362
November	192	82	110	416	244	172
December	132	36	96	312	163	149
All months	5517	2513	3004	8637	4438	4199

Figure 6.2: Number of In- and Out-migrants by Sex and Month, 1994

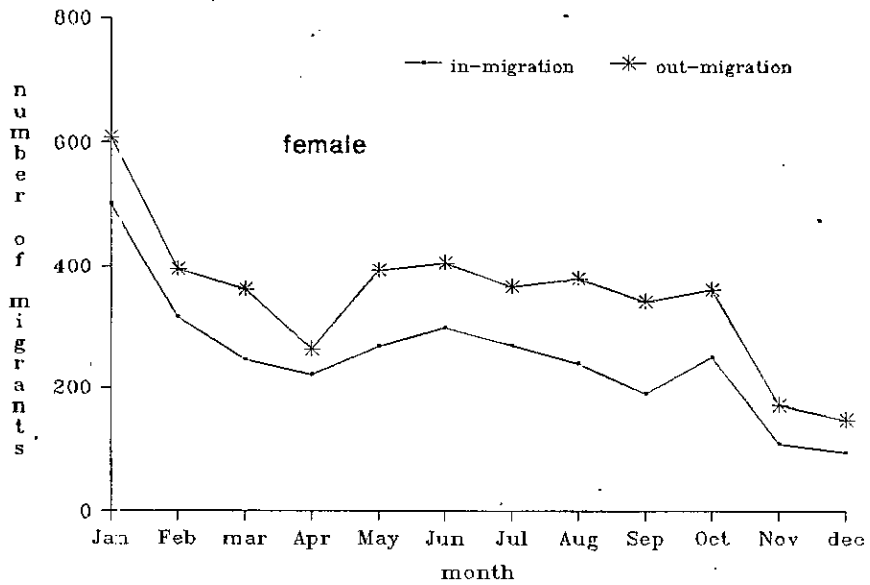
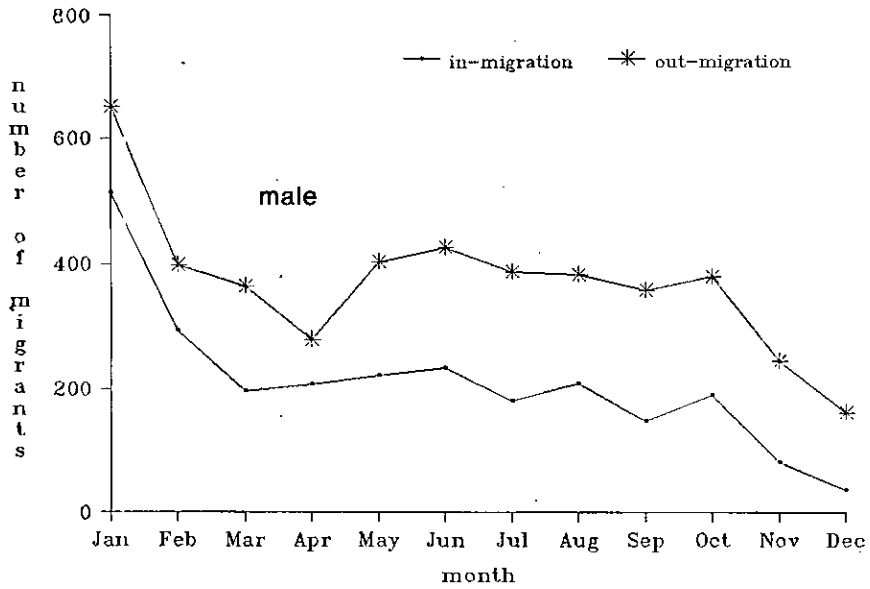


Table 6.10: Male Migration by Destination or Origin, 1994

Destination/origin			Out-Migration					In-Migration						
			Age (years)					Age (years)						
Division	rural/ urban	District	0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
All migrants			1220	1553	1078	400	187	4438	963	398	615	295	242	2513
Rajshahi	rural		0	2	0	0	0	2	2	2	1	1	1	7
	urban		7	9	3	0	0	19	7	2	3	0	8	20
Khulna	rural		0	0	0	0	0	0	8	4	3	0	1	16
	urban		4	0	2	0	0	6	24	20	17	15	12	88
Dhaka	rural	Dhaka	14	14	10	3	1	42	13	0	2	3	0	18
	rural	Narayanganj	14	2	4	3	0	23	14	2	8	2	1	27
	rural	Narshindhi	4	0	1	2	0	7	7	2	2	2	1	14
	rural	rest	9	7	5	0	1	22	21	6	9	4	5	45
	urban	Dhaka	448	696	288	91	48	1570	241	126	171	75	65	675
	urban	Narayanganj	83	88	67	20	14	272	76	22	47	13	12	170
	urban	Narshindhi	8	4	6	1	0	19	8	5	8	3	2	26
	urban	Gazipur	26	23	17	6	3	75	9	2	5	7	7	30
	urban	rest	12	4	9	3	1	29	13	7	6	3	6	35
Chittagong	rural	Comilla	45	21	17	10	8	101	46	8	17	8	3	82
	rural	Chandpur	310	110	115	74	53	662	273	85	108	41	39	546
	rural	rest	11	8	6	1	1	27	12	5	7	6	5	35
	urban	Sylhet	27	44	23	7	4	105	72	31	28	13	16	160
	urban	Comilla	21	16	11	4	1	53	6	7	11	5	5	34
	urban	Chandpur	4	6	4	1	3	18	4	4	3	3	3	17
	urban	Chittagong	77	112	44	16	4	253	76	32	29	28	26	191
	urban	rest	23	12	13	4	4	56	18	1	7	4	3	33
India			47	35	30	10	17	139	8	5	11	2	4	30
Other Asia			1	213	215	75	10	514	1	8	43	15	4	71
Middle-East			4	105	169	59	9	346	4	12	68	42	13	139
Other			0	0	0	0	1	1	0	0	1	0	0	1
Unknown			2	2	7	0	1	12	0	0	0	0	0	0

Table 6.11: Female Migration by Destination or Origin, 1994

Destination/origin			Out-Migration						In-Migration					
			Age (years)						Age (years)					
Division	rural/ urban	District	0-14	15-24	25-34	35-44	45+	Total	0-14	15-24	25-34	35-44	45+	Total
All migrants			1190	1925	729	122	233	4199	935	1313	483	134	141	3004
Rajshahi	rural		0	1	0	0	0	1	2	2	1	1	0	6
	urban		7	10	4	0	3	24	9	9	3	1	1	23
Khulna	rural		3	5	2	1	2	13	8	12	7	1	0	28
	urban		14	12	11	4	2	43	21	13	9	5	6	54
Dhaka	rural	Dhaka	10	17	6	1	2	36	6	13	3	1	0	23
	rural	Narayangonj	5	14	5	1	1	26	10	8	5	1	0	24
	rural	Narshindhi	2	5	3	0	0	10	8	7	3	1	1	20
	rural	rest	8	21	5	0	1	35	18	24	12	3	4	61
	urban	Dhaka	427	579	242	42	84	1374	249	204	130	30	43	656
	urban	Narayangonj	98	105	51	5	14	273	65	41	36	9	8	159
	urban	Narshindhi	11	12	5	0	2	30	14	3	5	4	0	26
	urban	Gazipur	26	20	15	1	7	69	14	4	6	1	1	26
	urban	rest	19	14	7	1	1	42	17	12	6	4	1	40
Chittagong	rural	Comilla	50	154	39	8	10	261	52	131	33	3	2	221
	rural	Chandpur	315	720	203	31	56	1325	242	694	125	38	34	1133
	rural	rest	9	9	8	0	1	27	14	16	6	0	5	41
	urban	Sylhet	29	29	13	4	4	79	60	27	28	12	21	148
	urban	Comilla	15	16	14	0	8	53	10	16	5	1	0	32
	urban	Chandpur	7	5	5	2	0	19	8	3	1	2	0	14
	urban	Chittagong	68	119	44	7	9	247	71	50	47	10	7	185
	urban	rest	22	17	12	4	0	55	12	11	5	4	0	32
India			38	29	24	7	25	123	21	6	6	1	7	41
Other Asia			5	6	4	2	0	17	3	4	0	0	0	7
Middle-East			1	5	5	0	0	11	1	1	1	1	0	4
Other			0	0	1	0	1	2	0	0	0	0	0	0
Unknown			1	1	1	1	0	4	0	0	0	0	0	0

CHAPTER 7

Special Supplement

MORTALITY TRENDS IN MATLAB DURING 1966-1994: PRELIMINARY FINDINGS

INTRODUCTION

The International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) has been operating a field station in Matlab since 1963. In this field station the Demographic Surveillance System (DSS) has been functioning since 1966. The DSS consists of regular cross-sectional censuses together with the longitudinal registration of vital events. In this chapter, we will examine the levels and trends of mortality and focus on differentials in mortality by sex and area. A breakdown by area is of interest, because the study area is divided into a MCH-FP and a Comparison area. The MCH-FP area is characterized by the operation of a Maternal and Child Health and Family Planning Programme since 1978. In the Comparison area several health programmes have also been initiated since 1978, but they are less elaborate and less intensive than in the MCH-FP area.

A number of studies have been conducted focusing on levels, trends and determinants of mortality in general and infant and child mortality in particular. The following studies can be mentioned: D'Souza and Chen, 1986; D'Souza and Bhuiya, 1982; Bairagi, 1986; Koenig and D'Souza, 1986; Chowdhury, Phillips and Shaikh, 1989; Razzaque, 1989; Razzaque et al., 1990; Bhuiya and D'Souza, 1994; and Bairagi and Chowdhury, 1994. All of these studies dealt with various aspects of the higher female than male mortality in infancy and childhood and used DSS data between 1973 and 1985. Only a few studies have been carried out using data after 1985: Strong, 1992; LeGrand and Phillips, 1996 and Bairagi, Sutradhar and Alam, 1996. In this chapter, we will focus in particular on trends since 1985. The current analysis is based on compiled data published in the annual reports of the DSS.

METHODS AND PROCEDURES

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 lead to minor change in trends in mortality to be observed in the age groups 15-44, 45-64 and 65 years and older.

It should be added that the boundaries of DSS have changed in the period of nearly 30 years covered in this study. In 1966, the DSS area covered 132 villages with a population of 112,000. Soon afterwards the number of villages was expanded to 228 with a population of 226,000. It decreased to 149 villages with 176,000 people in 1978. The current DSS area still covers the same area as in 1978, but 7 villages have disappeared in the 1980's due to river erosion in the western side.

The results of this analysis are summarized in a number of graphs while actual figures are provided in three appendices.

RESULTS

Figure S.1a shows a very erratic pattern in life expectancy at birth for the Matlab DSS population until the late seventies. This is due to the dramatic political and ecological events that took place during this period. The lowest levels in life expectancy were reached in 1971-1972 and 1975, respectively the time of the liberation war and the famine. In 1975, the expectation of life dropped to a mere 44 years for males and 42.9 for females. Between 1975 and 1982, life expectancy rose significantly for men, but far less spectacular for women. In 1984, life expectancy dropped because of a shigella epidemic in Matlab (Bennish and Wojtyniak, 1991). Since the mid-eighties, life expectancy has increased significantly for both sexes. Men can now expect to live almost five years longer than ten years ago. The improvement for women is even more impressive. In the Matlab area, a newborn girl's life expectancy is now no less than nine years longer than just ten years ago. However, the progress in life expectancy was almost entirely made during the period 1985-1990. Since then, no important increase in life expectancy was observed.

Until 1988, life expectancy was considerably higher for males than for females. At the beginning of the 1980's, life expectancy was still about three to four years less for females than for males. Since 1989, this pattern was reversed and in 1994 life expectancy for females was about two years higher than for males (Figure S.1a). These results are a clear indication of improved health conditions for women in the Matlab area.

Figure S.1b shows the differences in life expectancy between the MiCH-FP and the Comparison areas during the period 1978-1994. Throughout the observation period, life

expectancy at birth was continuously higher in the MCH-FP area than in the Comparison area. However, during the last ten years the gap between both areas has narrowed.

The changing distribution of infant mortality by sex and area between 1966 and 1994 is shown in Figures S.2a and S.2b. In 1994, the infant mortality rate was 72.4 for boys and 71.5 for girls. During recent years, the infant mortality rate exhibits a similar pattern as the life expectancy, i.e., infant mortality for girls has become somewhat lower than for boys. Between 1966 and 1994, infant mortality declined significantly. This reduction is to some extent due to the improvements in neonatal conditions in Matlab but for the most part to improvements in condition in the post-neonatal period (DSS reports, 1978-93). Throughout the observation period, infant mortality was found to be consistently lower in the MCH-FP area than in the Comparison area.

Figures S.3a and S.3b depict mortality rates among children aged 1-4 years by sex and area. Child mortality also declined dramatically. In 1966-67, the male and female mortality rates among children 1-4 years age were respectively 20 and 30 per 1,000. In 1994, they had gone down to 5.7 per 1,000 for boys and 6.8 per 1,000 for girls (see appendix A and B). In contrast with infant mortality, girls between the ages 1 and 5 experienced a consistent higher risk of dying than boys in 1966-1990. However, the gap between both sexes has narrowed since 1985. Child mortality also shows important differences between both areas. Mortality rates in the MCH-FP area were consistently lower than in the Comparison area, but differences have narrowed in recent years.

Mortality rates for elder children (5-14 years) are shown in Figures S.4a and S.4b. Despite some fluctuations, a gradual decline in mortality rates for both sexes occurred during the period 1966-1994. In 1966, male and female mortality rates were respectively about 3 and 4 per 1,000. By 1994, these levels had come down to 1.4 per 1,000 for both sexes. 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. At that time, mortality in the age group 5-14 years was still higher in the comparison area than in the MCH-FP area. Since then, the difference has become smaller and currently, virtually no difference exists in terms of mortality among elder children between both areas.

As adult mortality is generally a relatively rare event, mortality rates are much lower in these age-groups. In the past, mortality rates in the age group 15-44 were higher for females than for males (Figure S.5a). This difference may have been caused by a high level of maternal mortality. During recent years, levels for both sexes have become almost equal and hover around 2 per 1,000. No significant areal differences in mortality were observed between ages 15 and 45 during the study period. It should be added, however, that Figure S.5b hides important differences by sex (details are not given here). Female mortality was lower than male mortality in the MCH-FP area throughout 1978-1994 while the opposite was true in the Comparison area until 1988. This can also be stated in a different manner: until 1988 female mortality was higher in the Comparison area than in the MCH-FP area but since 1988 there are no differences anymore in female mortality between the two areas.

Mortality rates for the age-group 45-64 are shown in Figures S.6a and S.6b. Despite some fluctuations, male mortality between 45 and 65 years old has remained almost stable during the observation period. However, female mortality has declined from a level between 15 and 20 per 1,000 before 1977 to less than 10 per 1,000 after 1988.

Figures S.7a and S.7b show the mortality rates of the elderly population in the Matlab area (age 65 and above). Initially, mortality rates for older women were higher than for older men. From 1985 onwards, female mortality at the more advanced ages seems to be somewhat lower than male mortality. Only little variation has been found among both areas.

CONCLUSIONS

In this chapter, we have presented mortality differentials by sex and area in Matlab during the period 1966-1994. The first decade of the DSS clearly reflects the dramatic historical events that took place in Bangladesh during this period. During the years of the liberation war (1971-1972) and the famine (1974-1975), mortality peaked at very high levels (Curlin, Chen and Hossain, 1974; Razzaque, 1989).

A second important finding is that since the mid-eighties life expectancy at birth has increased significantly in the Matlab area. This increase was mainly caused by rapid declining infant and child mortality. Especially, during the years 1985-1990 improvements have been considerable. After 1990, this mortality decline has not continued. In 1994, life expectancy at birth for males was estimated as 64 years for females and 62 for males.

Another important conclusion is that in recent years sex differences in mortality have changed dramatically. In the past, life expectancy at birth was much lower for females than for males. Since the late eighties life expectancy at birth for women in the Matlab area is about two years higher than for men. D'Souza and Chen showed in 1980 important surplus mortality for girls under 5, compared to boys. Since the mid-eighties this gap has narrowed dramatically. However, in the age-group 1-4, mortality among girls still remains a little higher than among boys.

A fourth finding was that in 1978-1994, a lower life expectancy at birth was found in the Comparison area than in the MCH-FP area. This was probably due to the impact of the MCH-FP programme that was in operation in the MCH-FP area. For details on the impact of this programme see various chapters in Fauveau, 1994; and LeGrand and Phillips, 1996. Differences in mortality between the two areas have narrowed in recent years in the age groups 1-4 and 5-14 years of age.

The results presented in this chapter show important changes in mortality since 1966. Nearly all of the studies conducted in Matlab on this topic date from the period before 1985. See in this connection the various studies cited in the Introduction. It is highly relevant to carry out a detailed analysis on the extent of the changes in mortality which have taken place using various demographic techniques. It would also be highly useful to conduct in-depth studies on the causes of the recent increase in life expectancy in general and of the more rapid increase in life expectancy for women in particular.

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Figure S.1a: Life Expectancy at Birth by Sex, 1966-94

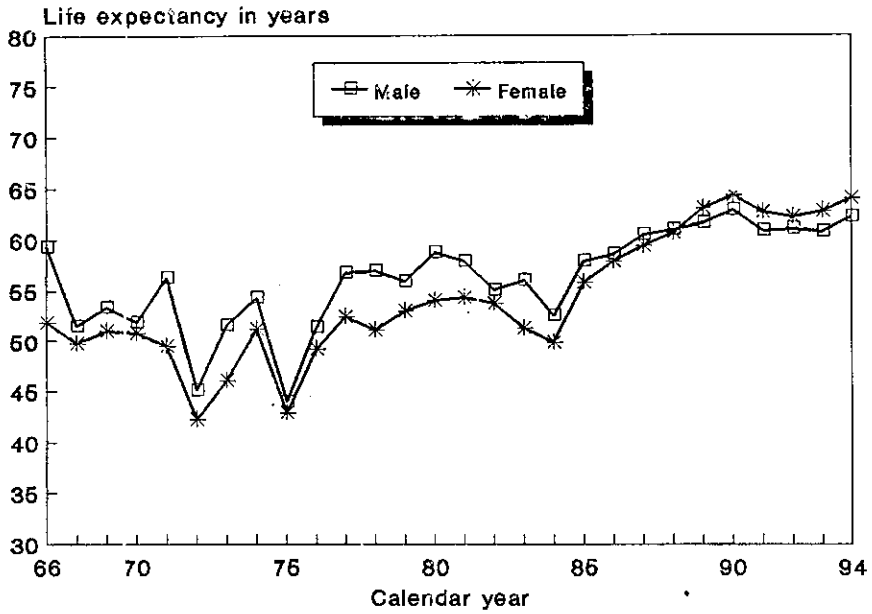


Figure S.1b: Life Expectancy at Birth by Area, 1978-94

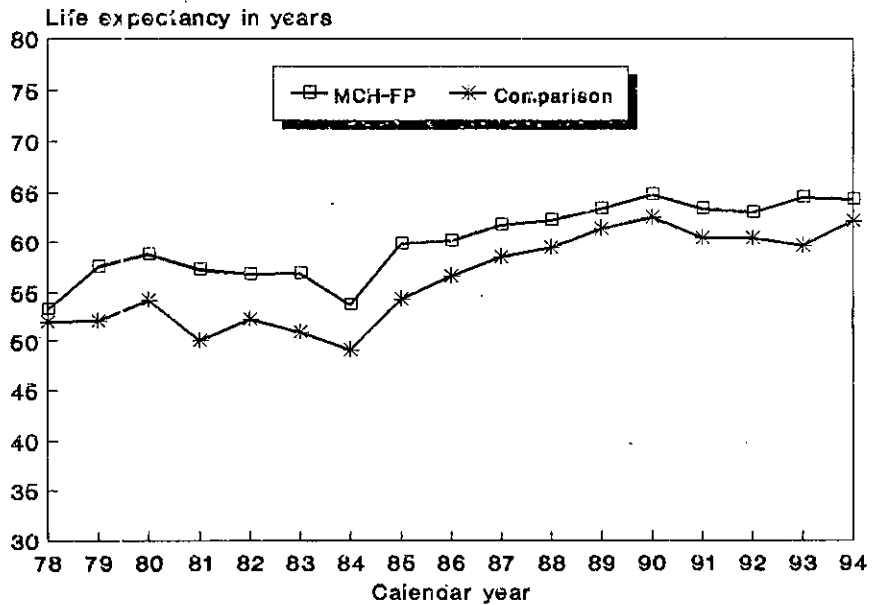


Figure S.2a: Infant Mortality Rate by Sex, 1966-94

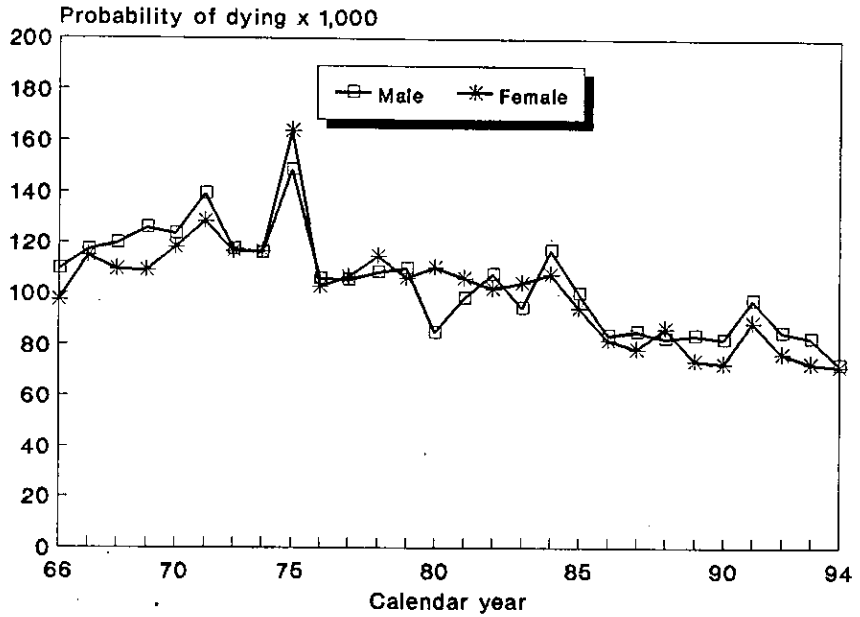


Figure S.2b: Infant Mortality Rate by Area, 1978-94

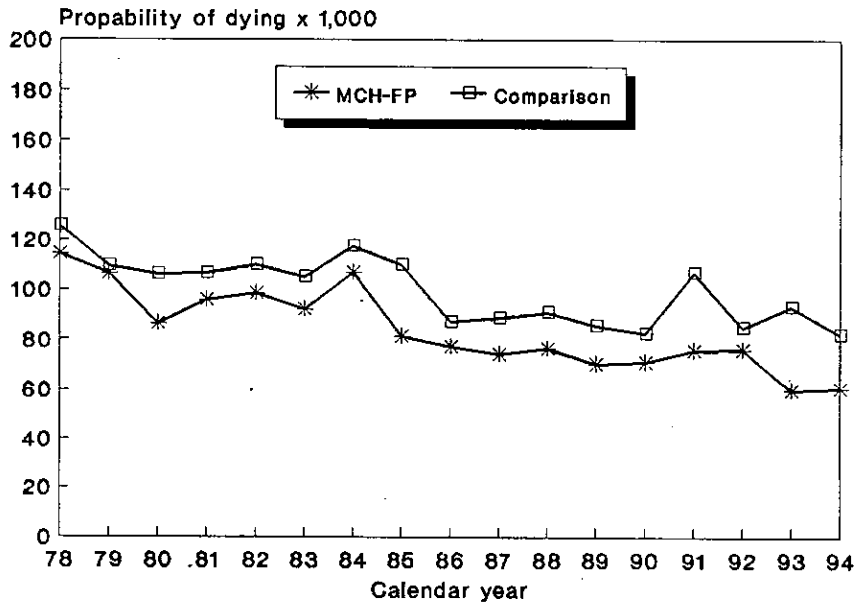


Figure S.3a: Child (1-4 years old) Mortality Rate By Sex, 1966-94

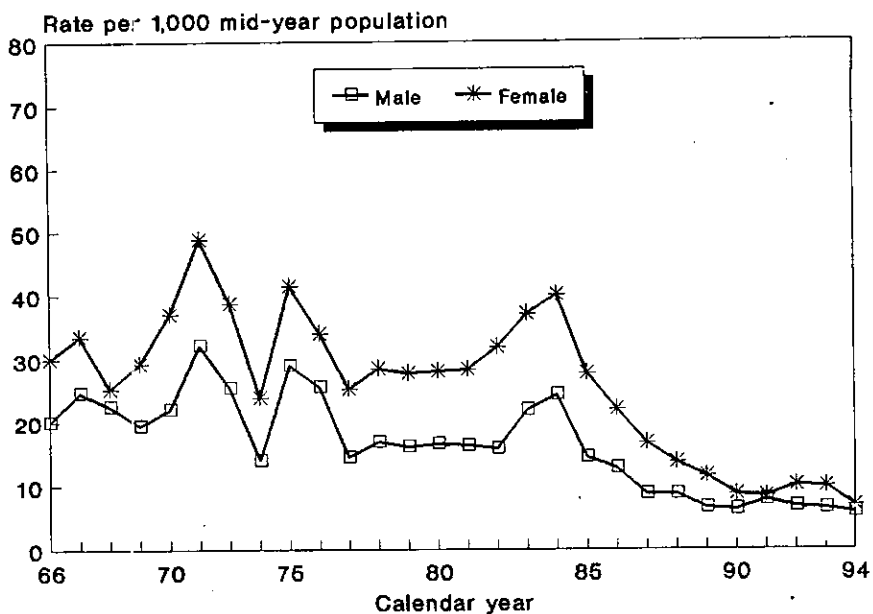


Figure S.3b: Child (1-4 years old) Mortality Rate by Area, 1978-94

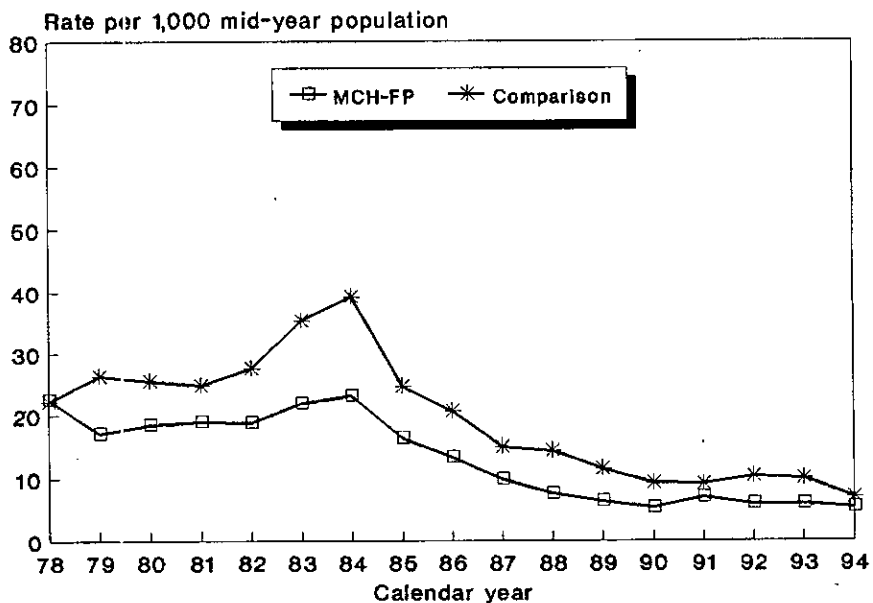


Figure S.4a: Elder Child (5-14 years old) Mortality by Sex, 1966-94

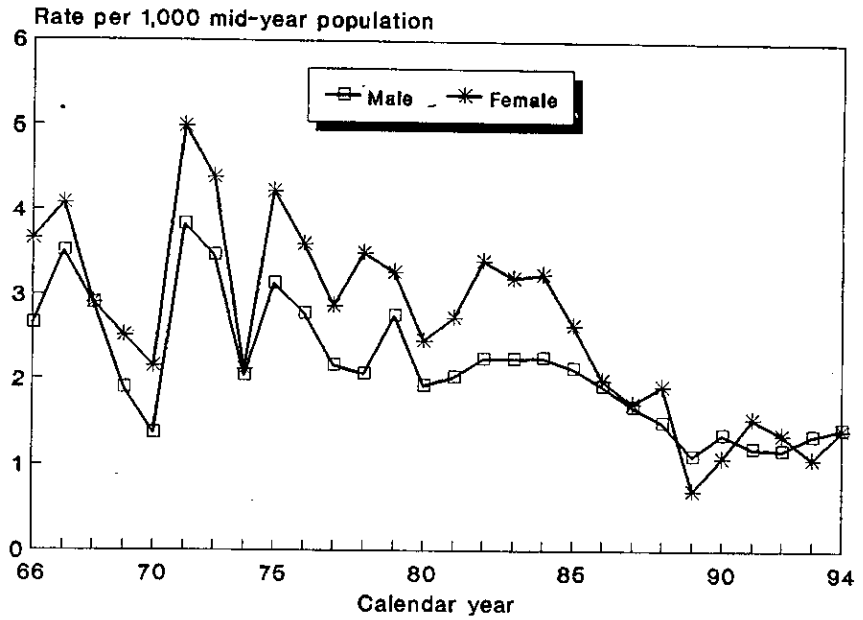


Figure S.4b: Elder Child (5-14 years old) Mortality By Area, 1978-94

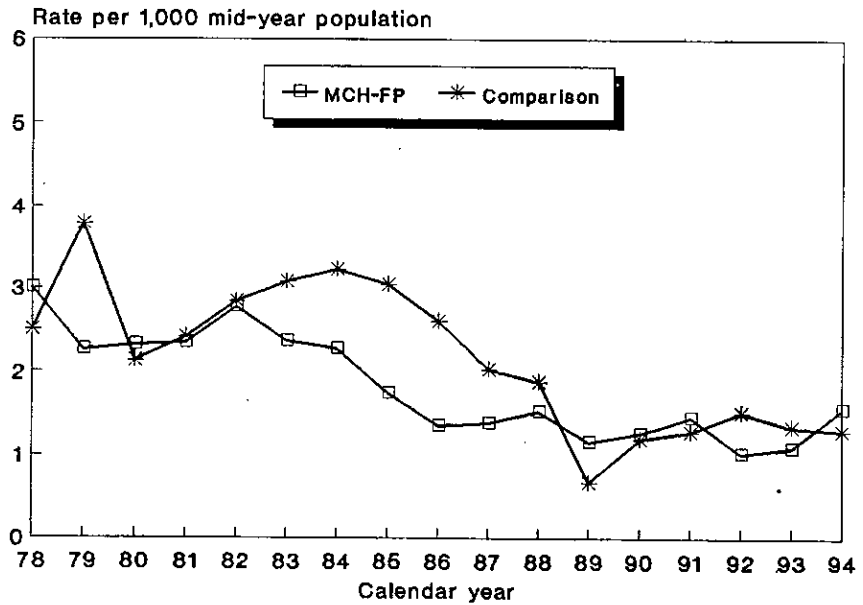


Figure S.5a: Adult (15-44 years old) Mortality Rate by Sex, 1966-94

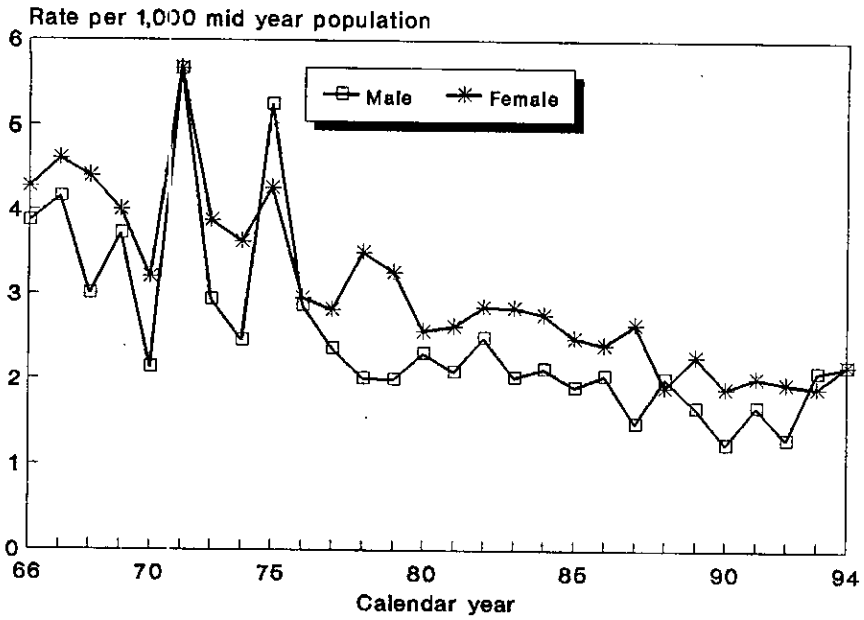


Figure S.5b: Adult (15-44 years old) Mortality Rate by Area, 1978-94

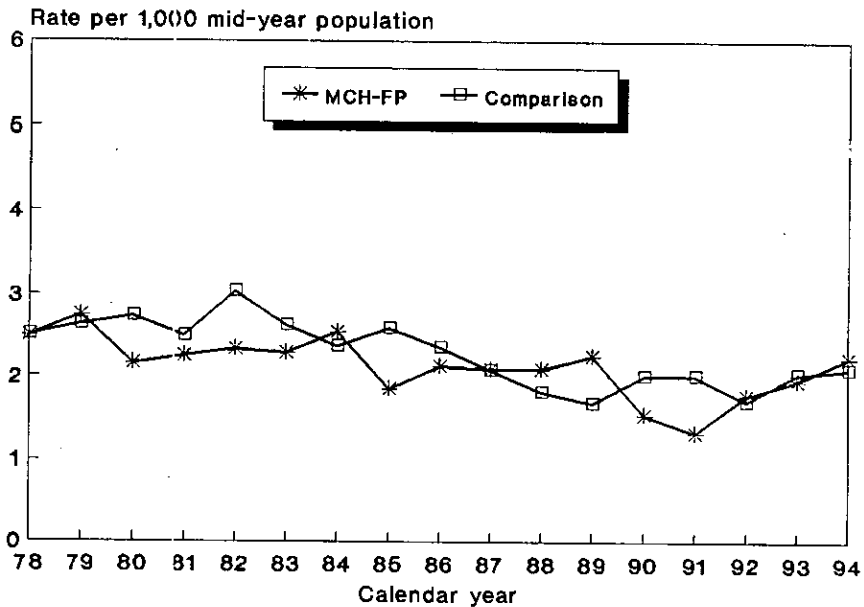


Figure S.6a: Mortality Rate in Age-group 45-64 Years Old
by Sex, 1966-94

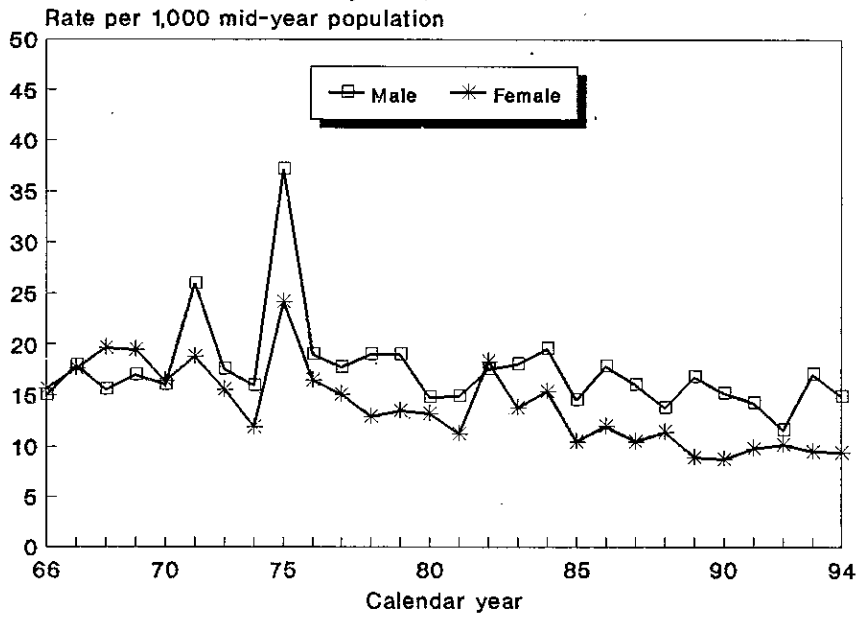


Figure S.6b: Mortality Rate in Age-group 45-64 Years Old
by Area, 1978-94

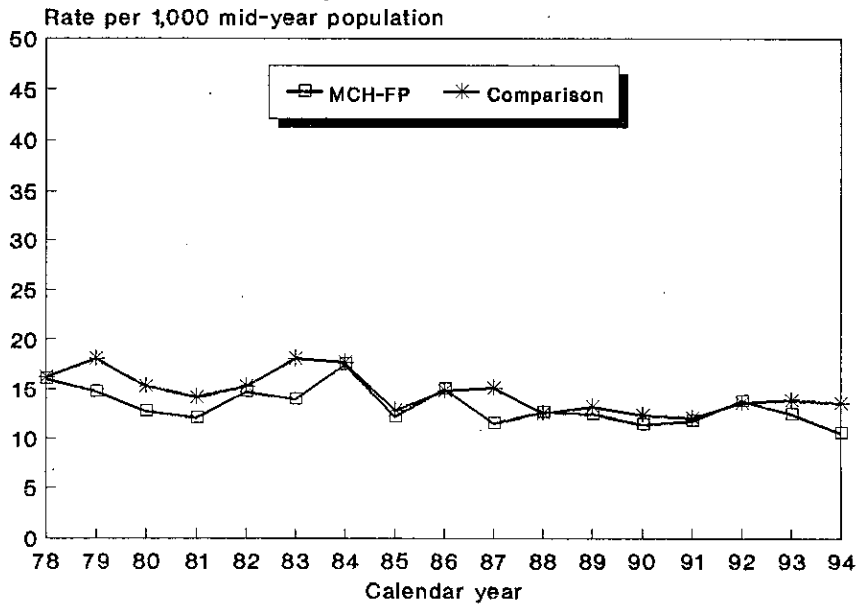


Figure S.7a: Old Age (65 years and older) Mortality Rate
by Sex, 1966-94

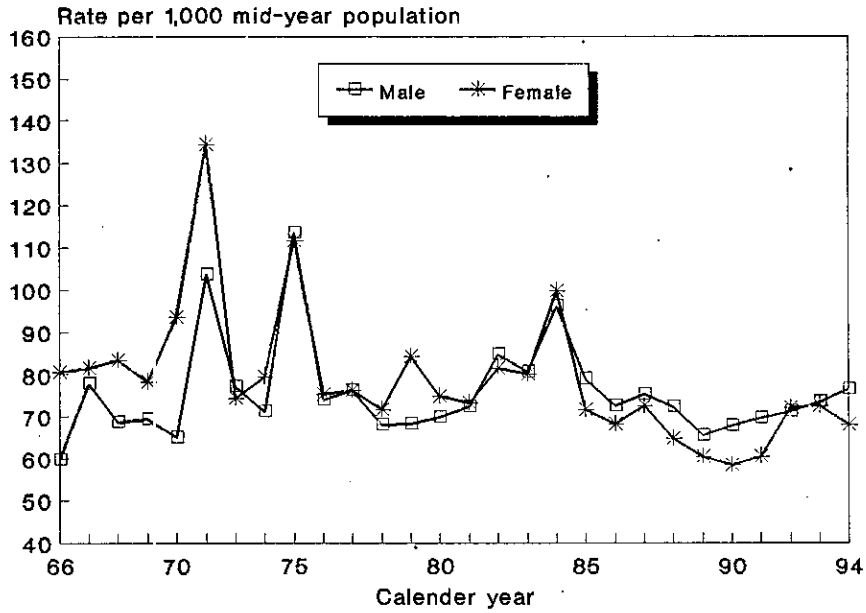
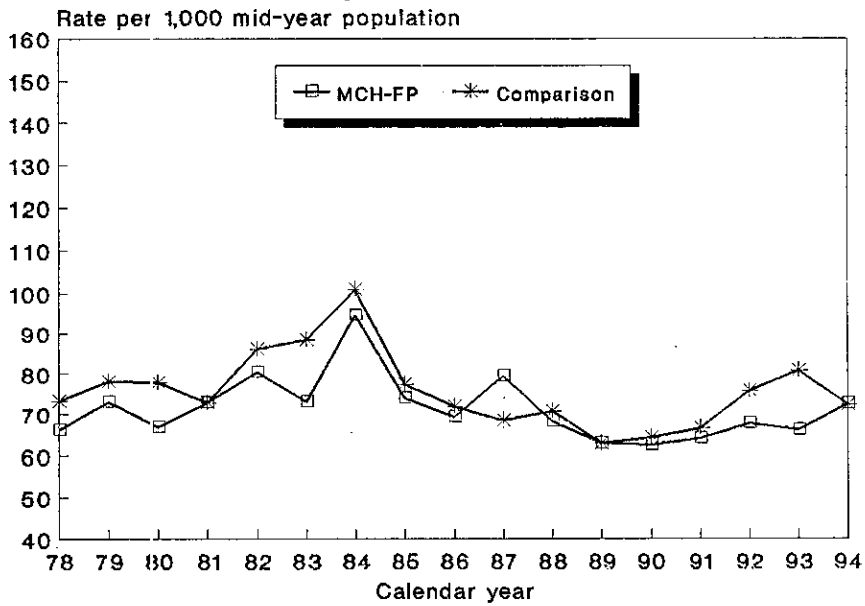


Figure S.7b: Old Age (65 years and older) Mortality Rate
by Area, 1978-94



Appendix-S.1

Age-specific Male Mortality Rates and Life Expectancy
at Birth in Matlab, Bangladesh, 1966-94
(per 1000 mid-year population)

Year	Age (years)						e ⁰ (years)
	<1*	1-4	5-14	15-44	45-64	65+	
1966-67	109.35	20.02	2.66	3.86	14.96	59.80	59.35
1967-68	117.04	24.60	3.51	4.15	17.99	77.93	51.48
1968-69	119.58	22.50	2.90	3.00	15.61	68.76	53.40
1969-70	125.65	19.40	1.89	3.72	17.02	69.30	51.84
1970-71	123.47	22.10	1.37	2.13	16.04	65.17	56.34
1971-72	139.02	32.10	3.83	5.66	25.89	103.69	45.11
1972-73	117.55	25.30	3.46	2.93	17.56	77.11	51.58
1973-74	116.02	13.90	2.04	2.46	15.99	71.11	54.29
1975	148.66	28.80	3.13	5.24	37.12	113.41	44.00
1976	105.57	25.50	2.78	2.86	18.99	74.04	51.40
1977	105.31	14.50	2.16	2.36	17.80	76.15	56.76
1978	108.15	16.90	2.06	2.00	19.01	67.97	57.00
1979	109.96	16.10	2.76	1.99	18.98	68.26	55.93
1980	84.74	16.50	1.92	2.30	14.85	69.76	58.83
1981	97.87	16.20	2.03	2.08	14.90	72.38	57.97
1982	107.50	15.80	2.25	2.49	17.55	84.61	55.11
1983	94.40	21.90	2.26	2.02	18.09	80.64	56.04
1984	117.20	24.30	2.26	2.12	19.58	96.04	52.48
1985	99.80	14.40	2.13	1.90	14.54	78.87	57.89
1986	83.40	12.80	1.93	2.04	17.84	72.67	58.55
1987	85.10	8.70	1.69	1.48	16.04	75.33	60.52
1988	82.40	8.70	1.50	2.01	13.79	72.46	60.98
1989	83.50	6.50*	1.12	1.66	16.82	65.62	61.66
1990	82.10	6.20	1.37	1.24	15.17	67.75	62.88
1991	97.20	7.80	1.21	1.68	14.28	69.62	60.85
1992	84.90	6.60	1.19	1.30	11.63	71.20	61.05
1993	82.28	6.40	1.36	2.08	17.11	73.58	60.80
1994	72.35	5.70	1.44	2.15	14.87	76.36	62.19

*Probability of dying before completing first year of life (${}_1q_0 \times 1000$).

Appendix-S.2

Age-specific Female Mortality Rates and Life Expectancy
at Birth in Matlab, Bangladesh, 1966-94
(per 1000 mid-year population)

Year	Age (years)						e ⁰ (years)
	<1*	1-4	5-14	15-44	45-64	65+	
1966-67	97.34	29.90	3.66	4.28	15.67	80.60	51.89
1967-68	114.75	33.50	4.08	4.41	17.70	81.38	49.74
1968-69	109.59	25.20	2.91	4.40	19.66	83.40	50.97
1969-70	109.08	29.10	2.52	4.00	19.46	78.36	50.84
1970-71	118.08	36.90	2.15	3.20	16.46	93.47	49.48
1971-72	128.49	48.80	4.99	5.67	18.82	134.32	42.29
1972-73	116.55	38.60	4.39	3.88	15.60	74.52	46.00
1973-74	116.72	23.80	2.12	3.63	11.84	79.46	51.18
1975	163.89	41.30	4.23	4.26	24.10	111.48	42.91
1976	102.71	33.90	3.60	2.96	16.55	75.40	49.14
1977	106.31	25.20	2.87	2.82	15.11	76.15	52.44
1978	114.74	28.40	3.50	3.50	12.93	71.66	51.13
1979	106.14	27.60	3.27	3.26	13.47	84.14	52.95
1980	110.03	28.00	2.46	2.57	13.16	74.97	54.03
1981	105.88	28.30	2.73	2.62	11.20	73.35	54.30
1982	101.70	31.70	3.41	2.85	18.34	81.47	53.76
1983	104.00	37.00	3.20	2.84	13.77	80.21	51.27
1984	107.60	39.90	3.25	2.76	15.36	99.63	49.84
1985	94.10	27.60	2.64	2.49	10.42	71.69	55.84
1986	81.50	22.00	1.99	2.41	11.93	68.29	57.92
1987	78.40	16.70	1.72	2.64	10.41	72.63	59.49
1988	86.20	13.60	1.92	1.90	11.42	64.87	60.71
1989	73.60	11.60	0.70	2.27	8.95	60.40	63.07
1990	72.70	8.60	1.09	1.89	8.72	58.50	64.27
1991	88.50	8.40	1.55	2.02	9.75	60.45	62.66
1992	76.40	10.00	1.37	1.96	10.16	72.03	62.16
1993	72.50	9.90	1.08	1.90	9.53	72.70	62.82
1994	71.53	6.80	1.42	2.17	9.40	68.11	64.03

*Probability of dying before completing first year of life (${}_1q_0 \times 1000$).

Appendix-S.3

Age-specific Mortality and Life Expectancy at Birth
by Area in Matlab, 1978-94
(per 1000 mid-year population)

Year	Age (years)						e ⁰ (years)
	<1*	1-4	5-14	15-44	45-64	65+	
(a) MCH-FP area							
1978	114.50	22.49	3.00	2.46	16.01	66.13	53.31
1979	106.26	17.11	2.26	2.73	14.70	73.06	57.57
1980	86.27	18.60	2.31	2.15	12.77	66.98	58.75
1981	95.89	19.05	2.34	2.24	12.04	72.79	57.23
1982	98.58	18.85	2.77	2.33	14.69	80.37	56.77
1983	91.90	21.92	2.36	2.28	13.99	73.00	56.87
1984	106.60	23.11	2.27	2.53	17.43	94.56	53.72
1985	81.30	16.39	1.74	1.85	12.17	74.04	59.79
1986	77.20	13.41	1.35	2.12	15.00	69.49	60.09
1987	74.10	9.87	1.39	2.08	11.46	79.37	61.72
1988	76.30	7.63	1.53	2.08	12.67	68.29	62.21
1989	70.40	6.36	1.16	2.24	12.41	63.10	63.38
1990	71.20	5.26	1.27	1.54	11.36	62.56	64.76
1991	75.50	6.98	1.46	1.32	11.81	64.26	63.30
1992	76.00	5.86	1.02	1.77	13.76	67.78	62.92
1993	60.10	5.94	1.09	1.95	12.40	66.31	64.50
1994	60.63	5.28	1.66	2.22	10.50	72.51	64.25
(b) Comparison area							
1978	125.70	22.12	2.50	2.50	16.23	73.30	51.98
1979	109.59	26.23	3.79	2.62	18.01	77.98	52.02
1980	106.14	25.45	2.13	2.72	15.32	77.82	54.22
1981	106.57	24.79	2.40	2.49	14.19	72.83	50.05
1982	109.85	27.44	2.84	3.03	15.30	86.00	52.18
1983	104.80	35.33	3.08	2.61	18.01	88.34	50.86
1984	117.40	39.24	3.23	2.36	17.62	100.97	49.11
1985	109.90	24.63	3.04	2.58	12.86	77.35	54.36
1986	87.10	20.66	2.60	2.35	14.77	71.98	56.55
1987	88.60	14.99	2.03	2.07	15.05	68.45	58.47
1988	90.70	14.38	1.88	1.81	12.49	70.85	59.46
1989	85.30	11.49	0.67	1.67	13.16	62.99	61.38
1990	82.40	9.29	1.20	2.00	12.31	64.36	62.53
1991	106.90	9.09	1.29	2.00	12.09	66.55	60.40
1992	84.90	10.35	1.52	1.70	13.57	75.82	60.39
1993	93.10	10.00	1.34	2.03	13.83	80.81	59.65
1994	82.16	7.01	1.30	2.09	13.54	72.47	62.14

*Probability of dying before completing first year of life (${}_1q_0 \times 1000$).

Appendix-A

Names and Codes of Villages in the DSS Area, 1994

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
	V32	Mobarakdi			J	Char Harigope	V96	Rampur
B	H	Lamchari	V26	Narayanpur	U	Baispur	V97	Dhanagoda
	V12	Bhangerpar	V56	Palipara	V01	Kadamtali	V98	Santoshpur
	V13	Baburpara	V82	Dhanarpar	V02	Nilokhi	V99	Baluakandi
	V19	Lakshmipur	V83	Padmapal	V03	Char Nilokhi	VB1	Taltoli
	V20	Dagorpur	V85	Bhanurpara	V04	Char Pathalia	VB2	Sree Rayerchar
	V21	Khadergaon	V87	Hurmaisha	V05	Gazipur	VB3	Rayerkandi
	V22	Beloti	VB12	Nagda	V06	Fatepur	VB4	Ramdaspur
	V23	Baluchar	VB13	Naogaon	V07	Nayakandi	VB5	Thakurpara
V24	Machukhal			V08	Goalbhar	VB6	Sarkerpara	
C	K	Shahpur	V40	Masunda	V09	Naburkandi	VB7	Mirpur
	L	Tatkhana	V41	Paton	V14	Enayetnagar	VB8	Farazikandi
	M	Char Nayergaon	V42	Adhara (South)	V35	Durgapur	VB9**	Ramanathgonj
	N	Aswipur	V43	Kanachak	V36	Ludhua	VB10	South Rampur
	O	Nayergaon	V44	Panchdona	V37**	Charputia	D28	Bazarkhola
	P	Titerkandi	V64	Kawadi	V38	Galimkha	D29	Kirtonkhola
	Q	Char Shibpur	V86	Adhara	V45	Bakchar	D30	Banuakandi
	V27	Panchghoria	V88	Datikara	V46	Silinda	D31	Harina Bazarkhola
	V28	Khidirpur	VB11	Mehron	V47	Tulatali	D32	Khalisha
	V30	Harion	D100	Barogaon	V48	Gangkandi	D33	Nayanagar
	V39	Gobindapur	D101	Naojan	V49	Harina	D34	Saidkharkandi
D	R	Nandalapur	V52	Nayakandi	V50	Baharpur	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	Chosoi			

*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, 1994

Village code*	Popula- tion	Live births	Deaths	Birth rate	Death rate
D	1878	53	14	28.2	7.5
W	3806	74	20	19.4	5.3
V10	1537	48	10	31.2	6.5
V11	1845	46	11	24.9	6.0
V31	8513	225	70	26.4	8.2
V32	2630	74	29	28.1	11.0
V59	1047	37	9	35.3	8.6
V60	901	31	4	34.4	4.4
V61	681	17	7	25.0	10.3
V62	860	22	7	25.6	8.1
V72	5967	195	44	32.7	7.4
Block A	29665	822	225	27.7	7.6
H	1218	36	11	29.6	9.0
V12	535	22	6	41.1	11.2
V13	692	19	6	27.5	8.7
V19	2873	70	22	24.4	7.7
V20	1180	35	13	29.7	11.0
V21	491	12	2	24.4	4.1
V22	554	17	2	30.7	3.6
V23	507	11	3	21.7	5.9
V24	2675	83	20	31.0	7.5
V26	2585	71	24	27.5	9.3
V56	1442	29	13	20.1	9.0
V82	1472	41	10	27.9	6.8
V83	532	14	4	26.3	7.5
V85	419	9	1	21.5	2.4
V87	609	16	4	26.3	6.6
VB12	4106	129	31	31.4	7.5
VB13	4527	117	34	25.8	7.5
Block B	26417	731	206	27.7	7.8

(continued)

Appendix-B (cont.)

Village code	Population	Live births	Deaths	Birth rate	Death rate
K	899	23	8	25.6	8.9
L	515	15	4	29.1	7.8
M	175	5	1	28.6	5.7
N	2048	40	17	19.5	8.3
O	1465	30	15	20.5	10.2
P	1954	62	7	31.7	3.6
Q	330	7	3	21.2	9.1
V27	856	20	9	23.4	10.5
V28	1437	32	10	22.3	7.0
V30	551	23	4	41.7	7.3
V39	323	5	5	15.5	15.5
V40	770	19	3	24.7	3.9
V41	1540	40	11	26.0	7.1
V42	717	16	4	22.3	5.6
V43	847	18	10	21.3	11.8
V44	595	12	5	20.2	8.4
V64	4524	109	34	24.1	7.5
V86	799	18	3	22.5	3.8
V88	483	10	5	20.7	10.4
VB11	2469	43	25	17.4	10.1
D100	3125	78	29	25.0	9.3
D101	1278	33	15	25.8	11.7
Block C	27700	658	227	23.8	8.2
R	1341	28	12	20.9	8.9
S	939	21	12	22.4	12.8
T	1540	43	9	27.9	5.8
V15	630	17	6	27.0	9.5
V16	769	21	6	27.3	7.8
V17	1044	23	7	22.0	6.7
V18	3740	86	30	23.0	8.0
V25	1215	31	9	25.5	7.4
V29	429	15	5	35.0	11.7
V33	488	9	3	18.4	6.1
V34	815	23	6	28.2	7.4
V52	223	3	2	13.5	9.0
V54	633	14	2	22.1	3.2
V55	524	16	4	30.5	7.6
V57	1070	27	12	25.2	11.2
V63	2014	34	24	16.9	11.9
V67	589	12	5	20.4	8.5
V81	636	19	6	29.9	9.4
V84	2183	58	20	26.6	9.2
V89	1396	36	10	25.8	7.2
Block D	22218	536	190	24.1	8.6
MCH-FP Area	106000	2747	848	25.9	8.0

(continued)

Appendix-B (cont.)

Village code	Population	Live births	Deaths	Birth rate	Death rate
A	2961	91	29	30.7	9.8
B	2077	66	23	31.8	11.1
C	3860	126	32	32.6	8.3
F	1401	41	13	29.3	9.3
G	2591	66	24	25.5	9.3
J	574	20	3	34.8	5.2
U	8209	239	72	29.1	8.8
V01	590	13	5	22.0	8.5
V02	527	16	1	30.4	1.9
V03	657	15	6	22.8	9.1
V04	301	11	4	36.5	13.3
V05	3313	112	34	33.8	10.3
V06	2399	65	27	27.1	11.3
V07	404	11	1	27.2	2.5
V08	1296	34	9	26.2	6.9
V09	1181	27	10	22.9	8.5
V14	849	20	6	23.6	7.1
V35	3693	130	37	35.2	10.0
V36	5131	165	54	32.2	10.5
V37	0	0	0	0	0
V38	1652	52	13	31.5	7.9
V45	1094	17	12	15.5	11.0
V46	399	17	6	42.6	15.0
V47	1807	40	18	22.1	10.0
V48	608	13	3	21.4	4.9
V49	1318	40	19	30.3	14.4
V50	124	2	1	16.1	8.1
V51	860	30	12	34.9	14.0
V53	3211	84	34	26.2	10.6
V58	0	0	0	0	0
V65	753	33	9	43.8	12.0
V66	845	27	10	32.0	11.8
V68	936	40	8	42.7	8.5
V69	0	0	0	0	0
V70	0	0	0	0	0
V71	461	22	7	47.7	15.2
V73	804	33	6	41.0	7.5
V74	1434	47	14	32.8	9.8
V75	396	8	4	20.2	10.1
V76	1676	47	15	28.0	8.9
V78	255	8	0	31.4	0.0
V79	349	13	3	37.2	8.6
V80	1170	21	7	17.9	6.0
V90	1191	32	8	26.9	6.7
V95	1783	55	20	30.8	11.2
V96	609	14	3	23.0	4.9
V97	417	14	3	33.6	7.2
V98	181	3	1	16.6	5.5
V99	641	20	10	31.2	15.6

(continued)

Appendix-B (cont.)

Village code	Population	Live births	Deaths	Birth rate	Death rate
VB1	1143	30	8	26.2	7.0
VB2	1043	29	3	27.8	2.9
VB3	3010	91	27	30.2	9.0
VB4	3787	90	30	23.8	7.9
VB5	945	28	8	29.6	8.5
VB6	598	25	5	41.8	8.4
VB7	307	14	2	45.6	6.5
VB8	1354	34	13	25.1	9.6
VB9	0	0	0	0	0
VB10	2659	73	23	27.5	8.6
D28	1226	36	10	29.4	8.2
D29	173	4	0	23.1	0.0
D30	696	19	10	27.3	14.4
D31	1063	39	9	36.7	8.5
D32	691	33	10	47.8	14.5
D33	1126	32	6	28.4	5.3
D34	1413	35	20	24.8	14.2
D35	656	13	2	19.8	3.0
D88	1399	40	12	28.6	8.6
D89	1198	46	13	38.4	10.9
D90	1060	43	10	40.6	9.4
D91	0	0	0	0	0
D92	0	0	0	0	0
D93	1204	30	9	24.9	7.5
D94	1310	53	22	40.5	16.8
D95	466	9	4	19.3	8.6
D96	856	23	3	26.9	3.5
D97	805	14	1	17.4	1.2
D98	3315	83	30	25.0	9.0
D99	2061	50	14	24.3	6.8
Comparison Area	102552	3016	940	29.4	9.2

*See village name in Appendix A.

Appendix-C

Life Table Equations

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

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

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

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

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

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

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

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

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

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

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

Appendix-D

New Standard Populations

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

Appendix-E

List of DSS Staff

Project Directors

Dr. Michael A. Strong (till June 1995)
Dr. Jeroen K. van Ginneken (since November 1995)

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. Jaliil 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

(continued from inside of the front cover)

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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