

# **SEAMIC HEALTH STATISTICS**

**1996**

Southeast Asian Medical Information Center  
International Medical Foundation of Japan

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## Foreword

It is my great pleasure to send you the 1996 edition of SEAMIC Health Statistics. I would like to express my appreciation to the devoted work of our Editorial Board Members.

I hope this publication will serve your reference.

Takaji Ishimaru, M.D.  
Director General  
SEAMIC/IMFJ

## Preface

The SEAMIC HEALTH STATISTICS has been issued annually since 1979 as one of the SEAMIC/IMFJ publications. It has been presenting in a uniform manner, information relevant to health developments in the countries participating in the SEAMIC. The publication has been appreciated by users both in those countries and in others.

Part I presents comparative statistics from the participating countries on selected health and related topics. Part II describes the organizational aspects of the health statistics system of each country, providing the background information as to how the statistics included in Part I have been collected, processed and produced.

The structure of the present issue remains almost the same as for the last one for 1995, but two changes have been incorporated. First, a new table 7-4 on adult smoking prevalence has been added. Second, with the introduction of the 10th Revision of the International Statistical Classification of Diseases and Related Health Problems (ICD-10) in two of the countries, tables under Section 3 on causes of death and those under Section 5 on morbidity from infectious diseases have accommodated statistics based on ICD-9 and ICD-10, whichever is applicable to each country.

In view of the evolving information needs of the users, the contents of the publication will continue to be reviewed to make it more relevant, as done in the past. Suggestions in this regard from the users would be much appreciated.

The Editorial Board wishes to express its warmest thanks to all those in the participating countries who have made valuable contributions to the compilation of the present edition.

March, 1997

Kazuo Uemura, Ph.D.  
Chairman  
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SEAMIC HEALTH STATISTICS

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# **Part I**

## **Health Statistics**

### Explanation of Symbols

••	Category not applicable
(blank) or NA	Data not available
—	Nil
0.0	Not nil, but less than 0.05
*	Provisional or estimated

# **1. Population**

1 - 1 Population by Sex, Rate of Population Increase, Surface Area and Density

	Latest Census						Annual Rate of Increase 1981-1990 (%)	Surface Area (km <sup>2</sup> )	Density (Persons / km <sup>2</sup> )
	Date	Total	Male	Female	Sex Ratio	Persons per Household			
BRUNEI <sup>(1)</sup>	26 August 1991	260,482	137,616	122,866	112.0	6.0	a) 4.0	5,765	a) 51
INDONESIA <sup>(2)</sup>	1990	179,322,000	89,436,285	89,885,715	99.5	4.5	2.0	1,919,443	93
JAPAN <sup>(3) b)</sup>	1 October 1995	125,570,246	61,574,398	63,995,848	96.2	2.9	c) 1.6	377,737	337
MALAYSIA <sup>(4)</sup>		18,379,655	9,327,519	9,052,136	103.0	4.8	d) 2.6	329,758	54
Peninsular Malaysia	14 August 1991	14,797,616	7,460,363	7,337,253	101.7	4.9	2.3	131,598	112
Sabah		1,863,659	983,875	879,784	111.8	5.1	5.7	73,711	25
Sarawak		1,718,380	883,281	835,099	105.8	4.7	2.6	124,449	14
PHILIPPINES <sup>(5)</sup>	1 May 1990	60,487,185	30,410,475	30,076,710	101.1	5.6	d) 2.5	300,000	201
SINGAPORE <sup>(6) e)</sup>	30 June 1990	2,705,115	1,370,059	1,335,056	102.6	4.2	f) 1.9	g) 648	g) 4,608
THAILAND <sup>(7)</sup>	1 April 1990	54,548,530	27,061,733	27,486,797	98.5	4.4	2.0	513,115	106.3

Source : (1) Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) *Population Census of Indonesia, 1990*, Central Bureau of Statistics  
 (3) *1995 Population Census of Japan*, Statistics Bureau, Management and Coordination Agency  
 (4) *Population and Housing Census of Malaysia, 1991*  
 (5) National Statistics Office  
 (6) *Census of Population 1990 Singapore*, and *Yearbook of Statistics, Singapore 1995*, Department of Statistics  
 (7) *1990 Population and Housing Census*, National Statistics Office, Office of the Prime Minister.

Note : a) For 1995  
 b) All residents  
 c) Annual rate of increase 1990-1995  
 d) Annual rate of increase 1985-1994  
 e) Singapore residents only  
 f) Annual rate of increase 1986-1995  
 g) Year 1995



## 1-2 Estimates of Mid-year Population

(in thousands)

	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI <sup>(1)</sup>	130	156	185	222	241	249	257	261	268	276	285	296
INDONESIA <sup>(2)</sup>	119,470 <sup>(3)</sup>	130,500 <sup>(3)</sup>	146,360 <sup>(3)</sup>	162,899	171,357	174,730	178,170	181,384	186,043	187,589	190,815	
JAPAN <sup>(4) a)</sup>	103,119	111,252	116,320	120,266	122,026	122,460	122,721	123,102	123,476	123,788	124,069	124,299
MALAYSIA <sup>(5)</sup>	10,768	12,175	13,764	15,681	16,942	17,354	17,764	18,327	18,762	19,208	19,658	
PHILIPPINES <sup>(6)</sup>	36,849	42,517	48,317	54,668	58,721	60,097	62,049	63,692	65,339	66,982	68,624	
SINGAPORE <sup>(7) b)</sup>	2,075	2,263	2,282	2,483	2,599	2,648	2,705	2,763	2,818	2,874	2,930	2,987
THAILAND <sup>(8)</sup>	36,370	41,388	46,718	51,683	54,536	55,448	56,340	57,196	57,760	58,584	59,695	

Source : (1) Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) *National Income of Indonesia 1983-1995*, Central Bureau of Statistics  
 (3) *Indonesian Population Projection 1980-2000*, Central Bureau of Statistics  
 (4) *Japan Statistical Yearbook*, Statistics Bureau, Management and Coordination Agency  
 (5) *Vital Statistics Malaysia 1994*, Department of Statistics  
 (6) National Statistics Office  
 (7) *Report on Registration of Births and Deaths, 1995*, National Registration Department  
 (8) *Report of Working Group on Population Projections*, Office of the National Economic and Social Development Board

Note : a) Japanese nationals only  
 b) Population figures from 1980 onwards refer to Singapore residents only

## 1-3 Population Estimates and Projections

(in thousands)

	2000	2005	2010	2015	2020	2025	2030	2035	2040
BRUNEI <sup>(1)</sup>	<sup>a)</sup> 345	<sup>b)</sup> 389	<sup>c)</sup> 437						
INDONESIA <sup>(2)</sup>	210,439	225,174	238,927	251,317	262,578				
JAPAN <sup>(3) d)</sup>	126,892	127,684	127,623	126,444	124,133	120,913	117,149	113,114	
MALAYSIA <sup>(4)</sup>	23,264	25,843	28,411	31,081	33,855	31,274			
PHILIPPINES <sup>(5)</sup>	78,415	86,326	93,874	100,950	107,447	113,462	119,095	124,051	128,136
SINGAPORE <sup>(6) e)</sup>	3,259	3,527	3,661	3,764	3,844	3,907	3,940		
THAILAND <sup>(7)</sup>	64,389	67,910	70,865	73,208					

Source: (1) Based on *Demographic Situation & Population Projections 1991-2011*, Statistics Division, Economic Planning Unit, Ministry of Finance  
 (2) Based on *Population Formula Census 1990*, Central Bureau of Statistics. Calculated by Centre for Health Data  
 (3) *Population Projections for Japan: 1996-2050*, 1997, Institute of Population Problems, Ministry of Health and Welfare  
 (4) Department of Statistics  
 (5) Based on *Population Projections (Series 2: Moderate Fertility Decline and Moderate Mortality Decline)*, National Statistics Office  
 (6) Population Planning Unit, Ministry of Health  
 (7) *Report of Working Group on Population Projections*, Office of the National Economic and Social Development Board

Note: a) Year 2001  
 b) Year 2006  
 c) Year 2011  
 d) Population on 1 October  
 e) Singapore residents only

## 1-4 Population by Age and Sex

	Year	Sex	Ages								
			All Ages	0 – 4	5 – 9	10 – 14	15 – 19	20 – 24	25 – 29	30 – 34	35 – 39
BRUNEI <sup>(1)</sup>	1995	T	296.0	35.9	33.6	28.8	25.4	28.0	30.0	29.3	26.2
		M	156.6	18.5	17.4	14.7	13.2	14.5	16.1	15.9	14.4
		F	139.4	17.4	16.2	14.1	12.2	13.5	13.9	13.4	11.8
INDONESIA <sup>(2) a)</sup>	1995	T	195,283	21,718	21,294	22,482	21,540	18,643	16,359	15,025	13,252
		M	97,387	11,046	10,817	11,415	11,095	9,336	7,810	7,169	6,609
		F	97,896	10,671	10,477	11,067	10,445	9,307	8,549	7,856	6,642
JAPAN <sup>(3) b)</sup>	1995	T	124,299	5,950	6,493	7,425	8,492	9,765	8,614	7,969	7,709
		M	60,919	3,047	3,325	3,800	4,352	4,980	4,370	4,035	3,889
		F	63,380	2,903	3,168	3,625	4,140	4,785	4,245	3,934	3,820
MALAYSIA <sup>(4)</sup>	1994	T	19,658	2,435	2,399	2,198	1,940	1,764	1,656	1,590	1,346
		M	9,976	1,257	1,231	1,131	985	890	830	802	683
		F	9,682	1,178	1,168	1,067	954	874	826	788	663
PHILIPPINES <sup>(5)</sup>	1994	T	68,624	9,581	8,299	7,934	7,249	6,388	5,683	4,993	4,288
		M	34,476	4,984	4,248	4,058	3,711	3,269	2,855	2,424	2,066
		F	34,148	4,687	4,051	3,876	3,538	3,119	2,827	2,569	2,222
SINGAPORE <sup>(6) c)</sup>	1995	T	2,987	246	230	209	201	237	261	302	302
		M	1,503	127	119	108	103	119	129	152	154
		F	1,484	119	111	101	97	118	132	150	149
THAILAND <sup>(7)</sup>	1995	T	59,277	5,412	5,468	5,706	5,818	5,688	5,380	4,967	4,492
		M	29,615	2,735	2,766	2,897	2,959	2,899	2,736	2,499	2,250
		F	29,662	2,677	2,702	2,809	2,859	2,789	2,643	2,467	2,241

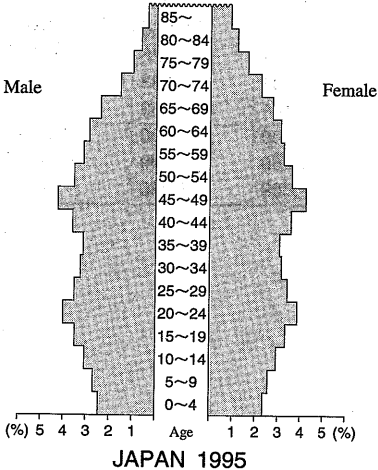
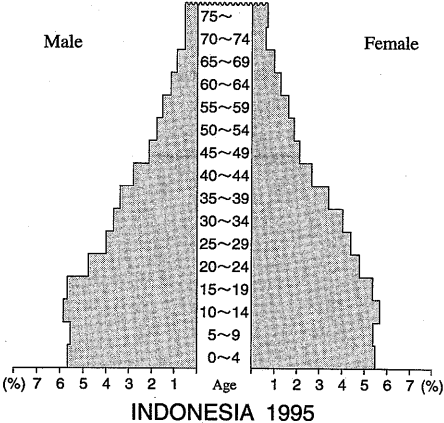
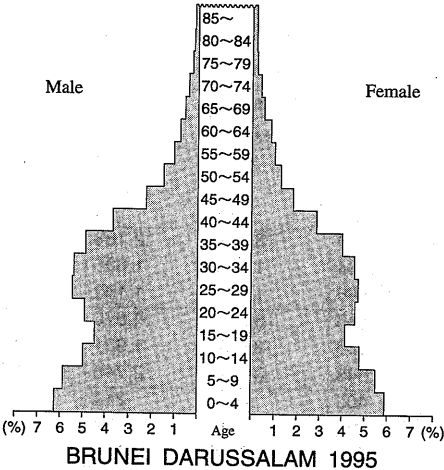
Source : (1) Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) *Population Projection, Indonesia by Province 1990-1995*, Central Bureau of Statistics  
 (3) *Vital Statistics Japan*, Ministry of Health and Welfare  
 (4) Department of Statistics  
 (5) National Statistics Office  
 (6) Department of Statistics  
 (7) *The Central Office for Civil Registration*, Ministry of Interior

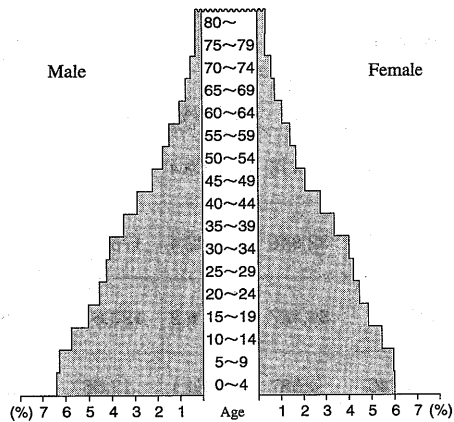
Note : a) Excluding non-permanent resident (homeless people, sailor, boat people and remote area communities)  
 b) Japanese nationals only  
 c) Singapore residents only

(in thousands)

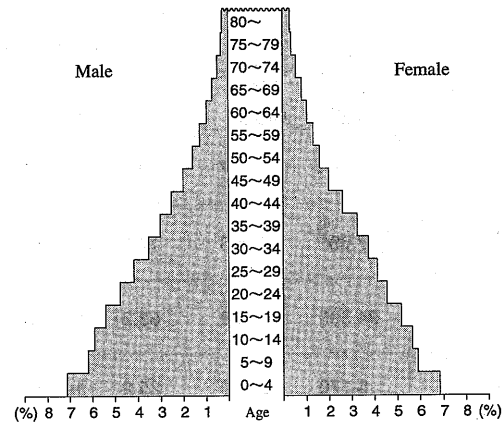
Age									
40-44	45-49	50-54	55-59	60-64	65-69	70-74	75-79	80-84	85+
19.3	12.0	8.1	6.0	4.7	3.2	2.3	1.3	1.0	0.9
10.9	6.7	4.4	3.1	2.3	1.7	1.2	0.7	0.5	0.4
8.4	5.3	3.7	2.9	2.4	1.5	1.1	0.6	0.5	0.5
10,646	8,249	7,113	6,097	4,709	3,609	2,188	2,358		
5,458	4,142	3,483	2,962	2,254	1,723	1,036	1,030		
5,188	4,107	3,630	3,135	2,455	1,885	1,152	1,328		
9,917	10,545	8,868	7,912	7,446	6,373	4,675	3,277	2,294	1,576
4,482	5,290	4,394	3,886	3,598	2,987	1,931	1,254	822	478
4,435	5,255	4,474	4,027	3,848	3,386	2,743	2,022	1,472	1,098
1,110	838	667	567	405	288	214	118	124	
567	432	342	286	195	140	97	55	53	
543	406	328	280	210	147	117	63	71	
3,514	2,737	2,177	1,770	1,373	1,032	727	480	401	
1,736	1,375	1,089	871	662	486	335	219	179	
1,778	1,362	1,088	899	711	546	392	261	222	
257	205	126	114	94	75	51	36	23	16
131	104	63	57	46	36	24	16	9	6
126	101	63	57	48	39	27	20	14	11
3,844	2,969	2,490	2,218	1,794	1,242	835	946		
1,904	1,460	1,209	1,067	857	588	386	395		
1,939	1,509	1,280	1,151	936	653	448	551		

Fig. 1 Population Pyramid

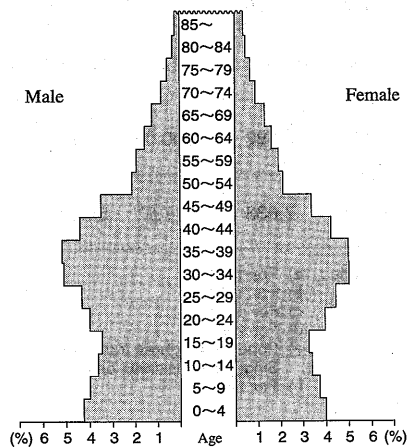




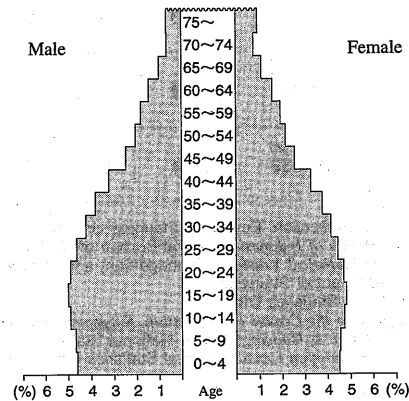
MALAYSIA 1994



PHILIPPINES 1994



SINGAPORE 1995



THAILAND 1995

## 1-5 Urban and Total Population

(in thousands)

	1960			1970			1980			1990		
	Total	Urban	(%)	Total	Urban	(%)	Total	Urban	(%)	Total	Urban	(%)
BRUNEI <sup>(1)</sup>	84	37	43.6	<sup>a)</sup> 136	87	63.6	<sup>b)</sup> 193	115	59.4	<sup>c)</sup> 261	173	66.6
INDONESIA <sup>(2)</sup>	<sup>d)</sup> 97,085	14,358	14.8	119,143	20,733	17.4	146,776	32,846	22.4	175,588	50,456	28.7
JAPAN <sup>(3)</sup>	94,300	59,698	63.3	104,666	75,429	72.1	117,600	89,187	76.2	123,611	95,644	77.4
MALAYSIA <sup>(4)</sup> Peninsular Malaysia Sabah Sarawak	8,170	2,060	25.2	10,439	2,787	26.7	13,745	4,687	34.1	17,567	8,896	50.6
				8,810	2,530	28.7	11,426	4,250	37.2	14,128	7,677	54.3
				653	107	16.7	1,011	208	20.6	1,791	603	33.7
				975	149	15.4	1,307	230	17.6	1,648	616	37.4
PHILIPPINES <sup>(5)</sup>	28,098	8,513	30.3	37,540	12,366	32.9	48,098	17,944	37.3	60,487	29,419	48.6
SINGAPORE <sup>(6)</sup>	<sup>d)</sup> 1,446	1,132	78.0	2,075	1,562	75.0	<sup>e)</sup> 2,282	2,282	100.0	<sup>e) f)</sup> 2,987	2,987	100.0
THAILAND <sup>(7)</sup>	<sup>(8)</sup> 26,258	3,274	12.5	34,397	4,553	13.2	44,824	7,633	17.0	54,548	10,215	18.7

Source: (1) Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) *Population of Indonesia*, Central Bureau of Statistics  
 (3) *Japan Statistical Yearbook*, Management and Coordination Agency  
 (4) Department of Statistics  
 (5) National Statistics Office  
 (6) *Report on the Census of Population, Singapore, Vol. 1*, Department of Statistics  
 (7) *Population & Housing Census*, National Statistical Office, Office of the Prime Minister  
 (8) *1960 Population Census*, Central Statistics Office, National Economic Development Board

Note: a) For 1971  
 b) For 1981  
 c) For 1991  
 d) For 1957  
 e) Population figures from 1980 onwards refer to Singapore residents only  
 f) For 1995

## **2. General Vital Statistics and Life Tables**



## 2 – A Explanatory Notes on Vital Statistics

Crude Live-birth Rate =  $(B / P) \times 1,000$

Crude Death Rate =  $(D / P) \times 1,000$

Infant Mortality Rate =  $(\text{Infant Deaths} / B) \times 1,000$

where B = Number of live-births during a year  
 D = Number of deaths during a year  
 P = Population at middle of year

Crude Marriage Rate =  $(M / P) \times 1,000$

Crude Divorce Rate =  $(D / P) \times 1,000$

Crude Birth Rate =  $(B / P) \times 1,000$

General Fertility Rate =  $(B / F_{15-49}) \times 1,000$

where M = Number of marriages during a year  
 D = Number of divorces during a year  
 B = Number of births during a year  
 P = Population at middle of year  
 $F_{15-49}$  = Population of women at ages 15–49 at middle of year

Absolute numbers and crude rates per 1,000 live-births

Late fetal deaths:	Fetal deaths after at least 28 weeks' gestation
	Fetal deaths of unknown gestational age are included
Infant deaths:	Deaths under one year
Neonatal deaths:	Deaths under four weeks
Post-neonatal deaths:	Deaths from four weeks to under one year
Perinatal deaths:	Late fetal deaths and deaths under one week

Maternal Mortality Rate is computed as the ratio of maternal deaths in a year to 100,000 live-births of the same year

Maternal Mortality Rate =  $(D_p / B) \times 100,000$

where  $D_p$  = Direct obstetric deaths (Chapter XI in ICD-9 and Chapter XV in ICD-10) during a year  
 B = Number of live-births during a year

## 2-B A Brief Description of Population and Vital Statistics Trends

**BRUNEI***Population:*

During 1981-91 the annual average growth rate was just over 3 percent which was somewhat lower than during the period 1971-1981. The rate of 3% is still relatively high by world standards. If the current rate of population growth continues at the same level into the future, the population size of Brunei Darussalam will double in about 23 years.

The population is still relatively young with those below the age of 15 years accounting for 35% of the population. Though the elderly accounts for only 4%, problems associated with ageing are now being addressed to.

Year	Population	Annual Growth (%)
1971 <sup>a)</sup>	136,256	1971-81 = 3.47
1981 <sup>a)</sup>	192,832	
1991 <sup>a)</sup>	260,482	1981-91 = 3.01
1995	296,000	

a) Census years

*Birth and Death Rates:*

Brunei Darussalam has a moderately high level of fertility with a crude birth rate of 24.8 per 1000 population in 1995. However, the rate has declined as seen in the table. The crude death rate fluctuates around 3.3 per 1000 population. This is an extremely low level by world standards.

Heart Disease is the leading cause of death, followed by cancer and accident, violence and poisoning. Death due to road traffic accidents is the main contributor to this third cause of death.

	Crude birth rate <sup>b)</sup>		Crude death rate <sup>b)</sup>	
Year	Rate	Index	Rate	Index
1971	36.0	100	5.9	100
1981	30.5	85	3.6	61
1991	27.3	76	3.3	56
1995	24.8	69	2.9	49

b) per 1,000 population

*Life Expectancy:*

The life expectancy in 1991 was 72.1 years for male and 76.2 years for female.

**INDONESIA***Population:*

Indonesia has an estimated 1995 population of more than 195 million. This would make Indonesia the fourth most populous country in the world after the People's Republic of China, India, and the United States of America.

The nation's population growth is continuously declining. During 1990-1995, the estimated annual population growth was 1.71%, compared to 2.32% in 1971-1980 and 1.98% in 1981-1990. Census and survey data show that Indonesia's fertility has declined significantly since the 1970s. The crude birth rate, which was estimated at 33.7 births per 1,000 population in the period 1980-1985, declined to an estimated 25.3 per 1,000 in the period 1990-1995.

*Crude Death Rate:*

The crude death rate is showing a downward trend since the early 1970s. The rate in 1995 is estimated at 7.5 per 1,000 population, compared to 18.7 and 12.5 in 1971 and 1980, respectively (average annual decline of 2.8%). The 1992 Household Health Survey found that cardiovascular diseases were the prime cause of death. In earlier surveys, infectious diseases were the prime cause, while cardiovascular diseases were not even among the top five causes.

#### *Life Expectancy:*

In the early 1970s, the life expectancy at birth was still very low: 45 years for males and 48 years for females. The current life expectancy at birth is estimated at 61.5 years for males and 65.3 years for females. This longer life expectancy is very much influenced by the decreased mortality, particularly among infants, due to the successful health programme.

### **JAPAN**

#### *Population:*

The population is growing every year, reaching 125.57 million on 1 October 1995. The proportion of people over 65 years old was 14.6% in 1995 and is growing rapidly.

#### *Crude Birth Rate:*

The number of births in 1995 was 1,187,064 and the crude birth rate was 9.6 (per 1,000 population). The rate had been decreasing gradually (though in 1994, it increased slightly).

#### *Crude Death Rate:*

The number of deaths in 1995 was 922,139 and the crude death rate was 7.4 (per 1,000 population). The rate used to decrease after World War II, but has turned increasing gradually in recent years, caused by the rising number of aged people's deaths.

#### *Trends of Causes of Death:*

In 1995, there was a significant change in the ranking of causes of death: heart diseases, which used to be the second frequent cause of death, shifted to the third cause, and cerebrovascular diseases, which used to be the third cause, moved to the second rank.

This change seems to be due to the use of ICD-10 instead of ICD-9 and to a reform of death certification, consisting of the introduction of the new international certificate and the discouragement of using non-specific disease terms.

#### *Life Expectancy:*

In 1995, Japanese life expectancy at birth for male was 76.36 years, which represents a decrease by 0.21 year as compared with the preceding year and the first fall in three years. Life expectancy for females was 82.84 years, also showing a decrease by 0.14 year, which was the first decline in seven years. These declines are considered as due to the great earthquake in Kobe and the neighbouring areas and also to an influenza epidemic, both of which occurred in that year.

#### *Health Care Status:*

Most Japanese are enjoying good health. About 90% of people consider themselves healthy or very healthy. The Ministry of Health and Welfare continues to make efforts to provide a high-quality, efficient, cost-effective, accessible health care system, to prevent diseases, and to promote health.

### **MALAYSIA**

Malaysia has a population of 20.7 million with a steady growth rate of 2.3% for the year 1995. 46% of Malaysian population are young, below the age of 20 years. However, the elderly population continues to grow and is expected to be 4.2% of the total population by the year 2020.

In the 1995 records, heart diseases and diseases of pulmonary circulation constituted the leading cause of death in government hospitals. The life expectancy at birth was 69.4 years for males and 74.2 years for females in 1995.

## **PHILIPPINES**

### *Population:*

The country's population was 70.3 million in 1995, showing an increase of 13.2% from 1990. The male dominated the female with a sex ratio of 101 males to 100 females. The population remains to be young, with age 0 to 14 years comprising 37.4%, 15 to 64 years 58.8%, and 65 years and over constituting 3.8%.

### *Life Expectancy:*

Life expectancy is longer for the female than the male, with 68.83 and 63.58 years, respectively.

### *Crude Birth Rate:*

The crude birth rate decreased by 2.9 percentage point from 29.8 per 1000 population in 1990 to 26.9 in 1995.

### *Crude Death Rate:*

The crude death rate decreased by 0.5 percentage point from 7.2 per 1000 population in 1990 to 6.7 in 1995.

## **SINGAPORE**

### *Population:*

The mid-year resident population of Singapore grew marginally by about 1.9% from 2.93 million in 1994 to 2.99 million in 1995. The Chinese constituted the majority of the population at 77.4%, followed by the Malays at 14.2% and the Indians at 7.2%. The population continued to age, with the proportion of the elderly aged 65 years and over increasing from 6.6% in 1994 to 6.8% in 1995. The median age was at 31.8% years, up from 31.4 years in 1994.

The rate of natural increase decreased from 11.7 per 1000 resident population in 1994 to 10.9 per 1000 in 1995. There were 48,635 births in 1995, which was a decrease of 1.9% from the 49,554 births in 1994. The total fertility rate fell marginally to 1.7 births per woman from the 1.8 births in 1994. The number of deaths on the other hand rose slightly from 14,946 to 15,569 over the same period. The crude death rate remained low at 4.8 deaths per 1000 resident population.

### *Life Expectancy:*

The life expectancy at birth of Singaporeans was 76.4 years in 1995. Expectancy of life at birth for the average male was 74.2 years and that for the average female was 78.7 years.

### *Health Care Status:*

The state of health of Singaporeans continues to improve. The Ministry of Health has embarked on a National Healthy Lifestyle Programme in 1992, which aims to create awareness for the need to lead a healthy lifestyle, teaching the skills and providing the supportive environment to do so. It is a multi-disciplinary, multi-sectoral and community-based programme. The Ministry of Health's efforts towards health promotion and disease prevention and to encourage Singaporeans to stay healthy including this programme were sustained in 1995. The Ministry also continued

with its policy to ensure that good, up-to-date and proven medical care that is cost-effective, remained available and accessible to all Singaporeans.

## **THAILAND**

### *Population:*

Thailand has a population of around 58.99 million (January 1995). In 1994, the population growth rate was approximately 1.15 percent and the population is expected to reach 70 million by the year 2000. The trend of population growth indicates that the country is becoming more urbanized, with an increase in proportion of working ages and old ages, and a decrease in the dependency ratio.

### *Life Expectancy:*

As a result of the success in health development, life expectancy of the Thai people has increased by the average of 0.46 year annually, in male from 60 years during 1980–1985 to 63 years during 1990–1995 (66.6 years in 1995) and in female from 66 years to 68 years between the same period of time (71.7 years in 1995).

## 2-1 Crude Live-birth Rates

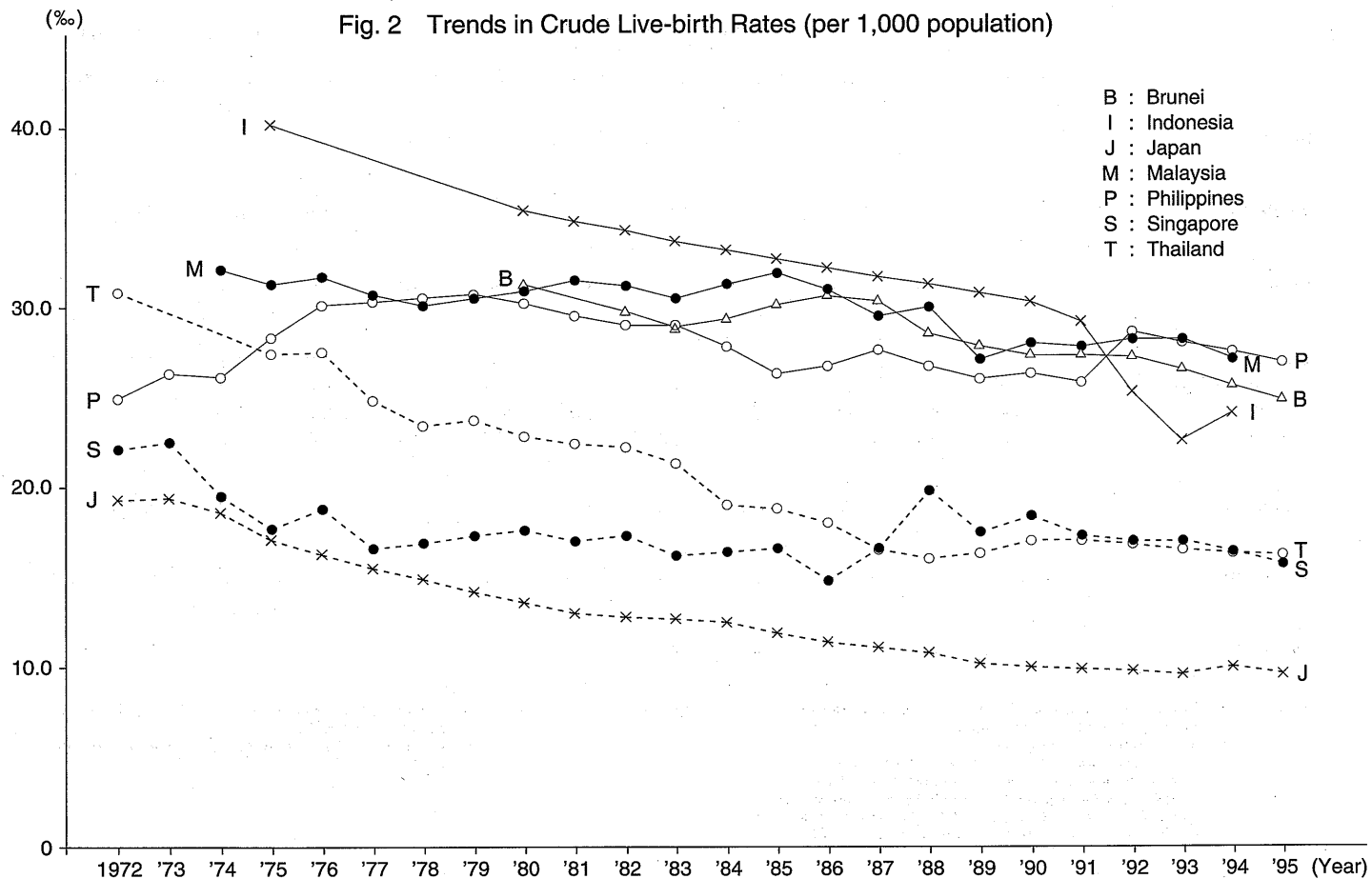
(per 1,000 population)

Year	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI <sup>(1)</sup>			31.2	30.1	28.5	27.8	27.3	27.3	27.2	26.5	25.6	24.8
INDONESIA <sup>(2)</sup>	43.8	40.2	35.4	32.7	31.3	30.8	30.3	29.2 <sup>a)</sup>	25.3 <sup>a)</sup>	22.6 <sup>a)</sup>	24.1 <sup>a)</sup>	
JAPAN <sup>(3)</sup>	18.8	17.1	13.6	11.9	10.8	10.2	10.0	9.9	9.8	9.6	10.0	9.6
MALAYSIA <sup>(4)</sup>				31.9	30.0	27.1	28.0	27.9	28.2	28.2	27.1	
Peninsular Malaysia	33.9	31.3	30.3	31.3	28.8	26.2	27.0	26.8	27.1	27.1		
Sabah	37.9	35.4	38.7	42.3	42.1	36.8	38.8	39.2	39.2	38.5		
Sarawak	30.4	29.7	29.4	27.7	30.0	26.4	27.4	25.6	27.4	27.5		
PHILIPPINES <sup>(5)</sup>	27.4	28.8	30.2	26.3	26.7	26.0	26.3	25.8	28.6	28.0	27.5	26.9
SINGAPORE <sup>(6) b)</sup>	22.1	17.7	17.6	16.6	19.8	17.5	18.4	17.3	17.0	17.0	16.4	15.7
THAILAND <sup>(7)</sup>	31.5	27.4	22.8	18.8	16.0	16.3	17.0	17.0	16.8	16.5	16.3	16.2

Source: (1) Birth & Death Registry, Ministry of Health and Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) Central Bureau of Statistics  
 (3) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (4) *Yearbook of Statistics Malaysia*, Department of Statistics  
 (5) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (6) *Yearbook of Statistics, Singapore 1994*, Department of Statistics  
 (7) Health Information Division, Ministry of Public Health

Note: a) Calculated by Central Bureau of Statistics based on National Census 1990  
 b) Rates from 1980 onward refer to Singapore residents only

Fig. 2 Trends in Crude Live-birth Rates (per 1,000 population)



## 2-2 Crude Death Rates

(per 1,000 population)

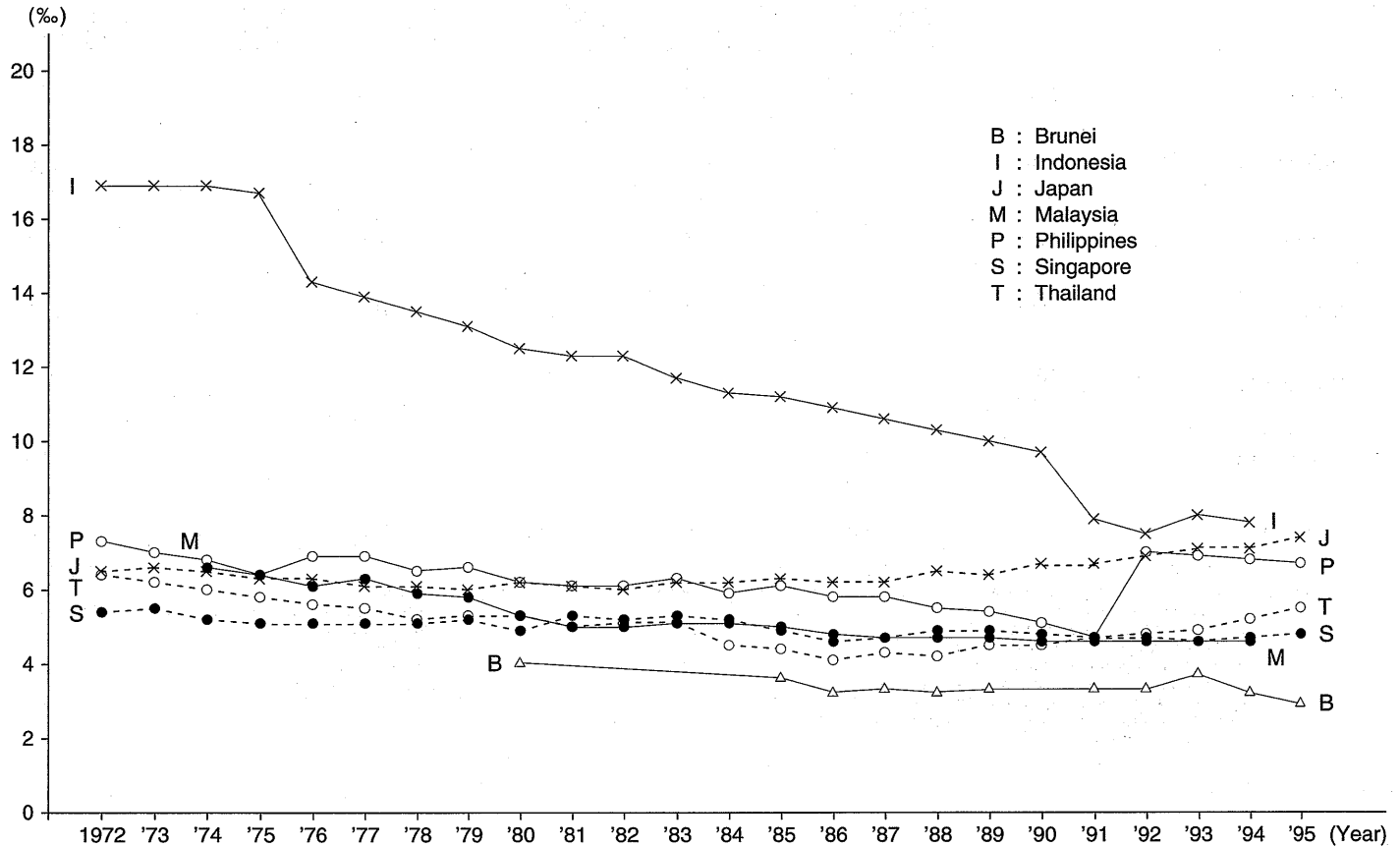
Year	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI <sup>(1)</sup>			4.0	3.6	3.2	3.3		3.3	3.3	3.7	3.2	2.9
INDONESIA <sup>(2)</sup>	18.7	16.7	12.5	11.2	10.3	10.0	9.7	a) 7.9	a) 7.5	a) 8.0	a) 7.8	
JAPAN <sup>(3)</sup>	6.9	6.3	6.2	6.3	6.5	6.4	6.7	6.7	6.9	7.1	7.1	7.4
MALAYSIA <sup>(4)</sup>			5.3	5.0	4.7	4.7	4.6	4.6	4.6	4.6	4.6	
Peninsular Malaysia	7.3	6.4	5.5	5.3	4.9	4.9	4.9	4.9	4.8	4.8		
Sabah	5.9	4.3	4.2	4.1	3.9	3.8	3.7	3.8	3.6	3.6		
Sarawak	5.2	5.0	4.2	3.7	3.3	3.8	3.8	3.8	3.7	3.8		
PHILIPPINES <sup>(5)</sup>	6.7	6.4	6.2	6.1	5.5	5.4	5.1	4.7	7.0	6.9	6.8	6.7
SINGAPORE <sup>(6) b)</sup>	5.2	5.1	4.9	4.9	4.9	4.9	4.8	4.7	4.7	4.6	4.7	4.8
THAILAND <sup>(7)</sup>	6.2	5.8	5.3	4.4	4.2	4.5	4.5	4.7	4.8	4.9	5.2	5.5

Source: (1) Birth & Death Registry, Ministry of Health and Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) Central Bureau of Statistics  
 (3) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (4) *Yearbook of Statistics, Malaysia*, Department of Statistics  
 (5) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (6) *Yearbook of Statistics Singapore, 1993*, Department of Statistics  
 (7) Health Information Division, Ministry of Public Health

Note: a) Calculated by Central Bureau of Statistics based on National Census 1990  
 b) Rates from 1980 onward refer to Singapore residents only



Fig. 3 Trends in Crude Death Rates (per 1,000 population)



## 2-3 Vital Statistics Rates

(per 1,000 population)

	Year	Crude Marriage Rate	Crude Divorce Rate	Crude Birth Rate	General Fertility Rate	Crude Death Rate	Infant Mortality Rate
BRUNEI <sup>(1)</sup>	1995	<sup>a)</sup> 5.4	<sup>a)</sup> 0.9	24.8	93.5	2.9	7.9
INDONESIA <sup>(2) b)</sup>	1995	<sup>a)</sup> 8.4	<sup>a)</sup> 0.8	<sup>c)</sup> 24.1		<sup>c)</sup> 7.8	55.0
JAPAN <sup>(3)</sup>	1995	6.4	1.6	9.6	38.8	7.4	4.3
MALAYSIA <sup>(4)</sup>	1994	<sup>d)</sup> 7.8	<sup>d)</sup> 0.7	27.1	106.1	4.6	10.9
PHILIPPINES <sup>(5)</sup>	1994 1995	<sup>d)</sup> 14.2	..	27.5 26.9	122.0	6.8 6.7	50.4
SINGAPORE <sup>(6) e)</sup>	1995	8.4	1.4	15.7	53.7	4.8	4.0
THAILAND <sup>(7)</sup>	1995	<sup>(8) f)</sup> 8.3	<sup>(8) f)</sup> 0.8	16.2	58.6	5.5	7.2

Source : (1) Birth & Death Registry, Ministry of Health and Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) Central Bureau of Statistics  
 (3) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (4) National Registration Department  
 (5) National Statistics Office (estimated vital rates)  
 (6) *Yearbook of Statistics Singapore 1995*, Department of Statistics  
 (7) Health Information Division, Ministry of Public Health  
 (8) Ministry of Interior

Note : a) Muslims  
 b) Calculated by Central Bureau of Statistics based on National Census 1990  
 c) For 1994  
 d) For 1993  
 e) Singapore residents only  
 f) For 1993

## 2 - 4 Natality, Mortality and Natural Increase

	Year	Natality (live-born)				Mortality				Natural Increase (%)
		Number			(%)	Number			(%)	
		Total	Male	Female		Total	Male	Female		
BRUNEI <sup>(1)</sup>	1995	7,341	3,789	3,552	24.8	872	499	373	2.9	21.9
INDONESIA <sup>(2)</sup>	1994				24.1				7.8	16.3
JAPAN <sup>(3)</sup>	1995	1,187,064	608,547	578,517	9.6	922,139	501,276	420,863	7.4	2.1
MALAYSIA <sup>(4)</sup>	1994	533,185	275,569	257,616	27.1	89,702	51,391	38,311	4.6	22.6
PHILIPPINES <sup>(5)</sup>	1992	1,684,395	877,885	806,510	25.8	319,575	189,565	130,010	4.9	21.1
SINGAPORE <sup>(6) a)</sup>	1995	48,635 <sup>b)</sup>	25,295	23,339	15.7	15,569	8,857	6,711	4.8	10.9
THAILAND <sup>(7)</sup>	1995	963,678	494,396	469,282	16.2	324,842	198,411	126,431	5.5	10.8

Source : (1) Birth & Death Registry, Ministry of Health and Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) Calculated by Central Bureau of Statistics  
 (3) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (4) *Vital Statistics Malaysia, 1994*, Department of Statistics  
 (5) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (6) *Report on Registration of Births and Deaths, 1995*, National Registration Department  
 (7) Health Statistics Division, Ministry of Public Health

Note : Figures for males and females may not add up to the total on account of unknown sex  
 a) Singapore residents only  
 b) Includes unknown sex

## 2-5 Deaths and Death Rates by Age

	Year	Sex	All ages		0-4		5-14		15-24	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI (1)	1995	T	872	294.6		200.6	25	40.1	41	76.8
		M	499	318.6		216.2	16	49.8	31	111.9
		F	373	267.6		183.9	9	29.7	10	38.9
INDONESIA (2) a)	1992	T	5,352		292		315		443	
JAPAN (3)	1995	T	922,139	741.9	7,040	118.3	2,419	17.4	8,449	46.3
		M	501,276	822.9	3,929	129.0	1,468	20.6	6,053	64.9
		F	420,863	664.0	3,111	107.2	951	14.0	2,396	26.8
MALAYSIA (4)	1994	T	89,702	456.3	7,450	306.0	1,815	39.5	3,848	103.9
		M	51,391	515.2	4,143	329.6	1,117	47.3	2,920	155.7
		F	38,311	395.7	3,307	280.7	698	31.2	928	50.8
PHILIPPINES (5)	1992	T	319,575	489.1	58,214	643.7	13,991	88.0	16,479	126.4
		M	189,565	583.1	33,099	715.2	7,856	96.6	11,007	165.2
		F	130,010	400.0	25,115	569.9	6,135	79.1	5,472	85.9
SINGAPORE (6) b)	1995	T	15,569 <sup>c)</sup>	484.2	263 <sup>c)</sup>	94.2	104	21.0	288	43.6
		M	8,857	539.6	157	110.0	59	23.3	205	60.8
		F	6,711	427.7	105	76.4	45	18.4	83	26.0
THAILAND (7)	1995	T	324,842	547.9	11,168	206.3	5,938	53.1	23,721	206.1
		M	198,411	669.9	6,264	229.0	3,623	64.0	18,818	321.2
		F	126,431	426.2	4,904	183.2	2,315	42.0	4,903	86.8

Source: (1) Birth and Death Registry, Ministry of Health and Statistics Section, Economic Planning Unit, Ministry of Finance  
 (2) Directorate General of Medical Care, Ministry of Health  
 (3) *Vital Statistics Japan*, Ministry of Health and Welfare  
 (4) *Vital Statistics, Malaysia, 1994*, Department of Statistics  
 (5) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (6) *Report on Registration of Births and Deaths, 1995*, National Registration Department  
 (7) Health Statistics Division, Ministry of Public Health

Note: a) Based on a 10-day sample of discharges from hospital for each quarter  
 b) Singapore residents only  
 c) Includes unknown sex

(rate per 100,000 population)

25 - 34		35 - 44		45 - 54		55 - 64		65 - 74		75 & over		Unknown	
Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
66	111.3	83	182.4	60	298.5	126	1,177.6	165	3,000.0	234	7,312.5		
50	156.3	49	193.7	40	360.4	68	1,259.3	89	3,069.0	116	7,250.0		
10	58.6	34	168.3	20	222.2	58	1,094.3	76	2,923.1	118	7,375.0		
1,008				1,464				1,012					
9,725	58.6	19,653	111.5	57,082	294.0	113,042	736.0	191,532	1,733.6	512,560	7,171.7	637	
6,500	77.3	12,649	151.1	37,521	387.5	77,679	1,037.9	120,755	2,455.4	234,178	9,169.1	544	
3,225	39.4	7,004	84.8	19,561	201.1	35,363	449.1	70,777	1,154.8	278,382	6,062.3	93	
4,315	133.0	5,375	218.9	8,079	536.0	13,703	1,410.1	19,010	3,794.4	25,559	10,531.1	548	
3,022	185.2	3,485	278.9	5,191	670.9	8,378	1,739.1	10,432	4,399.5	12,330	11,441.4	373	
1,293	80.1	1,890	156.7	2,888	393.9	5,325	1,086.6	8,578	3,250.7	13,229	9,804.1	175	
21,693	213.3	24,554	339.9	29,390	642.0	38,236	1,303.2	44,527	2,693.7	72,479	8,904.1	12	
15,200	305.2	16,776	471.8	19,800	862.4	24,674	1,727.9	26,059	3,366.8	35,086	9,431.7	8	
6,493	125.1	7,778	212.2	9,590	420.1	13,562	900.5	18,468	2,098.6	37,393	8,459.9	4	
507	57.4	859	126.3	1,279	353.0	2,418	1,097.8	3,811	2,894.3	5,995	7,663.6	45	
366	73.1	561	154.6	823	446.4	1,532	1,411.1	2,281	3,629.8	2,832	8,880.3	41	
141	41.8	298	96.9	456	257.9	886	792.6	1,530	2,223.2	3,163	6,820.6	4	
34,983	338.1	31,553	378.5	32,863	601.9	46,563	1,160.3	133,698		4,420.7		4,355	
28,146	537.6	23,092	555.7	21,295	777.6	28,111	1,460.2	66,337		4,839.1		2,725	
6,837	133.7	8,461	202.3	11,568	414.6	18,452	883.8	67,361		2,259.5		1,630	

2-6 Expectation of Life at Specified Ages for Each Sex

	Year	Sex	Age								
			0	1	2	3	4	5	10	15	20
BRUNEI (1)	1991	M F	72.1 76.5	71.9 76.5				68.1 72.6	63.3 67.7	58.5 62.8	54.0 57.9
INDONESIA (2)	1995	M F	61.5 65.3	64.9 67.5				61.8 64.8	57.3 60.3	52.6 55.5	48.1 51.0
JAPAN (3)	1995	M F	76.4 82.8	75.7 82.2	74.8 81.2	73.8 80.2	72.8 79.3	71.9 78.3	66.9 73.3	62.0 68.4	57.2 63.5
MALAYSIA Peninsular Malaysia (4)	1994	M F	69.3 74.1	69.1 73.8				65.4 70.0	60.5 65.1	55.7 60.2	51.1 55.4
	1995	M F	69.4 74.2	69.2 74.0				65.5 70.2	60.6 65.3	55.8 60.4	51.2 55.5
PHILIPPINES (5)	1992	M F	63.2 68.5	66.3 71.1				63.9 68.8	59.3 64.2	54.6 59.4	49.9 54.7
SINGAPORE (6)	1994	M F	74.2 78.5	73.5 77.8				69.6 73.9	64.6 68.9	59.7 64.0	54.9 59.0
THAILAND (7)	1991	M F	67.7 72.5	69.8 74.8				66.2 71.1	61.6 66.4	56.9 61.6	52.3 56.9
Source: (1) Economic Planning Unit, Ministry of Finance											

- Source : (1) Economic Planning Unit, Ministry of Finance  
 (2) Calculated by Centre for Health Data, using Model Life Table for West Model and level of mortality = 18.66  
 (3) *Abridged Life Table for Japan*, Ministry of Health & Welfare  
 (4) *Abridged Life Table*, Department of Statistics  
 (5) University of the Philippines Population Institute, projected using 1990 baseline estimates based on registered deaths aged 5 years and over, corrected for underregistration and implied infant and child mortality from the adjusted deaths at ages 5-9 (Latin American Pattern, Model Life Tables for Developing Countries), assumption = moderate mortality decline.  
 (6) *Abridged Life Table*, Ministry of Health  
 (7) National Statistical Office

Age														
25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
49.5 52.9	44.8 48.0	40.2 43.3	35.5 38.4	30.9 33.7	26.4 29.0	22.2 25.0	18.6 21.1	15.2 17.9	12.8 14.4	10.2 12.0	8.8 10.1			
43.8 46.5	39.4 42.0	35.0 37.7	30.7 33.3	26.5 29.0	22.5 24.8	18.7 20.8	15.3 17.0	12.1 13.5	9.4 10.4	7.0 7.7	5.0 5.5			
52.4 58.6	47.5 53.6	42.7 48.8	37.9 43.9	33.3 39.1	28.7 34.4	24.4 29.8	20.3 25.3	16.5 20.9	13.0 16.8	9.8 12.9	7.1 9.5	5.1 6.7	3.6 4.6	2.5 3.1
46.6 50.5 46.6 50.7	42.0 45.7 42.1 45.9	37.4 40.9 37.5 41.1	32.8 36.1 32.9 36.3	28.3 31.5 28.4 31.6	24.0 26.9 24.1 27.1	20.0 22.6 20.1 22.7	16.2 18.4 16.4 18.5	13.0 14.6 13.1 14.7	10.1 11.3 10.1 11.2	7.7 8.5 7.8 8.5	5.5 6.2 5.5 6.2			
45.5 50.0	41.1 45.3	36.8 40.7	32.6 36.2	28.5 31.8	24.5 27.5	20.8 23.3	17.3 19.4	14.1 15.7	11.2 12.3	8.6 9.3	6.4 6.8			
50.1 54.1	45.2 49.2	40.4 44.3	35.6 39.5	31.0 34.7	26.5 30.1	22.2 25.6	18.3 21.3	14.8 17.3	11.8 13.6	9.1 10.5	6.8 7.5	4.4 4.6		
47.7 52.3	43.2 47.7	38.8 43.1	34.4 38.6	30.2 34.1	26.1 29.7	22.3 25.9	18.8 22.0	15.7 18.3	12.8 14.8	10.5 11.4	9.3 9.0			

2-7 Survivors at Specified Ages for Each Sex

	Year	Sex	Age							
			0	1	5	10	15	20	25	30
BRUNEI <sup>(1)</sup>	1991	M F	100,000 100,000	98,850 98,784	98,490 98,694	98,200 98,556	97,945 98,359	96,995 98,226	96,092 98,113	95,532 98,000
INDONESIA <sup>(2)</sup>	1995	M F	100,000 100,000	93,822 95,102	91,911 93,355	91,135 92,732	90,636 92,190	89,726 91,430	88,465 90,423	87,158 89,253
JAPAN <sup>(3)</sup>	1995	M F	100,000 100,000	99,544 99,616	99,360 99,467	99,250 99,391	99,155 99,327	98,889 99,215	98,532 99,066	98,175 98,903
MALAYSIA Peninsular Malaysia <sup>(4)</sup>	1994	M F	100,000 100,000	98,833 99,047	98,478 98,731	98,249 98,573	97,985 98,398	97,285 98,165	96,340 97,862	95,418 97,520
PHILIPPINES <sup>(5)</sup>	1992	M F	100,000 100,000	94,032 95,055	91,850 92,932	91,212 92,397	90,790 92,064	90,065 91,650	88,957 91,098	87,593 90,433
SINGAPORE <sup>(6)</sup>	1994	M F	100,000 100,000	99,557 99,627	99,412 99,522	99,335 99,448	99,200 99,363	98,947 99,235	98,582 99,089	98,258 98,923
THAILAND <sup>(7)</sup>	1991	M F	100,000 100,000	95,624 95,670	95,106 95,248	94,544 94,798	94,030 94,513	93,385 94,024	92,582 93,316	91,561 92,702

- Source : (1) Economic Planning Unit, Ministry of Finance  
 (2) Calculated by Centre for Health Data, using level of mortality = 18.66  
 (3) *Abridged Life Table*, Ministry of Health & Welfare  
 (4) *Abridged Life Table*, Department of Statistics  
 (5) University of the Philippines Population Institute, projected using 1990 baseline estimates based on registered deaths aged 5 years and over, corrected for underregistration and implied infant and child mortality from the adjusted deaths at ages 5-9 (Latin American Pattern, Model Life Tables for Developing Countries), assumption = moderate mortality decline.  
 (6) *Abridged Life Table*, Ministry of Health  
 (7) National Statistical Office



Age												
35	40	45	50	55	60	65	70	75	80	85	90	95
94,685 97,365	94,020 97,112	92,838 96,339	91,055 95,433	88,072 92,012	82,470 87,510	74,720 79,949	62,180 72,651	50,509 59,577	34,403 45,155	20,647 31,581		
85,699 87,900	83,958 86,286	81,580 84,288	78,344 81,993	73,791 78,508	67,446 73,723	58,826 66,852	47,771 57,186	34,548 44,133	20,732 28,746			
97,767 98,673	97,211 98,361	96,341 97,865	94,875 97,054	92,548 95,868	88,964 94,187	83,233 91,612	75,134 87,690	63,782 81,181	48,202 70,203	29,401 52,691	12,904 31,217	3,402 12,419
94,448 97,064	93,328 96,431	91,742 95,498	89,386 94,027	85,524 91,683	79,788 87,964	70,599 81,621	58,774 71,688	43,830 57,379	28,603 39,640			
86,004 89,620	84,147 88,529	81,775 87,116	78,569 85,189	74,282 82,376	68,623 78,589	61,054 73,023	51,820 65,157	40,521 54,017	27,668 39,264			
97,872 98,689	97,273 98,302	96,326 97,702	94,663 96,713	91,899 94,960	87,126 91,925	79,461 87,279	68,304 80,121	54,642 68,915	38,619 54,380	24,265 38,961		
90,304 91,900	88,711 90,780	86,695 89,406	83,959 87,701	79,901 84,092	74,226 80,437	66,522 75,230	57,251 68,750	45,430 60,596	30,775 47,065			

Fig. 4 Survivors at Specified Ages for Each Sex (1) Brunei, 1991

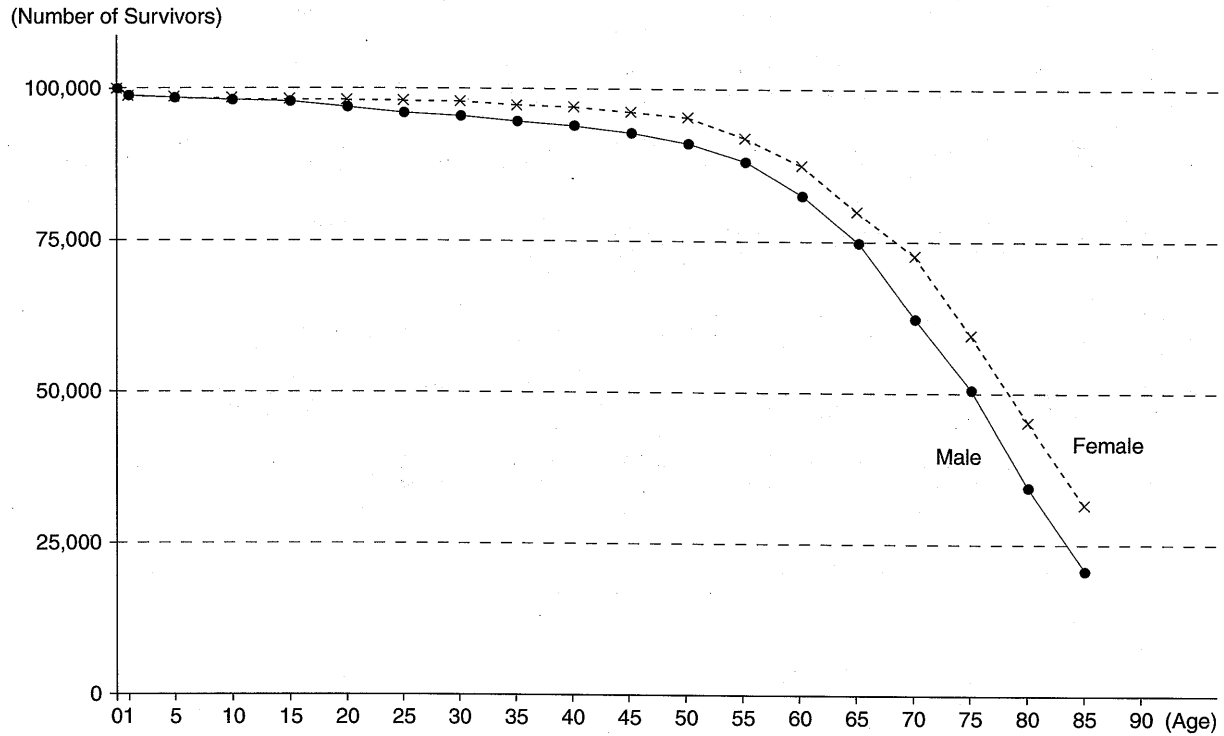


Fig. 4 Survivors at Specified Ages for Each Sex (2) Indonesia, 1995

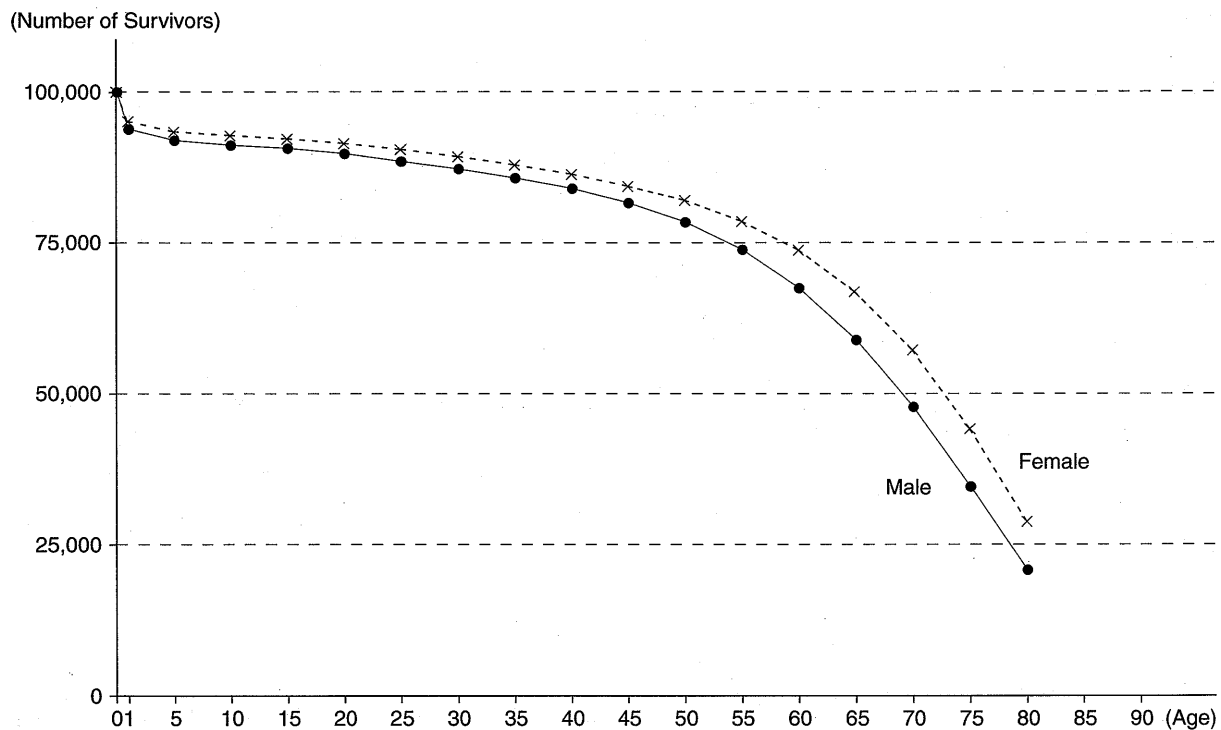


Fig. 4 Survivors at Specified Ages for Each Sex (3) Japan, 1995

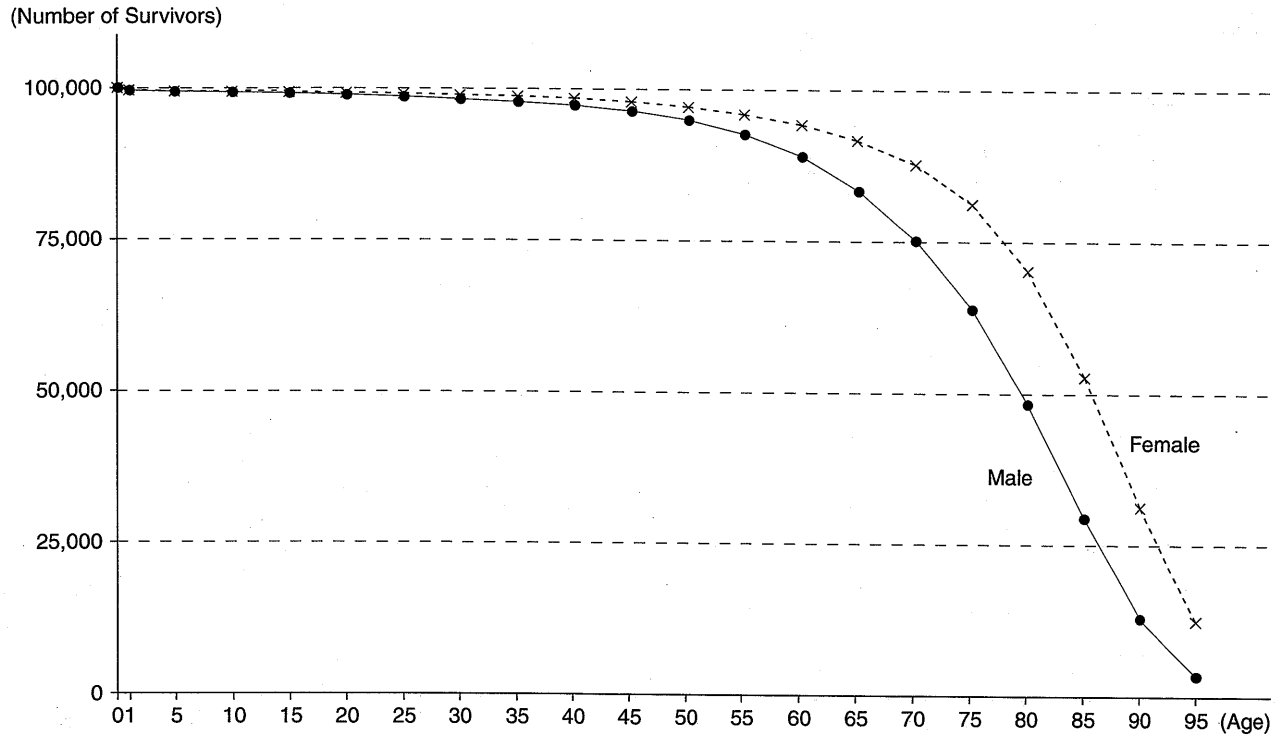


Fig. 4 Survivors at Specified Ages for Each Sex (4) Peninsular Malaysia, 1994

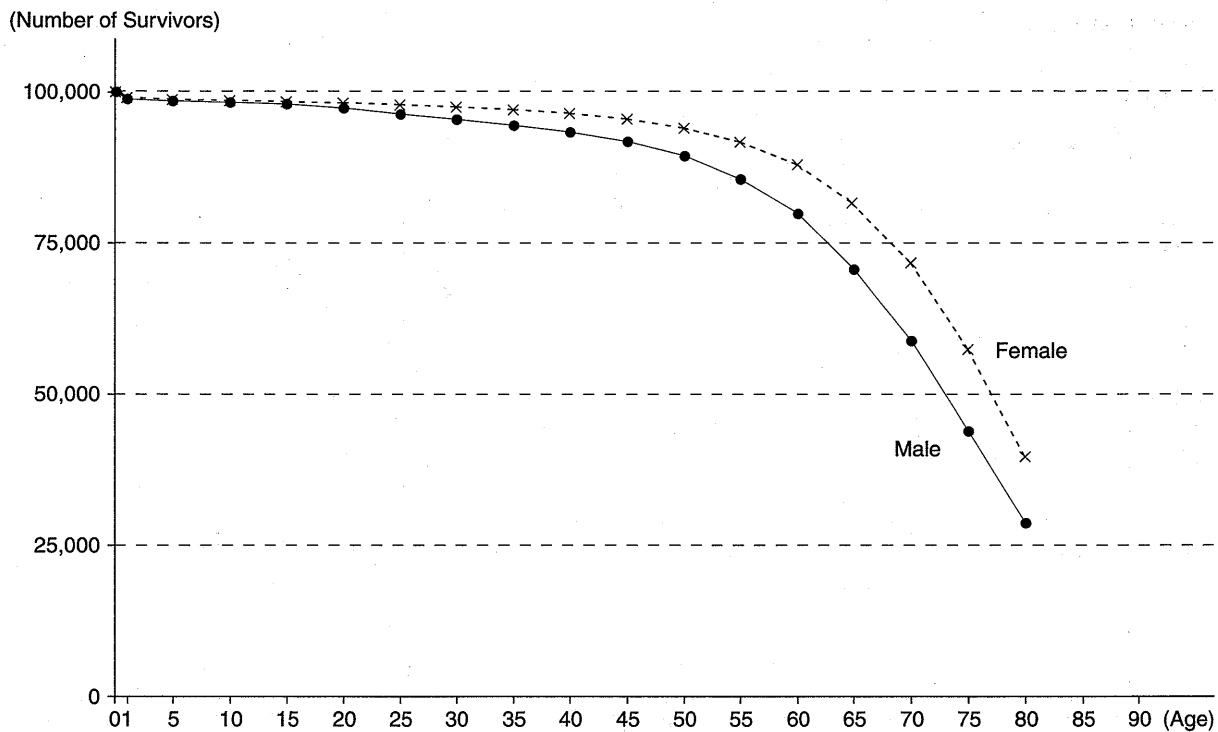


Fig. 4 Survivors at Specified Ages for Each Sex (5) Philippines, 1992

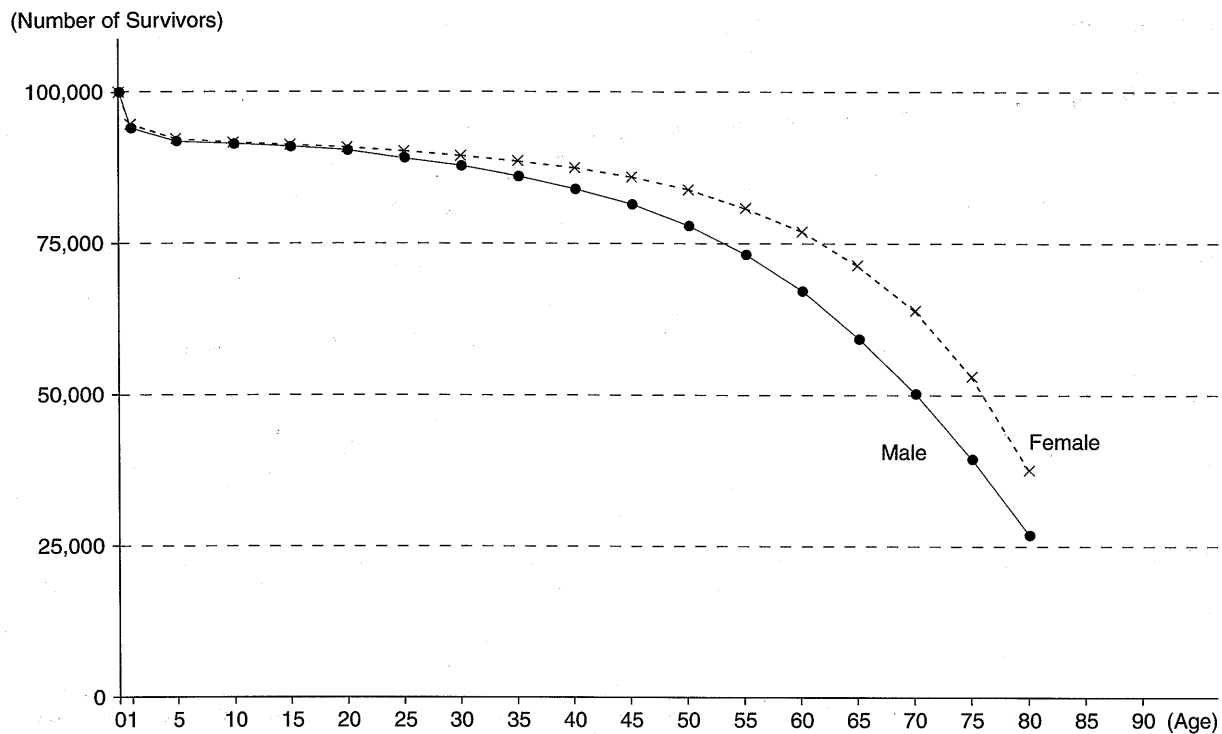


Fig. 4 Survivors at Specified Ages for Each Sex (6) Singapore, 1994

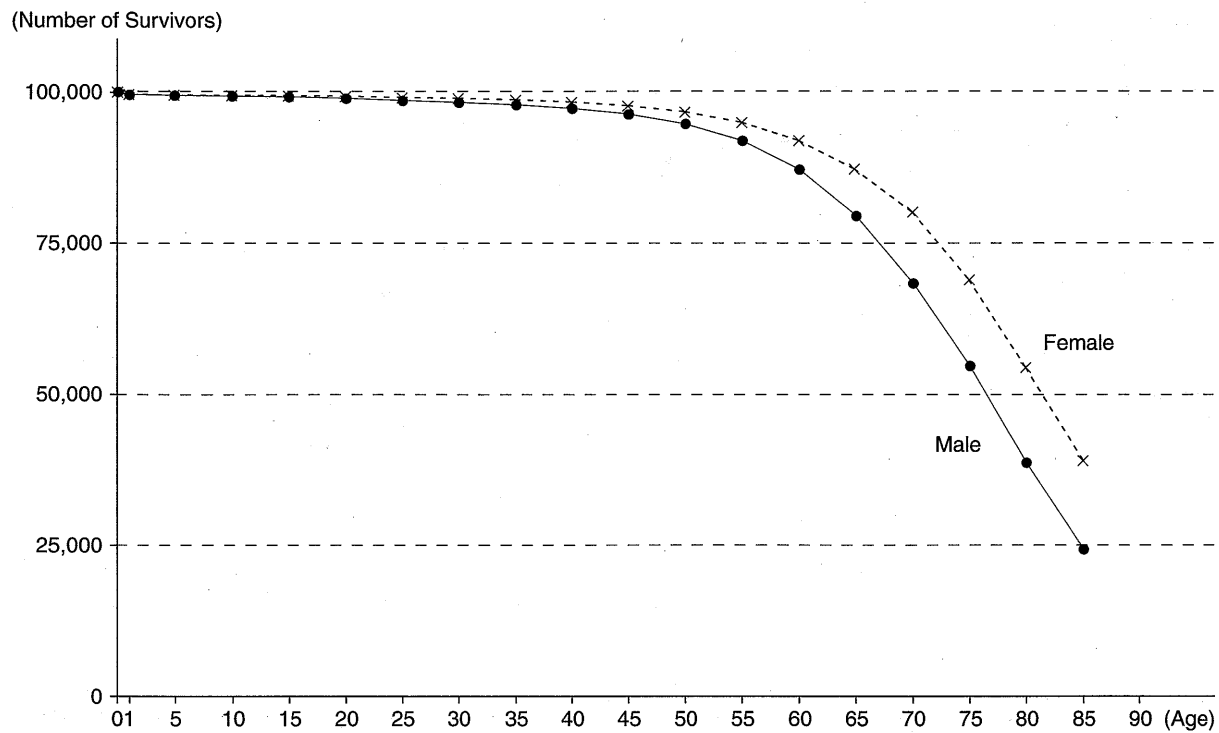
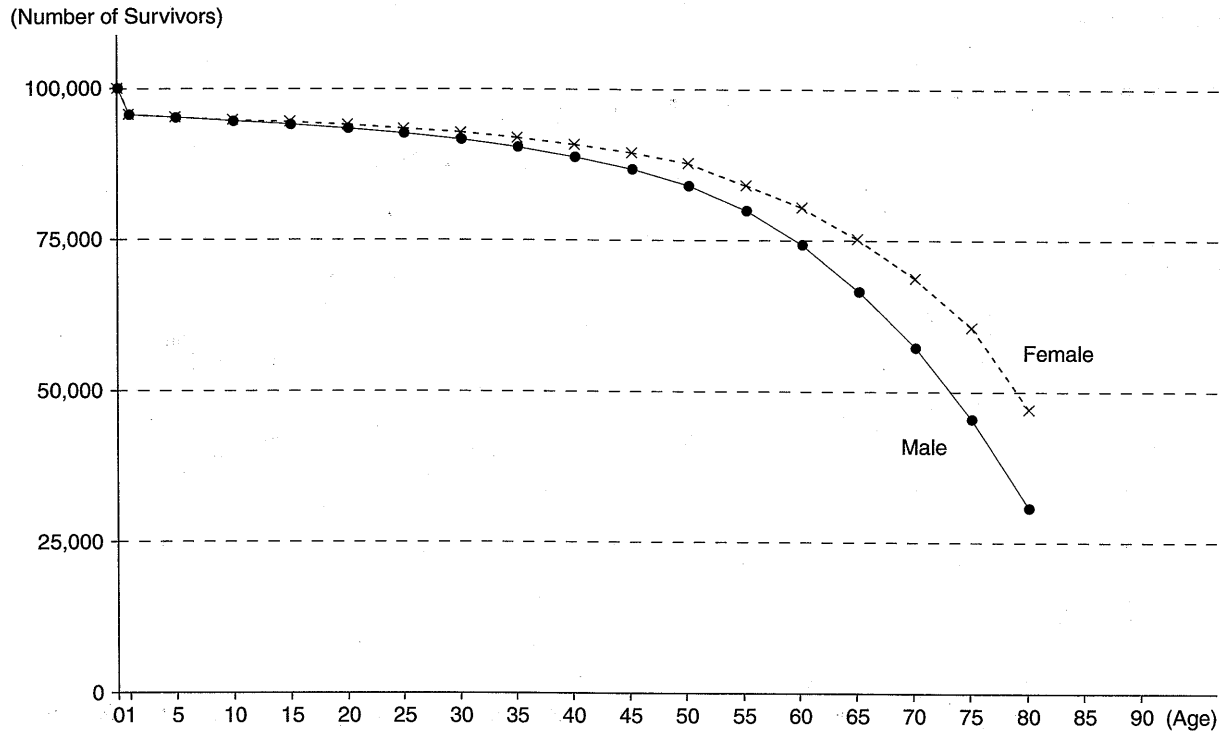


Fig. 4 Survivors at Specified Ages for Each Sex (7) Thailand, 1991





### 3. Causes of Death

## 3 - 1 Ten Leading Causes of Death

	Year	1	2	3	4	
BRUNEI <sup>(1)</sup>	1995	Accidents, Poisoning & Other Violence	Malignant Neoplasms	Heart Diseases	Cerebrovascular Diseases	
INDONESIA <sup>(2)</sup>	1993	Celebrovascular Diseases	Lower Respiratory Diseases	Cardiovascular Diseases	Perinatal Diseases	
JAPAN <sup>(3)</sup>	1995	Malignant Neoplasms	Cerebrovascular Diseases	Heart Diseases	Pneumonia and Bronchitis	
MALAYSIA <sup>(4) a)</sup>	Peninsular Malaysia	1994	Heart Diseases and Diseases of Pulmonary Circulation	Accidents	Certain Condition Originating in the Perinatal Period	Cerebrovascular Diseases
	Sabah	1994	Septicemia	Certain Condition Originating in the Perinatal Period	Heart Diseases and Diseases of Pulmonary Circulation	Malignant Neoplasm
	Sarawak	1994	Heart Diseases and Diseases of Pulmonary Circulation	Septicemia	Cerebrovascular Diseases	Certain Condition Originating in the Perinatal Period
PHILIPPINES <sup>(5)</sup>	1992	Heart Diseases	Pneumonia	Diseases of the Vascular System	Malignant Neoplasms	
SINGAPORE <sup>(6)</sup>	1995	Malignant Neoplasms	Heart Diseases	Pneumonia	Cerebrovascular Diseases	
THAILAND <sup>(7)</sup>	1995	Heart Diseases	Accidents and Poisoning	Malignant Neoplasms, All Forms	Hypertension and Cerebrovascular Diseases	

Source : (1) Birth and Death Registry, Ministry of Health  
 (2) Directorate General of Medical Care, Ministry of Health  
 (3) *Vital Statistics Japan*, Ministry of Health and Welfare  
 (4) Information and Documentation System Unit, Ministry of Health  
 (5) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (6) National Registration Department, Singapore

(7) Health Information Division, Bureau of Health Policy and Plan, Ministry of Public Health

Note : a) Government hospitals only

5	6	7	8	9	10
Diabetes Mellitus	Hypertensive Diseases	Acute Lower Respiratory Infections	Conditions Originating in the Perinatal Period	Bronchitis, Chronic & Unspecified Emphysema & Asthma	Congenital Anomalies
Injury and Poisoning	Neoplasms	Diseases of Nervous Systems	Tuberculosis	Hepatitis	Enteritis
Accidents, Poisoning and Violence	Suicide	Chronic Liver Diseases & Cirrhosis of Liver	Nephritis, Nephrotic Syndrome & Nephrosis	Diabetes Mellitus	Hypertensive Diseases
Malignant Neoplasms	Septicemia	Nephritis, Nephrotic Syndrome & Nephrosis	Diseases of the Digestive Systems	Congenital Anomalies	Symptoms, Signs and Ill-defined Conditions
Cerebrovascular Diseases	Pneumonia	Accidents	Diseases of Nervous Systems	Diseases of Digestive Systems	Symptoms, Signs and Ill-defined Conditions
Malignant Neoplasms	Symptoms, Signs and Ill-defined Conditions	Accidents	Nephritis, Nephrotic Syndrome and Nephrosis	Diseases of the Digestive Systems	Pneumonia
Tuberculosis, All Forms	Accidents	Chronic Obstructive Pulmonary Diseases & Allied Conditions	Other Diseases of Respiratory System	Diarrheal Disease	Septicemia
Accidents	Diabetes Mellitus	Nephritis and Nephrosis	Septicemia	Bronchitis Emphysema and Asthma	Congenital Anomalies
Suicide, Homicide and Other Injury	Diseases of Liver and Pancreas	Pneumonia and Other Diseases of Lung	Nephritis, Nephrotic Syndrome and Nephrosis	Tuberculosis, All Forms	Paralysis, All Types

[Brunei Darussalam]

## 3-2 Trends in the Leading Causes of Death

Year		1983	1985	1988	1989	1990	1991	1992	1993	1994	1995
Order											
No. 1	Cause of Death	Accidents, Poisoning & Violence	Accidents, Poisoning & Violence	Malignant Neoplasms	Heart Diseases			Malignant Neoplasms	Heart Diseases	Malignant Neoplasms	Accidents, Poisoning & Violence
	Death Rate per 100,000 Population	31.7	37.0	43.1	46.6	54.6	49.8	37.3	48.9	42.5	44.6
No. 2	Cause of Death	Malignant Neoplasms	Heart Diseases	Heart Diseases	Malignant Neoplasms			Heart Diseases	Accidents, Poisoning & Violence		Malignant Neoplasms
	Death Rate per 100,000 Population	25.5	32.4	35.6	45.0	36.6	41.0	36.6	46.3	42.2	37.8
No. 3	Cause of Death	Heart Diseases	Malignant Neoplasms	Accidents, Poisoning & Violence					Malignant Neoplasms	Heart Diseases	
	Death Rate per 100,000 Population	24.5	28.8	29.8	24.9	26.1	38.0	30.6	44.9	38.7	37.8
No. 4	Cause of Death	Pneumonia	Cerebro-vascular Diseases	Cerebro-vascular Diseases	Pneumonia	Cerebro-vascular Diseases	Hypertensive Diseases	Cerebrovascular Diseases			
	Death Rate per 100,000 Population	15.4	18.0	17.8	22.1	14.4	15.3	19.0	22.1	23.6	25.0
No. 5	Cause of Death	Cerebro-vascular Diseases	Pneumonia	Diabetes Mellitus	Hypertensive Diseases		Cerebro-vascular Diseases	Pneumonia	Conditions Originating in the Perinatal Period		Diabetes Mellitus
	Death Rate per 100,000 Population	13.0	13.1	12.4	16.5	11.7	13.0	12.3	13.8	9.1	13.9

Source : Ministry of Health

[Indonesia]

## 3-2 Trends in the Leading Causes of Death (Contd.)

Year		1972	1980	1986	1992
Order					
No. 1	Cause of Death	Diarrhea	Lower Respiratory Tract Infection	Diarrhea	Circulatory System Diseases
	Death Rate per 100,000 Population	425.7	146.0	84.5	68.1
No. 2	Cause of Death	Lower Respiratory Tract Infection	Diarrhea	Tuberculosis	Tuberculosis
	Death Rate per 100,000 Population	331.1	137.9	60.2	40.6
No. 3	Cause of Death	Tuberculosis	Cardio-vascular Diseases	Diphtheria, Measles & Cough	Lower Respiratory Tract Infection
	Death Rate per 100,000 Population	165.6	73.0	53.0	37.9
No. 4	Cause of Death	Cardiovascular Disorder & Nervous System	Tuberculosis	Tetanus	Diarrhea
	Death Rate per 100,000 Population	141.9	61.7	42.1	30.8
No. 5	Cause of Death	Tetanus	Tetanus	Malaria	Perinatal Diseases
	Death Rate per 100,000 Population	141.9	47.9	23.9	29.5

Source : Household Health Survey in Indonesia

[Japan]

## 3-2 Trends in the Leading Causes of Death (Contd.)

Year		1899	1920	1930	1940	1950	1960	1970	1980	1985	1990	1993	1994	1995
Order														
No. 1	Cause of Death	Pneumonia and Bronchitis	Pneumonia and Bronchitis	Gastro-enteritis	Tuber-culosis	Tuber-culosis	Cerebro-vascular Diseases	Cerebro-vascular Diseases	Cerebro-vascular Diseases	Malignant Neoplasms	Malignant Neoplasms	Malignant Neoplasms		
	Death Rate per 100,000 Population	206.1	408.6	221.4	212.9	146.4	160.7	175.8	139.5	156.1	177.2	190.4	196.4	211.6
No. 2	Cause of Death	Cerebro-vascular Diseases	Gastro-enteritis	Pneumonia and Bronchitis	Pneumonia and Bronchitis	Cerebro-vascular Diseases	Malignant Neoplasms	Malignant Neoplasms	Malignant Neoplasms	Heart Diseases	Heart Diseases	Heart Diseases		Cerebro-vascular Diseases
	Death Rate per 100,000 Population	170.5	254.2	200.1	185.8	127.1	100.4	116.3	139.1	117.3	134.8	145.6	128.6	117.9
No. 3	Cause of Death	Tuber-culosis	Tuber-culosis	Tuber-culosis	Cerebro-vascular Diseases	Pneumonia and Bronchitis	Heart Diseases	Heart Diseases	Heart Diseases	Cerebro-vascular Diseases	Cerebro-vascular Diseases	Cerebrovascular Diseases		Heart Diseases
	Death Rate per 100,000 Population	155.7	223.7	185.6	177.7	93.2	73.2	86.7	106.2	112.2	99.4	96.0	96.9	112.0
No. 4	Cause of Death	Gastro-enteritis	Influenza	Cerebro-vascular Diseases	Gastro-enteritis	Gastro-enteritis	Pneumonia and Bronchitis	Accidents, Poisoning & Violence	Pneumonia and Bronchitis	Pneumonia and Bronchitis	Pneumonia and Bronchitis	Pneumonia and Bronchitis		
	Death Rate per 100,000 Population	149.7	193.7	162.8	159.2	82.4	58.0	42.5	33.7	42.7	60.7	70.6	72.4	64.1
No. 5	Cause of Death	Senility	Cerebro-vascular Diseases	Senility	Senility	Malignant Neoplasms	Accidents, Poisoning & Violence	Pneumonia and Bronchitis	Accidents, Poisoning & Violence	Accidents, Poisoning & Violence	Accidents, Poisoning & Violence	Accidents, Poisoning & Violence		
	Death Rate per 100,000 Population	127.2	157.6	118.8	124.5	77.4	49.3	34.1	25.1	24.6	26.9	28.0	29.1	36.5

Source : Ministry of Health and Welfare

## [Peninsular Malaysia]

## 3-2 Trends in the Leading Causes of Death (Contd.)

Year		1980	1985	1988	1989	1990	1991	1992	1993	1994
Order										
No. 1	Cause of Death	Heart Diseases	Heart Diseases and Diseases of Pulmonary Circulation	Heart Diseases and Diseases of Pulmonary Circulation						
	Death Rate per 100,000 Population	25.0	27.5	24.4	23.8	23.8	19.2	22.1	20.3	16.9
No. 2	Cause of Death	Diseases of Early Infancy	Certain Condition Originating in the Perinatal Period	Certain Condition Originating in the Perinatal Period						Accidents
	Death Rate per 100,000 Population	22.7	18.9	14.2	13.4	14.1	11.6	13.3	12.6	10.5
No. 3	Cause of Death	Accidents	Accidents	Cerebrovascular Diseases			Accidents		Cerebrovascular Diseases	Certain Condition Originating in the Perinatal Period
	Death Rate per 100,000 Population	20.0	17.8	11.9	12.5	12.7	11.4	13.2	12.2	10.4
No. 4	Cause of Death	Cerebrovascular Diseases	Cerebrovascular Diseases	Accidents			Cerebrovascular Diseases		Accidents	Cerebrovascular Diseases
	Death Rate per 100,000 Population	12.1	12.2	11.9	12.5	12.7	11.4	13.1	11.8	10.4
No. 5	Cause of Death	Malignant Neoplasms	Malignant Neoplasms	Malignant Neoplasms			Septicemia		Malignant Neoplasms	
	Death Rate per 100,000 Population	11.9	11.3	11.8	12.4	12.0	9.7	11.2	11.3	9.5

Source : Annual Report-1980, 1985-1994 of Ministry of Health Malaysia

[Philippines]

## 3-2 Trends in the Leading Causes of Death (Contd.)

Year		1960	1965	1970	1975	1980	1985	1987	1988	1989	1990	1991	1992
Order													
No. 1	Cause of Death	Pneumonia	Pneumonia	Pneumonia	Pneumonia	Pneumonia	Pneumonia	Pneumonia			Heart Diseases		
	Death Rate per 100,000 Population	100.4	83.4	118.2	102.0	93.6	96.7	91.9	80.8	77.0	74.4	72.9	75.2
No. 2	Cause of Death	Tuberculosis (All Forms)	Respiratory Tuberculosis	Tuberculosis (All Forms)	Tuberculosis (All Forms)	Heart Diseases	Heart Diseases	Heart Diseases			Pneumonia		
	Death Rate per 100,000 Population	92.1	83.4	80.1	69.2	60.8	66.3	67.7	69.1	74.6	66.3	57.7	64.5
No. 3	Cause of Death	Gastro-enteritis & Colitis	Gastro-enteritis & Colitis	Diseases of Vascular System	Heart Diseases	Tuberculosis (All Forms)	Tuberculosis (All Forms)	Diseases of Vascular System					
	Death Rate per 100,000 Population	60.5	46.0	35.8	56.6	59.6	57.9	52.1	53.1	56.1	54.2	51.8	54.3
No. 4	Cause of Death	Bronchitis	Bronchitis	Gastro-enteritis & Colitis	Diseases of Vascular System	Diseases of Vascular System	Diseases of Vascular System	Tuberculosis (All Forms)					Malignant Neoplasms
	Death Rate per 100,000 Population	57.2	43.1	35.0	31.8	43.8	49.7	50.0	46.0	43.8	39.1	35.9	36.7
No. 5	Cause of Death	Beri-beri	Beri-beri	Heart Diseases	Malignant Neoplasms	Diarrhea	Malignant Neoplasms	Malignant Neoplasms					Tuberculosis (All Forms)
	Death Rate per 100,000 Population	54.4	32.8	34.0	29.4	33.2	33.2	35.5	36.1	36.5	35.7	35.2	35.8

Source : *Philippine Health Statistics, 1960-1992*, Health Intelligence Service



[Singapore]

## 3 - 2 Trends in the Leading Causes of Death (Contd.)

Year		1950	1955	1960	1970	1980	1985	1989 <sup>a)</sup>	1990 <sup>a)</sup>	1991 <sup>a)</sup>	1992 <sup>a)</sup>	1993 <sup>a)</sup>	1994 <sup>a)</sup>	1995
Order														
No. 1	Cause of Death	Tuberculosis	Pneumonia	Malignant Neoplasms	Malignant Neoplasms	Heart Diseases	Heart Diseases	Heart Diseases		Malignant Neoplasms				
	Death Rate per 100,000 Population	145	79	62	77	111	118	121	117	116	117	117	122	125
No. 2	Cause of Death	Infantile Convulsions	Tuberculosis	Pneumonia	Heart Diseases	Malignant Neoplasms	Malignant Neoplasms	Malignant Neoplasms		Heart Diseases				
	Death Rate per 100,000 Population	133	76	56	76	106	113	117	115	107	115	112	114	114
No. 3	Cause of Death	Pneumonia	Heart Diseases	Heart Diseases	Cerebro-vascular Diseases	Cerebro-vascular Diseases	Cerebro-vascular Diseases	Cerebrovascular Diseases						Pneumonia
	Death Rate per 100,000 Population	131	56	49	50	60	55	56	58	59	57	55	55	64
No. 4	Cause of Death	Gastro-enteritis	Gastro-enteritis	Tuberculosis	Accidents	Pneumonia	Pneumonia	Pneumonia						Cerebro-vascular Diseases
	Death Rate per 100,000 Population	108	54	39	41	47	50	40	41	44	46	52	54	54
No. 5	Cause of Death	Diseases of Early Infancy	Malignant Neoplasms	Gastro-enteritis	Pneumonia	Accidents	Accidents	Accidents						
	Death Rate per 100,000 Population	79	50	33	41	37	42	32	31	31	31	27	28	28

Source : National Registration Department

Note : a) Rates refer to Singapore residents only

[Thailand]

## 3-2 Trends in the Leading Causes of Death (Contd.)

Year		1930	1940	1950	1960	1970	1980	1985	1990	1991	1992	1993	1994	1995
Order														
No. 1	Cause of Death	Malaria	Malaria	Malaria	Gastro-enteritis	Accidents	Accidents	Heart Diseases	Diseases of Pulmonary Circulation and Other Forms of Heart Diseases		Heart Diseases			
	Death Rate per 100,000 Population	342.4	277.8	195.0	38.7	27.2	35.9	36.4	49.6	52.5	56.0	58.5	72.7	78.9
No. 2	Cause of Death	Gastro-enteritis	Gastro-enteritis	T.B. of Respiratory System	T.B. of Respiratory System	T.B. of Respiratory System	Heart Diseases	Accidents and Poisoning	Other Accidents Including Late Effect		Accidents and Poisoning			
	Death Rate per 100,000 Population	159.8	168.8	65.5	34.7	20.8	31.4	28.9	25.3	25.8	48.5	52.7	61.5	61.5
No. 3	Cause of Death	T.B. of Respiratory System	Dysentery	Gastro-enteritis	Pneumonia	Diarrhea	Malignant Neoplasms	Malignant Neoplasms	Malignant Neoplasms of Other and Unspecified Sites		Malignant Neoplasm, All Forms			
	Death Rate per 100,000 Population	79.2	110.0	66.1	32.5	17.6	23.6	27.0	22.0	21.9	43.5	45.0	48.9	50.9
No. 4	Cause of Death	Dysentery	T.B. of Respiratory System	Pneumonia	Malaria	Heart Diseases	T.B. of Respiratory System	T.B. of Respiratory System	Diseases of Digestive System Other than Oral Cavity, Salivary Glands and Jaws		Hypertension and Cerebro-vascular Diseases			
	Death Rate per 100,000 Population	74.3	80.9	39.4	30.2	15.3	14.3	10.3	18.4	18.5	16.9	16.4	15.7	16.1
No. 5	Cause of Death	Pneumonia	Pneumonia	Dysentery	Heart Diseases	Pneumonia	Pneumonia	Pneumonia	Transport Accidents		Suicide, Homicide and Other Injury		Diseases of Liver and Pancreas	Suicide, Homicide and Other Injury
	Death Rate per 100,000 Population	22.0	48.7	32.8	19.0	14.8	10.0	7.4	15.2	18.3	13.3	14.7	13.0	13.3

Source : Ministry of Public Health

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Basic Tabulation List ICD – 9 a) ICD – 10				01 – 07 A00 – B99		010 A00		011 A01		012, 014 A03,A06	
	Year	Sex	All Causes		Infectious and Parasitic Diseases		Cholera		Typhoid and Paratyphoid Fevers		Dysentery (Amebiasis and Bacillary)	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI (1)	1995	T	872	294.6	26	8.8	—		—		—	
		M	499	318.6	14	8.9	—		—		—	
		F	373	267.6	12	8.6	—		—		—	
INDONESIA (2) b)	1995	T	3,071						55			
		M	1,754						27			
		F	1,317						28			
JAPAN (3)	1995	T	922,139	741.9	18,925	15.2	1	0.0	—		4	0.0
		M	501,276	822.9	10,671	17.5	1	0.0	—		4	0.0
		F	420,863	664.0	8,254	13.0	—		—		—	
MALAYSIA (4) b)	1994	T	38,154	194.1	3,107	15.8	23	0.1	16	0.1	5	0.0
		M	23,909	239.7	1,895	19.0	22	0.2	13	0.2	4	0.0
		F	14,245	147.1	1,212	12.5	1	0.0	3	0.0	1	0.0
PHILIPPINES (5)	1993	T	482,546	720.4	44,579	66.5	107	0.2	1,120	1.7	361	0.5
		M	290,236	862.4	27,576	81.9	69	0.2	667	2.0	214	0.6
		F	192,310	577.0	17,003	51.0	38	0.1	453	1.4	147	0.4
SINGAPORE (6) c)	1995	M	15,569 d)	484.2	369	11.4	—		—		—	
		M	8,857	539.6	211	13.0	—		—		—	
		F	6,711	427.7	158	9.8	—		—		—	
THAILAND (7)	1995	T	324,842	547.9	17,703	29.9	—		127	0.2	9	0.0
		M	198,411	669.9	11,887	40.1	—		93	0.3	5	0.0
		F	126,431	426.2	5,816	19.6	—		34	0.1	4	0.0

Source : (1) Birth and Death Registry, Ministry of Health and Economic Planning Unit,  
Ministry of Finance  
(2) Directorate General of Medical Care, Ministry of Health  
Based on 10-day sample of discharges from hospital for each quarter  
(3) *Vital Statistics Japan*, Ministry of Health and Welfare  
(4) *Vital Statistics Peninsular Malaysia, Sabah & Sarawak*, Department of Statistics  
(5) *Philippine Health Statistics*, Department of Health  
(6) *Report on Registration of Birth and Deaths*, National Registration Department  
(7) Ministry of Public Health (official data)

Note : a) ICD - 10: Japan and Thailand  
b) Medically certified deaths only  
c) Singapore residents only  
d) Includes unknown sex

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Year	Sex	013, 015, 016, 019 Rest of A00 - A09		020 - 021 A15, A16		022 - 025, 029 A17 - A19		033 A36		034 A37	
			Other Intestinal Infectious Diseases		Tuberculosis of Respiratory System		Tuberculosis of Other Forms		Diphtheria		Whooping Cough	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI	1995	T	—		9	3.0	—		—		—	
		M	—		4	2.6	—		—		—	
		F	—		5	3.6	—		—		—	
INDONESIA	1995	T	90		134		6				—	
		M	46		84		2				—	
		F	44		50		4				—	
JAPAN	1995	T	1,092	0.9	2,986	2.1	192	0.2	—		5	0.0
		M	471	0.8	2,163	3.6	104	0.2	—		3	0.0
		F	621	1.0	823	1.3	88	0.1	—		2	0.0
MALAYSIA	1994	T	117	0.6	454	2.3	70	0.4	—		—	
		M	68	0.7	328	3.3	42	0.4	—		—	
		F	49	0.5	126	1.3	28	0.3	—		—	
PHILIPPINES	1993	T	5,291	7.9	23,743	35.4	837	1.2	56	0.1	4	0.0
		M	3,061	9.1	15,503	46.1	494	1.5	24	0.1	3	0.0
		F	2,230	6.7	8,240	24.7	343	1.0	32	0.8	1	0.0
SINGAPORE	1995	T	26	0.8	110	3.5	8	0.3	—		—	
		M	16	1.1	85	5.5	5	0.3	—		—	
		F	10	0.6	25	1.6	3	0.2	—		—	
THAILAND	1995	T	1,388	2.3	2,138	3.6	2,006	3.4	6	0.0	—	
		M	864	2.9	1,588	5.4	1,467	5.0	3	0.0	—	
		F	524	1.8	550	1.9	539	1.8	3	0.0	—	

(rate per 100,000 population)

036 A39	037 A33 - A35	038 A40, A41	030 - 032, 035, 039 Rest of A20 - A49	040 A80	042 B05	046 B15 - B19	047 A82
Meningococcal Infection	Tetanus	Septicemia	Other Bacterial Diseases	Acute Poliomyelitis	Measles	Viral Hepatitis	Rabies
Number    Rate	Number    Rate	Number    Rate	Number    Rate	Number    Rate	Number    Rate	Number    Rate	Number    Rate
—	—	13    4.4	—	—	—	—	—
—	—	7    4.5	—	—	—	—	—
—	—	6    4.3	—	—	—	—	—
—	38	50	7	—	1	—	—
—	21	25	4	—	1	—	—
—	17	25	3	—	—	—	—
1    0.0	14    0.0	4,905    3.9	860    0.7	—	7    0.0	6    0.0	—
1    0.0	5    0.0	2,269    3.7	404    0.7	—	3    0.0	4    0.0	—
—	9    0.0	2,636    4.2	456    0.7	—	4    0.0	2    0.0	—
9    0.0	17    0.1	1,974    10.0	142    0.7	—	11    0.1	16    0.1	2    0.0
3    0.0	13    0.1	1,144    11.5	77    0.8	—	4    0.0	11    0.1	2    0.0
6    0.1	4    0.0	830    8.6	65    0.7	—	7    0.1	5    0.1	0    0.0
195    0.3	1,008    1.5	5,209    7.8	134    0.2	34    0.1	2,989    4.5	1,034    1.5	481    0.7
114    0.3	704    2.1	2,839    8.4	72    0.2	17    0.1	1,537    4.6	693    2.1	318    0.9
81    0.2	304    0.9	2,370    7.1	62    0.2	17    0.1	1,452    4.4	341    1.0	163    0.5
1    0.0	—	172    5.5	7    0.2	—	—	19    0.6	—
—	—	69    4.2	6    0.3	—	—	14    0.9	—
1    0.0	—	103    6.7	1    0.1	—	—	5    0.3	—
1    0.0	126    0.2	6,593    11.1	33    0.0	5    0.0	8    0.0	230    0.4	61    0.1
1    0.0	76    0.3	3,736    12.6	21    0.1	3    0.0	6    0.0	157    0.5	33    0.1
—	50    0.2	2,857    9.6	12    0.0	2    0.0	2    0.0	73    0.2	28    0.1

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Year	Sex	279.5 <sup>a)</sup> B20 - B24		065.4 <sup>a)</sup> A91		061 <sup>a)</sup> A90		044, 045 ..		041, 043, 048, 049 Rest of A80 - B34		052 B50 - B54	
			AIDS (HIV)		Dengue Hemorrhagic Fever		Dengue		Other Arthropod-borne Viral Diseases		Other Viral Diseases		Malaria	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI	1995	T							1	0.3			—	
		M							1	0.6			—	
		F							—				—	
INDONESIA	1995	T							1		51		22	
		M							1		26		13	
		F							—		25		9	
JAPAN	1995	T	56 <sup>b)</sup>	0.0	—		—				6,220	5.0	—	
		M	52	0.1	—		—				3,531	5.8	—	
		F	4	0.0	—		—		..		2,689	4.2	—	
MALAYSIA	1993	T	—		—		21	0.1	2	0.0	57	0.3	60	0.3
		M	—		—		10	0.1	1	0.0	37	0.4	39	0.4
		F	—		—		11	0.1	1	0.0	20	0.2	21	0.2
PHILIPPINES	1993	T	36	0.0	531	0.8	—		37	0.0	261	0.4	811	1.2
		M	21	0.0	271	0.8	—		16	0.0	170	0.5	564	1.7
		F	15	0.0	260	0.8	—		21	0.0	91	0.3	247	0.7
SINGAPORE	1995	T	41	1.3	2	0.0	—		—		13	0.3	3	0.0
		M	39	2.4	1	0.0	—		—		8	0.4	2	0.1
		F	2	0.1	1	0.0	—		—		5	0.2	1	0.0
THAILAND	1995	T	2,156	3.6	1	0.0	—				474	0.8	856	1.4
		M	1,893	6.4	1	0.0	—		..		282	1.0	638	2.2
		F	263	0.9	—	0.0	—				192	0.6	218	0.7

Note: a) Four-digit subcategories

b) Excluding hemophiliacs

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(rate per 100,000 population)

06 A50 – A64		Rest of 01 – 07 Rest of A00 – B99		08 – 14 C00 – C97		091 C16		093 C18		094 C19 – C20		095 C22		101 C33 – C34	
Venereal Diseases		Other Infectious and Parasitic Diseases		Malignant Neoplasms		Malignant Neoplasm of Stomach		Malignant Neoplasm of Colon		Malignant Neoplasm of Rectum, Rectosigmoid Junction and Anus		Malignant Neoplasm of Liver Specified as Primary		Malignant Neoplasm of Trachea, Bronchus and Lung	
Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
2	0.7	1	0.3	112	37.8	5	1.7	9	3.0	7	2.4	9	3.0	27	9.1
1	0.6	1	0.6	67	42.8	3	1.9	5	3.2	3	1.9	8	5.1	23	14.7
1	0.7	—	—	45	32.3	2	1.4	4	2.9	4	2.9	1	0.7	4	2.9
		2		154		1		4		9		30		28	
		—		88		—		4		5		22		24	
		2		66		—		—		4		8		4	
28	0.0	2,548	2.0	263,022	211.6	50,076	40.3	20,286	16.3	10,988	8.8	31,707	25.5	45,745	36.8
18	0.0	1,638	2.7	159,623	262.0	32,015	52.6	10,420	17.1	6,892	11.3	22,773	37.4	33,389	54.8
10	0.0	910	1.4	103,399	163.1	18,061	28.5	9,866	15.6	4,096	6.5	8,934	14.1	12,356	19.5
6	0.0	105	0.5	3,921	19.9	256	1.3	164	0.8	107	0.5	343	1.7	830	4.2
4	0.0	73	0.7	2,181	21.9	157	1.6	91	0.9	52	0.5	245	2.5	586	5.9
2	0.0	32	0.3	1,740	18.0	99	1.0	73	0.8	55	0.6	98	1.0	244	2.5
6	0.0	294	0.4	20,295	30.3	1,266	1.9	909	1.4	358	0.5	—		4,103	6.1
5	0.0	200	0.6	10,912	32.4	727	2.2	514	1.5	198	0.6	—		3,001	8.9
1	0.0	94	0.3	9,383	28.2	539	1.6	395	1.2	160	0.5	—		1,102	3.3
1	0.0	7	0.2	3,898	124.6	360	11.7	382	12.5	167	5.6	173	5.4	863	27.9
1	0.1	4	0.2	2,310	147.0	212	13.6	209	13.6	104	6.9	140	8.8	601	38.7
—		3	0.1	1,588	101.8	148	9.8	173	11.3	63	4.2	33	2.0	262	17.0
5	0.0	1,480	2.5	29,891	50.4	477	0.8	938	1.6	—		6,004	10.1	2,772	4.7
3	0.0	1,017	3.4	18,033	60.9	291	1.0	564	2.0	—		4,219	14.2	1,982	6.7
2	0.0	463	1.6	11,858	40.0	186	0.6	374	1.3	—		1,785	6.0	790	2.7

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Year	Sex	113 C50 <sup>a)</sup>		120 C53		122 C54, C55		Rest of 8 – 13 Rest of C00 – C80		141 C91 – C95		140, 149 Rest of C81 – C97	
			Malignant Neoplasm of Female Breast		Malignant Neoplasm of Cervix Uteri		Malignant Neoplasm of Uterus, Other and Unspecified		Malignant Neoplasm of Other Sites		Leukemia		Other Malignant Neoplasm of Lymphatic and Hemopoietic Tissue	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI	1995	T	6	2.0	7	2.4	—		37	12.5	2	0.7	3	1.0
		M	..	..	..	..	..	22	14.0	2	1.3	1	0.6	
		F	6	4.3	7	5.0	—		15	10.8	—		2	1.4
INDONESIA	1995	T	9		8		1		38		16		10	
		M	..	..	..	..	..	20		8		5		
		F	9		8		1		18		8		5	
JAPAN	1995	T	7,819	6.2	2,268	1.8	2,597	2.1	76,057	61.2	6,129	4.9	9,350	7.5
		M	56	0.1	..		..		45,133	74.1	3,645	6.0	5,300	8.7
		F	7,763	12.2	2,268	3.6	2,597	4.1	30,924	48.8	2,484	3.9	4,050	6.4
MALAYSIA	1994	T	260	1.3	165	0.8	21	0.1	1,329	6.8	265	1.3	181	0.9
		M	..	..	..	..	..	800	8.0	137	1.4	113	1.1	
		F	260	2.7	165	1.7	21	0.2	529	5.5	128	1.3	68	0.7
PHILIPPINES	1993	T	2,047	3.1	535	0.8	564	0.8	8,208	12.3	1,771	2.6	534	0.8
		M	..	..	..	..	..	5,218	15.5	929	2.8	325	1.0	
		F	2,047	6.1	535	1.6	564	1.7	2,990	9.0	842	2.5	209	0.6
SINGAPORE	1995	T	238	7.5	96	3.1	30	1.0	1,346	43.2	108	3.1	135	3.8
		M	..	..	..	..	..	889	56.6	65	3.7	90	5.2	
		F	238	15.1	96	6.1	30	2.0	457	29.7	43	2.4	45	2.3
THAILAND	1995	T	478	0.8	214	0.4	553	0.9	17,354	29.3	814	1.4	287	0.5
		M	4	0.0	..		..		10,309	34.8	469	1.6	195	0.7
		F	474	1.6	214	0.7	553	1.9	7,045	23.8	345	1.2	92	0.3

Note: a) Malignant Neoplasm of Breast (both sexes)  
b) Includes D80 - D89: Certain Disorders Involving the Immune Mechanism



(rate per 100,000 population)

15-17 D00-D48		181 E10-E14		180, 182, 183, 189 Rest of E00-E90		19 E40-E64		200 D50-D64		209 D65-D89 <sup>b)</sup>		21 F00-F99		220 G00-G09	
Benign Neoplasm, Carcinoma in Situ, Other and Unspecified Neoplasmas		Diabetes Mellitus		Other Endocrine and Metabolic Diseases		Nutritional Deficiencies		Anemias		Other Diseases of Blood and Blood- forming Organs		Mental Disorders		Meningitis	
Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
—	—	41	13.9	3	1.0	—	—	—	—	—	—	2	0.7	1	0.3
—	—	17	10.9	1	0.6	—	—	—	—	—	—	2	1.3	1	0.6
—	—	24	17.2	2	1.4	—	—	—	—	—	—	—	—	—	—
24	—	82	—	18	—	7	—	32	—	6	—	5	—	47	—
14	—	40	—	11	—	2	—	21	—	3	—	4	—	21	—
10	—	42	—	7	—	5	—	11	—	3	—	1	—	26	—
7,271	5.8	14,225	11.4	3,847	3.1	1,288	1.0	1,652	1.3	2,454	2.0	3,762	3.0	924	0.7
4,026	6.6	7,107	11.7	1,673	2.7	707	1.2	666	1.1	1,166	1.9	1,670	2.7	537	0.9
3,245	5.1	7,118	11.2	2,174	3.4	581	0.9	986	1.6	1,288	2.0	2,092	3.3	387	0.6
184	0.9	720	3.7	318	1.6	26	0.1	109	0.6	116	0.6	120	0.6	197	1.0
96	1.0	330	3.3	231	2.3	19	0.2	54	0.5	65	0.7	109	1.1	124	1.2
88	0.9	390	4.0	87	0.9	7	0.1	55	0.6	51	0.5	11	0.1	73	0.8
183	0.3	4,787	7.1	2,652	4.0	3,263	4.9	2,350	3.5	637	0.9	615	0.7	2,220	3.3
78	0.2	2,236	6.6	1,449	4.3	1,716	5.1	1,198	3.6	343	1.0	413	0.9	1,235	3.7
105	0.3	2,551	7.6	1,203	3.6	1,547	4.6	1,152	3.5	294	0.9	202	0.4	985	2.8
23	0.6	271	8.9	14	0.4	1	0.0	16	0.5	21	0.7	5	0.2	13	0.4
14	0.7	119	7.7	10	0.7	—	—	8	0.5	11	0.7	3	0.2	8	0.5
9	0.6	152	10.0	4	0.2	1	0.1	8	0.4	10	0.7	2	0.1	5	0.2
304	0.5	4,383	7.4	129	0.2	133	0.2	195	0.3	3,930	6.6	907	1.5	1,923	3.2
169	0.6	1,774	6.0	58	0.2	72	0.2	104	0.4	3,172	10.7	804	2.7	1,481	5.0
135	0.5	2,609	8.8	71	0.2	61	0.2	91	0.3	758	2.6	103	0.3	442	1.5

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Year	Sex	221-225, 229, 23,24 G10-H95	25-30 100-199		25 100-109		26 110-115		270 121-123		279 120, 124, 125	
			Other Diseases of Nervous System and Sense Organs	Diseases of Circulatory System		Rheumatic Fever and Rheumatic Heart Diseases		Hypertensive Disease		Acute Myocardial Infarction		Other Ischemic Heart Diseases	
			Number Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI	1995	T	4 1.1	218	73.6	4 1.4		27	9.1	44	14.9	21	7.1
		M	3 1.9	137	87.5	4 2.6		12	7.7	34	21.7	17	10.9
		F	1 0.7	81	58.1	—		15	10.8	10	7.2	4	2.9
INDONESIA	1995	T	99	652		7		25		45		38	
		M	51	356		2		8		31		20	
		F	48	296		5		17		14		18	
JAPAN	1995	T	7,722 6.2	304,824	245.2	2,811 2.3		8,222 6.6		52,533	42.3	23,040	18.5
		M	3,999 6.6	148,515	243.8	875 1.4		3,027 5.0		28,401	46.6	11,659	19.1
		F	3,723 5.9	156,309	246.6	1,936 3.1		5,195 8.2		24,132	38.1	11,381	18.0
MALAYSIA	1994	T	428 2.2	10,863	55.3	129 0.7		275 1.4		3,159	16.1	898	4.6
		M	239 2.4	6,635	66.5	39 0.4		158 1.6		2,198	22.0	548	5.5
		F	189 2.0	4,228	43.7	90 0.9		117 1.2		961	9.9	350	3.6
PHILIPPINES	1993	T	3,001 4.1	85,940	128.3	2,321 3.5		19,280 28.9		15,885	23.7	6,452	9.6
		M	1,762 4.7	49,156	146.1	1,070 3.2		11,098 33.0		10,323	30.7	3,225	9.6
		F	1,239 3.4	36,784	110.4	1,251 3.7		8,182 24.5		5,562	16.9	3,227	9.7
SINGAPORE	1995	T	76 2.3	5,560	174.2	42 1.2		365 11.8		1,530	47.2	1,334	43.1
		M	39 2.3	2,969	181.8	18 0.9		189 12.4		931	56.0	738	47.3
		F	37 2.3	2,591	166.5	24 1.6		176 11.3		599	38.4	596	38.8
THAILAND	1995	T	6,177 10.4	56,318	95.0	357 0.6		3,085 5.2		584 1.0		988 1.7	
		M	3,966 13.4	35,191	118.8	176 0.6		1,768 6.0		360 1.2		624 2.1	
		F	2,211 7.5	21,127	71.2	181 0.6		1,317 4.4		224 0.8		364 1.2	

(rate per 100,000 population)

28 I 30 - I 52		29 I 60 - I 69		300 I 70		301 - 305, 309 Rest of I 00 - I 99		310 - 312 J00 - J06		320 J20 - J21		321 J12 - J18		322 J10 - J11	
Other Heart Diseases		Cerebrovascular Disease		Atherosclerosis		Other Disease of Circulatory System		Acute Upper Respiratory Infection		Acute Bronchitis and Bronchiolitis		Pneumonia		Influenza	
Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
44	14.9	74	25.0	—	—	4	1.4	—	—	1	0.3	26	8.8	—	—
32	20.4	34	21.7	—	—	4	2.6	—	—	—	—	12	7.7	—	—
12	8.6	40	28.7	—	—	—	—	—	—	1	0.7	14	10.0	—	—
176	—	358	—	—	—	3	—	7	—	8	—	193	—	—	—
96	—	196	—	—	—	3	—	2	—	2	—	105	—	—	—
80	—	162	—	—	—	—	—	5	—	6	—	88	—	—	—
60,322	48.5	146,552	117.9	1,372	1.1	9,972	8.0	891	0.7	2,135	1.7	79,629	64.1	1,244	1.0
28,543	46.9	69,587	114.2	662	1.1	5,761	9.5	395	0.6	960	1.6	42,419	69.6	602	1.0
31,779	50.1	76,965	121.4	710	1.1	4,211	6.6	496	0.8	1,175	1.9	37,210	58.7	642	1.0
2,991	15.2	3,128	15.9	5	0.0	278	1.4	1	0.0	8	0.0	1,242	6.3	—	—
1,723	17.3	1,762	17.7	4	0.0	203	2.0	1	0.0	3	0.0	785	7.9	—	—
1,268	13.1	1,366	14.1	1	0.0	75	0.8	—	—	5	0.1	457	4.7	—	—
19,087	28.5	19,112	20.5	2,628	3.9	1,175	1.8	121	0.2	253	0.4	35,582	53.1	455	0.7
10,396	30.9	11,162	33.2	1,206	3.6	676	2.0	69	0.2	130	0.4	19,102	56.8	235	0.7
8,691	26.1	7,950	23.8	1,422	4.3	499	1.5	52	0.2	123	0.4	16,480	49.4	220	0.7
471	13.2	1,701	54.2	6	0.1	111	3.3	2	0.1	2	0.1	2,028	64.1	2	0.0
247	12.4	770	48.5	3	0.2	73	4.3	2	0.1	1	0.1	1,007	62.7	—	—
224	14.1	931	60.0	3	0.1	38	2.4	—	—	1	0.1	1,021	65.4	2	0.1
39,125	66.0	6,463	10.9	2	0.0	5,714	9.6	107	0.2	26	0.0	6,507	11.0	84	0.1
24,373	82.3	4,097	13.8	1	0.0	3,792	12.8	70	0.2	20	0.1	4,437	15.0	50	0.2
14,752	49.7	2,366	8.0	1	0.0	1,922	6.5	37	0.1	6	0.0	2,070	7.0	34	0.1

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Year	Sex	323 J40 - J46		313 - 315, 319, 324 - 327, 329 Rest of J00 - J99		341 K25 - K27		347 K73 - K74		33, 340, 342 - 346, 348, 349 Rest of K00 - K93		350 N00 - N19	
			Bronchitis, Chronic and Unspecified, Emphysema and Asthma		Other Diseases of Respiratory System		Ulcer of Stomach and Duodenum		Chronic Liver Disease and Cirrhosis		Other Diseases of Digestive System		Nephritis, Nephrotic Syndrome and Nephrosis	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI	1995	T	20	6.8	37	12.5	3	1.0	1	0.3	18	6.1	18	6.1
		M	15	9.6	17	10.9	2	1.3	1	0.6	8	5.1	11	7.0
		F	5	3.6	20	14.3	1	0.7	—	—	10	7.2	7	5.0
INDONESIA	1995	T	48		94		5		81		194		114	
		M	30		73		2		59		123		67	
		F	18		21		3		22		71		47	
JAPAN	1995	T	22,690	18.3	20,072	16.1	4,314	3.5	11,952	9.6	22,460	18.1	19,375	15.6
		M	14,649	24.0	12,170	20.0	2,274	3.7	7,847	12.9	11,887	19.5	9,054	14.9
		F	8,041	12.7	7,902	12.5	2,040	3.2	4,105	6.5	10,573	16.7	10,321	16.3
MALAYSIA	1994	T	15	0.1	2,323	11.8	142	0.7	344	1.7	986	5.0	1,017	5.2
		M	7	0.1	1,592	16.0	108	1.1	258	2.6	655	6.6	603	6.0
		F	8	0.1	733	7.6	34	0.4	86	0.9	331	3.4	414	4.3
PHILIPPINES	1993	T	11,154	16.6	6,955	10.4	5,349	8.0	3,332	5.0	6,369	9.5	6,261	9.3
		M	7,155	21.3	3,518	10.4	3,743	11.1	2,665	7.9	4,568	13.6	3,658	10.9
		F	3,999	12.0	3,437	10.3	1,606	4.8	667	2.0	1,801	5.4	2,603	7.8
SINGAPORE	1995	T	163	5.0	715	22.9	94	3.1	154	4.7	161	4.9	194	6.2
		M	95	5.7	524	33.4	71	4.7	108	6.5	88	5.3	110	6.9
		F	68	4.2	191	12.3	23	1.5	46	2.8	73	4.5	84	5.5
THAILAND	1995	T	2,370	4.0	13,536	22.8	542	0.9	2,832	4.8	7,118	12.0	6,314	10.7
		M	1,668	5.6	8,984	30.3	383	1.3	2,064	7.0	5,009	16.9	3,497	11.8
		F	702	2.4	4,552	15.3	159	0.5	768	2.6	2,109	7.1	2,817	9.5

(rate per 100,000 population)

351-353, 359, 36, 37 N20-N99		38 O00-O08		39 O10-O75, O81-O97		40, 41 O80, O98-O99		42 L00-L		43 M00-M99		44 Q00-Q99		45 P00-P96	
Other Diseases of Genito-urinary System		Abortion		Other Direct Obstetric Causes		Indirect Obstetric Causes		Diseases of Skin and Subcutaneous Tissue		Diseases of Musculo- skeletal System and Connective Tissue		Congenital Anomalies		Certain Conditions Originating in the Perinatal Period	
Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
—		—		—		—		1	0.3	—		19	6.4	23	7.8
—		..		..		..		—		—		12	7.7	13	8.3
—		—		—		—		1	0.7	—		7	5.0	10	7.2
26		4		39		6		10		6		24		277	
17		..		..		..		4		2		12		163	
9		4		39		6		6		4		12		114	
2,006	1.6	2	0.0	88	0.1	18	0.0	866	0.7	4,070	3.3	3,285	2.6	1,547	1.2
900	1.5	..		..		..		285	0.5	1,278	2.1	1,687	2.8	902	1.5
1,106	1.7	2	0.0	88	0.1	18	0.0	581	0.9	2,792	4.4	1,598	2.5	645	1.0
56	0.3	7	0.0	72	0.4	1	0.0	104	0.5	78	0.4	1,058	5.4	2,580	13.1
34	0.3	..		..		..		44	0.4	17	0.2	571	5.7	1,483	14.9
22	0.2	7	0.1	72	0.7	1	0.0	60	0.6	61	0.6	487	5.0	1,097	11.3
983	1.5	179	0.3	901	1.3	—		761	1.1	698	1.0	3,249	4.8	14,042	21.0
499	1.5	..		..		..		386	1.1	411	1.2	1,854	5.5	8,277	24.6
484	1.5	179	0.5	901	2.7	—		375	1.1	287	0.9	1,395	2.1	5,765	17.3
289	9.4	—		2	0.1	—		30	0.9	45	1.2	157	4.9	51 <sup>a)</sup>	1.4
104	6.9	..		..		..		11	0.7	7	0.4	90	5.6	31	1.6
185	12.1	—		2	0.1	—		19	1.1	38	2.1	67	4.1	19	1.2
371	0.6	11	0.0	92	0.2	—		581	1.0	271	0.5	2,091	3.5	1,448	2.4
193	0.7	..		..		..		460	1.6	165	0.6	1,144	3.9	856	2.9
178	0.5	11	0.0	92	0.3	—		121	0.4	106	0.4	947	3.2	592	2.0

Note : a) Includes unknown sex

## 3-3 Deaths and Death Rates by Causes (ICD-9/ICD-10)

	Year	Sex	465 R54		460-464, 466, 467, 469 Rest of R00-R99		E47-E56 V01-Y98		E47 V01-V99		E48 X-X29, X40-X49		E50 W00-W19	
			Senility without Mention of Psychosis		Signs, Symptoms and Other Ill- defined Conditions		Accidents and Adverse Effects		Transport Accidents		Accidental Poisoning		Accidental Falls	
			Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI	1995	T	112	37.8	54	18.2	132	44.6	57	19.3	3	1.0	7	2.4
		M	48	30.7	26	16.6	92	58.7	40	25.5	2	1.3	6	3.8
		F	64	45.9	28	20.1	40	28.7	17	12.2	1	0.7	1	0.7
INDONESIA	1995	T			146		206		97		4		18	
		M			72		156		71		1		16	
		F			74		50		26		3		2	
JAPAN	1995	T	21,493	17.3	4,227	3.4	69,877	56.2	15,147	12.2	613	0.5	5,911	4.8
		M	6,684	11.0	2,536	4.2	44,387	72.9	10,772	17.7	427	0.7	3,663	6.0
		F	14,809	23.4	1,691	2.7	25,490	40.2	4,375	6.9	186	0.3	2,248	3.5
MALAYSIA	1994	T	1,238	6.3	943	4.8	5,830	29.7	2,080	10.6	160	0.8	592	3.0
		M	496	5.0	612	6.1	4,662	46.7	1,743	17.5	109	1.1	483	4.8
		F	742	7.7	331	3.4	1,168	12.1	337	3.5	51	0.5	109	1.1
PHILIPPINES	1993	T	9,284	13.9	182,811	272.9	23,285	34.8	37	0.1	151	0.2	740	1.1
		M	3,982	11.8	112,534	334.4	19,376	57.6	27	0.1	96	0.3	548	1.6
		F	5,302	15.9	70,277	210.9	3,909	11.7	10	0.0	55	0.2	192	0.6
SINGAPORE	1995	T	4	0.1	55	1.5	1,113	28.0	242	6.1	8	0.2	113	3.0
		M	—		33	1.5	834	40.1	199	9.8	6	0.2	86	4.3
		F	4	0.3	22	1.5	279	15.8	43	2.4	2	0.1	27	1.6
THAILAND	1995	T	80,957	136.6	33,296	56.2	44,295	74.7	16,782	28.3	397	0.7	311	0.5
		M	36,528	123.3	20,569	69.5	35,603	120.2	13,930	47.0	252	0.9	241	0.8
		F	44,429	149.8	12,727	42.9	8,692	29.3	2,852	9.6	145	0.5	70	0.2

(rate per 100,000 population)

E51 X00 – X09		E521 W65 – W79		E49, E520, E522, E529 Rest of W00 – X59		E53 Y40 – Y84		E54 X60 – X84		E55 X85 – Y09		E56 Y10 – Y36, Y85 – Y98	
Accidents Caused by Fire and Flames		Accidental Drowning and Submersion		All Other Accidents Including Late Effects		Drugs, Medicaments Causing Adverse Effects in Therapeutic Use		Suicide and Self-inflicted Injury		Homicide & Injury Inflicted by Other Persons		Other Violence	
Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
9	3.0	21	7.1	15	5.1	—	—	—	—	6	2.0	14	4.7
4	2.6	15	9.6	9	5.7	—	—	—	—	4	2.6	12	7.7
5	3.6	6	4.3	6	4.3	—	—	—	—	2	1.4	2	1.4
11				68				2		3		2	
6				55				2		2		2	
5				13				—		1		—	
1,383	1.1	10,915	8.8	11,354	9.1	149	0.1	21,420	17.2	727	0.6	2,258	1.8
849	1.4	6,391	10.5	6,127	10.1	81	0.1	14,231	23.4	413	0.7	1,433	2.4
534	0.8	4,524	7.1	5,227	8.2	68	0.1	7,189	11.3	314	0.5	825	1.3
179	0.9	80	0.4	354	1.8	4	0.0	36	0.2	47	0.2	8	0.0
103	1.0	56	0.6	302	3.0	1	0.0	26	0.3	38	0.4	6	0.1
76	0.8	24	0.2	52	0.5	3	0.0	10	0.1	9	0.1	2	0.0
15	0.0	2,237	3.3	4,177	6.2	888	1.3	851	1.3	7,726	11.5	6,463	9.6
7	0.0	1,476	4.4	3,173	9.2	730	2.2	509	1.5	7,181	21.3	5,629	10.7
8	0.0	761	2.3	1,004	3.0	158	0.5	342	1.0	545	1.6	834	2.5
4	0.1	12	0.2	73	1.2	1	0.0	401	12.2	53	0.9	206	4.0
2	0.1	10	0.4	64	1.9	1	0.1	245	15.0	38	1.2	183	7.0
2	0.1	2	0.1	9	0.5	—	—	156	9.3	15	0.6	23	1.0
193	0.3	4,057	6.8	14,366	24.2	4	0.0	4,296	7.2	3,564	6.0	325	0.5
128	0.4	2,978	1.1	11,679	39.4	2	0.0	3,143	10.6	3,005	10.1	245	0.8
65	0.2	1,079	3.6	2,687	9.1	2	0.0	1,153	3.9	559	1.9	80	0.3

## **4. Child and Maternal Health**



## 4 - A A Brief Description of Trends in Infant Mortality and Maternal Mortality

**BRUNEI**

The infant mortality rate has generally been declining despite some annual ups and downs, and it stands at 7.9 per 1,000 live births. The level of infant mortality in Brunei is nowadays comparable to the levels of the advanced countries. There was no maternal death for the whole of 1995. Maternal mortality is a rare occurrence in Brunei Darussalam.

Year	Infant mortality <sup>a)</sup>	
	Rate	Index
1971	38.4	100
1981	15.8	41
1991	11.1	29
1995	7.9	21

a) per 1,000 live-births

**INDONESIA***Infant Mortality Rate:*

Since the late 1960s, the estimated infant mortality rate in Indonesia declined from 145 to 55 deaths per 1,000 live births in 1995. The 1992 Household Health Survey found that infant mortality was mainly caused by acute upper respiratory tract infection (36%), diarrheal disease (11%), and neonatal tetanus (9.8%). Income and nutritional gains, along with the fertility decline probably also account for much of the decline of the rate. The 1994 Demographic and Health Survey found that infant mortality was lowest for children of mothers who received both antenatal care and assistance at delivery from medical professionals, and highest for children whose mothers had neither antenatal care nor medical assistance at delivery (39 and 107 deaths per 1,000 live-births, respectively).

*Child (under five years) Mortality Rate:*

For children under five years, the mortality rate declined from 111 deaths per 1,000 live births in 1986 to 81 in 1995. The 1992 Household Health Survey found that child mortality was mainly caused by diarrhea (23%) and acute upper respiratory tract infection (13%).

*Maternal Mortality Rate:*

The 1994 Demographic and Health Survey estimated the maternal mortality rate to be 390 deaths per 100,000 live births for the period 1989-94. However, there are no accurate measures of the national level of maternal mortality, because 75% of all deliveries take place at home and the related deaths are not registered. The 1992 Household Health Survey findings suggest a decline from 420 to the current estimate of 390 deaths per 100,000 live births. The relatively high rate is believed to be attributed to the low frequency of deliveries attended by health professionals (35% in the rural and 65% in the urban areas). Next to that, the high percentage of pregnant women with anemia (about 55%) may aggravate the problem of maternal deaths.

**JAPAN***Infant Mortality Rate:*

The infant mortality rate has been at the lowest level in the world. In 1995, the number of infant deaths was 5,054 and the infant mortality rate was 4.3 (per 1,000 live births).

*Maternal Mortality Rate:*

The maternal mortality rate has been gradually decreasing. In 1994, the number of maternal deaths was 76 and the maternal mortality rate was 5.9 (per 100,000 live births).

## **MALAYSIA**

The health status of Malaysians continues to improve steadily, with the infant mortality rate of 10.4 per 1,000 and the maternal mortality rate of 0.2 per 1,000 in 1995.

## **PHILIPPINES**

The infant mortality rate showed an improvement, as it went down from 56.7 in 1990 to 48.9 per 1,000 live births in 1995. The maternal mortality rate likewise declined from 209 to 179.7 per 100,000 live births for the same period.

## **SINGAPORE**

### *Infant Mortality:*

Singapore's infant mortality rate declined further from 4.3 per 1,000 live births in 1994 to reach a new low of 4.0 per 1,000 live births in 1995. This is amongst the lowest in the world today.

### *Maternal Mortality:*

In 1995, only two maternal deaths were registered.

## **THAILAND**

The infant mortality rate has continuously declined since 1987 due to the increased health care coverage and utilization, the improved socioeconomic status and the Extended Programme for Immunization. The rate was 7.2 per 1,000 live-births in 1995.

## 4 - 1 Late Fetal, Infant, Neonatal, Post-neonatal and Perinatal Mortality (per 1,000 live-births)

	Year	Late Fetal Mortality		Infant Mortality		Neonatal Mortality		Post-neonatal Mortality		Perinatal Mortality	
		Number	Rate	Number	Rate	Number	Rate	Number	Rate	Number	Rate
BRUNEI <sup>(1)</sup>	1995	60	8.2	58	7.9	39	5.3	19	2.6	91	12.4
INDONESIA <sup>(2)</sup>	1995				a) 55.0						
JAPAN <sup>(3)</sup>	1995	6,580	5.5	5,054	4.3	2,615	2.2	2,439	2.1	8,412	7.0
MALAYSIA <sup>(4)</sup>	1994	2,809	5.2	5,833	11.0	3,837	7.2	1,996	3.7	5,846	10.9
PHILIPPINES <sup>(5)</sup>	1992	3,692	2.2	36,814	21.9	17,091	10.1	19,723	11.7	17,062	10.1
SINGAPORE <sup>(6)</sup>	1995	140	2.9	195	4.0	102	2.1	93	1.9	212	4.3
THAILAND <sup>(7) b)</sup>	1995	327	0.3	6,920	7.2	3,185	3.3	3,735	3.9	2,437	2.5

Source : (1) Birth & Death Registry and Economic Planning Unit  
 (2) Central Bureau of Statistics (Projection)  
 (3) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (4) *Vital Statistics Malaysia*, Department of Statistics  
 (5) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (6) *Report on Registration of Births and Deaths*, National Registration Department  
 (7) Health Statistics Division, Ministry of Public Health

Note : a) Calculated by Central Bureau of Statistics based on National Census 1990  
 b) While the vital registration system of the whole country was revised for improvement in 1984, the registration of stillbirth has no longer been emphasized since then. The stillbirth data are therefore incomplete and not valid enough to be presented in the vital statistics.

## 4-2 Infant Mortality by Age and Sex

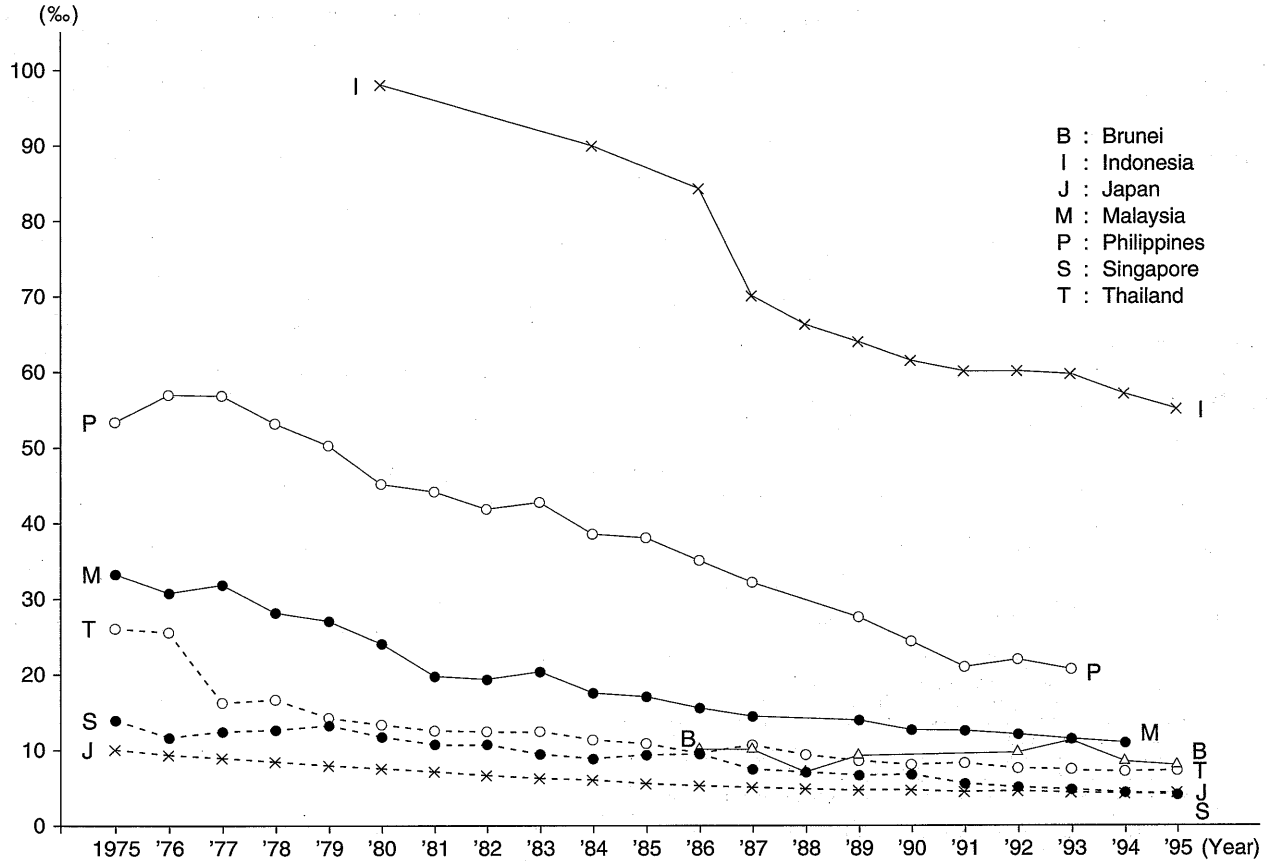
	Year	Sex	Number						Rate (per 1,000 live-births)					
			Total	- 1 day	2-6	7-27	28-365	Unknown	Total	- 1 day	2-6	7-27	28-365	Unknown
BRUNEI <sup>(1)</sup>	1995	T	58	21	10	8	19	—	7.9	2.9	1.4	1.1	2.6	—
		M	32	9	6	6	11	—	8.4	2.4	1.6	1.6	2.9	—
		F	26	12	4	2	8	—	7.3	3.4	1.1	0.6	2.3	—
INDONESIA <sup>(2)</sup>	1995	T							a) 55					
									61					
									49					
JAPAN <sup>(3)</sup>	1995	T	5,054	1,005	827	783	2,439	—	4.3	0.8	0.7	0.7	2.1	—
		M	2,808	551	474	442	1,341	—	4.6	0.9	0.7	0.7	2.2	—
		F	2,246	454	353	341	1,098	—	3.9	0.8	0.6	0.6	1.9	—
MALAYSIA <sup>(4)</sup>	1994	T	5,833	3,037		800	1,996	—	10.9	5.7		1.5	3.7	—
		M	3,263	1,732		463	1,068	—	11.8	6.3		1.7	3.9	—
		F	2,570	1,305		337	928	—	10.0	5.1		13.	3.6	—
PHILIPPINES <sup>(5)</sup>	1993	T	34,673	13,269		3,599	17,805	—	20.6					
SINGAPORE <sup>(6)</sup>	1995	T	b) 195	b) 45	27	30	93	—	4.0	0.9	0.6	0.6	1.9	—
		M	116	22	19	23	52	—	4.6	0.9	0.8	0.9	2.1	—
		F	78	22	8	7	41	—	3.3	0.9	0.3	0.3	1.8	—
THAILAND <sup>(7)</sup>	1995	T	6,920	1,002	1,108	1,075	3,305	430	7.2	1.0	1.1	1.1	3.4	0.4
		M	3,838	550	680	605	1,783	220	7.8	1.1	1.4	1.2	3.6	0.4
		F	3,082	452	428	470	1,522	210	6.6	1.0	0.9	1.0	3.2	0.4

Source: (1) Birth & Death Registry and Economic Planning Unit  
 (2) Central Bureau of Statistics  
 (3) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (4) *Vital Statistics Peninsular Malaysia, Sabah and Sarawak*, Department of Statistics  
 (5) Health Intelligence Service, Department of Health

(6) *Report on Registration of Births and Deaths*, National Registration Department  
 (7) Health Statistics Division, Ministry of Public Health

Note: a) Calculated by Central Bureau of Statistics based on National Census 1990  
 b) Includes unknown sex

Fig. 5 Trends in Infant Mortality Rates (per 1,000 live-births)



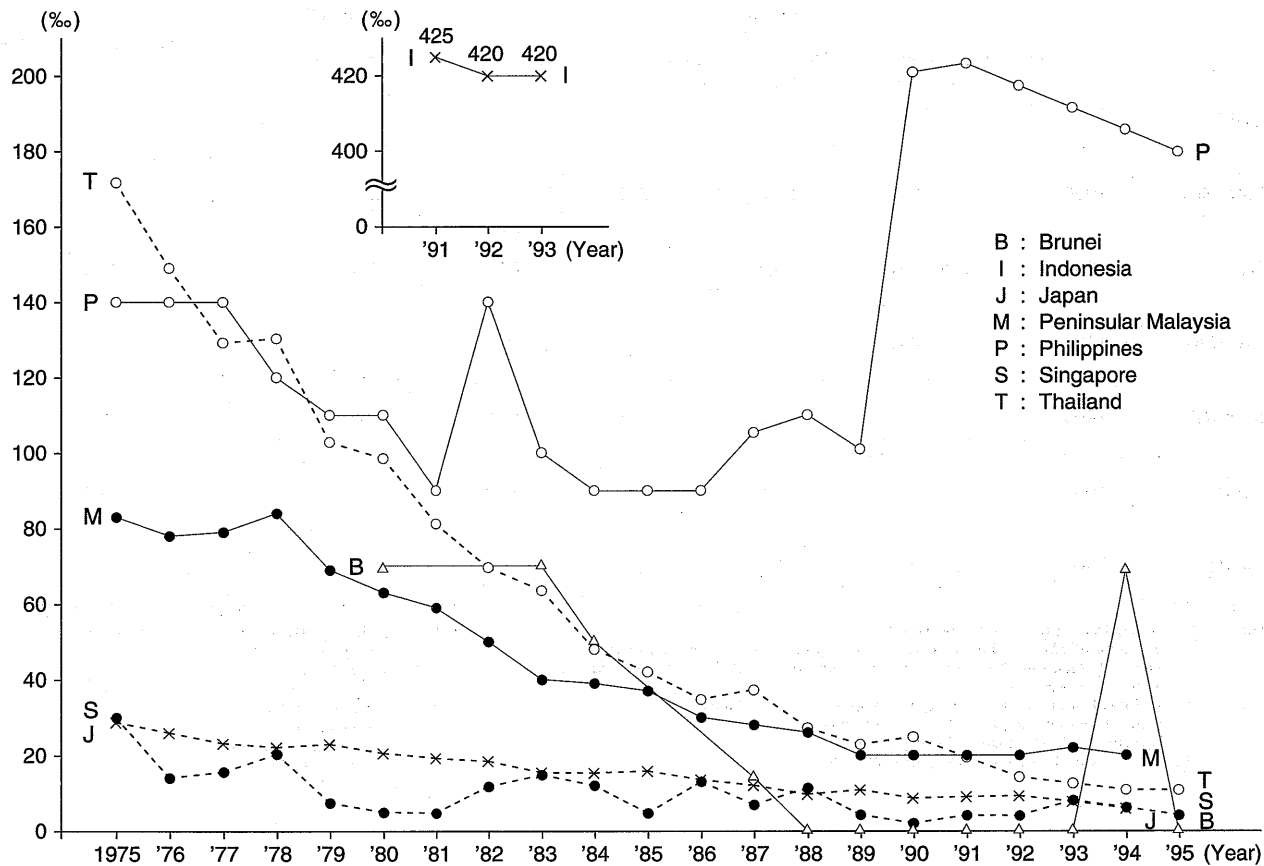
## 4-3 Maternal Mortality Rates

(per 100,000 live-births)

	1970	1975	1980	1985	1987	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI <sup>(1)</sup>			69.2	—	14.1	—	—	—	—	—	—	68.8	—
INDONESIA									425	420	420		
JAPAN <sup>(2)</sup>	50.0	28.7	20.5	15.8	12.0	9.6	10.8	8.6	9.0	9.2	7.7	5.9	
MALAYSIA <sup>(3)</sup>													
Peninsular Malaysia	148	83	63	37	28	26	20	20	20	20	20	20	
Sabah	11	72	107	19	14	19	25	19	33	10	10		
Sarawak	90	20	50	10	1	15	12	7	1	20	14		
PHILIPPINES <sup>(4)</sup>	190.0	140.0	110.0	90.0	105.3	110.0	100.9	200.9	203.2	197.3	191.4	185.6	179.7
SINGAPORE <sup>(5)</sup>	32.7	30.0	4.9	4.7	6.9	11.3	4.2	2.0	4.1	4.0	8.0	6.1	4.1
THAILAND <sup>(6)</sup>	226.1	171.7	98.5	42.0	37.2	27.2	22.8	24.8	19.4	14.2	12.5	10.8	10.7

- Source: (1) Birth & Death Registry and Economic Planning Unit  
 (2) *Vital Statistics Japan*, Ministry of Health & Welfare  
 (3) *Vital Statistics Peninsular Malaysia, Sabah and Sarawak* (Respective years), Department of Statistics  
 (4) *Philippine Health Statistics*, Intelligence Health Service, Department of Health (1970-1989), National Statistical Coordination Board (1990-)  
 (5) *Report on the Registration of Births and Deaths*, National Registration Department  
 (6) Health Statistics Division, Ministry of Public Health

Fig. 6 Trends in Maternal Mortality Rates (per 100,000 live-births)



## 4-4 Family Planning Methods Used

(%)

	Year	Reversible				Irreversible	Natural <sup>a)</sup>	Others <sup>b)</sup>
		Oral Contraceptive	IUD	Injection	Condom	Sterilization		
BRUNEI								
INDONESIA <sup>(1)</sup>	1995	29.6	22.0	32.5	1.5	5.6		8.8
JAPAN <sup>(2) c)</sup>	1994	0.6	3.7	—	77.7	7.0	13.9	8.7
MALAYSIA <sup>(3)</sup>	1994	74.8	4.5	1.9	11.3	5.5	—	2.0
PHILIPPINES <sup>(4)</sup>	1994	58.0	15.2	0.3	14.2	<sup>d)</sup> 7.4 <sup>e)</sup> 0.1	<sup>f)</sup> 1.3	<sup>g)</sup> 3.5
SINGAPORE <sup>(5)</sup>	1992	10.7	10.1	1.0	33.4	23.6	14.5	6.7
THAILAND <sup>(6)</sup>	1995	33.3	6.2	24.5		33.8	—	1.9

Source : (1) Family Planning Coordination Board  
 (2) *In Search of The New Family Model, Summary of Twenty-second National Survey on Family Planning*, The Population Problems Research Council, The Mainichi Shimbun, Tokyo, Japan  
 (3) National Population and Family Development Board Malaysia  
 (4) Family Planning, Department of Health only  
 (5) Population Planning Unit, Ministry of Health  
 (6) Department of Health, Ministry of Public Health

Note : a) Basic body temperature, cervical mucous, rhythm method  
 b) Diaphragm, etc.  
 c) Plural choice  
 d) Tubal ligation  
 e) Vasectomy  
 f) Excluding Rhythm  
 g) Including Rhythm



## 4 – 5 Women Receiving Prenatal Care

	Year	Percentage of Pregnant Women who Received Prenatal Care at least 4 Times from Trained Health Personnel during Entire Pregnancy
BRUNEI	1995	a) 8.1
INDONESIA	1995	62.2
JAPAN	1995	b) 401,000
MALAYSIA	1994	c) 72.4
PHILIPPINES	1995	d) 43.8
SINGAPORE	1995	100
THAILAND	1995	70.1

Source : Ministry of Health of each country

Note : a) Average number of visits to trained health personnel during entire pregnancy  
 b) Number of pregnant women reported in National Patient Survey  
 c) 1 time  
 d) 3 times

## **5. Morbidity from Infectious Diseases**

## 5 - A List of Notifiable Infectious Diseases

ICD-9/ICD-10 Categories	Brunei 1995	Indonesia 1995	Japan 1995	Malaysia 1995	Philippines 1993	Singapore 1995	Thailand 1995
001/A00 Cholera	V	V	V	V	V	V	
002/A01 Typhoid and Paratyphoid Fevers	V	V	V	V	V	V	V
003/A02 Other Salmonella Infections	V			V	V		V
004, 006/A03, A06 Shigellosis	V		V				V
008/A04 - A09 Intestinal Infections due to Other Organisms			V a)				
010 - 018/A15 - A19 Tuberculosis	V	V	V	V	V	V	V
020/A20 Plague	V	V	V	V		V	
022/A22 Anthrax		V	V				
030/A30 Leprosy	V	V	V	V	V	V	V
032/A36 Diphtheria	V	V	V	V	V	V	V
033/A37 Whooping Cough	V	V	V	V	V		V
034/A38, J02.0 Streptococcal Sore Throat and Scarlet Fever			V b)				
036/A39 Meningococcal Infection			V				V
037/A33 - A35 Tetanus	V	V	V	V	V		V
045/A80 Acute Poliomyelitis	V	V	V	V	V	V	V
050/B03 Smallpox			V				
052/B01 Chickenpox	V				V	V	V
055/B05 Measles	V	V	V	V	V	V	V
060/A95 Yellow Fever	V		V	V		V	
061/A90 Dengue	V	V		V	V	V	V
062/A83 Mosquito-borne Viral Encephalitis	V		V	V		V	V
070/B15 - B19 Viral Hepatitis	V	V		V	V	V	V
071/A82 Rabies		V	V	V			V

Note : a) Infectious diarrhoea only

b) Scarlet fever only

## 5 - A List of Notifiable Infectious Diseases (Contd.)

ICD-9/ICD-10 Categories	Brunei 1995	Indonesia 1995	Japan 1995	Malaysia 1995	Philippines 1993	Singapore 1995	Thailand 1995
072/B26 Mumps	V					V	V
081/A75.1 - A75.9 Other Typhus	V			V			V
084/B50 - B54 Malaria	V	V	V	V	V	V	V
087/A68 Relapsing Fever			V	V			
090/A50 Congenital Syphilis	V	V	V	V	V	V	V
098/A54 Gonococcal Infections	V	V	V	V	V	V	V
099/A55 - A64 Other Venereal Diseases			V <sup>a)</sup>	V <sup>b)</sup>		V <sup>c)</sup>	V
100/A27 Leptospirosis	V						V
102/A66 Yaws							V
120/B65 Schistosomiasis [Bilharziasis]		V			V		
124/B75 Trichinosis							
125/B72, B74 Filarial Infection and Dracontiasis	V		V <sup>d)</sup>				
279.5/B20 - B24 AIDS		V	V	V	V	V	V
487/J10, J11 Influenza		V	V		V		V

Note : a) Chancroid + lymphogranuloma inguinale  
 b) Chancroid  
 c) All sexually transmitted diseases  
 d) Filariasis only

## 5 – B Infectious Diseases Specified by Immunization Programme

	Brunei 1995	Indonesia 1995	Japan 1995	Malaysia 1995	Philippines 1993	Singapore 1995	Thailand 1995
Cholera	V	V			V		
Diphtheria	V	V	V	V	V	V	V
Measles	V	V	V	V	V	V	V
Mosquito-borne Viral Encephalitis			V				V
Mumps	V					V	V
Poliomyelitis	V	V	V	V	V	V	V
Rubella	V		V	V <sup>a)</sup>		V	V
Tetanus	V	V	V	V	V	V	V
Tuberculosis (BCG)	V	V	V	V	V	V	V
Typhoid and Paratyphoid Fever	V	V			V		V
Whooping Cough	V	V	V	V	V	V	V
Yellow Fever	V			V <sup>b)</sup>			

Note : a) Women only  
b) Required under Institute for Medical Research

## 5-1 Morbidity Statistics (ICD-9/ICD-10)

	ICD-9 ICD-10 <sup>a)</sup>	001 A00	002 A01	004, 006 A03, A06	003, 005 A02, A04, A05	010-018 A15-A19	030 A30
	Year	Cholera	Typhoid and Paratyphoid Fever	Amebiasis and Bacillary Dysentery	Food Poisoning (Bacterial)	Tuberculosis of All Forms	Leprosy
BRUNEI <sup>(1)</sup>	1995	2	6	8	69	185	1
INDONESIA <sup>(2)</sup>	1995	2,619	268,455	590,311	1,632	460,190	36,804
JAPAN <sup>(3) (4) (5)</sup>	1995	306	139	1,062	22,329	168,581 <sup>b)</sup>	
MALAYSIA <sup>(6)</sup>	1995	2,209	906	152	1,438	11,778	311
PHILIPPINES <sup>(7)</sup>	1992	2,201	14,926	—	—	106,655	1,421
SINGAPORE <sup>(8)</sup>	1995	14	171	38	628	2,167	34
THAILAND <sup>(9)</sup>	1995	—	14,271	74,299	74,907	21,681	485

Source: (1) Disease Control Unit, Health Department  
 (2) Directorate General of CDC, Ministry of Health  
 (3) *Statistics on Communicable Diseases*, Ministry of Health and Welfare  
 (4) *Statistics of Food Poisoning*, Ministry of Health and Welfare  
 (5) *Annual Report of Surveillance of Tuberculosis and Infectious Diseases*, Ministry of Health & Welfare  
 (6) Information & Documentation System Unit, Ministry of Health  
 (7) *Philippine Health Statistics*, Health Intelligence Service, Department of Health  
 (8) Ministry of the Environment and Ministry of Health

(9) Health Information Division, Ministry of Public Health

Note: a) ICD-10: Japan and Thailand  
 b) Prevalence of registered patients

032 A36	052 B01	070 B15 - B19	071 A82	084 B50 - B54	487 J10, J11	033 A37	036 A39	037 A33 - A35	055 B05
Diphtheria	Chickenpox	Viral Hepatitis (A,B,Non · A, Non · B)	Rabies	Malaria	Influenza (Grippe)	Whooping Cough	Meningococcal Infection	Tetanus	Measles
—	2,281	59		46		6		1	45
597	—	33,102	703	1,337,360	—	—	317	4,283	37,594
1	186,214 <sup>a)</sup>	207,000 <sup>(10) b)</sup>	—	66	22,293	226	3	45	931
1		686	—	59,208		8		39	654
1,105	50,765	9,566	116	37,909	367,324	5,168	160	2,201	49,452
—	34,066	267	—	316		1			185
19	43,668	10,275	70	55,174	54,174	130	31	366	10,963

Source : (10) *Patient Survey*, Ministry of Health and Welfare

Note : a) Cases treated in large hospitals only  
b) For 1993

## 5-1 Morbidity Statistics (ICD-9/ICD-10)

		056 B06	072 B26	279.5 B20 - B24	045 A80	047-049, 062-064 A83 - A89	060, 061, 065 A90, A91	125 B74	120 B65	090 - 097 A50 - A53	098 A54	099 A55 - A64
		Rubella	Mumps	AIDS (HIV)	Acute Polio- myelitis	Viral Meningitis and Encephalitis	Viral Hemor- rhagic Fever	Filariasis	Schisto- somiasis	Syphilis	Gonococcal Infections	Other Venereal Diseases
BRUNEI <sup>(1)</sup>	1995	8	18		—	—	3	2		17	182	9
INDONESIA <sup>(2)</sup>	1995	—	—	20	14	—	18,783	2,444	—	4,696	27,118	
JAPAN <sup>(3) (4) (5)</sup>	1995	<sup>a)</sup> 16,269	70,921	<sup>a)</sup> 571 (HIV 2,120)	1	4		1		530	1,699	5
MALAYSIA <sup>(6)</sup>	1994			142	—	7	<sup>b)</sup> 387			1,407	934	67
PHILIPPINES <sup>(7)</sup>	1992			69	444		21,508	1,481	9,848	90	198	
SINGAPORE <sup>(8)</sup>	1995	326	786	56	—	4	2,008			1,198	1,473	3,469
THAILAND <sup>(9)</sup>	1995	2,197	40,978	28,154	—	562	59,911	—	—	3,528	7,948	14,823

Note : a) Cases treated in large hospitals only  
b) Refer to dengue hemorrhagic fever



5-2 Percentage of Infants under 1 Year Who Are Fully Immunized Against Target Diseases

	Year	Diphtheria	Pertussis	Tetanus	Poliomyelitis	Measles	Tuberculosis
BRUNEI <sup>(1)</sup>	1994	97			97		99
INDONESIA <sup>(2)</sup>	1995	89.8			86.6	88.9	99.0
JAPAN <sup>(3)</sup>	1995	99.9			a) 97.3	b) 93.0	
MALAYSIA <sup>(4)</sup>	1994	94.5			93.8	84.9	100
PHILIPPINES <sup>(5)</sup>	1994	85.1			86.6	85.8	87.3
SINGAPORE <sup>(6)</sup>	1995	91.8			92.2	c) 90.3	97.3
THAILAND <sup>(7)</sup>	1995	96			96	92	98

Source: (1) Ministry of Health  
 (2) Ministry of Health  
 (3) Ministry of Health and Welfare  
 (4) Ministry of Health  
 (5) Health Intelligence Service-FHSIS, Department of Health  
 (6) *Family Health Service Annual Report 1995*  
 (7) Department of Health, Ministry of Public Health

Note: a) 3 months to 1.5 years old children  
 b) 1 to 2 years old children  
 c) 2 years old children

## **6. Nutrition**

## 6 - 1 Per Capita Food Intake

	Year	Energy (kcal / day)			Protein (g / day)			Fat (g / day)		
		Total	Vegetable Products	Animal Products	Total	Vegetable Products	Animal Products	Total	Vegetable Products	Animal Products
BRUNEI										
INDONESIA <sup>(1)</sup>	1993	1,879	1,790	89	45.5	35.2	10.3	30.5 <sup>a)</sup>		
JAPAN <sup>(2)</sup>	1994	2,023			79.7	37.2	42.5	58.0	29.5	28.5
MALAYSIA <sup>(3)</sup>	1977	2,549 <sup>b)</sup>	2,195 <sup>b)</sup>	354 <sup>b)</sup>	57.6	35.7	21.9	45.5	29.2	16.3
PHILIPPINES <sup>(4)</sup>	1993	1,684	1,475	209	49.9	29.8	20.1	28	16	12
SINGAPORE <sup>(5)</sup>	1993	1,981			76.4			67.0		
THAILAND <sup>(6)</sup>	1986	1,766	1,412	354	50.8	27.9	22.9	42.6	13.4	29.2

Source : (1) *Welfare Indonesia*, Central Bureau of Statistics  
 (2) *National Nutrition Survey*, Health Promotion and Nutrition Division, Ministry of Health and Welfare  
 (3) *Food Balance Sheets 1975-77, Average and Per Capita Food Supplies 1961-65, Average 1967 to 1977*, FAO, 1980  
 (4) Actual Food Consumption Survey (Food Weighing Technique), Food and Nutrition Research Institute, Department of Science & Technology 1987  
 (5) *Food Consumption Study of Adults (24 hour recall) 1993*, Food and Nutrition Department, Ministry of Health  
 (6) Nutrition Division, Ministry of Public Health

Note : a) For 1992  
 b) For 1982

## 6-1 Per Capita Food Intake (Contd.)

	Year	Calcium (mg / day)	Iron (mg / day)	Vitamin A ( $\mu$ g / day)	Vitamin B <sub>1</sub> (mg / day)	Vitamin B <sub>2</sub> (mg / day)	Vitamin C (mg / day)	Carbohydrate (g / day)
BRUNEI								
INDONESIA	1986	215	10.0	<sup>a)</sup> 1,096	1.18		142	<sup>b)</sup> 353.8
JAPAN	1994	545	11.3	<sup>a)</sup> 2,602	1.21	1.35	117	282
MALAYSIA	1977	330	13.5	135	0.87	0.79	44	
PHILIPPINES	1993	390	10.1	<sup>c)</sup> 392	0.67	0.56	47	302
SINGAPORE	1993	491	14.0	578				265.9
THAILAND	1986	301	11.8	<sup>a)</sup> 4,679	0.89	0.73	96	

Note : a) Unit = IU

b) For 1990

c) Unit = Retinol Equivalent, mcg.

6-2 Mean Length of Infants from Birth to One Year

(cm)

	Population or Place	Year	Sex	Age					
				Birth	4 wks	3 mos	6 mos	9 mos	12 mos
BRUNEI									
INDONESIA <sup>(1)</sup>	National	1994	M F	49.4 48.9					
JAPAN <sup>(2)</sup>	National	1990	M F	49.6 48.9	56.7 55.6	63.2 61.5	68.5 66.8	72.0 70.6	75.4 74.2
MALAYSIA									
PHILIPPINES <sup>(3)</sup>	National	1993	M F	51.3 51.1	57.5 56.7	64.1 62.0	67.7 68.0	72.0 70.8	77.6 76.6
SINGAPORE <sup>(4)</sup>	Malays	1972	M F			60.2 59.5	65.3 64.0		73.6 71.5
	Chinese	1972	M F			61.8 60.0	66.5 65.0	71.0 69.5	74.5 73.0
THAILAND <sup>(5)</sup>	National	1986	M F	50.7 50.2	53.5 56.0	57.7 60.1	66.6 66.9	69.1 71.3	73.0 74.4

Source: (1) Ministry of Health  
 (2) Ministry of Health and Welfare  
 (3) Food and Nutrition Research Institute  
 (4) Ministry of Health  
 (5) *National Food and Nutrition Survey*, Department of Health, Ministry of Public Health

Note: a) For 1-1.99 years old

6-3 Mean Weight of Infants from Birth to One Year

(kg)

	Population or Place	Year	Sex	Age					
				Birth	4 wks	3 mos	6 mos	9 mos	12 mos
BRUNEI									
INDONESIA <sup>(1)</sup>	National	1994	M F	3.1 3.0					
JAPAN <sup>(2)</sup>	National	1990	M F	3.2 3.1	5.1 4.7	6.9 6.3	8.1 7.5	9.0 8.4	9.6 9.0
MALAYSIA <sup>(3)</sup>	Peninsular Malaysia	1994	T	3.2					
PHILIPPINES <sup>(4)</sup>	National	1993	M F	3.5 3.4	5.3 4.8	6.6 6.1	7.4 7.2	8.1 7.8	<sup>a)</sup> 9.4 9.0
SINGAPORE <sup>(5)</sup>	National	1995	M F	3.2 3.1					
THAILAND <sup>(6)</sup>	National	1986	M F	3.1 3.0	4.1 4.7	5.4 6.1	7.3 7.8	7.9 8.8	8.8 9.5

Source : (1) Ministry of Health  
 (2) Ministry of Health and Welfare  
 (3) Ministry of Health  
 (4) Food and Nutrition Research Institute  
 (5) Ministry of Health  
 (6) *National Food and Nutrition Survey*, Department of Health, Ministry of Public Health

Note : a) For 1-1.99 years old

6-4 Mean Chest Circumference of Infants from Birth to One Year

(cm)

	Population or Place	Year	Sex	Age					
				Birth	4 wks	3 mos	6 mos	9 mos	12 mos
BRUNEI									
INDONESIA <sup>(1)</sup>	National	1994	M F	32.5 32.4					
JAPAN <sup>(2)</sup>	National	1990	M F	32.2 32.0	38.6 37.6	42.2 41.0	44.2 43.1	45.6 44.5	46.5 45.4
MALAYSIA									
PHILIPPINES <sup>(3)</sup>	National	1987	M F	34.5 34.3	37.8 36.8	41.7 40.0	43.5 42.1	44.1 43.2	46.1 45.0
SINGAPORE									
THAILAND <sup>(4)</sup>	National	1986	M F		37.9 35.0	40.2 38.5	42.7 41.5	44.4 43.2	45.7 44.4

Source: (1) Ministry of Health  
 (2) Ministry of Health and Welfare  
 (3) Food and Nutrition Research Institute  
 (4) *National Food and Nutrition Survey*, Department of Health, Ministry of Public Health

6-5 Mean Height by Age (1-18 years)

	Population or Place	Year	Sex	Age						
				1	2	3	4	5	6	7
BRUNEI										
INDONESIA <sup>(1)</sup>	National	1994	M F					107.1 106.1	109.7 108.7	112.2 111.3
JAPAN <sup>(4)</sup>	National	1994	M F	79.8 79.2	90.0 88.2	97.3 95.6	103.6 102.9	110.5 107.5	116.0 116.2	121.7 121.7
MALAYSIA <sup>(5)</sup>	National	1960	M F						105.4	109.7 109.7
PHILIPPINES <sup>(6)</sup>	National	1993	M F	77.6 76.7	85.0 84.2	92.6 91.3	98.2 97.7	103.9 103.8	108.8 108.8	114.5 114.2
SINGAPORE <sup>(7)</sup>	National	1995	M F						120.2 119.4	
THAILAND <sup>(8)</sup>	National	1986	M F	73.0 74.4	82.3 85.1	92.4 92.4	98.9 101.0	105.3 106.1	111.6 111.2	116.1 115.9

Source : (1) *Report on Height of School Entrance in Indonesia 1994/1995*, Directorate of Community Nutrition, Ministry of Health  
 (2) *Report on Height and Growth of Young Man in the Area of Malnutrition in 1988/89*, Ministry of Population and Environment and Centre for Nutrition Research and Development, 1989  
 (3) Centre for Nutrition Research and Development  
 (4) *National Nutrition Survey*, Health Service Bureau, Ministry of Health and Welfare  
 (5) *Worldwide Variation in Human Growth*, Cambridge University Press, 1976  
 (6) Food and Nutrition Research Institute  
 (7) School Health Service, Ministry of Health  
 (8) *National Food and Nutrition Survey*, Department of Health, Ministry of Public Health

Note : a) For 1993. West Sumatra, Central Java and West Nusa Tenggara  
 b) For 1989. In West Sumatra, Central Java and West Nusa Tenggara



(cm)

Age										
8	9	10	11	12	13	14	15	16	17	18
115.0	117.9	121.3	123.7	(2) a) 128.9		(3) b) 151.3	(3) b) 155.2	(3) b) 159.7	(3) b) 161.3	(3) b) 162.9
114.0	117.0	120.1	122.9	130.0		148.9	149.7	150.9	151.6	151.7
126.8	133.4	138.0	144.1	150.8	159.8	163.7	168.2	170.0	170.4	170.4
127.7	134.3	139.2	146.5	151.3	154.6	156.2	157.6	157.8	158.0	157.4
111.8	114.3	121.9	129.3	133.4	138.4	141.4				
112.8	117.9	123.4	131.8	137.2						
119.0	124.5	128.5	131.7	137.4	143.6	150.9	156.2	159.6	160.9	162.3
119.1	124.3	130.6	135.1	141.3	145.8	148.7	150.6	150.2	151.1	151.7
			148.8				170.5			
			150.0				159.3			
120.9	126.2	130.9	134.8	141.4	148.7	153.8	158.9	163.5	164.5	165.9
120.5	126.0	130.9	137.7	143.8	149.4	152.3	153.8	154.3	153.9	155.1

6-6 Mean Weight by Age (1-18 years)

	Population or Place	Year	Sex	Age						
				1	2	3	4	5	6	7
BRUNEI										
INDONESIA <sup>(1)</sup>	National	1977	M F		10.4 10.1	12.1 11.6	13.8 13.2	15.5 14.5	15.7 15.7	18.2 17.0
JAPAN <sup>(2)</sup>	National	1994	M F	11.0 10.2	12.9 12.3	15.0 14.5	17.3 16.2	19.1 18.3	21.5 21.6	23.6 23.4
MALAYSIA <sup>(3)</sup>	National	1960	M F						16.4	17.8 18.6
PHILIPPINES <sup>(4)</sup>	National	1993	M F	9.4 9.0	11.5 11.0	12.9 12.5	14.5 14.0	15.9 15.7	17.2 17.2	19.2 19.0
SINGAPORE <sup>(5)</sup>	National	1995	M F						23.0 22.0	
THAILAND <sup>(6)</sup>	National	1986	M F	8.8 9.5	11.4 11.9	13.4 14.6	14.9 15.2	16.6 16.5	18.6 18.0	20.2 20.2

Source : (1) Ohsawa's Laboratory, Otsuma Women's University  
 (2) *National Nutrition Survey*, Health Service Bureau, Ministry of Health and Welfare  
 (3) *Worldwide Variation in Human Growth*, Cambridge University Press, 1976  
 (4) Food and Nutrition Research Institute  
 (5) School Health Service, Ministry of Health  
 (6) *National Nutrition Survey*, Department of Health, Ministry of Public Health

(kg)

Age										
8	9	10	11	12	13	14	15	16	17	18
19.9 19.2	21.3 21.0	23.3 23.4	25.7 26.3	27.3 30.3	31.8 33.4	37.1 37.6	40.9 40.4	44.7 43.2	46.9 44.6	48.7 45.9
26.3 27.2	31.4 30.8	34.4 34.0	37.9 38.8	44.2 42.4	49.6 46.3	54.0 48.0	57.8 51.8	60.2 51.8	61.3 51.7	62.2 50.4
19.5 18.7	20.7 21.8	24.2 24.0	27 28.5	29.5 30.0	32.5	35.5				
20.7 20.9	23.5 23.3	25.7 26.6	27.6 29.1	31.0 33.4	34.7 37.9	39.8 40.8	44.4 44.6	49.0 46.8	52.0 46.5	54.0 46.0
			41.7 41.8				59.5 50.6			
22.0 21.7	24.3 24.2	27.1 26.8	29.3 30.7	33.3 35.4	38.9 40.4	41.7 43.6	45.9 45.9	50.8 46.4	52.2 47.4	52.7 48.8

## **7. Environmental Health and Socio-economic Situation**

## 7 - 1 Housing Conditions

(%)

	Year		Percentage of Population Served with Safe Water	Percentage of Population with Sanitary Toilet	Lighting				
					Electricity	Pressure / Gas Lamp	Oil Lamp	Kerosene	Other
BRUNEI <sup>(1)</sup>	1991	Total	a) 96.0	a) 79.0	97.5			2.0	0.5
INDONESIA <sup>(2)</sup>	1995	Total	16.4 <sup>b)</sup>	30.3 <sup>c)</sup>	66.7	7.5	24.7		1.1
		Urban	36.5	59.0	93.4	2.3	4.1	—	0.2
		Rural	5.7	15.2	52.5	10.2	35.7		1.6
JAPAN <sup>(3)</sup>	1995	Total	95.5	d) 98.4	99.9				
MALAYSIA <sup>(4)</sup>	1994	Total	91.0	94.7	e) 91	e) 2	e) 7	e) —	e) 1
PHILIPPINES <sup>(5)</sup>	1992	Total	83.0	77.0	f) 55.1	f) 1.7	f) 0.1	f) 49.6	f) 0.5
		Urban			79.2	1.2	0.1	19.3	0.2
		Rural			31.9	2.1	0.2	65.1	0.7
SINGAPORE <sup>(6)</sup>	1995	Total	100.0	100.0	100.0				
THAILAND <sup>(7)</sup>	1995	Total	89.3	95.7	97.7				

Source : (1) Ministry of Health  
 (2) *Welfare Statistics, 1994*, Central Bureau of Statistics  
 (3) Water Supply and Environmental Sanitation Department, Ministry of Health and Welfare  
 (4) Ministry of Health  
 (5) *Census of Population and Housing*, National Statistics Office  
 (6) Public Utilities Board, Ministry of the Environment and Singapore Power  
 (7) *Provincial Health Survey I (1995)*, Health Information Division, Ministry of Public Health

Note : a) Percentage of households  
 b) Percentage of households with piped water  
 c) Percentage of households with flush toilet  
 d) For 1993  
 e) For 1991  
 f) For 1990

## 7-2 Socio-economic Indicators

	Year	Literacy Rate (%)	Year	Per Capita GNP <sup>a)</sup> (in US \$)	Year	Labour Force Participation Rate (%)
BRUNEI	1991	<sup>b)</sup> 89.0	1995	<sup>c)</sup> 17,003	1991	<sup>d)</sup> 65.6
INDONESIA	1995	<sup>e)</sup> 86.3	1995	1,014	1994	58.0
JAPAN	1995	<sup>f)</sup> 99.99	1995	41,037	1995	<sup>(1)</sup> 63.4
MALAYSIA	1991	<sup>(2)</sup> 85.0	1994	<sup>(3)</sup> 3,836	1994	<sup>(3)</sup> 66.9
PHILIPPINES	1993	<sup>(4)</sup> 92.8	1993	<sup>(4)</sup> 826	1993	<sup>(5)</sup> 65.6
SINGAPORE <sup>(6)</sup>	1995	<sup>g)</sup> 91.8	1995	24,718	1995	<sup>h)</sup> 64.3
THAILAND <sup>(7)</sup>	1996	<sup>i)</sup> 97.7	1995	3,090	1996	58.8

Source : (1) *Labour Force Survey*, Statistics Bureau, Management and Coordination Agency  
 (2) *General Report of the Population Census, Vol. 1*  
 (3) Department of Statistics Malaysia  
 (4) National Statistics Office  
 (5) *Philippine Statistical Yearbook*, National Statistical Coordinating Board  
 (6) *Year Book of Statistics, Singapore 1994*, Department of Statistics  
 (7) *8th National Economic and Social Development Plan*, Office of the National Economic and Social Development Board

Note : a) Figures for each country except Indonesia, Philippines and Thailand converted into US \$ by SEAMIC / IMFJ, using yearly average exchange rates shown in *IMF International Financial Statistics*  
 b) Age 9 years and over  
 c) GDP  
 d) Age 15 years and over  
 e) Age 10 years and over  
 f) Children enrolled  
 g) Per 100 resident population aged 15 years and over  
 h) Per 100 population aged 15 years and over  
 i) Age 7 years

## 7 - 3 Expenditure of the Ministry of Health

	Fiscal Year	Total Health Budget (in US \$)	Health Budget as % of National Budget	Per Capita Health Budget (in US \$)	Health Expenditure (in US \$)			
					Total	Personal Services	Maintenance and Other	Capital Outlay (Development Expenditure)
BRUNEI	1995	131,720,051	4.9	439	105,192,606	57,570,199	39,508,960	8,113,447
INDONESIA	1991	480,167,150	1.9	1.7				
JAPAN <sup>a)</sup>	1995	148,571,124,813		1,195.3				
MALAYSIA	1995	1,035,469,973	5.3	51.0	1,096,218,300	945,906,574		150,311,727
PHILIPPINES <sup>b)</sup>	1995	336,310,531	2.2	4.8	336,310,531	113,495,800	142,138,368	80,676,363
SINGAPORE	1995	912,177		305.4	805,713	164,572	368,844	272,298
THAILAND	1994	1,563,367,396	6.3	26.2				

Source : Ministry of Health in each country

Note : Figures for each country except Indonesia converted into US \$ by SEAMIC / IMFJ, using yearly average exchange rates shown in *IMF International Financial Statistics*

a) Including budget for social welfare

b) Including attached agencies

## 7-4 Adult Smoking Prevalence

(%)

	Year	Total	Male	Female
BRUNEI <sup>(1) a)</sup>	1993	17.0	27.3	3.1
INDONESIA				
JAPAN <sup>(2) b)</sup>	1994	24.5	43.8	9.1
MALAYSIA				
PHILIPPINES				
SINGAPORE <sup>(1) c)</sup>	1995	17.0	32.0	3.0
THAILAND				

Source : (1) Ministry of Health  
(2) Ministry of Health and Welfare

Note: Adult smoking prevalence =  $\frac{\text{Number of adult smokers}}{\text{Number of adults investigated}} \times 100 (\%)$

All regular smokers are included in the numerator, regardless of the amount smoked daily.

- a) Cardiovascular diseases screening among civil servants aged 30 years and over
- b) 20 years old and over
- c) Age 18 - 64 years



## **8. Medical Establishments**

## 8 – A Definitions Used in Hospital Statistics (WHO)

	Definition
1. Hospital	Any establishment permanently staffed by at least one physician that can offer inpatient accommodation and provide active medical and nursing care. Establishments providing principally custodial care should not be included.
2. General Hospital (principal)	A hospital—other than local or rural hospitals providing medical and nursing care for more than one category of medical discipline (e.g., general medicine, specialized medicine, general surgery, specialized surgery, obstetrics, etc.)
3. Local or Rural Hospital	A hospital, usually in rural areas, permanently staffed by one or more physicians, which in respect of their functions is also a general hospital, but provides medical and nursing care of a more limited range than that provided by principal general hospitals.
4. Medical and Maternity Centre with Beds	A small unit, also known as rural health centre, bedded dispensary, a rural maternity home, etc., not permanently staffed by a physician (but by a medical assistant, nurse, midwife, etc.), which offers inpatient accommodation and provides a limited range of medical and nursing care.
5. Specialized Hospital	A hospital providing medical and nursing care primarily for only one discipline. This category does not include the specialized department administratively attached to a principal general hospital and sometimes located in an annex or separate building; their beds (and the related data) are included with the principal general hospital.
6. Government Hospital	Any hospital administered by a government authority at any level, whether central, intermediate, or local.

	Definition
7. Private Non-profit-making Hospital	Any hospital, whether subsidized by the government or not, operated on a non-profit-making basis by a non-government body, such as a religious mission, an industrial enterprise, a trust, or a philanthropic institution.
8. Private Profit-making Hospital	Any private hospital (or medical establishment with beds) operated on a profit-making basis.
9. Bed	A hospital bed is one regularly maintained and staffed for the accommodation and fulltime care of a succession of inpatients and is situated in wards or a part of the hospital where continuous medical care for inpatients is provided. The total of such beds constitutes the normally available bed complement of the hospital. Cribs and bassinets maintained for use by healthy newborn infants who do not require special care should not be included.
10. Admission	An inpatient admission is the formal admission by a hospital of an inpatient and always involves the allocation of a hospital bed. Healthy babies born in the hospital should not be counted if they do not require special care.
11. Discharges (including deaths)	The number of persons, living or dead, whose stay has terminated and whose departure has been officially recorded.
12. Patient days	Total of daily censuses of inpatients in the hospitals during the year. Not included in the daily censuses are healthy babies born in the hospitals if they do not require special care. The day of admission and the day of discharge should be counted together as one day.

8-B Comparative Table on Medical Establishments

	Brunei (1995)	Indonesia (1995)	Japan (1995)	Malaysia (1995)	Philippines (1995)	Singapore (1995)	Thailand (1995)
1 General Hospital	V	V	V	V <sup>a)</sup>	V	V	V
2 Local or Rural Hospital		V			V	V	V
3 Medical Centre					V		
4 Maternity Hospital		V			V	V	V
5 Infectious Diseases Hospital		V	V		V		V
6 Chronic Diseases Hospital						V	
7 Leprosy Hospital		V	V	V	V		V
8 Tuberculosis Hospital		V	V	V	V		V
9 Pediatrics Hospital					V		V
10 Ophthalmology Hospital		V					V
11 Orthopedics Hospital		V			V		
12 Mental Hospital		V	V	V	V	V	V
13 Estab. for Drug Addicts		V			V		V
14 Other Specialized Hospital		V			V		V

Note : a) Hospitals. The previous categorization into general hospital and local or rural hospitals does no longer apply.  
b) Provides only ambulatory care  
c) National Skin Center is a dermatology hospital only and provides only ambulatory care. STD cases requiring inpatient treatment are admitted into an annexe of one of the acute hospitals.

## 8-1 Number of Hospitals

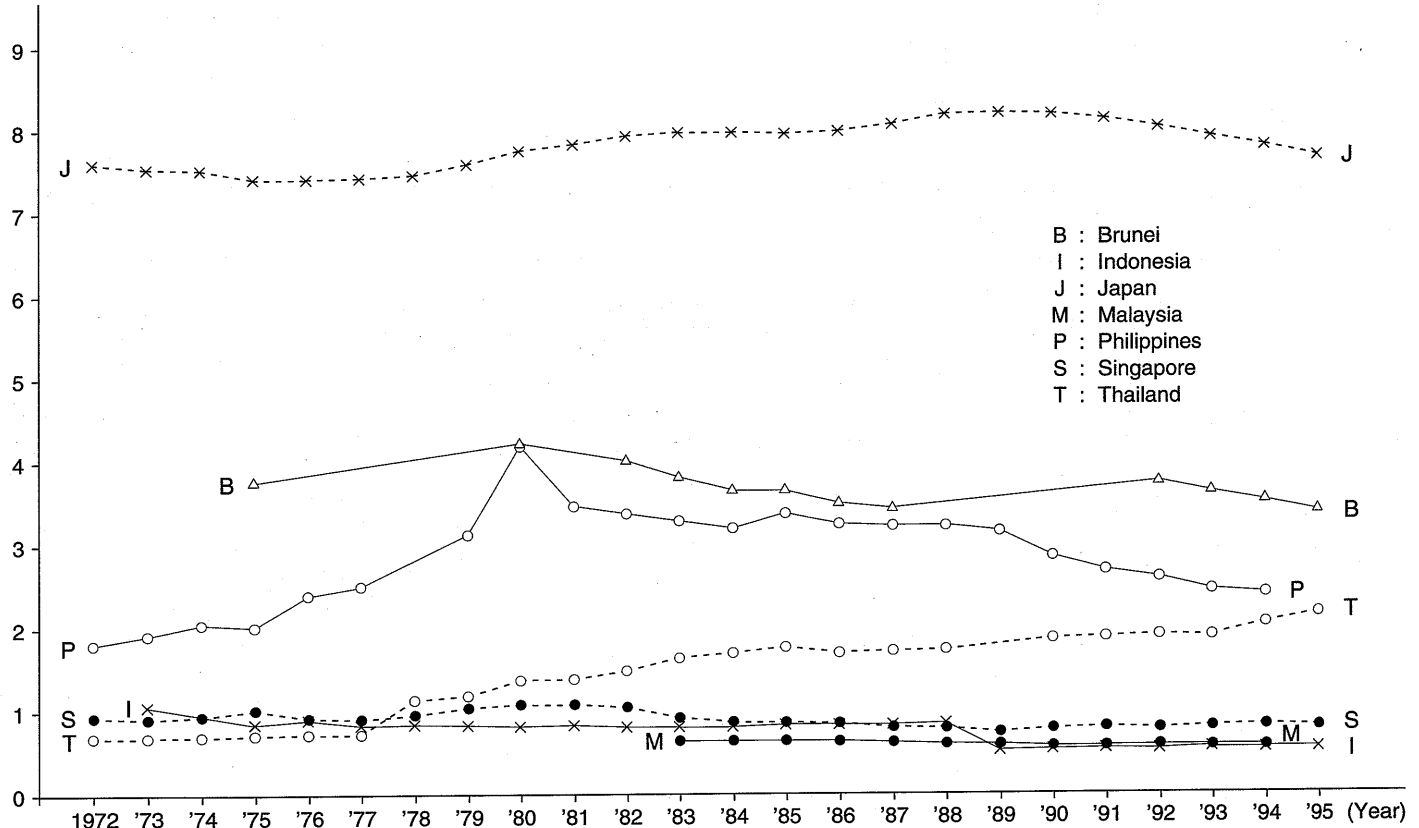
		1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI	Total		6	8	8					10	10	10	10
INDONESIA		1,164	1,115	1,208	1,367	1,500	<sup>a)</sup> 924	<sup>a)</sup> 950	<sup>a)</sup> 982	<sup>a)</sup> 994	<sup>a)</sup> 1,026	<sup>a)</sup> 1,039	<sup>a)</sup> 1,062
JAPAN	Total	7,974	8,294	9,055	9,608	10,034	10,081	10,096	10,066	9,963	9,844	9,731	9,606
MALAYSIA		<sup>b)</sup> 78	<sup>c)</sup> 29		101	102	102	102	104	107	108	112	118
PHILIPPINES	Total	650	927	2,020	1,846	1,805	1,805	1,726	1,663	1,691	1,723	1,648	1,702
	Public	220	316	413	612	619	619	<sup>d)</sup> 594	<sup>d)</sup> 562	582	<sup>e)</sup> 628	<sup>e)</sup> 553	607
	Private	430	611	1,607	1,229	1,186	1,186	1,132	1,101	1,109	1,095	1,095	1,095
SINGAPORE	Total	17	23	26	221	21	20	21	22	22	24	25	24
	Public	11	13	13	11	10	10	11	11	12	13	13	12
	Private	6	10	13	11	11	10	10	11	10	11	12	12
THAILAND	Total	98	281	636	910	941		1,043	1,064	1,097	1,105	1,215	1,280

Source : Ministry of Health in each country

Note : a) Excluding maternity hospitals  
b) Peninsular Malaysia and Sarawak only  
c) Sabah and Sarawak only  
d) Licensed only  
e) Retained and devolved hospitals

Fig. 7 Trends in Number of Hospitals (per 100,000 population)

(Number of Hospitals)



## 8-2 Number of Beds

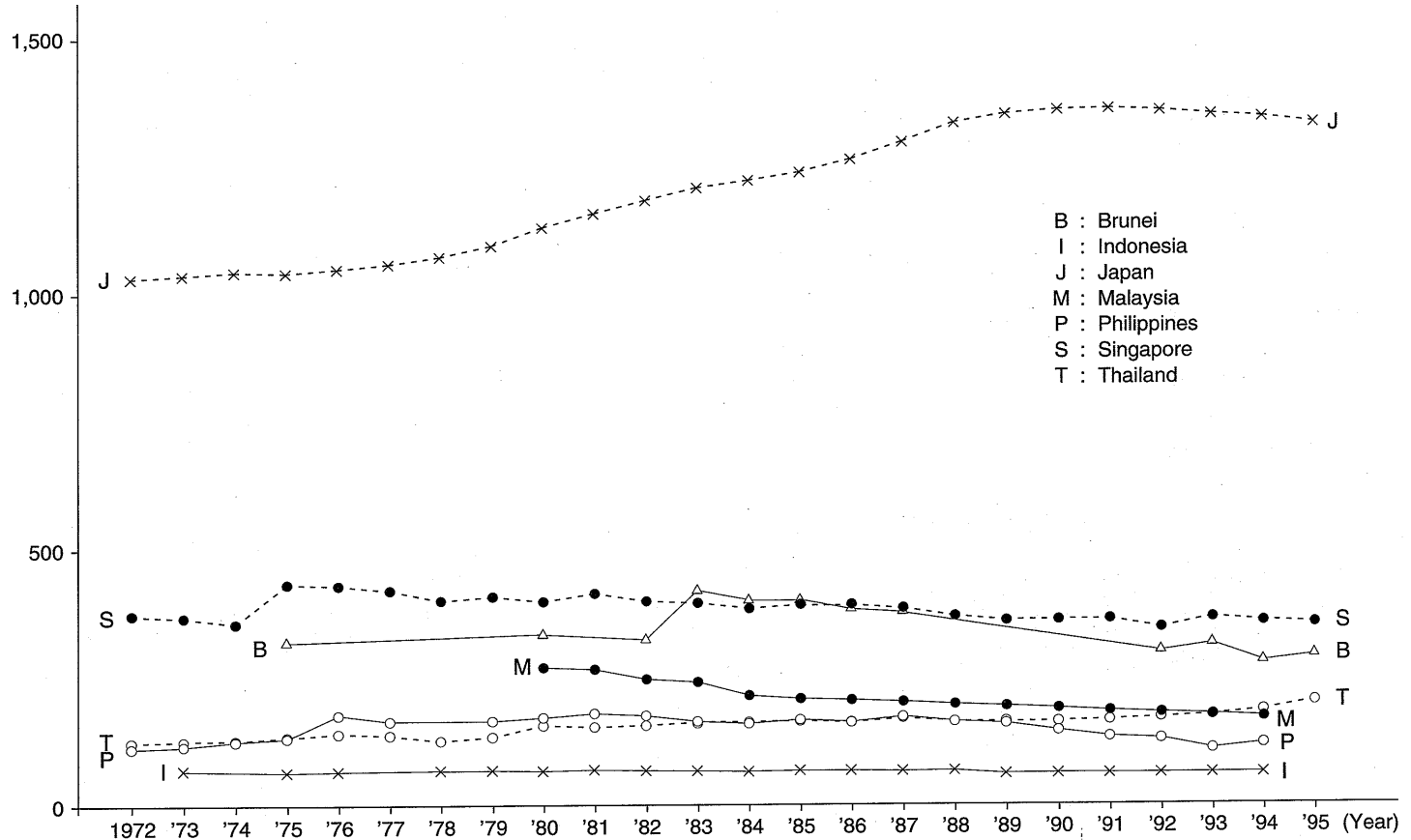
		1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI	Total		506	630	876					797	863	789	856
INDONESIA		86,022	83,696	98,543	110,361	116,847	107,112	119,387	111,127	112,779	114,474	116,847	118,306
JAPAN	Total	1,062,553	1,164,098	1,319,406	1,495,328	1,634,309	1,661,952	1,676,803	1,685,589	1,686,696	1,680,952	1,677,041	1,669,951
MALAYSIA		<sup>a)</sup> 29,927	<sup>b)</sup> 4,591	35,291	32,495	33,067	33,341	33,400	33,432	33,261	33,201	33,246	33,588
PHILIPPINES	Total	40,289	55,323	81,976	90,279	90,414	90,414	86,948	81,647	83,113	77,734	80,580	84,482
	Public	19,725	27,075	39,625	47,861	50,703	50,703	48,602	46,338	45,971 <sup>c)</sup>	41,498 <sup>c)</sup>	44,344	46,911
	Private	20,564	28,248	42,351	42,418	39,711	39,711	38,346	35,309	37,142	36,236	36,236	37,571
SINGAPORE	Total	7,760	9,311	9,585	10,000	9,730	9,644	9,759	9,801	9,726	10,469	10,446	10,537
	Public	6,891	8,211	8,078	8,329	7,893	7,852	7,922	7,892	7,833	8,640	8,346	8,326
	Private	869	1,100	1,507	1,671	1,837	1,792	1,837	1,909	1,893	1,829	2,100	2,211
THAILAND <sup>d)</sup>	Total	25,619	52,652	71,718	84,045	88,009	89,982	90,740	93,852	97,856	101,166	108,747	118,417

Source: Ministry of Health in each country

Note: a) Peninsular Malaysia and Sarawak only  
b) Sabah and Sarawak only  
c) Retained and devolved hospitals  
d) From 1985 onwards, including private maternity centres

Fig. 8 Trends in Number of Beds (per 100,000 population)

(Number of beds)



## 8-3 Hospitals and Other Medical Establishments with Beds

	Year	1 General Hospitals				2 Local or Rural Hospitals				3 Medical Centres			
		Establish-ments	Beds	Admissions or Discharges	Patient-Days	Establish-ments	Beds	Admissions or Discharges	Patient-Days	Establish-ments	Beds	Admissions or Discharges	Patient-Days
BRUNEI	1995	10	<sup>a)</sup> 856	<sup>a)</sup> 35,011	<sup>a)</sup> 171,703	..				..			
INDONESIA <sup>(1)</sup>	1995	276	58,000	2,185,719	12,237,027	574	42,388	1,537,439	7,720,414	..			
JAPAN	1995	8,519	1,395,836	11,360,298	415,508,785	..				..			
MALAYSIA <sup>(2)</sup>	1995	<sup>b)</sup> 111	<sup>b)</sup> 26,936	<sup>b)</sup> 1,450,013	<sup>b)</sup> 5,824,640	..				..			
PHILIPPINES <sup>(3) c)</sup>	1995	47	20,830	599,279	5,098,384					16	5,400	299,742	1,546,183
SINGAPORE	1995	12	6,108	307,906	1,631,163	3	284	3,866	62,732	..			
THAILAND <sup>(4)</sup>	1995	1,192	102,986	5,787,549	25,057,419	698	22,055			..			

Source: Ministry of Health in each country

(1) Directorate of Medical Care, Ministry of Health

(2) Information and Documentation System Unit

(3) Hospital Operation &amp; Management Services, and Bureau of Licensing &amp; Regulation, Department of Health

(4) Health Statistics Division, Ministry of Public Health

Note: a) Based on 4 government hospitals and 1 private hospital

b) Hospitals. The previous categorization into general hospital and local or rural hospitals does no longer apply.

c) DOH-retained hospitals only.



4 Maternity Hospitals				5 Infectious Diseases Hospitals				6 Chronic Diseases Hospitals			
Establish- ments	Beds	Admissions or Discharges	Patient- Days	Establish- ments	Beds	Admissions or Discharges	Patient- Days	Establish- ments	Beds	Admissions or Discharges	Patient- Days
..				..				..			
52	2,306	86,048	351,967	1	103	4,062	18,913	..			
..				5	274	150	5,207	..			
..				..				..			
1	700	50,962	217,322	3	975	27,163	170,656	..			
1	514	38,657	138,289	..				2	574	230	162,149
8	939			3	1,200			..			

## 8-3 Hospitals and Other Medical Establishments with Beds (Contd.)

	Year	7 Leprosy Hospitals				8 Tuberculosis Hospitals				9 Pediatrics Hospitals			
		Establish- ments	Beds	Admissions or Discharges	Patient- Days	Establish- ments	Beds	Admissions or Discharges	Patient- Days	Establish- ments	Beds	Admissions or Discharges	Patient- Days
BRUNEI	1995	..				..				..			
INDONESIA <sup>(1)</sup>	1995	24	2,754	2,077	496,750	10	747	9,439	125,795	..			
JAPAN	1995	15	8,633	116	2,088,053	8	570	561	150,567	..			
MALAYSIA <sup>(2)</sup>	1995	2	856	3,243	92,868	1	116	2,306	16,191	..			
PHILIPPINES <sup>(3)</sup>	1995	8	4,420	5,617	926,661					2	450	18,912	120,887
SINGAPORE	1995	..				..				..			
THAILAND <sup>(4)</sup>	1995	15	1,516			1	600			1	538		

10 Ophthalmology Hospitals				11 Orthopedics Hospitals				12 Mental Hospitals			
Establish- ments	Beds	Admissions or Discharges	Patient- Days	Establish- ments	Beds	Admissions or Discharges	Patient- Days	Establish- ments	Beds	Admissions or Discharges	Patient- Days
..				..				..			
10	661	11,605	77,897	1	200	1,727	41,510	48	8,114	33,259	2,189,580
..				..				1,059	264,638	178,170	92,207,746
..				..				4	5,720	9,935	1,567,282
..				1	700	8,548	182,037	1	4,200	7,327	1,154,583
a) 2				..				3	3,097	7,319	944,308
4	87			..				12	7,684		

Note: a) Provides only ambulatory care

## 8-3 Hospitals and Other Medical Establishments with Beds (Contd.)

	Year	13 Establ. for Drug Addicts				14 Other Specialized Hospitals				15 Total			
		Establish-ments	Beds	Admissions or Discharges	Patient-Days	Establish-ments	Beds	Admissions or Discharges	Patient-Days	Establish-ments	Beds	Admissions or Discharges	Patient-Days
BRUNEI	1995	..				..				10	<sup>a)</sup> 856	<sup>a)</sup> 35,011	<sup>a)</sup> 171,703
INDONESIA <sup>(1)</sup>	1995	1	22	523	5,212	65	3,011	115,033	512,303	1,602	118,306	3,986,931	23,777,368
JAPAN	1995	..				..				9,606	1,669,951	11,539,295	509,960,358
MALAYSIA <sup>(2)</sup>	1995	..				..				118	33,628	1,465,497	7,500,981
PHILIPPINES	1995					4	985	41,305	215,255	83	38,660	1,097,515	9,631,968
SINGAPORE	1995	..				<sup>b)</sup> 1				24	10,577	357,978	2,938,641
THAILAND <sup>(4)</sup>	1995	3	870			42	1,459			1,280	118,417	5,967,424	28,998,559

Note: a) Based on 4 government hospitals and 1 private hospital

b) National Skin Center is a dermatology hospital only and provides only ambulatory care. Sexually transmitted diseases cases requiring inpatient treatment are admitted into an annexe of one of the acute hospitals.

## 8-4 Hospital Utilization by Category of Hospital

	Year	All Hospitals					General Hospitals					
		Type	Population per Bed	Bed per 10,000 Population	Admissions per 10,000 Population	Bed Occupancy Rate (%)	Type	Bed per 10,000 Population	Admissions		Bed Occupancy Rate (%)	Average Length of Stay (Days)
									per 10,000 Population	per Bed		
BRUNEI	1995	T	346	28.9	1,183	55	T	28.9	1,183	41	55	5.0
INDONESIA <sup>(1)</sup>	1995	G	1,650	6.1	190.7	55.1	G	3.0	111.9	37.7	57.5	6.0
JAPAN	1995	T	75.2	133.0	919.0	83.6	T	111.2	904.7	8.1	81.5	36.6
MALAYSIA <sup>(2)</sup>	1995	G	603	16.6	721.9	61.4	G	<sup>a)</sup> 13.2	<sup>a)</sup> 714.2	<sup>a)</sup> 53.8	<sup>a)</sup> 59.7	<sup>a)</sup> 4.0
PHILIPPINES <sup>(3) b)</sup>	1995	T		0.8	52.4	86.4	T					
SINGAPORE <sup>c)</sup>	1995	T	282	35.4	1,026.0	80.3	T	20.5	882.5	50.4	78.6	5.3
THAILAND <sup>(4)</sup>	1995	T	500	19.9	1,006.6	67.1	T	17.4	976.3	56.1		

Source: Ministry of Health in each country  
 (1) Directorate of Medical Care, Ministry of Health  
 (2) Information and Documentation System Unit  
 (3) Hospital Operation & Management Services  
 (4) Health Statistics Division

Note: Type of hospitals

- T = Total  
 G = Government hospital establishments  
 a) Hospitals. The previous categorization into general hospitals and district hospitals does no longer apply.  
 b) Refer to data from 36 retained tertiary hospitals by Department of Health  
 c) Singapore residents population only

## 8-4 Hospital Utilization by Category of Hospital (Contd.)

	Year	District Hospitals						Tuberculosis Hospitals					
		Type	Bed per 10,000 Population	Admissions		Bed Occupancy Rate (%)	Average Length of Stay (Days)	Type	Bed per 10,000 Population	Admissions		Bed Occupancy Rate (%)	Average Length of Stay (Days)
				per 10,000 Population	per Bed					per 10,000 Population	per Bed		
BRUNEI	1995				..						..		
INDONESIA <sup>(1)</sup>	1995	G	2.2	78.7	36.3	49.9	5.0	G	0.0	0.5	12.6	46.1	13
JAPAN	1995				..			T	0.0	0.0	1.0	67.7	262.3
MALAYSIA <sup>(2)</sup>	1994	G			..			G	0.1	1.1	19.9	38.2	7.0
PHILIPPINES <sup>(3)</sup>	1995												
SINGAPORE	1995				..						..		
THAILAND <sup>(4)</sup>	1995	G	3.7					T	0.1				

Mental Hospitals						Maternity Hospitals					
Type	Bed per 10,000 Population	Admissions		Bed Occupancy Rate (%)	Average Length of Stay (Days)	Type	Bed per 10,000 Population	Admissions		Bed Occupancy Rate (%)	Average Length of Stay (Days)
		per 10,000 Population	per Bed					per 10,000 Population	per Bed		
..						..					
G	0.4	1.7	4.1	73.9	73	G	0.1	4.4	37.3	41.8	4
T	21.1	14.2	0.7	95.4	516.4	..					
G	2.8	4.9	1.7	75.3	142.2	..					
Special	0.4	0.9	2.2	76.4	157.6	Tertiary	0.1	5.1	73.0	106.1	4.3
T	<sup>a)</sup> 10.4	<sup>a)</sup> 21.0	2.4	84.9	101.4	T	<sup>a)</sup> 1.7	<sup>a)</sup> 110.8	75.2	73.7	3.6
T	1.2					T	0.1				

Note : a) Refer to Singapore residents population only

## **9. Human Resources for Health**



## 9 – A Definition of Medical Personnel (WHO)

	Definition
1. Physicians High (university) level	All graduates of a medical school or faculty actually working in your country in any medical field (practice, teaching, administration, research, laboratory, etc).
2. Medical Assistants Middle level	Personnel performing duties ranging from simple curative procedures for common diseases to wider medical care that may include a variety of diagnostic, curative and preventive practices. These personnel have no medical education of university level or equivalent.
3. Multipurpose Health Auxiliaries Basic level	Personnel who may have no more than elementary general education and a few months of inservice training and who provide basic health services at the village level.
4. Dentists / Dental Surgeons (a) High (university) level (b) Middle (non-university) level	(a) All graduates of a dental school (or faculty of odontology or stomatology) actually working in your country in any dental field. (b) Personnel qualified from a dental school of non-university level and licensed to practice dentistry in your country.
5. Dental Operating Auxiliaries	Personnel performing a limited range of diagnostic, preventive, and curative services in dentistry. These personnel usually do not have complete dental education of university level or equivalent.
6. Dental Non-operating Auxiliaries (a) Dental laboratory technicians (b) Dental chairside assistants	Dental non-operating auxiliaries who assist dentists and dental operating auxiliaries in their clinical work but do not carry out any independent intra-oral procedures. These dental personnel usually have technical training either in formal courses or by apprenticeship.

	Definition
7. Pharmacists / Chemists, High (university) level	All graduates of a faculty or school of pharmacy actually working in your country in pharmacies, hospitals, laboratories, industry, etc.
8. Pharmaceutical Assistants Middle level	Personnel assisting in pharmacies, hospitals, or dispensaries to make and dispense medicaments, under the supervision of a pharmacist. These personnel do not have pharmaceutical education of university level or equivalent.
9. Veterinarians / Veterinary Surgeons High (university) level	All graduates of a faculty or school of veterinary medicine actually working in your country in any field of veterinary activity, including teaching and public health.
10. Animal Health Assistants Middle level	Personnel carrying out limited diagnostic, preventive, and curative veterinary services. These personnel have no veterinary education of university level.
11. Professional Midwives, High level (a) Non-nurse midwives (b) Nurse-midwives	All graduates of a midwifery school actually working in your country in any field of midwifery (practice in institutions and community health services, teaching, administration, private practice, etc.)
12. Assistant Midwives / Auxiliary Midwives Middle level	Personnel carrying out midwifery duties in normal obstetrics, in institutions and other health services, in principle under the supervision of a professional midwife. These personnel do not have the full education and training of a professional midwife.
13. Auxiliary Nurse-midwives Middle level	Personnel performing certain nursing duties and midwifery duties in normal obstetrics, in principle under the supervision of a professional nurse or midwife. These personnel have simpler education and training in nursing and midwifery than that the professional nurse-midwife.

	Definition
14. Professional Nurse High level	All graduates of a nursing school working in your country in any nursing field (general nursing, specialized clinical nursing services in mental health, pediatrics, cardiovascular diseases, etc.—public health or occupational health, teaching, administration, research, etc.). These personnel are qualified and authorized to provide the most responsible and competent professional nursing service.
15. Assistant Nurses / Auxiliary Nurses Middle level	Personnel performing general patient care of a less complex nature in hospitals and other health services, in principle under the supervision of a professional nurse. These personnel do not have the full education and training of a professional nurse.
16. Nursing and Midwifery Aids Basic level	Personnel performing specified non-technical tasks in institutions or community health services under nursing supervision. These personnel usually have on-the-job or short training.
17. Physiotherapists / Physical therapists	Professional personnel treating patients by exercise, physical means, and massage, usually as prescribed by a physician.
18. Medical Laboratory Technicians High level	Professionals who have graduated from a school for laboratory technicians and work under the responsibility of a scientific or medical specialist. They also participate in the supervision, teaching and training of subordinate technical personnel.
19. Assistant Medi- cal Laboratory Technicians Middle level	Auxiliary technical laboratory personnel working under the supervision of a professional laboratory technologist or technician. These auxiliary personnel do not have the full training and theoretical knowledge of the professional.

	Definition
20. Medical Physicists High (university) level	All graduates of a university or faculty of natural science with qualification in physics and mathematics and special education and training in the field of medical physics.
21. Medical Radiological Technicians High level technicians	Professionals who have graduated from a school for radiological technicians and work under the general responsibility of a specialist or physician in the field of radiology. If possible, indicate the distribution of medical activity: (a) MRT (General) (b) MRT (Diagnosis) (c) MRT (Therapy)
22. Assistant Medi- cal Radiological Technicians Middle level technicians	Auxiliary medical radiological personnel working under the direct supervision of a medical radiological technician or under a specialist or physician. Professionally qualified engineers specialized in the prevention, control, and management of environmental factors that influence man's health adversely, e.g., in the design and operation of facilities for control and the planning and administration of environmental health programmes.
23. Sanitary engineers High (university) level	
24. Sanitarians High level technicians	Professional personnel other than physicians inspecting the environment, promoting measures to restore or improve sanitary conditions (food inspection, inspection of public premises, etc.) and supervising the implementation of these measures.
25. Auxiliary Sanitarians Middle level technicians	Personnel who perform to a limited extent the functions of a professional sanitarian but do not have the full training and theoretical knowledge of the professional.

	Definition
26. Other Scientific or Professional Personnel examples: Biochemists Biologists Entomologists Psychologists Nutritionists Dietitians Occupational therapists Speech therapists Other special therapists Health educators Health statisticians, Medical record librarians	Scientific (university) or professional personnel working in the health field, but not classifiable under previous items (e.g., excluding physicians).
27. Other Technical Personnel examples: Cardiology technicians Encephalographers Opticians Orthopedic technicians Hearing aid technicians Health statistical technicians Medical records technicians	Technical personnel in the health field not classifiable under previous items.

	Definition
28. Other Health Auxiliaries and Aides examples: Microscopist Laboratory aides Darkroom assistants	Health auxiliaries not classifiable under previous items, who generally have not more than primary general education and an elementary technical training by apprenticeship or in-service training.
29. Practitioners of Traditional Medicine / Midwifery examples: Herb doctors Ayurvedic doctors Lay medical practitioners Medicine men Acupuncturists Traditional birth attendants	

9 – B Comparative Table on Medical Personnel

	Brunei (1995)	Indonesia (1995)	Japan (1995)	Malaysia (1995)	Philippines (1994)	Singapore (1995)	Thailand (1995)
1 Physicians	V	V	V	V	V	V	V
2 Medical assistants				V			V
3 Multipurpose health auxiliaries					V		
4 Dentists / Dental surgeons	V	V	V	V	V	V	V
5 Dental operating auxiliaries	V	V	V			V	
6 Dental non-operating auxiliaries		V				V	V
7 Pharmacists / Chemists	V	V	V	V	V	V	V
8 Pharmaceutical assistants	V	V		V		V	V
9 Veterinarians / Veterinary surgeons	V		V		V	V	V
10 Animal health assistants						V	V
11 Professional midwives	V	V	V	V	V	V	V
12 Assistant midwives / Auxiliary midwives							
13 Auxiliary nurse-midwives	V						V
14 Professional nurses	V	V	V	V	V	V	V
15 Assistant nurses / Auxiliary nurses	V		V	V		V	V
16 Nursing and midwifery aids	V	V			V		
17 Physiotherapists / Physical therapists	V	V	V	V	V	V	V
18 Medical laboratory technicians	V	V	V	V	V	V	V
19 Assistant medical laboratory technicians	V	V		V		V	V
20 Medical physicists	V				V		
21 Medical radiological technicians	V	V	V		V	V	V
22 Assistant medical radiological technicians	V						
23 Sanitary engineers		V		V	V	V	V
24 Sanitarians	V	V			V	V	V
25 Auxiliary sanitarians	V					V	

## 9 - B Comparative Table on Medical Personnel (Contd.)

	Brunei (1995)	Indonesia (1995)	Japan (1995)	Malaysia (1995)	Philippines (1994)	Singapore (1995)	Thailand (1995)
26 Other scientific or professional personnel	V					V	V
27 Other technical personnel						V	V
28 Other health auxiliaries and aides						V	V
29 Practitioners of traditional medicine/midwifery							V
30 Dental nurses	V	V		V		V	
31 Nurses including nurse-midwives		V				V	V
32 Orthopedic technicians	V	V					
33 Malaria field officers	V				V		V
34 Health statistics technicians	V			V			V
35 Medical statisticians	V			V			V
36 Dental hygienists		V	V		V		V
37 Trained or rural midwives					V		
38 Traditional birth attendants					V		
39 Laboratory aids					V		V
40 Sanitary inspectors		V			V		
41 Medical social workers	V		V	V	V	V	V
42 Dental practitioners						V	
43 Veterinary assistants						V	V
44 Nurse-midwives		V					V
45 Dental technicians	V			V		V	
46 Dispensers		V				V	
47 Assistant nurse-midwives		V					
48 Nurses		V	V	V	V	V	V
49 Occupational therapists	V	V	V	V	V	V	V

	Brunei (1995)	Indonesia (1995)	Japan (1995)	Malaysia (1995)	Philippines (1994)	Singapore (1995)	Thailand (1995)
50 Dietitians	V	V			V	V	V
51 Radiographers	V	V		V		V	
52 X-ray assistant technicians	V						
53 Health inspectors	V	V		V		V	
54 Assistant health inspectors		V		V		V	
55 Biochemists							V
56 Health educators	V	V			V	V	V
57 Midwives		V	V	V	V	V	V
58 Microscopists	V						V
59 Health assistants	V						
60 Entomologists	V				V		V
61 Dental surgery assistants				V			
62 Nutritionists		V	V	V	V		V
63 Darkroom assistants	V						

## 9 - 1 Medical and Allied Health Personnel

	Year	1. Physicians	2. Medical Assistants	3. Multi-purpose Health Auxiliaries	4. Dentists / Dental Surgeons	5. Dental Operating Auxiliaries	6. Dental Non-operating Auxiliaries	7. Pharmacists / Chemists
BRUNEI	1995	251	..	..	38	38	..	13
INDONESIA	(1) 1994 1995	31,410	..	..	7,836	6,391		4,958 7,713
JAPAN	1995	b) 230,519	..	..	b) 81,055	b) 34,543	..	b) 176,871
MALAYSIA	(3) 1995	9,608	4,261	..	1,750	..	..	1,537
PHILIPPINES	1994	e) 82,494	..		e) 34,379	..	..	e) 42,183
SINGAPORE	1995	4,495	..	..	875	d) 237	d) 25	g) 815
THAILAND	(4) 1995	14,181	709	..	2,920	..	2,649	5,867

Source : Ministry of Health in each country

(1) Personnel Bureau

(2) Livestock Industry Bureau, Ministry of Agriculture, Forestry and Fisheries

(3) *Establishment Book*, Information and Documentation System Unit(4) *Health Resources Report*, Health Information Division

Note : a) For 1990

b) For 1994

c) As of December 31, 1994

d) Government only

e) Cumulative total (Professional Regulation Commission)

f) Department of Health only

g) Pharmacists only

h) Entry used for calculation of population/nursing and midwifery personnel ratios

8. Pharmaceutical Assistants	9. Veterinarians / Veterinary Surgeons	10. Animal Health Assistants	11. Professional Midwives	12. Assistant Midwives / Auxiliary Midwives	13. Auxiliary Nurse-midwives	14. Professional Nurses	15. Assistant Nurses / Auxiliary Nurses	16. Nursing & Midwifery Aids
24	4	..	269	183		876	487	389
16,465 22,556	..	..	51,067	..	..	96,427 110,504	..	38,770 <sup>a)</sup>
..	<sup>(2) c)</sup> 28,745	..	<sup>b)</sup> 23,048	..	..	<sup>b)</sup> 492,352	<sup>b)</sup> 369,661	..
<sup>d)</sup> 1,879	..	..	<sup>d)</sup> 2,069	..	..	<sup>d)</sup> 13,647	<sup>d)</sup> 9,677	..
..	<sup>e)</sup> 3,769	..	<sup>e)</sup> 102,875	..	..	259,629	..	5,178 <sup>f)</sup>
184	<sup>d)</sup> 22	<sup>d)</sup> 124	499	..	..	<sup>h)</sup> 9,536	<sup>h)</sup> 2,762	..
2,896	798	1,716	9,713	..	13,723	54,262	31,280	..



## 9-1 Medical and Allied Health Personnel (Contd.)

	Year	17. Physio- therapists / Physical Therapists	18. Medical Laboratory Technicians	19. Assistant Medical Laboratory Technicians	20. Medical Physicists	21. Medical Radiological Technicians	22. Assistant Medical Radiological Technicians	23. Sanitary Engineers
BRUNEI	1995	13	40	39	—	4	13	..
INDONESIA	(1) 1994 1995	996 1,179	a) 284	6,303 7,832	..	615 723	..	4,568
JAPAN	1995	15,626	43,753	..	..	40,932	..	..
MALAYSIA	(2) 1995	b) 217	b) 1,698	b) 1,197	..	..	..	b) 98
PHILIPPINES	1994	3,145	2,874	..	c) 25	d) 927	..	e) 1,862
SINGAPORE	1995	b) 9	b) 135	b) 24	..	b) 17	..	b) 219
THAILAND	(3) 1995	681	1,721	3,753	..	381	..	54

Source : Ministry of Health in each country  
 (1) Center for Manpower Education  
 (2) *Establishment Book*, Information and Documentation System Unit  
 (3) *Health Resources Report*, Health Statistics Division

Note : a) For 1990  
 b) Government only  
 c) Health physicists only  
 d) Licensed as of 1990 by Department of Health  
 e) Department of Health only  
 f) Cumulative total (Professional Regulation Commission)

24. Sanitarians	25. Auxiliary Sanitarians	26. Other Scientific or Professional Personnel	27. Other Technical Personnel	28. Other Health Auxiliaries and Aids	29. Practitioners of Traditional Medicine / Midwifery	30. Dental Nurses	31. Nurses Including Nurse midwives	32. Orthopedic Technicians
19	20	31	..	..	..	69	..	1
3,652 4,131	..	..	..	..	..	6,329 7,184	119,598	<sup>a)</sup> 34
..	..	..	..	..	..	..	..	..
..	..	..	..	..	..	<sup>b)</sup> 1,223	..	..
<sup>f)</sup> 2,362	..	..	..	..	..	..	..	..
<sup>b)</sup> 321	<sup>b)</sup> 267	<sup>b)</sup> 88	<sup>b)</sup> 13	<sup>b)</sup> 19	..	<sup>b)</sup> 311	12,298	..
745	..	1,376	18,942	14,814		..	54,262	..

## 9 - 1 Medical and Allied Health Personnel (Contd.)

	Year	33. Malaria Field Officers	34. Health Statistics Technicians	35. Medical Statisticians	36. Dental Hygienists	37. Trained or Rural Midwives	38. Traditional Birth Attendants	39. Laboratory Aids
BRUNEI	1995	11	4	1	..	..	..	..
INDONESIA <sup>(1)</sup>	1994 1995	..	..	..	6,391 7,246	..	..	..
JAPAN	1995	..	..	..	137,671	..	..	..
MALAYSIA <sup>(2)</sup>	1995	..	<sup>c)</sup> 9	<sup>c)</sup> 3	..	..	..	..
PHILIPPINES	1994	<sup>d)</sup> 680	..	..	<sup>d)</sup> 6	<sup>e)</sup> 102,875	<sup>f)</sup> 35,543	<sup>g)</sup> 465
SINGAPORE	1995	..	..	..	..	..	..	..
THAILAND <sup>(3)</sup>	1995	16,289	356	1,077	1,824	..	..	2,764

Source : Ministry of Health in each country  
 (1) Center for Manpower Education  
 (2) *Establishment Book*, Information and Documentation System Unit  
 (3) *Health Resources Report*, Health Statistics Division

Note : a) Hospitals only  
 b) For 1994  
 c) Government only  
 d) Department of Health only  
 e) Cumulative total (Professional Regulation Commission)  
 f) As of June 1994  
 g) Excluding the devolved

40. Sanitary Inspectors	41. Medical Social Workers	42. Dental Practitioners	43. Veterinary Assistants	44. Nurse-midwives	45. Dental Technicians	46. Dispensers	47. Assistant Nurse-midwives	48. Nurses
..	2	..	..	..	19	..	..	..
5,422 5,901	..	..	..	65,558	70 95	18,633	22,679	93,849
..	a) 5,834	..	..	..	..	..	..	b) 862,013
..	44	..	..	..	363	..	..	c) 13,647
g) 42	g) 171	..	..	..	..	..	..	e) 259,629
..	c) 25	875	c) 5	..	c) 25	c) 134	..	12,298
..	751	..	1,716	3,265	..	..	..	85,542

## 9-1 Medical and Allied Health Personnel (Contd.)

	Year	49. Occupational Therapists	50. Dietitians	51. Radiographers	52. X-ray Assistant Technicians	53. Health Inspectors	54. Assistant Health Inspectors	55. Biochemists
BRUNEI	1995	8	10	11	20	25	..	..
INDONESIA	(1) 1994 1995	a) 667	8,564 9,504	908 1,016	..	5,407	7,268 7,747	..
JAPAN	1995	c) 7,708	..	..	..	..	..	..
MALAYSIA	(2) 1995		..	d) 422	..	d) 1,425	d) 2,283	..
PHILIPPINES	1994	274	e) f) 8,583	..	..	..	..	..
SINGAPORE	1995	d) 11	d) 8	d) 17	..	d) 321	d) 267	..
THAILAND	(3) 1995	212	361	..	..	..	..	125

Source: Ministry of Health in each country

(1) Center for Manpower Education

(2) *Establishment Book*, Information and Documentation System Unit(3) *Health Resources Report*, Health Statistics Division

Note: a) For 1991

b) For 1990

c) Hospitals only

d) Government only

e) Cumulative total (Professional Regulation Commission)

f) Including nutritionists

g) Department of Health only

56. Health Educators	57. Midwives	58. Microscopists	59. Health Assistants	60. Entomologists	61. Dental Surgery Assistants	62. Nutritionists	63. Darkroom Assistants
7	..	8	20	1	..	..	10
b) 78	39,637	..	..	..	..	4,008 4,948	..
..	23,048	..	..	..	..	22,110	..
..	d) 5,495	..	..	..	d) 980	15	..
g) 80	102,875	..	..	g) 11	..		..
d) 18	499	..	..	..	..	..	..
565	9,713	162	..	28	..	832	..

## 9-2 Population / Health Personnel Ratios

	Year	Physicians per 10,000 Population	Population per Physician	Dentists per 10,000 Population	Population per Dentist	Pharmacists per 10,000 Population	Population per Pharmacist	Medical Assistants per 10,000 Population	Population per Medical Assistant	Nursing Personnel per 10,000 Population	Population per Nursing Personnel	Nursing & Midwifery Personnel per 10,000 Population	Population per Nursing & Midwifery Personnel
BRUNEI	1995	8.5	1,179	1.3	7,789	0.4	22,769	..	..	29.6	338	44.9	223
INDONESIA	1994	1.6	6,121	0.4	24,530	0.3	32,116	..	..	5.0	1,993	7.7	1,291
JAPAN	1994	18.4	542	6.5	1,543	14.1	707	..	..	68.9	145	70.8	141
MALAYSIA	1995	4.8	2,077	0.9	11,405	0.8	12,986	2.1	4,684	6.8	1,463	9.6	1,043
PHILIPPINES <sup>(1)</sup>	1994	12.0	831	5.0	1,996	6.2	1,627	..	..	37.8	264	53	189
SINGAPORE <sup>a)</sup>	1995	15.1	664	2.9	3,413	2.7	3,664	..	..	41.2	243	42.8	233
THAILAND	1995	2.3	4,180	0.5	20,300	1.0	10,103	0.1	83,607	9.1	1,092		

Source : Ministry of Health in each country  
(1) Professional Regulation Commission

Note : a) Refer to residents population only

## 9-3 Number of Physicians

Year	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI								197		226		251
INDONESIA <sup>(1)</sup>	3,578	8,279	12,931	19,875 <sup>(2)</sup>	23,367 <sup>(3)</sup>	24,823	25,752	25,754	27,652	29,450	31,400	
JAPAN	118,990	132,479	156,235	NA <sup>a)</sup>	201,658	NA <sup>a)</sup>	211,797	NA <sup>a)</sup>	219,704	NA <sup>a)</sup>	230,519	NA <sup>a)</sup>
MALAYSIA <sup>(4)</sup>	2,450 <sup>b)</sup>	2,757	3,858	4,939	6,274	6,577	7,012	7,198	7,719	8,279	8,831	9,608
PHILIPPINES <sup>(5)</sup>	31,515	37,276	50,848	58,015	65,893	68,682	72,593	74,008	77,127	79,936	82,494	
SINGAPORE <sup>(6)</sup>	1,363	1,622	1,976	2,631	3,162	3,397	3,573	3,779	3,962	4,146	4,301	4,495
THAILAND <sup>(7)</sup>	5,407	5,005	6,867	8,650	11,260	12,713	12,520	12,803	13,398	13,634	14,098	14,181

Source: Ministry of Health in each country

(1) *The Health Situation of Indonesia*, Ministry of Health

(2) Personnel Bureau 1987

(3) Personnel Bureau 1989

(4) Medical Council, Ministry of Health

(5) Professional Regulation Commission, Registered

(6) *Yearbook of Statistics, Singapore 1995*

(7) Health Statistics Division, Ministry of Public Health

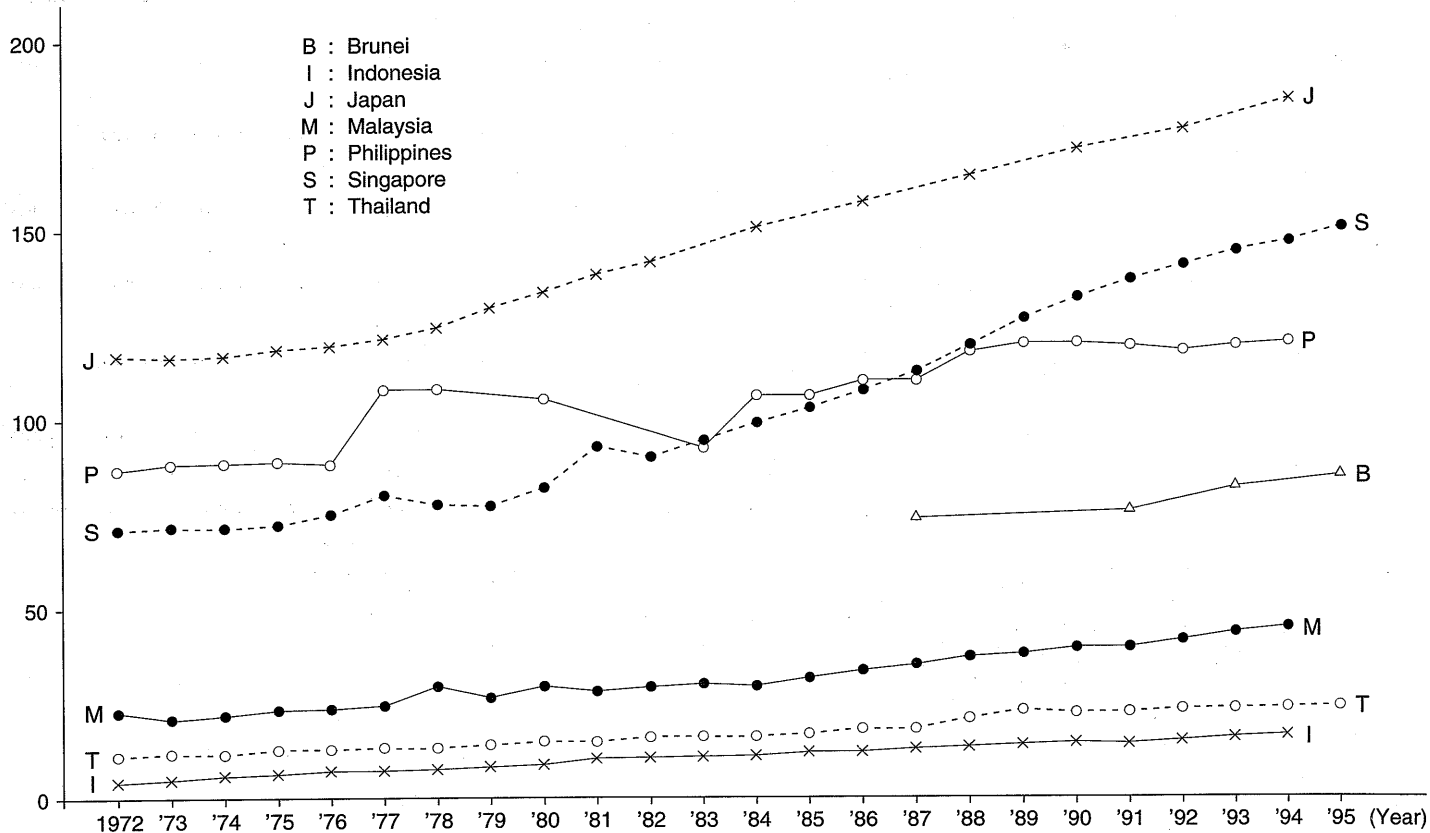
Note: a) Data collection every other year

b) Excluding Sabah



Fig. 9 Trends in Number of Physicians (per 100,000 population)

(Number of Physicians)



## 9 - 4 Number of Dentists

Year	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI								27		31		38
INDONESIA <sup>(1)</sup>	452		1,681	<sup>(2)</sup> 4,237	4,907	5,290	5,545	6,176	6,753	7,231	7,836	
JAPAN	37,859	43,586	53,602	<sup>a)</sup> NA	70,572	<sup>a)</sup> NA	74,028	<sup>a)</sup> NA	77,416	<sup>a)</sup> NA	81,055	<sup>a)</sup> NA
MALAYSIA <sup>(3) b)</sup>	<sup>c)</sup> 15	504	691	1,041	1,288	1,401	1,471	1,501	1,562	1,606	1,712	1,750
PHILIPPINES <sup>(4)</sup>	12,174	13,096	15,158	21,148	24,814	26,937	28,204	30,354	32,093	33,302	34,379	
SINGAPORE <sup>(5)</sup>	398	419	485	604	688	740	776	784	806	839	859	875
THAILAND	683	652	1,169	1,451	1,670	2,107	2,285	2,408	2,669	2,786	2,984	2,290

Source : Ministry of Health in each country

(1) *The Health Situation of Indonesia*, Ministry of Health

(2) Personnel Bureau, 1987

(3) Dental Council

(4) Professional Regulation Commission, Registered (cumulative)

(5) Ministry of Health

Note : a) Data collection every other year

b) As of December 31

c) Sabah only

## 9-5 Number of Pharmacists

Year	1970	1975	1980	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI						9				10		13		13
INDONESIA <sup>(1)</sup>	1,486	1,847	3,013	4,268 <sup>(2)</sup>	4,513	4,814 <sup>(2)</sup>	5,085 <sup>(2)</sup>	5,207	5,399	5,345	5,592	5,762	6,011	
JAPAN	79,393	94,362	116,056	NA <sup>a)</sup>	135,990	NA <sup>a)</sup>	143,429	NA <sup>a)</sup>	150,627	NA <sup>a)</sup>	162,021	NA <sup>a)</sup>	176,871	NA <sup>a)</sup>
MALAYSIA		258	488	843 <sup>(3)</sup>	963	1,050 <sup>(3)</sup>	1,084	1,170	1,239	1,214	1,351	1,324	1,510	1,537
PHILIPPINES <sup>(4)</sup>	19,076	20,838	23,225	26,440	25,088	27,493	27,732	28,764	29,612	30,971	32,126	33,233	34,854	
SINGAPORE <sup>(5)</sup>	245	288	368	436	454	487	526	557	587	629	677	720	773	815
THAILAND <sup>(6)</sup>	1,407	1,913	2,650	3,376	2,990	3,622	3,681	3,825	4,163	4,333	4,609	4,721	5,575	5,867

Source: Ministry of Health in each country

Note: a) Data collection every other year

- (1) *The Health Situation of Indonesia*, Ministry of Health
- (2) Directorate General, Food & Drugs Control, Ministry of Health
- (3) Pharmacy Board, Ministry of Health
- (4) Professional Regulation Commission, Registered (cumulative)
- (5) *Yearbook of Statistics, Singapore 1995*
- (6) Health Information Division, Ministry of Public Health

## 9 - 6 Number of Midwives

Year	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI								407		464		452
INDONESIA <sup>(1)</sup>	3,752	10,720	16,472		15,393	18,439	22,405 <sup>(2)</sup>	29,869 <sup>(3)</sup>	36,187	42,518	51,067	
JAPAN	28,087	26,742	25,867	a) NA	23,320	a) NA	22,918	a) NA	22,690	a) NA	23,048	a) NA
MALAYSIA <sup>(4)</sup>		b) 3,767	b) 5,002		5,389	5,509	5,492	5,543	5,476	5,508	5,500	5,495
PHILIPPINES <sup>(5)</sup>	16,082	18,528	42,114	55,841	63,094	66,621	71,092	77,773	85,172	94,849	102,875	
SINGAPORE <sup>(6)</sup>	1,058	930	779	623	569	550	543	529	530	522	507	499
THAILAND <sup>(7)</sup>	4,203	6,335	8,669	7,716	11,122	11,354	10,796	10,582	10,492	10,525	10,342	9,713

Source : Ministry of Health in each country

(1) *The Health Situation of Indonesia*, Ministry of Health

(2) Centre for Health Manpower Education, Ministry of Health

(3) Biro Kepegawaian, Data Jumlah yang bekerja di Depkes

(4) Nursing Board, Ministry of Health

(5) Professional Regulation Commission, Registered (cumulative)

(6) *Yearbook of Statistics, Singapore 1995*

(7) Health Information Division, Ministry of Public Health

Note : a) Data collection every other year

b) Peninsular Malaysia only

## 9-7 Number of Nurses

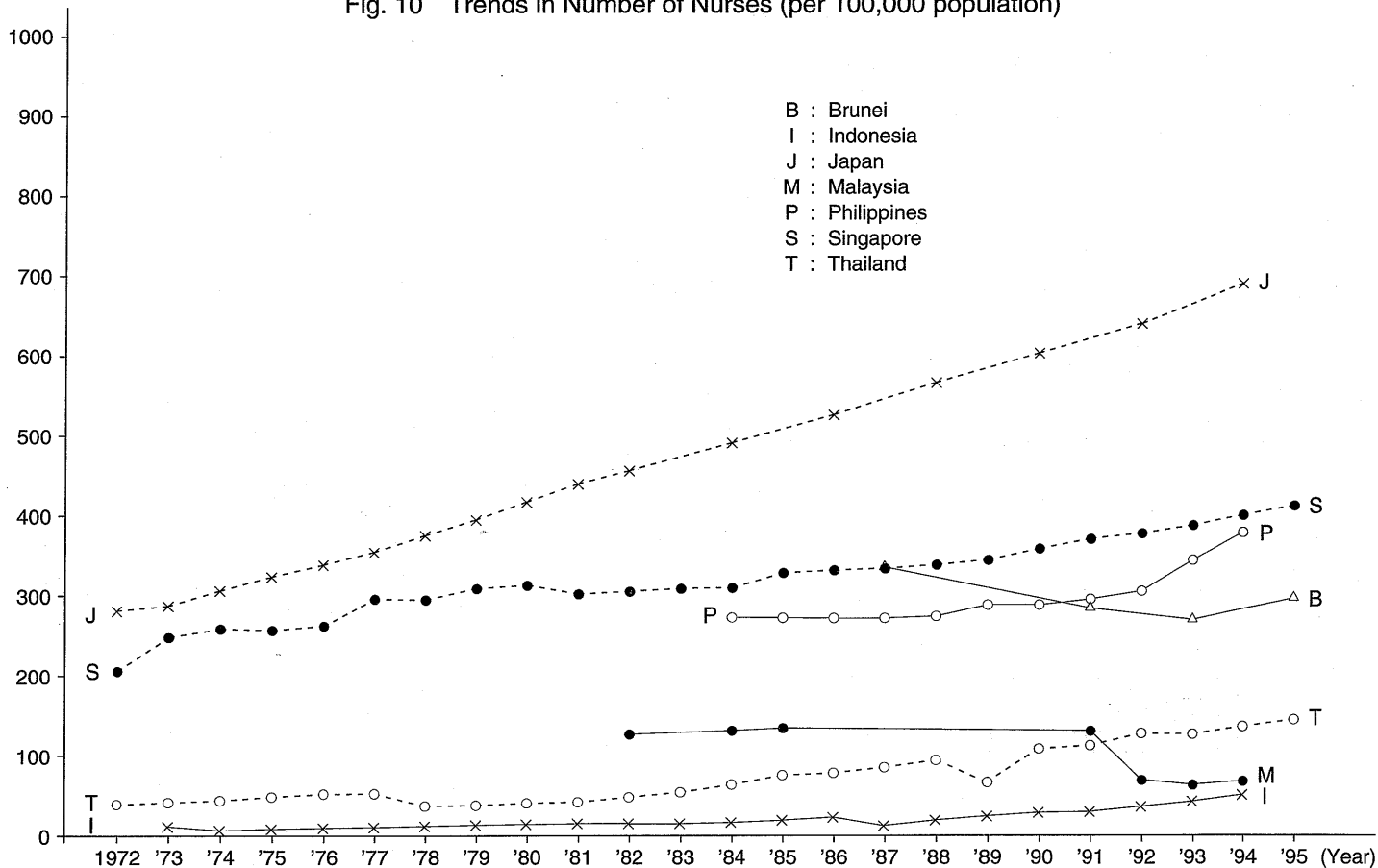
Year	1970	1975	1980	1985	1988	1989	1990	1991	1992	1993	1994	1995
BRUNEI								739		743		876
INDONESIA <sup>(1)</sup>		9,856	20,201		32,977	42,024	50,350	53,308	65,805	78,290	96,427	
JAPAN	273,572	361,604	487,169	<sup>a)</sup> NA	694,999	<sup>a)</sup> NA	745,301	<sup>a)</sup> NA	795,810	<sup>a)</sup> NA	862,013	<sup>a)</sup> NA
MALAYSIA <sup>(2)</sup>			<sup>b)</sup> 15,392	21,036	<sup>b)</sup> 22,020	<sup>b)</sup> 22,752	<sup>b)</sup> 23,308	23,753	12,789	11,961	13,224	13,647
PHILIPPINES <sup>(3)</sup>	38,918	64,165	114,657	148,514	160,657	165,012	174,112	183,277	199,263	230,187	259,629	
SINGAPORE <sup>(4)</sup>	4,304	5,767	7,545	8,393	8,957	9,237	9,695	10,233	10,633	11,127	11,723	12,298
THAILAND <sup>(5)</sup>	15,387	18,993	18,483	38,683	51,091	36,652	60,672	63,974	73,319	73,684	80,938	85,542

Source: Ministry of Health each country  
 (1) Personal Bureau, Ministry of Health  
 (2) Nursing Board, Ministry of Health  
 (3) Professional Regulation Commissioner, Registered (cumulative)  
 (4) *Yearbook of Statistics, Singapore*  
 (5) Health Information Division, Ministry of Public Health

Note: a) Data collection every other year  
 b) Peninsular Malaysia only

Number of Nurses)

Fig. 10 Trends in Number of Nurses (per 100,000 population)



## 9-8 Situation of Medical Schools

	Academic Year	Number of Medical Schools	Duration of Studies	Total Enrolment	Admissions	Graduates
BRUNEI	—	—	—	—	—	—
INDONESIA <sup>(1)</sup>	1994	30	6 years			1,960
JAPAN <sup>(2) a)</sup>	1995	80	6 Years	48,728	7,589	7,898
MALAYSIA <sup>(3)</sup>	1994 / 1995	3	5 Years	2,180		
PHILIPPINES <sup>(4)</sup>	1992 / 1993	28	Pre-Med-4 Years Proper-4 Years Intern-1 Years	9,722	3,178	2,300
SINGAPORE <sup>(5)</sup>	1995 / 1996	1	5 Years	b) 723 c) 39	b) 139 c) 11	b) 145 c) 5
THAILAND <sup>(6)</sup>	1995	9	7 Years			822

Source : (1) Consortium Medical Science  
 (2) Ministry of Education  
 (3) Ministry of Education  
 (4) Association of Philippine Medical Colleges, Manila  
 (5) National University of Singapore  
 (6) Ministry of Public Health

Note : a) Data on 1 May  
 b) Singaporeans  
 c) Non-Singaporeans

## **Part II**

# **An Outline of Health Statistics in SEAMIC Countries**



# Negara Brunei Darussalam



# Negara Brunei Darussalam

## 1. Population and Vital Statistics

### (1) *Background Information*

The main sources of information on population and vital statistics of Brunei are censuses and compulsory vital registration of births and deaths. The first census took place in 1911 and the last decennial census was conducted in 1991. Midyear population estimates are made for the intercensal years based on the 1991 census figures.

The occurrence of birth and death events is registered by law. The registration system has been operative since 1 January 1923 under the "Births and Deaths Registration Act". Although stillbirths have been recorded, they are not registered by law.

### (2) *Purpose*

The main purpose is to satisfy the internal need for statistical information on population, housing and agricultural activities, thereby providing the background for general planning purposes and for the Brunei Darussalam National Development Committee which requires timely and reliable data as es-

sential information.

### (3) *Coverage*

Nationwide

### (4) *Contents*

In the 1991 (latest) census, the information collected could be classified under the following categories:

- (a) Geographical, census house and census household characteristics;
- (b) Demographic and personal characteristics;
- (c) Educational characteristics;
- (d) Fertility characteristics;
- (e) Economic characteristics.

Statistics and health indicators derived from the vital registration system include:

#### *Births*

- (a) Number, sex, race, urban/rural, month and rate;

- (b) Number and district/registration area;
- (c) Crude birth rate.

### *Deaths*

- (a) All deaths: Number, age, sex, race, nationality, month, rate and causes;
- (b) Number and district/registration area;
- (c) Infant deaths: Number, age, sex, district/registration area, rate and cause;
- (d) Neonatal deaths: Number, sex, district/registration area, rate and cause;
- (e) Early neonatal deaths: Number, sex, district, rate and cause;
- (f) Stillbirths: Number, sex, rate and district/registration area;
- (g) Perinatal deaths: Number, sex, rate and district/registration area;
- (h) Maternal deaths: Number, rate and district/registration area;
- (i) Crude death rate;
- (j) Causes of death by age and sex (coding based on ICD-9).

### *(5) Data Collection Procedures*

In the 1991 population census, trained enumerators visited every house or building suspected of being used for habitation to collect information pertaining to name, identity card number, relationship to head of household, sex, age, place of birth, citizenship, marital status, religion, level of education, age at first marriage, number of children born alive, employment and income of each person staying in the house or building during the census night, i.e. the night of 26 August 1991.

The vital registration system is operating in 25 registration areas under the supervision of six Deputy Registrars. The responsible agency is the Birth and Death Registry, under the Medical and Health Directorate. The vital events information is now processed by the Birth and Death Registry and the Computer Unit, Ministry of Health.

### *(6) Tabulation and Publication*

The Economic Planning Unit is responsible for the tabulation and release of census results. The data are also published in the Brunei Statistical Yearbook. The vital events information is presented in the Public Health Services Annual Report.

## 2. Morbidity Statistics

### (1) *Background Information*

Notifiable and infectious disease statistics are collected from hospitals, health centres and general practitioners. To augment these data, hospital outpatient as well as inpatient information is being collected.

### (2) *Purpose*

To take prompt action on the occurrence of notifiable diseases. To study the general pattern and trend of morbidity situation in Brunei.

### (3) *Coverage*

All inpatients and outpatients.

### (4) *Contents*

Diseases by age, sex, average length of stay, district and Bruneian/Non-Bruneian.

### (5) *Data Collection Procedures*

The notifiable disease statistics are collected through specially designed yellow forms. The inpatient morbidity data are collected, based on individual case summaries of discharged patients, while outpatient morbidity data are collected, based on outpatient folder request forms. The disease coding is done by physicians and trained medical coders.

### (6) *Tabulation and Publication*

The Medical Records Officers at the Government hospitals are responsible for compilation of the source information. The Medical and Health Statistics Section, Planning, Research and Development Unit (PRDU) in the Ministry of Health is responsible for collection, compilation, processing, analysis and interpretation of the information.

## 3. Public Health Statistics

Statistics are collected on maternal and child health services, primary health care training, school health services, expanded programme of immunization, environmental health (food safety, pollution con-

trol and vector control), port health, disease control, nutrition, psychology, building and development, and health education programmes. Monitoring and evaluation indicators have accordingly been developed and

are used for the assessment of these programmes.

#### **4. Hospital Performance Statistics**

The Medical and Health Statistics Unit, PRDU, Ministry of Health is collecting hospital administrative statistics to obtain information on the workload, bed-usage and activities in order to plan, monitor and evaluate the hospital services. In so doing, the nursing census is properly maintained in all hospitals. These

statistics are collected by using a specially designed hospital activities format. Its contents relate to inpatient/outpatient/surgical/dental/miscellaneous activities, laboratory and radiological investigations, X-ray and blood transfusions, obstetric services, and results of care and information on beds.

#### **5. Monitoring System**

At the early part of 1991 Ministry of Health began an improvement programme called PIP (Performance Improvement Programming). The PIP concept is nothing but a planning process applied in Health Programming for Improved Performance. This approach is similar to the Country Health Programming Instrument used in some WHO member countries.

Based on this PIP, the monitoring system for Medical Care and Public Health Programmes was developed and put into operation by the Ministry of Health in April 1991. Regular meetings have been held ever since, at which the performance of the programme activities is monitored.

## 6. Health Manpower Statistics

### *(1) Background Information*

Special health manpower registers for doctors, dentists, pharmacists, nurses and midwives are systematically kept. Another source of health manpower data is from administrative records. This source covers all categories of personnel working under the Ministry of Health.

### *(2) Purpose*

To provide up-to-date information for health manpower planning.

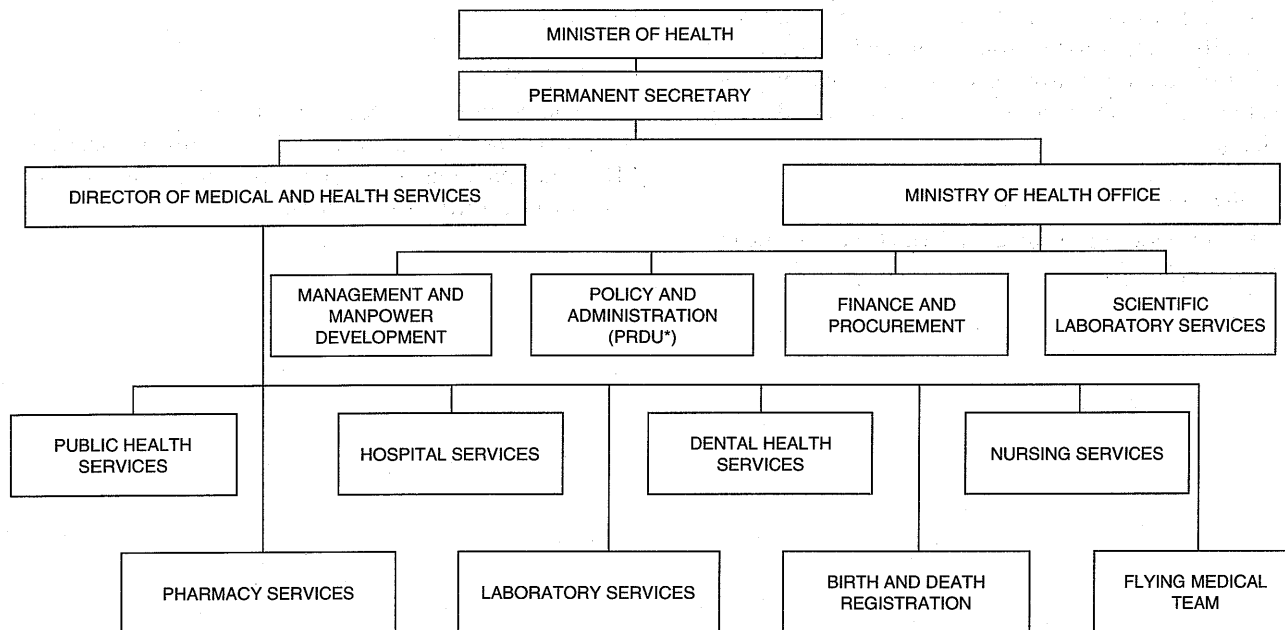
### *(3) Coverage*

All doctors, dentists, pharmacists, nurses, midwives, etc.

### *(4) The Plan*

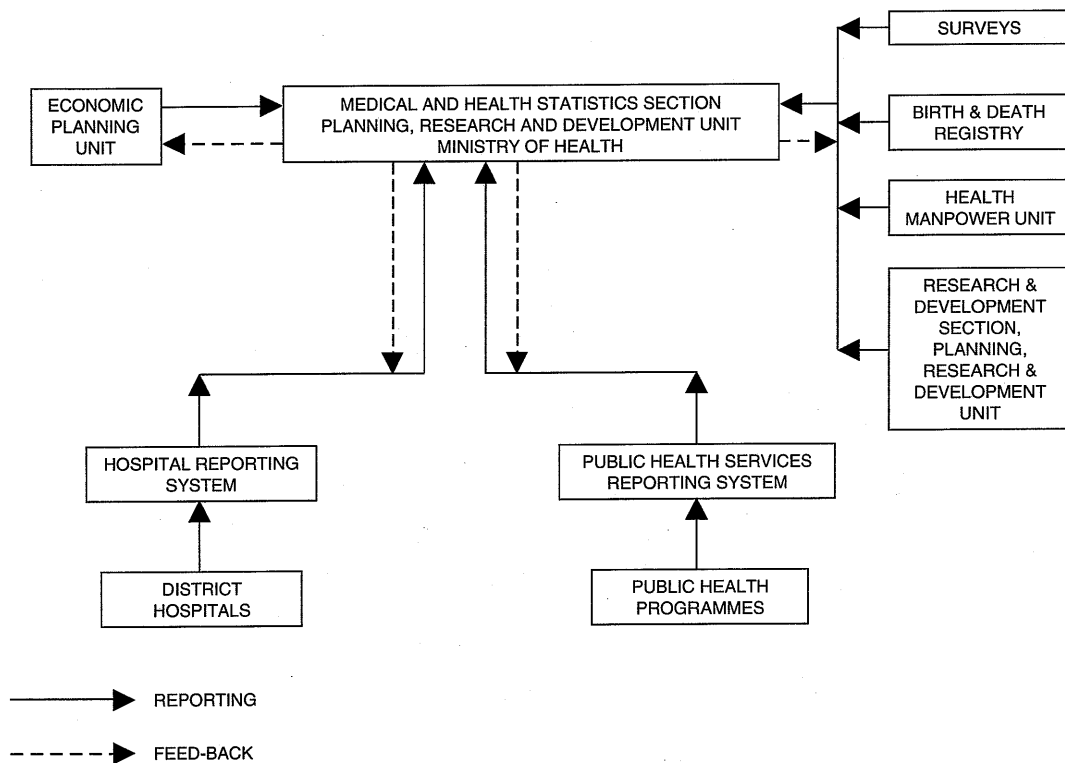
The Manpower Development and Management Unit and the Research and Development Section, PRDU are planning to develop a comprehensive health manpower information system.

**Ministry of Health  
Negara Brunei Darussalam**



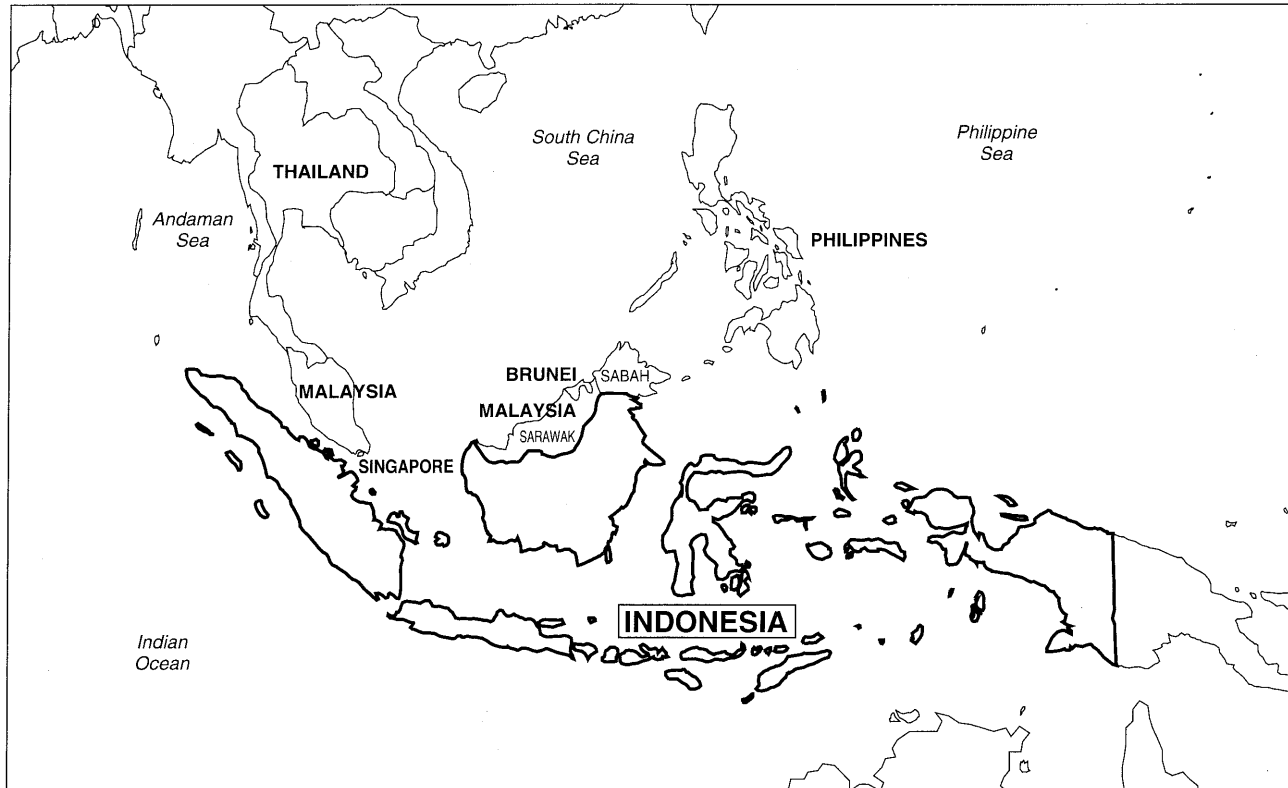
\*PRDU = Medical & Health Statistics Section, Planning, Research & Development Unit

### Flow of Health Information





# Indonesia



# Indonesia

## 1. Population Census

### (1) *Purpose*

To obtain the latest data and information on the population for monitoring and evaluating the development programmes such as health, housing, education, etc.

### (2) *Methodology*

The scope of the census is the whole population who live or stay in Indonesia, either Indonesian citizens or foreigners (excluding diplomatic corps), ship crews on Indonesian flagships in Indonesian waters, nomadic groups and homeless persons.

The census collects data on migration, education,

mortality, natality and other vital statistics, etc.

The data are collected once every ten years so that annual data can only be obtained through estimation and projection.

The data are collected in two phases. In the first phase, a complete census of the whole population is done to collect basic information on the number of population by sex and citizenship. In the second phase, five percent of the total population is taken as a sample to collect more detailed information.

The Central Bureau of Statistics organizes the activities.

## 2. Intercensal Population Survey

### (1) *Purpose*

The objectives of the survey are:

a. to estimate the number of population in the

time period between two censuses;

b. to estimate birth rates, death rates, and population mobility;

- c. to collect socio-economic data on the population;
- d. to collect information on building and housing.

### *(2) Methodology*

The survey covers all geographical areas and populations that have permanent residence in the Indonesian territory. The data are collected once every ten years, namely, in the middle year between two successive censuses.

In the first phase of the survey, all households in the latest census are listed. Based on the list, some

households are selected as samples in such a way that the number of the sample households becomes ten times the number of selected census blocks in the district. The data are collected through interview with respondents during the second phase of the survey. The data collected in the second phase consist of information about the family and the house; individual information relates to socio-economic characteristics, marriage, birth, family planning, health, death, migration, and labour force or activity.

The Central Bureau of Statistics organizes the survey.

## **3. Epidemic and Communicable Disease Report**

### *(1) Purpose*

To monitor closely some communicable diseases which are epidemic or potentially epidemic that might give rise to an outbreak or unusual events.

### *(2) Methodology*

The scope of the report is the whole population who are reached by health facilities or personnel. The types of communicable diseases being reported are:

- a. Quarantinable or serious epidemic diseases such as cholera, typhus, poliomyelitis and diphtheria;
- b. Potentially epidemic diseases which spread quickly or cause high mortality and require quick action, namely, dengue hemorrhagic fever (DHF), measles, pertussis and rabies;
- c. Other potential epidemic diseases, such as malaria, framboesia, influenza, anthrax, hepa-

titis, typhus abdominalis, meningitis, encephalitis, tetanus and tetanus neonatorum;

- d. Other communicable diseases which are not potentially epidemic such as worms, leprosy, tuberculosis, syphilis, gonorrhoea, filariasis, etc.

Amongst those diseases, only diseases in item a. and b. need to be reported weekly, provided there is no epidemic. The others must be reported through the Health Centre's recording and reporting system, but if there is an epidemic, it must be reported immediately within 24 hours.

In the recording and reporting system, there are two types of form to be used.

#### (i) W-1 Form.

This form is used to report an outbreak or unusual events within 24 hours by all health facilities to the ad-

ministrative level one step up.

Since it is a rough report on an epidemic, the report should be followed up with a temporary epidemiological investigation, and a plan of actions.

#### (ii) W-2 Form.

This form is used to report weekly some potentially epidemic diseases such as cholera, diarrhoea, typhus, DHF, rabies, diphtheria, poliomyelitis, pertussis, measles and other communicable diseases which are endemic at the time of outbreak.

The reports are done by all health facilities to the administrative level one step up.

The Directorate General of Communicable Diseases, Ministry of Health, Provincial Health Service, District Health Service and Health Centres organize the activity at the central, provincial, district and sub-district levels, respectively.

## 4. National Household Health Survey

### (1) Purpose

To obtain the latest data and information on the health situation of the population, especially on:

- a. morbidity and mortality pattern;

- b. fertility, pregnancy and child delivery pattern;
- c. pattern of health facilities utilization, both governmental and private;
- d. condition of environmental health;
- e. KAP and community participation in health

- service;
- f. nutritional status of infants, children, and pregnant women.

## *(2) Methodology*

Due to the limitations in ability and coverage of the survey, the number of population being taken as a sample is limited. The survey might not be able to cover every aspect of change in the health situation in the year of the survey. The survey is done once every five years.

Data are collected through interviews, environmental observation, and physical and laboratory examination. The head of the household acts as the respondent.

Six types of questionnaire are used to ask data on characteristics of household and living environment, individual characteristics, morbidity, mortality, and pregnancy and delivery.

A stratified multistage random sampling is done based on the clusters of the infant mortality rate.

From each cluster one province is chosen whose characteristics are considered to approximately correspond to the median of the values. In each province chosen, random sampling of districts and subdistricts is done to select three districts, and two or three subdistricts in each district. Approximately 889 households are selected in each subdistrict or about 4,445 population.

The Institute of Health Research and Development, Ministry of Health organizes the survey.

## **5. Food Balance Sheets**

### *(1) Purpose*

The objectives of composing Food Balance Sheets are:

- a. to present the food consumption pattern in general, namely, composition of food commodities, total consumption of calories and protein and fats, for monitoring and evaluating

- nutrition programmes;
- b. to describe the distribution of the food supply for export, import, industrial use and also for domestic consumption;
- c. to indicate the quality of the basic data available on exports, imports, conversion factors used, and the per capita consumption.

## *(2) Methodology*

The Food Balance Sheets cover all information dealing with the food consumption pattern and its nutrients, distribution of food supply for export, industrial use and domestic consumption and its quality.

The available annual data are compiled using FAO methods, in which some necessary adjustments

have to be made based on the existing data in Indonesia.

The Central Bureau of Statistics assisted by the FAO experts in collaboration with the Food and Nutrition Unit of the Ministry of Agriculture undertakes the composition.

## **6. National Socio-Economic Survey**

### *(1) Purpose*

To collect data on the population which are related to socio-economic activities.

### *(2) Methodology*

The survey covers all geographical areas and populations of Indonesia, and collects information on population, health, fertility, household expenditure, crime, housing and environment.

The samples are drawn from both urban and rural areas. In the rural areas, the samples are collected in four stages. The first two stages are meant for the selection of subdistricts and villages, respectively, which is conducted using the probability sampling proportional to the total population. In the third stage, census

blocks are selected using a random sampling procedure, and in the last stage, nine households are selected from each census block systematically. In the urban areas, the samples are drawn systematically in two stages: selection of clusters and households. A cluster is part of a village which consists of 50 households or 250 population living close to each other and which has a clear boundary. From each cluster nine households are selected.

The survey covers approximately 25,000 to 100,000 households and in each quarter one fourth of the households are to be visited for survey.

The Central Bureau of Statistics organizes the activities.

## 7. Hospital Recording System

### (1) *Purpose*

To obtain the latest data and information from hospitals concerning hospital activity or service.

### (2) *Methodology*

The recording covers all hospitals in Indonesia, either governmental or private. There are some limitations to the data being collected:

- a. the morbidity and mortality rates resulted from the hospital records do not cover all population in the district area;

- b. data on hospital service comprise hospital outpatient visits and inpatient care.

The data on morbidity and mortality are based on a ten-day sampling in three months. The data on visits and delivery are based on the daily census.

All of the data are recorded in the registers or individual records. Individual records are used for inpatient care including delivery. Based on the registers, quarterly reports are made.

The Directorate General of Medical Care organizes the activity, whereas the Centre for Health Data organizes the activity in the pilot project areas.

## 8. Health Manpower Recording and Reporting System

### (1) *Purpose*

To obtain data on health manpower and personnel, health schools and their students, and also data on training activities.

### (2) *Methodology*

The activity covers all health personnel who work in health offices, government health centres, and hos-

pitals, either governmental or private. It covers also all health schools and their students. Training of health personnel is also included in the activity.

- a. Health personnel records:

Every health personnel fills in the computerized form to record individual biodata and other attributes such as educational level, place of work, salary, etc. Every change of

those attributes should be reported for updating.

b. Health Schools:

Every health school should record and report basic data on the school such as the number of teachers, number of classrooms, number of students and amount of budget, etc. Besides,

every students should report his or her biodata, status and its changes.

- c. Data on health personnel training are reported, pertaining to the type of training, duration, budget, and number of personnel trained.

The Centre for Health Data organizes the activity.

## 9. Consortium of Health Sciences (CHS)

### (1) Purpose

To obtain data on the number of schools and graduates from all faculties of medicine in Indonesia to be used for planning and development of medical doctor education.

### (2) Methodology

The activity covers all governmental medical

schools in Indonesia; private schools are not included.

Every medical school should report the number of students in every class and also the number of graduates every year.

The Ministry of Education and Culture organizes the activity. All reports should be addressed to the CHS.

## 10. Recent Developments in the Health Information System

Since 1988, the Centre for Health Data, Ministry of Health initiated the preparation of the National Profile and Provincial and District Annual Health Profiles

to be used among others as supportive information for policy formulation and decision making at each government level. Furthermore in 1994, the Ministry of



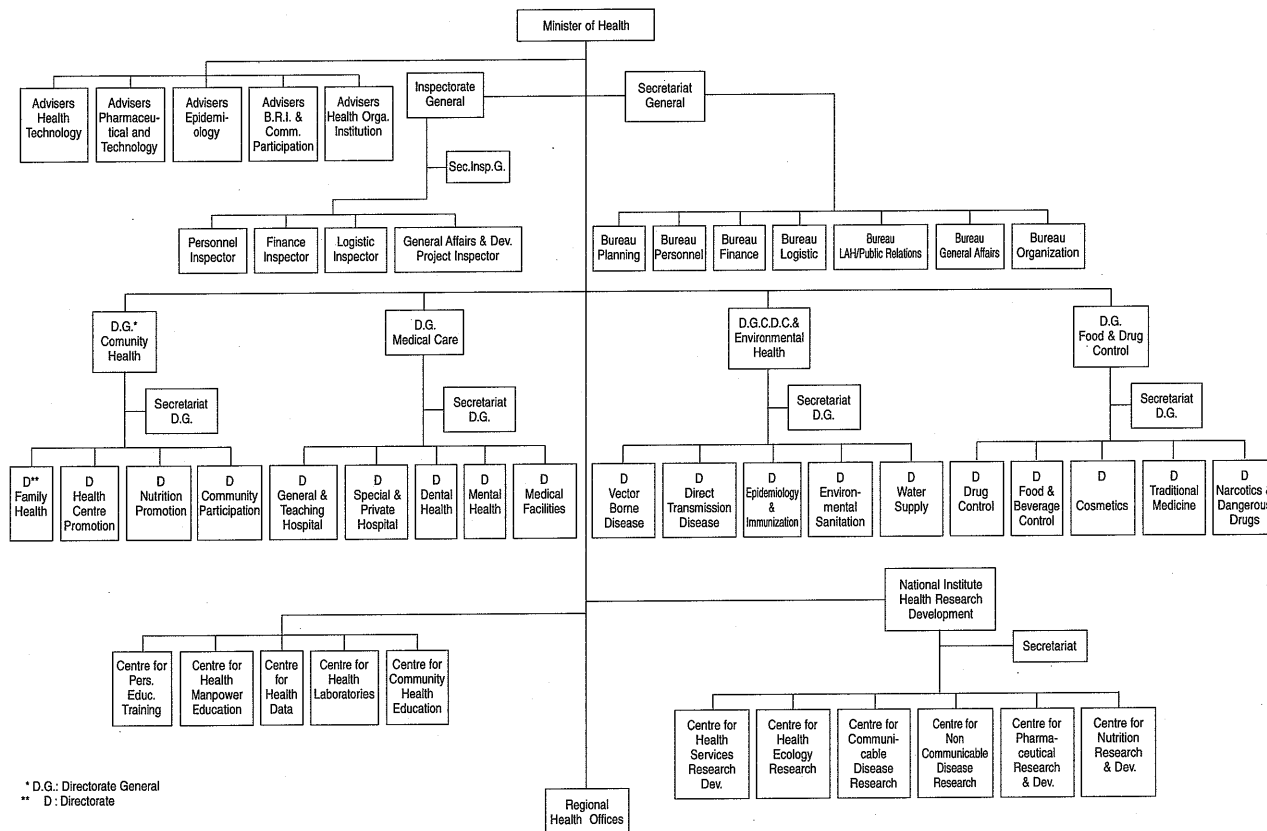
Health developed monthly and trimonthly executive reporting from each Provincial Health Officer to the Health Minister.

Recent technological advances in computing and informatics offer almost unlimited opportunities for improvement of information system. To support the

executive functions at national level, the local area network (intranet) and the wide area network (internet) are being developed.

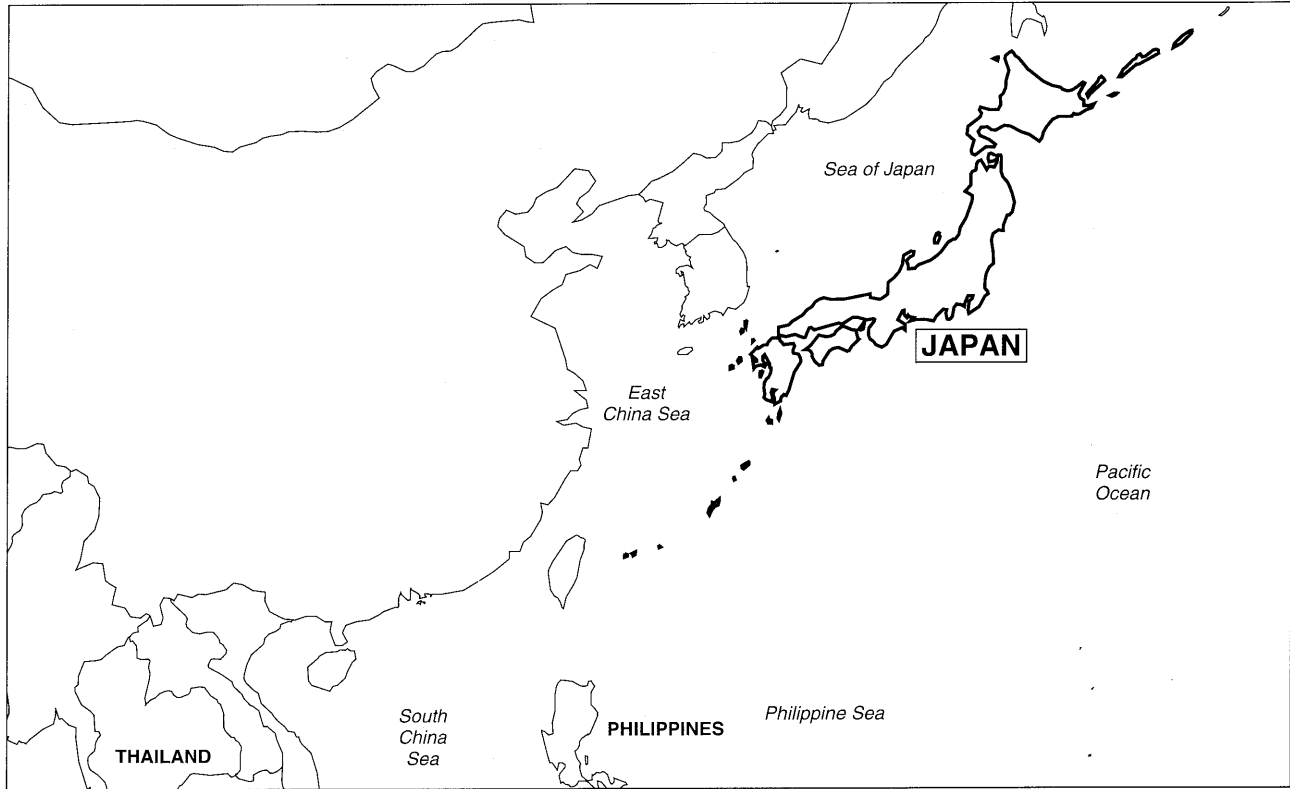
*(Centre for Health Data, Ministry of Health)*

## Organization Structure Ministry of Health, Indonesia



\* D.G.: Directorate General  
 \*\* D: Directorate

# Japan



# Japan

## 1. Population Census

### (1) *History*

Population censuses in Japan have been conducted every five years since 1920. The last 1995 Population Census was the sixteenth one.

The censuses include large-scale censuses and simplified censuses. The censuses taken every ten years starting 1920 are the large-scale censuses, while the censuses taken quinquennially between the large-scale decennial censuses are the simplified ones. The main difference between the two was the number of questions asked in the census. In a simplified one, questions were limited to basic characteristics of population, i.e., name, sex, age, marital status, etc., while a large-scale census covered questions on socio-economic characteristics such as occupation and industry in addition to the basic characteristics of population. The 1995 Population Census was taken as a simplified census.

After World War II, the scope of census-taking has generally been amplified so as to satisfy the increased demands from the variety of users of the census results.

### (2) *Purpose*

To provide data on the present situation of population in Japan.

### (3) *Coverage*

The whole population in Japan.

A person is enumerated at the place where he or she usually lives and is counted in the population of that area.

### (4) *Date*

As of 0:00 a.m. of 1 October of the census year.

(5) *Contents of Questionnaire for the 1990 Population Census (large-scale census)*

(i) For household member

- a. Name
- b. Sex
- c. Date of birth
- d. Relationship to the head of the household
- e. Marital status
- f. Nationality
- g. Previous address five years ago
- h. Educational record
- i. Type of employment (permanent/part-time employment)
- j. Industry
- k. Occupation
- l. Employment status (rank in enterprise)
- m. Place of work or location of school
- n. Transportation to the place of work or location of school
- o. Commutation time

(ii) For household

- a. Type of household (extended/nuclear family, etc.)

- b. Number of household members
- c. Source of income
- d. Type of tenure (purchased/rental)
- e. Number of dwelling rooms
- f. Total floor space
- g. Type of building (wooden/reinforced concrete) and number of stories

(6) *Data Collection Procedure*

The field enumeration of the 1990 Population Census was conducted, within their respective jurisdictions, by the mayors or the heads of city, ward, town and village, under the supervision of the governments of prefectures. The whole procedure was planned and administered by the Statistics Bureau under the Management and Coordination Agency, the Prime Minister's Office.

(7) *Tabulation and Publication*

The Statistics Bureau takes charge of the whole tabulation and releases the results through publications and other media.

## 2. Vital Statistics

### (1) History

The Family Registration System was established and came to function as a permanent source of vital statistics in 1872. The jurisdiction of vital statistics system was transferred from the Statistics Bureau, Prime Minister's Office to the Ministry of Health and Welfare in 1947, with a view to making full use of the collected data mainly for public health activities.

### (2) Method of Collecting Data

The basic characteristics of the present vital statistics system are based on the Family Registration System, which registers each individual's legal status under the jurisdiction of the Ministry of Justice.

According to the provisions of the Family Registration Law, vital events of birth, death, marriage and divorce have to be reported to the head of the local administrative office. The event of stillbirth (fetal death) also has to be reported under the provisions of the Stillbirth Report.

A birth report has to be accompanied with a birth certificate by the physician or the midwife who attended the delivery. The report should be submitted by either father, mother, a person who lives with them, or

anyone who attended the delivery, within 14 days after the birth.

A death has to be reported with a doctor's death certificate or autopsy report. The death report has to be submitted by a relative or anyone who lived with the deceased, the landowner, or the custodian, within 7 days after the death or the time when the death was known.

The report on stillbirth has to be made with a doctor's or midwife's certificate of stillbirth, and is to be submitted by father, mother, any person who lives with them, or anyone who attended the delivery, within 7 days after the stillbirth.

The channel of collecting vital statistics data can be illustrated in the chart shown below.

### (3) Publications on Vital Statistics

The results of vital statistics are published by the Statistics and Information Department, Ministry of Health and Welfare on a periodical basis in the following three publications:

- a. Monthly Brief Report on Vital Statistics  
The Monthly Brief Report covers total figures of live births, deaths, stillbirths, marriages and

divorces by prefecture. It should be noted that the figures stated in this report represent only the number of forms submitted for each type of vital events forwarded from Prefectural Governments and received by the Ministry of Health and Welfare. This is published 2 months later.

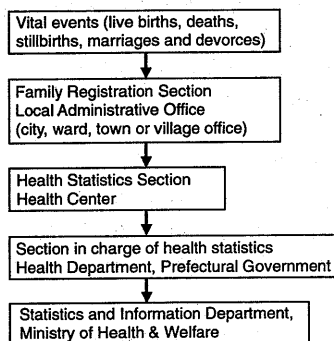
b. Monthly Report on Vital Statistics

The Monthly Report containing the figures derived from the processed data is published 5

months after the month of occurrence of the vital events. This report covers a wider variety of detailed tables of results.

c. Annual Report on Vital Statistics

The Annual Report is a fundamental one among the periodical publications on vital statistics. The Report includes a wide variety of detailed tables and presents final tabulations of vital statistics in Japan. The Report is published one year after the year of occurrence.



### Channel of collecting vital statistics data

1. Reporting.
2. Report accepted after scrutiny.
3. Vital statistics schedules prepared.
4. The schedules forwarded to the Health Centers immediately.
5. All schedules examined.
6. The schedules submitted to the Prefectural Government before the 25th of every month.
7. The schedules examined.
8. The schedules submitted to the Ministry of Health and Welfare before the 5th of the following month.
9. Vital statistics are tabulated, analysed and published monthly and consolidated annually.
10. Supervision and guidance given to local authorities in the handling of vital statistics.

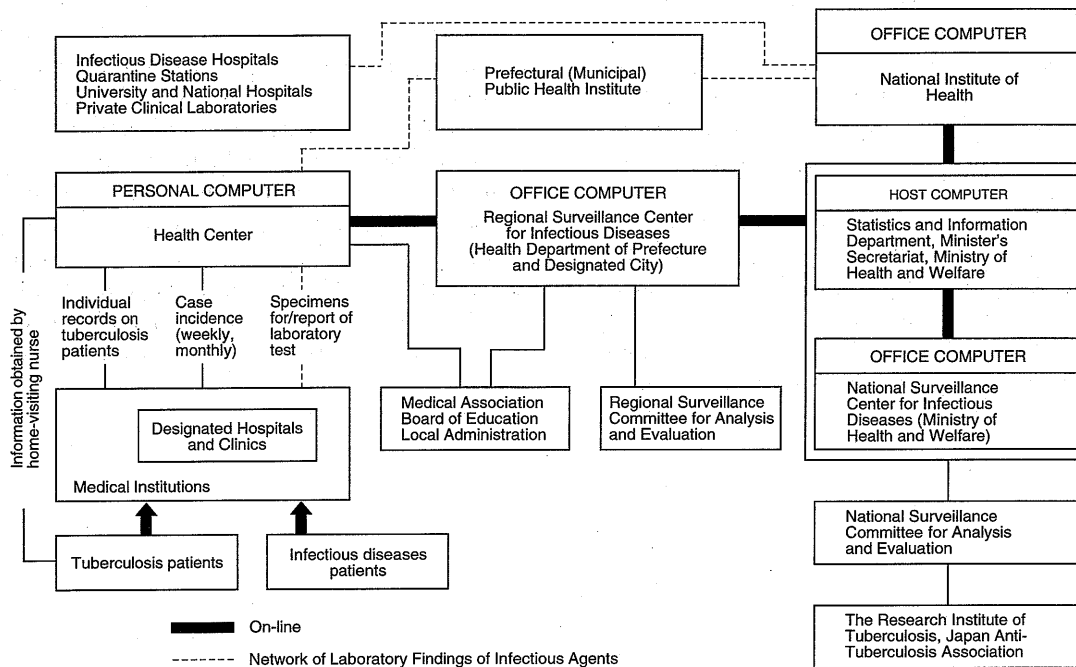
### 3. Infectious Disease Surveillance System

The Infectious Disease Surveillance System, designed to investigate epidemics of various communicable diseases on a weekly or monthly basis, was introduced in 1981 in all prefectures and large municipalities, in collaboration with over 3,000 designated clinics/hospitals. This system was then developed into a computerized on-line system in 1987 to facilitate communication and analysis of surveillance information. The outline of the surveillance system is illustrated in the following chart. The number of designated clinics/hospitals was allocated in proportion to the population served by each health center, including clinics/hospitals for pediatrics, internal medicine, urology and dermatology.

The following 26 diseases are included in this surveillance system: measles, rubella, chickenpox, mumps, pertussis, streptococcal infection, atypical pneumonia, infectious gastroenteritis, infantile vomiting and diarrhea, hand, foot and mouth disease, erythema infectiosum, exanthema subitum, herpangina, influenza, acute febrile mucocutaneous lymphnode syndrome, pharyngo-conjunctival fever, epidemic keratoconjunctivitis, acute hemorrhagic conjunctivitis, meningitis, encephalomyelitis, hepatitis (A, B, non-A, non-B), gonorrhea, genital chlamydial infection, genital herpes, condyloma acuminatum, and trichomoniasis.



## Infectious Disease Surveillance System



## 4. Patient Survey

### (1) History

The annual Patient Survey was formally established in 1953, though some morbidity data had been collected annually since 1948.

A major modification in the structural management and procedure was made in 1984. The address of the patient was added to the questionnaire and the sampling rate was increased. Since then the survey has been conducted every three years.

### (2) Purpose

To obtain fundamental information about patients treated in medical institutions.

### (3) Coverage

In the 1993 survey, about 7,000 hospitals, 6,000 general clinics and 1,000 dental clinics were randomly selected after stratification by prefecture. The sampling rates were: 70% for hospitals, 7.5% for general clinics and 2.0% for dental clinics.

### (4) Date

As of one designated day of October (since 1984 once every 3 years).

### (5) Contents of Reporting Forms

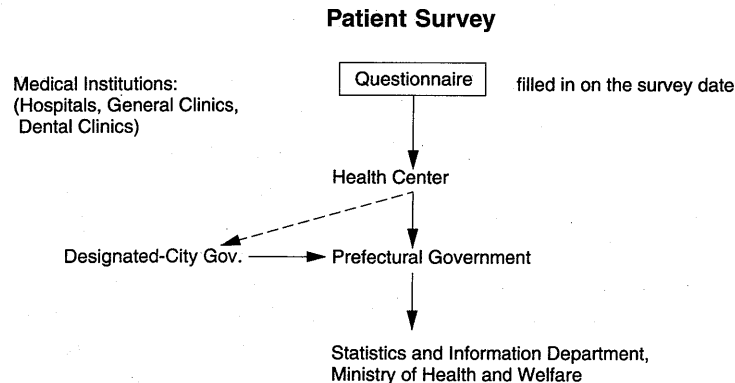
- a. Sex
- b. Date of birth
- c. Address
- d. Type of treatment
- e. Diagnosis
- f. Specialty of medical facility
- g. Type of health insurance
- h. Date of the last visit
- i. Route of reference

### (6) Data Collection Procedure

The questionnaires completed by the responsible institution are submitted to the health center of the area. Those collected are sent to the Statistics and Information Department of the Ministry of Health and Welfare through the prefectural and, where applicable, the designated-city governments.

### (7) Tabulation and Publication

The Statistics and Information Department is responsible for the tabulation and releases the results through publications and other media.



## 5. Statistical Report on Public Health Administration Services

### *(1) History*

The Statistical Report on Home Affairs, the predecessor of the Statistical Report on Public Health Administration and Services, was initiated in 1886.

When the Ministry of Health and Welfare was established in 1938, the Report was newly started as the Statistical Report on Public Health Administration and Services.

The jurisdiction of the Report was transferred from the General Affairs Division of the Minister's

Secretariat to the Statistics and Information Department in 1949, and thereafter there have been many changes in the reporting forms to meet the administrative demands.

### *(2) Purpose*

To collect data on the present situation of the health administrative activities in the prefectural and designated-city governments.

**(3) Coverage**

All prefectural and designated-city governments.

**(4) Date**

As of 31 December, annually.

**(5) Contents of Reporting Form**

All administrative activities about mental health, nutrition, leprosy, communicable diseases, venereal diseases, clinical examinations, environmental sanitation, food sanitation, veterinary sanitation, medical care inspections, dental technicians, public health nurses and pharmaceutical affairs in all the prefectural

and designated-city governments.

**(6) Data Collection Procedure**

The reporting forms filled by the responsible persons in the prefectural and designated-city governments are sent to the Statistics and Information Department of the Ministry of Health and Welfare.

**(7) Tabulation and Publication**

The Statistics and Information Department takes charge of the tabulation and releases the results through publications.

### Statistical Report on Public Health Administration Services

Prefectural Government  
or  
Designated-City Government

Reporting forms

filled in monthly, quarterly or annually



Statistics and Information Department,  
Ministry of Health and Welfare

## 6. Comprehensive Survey of Living Conditions of People on Health and Welfare

### (1) History

Ad-hoc surveys of households had been conducted by the Ministry of Health and Welfare since 1945. The Comprehensive Survey of Living Conditions of People on Health and Welfare has been conducted since 1986.

### (2) Purpose

To provide data on living conditions such as the health status, pensions, welfare, and incomes.

### (3) Coverage

In a detailed survey which is conducted every 3 years, 5,240 census enumeration districts are randomly sampled after stratification, and all households and household members in those districts are surveyed. The sample comprises approximately 260,000 households and 800,000 household members. A brief survey is conducted in each intermediate year with a sample of 1/5 the size of the sample for a detailed survey.

### (4) Date

A designated day in June or July  
Detailed survey: every 3 years

Brief survey: annually

### (5) Contents of Questionnaire (used in the 1994 survey which was a detailed one)

#### (i) Questionnaire on Household

- a. Number of household members
- b. Sex
- c. Date of birth
- d. Condition of disabled person(s)
- e. Occupational status
- f. Social insurance, pension system

#### (ii) Questionnaire on Health

- a. Activities of daily living (ADL)
- b. Symptoms
- c. Daily activities for health
- d. Medical consultation

#### (iii) Questionnaire on Income

- a. Status of income
- b. Tax and social security contributions

#### (iv) Questionnaire on Saving

- a. Status of saving

### *(6) Data Collection Procedure*

The interviewer-administered questionnaires on household and on income and the self-administered questionnaires on health and on savings are used in the Survey. The questionnaires on household and on health are submitted to the Health Center, while the questionnaire on income and savings collected by the investigator are submitted to the Welfare Office. All the collected questionnaires are then sent to the Statis-

tics and Information Department of the Ministry of Health and Welfare through the prefectural and, where applicable, the designated-city governments.

### *(7) Tabulation and Publication*

The Statistics and Information Department is responsible for the tabulation, and releases the results through publications and other media.

## **7. Census of Medical Care Institutions**

### *(1) History*

Before the formal establishment of the Census of Medical Care Institutions, the reporting on the number of facilities, their geographical location and type of services provided had been included in the Statistical Report on Home Affairs.

After the first census of medical care institutions was conducted in 1948, some improvements in the census method and data collection procedure were made, and they resulted in the establishment of the Census of Medical Care Institutions in the present form, which has been conducted on a regular basis since 1953.

In 1973, a major modification was made in the structural arrangement and procedure, dividing the census into two portions, namely, the Main Detailed Survey and the Brief Monthly Survey.

### *(2) Purpose*

To provide data on the geographical distribution, characteristics, manpower and equipments of medical care institutions.

### *(3) Coverage*

All hospitals and clinics in Japan.

(4) *Date*

The Main Detailed Survey is conducted as of 1 October every three years, and the Brief Monthly Survey is done as of the end of every month.

(5) *Contents of Questionnaire*

(i) Main Detailed Survey

- a. Name of medical care institution
- b. Address
- c. Type of ownership
- d. Number of beds, by type of disease
- e. Equipments installed
- f. Specialty
- g. Others

(ii) Brief Monthly Survey

This survey is only for the institutions newly registered or those reporting changes.

- a. Name of medical care institution
- b. Address

- c. Type of ownership
- d. Type of registration (establishment/abolition/suspension)
- e. Number of beds, by type of disease
- f. Specialty
- g. Others

(6) *Data Collection Procedure*

The questionnaire filled in by the responsible person in each institution is submitted to the health center that administers the area where the medical care institution is located. Those collected questionnaires are sent to the Statistics and Information Department of the Ministry of Health and Welfare through prefectural, and where applicable, the designated-city governments.

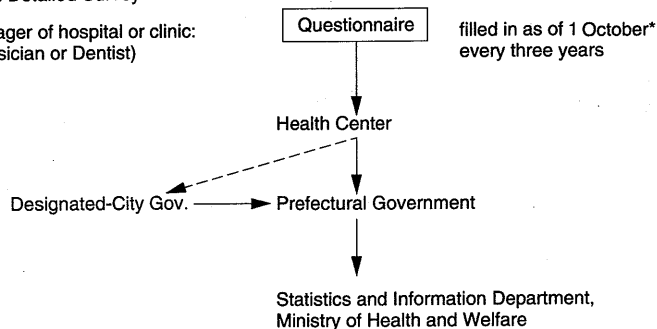
(7) *Tabulation and Publication*

The Statistics and Information Department is responsible for the tabulation, and releases the results through publications and other media.

## Census of Medical Care Institutions

### A. Main Detailed Survey

Manager of hospital or clinic:  
(Physician or Dentist)

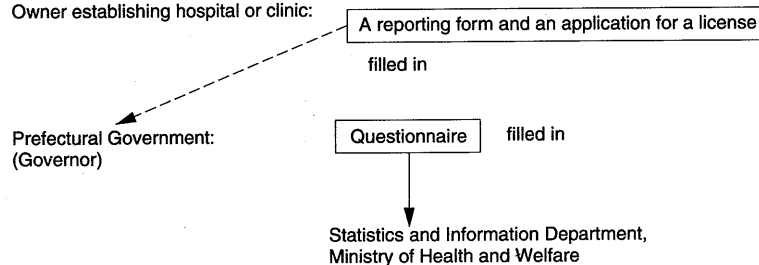


\* Questionnaire had been filled in as of the last day of the year up to 1981.

### B. Brief Monthly Survey

B-1. Medical Institutions except those established by the central government

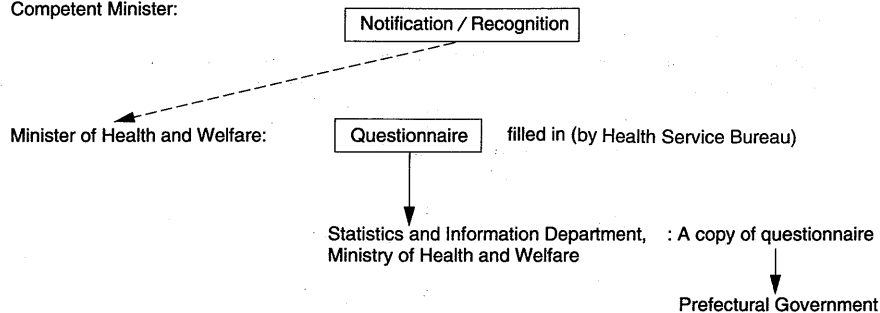
Owner establishing hospital or clinic:





B-2. Medical Institutions established by the central government

Competent Minister:



## 8. Hospital Report

### (1) *History*

The Report originated as the Weekly Hospital Report in 1945. In 1948 it was modified as a monthly report, together with the extension of the coverage by including tuberculosis and leprosy hospitals, and renamed as the Hospital Report, with the enactment of the Medical Service Law.

The number of newborns and the number of employees have been added to the items of the report since 1968 and 1973, respectively.

### (2) *Purpose*

The purpose of the Report is to provide data on the geographical distribution, present situation and utilization of hospitals.

### (3) *Coverage*

All hospitals in Japan.

### (4) *Contents of Report Form*

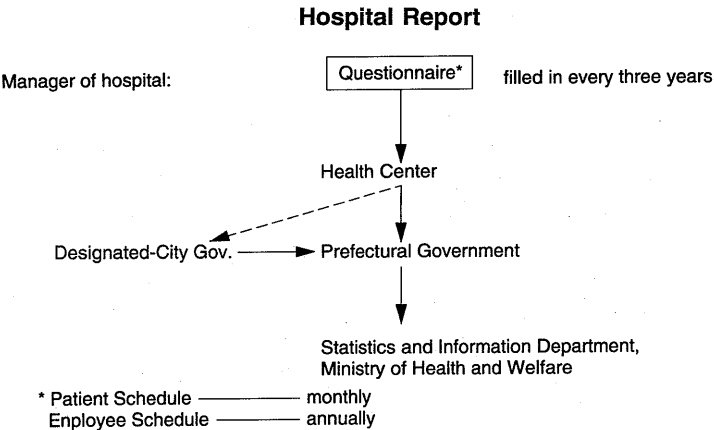
- a. Patient form (monthly)  
Number of inpatients, outpatients, newborns, etc.
- b. Employee form (annual)  
Number of physicians, pharmacists, nurses, etc.

### (5) *Data Collection Procedure*

The report forms filled in by the responsible person of the hospitals are sent to the Ministry of Health and Welfare through the health centers and prefectural governments.

### (6) *Tabulation and Publication*

The Statistics and Information Department takes charge of the tabulation and releases the results through publications and other media.



## 9. Survey on Physicians, Dentists and Pharmacists

### (1) *History*

Originally, the Survey on Physicians, Dentists and Pharmacists was included in the Statistical Report on Public Health Services started in 1874.

With the enactment of the Medical Practitioners Law and the Dentists Law in 1948 and with the amendment of the Pharmaceutical Affairs Law in 1954, the reporting forms on physicians, dentists and pharmacists were separated from the Statistical Report and constituted the forms for a new survey, the Survey on Physicians, Dentists and Pharmacists in 1954.

### (2) *Purpose*

To collect information on the number and geographical distribution of these health personnel.

### (3) *Coverage*

All physicians, dentists, and pharmacists registered in Japan.

### (4) *Date*

As of 31 December (since 1982 every two years).

### (5) *Contents of Reporting Forms*

- a. Name
- b. Sex
- c. Date of birth
- d. Date of registration
- e. Registration number
- f. Main activity
- g. Employment status

### (6) *Data Collection Procedure*

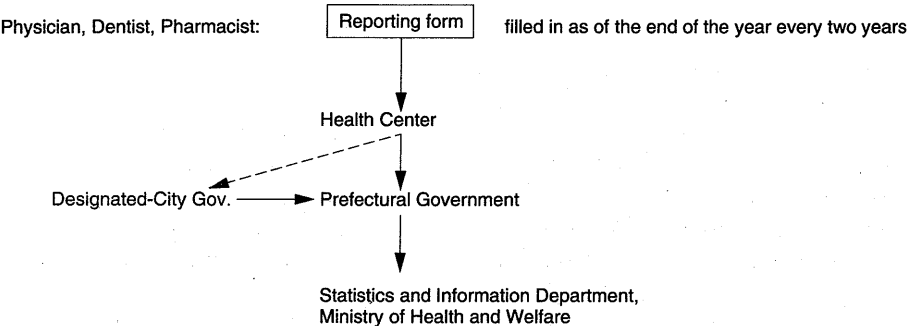
The report form filled in by each professional is submitted to the health center. At the health center, editing work is done and the report is sent to the Statistics and Information Department via the prefectural government.

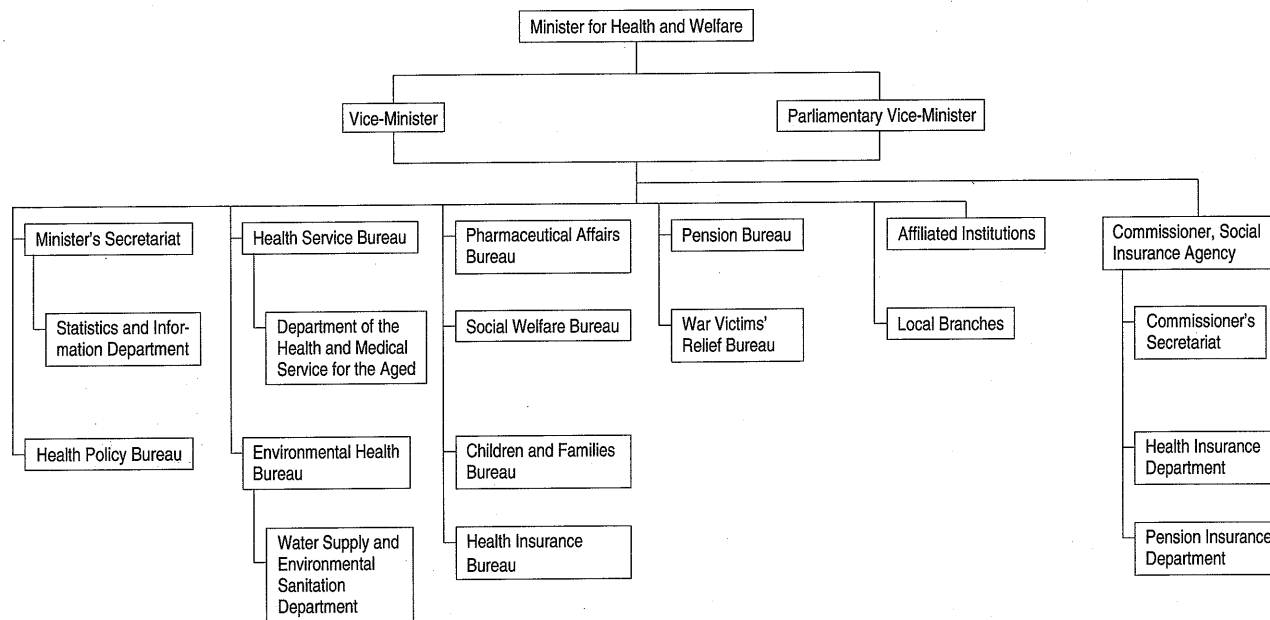
### (7) *Tabulation and Publication*

The Statistics and Information Department takes charge of the tabulation and releases the results through publications.

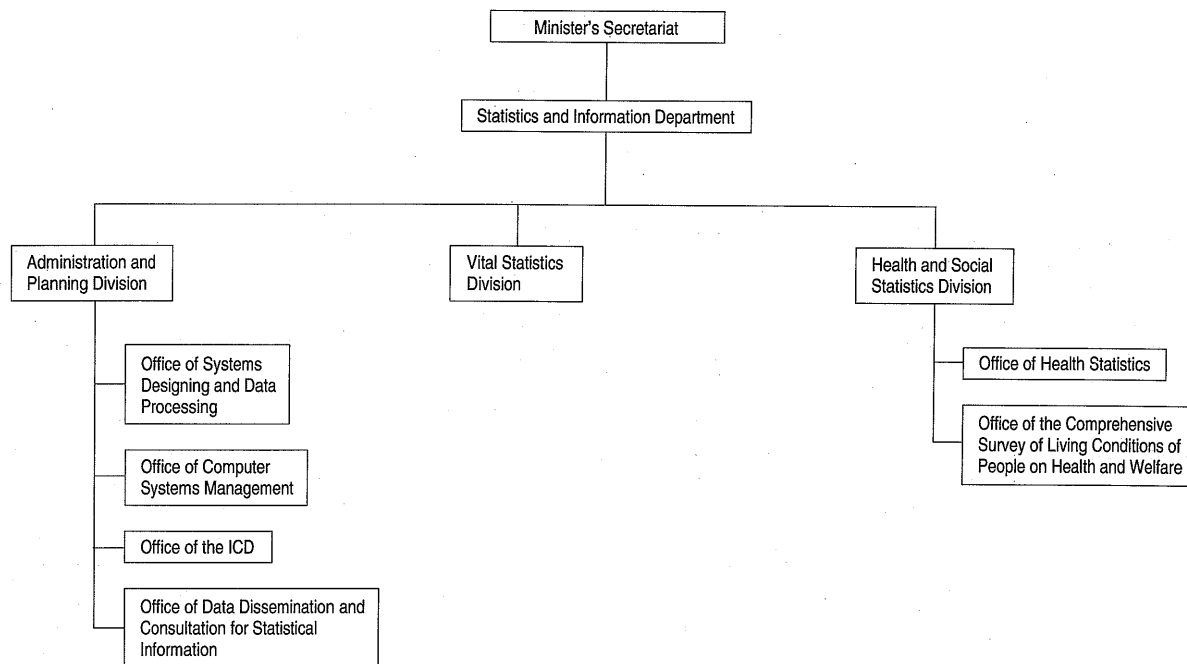
*(Statistics and Information Department,  
Ministry of Health and Welfare)*

**Survey on Physicians, Dentists, and Pharmacists**

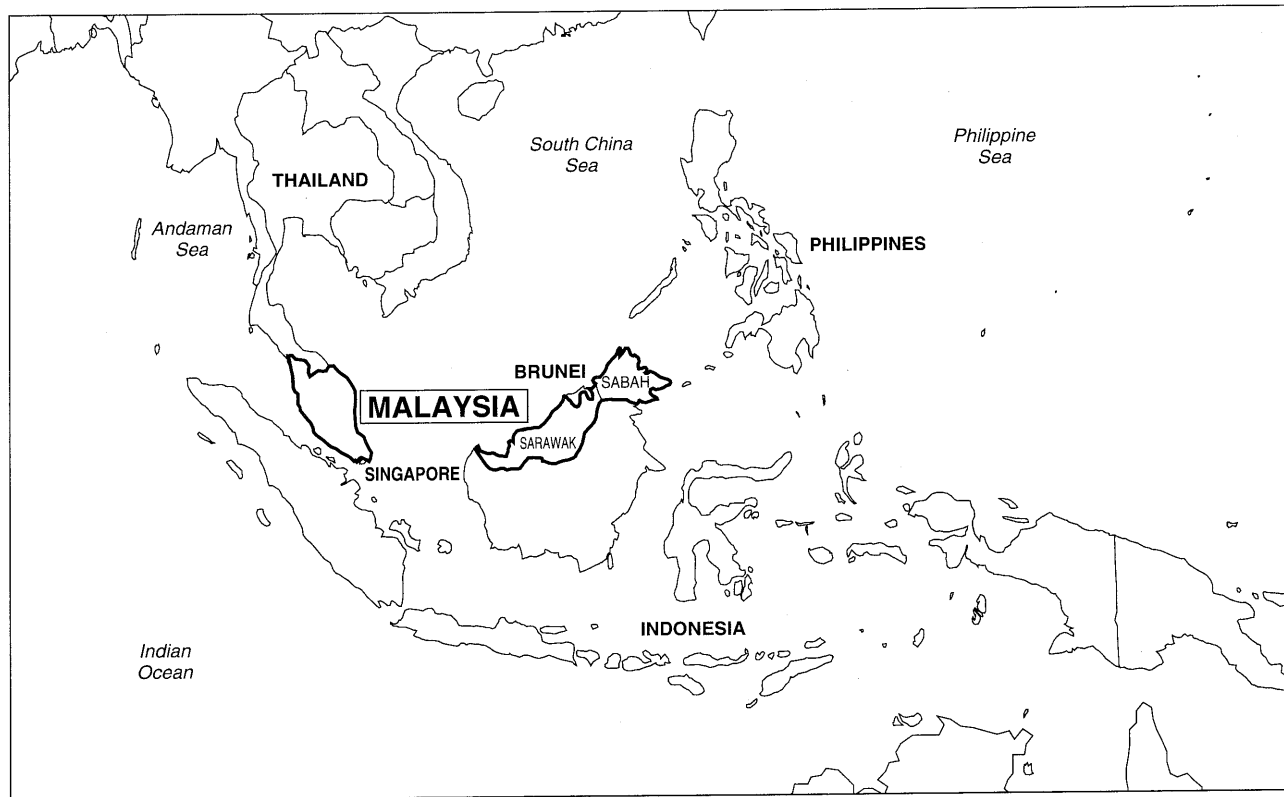


**Annex I. Organization Chart of the Ministry of Health and Welfare, Japan**

## Annex II. Organization Chart of Statistics and Information Department, Ministry of Health and Welfare



# Malaysia





# Malaysia

## 1. Population and Vital Statistics

### *(1) Background Information*

The main sources of information on population and vital statistics of Malaysia are censuses and vital registration of births and deaths.

In 1991 Malaysia conducted its third census of population since its formation in 1963, the first and second having been held in 1970 and 1980. Postwar population censuses were held in 1947 and 1957 in Peninsular Malaysia and in 1960 in Sabah (North Borneo as it was then known) and Sarawak.

Intercensal estimates based mainly on natural increases in population are undertaken by the Department of Statistics.

Since 1963 the Department of Statistics, with the concurrence of the Registrar-General of Births and Deaths, has been coding and publishing statistical data on vital events based on information contained in Birth, Death and Stillbirth Certificates.

The Registry of Births and Deaths responsible for the vital statistics information is under the Ministry of

Home Affairs, while the Department of Statistics is under the Prime Minister's Department.

### *(2) Purpose*

The main purpose of conducting these censuses is to obtain updated information on the population in the country, with each subsequent census covering an increasing number of items of socio-economic information in addition to the basic enumeration. The census information is used in sectoral planning by the Government as well as by the private sector and by researchers.

The main purpose of the vital statistics, apart from its legal value, is to inform on changes in the current population in respect of births, deaths and causes of death, and fertility trends in general. It is thus useful for constructing the intercensal population estimates and population projections. It is particularly useful in health planning as the data collected are on a national basis.

(3) *Coverage*

Nationwide.

(4) *Contents*

The 1991 census report contains a detailed analysis of the key census topics such as population changes and its structure, marriage and fertility, migration, labour force, education, household and other socioeconomic characteristics.

The vital registration statistics cover births, deaths and causes of death.

(5) *Data Collection Procedure*

In the 1991 population census, the particulars of all persons in Malaysia were recorded at their place of residence on the designated census day by field enumerators sent to the different census districts. Data

collection and computerized processing is done wholly by the Department of Statistics.

Vital statistics on births and deaths are collected at designated registration centres throughout the country. However, processing by computers is still done by the Department of Statistics.

(6) *Tabulation and Publications*

The Department of Statistics is responsible for the tabulation and release of census results and for the annual publication on current population estimates and vital statistics.

Census information is published in the Census Report, while information pertaining to current demographic changes is published in the annual Vital Statistics publication and the Year Book of Statistics.

## 2. Health Statistics

(1) *Background Information*

A major portion of the health service information under the Ministry of Health is collected by the Information and Documentation System Unit (IDSU)

through the Health Management Information System (HMIS). For the information whose collection is managed by the respective divisions in the Ministry (e.g. Finance, Manpower, Pharmacy, Research, etc.), the

final output will need to be channelled through the IDSU when it is meant for consumption of the general public.

The types of health information can be classified under three general groupings, viz.

- Health status
- Health resources
- Health activities.

## (2) *Health Status*

Information under the health status is comprised of two types:

- (i) Vital statistics as published by the Department of Statistics; and
- (ii) Morbidity and mortality statistics from government medical and health facilities as collected by the Ministry itself.

### a. Purpose

These statistics depict the current health status of the general population and also its trend over the years.

### b. Coverage

The vital statistics cover the total population while the mortality information covers all reported deaths. Owing to the nature of the occur-

rence of deaths, about two-thirds are non-medically certified. Generally, the causes of death (and morbidity) reported at government hospitals are fairly reliable.

Statistics on births, deaths and causes of death are published in Vital Statistics by the Department of Statistics while statistics on morbidity and mortality in government hospitals are available up till the third terminal digit of the ICD (9th Revision).

### c. Data Collection Procedure

Vital statistics are collected by the Registry of Births and Deaths through its network of registration centres all over the country by gazetted personnel. The data are processed and published by the Department of Statistics.

Morbidity and mortality statistics in government health facilities are collected monthly by the IDSU of the Ministry.

### d. Tabulation and Publication

Annual data are published in the HMIS Report, the Indicators for Monitoring and Evaluation of the Strategy for Health for All by the Year 2000 (HFA/2000), and the Annual Report of the Ministry of Health.

### (3) *Health Resources*

These cover health manpower, financing, inventory and infrastructure.

#### a. Purpose

The main purpose of this information is to ensure that the needed resources are adequate at all times for supporting the regular health services.

#### b. Coverage and Contents

- All registered medical professionals, paramedics and auxiliaries.
- Financing of all activities based on priority.
- All existing inventory in the Ministry of Health.
- Status of development of physical projects.

#### c. Data Collection Procedure

The information on health manpower is obtained through the various registration boards for the professionals and sub-professionals. These registers cover both the practitioners in the public and the private sectors and are updated annually.

Employment status of specific categories of personnel in the Ministry of Health (including non-medical professionals, sub-professionals, and also contract foreign medical personnel) is also available from administrative records.

Health financing is monitored by the Finance

Division of the Ministry of Health in the annual budgeting examinations. The Ministry has adopted the Modified Budgeting System introduced in 1990.

In the absence of a central inventory system and national guidelines, the existing lists of inventories or assets owned (plant, equipment and building, land, vehicles) are kept by the following divisions of the Ministry: Contract and Supply Division, Hospital Division, Health Division, Dental Division, Engineering Division, Planning and Development Division, the IDSU and the Computer Unit. However, plans for a centralized inventory system are under way.

The progress of physical projects is monitored by the Planning and Development Division. However, for projects that have gone off the ground, the maintenance is monitored by various divisions concerned with specific aspects of the fixed asset, for example, Engineering Division, Hospital Division, Health Division, and Finance Division.

#### d. Tabulation and Publication

The information on health resources is documented in the respective annual reports of the various divisions of the Ministry, and also in the

Annual Report of the Ministry of Health in a somewhat summarized form. The State's annual report and the Hospital's annual report also contain such information but in greater detail.

#### (4) *Health Activities*

In the formulation of the Sixth Malaysia Plan (1991-95), the health information system continues to receive emphasis from health management as a decision support system. Among the various programmes, some of the information systems were reviewed and further strengthened to accommodate the changing information needs of the health programmes.

The emphasis in health care delivery is gradually changing from adequacy of care to quality of care, and this has prompted the need to upgrade the analytical skills of health personnel at all levels in using information as a management tool.

##### a. Purpose

The main objective of the information system is to monitor prevailing health programme performance towards specific goals or targets. On a long-term basis, the information is used for policy formulation, resources planning and projection of future demands for health and medical services.

##### b. Coverage

Information is collected for all activities carried out by the twenty-three programmes in different types of health and medical establishments run by the Ministry of Health.

##### c. Contents

The information collected measures, directly or indirectly, performance in terms of achievement of objectives in the specific programmes. These include:

- family health activities;
- morbidity and mortality data and utilization of facilities in government medical establishments;
- incidence of notifiable communicable diseases and their prevention and control;
- environmental sanitation;
- food quality control;
- dental health;
- pharmaceuticals production and control;
- leprosy, tuberculosis and vector-borne disease control;
- health education activities;
- manpower planning;
- health systems research and biomedical research.

d. Data Collection Procedures

Information for a majority of the health care programmes is collected through the HMIS. However, many of the service support programmes like pharmacy, manpower development, general health planning, and health and medical research collect information through their own effort and initiative. There are plans to streamline these independent systems into the general HMIS.

All information generated at service delivery points, namely at hospitals and public health facilities, is compiled into a monthly report and sent to the district level for further compilation. The process is repeated from the district to the state and the province, and subsequently stopped at the

Information and Documentation System Unit at the national level for final processing.

e. Tabulation and Publication

Much of the routine data collection is on a monthly basis. However, published data for official use in general planning at national and at state levels are usually annual and in an aggregated or summarized form. Such information is to be found in the annual reports for specific programmes, the HMIS annual reports, the Ministry of Health Annual Report and the Indicators for the HFA/2000.

The state and hospital reports are also available but these contain detailed information useful for planning at local level.

### 3. Computerization of Health Information

(1) *Background Information*

Computerization as a supportive service to health management was conceptualized as early as in 1976. However, due mainly to technical manpower constraints it was deferred until 1979 when it gained momentum starting off with the computerization of accounting activities within the Ministry.

In the absence of a central coordinating unit, computerization developed as separate functional entities within the Ministry of Health. In an effort to coordinate and streamline such sporadic proliferation, the Technological Information Centre was established within the Ministry in January 1991.

## *(2) Current Development*

At present there are six key projects under the computerization plan in the Ministry covering the following activities:

- (i) Store Management and Inventory Control System;
- (ii) Biomedical Research;
- (iii) Staff Management Information System;
- (iv) Financial Information System;
- (v) Health Management Information System;
- (vi) National Pharmaceutical Laboratory Control System.

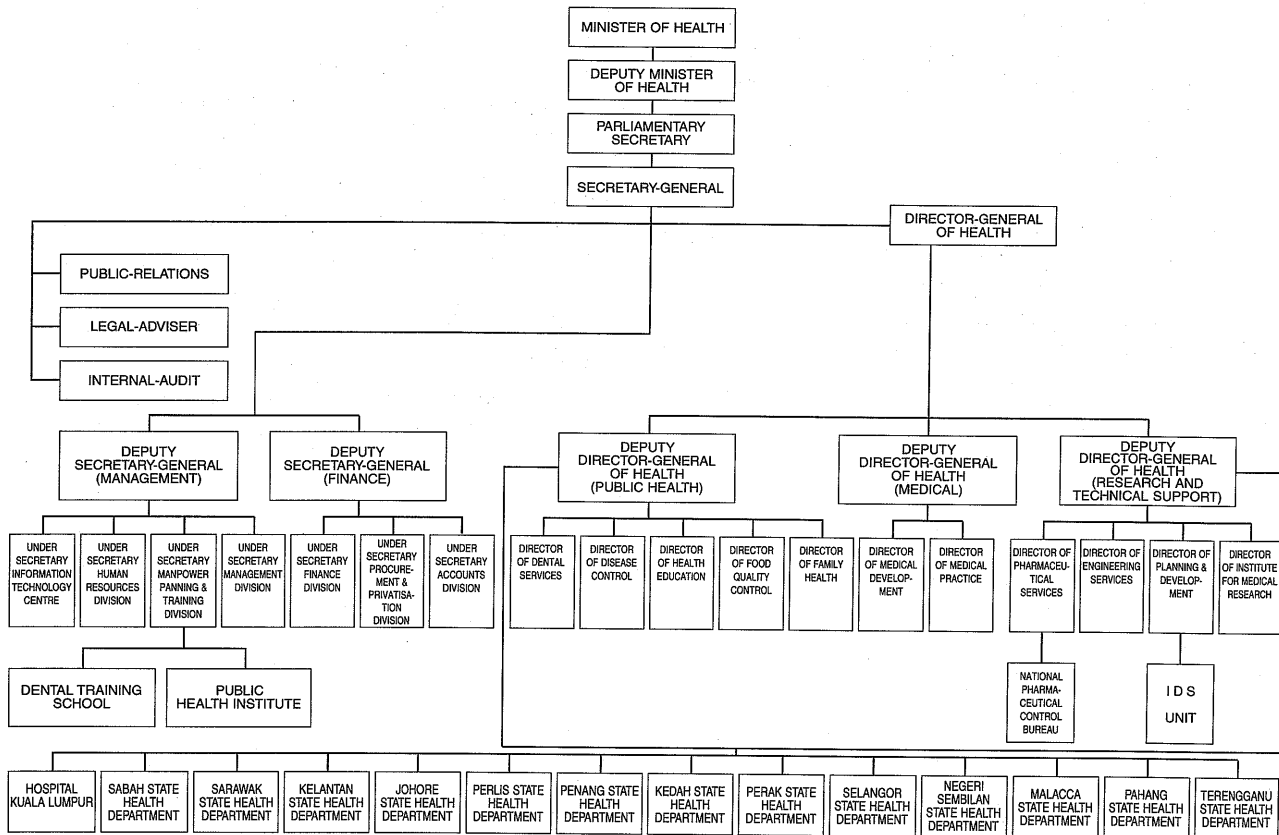
All the above projects either have been implemented fully (and continually upgraded) or are in various stages of implementation.

The hardware is in the form of mainframes, supermicros/minicomputers and microcomputers.

In response to the growing number of users of computerized information within the Ministry itself coupled with the availability of more sophisticated micros at lower costs, the Ministry is encouraging the use of a microcomputer system at local levels. Information sharing is one of the ultimate aims in computerization but duplication need to be avoided.

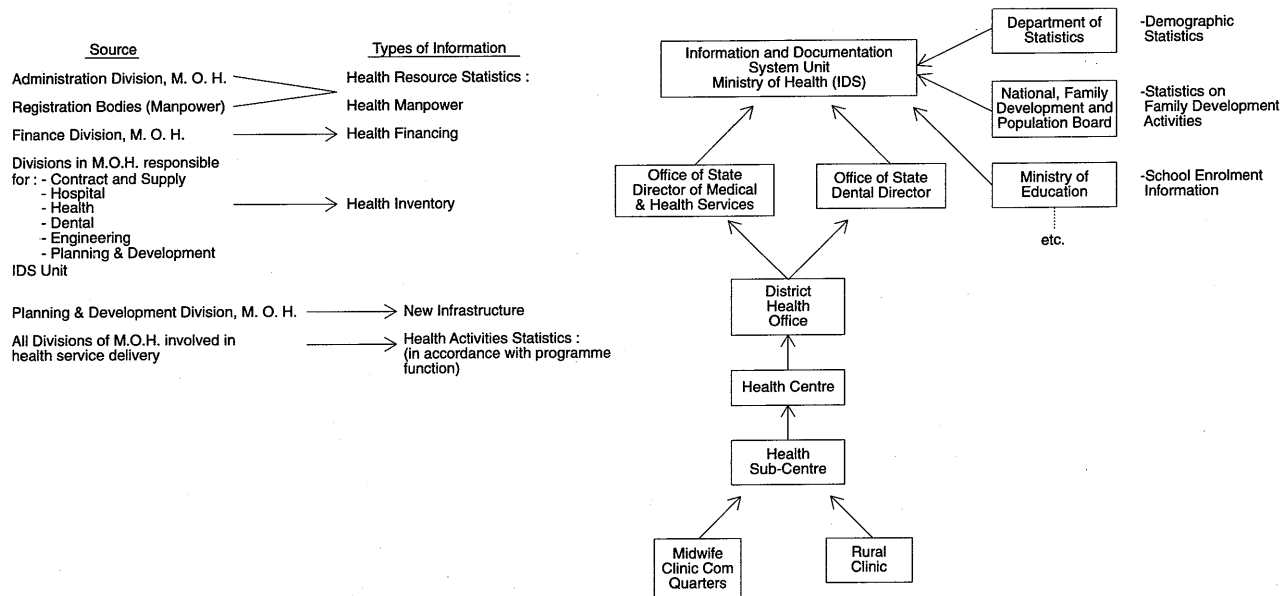
*(Information and Documentation System Unit,  
Ministry of Health Malaysia)*

## Organization Chart of the Ministry of Health, Malaysia

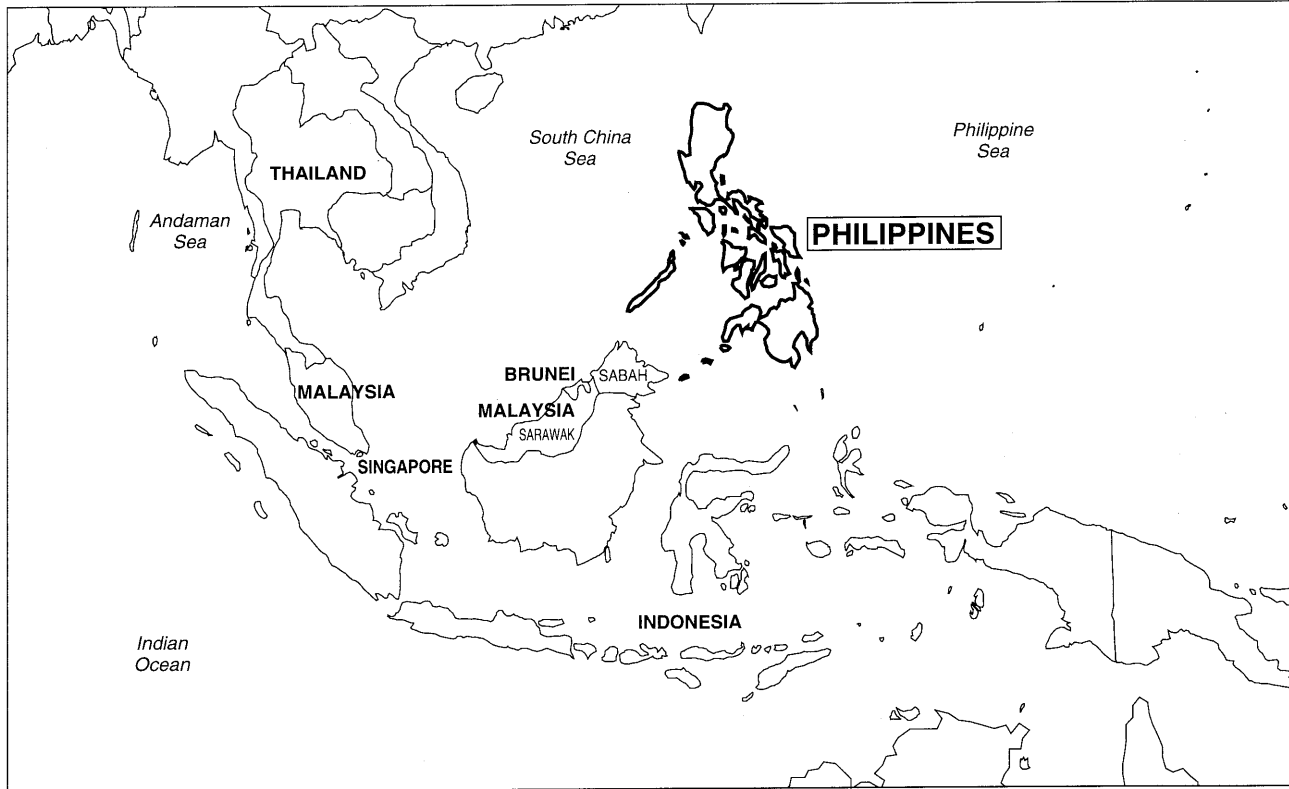




## Flow of Health and Health-Related Information, Malaysia



# The Philippines



# The Philippines

## 1. Population Statistics

### (1) *History*

The first complete returns of the population of the archipelago were made in 1903. The census of 1903 was followed by others carried out in 1918, 1939, 1948, 1960, 1970, 1975, 1980 and 1990. The 1990 census was the latest. The National Statistics Office conducted the 1990 Census of Population and Housing in May 1990. In May 1970 and 1980, this type of census was also undertaken. An Integrated Census of the Population and its Economic Activities was done in May 1975. The objective was to obtain data on the size, distribution, structure, change and socio-economic characteristics of the population including inventory of the housing accommodation, their geographic location, structural characteristics and available facilities, among others.

### (2) *Purpose*

The purpose of the Census of Population and Housing is to provide data on the present situation of

population in the Philippines.

### (3) *Coverage*

Nationwide.

### (4) *Contents of Reporting Form*

The population of the barangays, municipalities, cities, provinces, regions and the total Philippine population are tabulated by age, sex, and other demographic characteristics such as occupation, educational attainment, income, rural or urban. These tabulations are published by the National Statistics Office (NSO).

### (5) *Data Collection Procedure*

The population censuses are conducted in the Philippines every ten or five years using the enumerator or interview method.

Under Commonwealth Act No. 891, the National Census and Statistics Office (renamed the National Statistics Office) is authorized "to prepare and under-

take all censuses of population, agriculture, industry and commerce.”

In February 1980, Parliamentary Bill No. 909 was presented at the Batasang Pambansa, providing for the taking of an integrated census every ten years beginning 1980, with May 1 of every intercensal year as the reference year.

#### *(6) Consolidation, Analysis and Presentation*

The total population by age, sex, citizenship, date of birth, marital status, educational characteristics and language is released by the National Statistics Office

with their summary of the population projections by region and province. The latest projections are for 1981-2030.

Projections at the national, regional and provincial levels follow the most common demographic procedure of forecasting population by age and sex, namely, by the cohort-component method.

To project population of cities and municipalities, the ratio method, rather than the cohort-component method was utilized because of the unavailability of data on fertility, mortality and migration at the city and municipality level.

## **2. Natality Statistics**

#### *(1) History*

As provided for by the Civil Registry Law (Act No. 3753), all livebirths shall be registered within thirty days from the date of birth at the Local Civil Registrar of the place of birth.

#### *(2) Purpose*

The purpose of these statistics is to determine the number of livebirths in the Philippines and, in addition, to obtain the fertility rates among Filipinos and

statistical indices computed to be used in the appraisal of the nation's state of health.

#### *(3) Coverage*

Nationwide.

#### *(4) Contents of Reporting Form*

Natality statistics are consolidated using FHSIS Form / M-2 (Monthly Natality Report) and are tabulated by sex, place of birth, attendance and age of mother.

### *(5) Data Collection Procedure*

All cities and provinces submit their monthly natality reports to their respective Regional Health Office and to the Health Intelligence Service (HIS), Department of Health.

### *(6) Consolidation, Analysis and Presentation*

Appropriate and practical graphical diagrammatic presentations are made at each level as released by the HIS in its annual Philippine Health Statistics. These data present the annual trends, sex ratios, attendance at birth, and births by location.

## **3. Mortality Statistics**

### *(1) History*

Deaths are registered in accordance with the Civil Registry Law (Act No. 3753) - an Act to establish a civil register. Deaths shall be registered within thirty days from the time of death in the Office of the Local Civil Registrar of the place of occurrence. When death occurred in transit or where the place of death could not be determined, registration shall be made in the Office of the Local Civil Registrar of the place of the burial in the Philippines.

### *(2) Purpose*

These statistics are used for medical and legal purposes:

- a. Medical - to gather information on the causes of death for specific groups of

people for purposes of prevention and control;

- b. Legal - so that the deceased person will be relieved from social, legal and official obligations.

### *(3) Coverage*

Nationwide.

### *(4) Contents of Reporting Form*

The reports are based on the data compiled from the death certificates of the Office of the Local Civil Registrar and are submitted to the HIS, Department of Health, using the FHSIS Form / M-3 (Monthly Mortality Report). These data are tabulated by place of occurrence, cause, age, sex, and medical attendance.

*(5) Data Collection Procedure*

Data are gathered by field health personnel of each City and Provincial Health Office and are submitted to the Regional Health Office and the HIS, Department of Health, every month.

*(6) Consolidation, Analysis and Presentation*

The HIS and the Regional Health Offices consoli-

date monthly reports from City Health and Provincial Health Offices and make the final analysis of the annual data. These are presented by frequencies, trends and distribution of total mortality, infant mortality, maternal mortality and fetal mortality in the different regions through the Regional Annual Reports and throughout the Philippines in the annual Philippine Health Statistics.

## **4. Morbidity Statistics**

*(1) History*

Data on notifiable diseases are based on information gathered by field health personnel as provided for in the Law on Reporting of Communicable Diseases (Act No. 3573) - an Act providing for the prevention and suppression of dangerous communicable diseases and for other purposes. This Act was passed on 26 November 1929.

*(2) Purpose*

The purpose of these statistics is to obtain information on the trend of occurrence of major communicable diseases and their epidemiological features for surveillance and immediate institution of appropriate

preventive and control measures.

*(3) Coverage*

Nationwide.

*(4) Contents of Reporting Forms*

Weekly number of cases and deaths of notifiable diseases by age and sex and by place of occurrence.

*(5) Data Collection Procedure*

The weekly FHSIS/W-1B reports are submitted simultaneously to the Regional Health Office and the Health Intelligence Service by the City Health Office and Provincial Health Office comprising such regions.

*(6) Consolidation, Analysis and Presentation*

These reports are consolidated for the regions and the whole country. The ten leading causes are listed, and the annual morbidity rates and expected limits are computed.

The Health Intelligence Service takes charge of the tabulation. The results are released through the fol-

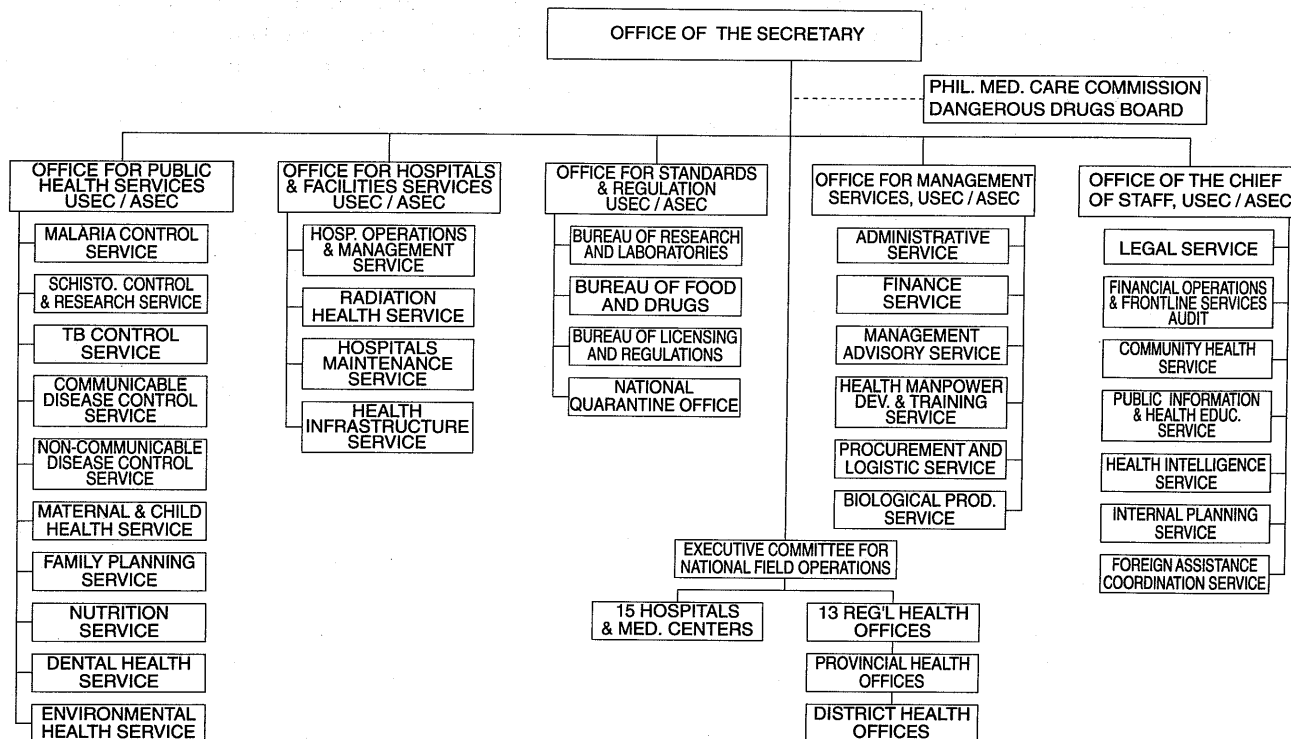
lowing regular publications:

- a. HIS Bulletin (weekly);
- b. Weekly Health Intelligence (weekly);
- c. Philippine Health Statistics (annual);
- d. State of Health (annual and every three years).

*(Health Intelligence Service, Department of Health)*

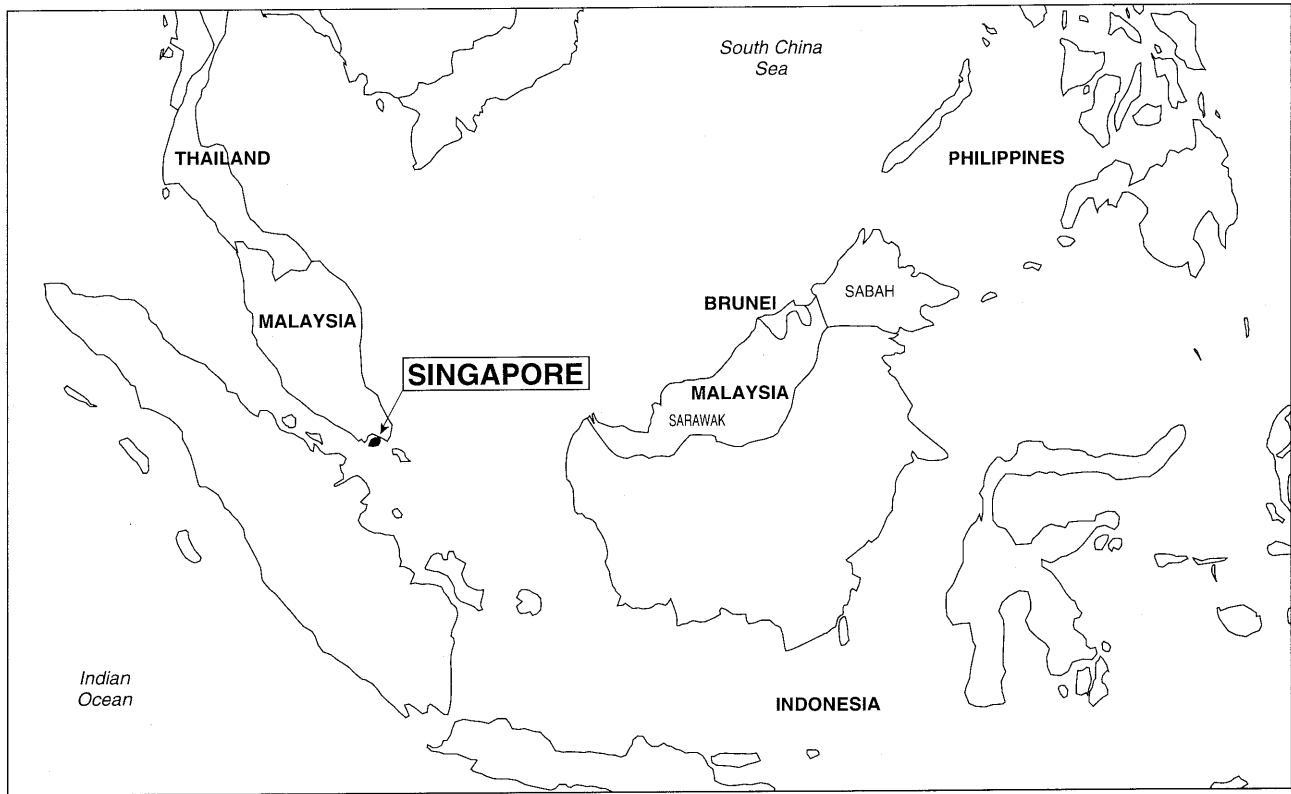
# Department of Health, Philippines

## Reorganized Structure Executive Order 119 (1988)





# Singapore



# Singapore

## 1. Population and Vital Statistics

### *(1) Background Information*

The main sources of information on population and vital statistics of Singapore are censuses and compulsory vital registration of births and deaths.

Singapore conducted its first population census in 1871 and subsequent censuses at ten-year intervals till the outbreak of World War II. In the pre-war censuses, Singapore was included as part of the Straits Settlements and later, of Malaya. Separate censuses for Singapore were carried out in 1947, 1959, 1970, 1980 and 1990. Mid-year population estimates are made for the intercensal years.

Under the Registration of Births and Deaths Act, all occurrences of births and deaths within Singapore are required to be reported within stipulated periods. The registration system has been operative for many years and records of vital statistics are virtually complete.

### *(2) Purpose*

The main purpose of conducting censuses is to obtain updated information on the population situation in the country. In the case of vital registration, besides the legal requirements, the aim is to collect detailed information on births and deaths including the underlying causes of mortality. Such data are essential for statistical analysis of changes in the population and studies of mortality trends. Census information is particularly useful for planning and for evaluation of programmes such as housing, education, health, transport and other social amenities, as well as for research and analysis by the Government, private corporations and individuals.

### *(3) Coverage*

The whole population of Singapore.

### *(4) Contents*

In the 1990 Census of Population, the detailed information collected on the population could be clas-

sified under the following broad categories:

- a. Demographic characteristics;
- b. Literacy and educational qualifications;
- c. Economic characteristics and employment;
- d. Geographic distribution;
- e. Houses and households;
- f. Income and mode of transport;
- g. Language and dialects spoken at home;
- h. Religion and fertility.

Statistics and health indicators derived from the vital registration system include:

(i) Births

- a. Number and rate;
- b. Number and percentage distribution by birth attendant;
- c. Number and rate by age of mother and ethnicity;
- d. Number by occupation of father and birth order;
- e. Number by birth weight and gestation period;
- f. Crude birth rate;
- g. Age-specific fertility rate;
- h. Total fertility rate;
- i. General fertility rate;

j. Gross reproduction rate.

(ii) Deaths

- a. All deaths, number and rate by age, sex, ethnic group, medical attendance and cause;
- b. Infant deaths, number and rate by sex, ethnic group and cause;
- c. Neonatal deaths, number and rate by sex, ethnic group and cause;
- d. Perinatal deaths, number and rate;
- e. Stillbirths, number and rate;
- f. Maternal deaths, number and rate;
- g. Crude death rate;
- h. Causes of deaths by age and sex (coding based on ICD-9);
- i. Standardized mortality ratio.

(5) *Data Collection Procedure*

In the 1990 Population Census, a new approach was adopted. Particulars of individuals and houses which were readily available in the databases and administrative records of public authorities were pre-printed on census schedules. This procedure saved the effort of obtaining the information from the individuals; the field interviewers had only to verify/confirm as

the case might be. Any changes, e.g. births or deaths or occupancy of the houses, were taken into account for the extraction of the particulars from the administrative records. Additional information which was not available in the database was obtained from the households and updated in the census schedules.

Data processing was undertaken from June 1990 to March 1991, by the Department of Computer Information Services of the Ministry of Finance, using the latest technology. This involved automatic coding for occupation and household structure, and computer-assisted coding of economic activity. The computer was also designed to carry out comprehensive checks for record errors and inconsistencies.

Vital statistics on births and deaths are processed from the Special Preliminary Report Forms completed

by the various vital registration centres. Processing of the statistical information is undertaken by the Registry of Births and Deaths which is under the purview of the Ministry of Home Affairs.

#### *(6) Tabulation and Publication*

The Department of Statistics is responsible for the tabulation and release of census results and also for the periodic publication of population and vital statistics. The data are published in the Monthly Demographic Bulletin, Monthly Digest of Statistics, Statistical Highlights Singapore and the Yearbook of Statistics, Singapore.

Detailed information on births and deaths are published annually in the Annual Report of the Registration of Births and Deaths.

## **2. Statistics on Notifiable Diseases**

### *(1) Background Information*

Statistics from notification of specific infectious diseases, e.g. cholera, enteric fevers, dengue hemorrhagic fever, malaria, viral encephalitis, viral hepatitis, tuberculosis, venereal diseases and leprosy, are collected routinely.

In 1973, a Joint Co-ordination Committee on Epidemic Diseases was set up. The main objective of the Committee is to co-ordinate the work and responsibilities of the Ministry of Health and the Ministry of the Environment on diseases of public health importance, specifically, the notifiable diseases and other diseases

which may be considered of sufficient importance to require co-ordinating action and liaison between the two Ministries.

Statistics on diseases of key interest are monitored and reviewed by this Committee.

*(2) Purpose*

To monitor and control the epidemiological situation of the country with the primary aim of early detection of outbreaks of infectious diseases so that control measures can be instituted promptly.

*(3) Coverage*

All persons reported to have contracted any of the notifiable diseases.

*(4) Contents*

All reported cases of notifiable infectious diseases by type, including information on the profile of infected persons.

*(5) Data Collection Procedure*

Except for tuberculosis, venereal diseases and leprosy for which notifications are made to special registries in the Ministry of Health, notifications of the other infectious diseases are received by the Quarantine and Epidemiology Department of the Ministry of the Environment. Under the existing regulations, notifications of the specific notifiable diseases are compulsory by all providers of health and medical service in the country.

*(6) Tabulation and Publication*

Based on information from notifications of specific notifiable diseases, the Committee on Epidemic Diseases publishes the "Weekly Infectious Diseases Bulletin" and the "Monthly Epidemiological News Bulletin".

### 3. Morbidity Statistics

#### *(1) Background Information*

Routine collection of morbidity statistics on patients admitted into government hospitals started in 1969 as part of an overall objective of augmenting the existing data on specific notifiable diseases and other data on specific diseases from special disease registers such as those of tuberculosis, leprosy, venereal diseases and cancer.

In 1974, the scope of morbidity data was extended to the outpatient level, and since then the records of cases seen at all government primary health care clinics have been compiled according to disease conditions.

In 1978, a new statistical series was introduced by the Ministry of Health requiring private hospitals to provide, on prescribed forms, information pertaining to each patient admitted into their hospitals.

In July 1990, the Central Claims Processing System (CCPS), an automated system, was introduced by the Ministry of Health to facilitate all public and private hospitals to submit their Universal Claims Forms (UCF) through the Singapore Network Systems. The UCF is a single electronic message that contains all information for the Medisave, claims for Medishield and Hospital Inpatient Discharge Summary (HIDS).

Through this system, Medisave and Medishield claims are submitted to the Central Provident Fund Board while the information from the HIDS is submitted to the Ministry of Health for the compilation of medical statistics.

To supplement the morbidity data collected on inpatients, special censuses and studies have also been conducted on long-staying patients, particularly those in the mental institutions. Mainly because the available morbidity data collected are inadvertently biased towards certain groups of people who seek medical attention from hospitals and clinics, ad hoc morbidity and other health examination surveys have also been carried out from time to time to obtain additional information which would provide a better understanding of the disease pattern prevailing in the community.

#### *(2) Purpose*

The main purpose of collecting the data is to study the morbidity patterns of patients and to analyse the epidemiological profile of patients with different disease conditions. This is to help in the planning and proper design of government and community health programmes.

### *(3) Coverage*

All patients admitted into government and private hospitals and patients attending government primary health care clinics.

### *(4) Contents*

Data on hospitalized patients include:

- a. Socio-economic profile, e.g. age, sex, ethnicity, nationality, occupation;
- b. Patient classification by specialty;
- c. Source of referral;
- d. Diagnoses (coding based on ICD-9);
- e. Surgical operation;
- f. Underlying cause of death (in the case of death of patient).

For outpatients, the principal morbid condition for which the patient is treated is recorded.

### *(5) Data Collection Procedure*

With the introduction of the CCPS, all public and private hospitals submit electronically their Medisave and Medishield claims to the Central Provident Fund Board and their Hospital Inpatient Discharge Summaries (HIDS) to the Ministry of Health through their UCF. Morbidity data on outpatients are compiled from computerized records of patients attending government primary health care clinics.

### *(6) Tabulation and Publication*

The Research and Epidemiology Department, Ministry of Health is responsible for co-ordinating and ensuring that individual hospitals are up-to-date in their submissions of the returns. The statistics are processed annually and given to each individual hospital for their reference and retention.

## **4. Statistics on Occupational Diseases**

### *(1) Background Information*

The Department of Industrial Health in the Ministry of Labour is responsible for controlling health hazards in workplaces and preventing occupational diseases. The department's inspectors, industrial hygiene

staff, nurses and doctors check workplaces, investigate complaints and notifications of occupational diseases, and enforce the health provisions of the Factories Act. Advice is given to companies, unions and other organizations with problems relating to occupational

health matters. Surveys are also conducted to delineate specific occupational health problems so that appropriate preventive programmes, including legislation, may be instituted.

## *(2) Purpose*

Statistics on occupational diseases are collected for the following reasons:

- a) To assess the size of various occupational health problems in Singapore;
- b) To identify areas of concern;
- c) To study occupational disease trends and patterns;
- d) To formulate action plans so as to effectively control the hazards and prevent occupational diseases.

## *(3) Data Collection and Publication*

Workers suspected to have occupational disease are referred to the Department through:

- a) Notifications under the Factories Act and the Workmen's Compensation Act;

- b) Complaints and consultation received from workers, unions and employers;
- c) Returns on medical surveillance results of workers exposed to specific hazards, including hazards prescribed under the Factories (Medical Examinations) Regulations 1985.

All these cases are investigated by the Department in order to establish the diagnosis and ensure that control measures are taken to prevent further cases.

Data collected following the above investigations of occupational diseases cases are analysed. This is the only source of data on occupational diseases in Singapore.

These data are published annually in the Ministry of Labour's Annual Report, the Singapore Yearbook, the Yearbook of Labour Statistics, as well as Singapore Facts and Pictures. On an ad hoc basis, the data may be published in the Labour Ministry's newsletters, in scientific journals and in reports to international bodies, such as the ILO and WHO.



## 5. Health Service Utilization Statistics

### *(1) Background Information*

Prior to 1976, the responsibility for data collection and the determination of the type of data to be collected rested with each government health institution depending on their specific administrative needs and requirements. However, with increasing awareness and recognition of the importance of developing an effective health management information system (HMIS) for both administrative and planning purposes, the overall system of data collection was revamped in 1976. The task of developing and maintaining the HMIS was put under the charge of the then Research and Evaluation Section (now Research and Epidemiology Department) of the Ministry of Health. The HMIS has undergone a number of revisions since 1976 in tandem with the changing needs and requirements of health administrators and planners.

In 1978, the statistical system was extended to cover the activities of the private hospitals. However, information on activities of private clinics is not monitored routinely and is obtained from ad hoc surveys conducted by the Department of Statistics.

### *(2) Purpose*

One of the prime objectives is to monitor and make short-term appraisal of the performance of the various service departments within the Ministry of Health and the utilization of private hospitals. The statistical information is also utilized in conjunction with other data for purposes of resource allocation, projection of future demand for health facilities and manpower as well as overall planning for health services in the country.

### *(3) Coverage*

Statistics collected cover activities of all government hospitals, ancillary services and primary health care clinics. Coverage of activities of private medical establishments is currently confined to private hospitals.

### *(4) Contents*

The range and type of data collected are fairly wide and include, amongst other things, information on:

- a. Use of inpatient facilities, e.g. hospital admissions, bed-days, bed occupancy, dura-

- tion of stay and discharges by specialty;
- b. Surgical operations and anaesthetic procedures;
- c. Outpatient attendances at hospital specialist clinics, ambulatory and emergency departments, primary health care and dental clinics;
- d. Radiological and laboratory investigations and extent of use of services of various other paraclinical and ancillary departments, e.g. physiotherapy, occupational therapy, medical social services, etc;
- e. Use of drugs;
- f. Home nursing service;
- g. Health screening and immunization;
- h. Health service for the elderly;

- i. Government health manpower and workload indicators;
- j. Government health expenditure, revenue and costing.

#### (5) *Data Collection Procedure*

The statistical returns are submitted on prescribed forms on a monthly basis by the various service centres to the Research and Epidemiology Department of the Ministry of Health for processing.

#### (6) *Tabulation and Publication*

The data are collected and published quarterly and annually in the form of statistical bulletins and other special reports.

## 6. Statistics on Preventive Health Care Service

### I. Immunization

#### (1) *Background Information*

Immunization of pre-school children is the responsibility of the Family Health Service.

The School Health Service (SHS) is responsible for the immunization of school children at regular in-

tervals and the Ministry of Defence for national servicemen.

Immunization against cholera and yellow fever is provided by the Government Vaccination Centre to any member of the public. Private medical practitioners also provide immunizations.

Since the early 1960's all childhood immuniza-

tions are notified to the Central Immunization Registry and statistics pertaining to immunizations administered have been collected and compiled.

*(2) Purpose*

To help determine immunization coverage in the country and to monitor immunization programme activities.

*(3) Coverage*

All pre-school and school children in Singapore.

*(4) Contents*

Data collected include:

- a) Number of immunizations administered;
- b) Number of children immunized by age;
- c) Type of immunization;
- d) Immunization coverage rate.

*(5) Data Collection Procedure*

Data are collected from the various Family Clinics and from vaccination records kept by the SHS and private practitioners as well as from the compulsory notifications of diphtheria immunization carried out in pre-school children received by the Central Immunization Registry.

*(6) Tabulation and Publication*

Statistics on the immunization programme is tabulated and published in the Report of the Childhood Immunization Programme in Singapore by the Quarantine and Epidemiology Department of the Ministry of the Environment. Information is also available in the Family Health Service Annual Report and the School Health Service Annual Report.

## **II. Contraception, Sterilization and Legalized Abortion**

*(1) Background Information*

The Singapore Family Planning and Population Board was established in 1966 by an act of Parliament as a Statutory Board under the portfolio of the Minister for Health. When the National Programme began in 1966, the main objective was to provide good and easily accessible clinical services where all couples wishing to practice family planning could obtain professional advice and contraceptive supplies.

In 1972, all existing programmes of the Board were intensified and many new measures were initiated.

Both the Abortion Act (1969) and the Voluntary Sterilization Act (1969) legalizing abortion and sterilization were repealed at the end of 1974 and replaced by the Abortion Act 1974 and the Sterilization Act 1974 which further liberalized abortion and sterilization in the Republic.

The collection of statistics on contraceptive methods used started in 1966/67, while statistics on sterilizations and legalized abortions were collected as from 1970.

## *(2) Purpose*

The purpose of collecting the data is to monitor the progress of the family planning programme activities and to provide the necessary information for policy formulation and programme planning.

## *(3) Coverage*

All persons who seek advice on family planning at the government clinics and those who have undergone sterilization or abortion.

## *(4) Contents*

The statistical data collected include:

- a) Attendances by government clinic and contraceptive methods according to new cases or revisits;
- b) Profile of family planning new acceptors;
- c) Number of sterilizations and profile of persons who have undergone sterilization;
- d) Number of legalized abortions performed and profile of persons who have had their pregnancies terminated.

## *(5) Data Collection Procedure*

Monthly returns on family planning acceptors from government clinics and sterilization and abortion returns from all clinics/institutions are submitted to the Research and Epidemiology Department of the Ministry of Health for data processing.

## *(6) Tabulation and Publication*

The Research and Epidemiology Department of the Ministry of Health is responsible for statistical tabulation and data analyses. The information is published annually.

## 7. Health Manpower Statistics

### (1) *Background Information*

Although statistics on all grades of health personnel are available from administrative records, particular emphasis is focused on certain key personnel, viz. doctors, dentists, pharmacists, nurses and midwives, who are also incidentally required to be registered under the relevant acts, namely, the Medical Registration Act, the Registration of Dentists Act, the Registration of Pharmacists Act, the Nurses Registration Act and the Midwives Act.

Special manpower registers for these groups of personnel are kept and updated periodically for them to be kept 'live'. To facilitate records maintenance and retrieval of statistical information, these registers have been computerized.

### (2) *Purpose*

The purpose of these registers is to provide up-to-date data on the stock of the key health personnel in the country both for administrative use and for manpower planning.

### (3) *Coverage*

All registered doctors, dentists, pharmacists,

nurses and midwives in Singapore.

### (4) *Contents*

Personnel particulars maintained in the registers contain not only vital information such as sex, age, race, religion and citizenship, but also details on qualifications, year of qualification and the university/institution which conferred the degree and specialist qualification, etc. Information on the type, duration and place of practice is also captured.

### (5) *Data Collection Procedure*

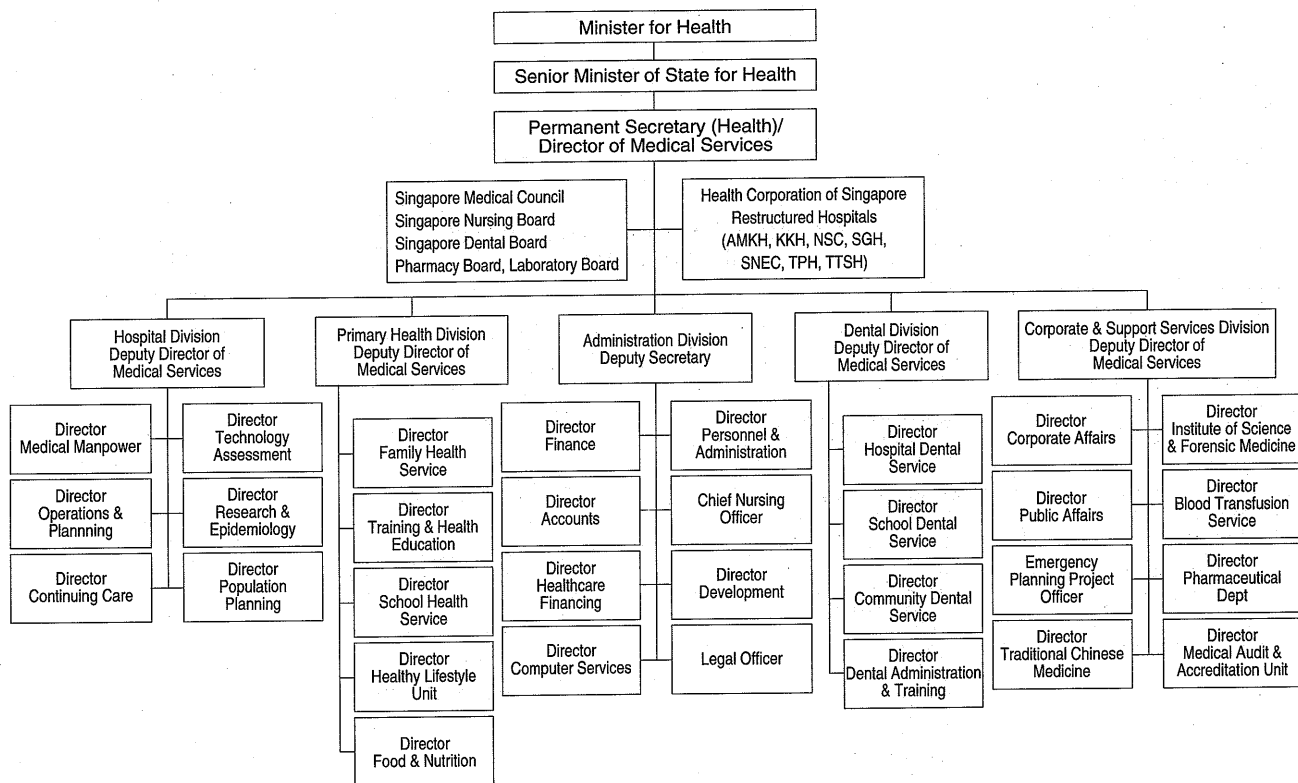
The information is obtained from the registration forms completed by the doctors, dentists, pharmacists, nurses and midwives. The manpower registers are updated annually.

### (6) *Tabulation and Publication*

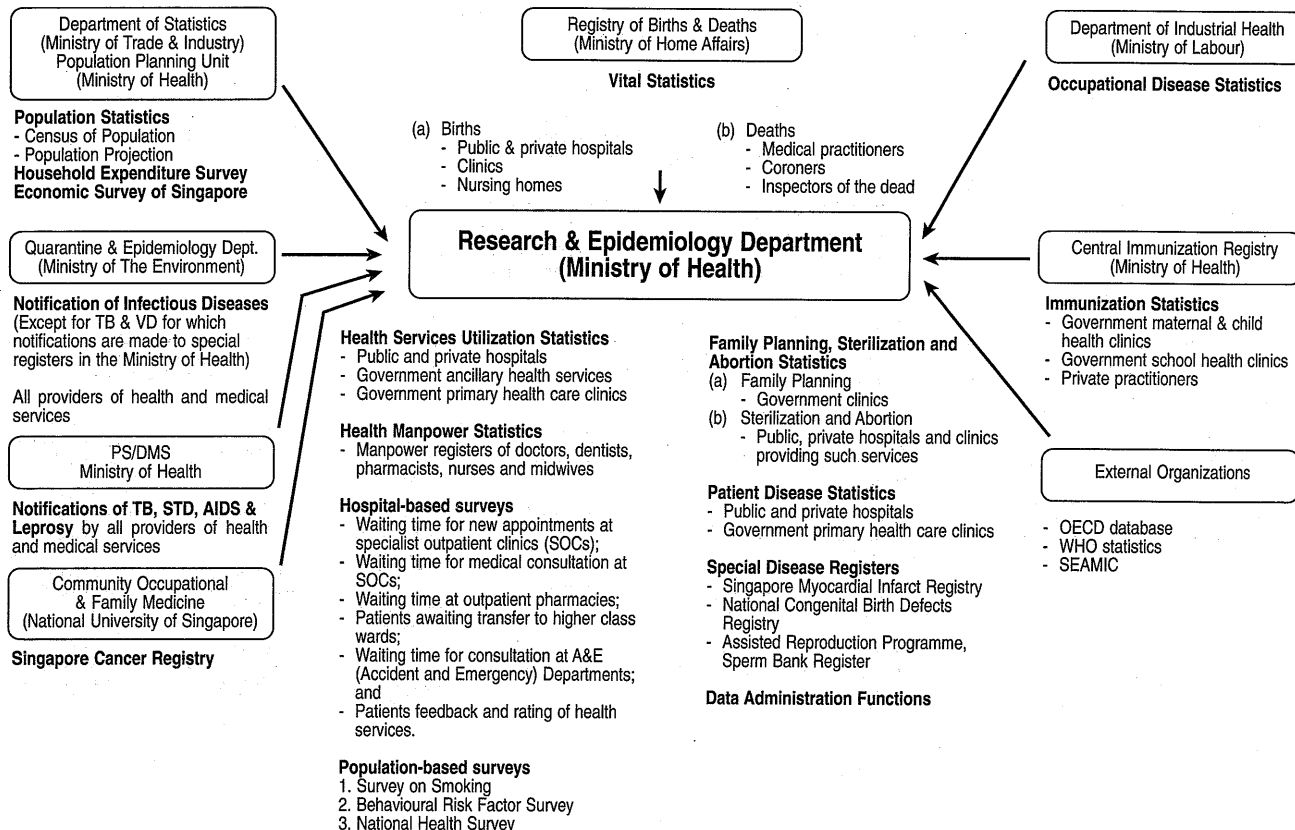
The Research and Epidemiology Department, Ministry of Health is responsible for the tabulation and analysis of the statistical data. Reports on these key health personnel are published annually.

*(Research and Epidemiology Department,  
Ministry of Health)*

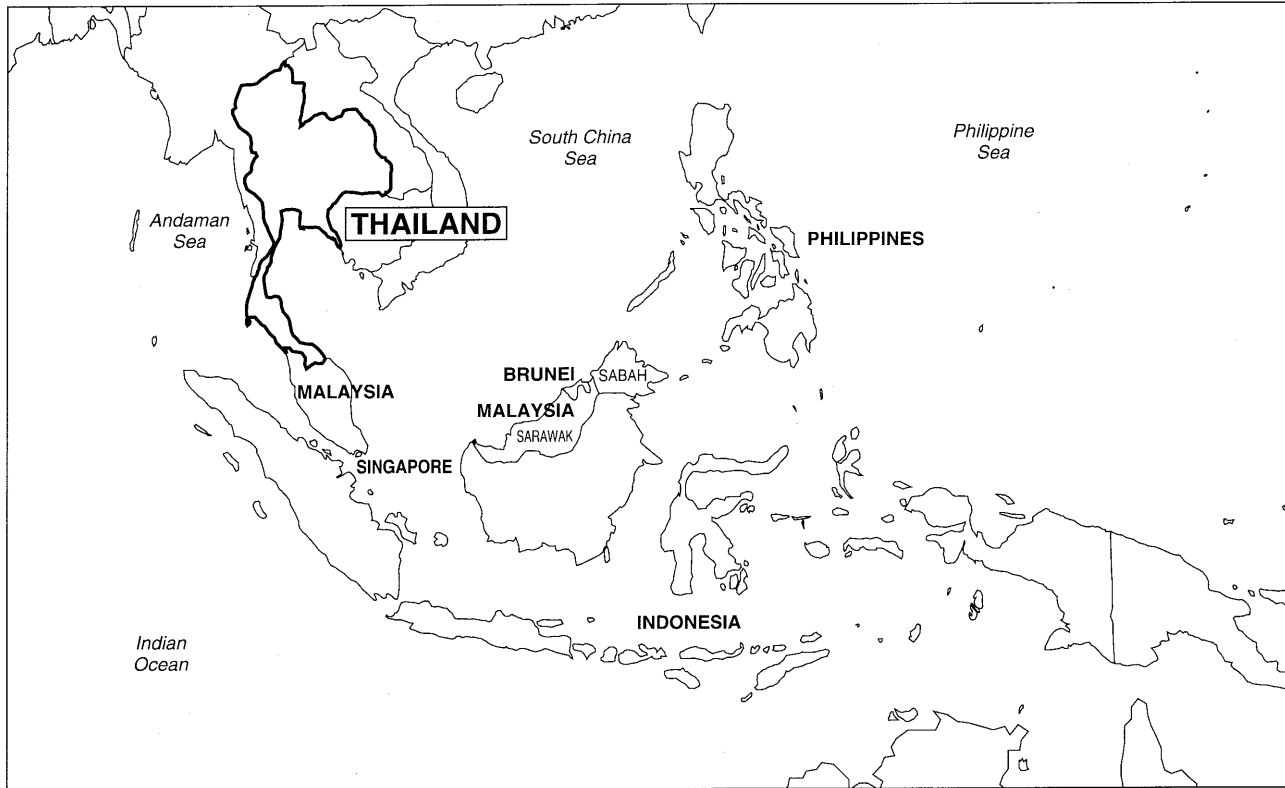
# Ministry of Health Organization Chart, Singapore



## Ministry of Health, Singapore Health Management Information System (HMIS)



# Thailand





# Thailand

## 1. Outline

It is well accepted that in the development of any country, the quality of life of the population is one of the most important factors which has to be arrived at. Among those acquired conditions, health status is considered the main element to come prior. The Ministry of Public Health has fully been involved in taking care of such responsibility by rendering health care to the population as a whole.

In Thailand the administrative area has been classified into various levels: central, provincial, district, subdistrict (tambon), and village. The health care delivery systems are provided along with such an organizational structure.

In order to know the relevant status on health of the population, the system for collecting vital and health statistics has been established. Started with vital statistics, it was about 70 years ago that the registration of vital events became compulsory by laws in terms of births, deaths, and marriages. The responsible organization was the Ministry of Interior to which at that time the Health Department was attached. After

that the Health Department was promoted and became the Ministry of Public Health, but the vital registration was still under the responsibility of the Ministry of Interior. When it came to the time for health development, the requirement for information concerning the health situation of population was not only confined to the vital statistics but also to other fields of health.

Within the context of health situation of the population, a variety of health information other than health and vital statistics is required so as to identify health problems. Health policies have been planned in accordance with the health problems of the people and subjected to the improvement of the unsatisfactory health situations. Health development plans are formulated to serve such policies and are included in the five-year National Economic and Social Development Plans. Particularly in the fourth five-year Plan, Country Health Programming became the strategy for the health planning formulation in Thailand. With the concept of problem-oriented planning, the health problems are duly identified to prop up the health policy in

planning to solve them. Then the requirements for the health information including vital and health statistics have become greater and greater, and the effective approaches to obtain more reliable and timely information have been implemented in the essence of high technology. The validity and accuracy of the statistics

and information have gradually come up to a satisfactory level, but the timeliness is still the major problem. So it is expected that with the modern technology of computerized data processing system, it will bring in more satisfaction to the users.

## 2. Population Statistics

Thailand has conducted a population census for the whole country for 9 times since 1911. At the beginning, the population census was under the responsibility of the Ministry of Interior. When the National Statistical Office was organized under the Office of the Prime Minister, the responsibility for conducting the population census was transferred from the Ministry of Interior to the National Statistical Office since then.

The ninth census "Population and Housing Census 1990," was undertaken on 1 April 1990.

The main population statistics presented are put into 3 groups:

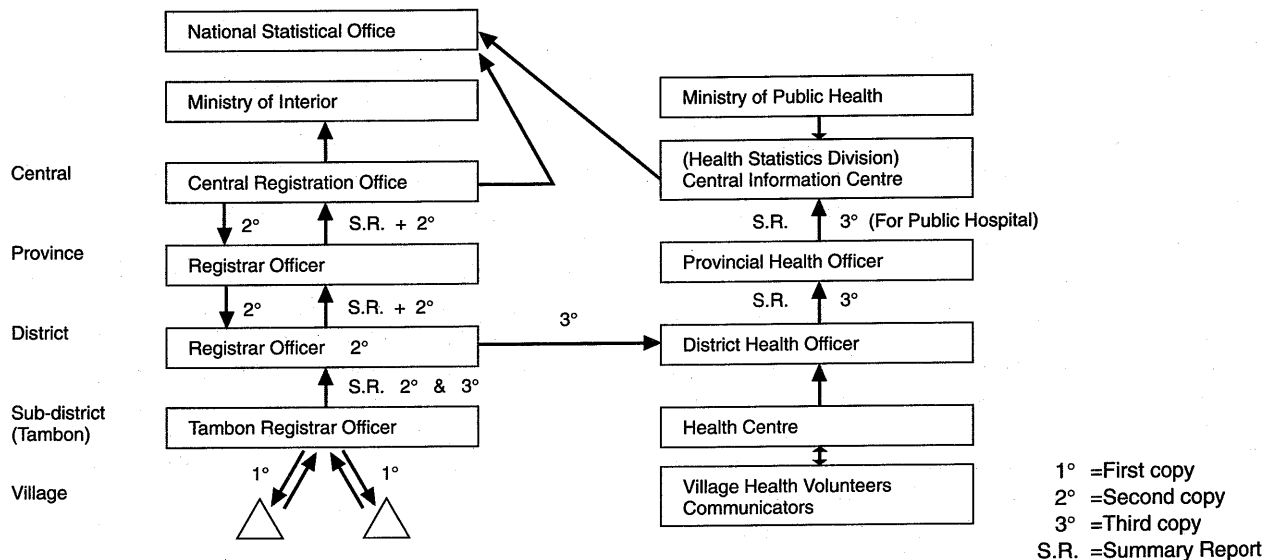
1. Census population and its components
2. Population estimates and expectation of life
3. Distribution of population

## 3. Vital Statistics

### *(1) Current System*

The Vital Registration System of Thailand is at present under the jurisdiction of the Ministry of Interior. The function of this system is compulsory and nationwide which is very essential as a source of vital

statistics. The raw data are collected through the channel of the local registrar office at the most peripheral level and are accumulated at the above level until the data reach the central level. This system can be illustrated as follows.



## (2) Channel of Data Collection

If there happens a vital event, birth or death, the owner of the household in the village must report to the Registrar Officer at the sub-district level for registration. The Registrar Officer produces three copies of the birth or death certificate. The first copy will be handed to the informant, and the second and the third copies are transferred to the District Registrar Officer

with a summary report on a monthly basis.

The District Registrar Officer collects reports and certificates from all sub-districts within the district and prepare a summary report to be presented to the provincial level. The second copy of the certificate is sent to the Central Registration Office for photocopying into microfilm and returned back to be kept as the legal document at the local registration office, while the

third copy is passed to the District Health Officer. At this junction, the vital registration system and the health information system are coordinated.

Provincial Registrar Officers prepare the summary report to be submitted to the central level which is under the responsibility of the Central Registration Office, Department of Local Administration, Ministry of Interior. The reports are made on a monthly basis, and at the end of each year the Central Registration Office publishes the total number of population, deaths and other movements.

When the third copies of vital certificates are passed from the District Registrar Officer to the District Health Officer, a summary report on vital events is prepared and submitted to the Provincial Health Officer together with the actual third copies. At the provincial level, the total numbers of births and deaths

are computed and submitted to the central level of the Ministry of Public Health in terms of a summary report. At the same time, birth and death certificates from public hospitals are collected and sent to the central level for processing in more details.

The Central Information Centre or the Health Statistics Division of the Ministry of Public Health collects and compiles the total number of vital events from the summary reports and prepares the annual report for the Ministry after having analysed and performed various types of statistical presentation.

The National Statistical Office performs the function of publishing all national statistical figures for the whole country. The vital statistics from the Ministry of Public Health are also sent to this Office on an annual basis.

## 4. Health Statistics

Other health statistics can be obtained under the jurisdiction of the Ministry of Public Health. The diagram below illustrates the flow of information from the grass-roots of the health delivery system. The information can be classified into health status, health activities, and health resources.

### *(1) Health Status*

(i) Morbidity data are collected from the outpatients and inpatients in hospitals and other health institutions. The disease categorization is based on the A-list and the 9th edition of the International Classification of Diseases (ICD) provided by WHO.

(ii) Epidemiological data are obtained from the prompt reports from the surveillance scheme which provide information without delay on the occurrence of disease or unfavourable conditions of the population concerning ill-health.

(iii) Natality, mortality and causes of death statistics are obtained from the vital registration system.

#### (iv) Data Collection Procedure

Morbidity statistics for inpatients and outpatients are submitted on the monthly basis from public hospitals and health service centres and compiled for the whole province and separately for municipal areas in each province. Epidemiological data are submitted in prescribed forms on the daily basis for other communicable diseases from public and private health service centres.

#### (v) Tabulation and Publication

Natality, morbidity and mortality data are published in Public Health Statistics. Epidemiological data are published yearly in the Epidemiological Surveillance Report and in other special publications weekly, monthly and quarterly.

### (2) *Health Activities*

(i) This kind of health information can be obtained from each level of the health delivery system in

accordance with the progress of the activities performed by the health personnel. The health indicators have been established for each programme or project, and the recording and reporting systems are required to facilitate the monitoring and evaluation of the health projects.

A variety of record and report formats have been designed and put into practice according to the requirements of the responsible health units. The publication of information is undertaken on an annual basis.

The health service personnel have to perform the task of recording and reporting of their health activities which consumes so much of their time that complaints are made against insufficient time devoted to rendering the services. There have been many attempts to reduce this burden by revising or simplifying the record and report forms, but problems still exist.

#### (ii) Coverage

Activities on health projects or programmes undertaken by public health personnel at all levels.

#### (iii) Contents of report

- a. Health care delivery
- b. Mental health
- c. Referral system
- d. Immunization
- e. Venereal disease control

- f. Leprosy control
- g. Tuberculosis control
- h. Worm and parasite control
- i. Malaria control
- j. Veterinary public health
- k. Diarrhoea control
- l. Maternal and child health
- m. School health
- n. Nutrition
- o. Dental health
- p. Health education
- q. Health supervision
- r. Epidemiological surveillance
- s. Primary health care
- t. Food sanitation
- u. Planning management information

#### (iv) Data Collection Procedure

The statistical data are filled in the prescribed health activities report forms on a monthly basis by the various public service centres and sent to the Provincial Health Information Centre. The data are then compiled for the whole province and separately for municipal areas and sent to the Central Health Information Centre on quarterly and 6-monthly bases.

#### (v) Tabulation and Publication

The data are classified according to provinces,

regions and the whole country and are published annually in Public Health Statistics and other special reports.

### (3) *Health Resources*

(i) This kind of information is also essential for the administration in the health field. Without knowing the health resources, health activities could not run smoothly and efficiently. Health resources comprise health manpower, health institutions, hospitals and health centres, finance, budget, supplies and equipment. These kinds of information are collected on an annual basis and the Central Information Centre of the Ministry of Public Health has been assigned to perform this job.

#### (ii) Coverage

The data on health manpower, the number of health service units and the number of beds are collected from all government and state enterprises and private sectors. The data on budget, supplies and equipment, buildings and construction can be collected only from health service units under the Ministry of Public Health.

#### (iii) Contents

- a. Number of health service units classified by number of beds, specialties and type of

organization

b. Number of health personnel

c. Buildings and construction

d. Equipment

e. Budget and finance

(iv) Data Collection Procedures

The data are collected in the prescribed health resources report form on a yearly basis by the various

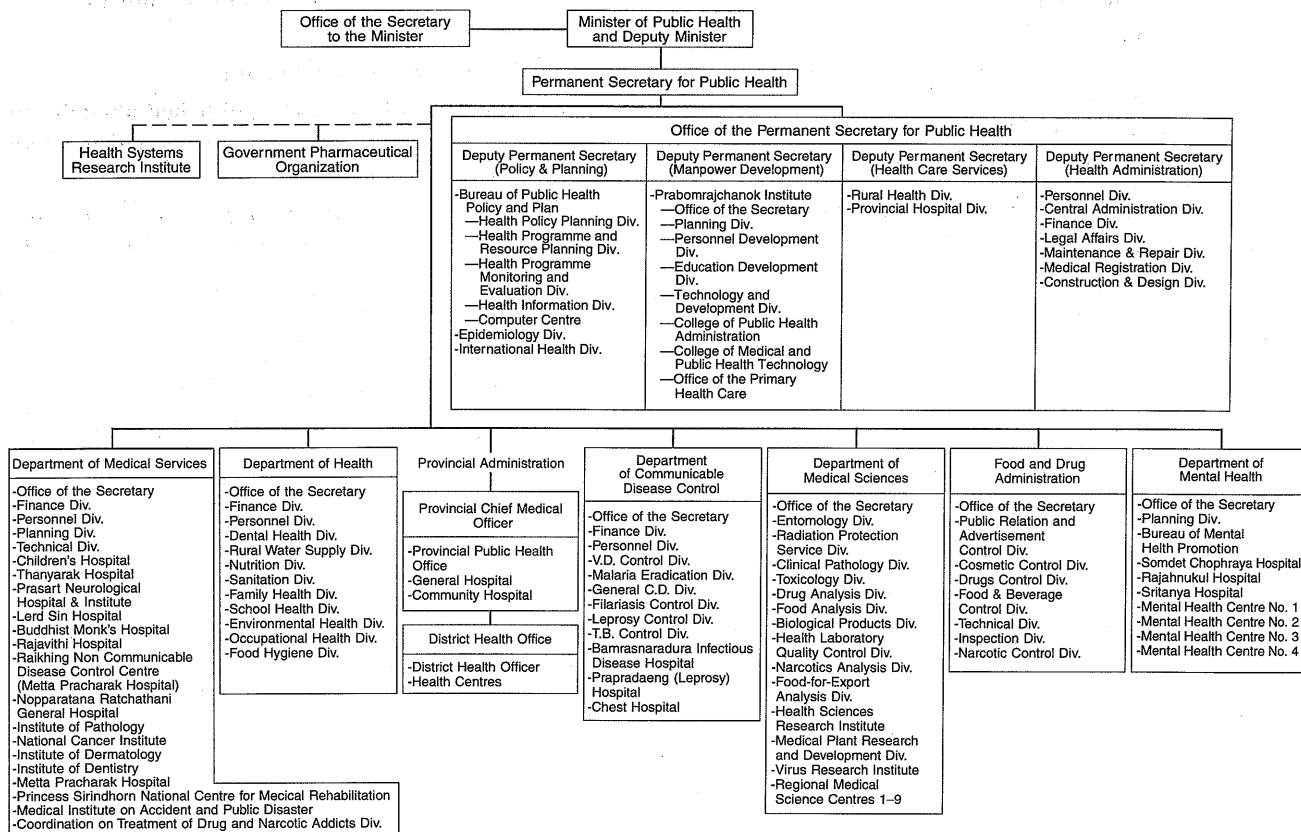
health service centres to the Central Health Information Centre.

(v) Tabulation and Publication

The data are collected and published annually in summary in the Public Health Statistics and in more details in the Report on Health Resources.

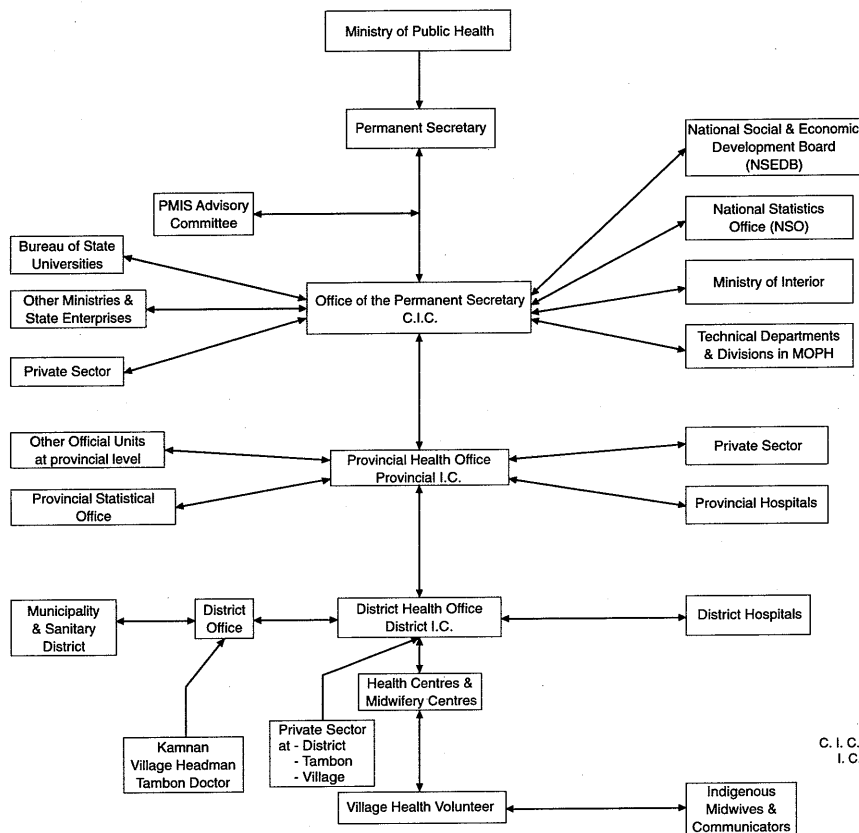
*(Health Information Division,  
Ministry of Public Health)*

# Organization Chart, Thailand





# Thailand National Health Information System Network



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# Appendix

## List of Organizations Related to Health Statistics

### BRUNEI

Ministry of Health

Bandar Seri Begawan 1210  
Negara Brunei Darussalam

### INDONESIA

Centre for Health Data  
Ministry of Health (Departmen Kesehatan)

Jalan H.R. Rasuna Said Kav. X 4-9, Jakarta

Directorate-General of Communicable Diseases Control  
Ministry of Health

Jalan Percetakan Negara 29  
P.O. Box 223, Jakarta

Central Bureau of Statistics

Jalan Dr. Sutomo No. 8  
P.O. Box 3, Jakarta

### JAPAN

Statistics and Information Department  
Ministry of Health and Welfare

2-3, Kasumigaseki 1-chome, Chiyoda-ku,  
Tokyo 100

Communicable Diseases Surveillance Division  
Health Service Bureau, Ministry of Health and Welfare

2-2, Kasumigaseki 1-chome, Chiyoda-ku,  
Tokyo 100

Statistics Bureau, the Management and  
Coordination Agency

19-1, Wakamatsu-cho, Shinjuku-ku,  
Tokyo 162

### MALAYSIA

Information & Documentation System Unit  
Ministry of Health (Kementarian Kesihatan)

TKT. 10, Bangunan Perkim, Jalan Ipoh, 51200  
Kuala Lumpur

Department of Statistics

Kuala Lumpur  
Kota Kinabalu, Sabah  
Kuching, Sarawak

## **PHILIPPINES**

Health Intelligence Service, Department of Health

National Statistical Coordination Board

San Lazaro Compound, Rizal Avenue, Manila  
P.O. Box 1116, Manila

21F Midland Buendia Bldg. 403 Sen. Gil Puyaf  
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Singapore 179434

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Health Information Division, Ministry of Public Health

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National Statistical Office, Office for the Prime Minister

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Tivanond Road, Nonthaburi 11000

Bangkok Metropolis

## **WHO**

WHO Regional Office for the Western Pacific

WHO Regional Office for South-East Asia

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P.O. Box 2932, 12115, Manila  
The Philippines

World Health House  
New Delhi  
110002, India