
TRENDS IN SELECTED INFECTIOUS DISEASES IN SINGAPORE

by

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INTRODUCTION

This paper provides a review of the morbidity rates and trends of four communicable diseases in Singapore, namely tuberculosis (TB), sexually-transmitted diseases (STD), human immunodeficiency virus (HIV) infection and leprosy. Data for this paper are obtained from the four National Programmes for the control of these diseases.

TUBERCULOSIS

In 1996, tuberculosis was reported in 1,696 Singapore citizens and permanent residents, an increase of 132 residents compared with 1995. The incidence rate of tuberculosis among residents declined from 106 cases per 100,000 population in 1980 to 56 cases per 100,000 population in 1996

with an average decline of 3 per cent per year (Chart 1).

TB was responsible for 0.8 per cent of all deaths in 1996. The TB mortality rate had declined from 10 cases per 100,000 population in 1980 to 4 cases per 100,000 in 1996, decreasing at an average of 7 per cent annually.

TB deaths occurred mostly in the older age groups. As in the past, TB continued to be a disease of older males. The incidence rate in 1996 was 2.3 times higher in males than in females (Table 1). Among males alone, the rate for residents aged 70 years and over was 11 times higher than those aged 30–39. In contrast, the incidence rates in children below the age of 15 years were less than 5 per 100,000 population.

CHART 1 ANNUAL INCIDENCE RATE OF TUBERCULOSIS AMONG RESIDENTS

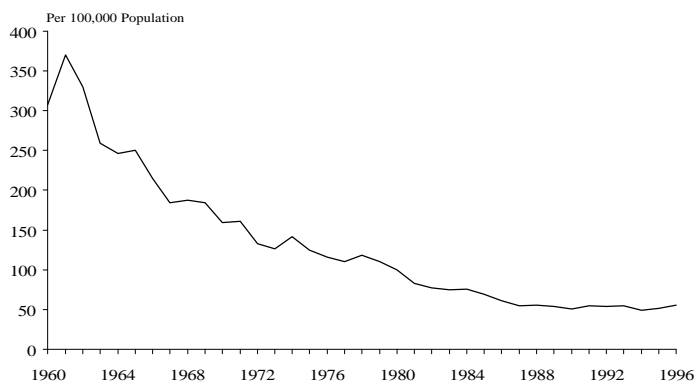


TABLE 1 TUBERCULOSIS INCIDENCE RATES AMONG RESIDENTS
BY AGE, SEX AND SITE OF DISEASE, 1996

Age Group	Per 100,000 Population						
	All Forms			Pulmonary		Extrapulmonary	
	Total	Male	Female	Male	Female	Male	Female
TOTAL	55.7	77.1	34.0	73.9	30.4	3.3	3.6
0 – 4	3.3	4.8	1.7	4.0	1.7	0.8	0.0
5 – 9	0.8	0.8	0.9	0.0	0.0	0.8	0.9
10 – 14	3.8	1.8	6.0	0.9	4.0	0.9	2.0
15 – 19	22.2	19.1	25.4	19.1	22.3	0.0	3.0
20 – 29	33.6	34.4	32.8	32.4	29.1	2.0	3.6
30 – 39	39.0	48.1	29.8	44.9	25.1	3.3	4.6
40 – 49	52.3	76.8	26.9	72.4	24.0	4.4	2.9
50 – 59	103.7	152.2	55.4	148.1	49.0	4.0	6.4
60 – 69	182.8	283.7	88.3	274.1	80.4	9.5	7.8
70 & Over	297.2	513.9	130.2	500.0	124.8	13.9	5.4

Treatment and BCG immunisation had contributed to the low incidence of TB in Singapore. Treatment was delivered by Tan Tock Seng Hospital and other hospitals, SATA and private practitioners. Strict supervision of treatment over the years has resulted in the levels of drug resistant TB bacilli remaining low at 4.8 per cent among residents with TB in 1996. Tuberculosis due to multi-drug resistant organisms remains a rarity.

Primary BCG vaccination was given to 97 per cent of newborn babies and infants in 1996. Commensurate with the higher number of births in private hospitals, the private sector was responsible for 58 per cent of all BCG vaccinations at birth.

SEXUALLY TRANSMITTED DISEASES (STD)

Sexually transmitted diseases infection in the population continued to decline, from an incidence rate of 1,013 cases per 100,000 population in 1980 to 154 cases per 100,000 population in 1996 (Chart 2). The three main sexually transmitted diseases notified in Singapore were gonorrhoea (GC), non-gonococcal urethritis (NGU) and syphilis. In 1996, the incidence rate for gonorrhoea was highest at 39 cases per 100,000 population, followed by NGU at 33 cases per 100,000 population and syphilis at 32 cases per 100,000 population.

CHART 2 ANNUAL INCIDENCE RATE OF SEXUALLY TRANSMITTED DISEASES

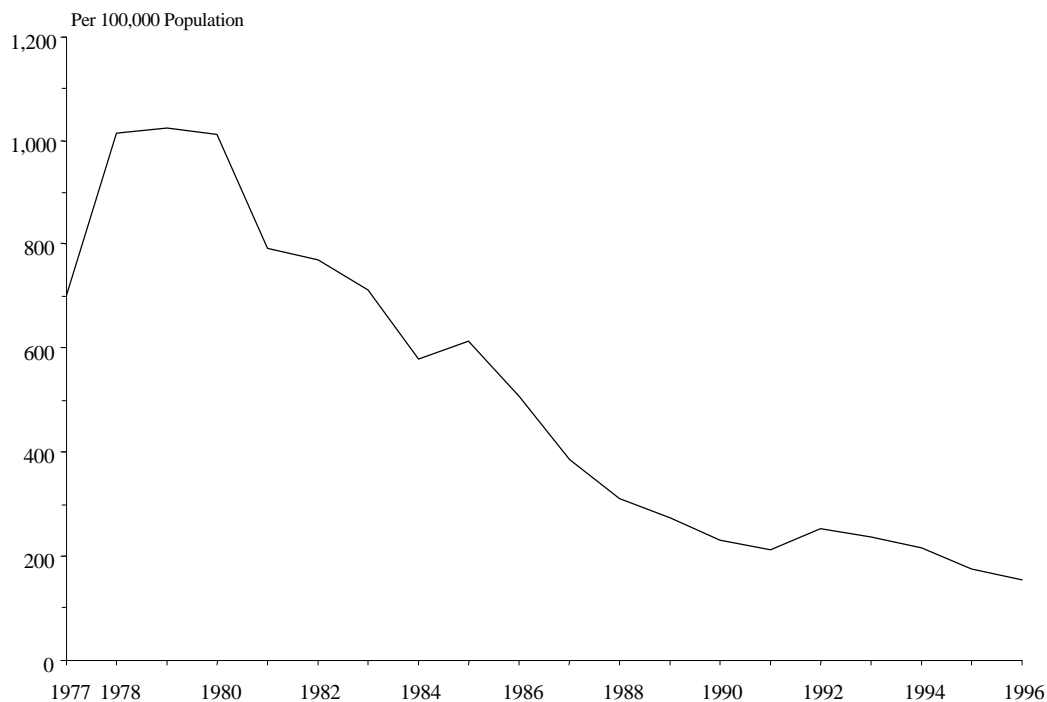


TABLE 2 DISTRIBUTION OF SEXUALLY TRANSMITTED DISEASES INCIDENCE RATES BY AGE AND SEX, 1996

Age Group	Per 100,000 Population		
	Total	Male	Female
TOTAL	154.2	206.5	98.4
0 - 9	0.0	0.0	0.0
10 - 14	5.8	0.0	12.2
15 - 19	92.0	95.7	88.1
20 - 24	334.1	340.8	327.4
25 - 29	341.2	424.0	243.3
30 - 34	261.7	385.3	117.8
35 - 39	190.1	290.8	76.7
40 - 44	132.8	204.5	54.1
45 - 49	131.8	198.1	61.0
50 - 59	63.3	96.8	29.0
60 & Over	36.2	62.5	13.4

The incidence of gonorrhoea and NGU have each declined since 1980. The incidence of syphilis however has stabilised at about 30 per 100,000. The incidence of other STDs such as genital herpes, genital warts and unspecified genital discharge, rose to 86 per 100,000 in 1993 but has declined since then.

The overall disease rate in males was 207 per 100,000 male population in 1996 (Table 2). This was 2.2 times that of females which had a disease rate of 98 per 100,000. The highest incidence rate was in the age group 25–29 years for males and 20–24 years for females.

HUMAN IMMUNODEFICIENCY VIRUS INFECTION

The number of notifications

of new HIV/AIDS infection among Singapore citizens and permanent residents increased by 25 per cent from 111 in 1995 to 139 in 1996. The cumulative total of HIV/AIDS infection among residents was 558 at the end of 1996 (Chart 3). There was a corresponding increase in incidence rate from 37 per million population in 1995 to 46 in 1996.

In 1996, 28 persons who were reported in previous years to be HIV infected progressed to full blown AIDS. A total of 62 residents with HIV/AIDS infection died during the year.

Majority of the cumulative 558 cases with HIV/AIDS infection (74 per cent) were below 40 years of age at the time of diagnosis (Table 3). Males outnumbered females by a ratio of 9.7 to 1.

CHART 3 INCIDENCE RATE OF HIV AND AIDS AMONG RESIDENTS

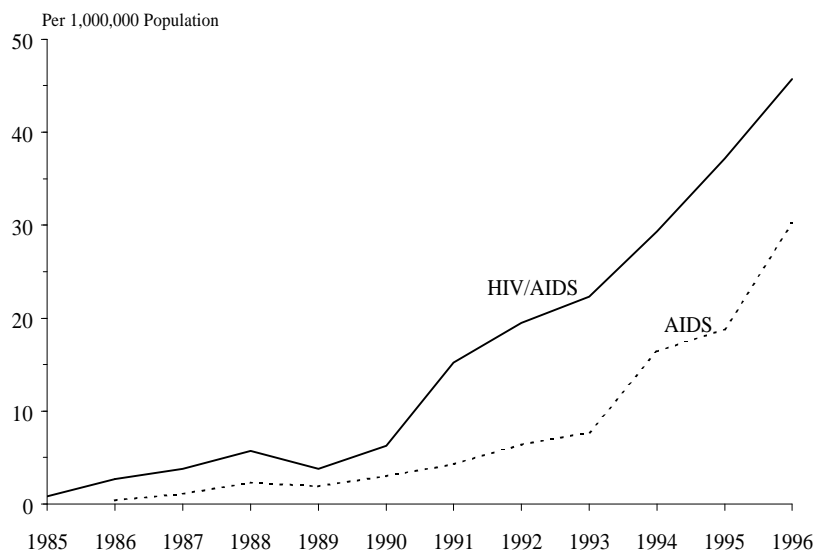


TABLE 3 CUMULATIVE AGE-SEX DISTRIBUTION OF RESIDENTS WITH HIV/AIDS INFECTION, 1985-1996

Age Group	Total	Male	Female	Total
	<i>Number</i>			<i>Per Cent</i>
TOTAL	558	506	52	100.0
0 - 9	1	1	-	0.2
10 - 19	6	5	1	1.1
20 - 29	166	144	22	29.7
30 - 39	239	221	18	42.8
40 - 49	87	80	7	15.6
50 - 59	36	33	3	6.5
60 & Over	23	22	1	4.1

TABLE 4 MARITAL STATUS OF RESIDENTS WITH HIV/AIDS INFECTION 1985-1996

Marital Status	Total	Male	Female	Total
	<i>Number</i>			<i>Per Cent</i>
TOTAL	558	506	52	100.0
Single	375	363	12	67.2
Married	141	106	35	25.3
Divorced	33	29	4	5.9
Widowed	9	8	1	1.6

TABLE 5 DISTRIBUTION OF RESIDENTS WITH HIV/AIDS INFECTION BY OCCUPATION, 1985-1996

Occupation	Number	Per Cent
TOTAL	558	100.0
Service & Sales Workers	106	19.1
Managers/Professionals	98	17.6
Technicians	39	7.0
Production Craftsmen	52	9.3
Machine Operators/Assemblers	46	8.2
Cleaners/Labourers	46	8.2
Clerical Workers	29	5.2
Others	71	12.7
Unemployed	71	12.7

Among males, 363 (72 per cent) were single (Table 4). In contrast, 67 per cent of females were married. In 1996, 95 per cent were infected through sexual transmission including 72 per cent through heterosexual transmission.

HIV has infected people in all walks of life. During 1985–1996, service and sales workers with HIV/AIDS formed 19 per cent of the total while 18 per cent were managers and professionals (Table 5).

LEPROSY

The incidence rate of leprosy among Singaporeans has declined markedly from 21 per 100,000 population

in 1960 to below 1 per 100,000 population since 1990 (Chart 4). In 1996, 13 new cases were reported among Singapore residents. The incidence rate of 0.4 per 100,000 population in 1996 was lower than the 0.7 per 100,000 reported the previous year.

CONCLUDING REMARKS

Over the past few decades, the number of reported cases of tuberculosis, sexually transmitted diseases and leprosy have declined. However, the number of notified cases of new HIV/AIDS infection among residents has increased since the first case was reported in Singapore in 1985. The number with HIV infection is still small and is not a major issue here.

CHART 4 ANNUAL INCIDENCE RATE OF LEPROSY AMONG RESIDENTS

