

SINGAPORE

Summary

Singapore has a low HIV prevalence. Since the first case of HIV infection was reported in 1985, annual reported cases have increased steadily (from 2 in 1985 to 199 in 1998). The cumulative total of 930 HIV infections at the end of December 1998 included 484 AIDS cases and 288 HIV/AIDS-related deaths.

Eighty-nine percent of reported HIV/AIDS cases have occurred among men, and two thirds of cases have been heterosexual. Before 1991, the majority of reported HIV infections were among homo-bisexual men (70%). However, the proportion of heterosexuals in reported HIV/AIDS cases has increased in recent years (from 29% in 1990 to 78% in 1998). HIV transmission among IDUs remains limited. Seroprevalence surveys show that the HIV prevalence among blood donors has been low (0.007 in 1993; 0.008% in 1998). No HIV positive case was detected during seroprevalence surveys among prenatal clinic attendees since 1995. However, slight increases in HIV prevalence have been noted among STI patients (from 0.5% in 1994 to 0.7% in 1998) and TB patients (from 0.7% in 1996 to 1.3% in 1998).

Prevalence rates for curable STI have been low in existing studies (<1% for syphilis and gonorrhoea, 2% for chlamydia). Overall incidence of reported STI has declined over time. Gonococcal antimicrobial resistance increased between 1992 and 1998, both to penicillin (35% to 56%) and quinolones (0.35% to 7.2%). The prevalence of condom use is high among MSM (82 to 86%) and SWs (75%).

Surveillance Structure

- The CDC AIDS case definition is used.
- All HIV and AIDS cases are notifiable to the Ministry of Health
- Other STI notifiable to the Ministry of Health are chancroid, gonorrhoea, NGU, syphilis and genital ulcers.
- HIV seroprevalence surveys conducted since 1989 have covered blood donors, antenatal clinic attendees, and patients with STI or TB.

HIV/AIDS

Reported cases as of December 1998 The first case of HIV was reported in 1985. By the end of December 1998, the cumulative total of 930 reported HIV infections included 484 AIDS cases and 288 HIV/AIDS-related deaths. The number of reported cases increased each year (Table 1).

Table 1: Reported cases of HIV/AIDS by year of diagnosis in Singapore as of December 1998

	<1990	90	91	92	93	94	95	96	97	98	Total
AIDS	15	8	12	18	22	48	56	92	88	125	484
HIV/AIDS	44	17	42	55	64	86	111	139	173	199	930

The majority (89%) of reported cases were in men. Heterosexual contact was reported in two thirds of reported cases and homo-bisexual contact in about one quarter (Table 2). Before 1991, the majority of HIV infections occurred in MSM through homo-/bisexual contact (70%). In the past 9 years, the percentage of reported HIV infections attributed to heterosexual contact has increased substantially (from 29% in 1990 to 78% in 1998).

Table 2: Distribution of cumulative reported HIV/AIDS cases by sex and mode of transmission in Singapore as of December 1998

	HIV (%)	AIDS (%)
Sex		
Male	89	92
Female	11	8
Mode of transmission		
Homo-/bisexual	25	25
IDU	2	2
Heterosexual	68	69
Blood products	1	1
Mother to infant	1	1
Other/unknown	3	2

Active HIV/AIDS surveillance

Serological surveillance has been implemented in various population groups since 1989. HIV seroprevalence remains low, although slight increases in HIV seroprevalence have been noted among patients with STI and TB.

- Screening of SWs attending public STI clinics showed HIV prevalence rates of 0.07% in 1993, 0.06% in 1994, 0.05% in 1995, and 0.09% in 1996.
- Among STI clinic patients (N = >500 per year), HIV prevalence increased from 0.5% in 1994 to 0.7% in 1998.
- Among TB patients (N = 300 per year), HIV prevalence remained at zero until 1995, then increased from 0.7% in 1996 to 1.3% in 1998.
- A total of 500 to 700 women attending antenatal clinics were screened from 1993 through 1998. Only one woman in 1995 tested HIV positive (0.14%).
- Among blood donors (N = >7000 annually), HIV prevalence has stayed consistently low (0.007% in 1993, 0.008% in 1998).

Estimates and projections for HIV/AIDS

The number of people living with HIV in 1998 was estimated at 3800 (prevalence rate of 0.2% in people aged 15 to 49 years). Heterosexual contact has been the predominant mode of transmission (Table 3).

Table 3: Selected epidemiological features of HIV/AIDS in Singapore (1998 estimates)

HIV	Prevalence	3800
	Prevalence rate in adults (15-49)	0.2%
	Women among HIV infected population	20%
HIV Infection by mode of transmission	Sexual contact	95%
	Injecting drug use	<1%
	Others	5%
	Estimated reporting rate for HIV	22%
	Estimated reporting rate for AIDS	64%

STI other than HIV

Reported cases Over the past 15 years, incidence of reported STI has steadily declined. Overall reported rates for all STI decreased from 946/100 000 in 1980 to 162/100 000 in 1998. In 1999, disease-specific reported incidence rates were 47/100 000 for gonorrhoea, 33/100 000 for syphilis, and 29/100 000 for NGU. The prevalence rate of syphilis among blood donors decreased from 0.24% in 1994 to 0.13% in 1998.

Active STI surveillance Screening of SWs attending the public STI clinic has shown a decline in gonorrhoea and chlamydia prevalence. Prevalence rates were 0.5% for gonorrhoea and 2.0% for chlamydia in 1996. Among blood donors in 1992 and 1993, syphilis prevalence rate was 0.2%.

Estimates for STI Estimates for the prevalence of STI at country level have been developed by WPRO based on STI surveys in selected population groups (Table 4).

Table 4: Estimated prevalence of selected STI in Singapore, 1997

	Gonorrhoea	Syphilis	Chlamdia
Prevalence rate in adults (15-49)	0.2%	0.18%	0.23%
Prevalence	4200	3700	4700

Gonococcal antimicrobial resistance Data from the GASP from 1992 through 1998 indicated increased gonococcal antimicrobial resistance to both penicillin (35% to 56%) and quinolones (0.3% to 7.2%).

HIV and STI Risk Behavioural Surveillance

Surveys on STI/HIV risk behaviour are not routinely conducted in Singapore. An ad hoc survey in 1997 among MSM indicated that 18% did not use condoms with regular partners and 14% did not use condoms with casual partners. Seventy five to 83% of persons arrested for a controlled drug between 1996 and 1998 were heroin users (Table 5).

A 1992 survey of FSWs indicated that 75% used condoms.

Table 5: Breakdown of persons arrested for consumption of a controlled drug in Singapore, 1996-1998

Year	Total number	Heroin consumption	Percentage
1996	5744	4431	77
1997	4752	3549	75
1998	4502	3727	83