

HIV INFECTION AND AIDS IN NSW, 1981 TO 1999

Robert Menzies

*Communicable Diseases Surveillance and Control Unit
NSW Department of Health*

Human Immunodeficiency Virus (HIV) is transmitted via body fluids, through behaviours such as unprotected sexual contact and sharing of intravenous injection equipment, or through transfusion with infected blood products. Initial infection may cause an acute mononucleosis-like illness within several weeks to months, lasting a week or two. Infected people are then usually free of symptoms for many months or years. However, the immune system becomes progressively damaged by the virus, eventually leading to the development of one or more opportunistic infections and cancers. This stage of the illness is described as Acquired Immune Deficiency Syndrome (AIDS). In the absence of effective treatment, the average time from HIV infection to AIDS is eight years, and from AIDS to death is approximately one year. The introduction of effective prophylactic treatments a decade ago increased average survival before AIDS to 10 years. The introduction in 1995 of combination antiretroviral therapy, including protease inhibitors, improved survival dramatically, by approximately 450 per cent.¹

It is estimated that, at the end of 1997, over 30 million people had acquired HIV infection worldwide, 11.7 million of whom had died. Approximately 90 per cent of people living with HIV are in sub-Saharan Africa or the developing countries of Asia.¹

METHODS

Under the NSW Public Health Act 1991, HIV reference laboratories are required to notify confirmed HIV infection to the NSW Department of Health. Requesting doctors are required to provide those laboratories with the information required for notification, which includes risk exposures, previous tests and clinical status. Medical practitioners and hospitals are required to notify their local public health unit of cases of AIDS. To protect patient's confidentiality, notifications of HIV and AIDS do not include full names or addresses.

The National Centre in HIV Epidemiology and Clinical Research (NCHECR) collates data collected by States and Territories into the National HIV Database and the National AIDS Register. The data presented here on notifications of HIV, AIDS and death with AIDS, are from these sources.

Population data were obtained from National Census estimates for 1999, available through the Health Outcome Information Statistical Toolkit (HOIST), Epidemiology Branch, NSW Department of Health.

Estimates of the number of people living with HIV were calculated as follows. The cumulative number of notifications in NSW and each area health service were

adjusted for the estimated number of multiple reports,² AIDS deaths and an estimated range of 10–30 per cent of cases diagnosed with HIV at AIDS diagnosis.

RESULTS

HIV Notifications

A total of 11,753 new diagnoses of HIV infection have been notified to the end of 1999 in NSW residents. Of those, between 7,200 and 9,700 were estimated to be living with HIV in 1999 (Table 7). HIV notifications for 1999 (389) were the lowest for any year since testing began in 1985, continuing a downward trend since the peak in 1987 (Table 5). Where information on the cases is available, 95 per cent are male, 70 per cent are aged 25–44 years, 70 per cent reside in Central or South Eastern Sydney Area Health Services, and 90 per cent reside in Sydney.

Where information on risk exposures has been reported, 6,805 (81 per cent) report male to male sexual contact, 255 (three per cent) male to male sex and injecting drug use, and 710 (eight per cent) heterosexual contact. Where further information was available on heterosexual exposure, 90 (35 per cent) were born in a high prevalence country, and 100 (39 per cent) reported sexual contact with a person from a high prevalence country. Injecting drug use without male to male sexual contact was reported

TABLE 5

PATIENTS NOTIFIED, BY YEAR OF HIV DIAGNOSIS, AIDS DIAGNOSIS, AND DEATH WITH AIDS, NSW, 1981–1999

Year of diagnosis	HIV diagnosis ¹ (Cases/100,000 /year)	AIDS diagnoses	Death with AIDS (% of all AIDS cases)
1981		1	1 (100)
1982		1	0 (0)
1983		3	1 (33)
1984	199	30	6 (20)
1985	987	90	46 (51)
1986	1,110	160	107 (67)
1987	1,635	249	143 (57)
1988	1,144	314	138 (44)
1989	982	347	235 (68)
1990	805	421	315 (75)
1991	811	439	336 (77)
1992	710	429	305 (71)
1993	607	468	369 (79)
1994	512	534	410 (77)
1995	541	463	343 (74)
1996	465	350	254 (73)
1997	441	199	110 (55)
1998	414	165	69 (42)
1999	389	90	50 (56)
Total	11,753(11.6)	4,753(4.0)	3,238(68)

1. The HIV test was first developed in 1984.

by 364 (four per cent). There have been 31 (0.4 per cent) cases of reported mother-to-child transmission.

There has been a strong decreasing trend over the years in the number of people that report male to male sex: 466 (80 per cent where exposure is known) in 1992 to 237 (72 per cent) in 1999. For heterosexual contact there has been little change in the total numbers reported by year, but they have increased as a proportion of total notifications received: 47 (eight per cent) in 1992 to 62 (19 per cent) in 1999. Of those, the number of people reporting being born in a high prevalence country increased: three in 1992 to 20 in 1998, as well as the number of people reporting sexual contact with someone from a high prevalence country: four in 1992 to 23 in 1998.

Data completeness has improved over the years but there is still room for improvement. In 1992 information on risk exposure was available in 82 per cent of notifications, compared to 84 per cent in 1999.

AIDS diagnoses and deaths

A total of 4,753 AIDS cases have been notified up to 1999, of which 3,238 have died, leaving a total of 1,515 living with AIDS. The first case of AIDS diagnosed in Australia was in Sydney in 1982. One person who died in 1981 was retrospectively diagnosed with AIDS and reported in 1994.³ AIDS notifications and deaths peaked in 1994 (534 cases, 410 deaths) and decreased markedly from 1997 onwards. As was the case for HIV notifications, AIDS cases

TABLE 6

CHARACTERISTICS OF PATIENTS NOTIFIED WITH HIV INFECTION, AIDS AND DEATH WITH AIDS, NSW, 1981–1999

Case characteristics	HIV diagnosis (% of total where data available)	AIDS (% of total where data available)	Death with AIDS (% of all AIDS cases)
Sex			
Male	10,889 (94.6)	4,555 (95.8)	3,117 (68)
Female	599 (5.2)	187 (3.9)	114 (61)
Transgender	20 (0.2)	11 (0.2)	7 (64)
Age group			
0–4	41 (0.4)	11 (0.2)	5 (45)
5–14	49 (0.4)	10 (0.2)	9 (90)
15–24	1,764 (15.1)	170 (3.6)	122 (72)
25–34	4,903 (42.0)	1,659 (34.9)	1,121 (68)
35–44	3,268 (28.0)	1,786 (37.6)	1,204 (67)
45–54	1,176 (10.1)	811 (17.1)	562 (69)
55–64	354 (3.0)	233 (4.9)	155 (67)
65+	105 (0.9)	73 (1.5)	60 (82)
Risk Exposure			
Male–male sex	6,805 (81.0)	3,876 (81.5)	2,699 (70)
Male–male sex + IDU	255 (3.0)	174 (3.7)	120 (69)
Male–female sex + IDU	364 (4.3)	136 (2.9)	75 (55)
Male–female sex (total)	710 (8.4)	218 (4.6)	97 (44)
• From high prevalence country	90 (1.1)	41 (0.9)	10 (24)
• Sex with person from high prev.	100 (1.2)	24 (0.5)	12 (50)
• Sex with bisexual	47 (0.6)	12 (0.3)	7 (58)
• Sex with IDU	47 (0.6)	12 (0.3)	5 (42)
• Sex with other	27 (0.3)	10 (0.2)	8 (80)
• Hetero not further specified	456 (5.4)	119 (2.5)	55 (46)
Receipt of blood products	261 (3.1)	155 (3.3)	134 (86)
Other	11 (0.1)	17 (0.4)	10 (59)
Not stated	3,317	177	103 (58)
AIDS-defining illness¹			
Candidiasis–oesophageal		721 (15.2)	444 (62)
Cryptococcosis		234 (4.9)	172 (74)
Cryptosporidiosis		164 (3.5)	114 (70)
Cytomegalovirus		328 (6.9)	264 (80)
Herpes simplex		172 (3.6)	122 (71)
HIV Encephalopathy		268 (5.6)	174 (65)
HIV Wasting Syndrome		456 (9.6)	272 (60)
Kaposi's sarcoma		772 (16.2)	526 (68)
Lymphoma–non-Hodgkin's		229 (4.8)	177 (77)
Mycobacterial–atypical		366 (7.7)	266 (73)
Pneumocystis pneumonia		1,546 (32.5)	1,132 (73)
Toxoplasmosis		207 (4.4)	164 (79)
Other		226 (4.8)	138 (61)
1. Cases may report more than one AIDS-defining illness at AIDS diagnosis			

TABLE 7

CUMULATIVE NOTIFICATIONS OF HIV DIAGNOSIS, AIDS, DEATH WITH AIDS, AND ESTIMATED NUMBER LIVING WITH HIV INFECTION, BY AREA HEALTH SERVICE OF RESIDENCE AT DIAGNOSIS, NSW (1981–1999)

Area Health Service	HIV diagnosis (annual rate/100,000 population)	AIDS diagnoses (annual rate/100,000 population)	Death with AIDS (% of all AIDS cases)	Number living with HIV
Central Coast	97 (2.2)	87 (1.7)	66 (76)	100–140
Central Sydney	1,500 (19.5)	1,056 (11.6)	755 (71)	1,500–2,100
Far West	8 (1.0)	3 (0.3)	1 (33)	7–10
Greater Murray	37 (0.9)	30 (0.6)	16 (53)	35–50
Hunter	203 (2.4)	162 (1.6)	113 (70)	210–280
Illawarra	103 (1.9)	93 (1.4)	57 (61)	110–145
Macquarie	16 (1.0)	15 (0.8)	7 (47)	15–20
Mid North Coast	85 (2.1)	72 (1.5)	40 (56)	85–115
Mid West	53 (2.0)	21 (0.7)	15 (71)	55–80
New England	17 (0.6)	15 (0.4)	7 (47)	15–20
Northern Rivers	73 (1.8)	131 (2.7)	75 (57)	80–105
Northern Sydney	595 (4.9)	417 (2.9)	314 (75)	620–830
Southern	20 (0.7)	23 (0.7)	12 (52)	20–30
South Eastern Sydney	3,347 (27.8)	1,927 (13.5)	1,267 (66)	3,500–4,700
South Western Sydney	297 (2.5)	167 (1.2)	104 (62)	310–420
Wentworth	156 (3.2)	138 (2.4)	102 (74)	165–220
Western Sydney	316 (3.0)	240 (1.9)	159 (66)	330–450
Not stated	4,832	156	128 (82)	
Total	11,755 (11.6)	4,753 (4.0)	3,238 (68)	7,200–9,700

and deaths were predominantly in males (96 per cent), aged 25–44 years (72 per cent), reported male to male sexual contact (89 per cent for cases, 90 per cent for deaths), and resided in Central or South Eastern Sydney (65 per cent), where information was available for those variables.

Pneumocystis carinii pneumonia was the most commonly reported AIDS defining illness (33 per cent of cases), followed by Kaposi's sarcoma (16 per cent) and oesophageal candidiasis (15 per cent). Data completeness is very high for AIDS notifications.

DISCUSSION

These data reflect an HIV–AIDS epidemic that, in comparison with almost any country in the world, has been successfully contained in NSW to date. HIV transmission has been predominantly through male to male sexual contact in NSW. Transmission through injecting drug use is uncommon; the number of notifications that reported injecting drug use is low, and surveys of clients of needle and syringe programs report seroprevalence of less than two per cent in those that do not also report male to male sexual contact.⁴ Transmission through heterosexual contact is also relatively uncommon, and the majority of cases either originated from a high prevalence country, or had sexual contact with a person from a high prevalence country. In particular, confirmed cases of heterosexual transmission, where neither partner was in a high-risk group, were rare.

The figures for AIDS cases and deaths reflect the considerable success of new combination therapies introduced in 1996. The figures for 1999 are incomplete,

but after adjustment for reporting delay, a substantial decrease is still apparent.⁴

Prevention measures such as safe sex campaigns targeting men who have sex with men and the sex industry, and needle and syringe programs, have been critically important in containing the epidemic. However, recent increases in notification rates of gonorrhoea, and other sexually transmitted infections in men who have sex with men,⁵ indicate that at-risk behaviours continue and permanent containment of the epidemic is never guaranteed.

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