



National Centre in HIV Epidemiology and Clinical Research

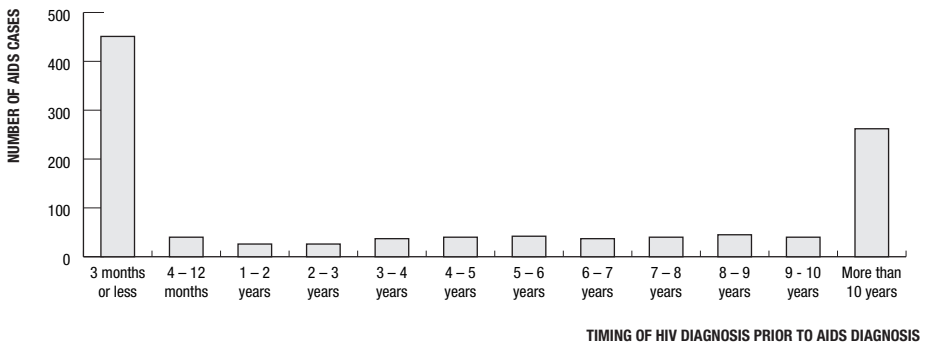
Australian HIV Surveillance Update

Vol 21 No 3 July 2005

Late HIV diagnosis among AIDS cases in Australia, 2000 – 2004

Use of highly active antiretroviral treatment (HAART) for HIV infection in Australia from mid-1996 has been associated with a substantial drop in AIDS incidence (Correll *et al* 1998, NCHECR 2005). AIDS incidence dropped among people whose HIV infection was diagnosed at least three months prior to AIDS diagnosis whereas there was no change in AIDS incidence over time among people whose HIV infection was newly diagnosed close to AIDS diagnosis. AIDS cases whose HIV infection was newly diagnosed close to AIDS diagnosis, so called cases of late HIV diagnosis, were unable to make use of HAART to delay their progression to AIDS or to reduce the risk of ongoing HIV transmission. Cases of late HIV diagnosis consequently accounted for an increasing percentage of total AIDS cases newly diagnosed in the years 1997 – 2001, due to the decline in AIDS incidence among cases whose HIV infection was diagnosed well before AIDS diagnosis (McDonald *et al* 2003). Here, we provide a brief update on the demographic, behavioural and clinical factors associated with late HIV diagnosis among AIDS cases newly diagnosed in Australia in 2000 – 2004.

Figure 1.1 Number of AIDS cases in Australia, 2000 – 2004, by timing of HIV diagnosis



The National Centre in HIV Epidemiology and Clinical Research is funded by the Australian Government Department of Health and Ageing and is affiliated with the Faculty of Medicine, The University of New South Wales. The NCHECR Surveillance Program is a collaborating unit of the Australian Institute of Health and Welfare. Its work is overseen by the Ministerial Advisory Committee on AIDS, Sexual Health and Hepatitis.

Announcements

National meetings

The **5th Australasian Viral Hepatitis Conference 2006** will be held at the Sydney Masonic Centre, Sydney, on 20 – 22 February 2006. Further information may be obtained from the 5th Australasian Viral Hepatitis Conference 2006,

Locked Mail Bag 5057, Darlinghurst NSW 1300 Australia.

Telephone: +61 2 8204 0770

Facsimile: +61 2 9212 4670

E-mail: conferenceinfo@hepatitis.org.au

Website: www.hepatitis.org.au

The **18th Annual Conference of Australasian Society for HIV Medicine** will be held in conjunction with the **3rd Australian Centre for HIV and Hepatitis Virology Research** at the Carlton Crest Hotel, Melbourne, on 11 – 14 October 2006. Further information may be obtained from ASHM Conference 2006,

Locked Mail Bag 5057, Darlinghurst NSW 1300 Australia.

Telephone: +61 2 8204 0770

Facsimile: +61 2 9212 4670

E-mail: conferenceinfo@ashm.org.au

Website: www.ashm.org.au/conference

The **4th IAS Conference on HIV Pathogenesis and Treatment** will be held in Sydney on 22 – 25 July 2007. Further information may be obtained through the website www.ias2007.org

AIDS cases were notified to the State/Territory health authority by the diagnosing doctor and then forwarded to the NCHECR Surveillance Program for entry onto the National AIDS Registry. Information sought at notification of AIDS included the person's date and country of birth, the State/Territory and date of first AIDS diagnosis in Australia, the AIDS defining illness(es) and CD4+ cell count, the date of first HIV diagnosis in Australia and the person's report of their exposure to HIV. Cases for which HIV infection was newly diagnosed within 90 days of AIDS diagnosis were defined as cases of late HIV diagnosis; cases for which HIV infection was diagnosed at least 91 days prior to AIDS diagnosis were defined as cases of non-late HIV diagnosis. AIDS defining illnesses were grouped as *Pneumocystis carinii* pneumonia (PCP) only, other opportunistic infections only, Kaposi's sarcoma only, other cancers only (Non-Hodgkin's lymphoma or invasive cervical cancer), central nervous system conditions (HIV encephalopathy, toxoplasmosis, cryptococcosis and progressive multifocal leukoencephalopathy), and other multiple illnesses. Country of birth was grouped into nine regions using the Australian Standard Classification of Countries for Social Statistics (ABS 1998). Independent predictors of late HIV diagnosis were assessed by multivariate analysis using logistic regression.

By 30 June 2005, a total of 1,087 AIDS cases newly diagnosed in Australia in 2000 – 2004 had been notified to the National AIDS Registry. The annual number of AIDS diagnoses remained relatively stable at around 225 cases per year (Table 1.1). Of 1,086 AIDS cases for which the date of first HIV diagnosis in Australia was reported, HIV infection was newly diagnosed within 90 days of AIDS diagnosis, between 91 days and ten years, and more than 10 years prior to AIDS diagnosis in 41.5%, 34.3% and 24.1% of AIDS cases respectively (Figure 1.1). The percentage of AIDS cases with late HIV diagnosis did not change significantly by year of AIDS diagnosis (Table 1.1).

Compared to New South Wales, AIDS cases diagnosed in Victoria and in the other State/Territory health jurisdictions combined were significantly more likely to have a late HIV diagnosis in the unadjusted analysis (Table 1.1). In the adjusted analysis, being diagnosed with AIDS in Victoria was independently associated with late HIV diagnosis. Women had a significantly increased risk of late HIV diagnosis compared to men in the unadjusted analysis but sex was not associated with late HIV diagnosis in multivariate analysis. Cases in the age group 45 years or older at AIDS diagnosis were independently associated with late HIV diagnosis, compared to cases aged 35 – 39 years. Australian AIDS cases born in European countries other than the United Kingdom and Ireland, or born in countries in the Middle East or North Africa, in countries in sub-Saharan Africa or in specific countries in Asia (Myanmar, Cambodia or Thailand) had a significantly increased risk of late HIV diagnosis compared to Australian born AIDS cases in the unadjusted analysis but having been born in a specific country in Asia only was independently associated with late HIV diagnosis in 2000 – 2004.

Men and women with a history of heterosexual contact as their only reported source of exposure to HIV, and men with a reported source of exposure to HIV other than homosexual contact, injecting drug use or heterosexual contact, had a significantly increased risk of late HIV diagnosis, compared to homosexually active men, in the unadjusted analysis. In the adjusted analysis, men with a history of heterosexual contact only and men with an other/undetermined exposure remained at significantly increased risk of late HIV diagnosis. Women and men with a history of injecting drug use, other than men with a history of homosexual contact, were similar to homosexually active men with respect to timing of HIV diagnosis. Although the proportion of AIDS cases with late HIV diagnosis among homosexually active men was lower, with 33% of 762 AIDS cases reported as late (Table 1.1), the majority of all late HIV diagnoses (252/451, 55.9%) were among homosexually active men, due to HIV transmission in Australia occurring predominantly through male homosexual contact.

Table 1.1 Number of AIDS cases diagnosed in Australia, 2000 – 2004, and percent with late HIV diagnosis by demographic, behavioural and clinical characteristics

Characteristic	Number	% late HIV diagnosis	Univariate analysis			Multivariate analysis		
			Unadjusted odds ratio	95% confidence interval	p value	Adjusted odds ratio ¹	95% confidence interval	p value
Year of AIDS diagnosis								
2000	262	40.5	1.00			1.0		
2001	207	41.1	1.03	0.71 – 1.49	0.895	0.91	0.60 – 1.38	0.649
2002	227	38.8	0.94	0.65 – 1.35	0.732	0.92	0.61 – 1.40	0.678
2003	225	41.8	1.06	0.74 – 1.52	0.768	1.03	0.68 – 1.55	0.896
2004	166	47.0	1.30	0.88 – 1.93	0.184	1.15	0.73 – 1.81	0.538
State/Territory of AIDS diagnosis								
NSW	533	36.0	1.00			1.00		
VIC	246	50.4	1.82	1.34 – 2.47	<0.0001	1.83	1.29 – 2.61	0.001
Other State/Territory	308	44.3	1.39	1.04 – 1.84	0.025	1.37	0.90 – 1.76	0.172
Sex								
Male	987	40.1	1.00			1.00		
Female	96	56.2	1.91	1.25 – 2.92	0.003	1.69	0.17 – 16.71	0.653
Transgender	4	25.0						
Age group at AIDS diagnosis (years)								
Less than 30	79	50.6	1.86	1.11 – 3.14	0.019	1.37	0.75 – 2.48	0.302
30–34	182	33.0	0.89	0.59 – 1.36	0.600	0.80	0.50 – 1.28	0.356
35–39	218	35.5	1.00			1.00		
40–44	195	34.9	0.97	0.65 – 1.46	0.897	0.95	0.60 – 1.51	0.819
45+	413	49.9	1.81	1.29 – 2.54	0.001	1.88	1.27 – 2.77	0.001
Country/region of birth								
Australia	718	36.1	1.00			1.00		
Other Oceania	58	39.7	1.16	0.67 – 2.10	0.586	1.14	0.62 – 2.11	0.665
United Kingdom/Ireland	46	39.1	1.14	0.55 – 1.81	0.992	1.02	0.50 – 2.06	0.958
Other Europe	68	52.9	1.99	1.21 – 3.29	0.007	1.10	0.61 – 1.99	0.746
Middle East/North Africa	10	90.0	15.95	2.01 – 126.6	0.009	6.74	0.76 – 59.63	0.086
Sub-Saharan Africa	49	59.2	2.71	1.49 – 4.92	0.001	1.60	0.79 – 3.22	0.192
Asia	84	69.0	3.95	2.43 – 6.43	<0.0001	3.02	1.71 – 5.32	<0.0001
North America	11	27.3	0.66	0.1 – 2.53	0.549	0.90	0.22 – 3.69	0.885

South/Central America and the Caribbean	16	43.7	1.38	0.51 – 3.74	0.529	1.70	0.55 – 5.23	0.358
Not reported	27	33.3	1.14	0.49 – 2.67	0.764	0.54	0.21 – 1.40	0.203
Sex and exposure category								
Male homosexual contact	762	33.0	1.00	4.94 – 12.72	<0.0001	6.19	3.65 – 10.48	<0.0001
Heterosexual contact (males)	118	79.7	7.93	1.92 – 5.13	<0.0001	4.51	0.43 – 47.20	0.209
Heterosexual contact (females)	74	60.8	3.14	0.57 – 2.07	0.806	1.25	0.61 – 2.56	0.534
Injecting drug use (males)	43	34.9	1.08	0.11 – 2.40	0.391	0.98	0.06 – 16.11	0.989
Injecting drug use (females)	10	20.0	0.51	1.50 – 4.25	<0.0001	2.36	1.31 – 4.24	0.004
Other/undetermined (males)	64	54.7	2.53	0.89 – 9.01	0.078	3.08	0.23 – 41.54	0.396
Other/undetermined (females)	12	58.3	2.83					
AIDS defining illness								
PCP only	300	48.7	1.00	0.40 – 0.76	<0.0001	1.00	0.33 – 0.68	<0.0001
Other opportunistic infections	342	34.5	0.56	0.22 – 0.64	<0.0001	0.48	0.28 – 0.89	0.019
Kaposi's sarcoma only	84	26.2	0.37	0.21 – 0.66	0.001	0.50	0.26 – 0.92	0.026
Other cancers only	74	25.7	0.37	0.45 – 0.99	0.042	0.49	0.43 – 1.03	0.069
CNS only	160	38.7	0.67	1.34 – 3.17	0.001	0.67	1.14 – 2.97	0.012
Multiple illnesses	127	66.1	2.06			1.84		
CD4+ cell count at AIDS (cells/ μ l)								
Less than 50	385	55.3	1.00	0.32 – 0.55	<0.0001	1.00	0.39 – 0.70	<0.0001
50+	616	34.3	0.42	0.22 – 0.61	<0.0001	0.52	0.23 – 0.71	0.002
Not reported	86	31.4	0.37			0.40		
Total	1 087	41.5						

1 Adjusted for State/Territory of AIDS diagnosis, age group, region of birth, sex and exposure category, AIDS defining illness and CD4+ cell count at AIDS diagnosis.

AIDS cases with a diagnosis of PCP only or with multiple AIDS defining illnesses were at significantly increased risk of late HIV diagnosis in both the unadjusted and adjusted analyses. A diagnosis of a central nervous system illness was associated with a lower risk of late HIV diagnosis in the unadjusted analysis but was not associated with late HIV diagnosis in the adjusted analysis. Cases with a CD4+ cell count of 50 cells/ μ l or higher had a significantly lower risk of late HIV diagnosis than cases with a CD4+ cell count of less than 50 cells/ μ l.

Close to 40% of AIDS cases diagnosed in Australia in 2000 – 2004 were newly diagnosed with HIV infection within 90 days of AIDS diagnosis. The highest number of cases of late HIV diagnosis was among homosexually active men. Late HIV diagnosis was not associated with year of AIDS diagnosis in 2000 – 2004 but was independently associated with State/Territory, age group, region of birth, sex and reported source of exposure to HIV, AIDS defining illness and CD4+ cell count at AIDS diagnosis.

The relatively stable AIDS incidence in Australia in 2000 – 2004 suggests that the effectiveness of HAART in delaying progression to AIDS has not changed substantially over the past five years. The apparent drop in the number of AIDS cases and the higher percentage of cases with late HIV diagnosis in 2004 may be due to reporting delay, predominantly among cases with a non-late HIV diagnosis. Despite the free availability of HIV antibody testing and effective treatment for HIV infection, no change in the extent of late HIV diagnosis has occurred in Australia over the past five years.

The lower risk of late HIV diagnosis in New South Wales may be attributable to higher rates of HIV antibody testing. A higher percentage of homosexually active men in Sydney reported having had an HIV antibody test in the previous 12 months compared to homosexually active men living in the other capital cities (Jin *et al* 2002; NCHECR 2005). The population rate of HIV antibody testing in New South Wales was also substantially higher than that recorded in Victoria, and the other health jurisdictions combined recorded the highest population rate of HIV antibody testing in Australia in 2000 – 2004 (NCHECR 2005). The pattern of increased risk of late HIV diagnosis among cases in the oldest age group may also be related to the pattern of HIV antibody testing among homosexually active men, with significantly lower rates of testing among men aged 40 – 49 year or 50 or more years (Jin *et al* 2002).

The pattern of late HIV diagnosis in 2000 – 2004 by region of birth was similar to that among AIDS cases diagnosed in Australia in 1997 – 2001, with an increased risk of late HIV diagnosis among cases born in a specific country in Asia (McDonald *et al* 2003). Among 98 cases of late HIV diagnosis for which HIV infection was attributed to an exposure other than male homosexual contact, with a completed assessment of the report of exposure, 82% were tested for investigation of suspected HIV disease, 11% had a screening test and 5% were tested following identification of specific risk behaviours for HIV infection including contact tracing, suggesting a lack of recognition of risk behaviours for HIV infection. The reason for testing among homosexually active men with late HIV diagnosis is not known.

A diagnosis of PCP only or a diagnosis of more than one AIDS defining illness was associated with late HIV diagnosis in Australia in 2000 – 2004, which was similar to the pattern of illness at late HIV diagnosis in two previous five yearly intervals, 1992 – 1996 and 1997 – 2001 (McDonald *et al* 2003). The association of a CD4+ cell count of less than 50 cells/ μ l with late HIV diagnosis among AIDS cases diagnosed in 2000 – 2004 was also observed among AIDS cases diagnosed in 1997 – 2001, and was attributed to an increase in CD4+ cell count among cases with a non-late HIV diagnosis, following the introduction of HAART for HIV infection in mid-1996 (Law *et al* 1999).

A national review of cases of HIV infection newly diagnosed in the United Kingdom and Ireland in 2003 identified a substantial number of missed opportunities for earlier diagnosis of HIV infection among cases with late HIV diagnosis, where late HIV diagnosis was defined as newly diagnosed HIV infection with a CD4+ cell count of less than 200 cells/ μ l (Sullivan *et al* 2005). A case report of late HIV diagnosis in Australia also indicated that HIV infection may have been diagnosed late due to missed opportunities for HIV antibody testing (Cooley and McDonald 2003).

In Australia, reducing HIV transmission and minimising the personal and social impacts of HIV infection was highlighted as a continuing goal of the recently released fifth National HIV/AIDS Strategy 2005 – 2008 (Australian Government Department of Health and Ageing 2005). Improving access to, and uptake of, HIV antibody testing was also identified as an important goal of the 5th strategy, to minimise the extent of late HIV diagnosis in Australia.

Reported by:

Ann McDonald and Handan Wand for the National HIV Surveillance Committee
National Centre in HIV Epidemiology and Clinical Research, Sydney, NSW

References

- Australian Bureau of Statistics. *Standard Australian Classification of Countries (SACC) 1998*. Commonwealth of Australia 2001. Canberra. ABS Catalogue No: 1269.0
- Australian Government Department of Health and Ageing. National HIV/AIDS Strategy – revitalising Australia's response 2005 – 2008. Commonwealth of Australia 2005. Canberra.
- Cooley L and McDonald A. Late diagnosis of HIV infection in 2002: a case report. *Australian HIV Surveillance Report* 2003; 19(2): 1 - 3
- Correll PK, Law MG, McDonald AM, Cooper DA and Kaldor JM. HIV disease progression in Australia in the time of combination antiretroviral therapies. *MJA* 1998; 169: 469 – 472
- Jin FY, Prestage G, Law MG, Van de Ven P, Rawsthorne P, Kaldor JM and Grulich AE. Predictors of recent HIV testing in homosexual men in Australia. *HIV Medicine* 2002; 3: 271 – 276
- Law MG, de Winter L, McDonald A, Cooper DA and Kaldor JM. AIDS diagnoses at higher CD4 counts in Australia following the introduction of highly active antiretroviral treatment. *AIDS* 1999; 13: 263 – 269
- McDonald AM, Li Y Dore GJ, Ree H and Kaldor JM. Late HIV presentation among AIDS cases in Australia, 1992 – 2001. *Aust NZ J Public Health* 2003; 27: 608- 613
- National Centre in HIV Epidemiology and Clinical Research. *HIV/AIDS, viral hepatitis and sexually transmissible infections in Australia Annual Surveillance Report 2005*. National Centre in HIV Epidemiology and Clinical Research, The University of New South Wales, Sydney, NSW; Australian Institute of Health and Welfare, Canberra, ACT. 2005
- Sullivan AK, Curtis H, Sabin CA and Johnson MA. Newly diagnosed HIV infections: review in UK and Ireland. *BMJ* 2005; 330: 1301 – 1302

Page left blank intentionally

National AIDS Registry

Table 2.1 Cases of AIDS and deaths following AIDS by sex and State/Territory in which diagnosis of AIDS was made, cumulative to 31 March 2005, and for two previous yearly intervals

Cases

State/Territory	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			
	Male	Female	Male	Female	Male	Female	Total†	%
ACT	3	1	0	0	92	9	101	1.1
NSW	133	2	59	9	5 191	230	5 436	56.9
NT	3	1	1	1	42	2	44	0.5
QLD	22	5	20	6	984	66	1 052	11.0
SA	7	0	6	1	389	31	421	4.4
TAS	0	0	1	0	48	4	52	0.5
VIC	39	3	36	6	1 885	99	1 994	20.9
WA	12	0	7	0	414	35	451	4.7
Total	219	12	130	23	9 045	476	9 551	100.0

Deaths

State/Territory	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			
	Male	Female	Male	Female	Male	Female	Total†	%
ACT	1	1	0	0	71	6	77	1.2
NSW	41	2	37	2	3 522	130	3 662	56.1
NT	0	0	0	1	26	1	27	0.4
QLD	11	2	10	1	642	41	685	10.5
SA	5	1	9	0	269	20	289	4.4
TAS	0	0	0	0	32	2	34	0.5
VIC	15	1	11	1	1 373	59	1 440	22.1
WA	5	0	6	1	289	24	314	4.8
Total	78	7	73	6	6 224	283	6 528	100.0

† Totals include 30 AIDS cases and 21 deaths following AIDS in people whose sex was reported as transgender.

Table 2.2 Incidence of AIDS per million current population¹ by sex and State/Territory of diagnosis for the two most recent yearly intervals

State/Territory	1 Apr 03 – 31 Mar 04			1 Apr 04 – 31 Mar 05		
	Male	Female	Total	Male	Female	Total
ACT	18.8	6.1	12.4	0.0	0.0	0.0
NSW	40.0	0.6	20.2	17.6	2.7	10.1
NT	28.7	10.6	20.1	9.5	10.5	10.0
QLD	11.5	2.6	7.1	10.2	3.1	6.7
SA	9.3	0.0	5.2	7.9	1.3	4.6
TAS	0.0	0.0	0.0	4.2	0.0	2.1
VIC	16.1	1.2	8.5	14.7	2.4	8.4
WA	12.2	0.0	6.1	7.0	0.0	3.5
Total	22.1	1.2	11.6	13.0	2.3	7.6

1 Population estimates by sex, State/Territory and calendar period from *Australian Demographic Statistics* (Australian Bureau of Statistics).

Table 2.3 Cases of AIDS and deaths following AIDS by sex and age group, cumulative to 31 March 2005, and for two previous yearly intervals

Cases¹

Age group (years)	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			
	Male	Female	Male	Female	Male	Female	Total [†]	%
0–2	0	0	0	0	9	9	18	0.2
2–12	0	0	0	0	21	11	32	0.3
0–12	0	0	0	0	30	20	50	0.5
13–19	0	0	0	0	27	4	31	0.3
20–29	12	2	5	2	1 406	115	1 534	16.1
30–39	82	5	39	8	3 744	176	3 930	41.1
40–49	64	3	49	5	2 583	82	2 669	27.9
50–59	43	2	26	5	936	42	981	10.3
60+	18	0	11	3	319	37	356	3.7
Total	219	12	130	23	9 045	476	9 551	100.0

Deaths²

Age group (years)	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			
	Male	Female	Male	Female	Male	Female	Total [†]	%
0–2	0	0	0	0	5	6	11	0.2
2–12	0	0	0	0	17	6	23	0.3
0–12	0	0	0	0	22	12	34	0.5
13–19	0	0	0	0	14	3	17	0.2
20–29	2	1	0	0	688	49	748	11.5
30–39	25	2	15	4	2 447	104	2 559	39.2
40–49	30	3	28	1	2 004	50	2 056	31.5
50–59	12	0	18	1	776	32	808	12.4
60+	9	1	12	0	273	33	306	4.7
Total	78	7	73	6	6 224	283	6 528	100.0

1 Cases are classified by age at diagnosis.

2 Deaths are classified by age at death.

† Totals include 30 AIDS cases and 21 deaths following AIDS in people whose sex was reported as transgender.

Table 2.4 Cases of AIDS by sex and exposure category, cumulative to 31 March 2005, and for two previous yearly intervals

Exposure category	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			%
	Male	Female	Male	Female	Male	Female	Total	
Male homosexual/bisexual contact	147	–	82	–	7 442	–	7 442	80.9
Male homosexual/bisexual contact and injecting drug use	16	–	15	–	440	–	440	4.8
Injecting drug use	12	0	5	1	208	95	303	3.3
<i>Heterosexual</i>	6	0	3	1	134	71	205	
<i>Not further specified</i>	6	0	2	0	74	24	98	
Heterosexual contact	30	11	18	20	421	269	690	7.5
<i>Sex with injecting drug user</i>	2	1	0	1	9	27	36	
<i>Sex with bisexual male</i>	–	1	–	3	–	47	47	
<i>From a high prevalence country</i>	3	5	4	11	77	70	147	
<i>Sex with person from a high prevalence country</i>	6	4	4	1	70	21	91	
<i>Sex with person with medically acquired HIV</i>	0	0	0	0	2	10	12	
<i>Sex with HIV infected person, exposure not specified</i>	2	0	1	1	38	34	72	
<i>Not further specified</i>	17	0	9	3	225	60	285	
Haemophilia/coagulation disorder	1	0	0	0	120	3	123	1.3
Receipt of blood/tissue	1	0	1	1	80	66	146	1.6
Health care setting	0	0	0	0	1	3	4	0.0
Total Adults/Adolescents	207	11	121	22	8 712	436	9 148	99.5
Children (under 13 years at AIDS diagnosis)								
Mother with/at risk for HIV infection	0	0	0	0	14	17	31	0.3
Haemophilia/coagulation disorder	0	0	0	0	5	0	5	0.1
Receipt of blood/tissue	0	0	0	0	11	3	14	0.1
Total children	0	0	0	0	30	20	50	0.5
Sub-total	207	11	121	22	8 742	456	9 198	100.0
Other/undetermined ¹	12	1	9	1	303	20	353	
Total	219	12	130	23	9 045	476	9 551	

1 The 'Other/undetermined' exposure category includes 30 AIDS cases in people whose sex was reported as transgender. The category was excluded from the calculation of the percentage of cases attributed to each exposure category.

Table 2.5 Deaths following AIDS by sex and exposure category, cumulative to 31 March 2005, and for two previous yearly intervals

Exposure category	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			%
	Male	Female	Male	Female	Male	Female	Total	
Male homosexual/bisexual contact	52	–	50	–	5 246	–	5 246	83.1
Male homosexual/bisexual contact and injecting drug use	10	–	5	–	295	–	295	4.7
Injecting drug use	5	2	6	0	127	58	185	2.9
<i>Heterosexual</i>	3	1	1	0	82	47	129	
<i>Not further specified</i>	2	1	5	0	45	11	56	
Heterosexual contact	7	3	8	5	183	138	321	5.1
<i>Sex with injecting drug user</i>	0	0	0	1	5	13	18	
<i>Sex with bisexual male</i>	–	0	–	1	–	32	32	
<i>From a high prevalence country</i>	0	2	1	0	18	19	37	
<i>Sex with person from a high prevalence country</i>	2	1	2	1	25	11	36	
<i>Sex with person with medically acquired HIV</i>	0	0	0	0	2	7	9	
<i>Sex with HIV infected person, exposure not specified</i>	2	0	0	0	25	17	42	
<i>Not further specified</i>	3	0	5	2	108	39	147	
Haemophilia/coagulation disorder	0	0	0	0	95	3	98	1.6
Receipt of blood/tissue	0	1	2	1	71	58	129	2.0
Health care setting	0	0	0	0	1	2	3	0.0
Total Adults/Adolescents	74	6	71	6	6 018	259	6 277	99.5
Children (under 13 years at death following AIDS)								
Mother with/at risk for HIV infection	0	0	0	0	8	10	18	0.3
Haemophilia/coagulation disorder	0	0	0	0	3	0	3	0.0
Receipt of blood/tissue	0	0	0	0	11	2	13	0.2
Total children	0	0	0	0	22	12	34	0.5
Sub-total	74	6	71	6	6 040	271	6 311	100.0
Other/undetermined ¹	4	1	2	0	184	12	217	
Total	78	7	73	6	6 224	283	6 528	

1 The 'Other/undetermined' exposure category includes 21 deaths following AIDS in people whose sex was reported as transgender. The category was excluded from the calculation of the percentage of cases attributed to each exposure category.

The National HIV Database

Table 3.1 Number of new diagnoses of HIV infection by sex¹ and State/Territory, cumulative to 31 March 2005, and for two previous years intervals

State/Territory	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			
	Male	Female	Male	Female	Male	Female	Total	Rate ²
ACT	9	2	2	0	248	30	278	85.8
NSW ³	363	48	355	43	12 803	794	13 858	205.8
NT	6	3	2	1	123	18	141	70.4
QLD	111	17	133	23	2 472	238	2 719	69.6
SA	55	4	44	4	847	85	933	60.8
TAS	0	0	4	1	89	8	97	20.1
VIC ⁴	192	16	178	27	4 804	318	5 163	103.7
WA	49	11	35	11	1 112	171	1 290	65.0
Total⁵	785	101	753	110	22 498	1 662	24 479⁶	121.5

1 Sixty three people (27 NSW, 9 QLD, 1 SA, 19 VIC and 7 WA) whose sex was reported as transgender are included in the total columns of Tables 3.1 – 3.3

2 Rate per one hundred thousand current population. Population estimates by sex, State/Territory and calendar interval from *Australian Demographic Statistics* (Australian Bureau of Statistics).

3 Cumulative total for NSW includes 234 people whose sex was not reported.

4 Cumulative total for VIC includes 22 people whose sex was not reported.

5 Cumulative total for Australia includes 256 people whose sex was not reported.

6 Estimated number of new diagnoses of HIV infection, adjusted for multiple reports, was 21 590 (range 21 090 to 22 090). Reference: Law MG, McDonald AM and Kaldor JM. Estimation of cumulative HIV incidence in Australia, based on national case reporting. *Aust NZ J Public Health* 1996; 20: 215 - 217

Table 3.2 Number of new diagnoses of HIV infection for which exposure category was reported, by sex and exposure category, cumulative to 31 March 2005, and for two previous yearly intervals

Exposure category	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			%
	Male	Female	Male	Female	Male	Female	Total ¹	
Male homosexual/ bisexual contact	577	–	549	–	15 868	–	15 868	76.8
Male homosexual/bisexual contact and injecting drug use	38	–	22	–	883	–	883	4.3
Injecting drug use	24	7	22	8	658	207	871	4.2
<i>Heterosexual</i>	12	7	13	5	274	152	426	
<i>Not further specified</i>	12	0	9	3	384	55	445	
Heterosexual contact	86	83	86	93	1 279	1 136	2 422	11.7
<i>Sex with injecting drug user</i>	4	5	0	6	32	103	135	
<i>Sex with bisexual male</i>	–	5	–	12	–	146	146	
<i>From a high prevalence country</i>	20	38	26	45	282	348	634	
<i>Sex with person from a high prevalence country</i>	34	10	29	10	259	125	384	
<i>Sex with person with medically acquired HIV</i>	0	0	0	0	4	18	22	
<i>Sex with HIV infected person, exposure not specified</i>	7	13	6	6	80	163	244	
<i>Not further specified</i>	21	12	25	14	622	233	857	
Haemophilia/coagulation disorder	0	0	0	0	218	4	222	1.1
Receipt of blood/tissue	0	0	1	0	109	101	210	1.0
Health care setting ²	1	0	0	0	3	9	12	0.1
Total Adults/Adolescents¹	726	90	680	101	19 018	1 457	20 488	99.2
Children (under 13 years at HIV diagnosis)								
Mother with/at risk for HIV infection ³	0	3	0	1	40	35	75	0.4
Haemophilia/coagulation disorder	0	0	0	0	65	0	65	0.3
Receipt of blood/tissue	0	0	0	0	13	9	22	0.1
Total children	0	3	0	1	118	44	162	0.8
Sub-total	726	93	680	102	19 136	1 501	20 650	100.0
Other/undetermined ⁴	59	8	73	8	3 362	161	3 829	
Total¹	785	101	753	110	22 498	1 662	24 479⁵	

1 Total column includes people whose sex was not reported.

2 'Health care setting' includes 5 cases of occupationally acquired HIV infection and 4 cases of HIV transmission in surgical rooms.

3 A total of 348 children were notified as having been born to women with HIV infection, cumulative to 31 March 2005.

4 The 'Other/undetermined' exposure category includes 3 807 adults/adolescents and 21 children. Sixty three people whose sex was reported as transgender were included in the 'Other/undetermined' category. The 'Other/undetermined' category was excluded from the calculation of the percentage of cases attributed to each exposure category.

5 See footnote Table 3.1

Table 3.3 Number of new diagnoses of HIV infection by sex and age group, cumulative to 31 March 2005, and for two previous yearly intervals

Age group (years)	1 Apr 03 – 31 Mar 04		1 Apr 04 – 31 Mar 05		Cumulative to 31 Mar 05			%
	Male	Female	Male	Female	Male	Female	Total ¹	
0–2	0	1	0	0	44	22	67	0.3
3–12	0	2	1	1	91	25	116	0.5
0–12	0	3	1	1	135	47	183	0.8
13–19	7	6	9	2	449	100	557	2.3
20–29	170	36	153	40	7 318	663	8 101	33.1
30–39	299	28	315	34	8 443	485	9 038	36.9
40–49	182	16	172	19	4 062	188	4 294	17.5
50–59	98	8	72	11	1 458	74	1 544	6.3
60+	29	4	31	3	485	73	561	2.3
Not reported	0	0	0	0	148	32	201	0.8
Total¹	785	101	753	110	22 498	1 662	24 479	100.0

1 See footnotes Table 3.1

Table 3.4 Number of new diagnoses of HIV infection in the year 1 April 2004 to 31 March 2005 for which an HIV seroconversion illness was diagnosed or the date of a prior negative test was within one year of diagnosis of HIV infection, by sex and State/Territory and for two six month intervals of HIV diagnosis

State/Territory	1 Apr 04 – 30 Sep 04		1 Oct 04 – 31 Mar 05		1 Apr 04 – 31 Mar 05		
	Male	Female	Male	Female	Male	Female	Total
ACT	0	0	1	0	1	0	1
NSW	53	1	65	1	118	2	120
NT	1	0	0	0	1	0	1
QLD	22	2	26	1	48	3	51
SA	9	0	6	1	15	1	16
TAS	1	0	0	0	1	0	1
VIC	30	3	34	2	64	5	69
WA	2	0	2	1	4	1	5
Total	118	6	134	6	252	12	264

Table 3.5 Number of new diagnoses of HIV infection in the year 1 April 2004 to 31 March 2005 for which an HIV seroconversion illness was diagnosed or the date of a prior negative test was within one year of diagnosis of HIV infection, by sex and exposure category and for two six month intervals of HIV diagnosis

Exposure category	1 Apr 04 – 30 Sep 04		1 Oct 04 – 31 Mar 05		1 Apr 04 – 31 Mar 05		
	Male	Female	Male	Female	Male	Female	Total
Male homosexual/bisexual contact	104	–	117	–	221	–	221
Male homosexual/bisexual contact and injecting drug use	3	–	3	–	6	–	6
Injecting drug use (female and heterosexual male)	1	1	2	2	3	3	6
Heterosexual contact	7	5	3	4	10	9	19
Health care setting	0	0	0	0	0	0	0
Other/undetermined	3	0	9	0	12	0	12
Total	118	6	134	6	252	12	264

Table 3.6 Number of new diagnoses of HIV infection in the year 1 April 2004 to 31 March 2005 for which an HIV seroconversion illness was diagnosed or the date of a prior negative test was within one year of diagnosis of HIV infection, by sex and age group and for two six month intervals of HIV diagnosis

Age group (years)	1 Apr 04 – 30 Sep 04		1 Oct 04 – 31 Mar 05		1 Apr 04 – 31 Mar 05		
	Male	Female	Male	Female	Male	Female	Total
13–19	0	0	4	0	4	0	4
20–29	31	6	34	3	65	9	74
30–39	53	0	64	2	117	2	119
40–49	25	0	24	0	49	0	49
50–59	5	0	8	1	13	1	14
60+	4	0	0	0	4	0	4
Total	118	6	134	6	252	12	264

Sentinel surveillance of HIV infection in sexual health clinics

Table 4.1 Number of people seen, number of people tested for HIV antibody and number of people newly diagnosed with HIV infection, by sex and sexual health clinic, during the quarter 1 January to 31 March 2005

Sexual health clinic	Seen at Clinic		Tested for HIV antibody		Newly diagnosed with HIV infection		
	Male	Female	Male	Female	Male	Female	Total
Sydney Sexual Health Centre, NSW	1 527	837	710	351	6	1	7
Livingstone Road Sexual Health Centre, Marrickville, NSW	339	256	132	64	0	0	0
Brisbane Sexual Health Clinic, QLD	933	839	332	160	4	0	4
Gold Coast Sexual Health Clinic, QLD	481	463	150	192	0	0	0
Clinic 275, Adelaide, SA	1 213	741	922	511	3	0	3
Melbourne Sexual Health Centre, VIC	1 396	1 353	750	649	3	0	3
Total	5 889	4 489	2 996	1 927	16	1	17

Table 4.2 Number of people seen who had a *previous negative HIV antibody test*, percent retested for HIV antibody and number (percent) newly diagnosed with HIV infection, by sex and exposure category, during the quarter 1 January to 31 March 2005

Exposure category	Previous negative HIV antibody test		% retested for HIV antibody		Newly diagnosed with HIV infection			%
	Male	Female	Male	Female	Male	Female	Total	
Male homosexual/bisexual contact	1 353	–	66.3	–	9	–	9	1.0
Male homosexual/bisexual contact and injecting drug use	96	–	70.8	–	2	–	2	2.9
Injecting drug use (female and heterosexual male)	165	92	53.3	42.4	0	0	0	0.0
Heterosexual contact	1 803	1 611	46.4	42.7	0	0	0	0.0
<i>outside Australia</i>	387	282	57.6	51.4	0	0	0	0.0
<i>within Australia only</i>	1 416	1 329	43.3	40.9	0	0	0	0.0
Sex worker	–	681	–	64.9	–	0	0	0.0
Sex worker and injecting drug use	–	73	–	50.7	–	0	0	0.0
Other/undetermined	47	103	31.9	33.0	0	0	0	0.0
Total	3 464	2 560	55.0	48.4	11	0	11	0.3

Table 4.3 Number of people seen with *no previous HIV antibody test*, percent tested for HIV antibody for the first time, and number (percent) newly diagnosed with HIV infection, by sex and exposure category, during the quarter 1 January to 31 March 2005

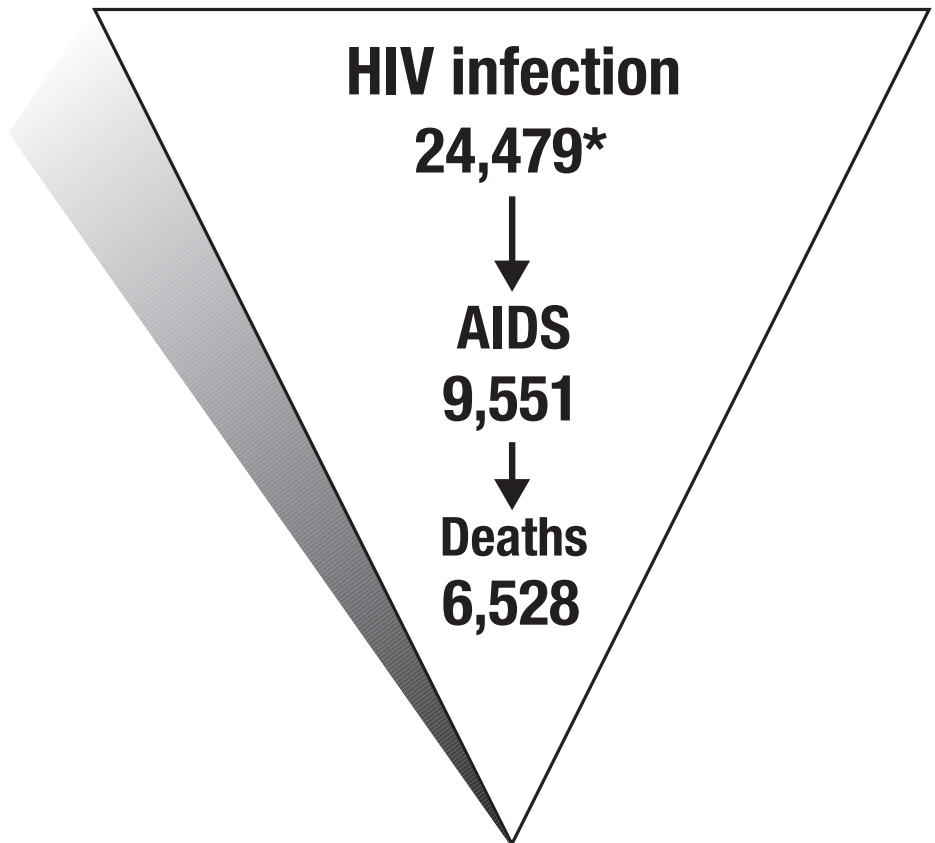
Exposure category	No previous HIV antibody test		% tested for HIV antibody		Newly diagnosed with HIV infection			
	Male	Female	Male	Female	Male	Female	Total	%
Male homosexual/bisexual contact	419	–	58.2	–	5	–	5	2.7
Male homosexual/bisexual contact and injecting drug use	19	–	47.4	–	0	–	0	0.0
Injecting drug use (female and heterosexual male)	53	30	73.6	46.7	0	0	0	0.0
Heterosexual contact	1 464	1 427	52.9	42.3	0	1	1	0.03
<i>outside Australia</i>	353	286	58.3	54.5	0	0	0	0.0
<i>within Australia only</i>	1 111	1 141	51.2	39.3	0	1	1	0.04
Sex worker	–	224	–	17.0	–	0	0	0.0
Sex worker and injecting drug use	–	19	–	31.6	–	0	0	0.0
Other/undetermined	212	198	11.8	12.6	0	0	0	0.0
Total	2 167	1 898	50.4	36.2	5	1	6	0.3

Table 4.4 Number of people seen, number of people tested for HIV antibody and number of people newly diagnosed with HIV infection, by sex and age group, during the quarter 1 January to 31 March 2005

Age group (years)	Seen at Clinic		Tested for HIV antibody		Newly diagnosed with HIV infection		
	Male	Female	Male	Female	Male	Female	Total
13–19	208	451	125	163	1	0	1
20–29	2 411	2 314	1 326	898	2	1	3
30–39	1 757	1 136	896	497	6	0	6
40–49	956	442	418	303	5	0	5
50–59	390	123	168	58	1	0	1
60+	167	23	63	8	1	0	1
Total	5 889	4 489	2 996	1 927	16	1	17

The HIV Epidemic in Australia

A cumulative profile to 31 March 2005



* Estimated number of new diagnoses of HIV infection, adjusted for multiple reports, was 21,590 (range 21,090 to 22,090).



Diagnoses in the first quarter

1 January – 31 March 2005

- a total of 225 diagnoses of HIV infection, 37 diagnoses of AIDS and 12 deaths following AIDS were reported, by 30 June 2005, to have occurred in the first quarter of 2005
- following adjustment for reporting delay, the estimated numbers of AIDS diagnoses and deaths following AIDS occurring in the first quarter of 2005 were 76 and 22
- in comparison, 254 diagnoses of HIV infection, 50 diagnoses of AIDS and 17 deaths following AIDS were reported by 30 June 2005, to have occurred in the first quarter of 2004

New HIV infection

During the first quarter of 2005, 69 cases among males were reported as having newly acquired HIV infection identified by a negative test within the 12 months prior to diagnosis or the diagnosis of HIV seroconversion illness. A history of male homosexual contact only was reported in 64 (92.8%) cases.

Diagnoses in the year to 31 March 2005

- 864 diagnoses of HIV infection
- 153 diagnoses of AIDS
- 79 deaths following AIDS were reported by 30 June 2005

HIV diagnoses

People diagnosed with HIV infection in the year to 31 March 2005 had an average age of 37 years and 1.3% was in the age group 13 – 19 years

- 87.2% were male, 12.7% were female, and sex was not reported in 0.1%
- of 680 cases of HIV infection, newly diagnosed among men in the year to 31 March 2005 for which an exposure to HIV was reported, 549 (80.7%) were attributed to male homosexual/bisexual contact only.

Total diagnoses to 31 March 2005

- 24,479 diagnoses of HIV infection
- 21,590 diagnoses of HIV infection following adjustment for multiple reporting
- 9,551 diagnoses of AIDS
- 6,528 deaths following AIDS were reported by 30 June 2005

HIV testing in sexual health clinics

Six sexual health clinics in Adelaide, Brisbane, Gold Coast, Melbourne and Sydney tested 4,923 people in the quarter 1 January – 31 March 2005 who were not previously known to have HIV infection

- of 1,092 men reported as having been tested for the first time, 5 (0.5%) was found to have HIV infection
- of 1,904 men reported as having been retested following a previous negative test, 11 (0.6%) were found to have HIV infection
- of 244 men who reported a history of homosexual contact and who were tested for the first time, 5 (2.7%) were newly diagnosed with HIV infection

Contents

Late HIV diagnosis among AIDS cases in Australia, 2000 – 2004	1
Announcements	2
National AIDS Registry	9
National HIV Database	14
Sentinel HIV Surveillance in sexual health clinics	18
Australian HIV Surveillance Update	21
Notes	24

List of tables and figures

Figure 1.1	Number of AIDS cases in Australia, 2000 – 2004, by timing of HIV diagnosis	1
Table 1.1	Number of AIDS cases diagnosed in Australia, 2000 – 2004, and percent with late HIV diagnosis by demographic, behavioural and clinical characteristics	4
Table 2.1	Cases of AIDS and deaths following AIDS by sex and State/Territory in which diagnosis of AIDS was made, cumulative to 31 March 2005, and for two previous yearly intervals	9
Table 2.2	Incidence of AIDS per million current population by sex and State/Territory of diagnosis for the two most recent yearly intervals	10
Table 2.3	Cases of AIDS and deaths following AIDS by sex and age group, cumulative to 31 March 2005, and for two previous yearly intervals	11
Table 2.4	Cases of AIDS by sex and exposure category, cumulative to 31 March 2005, and for two previous yearly intervals	12
Table 2.5	Deaths following AIDS by sex and exposure category, cumulative to 31 March 2005, and for two previous yearly intervals	13
Table 3.1	Number of new diagnoses of HIV infection by sex and State/Territory, cumulative to 31 March 2005, and for two previous yearly intervals	14
Table 3.2	Number of new diagnoses of HIV infection for which exposure category was reported, by sex and exposure category, cumulative to 31 March 2005, and for two previous yearly intervals	15
Table 3.3	Number of new diagnoses of HIV infection by sex and age group, cumulative to 31 March 2005, and for two previous yearly intervals	16
Table 3.4	Number of new diagnoses of HIV infection in the year 1 April 2004 to 31 March 2005 for which an HIV seroconversion illness was diagnosed or the date of a prior negative test was within one year of diagnosis of HIV infection, by sex and State/Territory and for two six month intervals of HIV diagnosis	16
Table 3.5	Number of new diagnoses of HIV infection in the year 1 April 2004 to 31 March 2005 for which an HIV seroconversion illness was diagnosed or the date of a prior negative test was within one year of diagnosis of HIV infection, by sex and exposure category and for two six month intervals of HIV diagnosis	17
Table 3.6	Number of new diagnoses of HIV infection in the year 1 April 2004 to 31 March 2005 for which an HIV seroconversion illness was diagnosed or the date of a prior negative test was within one year of diagnosis of HIV infection, by sex and age group and for two six month intervals of HIV diagnosis	17
Table 4.1	Number of people seen, number of people tested for HIV antibody and number of people newly diagnosed with HIV infection, by sex and sexual health clinic, during the quarter 1 January to 31 March 2005	18
Table 4.2	Number of people seen who had a previous negative HIV antibody test, percent retested for HIV antibody and number (percent) newly diagnosed with HIV infection, by sex and exposure category, during the quarter 1 January to 31 March 2005	18
Table 4.3	Number of people seen with no previous HIV antibody test, percent tested for HIV antibody for the first time, and number (percent) newly diagnosed with HIV infection, by sex and exposure category, during the quarter 1 January to 31 March 2005	19
Table 4.4	Number of people seen, number of people tested for HIV antibody and number of people newly diagnosed with HIV infection, by sex and age group, during the quarter 1 January to 31 March 2005	19

Australian HIV Surveillance Report

National Centre in HIV Epidemiology and Clinical Research

Editor Ann McDonald

Editorial Advisory Panel John Kaldor (Chair)
Frank Bowden, David Cooper,
Nick Crofts, Basil Donovan,
Gary Dowse, Aileen Plant,
Linda Selvey, Russell Waddell,
Ashley Watson

Desktop publishing il RAZZO [Tel 02 48 211136]

ISSN 1035-221X

NOTES

The National AIDS Registry is maintained by NCHECR on behalf of the National HIV Surveillance Committee, which consists of representatives from NCHECR, and the Health Departments of each State and Territory and the Commonwealth of Australia. The Registry is based on reports from doctors who diagnose AIDS, made to the Health Department in the State/Territory of diagnosis. Date of birth and a name code (first two letters of first and last name) are used to minimise duplicate registration, while maintaining confidentiality.

The National HIV Database is maintained by NCHECR on behalf of the National HIV Surveillance Committee. It is based on reports of new diagnoses of HIV infection from HIV Reference Laboratories (ACT, NSW, TAS, VIC), or from a combination of Reference Laboratory and diagnosing doctors (NT, QLD, SA, WA). In order to avoid counting the same case more than once, only diagnoses which are determined to be new by the diagnosing laboratory or doctor are reported for the purposes of national surveillance.

Sentinel surveillance is carried out by six sexual health clinics in five Australian cities, which send quarterly reports on HIV antibody testing to NCHECR. Tabulations from the National AIDS Registry, the National HIV Database and Sentinel HIV Surveillance in sexual health clinics are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information.

Abbreviations: HIV is the human immunodeficiency virus, and unless otherwise specified, refers to HIV-1 only. AIDS is the acquired immunodeficiency syndrome and STI stands for sexually transmissible infection. High prevalence countries are those of sub-Saharan Africa, the Caribbean and specific countries in South East Asia (Cambodia, Myanmar and Thailand), where HIV prevalence is above 1% and transmission is believed to be predominantly heterosexual. The Australian States and Territories are: Australian Capital Territory (ACT), New South Wales (NSW), Northern Territory (NT), Queensland (QLD), South Australia (SA), Tasmania (TAS), Victoria (VIC) and Western Australia (WA). NCHECR is the National Centre in HIV Epidemiology and Clinical Research.

All data in this report are provisional and subject to future revision.

The Australian HIV Surveillance Report is produced by the National Centre in HIV Epidemiology and Clinical Research on a quarterly basis, issued in January, April, July and October. Subscription is free, and can be obtained by writing to the Editor or by calling the Epidemiology Section of the NCHECR:

Australian HIV Surveillance Report
National Centre in HIV Epidemiology and Clinical Research
376 Victoria Street
Darlinghurst NSW 2010
Australia

Tel: (02) 9385 0900
Fax: (02) 9385 0920 International prefix: (612)
Email: recept@nchecr.unsw.edu.au
Internet: www.med.unsw.edu.au/nchecr

State/Territory publications of surveillance data, available through the Internet, are listed below:

NSW Public Health Bulletin	www.health.nsw.gov.au/public-health/phb/phb.html
The Northern Territory Disease Control Bulletin	www.nt.gov.au/health/cdc/aids_std/report/index.shtml
Sexually Transmitted Diseases in South Australia	www.stdservices.on.net/publications
Victorian Infectious Diseases Bulletin	www.dhs.vic.gov.au/phd/vidb/
Disease Watch	www.public.health.wa.gov.au/

For further information at a State/Territory level, contact:

ACT	Ms Riemke Kampen, ACT Health	(02) 6205 2052
NSW	Mr Mark Bartlett	(02) 9391 9675
NT	Dr Kevin Sesnan, Department of Health and Community Services	(08) 8922 8606
QLD	Ms Jo Murray, Queensland Department of Health	(07) 3224 5526
SA	Ms Therese Davey, SA Health Commission	(08) 8226 6025
TAS	Mr David Coleman, Department of Health	(03) 6233 3203
VIC	Ms Rebecca Guy, Burnet Institute	(03) 9282 2290
WA	Ms Carolien Giele, WA Department of Health	(08) 9388 4817