

# Australian HIV Surveillance Report

National Centre in HIV Epidemiology and Clinical Research

Volume 13, Number 1

January 1997

## Cryptosporidiosis in people with AIDS

*Cryptosporidium parvum* is a parasite which has been recognised as a human pathogen since 1976. Over the last decade, *Cryptosporidium* has also been recognised as an important cause of opportunistic illness in people with HIV infection. *Cryptosporidium* infection is acquired through ingestion of oocysts excreted in the faeces of infected humans and animals. Modes of transmission therefore include person to person transmission, contact with infected animals, and ingestion of faecally contaminated water or food (MacKenzie *et al* 1994, Lengerich *et al* 1993, Ravn *et al* 1991, Current 1994, Centers for Disease Control and Prevention 1996). The relative importance of these transmission routes in people with HIV infection is not clearly defined. In particular, the risks of transmission associated with ingestion of filtered or unfiltered tap water, recreational water contact and specific sexual practices involving oro-faecal contact, have not been investigated.

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The National Centre is funded by the Commonwealth Department of Human Services and Health through the Australian National Council on AIDS (ANCA), and is affiliated with the Faculty of Medicine, University of New South Wales

## ANNOUNCEMENTS

### National meetings

**The First Australasian Conference on Hepatitis C** will be held in Sydney, New South Wales, on 16 – 18 March 1997. Telephone: 03 9328 3111, Facsimile: 03 9328 3008, E-mail vadf@ilanet.sl.nsw.gov.au

**The 9th Annual Conference of the Australasian Society for HIV Medicine** will be held in Adelaide, South Australia, on 13–16 November 1997. Telephone: 02 9241 1478, Fax: 02 9251 3552, E-mail: reply@icmsaust.com.au

### International meetings

**The 8th International Conference on the reduction of drug related harm** will be held in Paris, France, on 23 – 27 March 1997. Telephone: 44 (0)151 227 4423, Facsimile: 44 (0)151 227 4023, E-mail: hrc@hit1.demon.co.uk

**The 3rd AIDS Impact Conference** will be held in Melbourne, Victoria, on 22–25 June 1997. The date for submission of abstracts has been extended to 17 February 1997. Telephone: 61 3 9819 3700, Facsimile: 61 3 9819 5978, E-mail: meeting@iaccess.com.au

**The 4th International Congress on AIDS in Asia and the Pacific** will be held in Manila, Philippines, on 25–29 October 1997. Further information may be obtained from the Secretariat, 2/F Physicians' Tower, 533 United Nations Avenue, Manila, Philippines. Telephone: 632 521 4884 and 632 522 1081, Facsimile: 632 521 2831

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Although *Cryptosporidium* infection gives rise to self-limiting diarrhoea among the immunocompetent population, in particular young children in developing countries, it is only among the immunosuppressed population that diarrhoea becomes persistent and that other morbidity such as biliary disease develops (Gowan *et al* 1993). In people with HIV infection, the clinical presentation of *Cryptosporidium* infection varies considerably, and includes asymptomatic colonisation, self-limiting diarrhoea, and life-threatening intractable watery diarrhoea and biliary disease (Gowan *et al* 1993). The chronicity of diarrhoea appears to be related to the level of immunodeficiency. People with a CD4+ cell count above 200/mm<sup>3</sup> tend to have a self-limiting illness, while those more severely immunodeficient generally are unable to eradicate the parasite, and develop persistent diarrhoea (Flanigan *et al* 1992).

Cryptosporidiosis, an AIDS-defining illness if it produces diarrhoea of longer than one month's duration, is a major cause of HIV-related morbidity and mortality for several reasons. Firstly, 7–10% of people with AIDS in Australia were diagnosed with cryptosporidiosis (NCHECR 1996). Secondly, there is no proven prophylaxis or eradication therapy for *Cryptosporidium* infection. Thirdly, the risk of death following AIDS diagnosis doubles if the AIDS-defining illness was cryptosporidiosis (Colford *et al* 1996).

#### **Cryptosporidiosis at St. Vincent's Hospital, Sydney, 1983-1994**

Over the period 1983 through 1994, over 1,400 people with AIDS were cared for by the St Vincent's Hospital HIV Unit in Sydney. In 1995, a review of patient medical records was undertaken to examine AIDS illness incidence trends. Among the 1,394 people with available information, 145 (10.4%) had developed *Cryptosporidium* infection. Of these 145, cryptosporidiosis was the AIDS-defining illness in 60 (41.3%). The percentage of AIDS cases with a diagnosis of *Cryptosporidium* infection increased over time, from 6.6% in 1983–1987 to 12% in 1991–1994. However, the increasing proportion of diagnoses of cryptosporidiosis in people with AIDS may be attributable to improved diagnostic capability rather than a true increase in prevalence.

There was no significant difference in risk of *Cryptosporidium* infection according to sex, HIV exposure category or country of birth (Table 1.1). However, the vast majority of AIDS cases in the St. Vincent's Hospital cohort were males who reported a history of homosexual contact. The ability to detect significant differences in risk by sex and HIV exposure category was therefore low. No seasonal variation was found in the number of diagnoses of *Cryptosporidium* infection.

CD4+ cell counts measured within three months of the diagnosis of *Cryptosporidium* infection were available for 113 (78%) cases. The median CD4+

**Table 1.1**  
**Number (proportion) of AIDS cases seen at St Vincent's Hospital, Sydney, in 1983 – 1994, number (proportion) with *Cryptosporidium* infection and risk of infection, by selected demographic characteristics.**

Characteristic	Total (%)	<i>Cryptosporidium</i> infection (%)	Infection risk (95% CI)
<b>Sex</b>			<b>0.58 (0.15 – 2.54)</b>
Male	1372 (98.7)	142 (97.9)	
Female	18 (1.3)	3 (2.1)	
<b>Exposure category</b>			<b>1.23 (0.81 – 1.86)</b>
Male homosexual/bisexual contact	998 (71.6)	109 (75.2)	
Male homosexual/bisexual contact and ID use	53 (3.8)	1 (0.7)	
ID use	29 (2.1)	2 (1.4)	
Heterosexual contact	22 (1.6)	0 (0.0)	
Other/undetermined	292 (20.9)	33 (22.8)	
<b>Country of birth</b>			<b>0.79 (0.55 – 1.14)</b>
Australia	878 (63.0)	84 (57.9)	
Other	516 (37.0)	61 (42.1)	

cell count was 20/mm<sup>3</sup>, and only 4.8% of cases were diagnosed when the CD4+ cell count was above 200/mm<sup>3</sup>.

Median survival following diagnosis of *Cryptosporidium* infection was 12 months, but was greater for those cases for which cryptosporidiosis was the AIDS-defining illness (14 months) compared to those who developed infection following AIDS diagnosis (9 months) (p=0.04). Survival did not vary by year of AIDS diagnosis.

Approximately half the cases of HIV-related biliary disease were associated with *Cryptosporidium* infection. *Cryptosporidium* was also the most common underlying opportunistic infection in these cases.

#### **Prevention of *Cryptosporidium* infection**

Among people with HIV infection the only well described risk factors for acquisition of *Cryptosporidium* infection are level of immunodeficiency and sexual orientation. Men who report a history of homosexual contact and are severely immunodeficient are at highest risk. Risk appears low among women and older people with HIV infection (Colford *et al* 1996). However, there is limited information on other risk factors including sexual practices.

Guidelines for prevention of *Cryptosporidium* infection among immunocompromised people issued by the Centers for Disease Control and Prevention in the United States (1995a) include the following:

- education and counselling on modes of *Cryptosporidium* transmission
- avoidance of drinking water directly from lakes and rivers
- awareness that swimming in lakes, rivers, or public swimming pools may increase the risk of infection
- boiling of water (1 minute) during waterborne outbreaks of *Cryptosporidium* infection
- use of submicron, personal use filters or high quality bottled water can also reduce risk

Only filters which are capable of removing particles with a diameter of less than 1/μm are recommended, and include filters which function by reverse osmosis. Those based only on ultraviolet light, activated carbon or pentiodide-impregnated resins are not effective. Bottled water obtained from underground springs and wells is more likely to be free of *Cryptosporidium* oocysts than water from rivers or lakes (Centers for Disease Control and Prevention 1995a).

People with HIV infection should avoid contact with human and animal faeces. The risk of *Cryptosporidium* infection may be higher from contact with young pets, especially those with diarrhoea. Sexual practices involving oro-faecal contact are also hypothesised to increase risk of infection but the magnitude of the risk has not been ascertained.

Although it has been recommended that people with HIV infection avoid swimming in lakes, rivers and public swimming pools (Centers for Disease Control and Prevention 1995b), the level of risk of these activities is unknown, and the benefits of such activity from both a general health and psychological perspective probably outweigh the risk of infection.

#### **Future research and public health needs**

Areas of future research should include ongoing monitoring of incidence of *Cryptosporidium* infection, evaluation of behavioural risk factors, clinical research to further define morbidity including biliary disease associated with *Cryptosporidium* infection, and evaluation of possible therapeutic agents. The effect of combination antiretroviral therapy on cryptosporidial diarrhoea also needs to be investigated.

Monitoring the incidence of *Cryptosporidium* infection is important in assessing geographical variation in infection rates and evaluating possible interventions.

The Sydney Water Board has recently installed a new filtration system so it will be important to monitor the effect this has on *Cryptosporidium* incidence in the Sydney area.

A case-control study of *Cryptosporidium* infection among people with HIV infection is currently in the planning stages. The major objective of the study will be to evaluate behavioural and demographic risk factors for *Cryptosporidium* infection.

Surveillance of water sources for *Cryptosporidium* oocysts, including drinking water and swimming pools, is required to assist in prevention of waterborne outbreaks and to evaluate the association between oocyst density and incidence of *Cryptosporidium* infection among people at highest risk such as those with HIV infection.

**Reported by:**

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## THE 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 30 September 1996, and for two previous yearly intervals.

### Cases

STATE/ TERRITORY	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
ACT	11	2	5	2	76	7	83	1.2
NSW	433	16	298	12	3985	142	4137	58.8
NT	2	0	1	0	26	0	26	0.3
QLD	100	2	54	4	670	30	702	10.0
SA	31	5	25	0	284	18	302	4.3
TAS	2	0	0	0	32	2	34	0.5
VIC	151	11	84	1	1373	48	1428	20.3
WA	33	1	22	1	301	18	321	4.6
<b>TOTAL †</b>	<b>763</b>	<b>37</b>	<b>489</b>	<b>20</b>	<b>6747</b>	<b>265</b>	<b>7033</b>	<b>100.0</b>

### Deaths

ACT	5	0	1	0	50	2	52	1.0
NSW	350	18	249	8	2842	105	2953	57.8
NT	2	0	3	0	21	0	21	0.4
QLD	68	2	60	5	470	24	496	9.7
SA	27	3	27	0	197	13	210	4.1
TAS	1	0	0	0	21	2	23	0.4
VIC	136	12	93	9	1084	37	1127	22.0
WA	21	1	18	1	222	11	234	4.6
<b>TOTAL †</b>	<b>610</b>	<b>36</b>	<b>451</b>	<b>23</b>	<b>4907</b>	<b>194</b>	<b>5116</b>	<b>100.0</b>

†. Total columns of Tables 2.1 – 2.5 and 5.1 include 21 cases and 15 AIDS deaths in people whose sex was reported as transsexual.

**Table 2.2**

**Incidence of AIDS per million current population by sex and State/Territory of diagnosis, from 1 January 1981 to 30 September 1996, and for two previous yearly intervals.**

STATE/ TERRITORY	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96		
	Male	Female	Male	Female	Male	Female	Total
ACT	71.8	13.3	32.2	13.1	489.7	46.0	269.9
NSW	142.6	5.2	97.0	3.9	1296.5	45.6	668.3
NT	22.3	0.0	11.0	0.0	285.1	0.0	146.3
QLD	60.9	1.2	32.1	2.4	398.4	17.9	209.3
SA	42.4	6.7	34.0	0.0	386.7	24.2	204.2
TAS	8.5	0.0	0.0	0.0	136.3	8.4	71.8
VIC	67.8	4.8	37.4	0.4	611.0	20.9	314.5
WA	38.0	1.2	24.9	1.1	340.2	20.5	182.1
<b>TOTAL †</b>	<b>84.9</b>	<b>4.1</b>	<b>55.2</b>	<b>2.2</b>	<b>741.1</b>	<b>28.9</b>	<b>384.5</b>

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 30 September 1996, and for two previous yearly intervals.

Cases<sup>1</sup>

AGE GROUP (years)	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
0 – 2	2	1	0	0	8	6	14	0.2
3 – 12	1	4	0	0	19	9	28	0.4
0 – 12	3	5	0	0	27	15	42	0.6
13 – 19	4	0	0	0	22	3	25	0.4
20 – 29	108	9	64	6	1166	70	1248	17.7
30 – 39	348	13	224	6	2852	83	2941	41.8
40 – 49	208	6	122	5	1895	43	1940	27.6
50 – 59	71	2	58	2	601	23	625	8.9
60 +	21	2	21	1	184	28	212	3.0
<b>TOTAL<sup>†</sup></b>	<b>763</b>	<b>37</b>	<b>489</b>	<b>20</b>	<b>6747</b>	<b>265</b>	<b>7033</b>	<b>100.0</b>

Deaths<sup>2</sup>

AGE GROUP (years)	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
0 – 2	1	1	0	0	5	5	10	0.2
3 – 12	1	1	0	0	16	4	20	0.4
0 – 12	2	2	0	0	21	9	30	0.6
13 – 19	1	1	0	0	13	3	16	0.3
20 – 29	55	11	46	3	608	36	653	12.8
30 – 39	255	10	197	13	1983	64	2051	40.1
40 – 49	200	8	126	2	1550	33	1585	31.0
50 – 59	73	3	64	3	557	22	579	11.3
60 +	24	1	18	2	175	27	202	3.9
<b>TOTAL<sup>†</sup></b>	<b>610</b>	<b>36</b>	<b>451</b>	<b>23</b>	<b>4907</b>	<b>194</b>	<b>5116</b>	<b>100.0</b>

1. Cases are classified by age at diagnosis.
2. Deaths are classified by age at death.

Table 2.4

Cases of AIDS by sex and exposure category, cumulative to 30 September 1996, and for two previous yearly intervals.

Adults/adolescents (13 years and older at diagnosis of AIDS)

EXPOSURE CATEGORY	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
<b>Male homosexual/bisexual contact</b>	641	-	387	-	5750	-	5750	81.8
<b>Male homosexual/bisexual contact and ID use</b>	29	-	27	-	291	-	291	4.1
<b>ID use</b>	19	8	12	5	115	61	176	2.5
<i>Heterosexual</i>	12	8	4	3	90	51	141	
<i>Not further specified</i>	7	0	8	2	25	10	35	
<b>Heterosexual contact:</b>	26	19	20	11	182	118	300	4.3
<i>Sex with ID user</i>	2	2	1	2	4	8	12	
<i>Sex with bisexual male</i>	-	2	-	2	-	26	26	
<i>From specified country</i>	6	3	2	4	22	19	41	
<i>Sex with person from specified country</i>	2	2	4	1	22	12	34	
<i>Sex with person with medically acquired HIV</i>	0	1	0	1	3	8	11	
<i>Sex with HIV-infected person, exposure not specified</i>	1	4	1	0	27	15	42	
<i>Not further specified</i>	15	5	12	1	104	30	134	
<b>Haemophilia/coagulation disorder</b>	16	0	4	0	99	2	101	1.4
<b>Receipt of blood components/tissue</b>	3	4	1	4	76	58	134	1.9
<b>Health care setting</b>	0	1	0	0	3	3	6	0.1
<b>Other/undetermined<sup>†</sup></b>	26	0	38	0	204	8	233	3.3
<b>Total Adults/Adolescents<sup>†</sup></b>	<b>760</b>	<b>32</b>	<b>489</b>	<b>20</b>	<b>6720</b>	<b>250</b>	<b>6991</b>	<b>99.4</b>

Children (under 13 years at diagnosis of AIDS)

<b>Mother with/at risk for HIV infection</b>	3	4	0	0	11	12	23	0.3
<b>Haemophilia/coagulation disorder</b>	0	0	0	0	5	0	5	0.1
<b>Receipt of blood components/tissue</b>	0	1	0	0	11	3	14	0.2
<b>Total Children</b>	<b>3</b>	<b>5</b>	<b>0</b>	<b>0</b>	<b>27</b>	<b>15</b>	<b>42</b>	<b>0.6</b>
<b>TOTAL<sup>†</sup></b>	<b>763</b>	<b>37</b>	<b>489</b>	<b>20</b>	<b>6747</b>	<b>265</b>	<b>7033</b>	<b>100.0</b>

Table 2.5  
Deaths following AIDS by sex and exposure category, cumulative to 30 September 1996,  
and for two previous yearly intervals.

Adults/adolescents (13 years and older at diagnosis of AIDS)

EXPOSURE CATEGORY	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
<b>Male homosexual/bisexual contact</b>	505	-	367	-	4229	-	4229	82.7
<b>Male homosexual/bisexual contact and ID use</b>	32	-	26	-	202	-	202	4.0
<b>ID use</b>	17	7	10	5	73	44	117	2.3
<i>Heterosexual</i>	14	7	7	4	63	38	101	
<i>Not further specified</i>	3	0	3	1	10	6	16	
<b>Heterosexual contact:</b>	19	21	18	18	115	85	200	3.9
<i>Sex with ID user</i>	0	1	1	3	1	6	7	
<i>Sex with bisexual male</i>	-	0	-	2	-	20	20	
<i>From specified country</i>	5	4	0	3	8	11	19	
<i>Sex with person from specified country</i>	1	4	4	2	13	10	23	
<i>Sex with person with medically acquired HIV</i>	0	1	1	2	3	6	9	
<i>Sex with HIV-infected person, exposure not specified</i>	2	1	0	1	22	10	32	
<i>Not further specified</i>	11	10	12	5	68	22	90	
<b>Haemophilia/coagulation disorder</b>	11	0	9	0	75	2	77	1.5
<b>Receipt of blood components/tissue</b>	2	5	3	0	66	48	114	2.2
<b>Health care setting</b>	0	0	1	0	1	1	2	0.0
<b>Other/undetermined<sup>†</sup></b>	22	0	17	0	123	4	142	2.8
<b>Total Adults/Adolescents<sup>†</sup></b>	<b>608</b>	<b>33</b>	<b>451</b>	<b>23</b>	<b>4884</b>	<b>184</b>	<b>5083</b>	<b>99.4</b>

Children (under 13 years at diagnosis of AIDS)

<b>Mother with/at risk for HIV infection</b>	2	1	0	0	7	7	14	0.3
<b>Haemophilia/coagulation disorder</b>	0	0	0	0	5	0	5	0.0
<b>Receipt of blood components/tissue</b>	0	2	0	0	11	3	14	0.3
<b>Total Children</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>23</b>	<b>10</b>	<b>33</b>	<b>0.6</b>
<b>TOTAL<sup>†</sup></b>	<b>610</b>	<b>36</b>	<b>451</b>	<b>23</b>	<b>4907</b>	<b>194</b>	<b>5116</b>	<b>100.0</b>



## THE NATIONAL HIV DATABASE

Table 3.1

Number of new diagnoses of HIV infection by sex<sup>1</sup> and State/Territory, cumulative to 30 September 1996, and for two previous yearly intervals.

STATE/ TERRITORY	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	Rate <sup>2</sup>
ACT	17	3	9	0	174	15	189	61.5
NSW <sup>3</sup>	397	37	365	35	10207	529	12799	206.8
NT	4	0	4	0	84	3	87	49.0
QLD	109	13	141	9	1665	102	1772	52.8
SA	35	4	33	1	585	45	630	42.6
TAS	4	0	5	0	76	4	80	16.9
VIC <sup>4</sup>	178	13	167	13	3448	169	3668	80.8
WA	50	17	34	7	784	77	863	49.0
<b>TOTAL<sup>5</sup></b>	<b>794</b>	<b>87</b>	<b>758</b>	<b>65</b>	<b>17023</b>	<b>944</b>	<b>20088<sup>6</sup></b>	<b>109.8</b>

1. Thirty people (14 NSW, 5 QLD, 9 VIC and 2 WA) whose sex was reported as transsexual 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 2049 people whose sex was not reported. Cases with a false positive HIV antibody test result have been removed and the sex of selected cases has been revised from female to male or transsexual.
4. Cumulative total for VIC includes 42 people whose sex was not reported.
5. Cumulative total for Australia includes 2091 people whose sex was not reported.
6. Estimated number of new diagnoses of HIV infection, adjusted for multiple reports, was 15,900 (range 14,900 to 16,800). 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 30 September 1996 and for two previous yearly intervals.

EXPOSURE CATEGORY	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
<b>Male homosexual/bisexual contact</b>	590	-	553	-	10763	-	10763	80.3
<b>Male homosexual/bisexual contact and ID use</b>	44	-	19	-	421	-	421	3.1
<b>ID use</b>	28	8	19	3	480	150	651	4.9
<i>Heterosexual</i>	18	4	6	2	132	56	191	
<i>Not further specified</i>	10	4	13	1	348	94	460	
<b>Heterosexual contact:</b>	80	65	63	55	625	438	1067	8.0
<i>Sex with ID user</i>	2	6	1	4	15	34	49	
<i>Sex with bisexual male</i>	-	7	-	4	-	32	32	
<i>From specified country</i>	17	16	11	8	59	45	105	
<i>Sex with person from specified country</i>	10	9	19	11	72	41	113	
<i>Sex with person with medically acquired HIV</i>	0	0	0	0	3	6	9	
<i>Sex with HIV-infected person, exposure not specified</i>	8	8	5	7	35	36	71	
<i>Not further specified</i>	43	19	27	21	441	244	688	
<b>Haemophilia/coagulation disorder</b>	1	0	0	0	186	2	188	1.4
<b>Receipt of blood/tissue</b>	1	2	2	2	109	66	175	1.3
<b>Health care setting<sup>1</sup></b>	0	0	0	0	3	7	10	0.1
<b>Total Adults/ Adolescents<sup>2</sup></b>	<b>744</b>	<b>75</b>	<b>656</b>	<b>60</b>	<b>12587</b>	<b>663</b>	<b>13275</b>	<b>99.1</b>

**Children (under 13 years at diagnosis of HIV infection)**

<b>Mother with/at risk for HIV infection</b>	3	6	3	2	26	22	48	0.4
<b>Haemophilia/coagulation disorder</b>	0	0	0	0	55	0	55	0.4
<b>Receipt of blood/tissue</b>	0	0	0	0	12	5	17	0.1
<b>Total Children</b>	<b>3</b>	<b>6</b>	<b>3</b>	<b>2</b>	<b>93</b>	<b>27</b>	<b>120</b>	<b>0.9</b>
<b>Sub-total</b>	<b>747</b>	<b>81</b>	<b>659</b>	<b>62</b>	<b>12680</b>	<b>690</b>	<b>13395</b>	<b>100.0</b>
Other/undetermined <sup>3</sup>	47	6	99	3	4343	254	6693	
<b>TOTAL</b>	<b>794</b>	<b>87</b>	<b>758</b>	<b>65</b>	<b>17023</b>	<b>944</b>	<b>20088</b>	



1. The category 'Health care setting' includes 5 cases of occupationally acquired HIV infection and 4 cases of transmission in surgical rooms.
2. Total column includes cases for which sex was not reported.
3. The 'Other/undetermined' category includes 6675 adults/adolescents and 18 children. Thirty people whose sex was reported as transsexual are 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.
4. See footnote Table 3.1.

**Table 3.3**

**Number of new diagnoses of HIV infection by sex and age group, cumulative to 30 September 1996, and for two previous yearly intervals.**

AGE GROUP (YEARS)	1 Oct 94 – 30 Sep 95		1 Oct 95 – 30 Sep 96		Cumulative to 30 Sep 96			
	Male	Female	Male	Female	Male	Female	Total	%
0 – 2	2	2	3	1	33	14	48	0.2
3 – 12	1	5	0	1	74	16	90	0.5
0 – 12	3	7	3	2	107	30	138	0.7
13 – 19	10	11	9	5	362	57	427	2.1
20 – 29	252	28	210	29	5504	375	5997	29.9
30 – 39	309	29	302	21	5588	228	5932	29.5
40 – 49	149	9	143	3	2501	71	2613	13.0
50 – 59	43	2	67	4	771	35	815	4.1
60 +	25	1	19	1	246	36	283	1.4
Unknown	3	0	5	0	1944	112	3883	19.3
<b>TOTAL<sup>1</sup></b>	<b>794</b>	<b>87</b>	<b>758</b>	<b>65</b>	<b>17023</b>	<b>944</b>	<b>20088</b>	<b>100.0</b>

1. See footnotes Table 3.1.

**Table 3.4**

**Number of new diagnoses of HIV infection in the year 1 October 1995 to 30 September 1996 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 Oct 95 – 31 Mar 96		1 Apr 96 – 30 Sep 96		1 Oct 95 – 30 Sep 96		
	Male	Female	Male	Female	Male	Female	Total
ACT	2	0	3	0	5	0	5
NSW <sup>1</sup>	45	1	37	1	82	2	85
NT	0	0	0	0	0	0	0
QLD	5	2	11	0	16	2	18
SA	5	0	3	0	8	0	8
TAS	0	0	0	0	0	0	0
VIC	17	1	9	0	26	1	27
WA	3	2	4	0	7	2	9
<b>TOTAL<sup>1</sup></b>	<b>77</b>	<b>6</b>	<b>67</b>	<b>1</b>	<b>144</b>	<b>7</b>	<b>152</b>

1. Total column for Tables 3.4 – 3.6 includes 1 person whose sex was not reported.

**Table 3.5**

Number of new diagnoses of HIV infection in the year 1 October 1995 to 30 September 1996 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 Oct 95 – 31 Mar 96		1 Apr 96 – 30 Sep 96		1 Oct 95 – 30 Sep 96		
	Male	Female	Male	Female	Male	Female	Total
Male homosexual/bisexual contact	67	-	59	-	126	-	126
Male homosexual/bisexual contact and ID use	2	-	1	-	3	-	3
ID use (female and heterosexual male)	0	2	1	0	1	2	3
Heterosexual contact	5	4	2	1	7	5	12
Health care setting	0	0	0	0	0	0	0
Other/undetermined <sup>1</sup>	3	0	4	0	7	0	8
<b>TOTAL<sup>1</sup></b>	<b>77</b>	<b>6</b>	<b>67</b>	<b>1</b>	<b>144</b>	<b>7</b>	<b>152</b>

1. See footnote Table 3.4.

**Table 3.6**

Number of new diagnoses of HIV infection in the year 1 October 1995 to 30 September 1996 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.

STATE/ (YEARS)	1 Oct 95 – 31 Mar 96		1 Apr 96 – 30 Sep 96		1 Oct 95 – 30 Sep 96		
	Male	Female	Male	Female	Male	Female	Total
13 – 19	1	2	1	1	2	3	6
20 – 29	35	1	24	0	59	1	60
30 – 39	30	3	30	0	60	3	63
40 – 49	8	0	11	0	19	0	19
50 – 59	2	0	1	0	3	0	3
60 +	1	0	0	0	1	0	1
<b>TOTAL<sup>1</sup></b>	<b>77</b>	<b>6</b>	<b>67</b>	<b>1</b>	<b>144</b>	<b>7</b>	<b>152</b>

1. See footnote Table 3.4.



## SENTINEL SURVEILLANCE OF HIV INFECTION IN SEXUALLY TRANSMISSIBLE DISEASE 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 STD clinic<sup>1</sup>, during the quarter 1 July 1996 to 30 September 1996.

STD 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	1536	1067	554	411	3	0	3
Clinic 34, Darwin, NT	236	175	104	77	0	0	0
Brisbane Sexual Health Clinic, QLD	1011	617	377	216	1	0	1
Clinic 275, Adelaide, SA	1074	741	818	538	3	0	3
Melbourne Sexual Health Centre, VIC	2068	1468	1429	1222	5	0	5
<b>TOTAL</b>	<b>5925</b>	<b>4068</b>	<b>3282</b>	<b>2464</b>	<b>12</b>	<b>0</b>	<b>12</b>

1. Data not available for Parramatta Sexual Health Clinic, NSW.

Table 4.2

Number of people seen<sup>1</sup> 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 July 1996 to 30 September 1996.

EXPOSURE CATEGORY	Previous negative HIV antibody test		% Retested for HIV antibody		Newly diagnosed with HIV infection			
	Male	Female	Male	Female	Male	Female	Total	%
Homosexual/bisexual contact	721	-	66.2	-	4	-	4	0.8
Homosexual/bisexual contact and ID use	73	-	65.8	-	2	-	2	4.2
ID use (female and heterosexual male)	233	127	61.4	65.4	0	0	0	0.0
Heterosexual contact	1994	1561	56.0	57.0	0	0	0	0.0
<i>outside Australia</i> <sup>2</sup>	226	126	47.3	37.3	0	0	0	0.0
<i>within Australia only</i>	1768	1435	57.1	58.7	0	0	0	0.0
Sex worker	-	395	-	80.3	-	0	0	0.0
Sex worker and ID use	-	42	-	71.4	-	0	0	0.0
Other/undetermined	103	129	82.5	73.6	0	0	0	0.0
<b>TOTAL</b>	<b>3124</b>	<b>2254</b>	<b>59.8</b>	<b>62.8</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>0.2</b>

1. At clinics other than Clinic 34, Darwin, NT.

2. Within 3 months for Clinic 275 and one year for other clinics.

Table 4.3

Number of people seen<sup>1</sup> 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 July 1996 to 30 September 1996.

EXPOSURE CATEGORY	No previous HIV antibody test		% Tested for HIV antibody		Newly diagnosed with HIV infection			
	Male	Female	Male	Female	Male	Female	Total	%
Homosexual/bisexual contact	272	-	49.6	-	3	-	3	2.2
Homosexual/bisexual contact and ID use	17	-	58.8	-	1	-	1	10.0
ID use (female and heterosexual male)	86	45	79.1	64.4	0	0	0	0.0
Heterosexual contact outside Australia <sup>2</sup>	1554	1199	60.9	62.2	0	0	0	0.0
within Australia only	130	60	53.1	43.3	0	0	0	0.0
	1424	1139	61.7	63.2	0	0	0	0.0
Sex worker	-	60	-	85.0	-	0	0	0.0
Sex worker and ID use	-	0	-	0.0	-	0	0	0.0
Other/undetermined	439	326	33.9	44.8	2	0	2	0.7
<b>TOTAL</b>	<b>2368</b>	<b>1630</b>	<b>55.3</b>	<b>59.6</b>	<b>6</b>	<b>0</b>	<b>6</b>	<b>0.3</b>

1. At clinics other than Clinic 34, Darwin, NT.

2. Within 3 months for Clinic 275 and one year for other clinics.

Table 4.4

Number of people seen<sup>1</sup>, 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 July 1996 to 30 September 1996.

AGE GROUP (YEARS)	Seen at Clinic		Tested for HIV antibody		Newly diagnosed with HIV infection		
	Male	Female	Male	Female	Male	Female	Total
13 - 19	201	494	115	293	0	0	0
20 - 29	2556	2179	1541	1336	4	0	4
30 - 39	1777	800	971	491	6	0	6
40 - 49	745	314	368	208	2	0	2
50 - 59	283	87	130	51	0	0	0
60 +	127	19	53	8	0	0	0
<b>TOTAL</b>	<b>5689</b>	<b>3893</b>	<b>3178</b>	<b>2387</b>	<b>12</b>	<b>0</b>	<b>12</b>

1. At clinics other than Clinic 34, Darwin, NT.

Table 4.5

Number of people diagnosed with specific STD<sup>1</sup>, other than HIV, by sex, exposure category and whether or not they were tested for HIV antibody<sup>2</sup> during the quarter 1 July 1996 to 30 September 1996.

EXPOSURE CATEGORY	Tested for HIV antibody		Not tested for HIV antibody	
	Male	Female	Male	Female
Homosexual/bisexual contact	28	-	17	-
Homosexual/bisexual contact and ID use	2	-	2	-
ID use (female and heterosexual male)	8	1	4	0
Heterosexual contact	46	28	51	19
<i>outside Australia</i> <sup>3</sup>	7	1	10	2
<i>within Australia only</i>	39	27	41	17
Sex worker	-	10	-	3
Sex worker and ID use	-	0	-	1
Other/undetermined	3	3	7	2
<b>TOTAL</b>	<b>87</b>	<b>42</b>	<b>81</b>	<b>25</b>

1. Specific STD are gonorrhoea, syphilis and chlamydia.
2. Includes people who may have been previously tested for HIV antibody and excludes people previously known to have HIV infection.
3. Within three months for Clinic 275 and one year for other clinics.



## REPORT FROM WHO WESTERN PACIFIC REGION

Dr G Pomerol, Regional Advisor, WHO Regional Office, Manila.

Table 5.1

AIDS and HIV in the WHO Western Pacific Region by country; based on reports available at 30 September 1996.

COUNTRY/ AREA	CUMULATIVE AIDS CASES				AIDS Rate <sup>1</sup>	Cumulative Diagnoses HIV
	Male	Female	Children <13 Years	Total		
American Samoa	0	0	0	0	0	0
Australia <sup>†</sup>	6747	265	42	7033	38.4	20088
Brunei	5	0	0	8	2.7	350
Cambodia	20	10	27	235	2.46	6829
China <sup>2</sup>	109	8	0	117	0.01	3341
Cook Islands	0	0	0	0	0	0
Fed. S. Micronesia	2	0	0	2	1.8	2
Fiji	2	1	0	8	1.0	35
French Polynesia	3	2	0	50	23.1	156
Guam	21	2	0	37	26.1	93
Hong Kong	165	49	5	214	3.7	702
Japan	691	83	0	1312	1.1	3758
Kiribati	2	0	0	2	2.6	12
Laos	10	3	1	17	0.4	131
Macao	4	0	0	8	1.9	133
Malaysia	443	33	7	476	2.4	16963
Marshall Islands	1	1	0	2	3.8	9
Mongolia	0	0	0	0	0	1
Nauru	0	0	0	0	0	1
New Caledonia	39	9	2	49	26.4	135
New Zealand	533	24	4	557	15.7	1131
Niue	0	0	0	0	0	0
N. Mariana Islands	2	0	0	6	10	10
Palau	1	0	0	1	5.8	1
Papua New Guinea	49	53	5	177	4.3	453
Philippines	175	95	7	273	0.4	810
Rep. of Korea	42	3	0	55	0.1	582
Samoa	3	1	1	6	3.7	9
Singapore	208	14	1	222	7.6	477
Solomon Islands	0	0	0	0	0	2
Tokelau	0	0	0	0	0	0
Tonga	1	0	0	7	7.1	11
Tuvalu	0	0	0	0	0	0
Vanuatu	0	0	0	0	0	0
Vietnam	408	44	1	500	0.7	4153
Wallis and Futuna	1	0	0	1	7.1	2
<b>TOTAL<sup>†</sup></b>	<b>9687</b>	<b>700</b>	<b>103</b>	<b>11375</b>	<b>0.6</b>	<b>60380</b>

1. AIDS cases per 100,000 total current population.

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## Australian HIV Surveillance Report

National Centre in HIV Epidemiology and Clinical Research

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ISSN No. 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 STD 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 STD 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.

**HIV antibody testing** is carried out at Public Health Laboratories and Blood Transfusion Services, and summary information on testing is sent on a four-weekly basis to the National HIV Reference Laboratory, which produces quarterly tabulations for publication in the Australian HIV Surveillance Report.

**Abbreviations:** HIV is the human immunodeficiency virus, and unless otherwise specified, refers to HIV-1 only. AIDS is the acquired immunodeficiency syndrome, ID stands for injecting drug, and STD for sexually transmissible disease. Specified countries are those of sub-Saharan Africa and the Caribbean, where transmission of HIV 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:

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