Pertussis epidemic

In the last six months, pertussis has claimed the lives of four children: three in New South Wales (Mr Rob Menzies, New South Wales Health Department, personal communication) and one in Victoria (Dr Graham Tallis, Victorian Department of Human Services, personal communication). All were children under three months of age.

Pertussis is a serious, highly infectious disease that kills about one in every 200 children under six months of age who become infected. The causative organism, *Bordetella pertussis*, is localised to the respiratory tract and transmission is believed to occur by aerosol droplet following a cough or sneeze. Because transmission requires close contact, parents and older siblings are considered to be an important source of infection. Symptoms can include severe coughing spasms followed by a gasp for breath resulting in the typical 'whoop' sound. Not all children 'whoop' and it is relatively uncommon among adults with pertussis. Vomiting often follows the coughing spasm.

Pertussis has been epidemic in Australia since 1993 and it appeared the epidemic was declining. However, since September 1996, there has been a substantial resurgence (Figure 1). There have been 1,911 notifications with onset dates from October to December 1996 compared with 1,154 for the same period in 1995 and 1,584 in 1994. As further notifications are received, the number with onset dates in the most recent period is likely to increase, particularly those with onset in January 1997.

Since 1991, there have been more females than males notified in each age group. The male:female ratio for notifications with onset in 1996 was 1:1.3. Females have significantly higher attack rates, morbidity and mortality from pertussis than males, although the reason for this is not known.

During the epidemic period 1993 to 1996, attack rates have consistently been highest among children under 15 years of age and there has been a smaller secondary peak among adults 30 - 49 years of age (Figure 2). The recent outbreak has seen markedly increased notification rates per 100,000 population in South Australia and Victoria (Figure 3). Although notification rates in Queensland and New South Wales appear to be declining, outbreaks occurred in both States during the last quarter of 1996. The rates for pertussis notifications with onset in 1996 were moderate in the other States and Territories: Australian Capital Territory (12 per 100,000 population); Western Australia (10); Northern Territory (8); and Tasmania (7).

Figure 1. Pertussis notifications by month of onset, January 1991 to January 1997

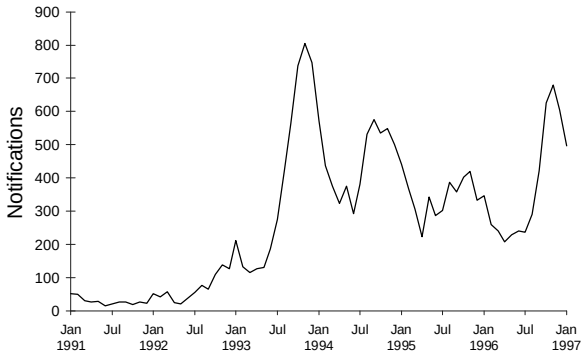


Figure 2. Pertussis notification rates by age group and year of onset, 1993 to 1996

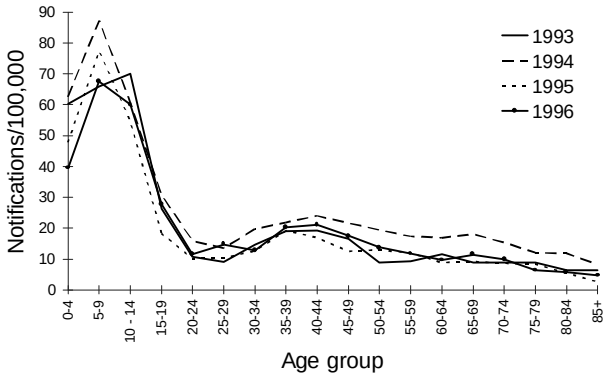
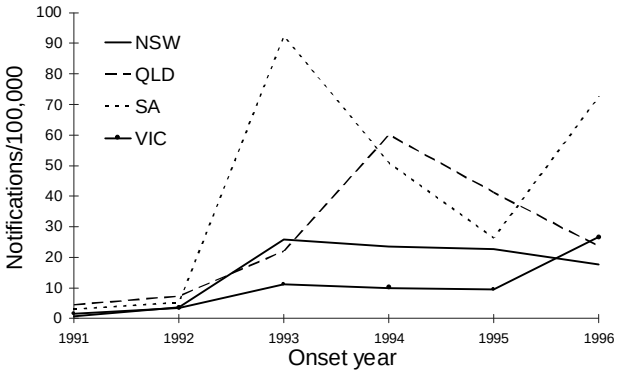


Figure 3. Pertussis notification rates by selected States and year of onset, 1991 to 1996



Hepatitis A notifications

There were 60 notifications of hepatitis A infection received in the National Notifiable Diseases Surveillance System for this period. High numbers of notifications have been seen at this time of year in 1995 and 1996 (Figure 4), but the present data do not indicate an increase in notifications. Twenty-eight of the reports (47%) were from New South Wales, with an outbreak currently occurring in this State (see page 46).

There was a sharp increase in notifications of hepatitis A to the *CDI* Virology and Serology Reporting Scheme (LabVISE) in December 1996 (Figure 5). In the most recent reporting period reports were received from all States and Territories except Queensland and Tasmania (Table 7).

Forty-seven per cent of reports to the National Notifiable Diseases Surveillance System for this period were for the 20 - 34 years age group and this reflects the age distribution seen for notifications in 1996 (Figure 6).

National Notifiable Diseases Surveillance System

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. The system coordinates the national surveillance of more than 40 communicable diseases or disease groups endorsed by the National Health and Medical Research Council (NHMRC). Notifications of these diseases are made to State and Territory health authorities under the provisions of their respective public health legislations. De-identified core unit data are supplied fortnightly for collation, analysis and dissemination. For further information, see CDI 1997;21:5.

Reporting period 22 January to 4 February 1997

There were 1,984 notifications received for this two-week period (Tables 1, 2 and 3). The numbers of reports for selected diseases have been compared with average data for this period in the previous three years (Figure 7).

The number of notifications of campylobacteriosis decreased this period, with 371 reports received. This is consistent with previous years when notifications started to decline in late summer. The 0 - 4 years age group accounted for 79 of the notifications, with 109 notifications in the 20 - 34 years age range.

Ross River virus infection notifications continue to increase, with 202 reports received for this period. The majority of notifications were reported from Queensland (67) and Victoria (62). Fifty per cent of reports were for the 30 - 49 years age range.

Salmonellosis was reported for 226 persons this period. One hundred and one of the cases were in the 0 - 4 years age group. Included were apparent clusters of 3 or more cases in postcode regions of South Australia (4) and Queensland (3).

Figure 4. Hepatitis A notifications to the National Notifiable Diseases Surveillance System, 1995 to January 1997, by month of onset

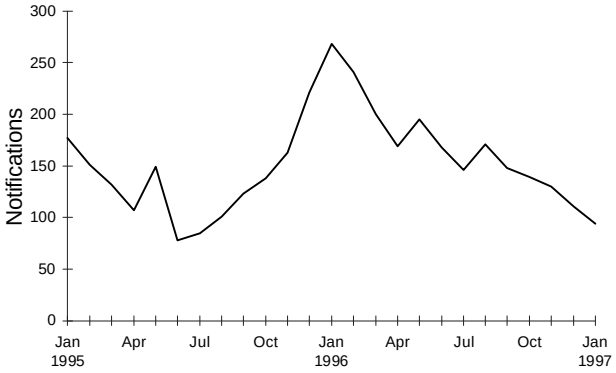


Figure 5. Hepatitis A laboratory reports to LabVISE, 1995 to 1996, by month of specimen collection

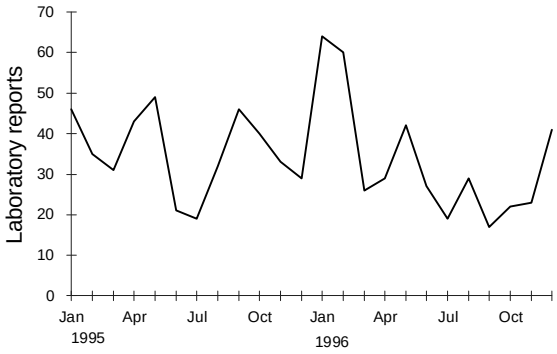


Figure 6. Hepatitis A infection notifications, to the National Notifiable Diseases Surveillance System, by age and sex, 1996

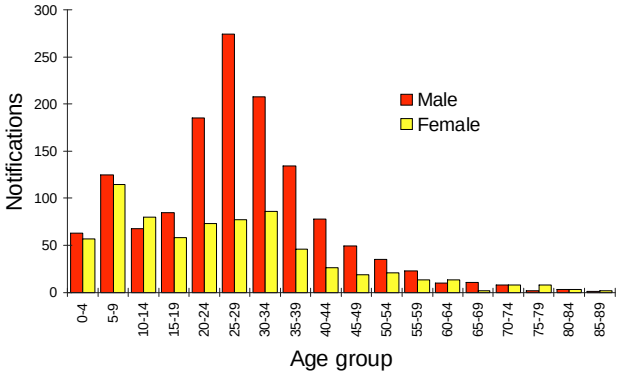


Table 1. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 22 January to 4 February 1997

Disease[1,2]	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1997	This period 1996	Year to date 1997	Year to date 1996
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
Haemophilus influenzae type B	0	0	0	0	1	0	0	0	1	1	8	6
Measles	0	2	0	8	0	0	6	0	16	14	43	61
Mumps	1	2	0	NN	1	0	2	0	6	5	16	14
Pertussis	4	73	0	36	92	5	74	23	307	121	764	384
Rubella	0	2	0	29	8	1	4	4	48	117	209	426
Tetanus	0	0	0	0	0	0	0	0	0	1	1	1

NN Not Notifiable.

1. No notifications of poliomyelitis have been reported since 1986.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

Table 2. Notifications of other diseases received by State and Territory health authorities in the period 22 January to 4 February 1997

Disease[1,2]	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1997	This period 1996	Year to date 1997	Year to date 1996
Arbovirus Infection (NEC)[3,4]	0	1	1	0	0	0	13	1	16	7	28	12
Barmah Forest virus infection	1	0	0	15	1	0	0	-	17	23	61	43
Campylobacteriosis[5]	7	-	11	134	84	13	73	49	371	454	1227	1191
Chlamydial infection (NEC)[6]	3	NN	19	130	0	10	46	35	243	280	679	660
Dengue	0	0	0	1	0	-	0	0	1	1	56	4
Donovanosis	0	NN	0	0	NN	0	0	0	0	3	1	6
Gonococcal infection[7]	0	5	28	34	0	1	13	19	100	119	250	312
Hepatitis A	0	28	5	11	4	0	5	7	60	103	147	284
Hepatitis B incident	0	1	0	0	0	0	0	5	6	8	16	25
Hepatitis C incident	0	0	0	-	0	0	-	-	0	2	2	4
Hepatitis C unspecified	4	NN	21	79	NN	8	32	17	161	333	644	820
Hepatitis (NEC)	0	2	0	0	0	0	0	NN	2	2	4	3
Legionellosis	1	0	1	0	1	0	0	1	4	5	19	17
Leptospirosis	0	0	0	0	0	0	1	0	1	6	14	25
Listeriosis	0	0	0	2	0	0	2	2	6	2	11	7
Malaria	2	4	0	0	2	0	4	0	12	36	72	70
Meningococcal infection	0	1	0	4	2	1	0	0	8	7	34	25
Ornithosis	0	NN	0	0	0	0	0	0	0	4	4	9
Q Fever	0	2	0	4	1	0	0	0	7	7	43	40
Ross River virus infection	0	24	7	67	30	0	62	12	202	208	452	303
Salmonellosis (NEC)	3	16	13	78	68	5	23	20	226	299	733	731
Shigellosis[5]	0	-	6	7	3	0	1	5	22	24	77	68
Syphilis	0	6	10	8	0	0	0	1	25	36	83	106
Tuberculosis	0	4	1	2	1	0	13	0	21	35	77	107
Typhoid[8]	0	1	1	0	0	0	1	1	4	7	6	15
Yersiniosis (NEC)[5]	0	-	0	10	3	0	0	0	13	11	42	29

1. For HIV and AIDS, see Tables 4 and 5. For rarely notified diseases, see Table 3.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. Tas: includes Ross River virus and dengue.
4. NT, Vic and WA: includes Barmah Forest virus.
5. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
6. WA: genital only.
7. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
8. NSW, Vic: includes paratyphoid.

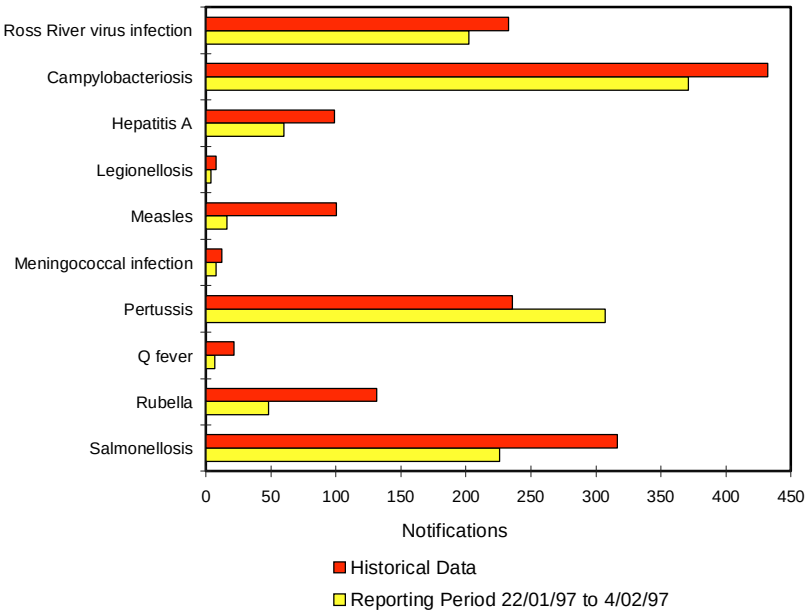
NN Not Notifiable.
NEC Not Elsewhere Classified.
- Elsewhere Classified.

Table 3. Notifications of rare[1] diseases received by State and Territory health authorities in the period 22 January to 4 February 1997

Disease[2]	Total this period	Reporting States or Territories	Total notifications 1997
Brucellosis	2	Qld	7
Cholera			1
Hydatid infection			2

1. Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1995.
2. No notifications were received during 1996 for the following rare diseases: botulism; chancroid; leprosy; lymphogranuloma venereum; plague; rabies; yellow fever; or other viral haemorrhagic fevers.

Figure 7. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



1. The historical data are the averages of the number of notifications in 9 previous 2-week reporting periods: the corresponding periods of the last 3 years and the periods immediately preceding and following those.

Table 4. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 30 September 1996, by sex and State or Territory of diagnosis

										Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1996	This period 1995	Year to date 1996	Year to date 1995
HIV diagnoses	Female	0	5	0	0	0	0	0	1	6	3	56	63
	Male	3	31	0	18	3	0	11	6	72	61	588	587
	Sex not reported	0	1	0	0	0	0	0	0	1	0	5	8
	Total[1]	3	37	0	18	3	0	11	7	79	64	650	660
AIDS diagnoses	Female	0	1	0	0	0	0	0	0	1	1	17	25
	Male	0	20	0	0	0	0	0	2	22	53	328	542
	Total[1]	0	21	0	0	0	0	0	2	23	54	345	568
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	1	14	29
	Male	0	15	0	0	0	0	0	0	15	31	306	449
	Total[1]	0	15	0	0	0	0	0	0	15	32	320	479

1. Persons whose sex was reported as transsexual are included in the totals.

Table 5. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 30 September 1996, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
HIV diagnoses	Female	15	529	3	102	45	4	169	77	944
	Male	174	10207	84	1665	585	76	3448	784	17023
	Sex not reported	0	2049	0	0	0	0	42	0	2091
	Total[1]	189	12799	87	1772	630	80	3668	863	20088
AIDS diagnoses	Female	7	142	0	30	18	2	48	18	265
	Male	76	3985	26	670	284	32	1373	301	6747
	Total[1]	83	4137	26	702	302	34	1428	321	7033
AIDS deaths	Female	2	105	0	24	13	2	37	11	194
	Male	50	2842	21	470	197	21	1084	222	4907
	Total[1]	52	2953	21	496	210	23	1127	234	5116

1. Persons whose sex was reported as transsexual are included in the totals.

HIV and AIDS Surveillance

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry.

Tabulations of diagnoses of HIV infection and AIDS 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. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly Australian HIV Surveillance Report, available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 332 4648 Facsimile: (02) 332 1837.

HIV and AIDS diagnoses and deaths following AIDS reported for September 1996, as reported to 31 December 1996, are included in this issue of *CDI* (Tables 4 and 5).

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network (ASPREN) comprises 99 sentinel general practitioners from throughout the country. Approximately 9,000 consultations are recorded each week for 12 conditions. Of these, CDI reports the consultation rates for chickenpox, HIV testing (doctor initiated), HIV testing (patient initiated), influenza, measles, pertussis, Ross River virus infection, rubella and gastroenteritis. For further information including case definitions see CDI 1997;21:6.

Data for weeks 4 and 5 ending 26 January and 2 February respectively are included in this issue of *CDI* (Table 6). The consultation rate for influenza-like illness has remained at low levels since the beginning of October. The consultation rate for gastroenteritis has been much lower during the last 4 reporting weeks than over recent months (Figure 8). The consultation rate for chickenpox has declined from the higher rate reported during December 1996. The numbers of reported cases of measles, rubella and pertussis have remained low. HIV testing, being reported for the first time this year, currently accounts for 3 per 1,000 consultations, two-thirds of these tests being patient initiated. Consultation rates for Ross River virus infection remain low at present.

Figure 8. Australian Sentinel Practice Research Network consultation rate for gastroenteritis, 1996 to January 1997

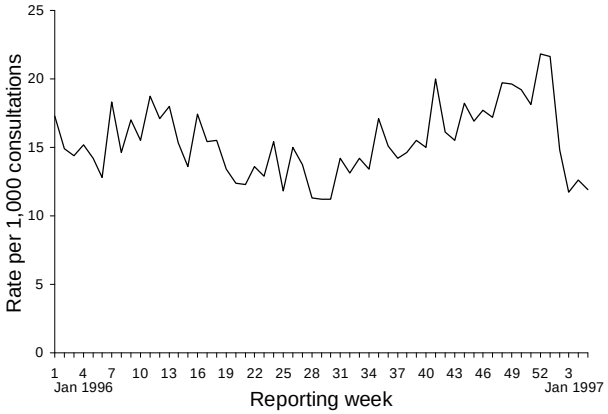


Table 6. Australian Sentinel Practice Research Network reports, weeks 4 and 5, 1997

Condition	*Week 4, to 26 January 1997*		*Week 5, to 2 February 1997*	
	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Chickenpox	26	3.5	22	3.8
Gastroenteritis	93	12.6	68	11.9
HIV testing (doctor initiated)	7	1.0	4	0.7
HIV testing (patient initiated)	17	2.3	13	2.3
Influenza	10	1.4	10	1.7
Measles	0	0.0	0	0.0
Pertussis	2	0.3	4	0.7
Ross River virus infection	7	1.0	1	0.2
Rubella	5	0.7	1	0.2

LabVISE

The Virology and Serology Laboratory Reporting Scheme, LabVISE, is a sentinel reporting scheme. Twenty-one laboratories contribute data on the laboratory identification of viruses and other organisms. Data are collated and published in Communicable Diseases Intelligence each fortnight. These data should be interpreted with caution as the number and type of reports received is subject to a number of biases. For further information, see CDI 1997;21:8-9.

There were 621 reports received in the *CDI* Virology and Serology Reporting Scheme this period (Tables 7 and 8).

Parvovirus was reported for 15 patients this period including 10 from Victoria. A total of 268 reports with specimen collection dates in 1996 have been received so far. This is the highest annual total recorded by this scheme.

Chlamydia trachomatis was reported for 107 patients this period. The male:female ratio was 1:1.7 and 94% of patients were in the 15 - 44 years age group. More laboratory reports (3,766) were received for 1996 than for any previous year.

Fifty-three reports of *Mycoplasma pneumoniae* were received this fortnight. The male:female ratio was 1:1.3 and 47% of patients were in the 5 - 14 years age group. The number of reports rose in the latter half of 1996 (Figure 9). In December the number of reports was the highest recorded by this scheme since September 1993.

Q fever was reported for 9 patients this period, 7 of whom were from New South Wales. All were in the 18 - 48 years age group and all but one were male.

Figure 9. *Mycoplasma pneumoniae* laboratory reports, 1992 to 1996, by month of specimen collection

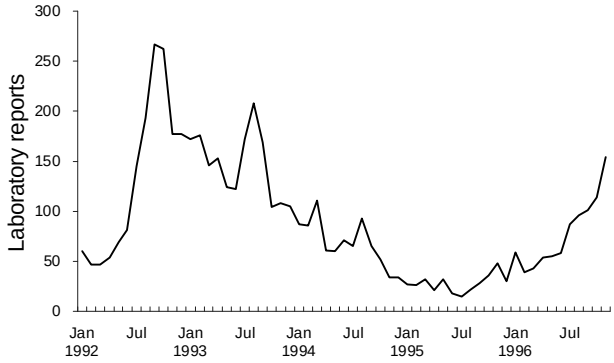


Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 16 to 29 January 1997, historical data[2], and total reports for the year

	State or Territory[1]							Total this fortnight	Historical data[2]	Total reported in *CDI* in 1997
	ACT	NSW	NT	Qld	SA	Vic	WA			
Measles, mumps, rubella										
Measles virus	1							1	16.3	9
Rubella virus		1			3			4	27.2	218
Hepatitis viruses										
Hepatitis A virus	6	1	1		4	3	4	19	18.3	87
Hepatitis D virus				1				1	.5	6
Arboviruses										
Ross River virus			5		20	5	8	38	55.7	180
Barmah Forest virus							2	2	4.5	41
Flavivirus (unspecified)						1		1	1.0	5
Adenoviruses										
Adenovirus type 3						2		2	3.0	10
Adenovirus type 4						1		1	.2	1
Adenovirus type 8						1		1	.3	5
Adenovirus type 26						1		1	.0	1
Adenovirus type 40						1		1	.0	6
Adenovirus not typed/pending	1	1			8	3	5	18	32.2	178
Herpes viruses										
Cytomegalovirus	10	10		4	1	11	2	38	36.0	183
Varicella-zoster virus	2	2			11	16	1	32	42.7	260
Epstein-Barr virus		13			20	3	10	46	68.7	502
Other DNA viruses										
Parvovirus		1			4	10		15	6.2	93

Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 16 to 29 January 1997, historical data[2], and total reports for the year, continued

	State or Territory[1]							Total this fortnight	Historical data[2]	Total reported in *CDI* in 1997
	ACT	NSW	NT	Qld	SA	Vic	WA			
Picornavirus family										
Coxsackievirus A16						3		3	.0	6
Coxsackievirus B2						1		1	.3	8
Coxsackievirus B3		1						1	.7	2
Coxsackievirus B5					1			1	.5	3
Echovirus type 5	1							1	.0	2
Echovirus type 7		1				1		2	.2	13
Poliovirus type 1 (uncharacterised)		1						1	.3	3
Rhinovirus (all types)				13	3	1		17	11.0	140
Enterovirus not typed/pending				3				3	22.5	136
Ortho/Paramyxoviruses										
Influenza A virus	3						1	4	8.5	89
Influenza B virus	1				2	4	1	8	1.5	49
Influenza virus - typing pending					15			15	.0	40
Parainfluenza virus type 1	1							1	1.2	17
Parainfluenza virus type 3	4	6		5	1	1	3	20	14.8	261
Parainfluenza virus typing pending					19			19	.7	39
Respiratory syncytial virus	68	16				1		85	15.5	131
Other RNA viruses										
Rotavirus		1			14	1	3	19	20.5	157
Astrovirus							1	1	.0	2
Norwalk agent						7		7	.0	36
Other										
Chlamydia trachomatis not typed	37	5	19		22	4	20	107	98.5	784
Chlamydia psittaci		1				1		2	5.2	20
Chlamydia species		1						1	4.5	4
Mycoplasma pneumoniae	9	22	1		6	5	10	53	14.7	351
Coxiella burnetii (Q fever)		7				2		9	5.7	62
Bordetella pertussis						17		17	26.8	356
Cryptococcus species	1					1		2	.7	3
TOTAL	145	91	26	26	154	108	71	621	566.8	4,499

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.
2. The historical data are the averages of the numbers of reports in 6 previous 2 week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 8. Virology and serology laboratory reports by contributing laboratories for the reporting period 16 to 29 January 1997

State or Territory	Laboratory	Reports
Australian Capital Territory	Woden Valley Hospital, Canberra	171
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	41
	Royal Prince Alfred Hospital, Camperdown	4
	South West Area Pathology Service, Liverpool	20
Queensland	State Health Laboratory, Brisbane	26
South Australia	Institute of Medical and Veterinary Science, Adelaide	154
Victoria	Microbiological Diagnostic Unit, University of Melbourne	4
	Monash Medical Centre, Melbourne	16
	Royal Children's Hospital, Melbourne	21
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	68
Western Australia	Princess Margaret Hospital, Perth	14
	Royal Perth Hospital	6
	Western Diagnostic Pathology	76
TOTAL		621