

Communicable Diseases Surveillance

Tuberculosis in Australia

Three programs currently monitor the occurrence of tuberculosis in Australia: the National Notifiable Diseases Surveillance System (NNDSS); the National Mycobacterial Surveillance System (NMSS); and the Australian Tuberculosis Reporting Scheme (ATRS). This issue of *CDI* is the first in a series which will contain reports on tuberculosis in Australia. In this issue, there is a report of the ATRS for the years 1994 and 1995. The following issue will feature a report of the 1995 data from the NMSS. A subsequent issue will present the 1996 Annual Report of the NNDSS, which will include data on a range of diseases including tuberculosis.

Tuberculosis has been a notifiable disease in Australia since early this century, with aggregate national data being available since 1917. The notification data has lacked historical consistency and should be interpreted with caution, particularly for the years prior to 1948, when separate collation of tuberculosis data commenced under the National Tuberculosis Campaign (NTBC). Data on aboriginality, country of birth and HIV status, in particular, have been incomplete and require caution in interpretation.

For the first half of this century, there was a steady decline in the rate of notifications of tuberculosis from about 90 cases per 100,000 population in 1917 to about 50 cases per 100,000 in 1947 (Figure 1). From the mid 1950s, the steady decline accelerated and continued until the mid 1980s. Over the past 10 years there has been a stabilisation of rates, which have fluctuated between 5 and 6 cases per 100,000 population per annum.

There are considerable differences in the rates of tuberculosis within subgroups of the Australian population. The incidence in the non-indigenous Australian born population has been declining and has been under 2.0 notifications per 100,000 population for several years. In 1995, it was 1.3 per 100,000. In contrast, the incidence in the indigenous Australian population in 1995 was 15.5 per

100,000 population. The crude incidence rate in the non-Australian born population for the same year was 17.3 per 100,000, but rates varied from a low of 1.7 per 100,000 in persons born in the United Kingdom to a high of 113.9 per 100,000 in persons born in Vietnam.

Tuberculosis in Australia is increasingly becoming a disease of the overseas-born. Over the past 10 years, as the incidence has declined in the Australian-born population, the proportion of cases occurring in overseas-born persons has risen from 60.3% in 1986 to 75.4% in 1995.

The current age-sex distribution of tuberculosis notifications can be illustrated by the data for 1995 (Figure 2). There is a bimodal distribution in age-specific incidence rates, with a peak in early to mid-adulthood (ages 20 -39 years) and a steady rise from the age of 55 years onwards. In the younger age groups, the rates are similar for males and females. However, males predominate in the older age groups. The highest rates of tuberculosis (33 per 100,000 population) are seen in males aged 85 years or more.

Two factors affecting tuberculosis rates in other countries, multi-drug resistance and HIV infection, do not appear to be having a significant effect at present on rates in Australia. Reliable data are available on drug susceptibility of tuberculosis organism isolates in Australia. The data confirm that the rate of multi-drug resistance continues to be low. Although HIV status of tuberculosis notifications is poorly reported, the rate of TB-HIV co-infection is considered to be low.

Tuberculosis has increased around the world in recent years. In 1993, the World Health Organization took the unprecedented step of declaring a global emergency in relation to the disease. Australia is fortunate in having one of the lowest rates of tuberculosis infection in the world. We must continue to undertake appropriate national tuberculosis control activities and contribute to control efforts in the region and globally.

Figure 1. Tuberculosis notifications per 100,000 population, 1917 to 1995, by year of report

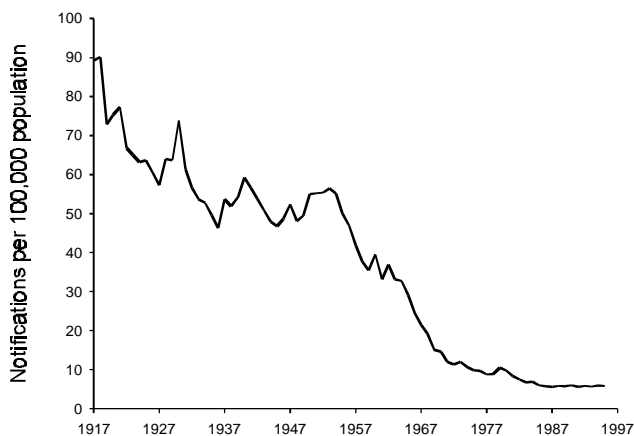
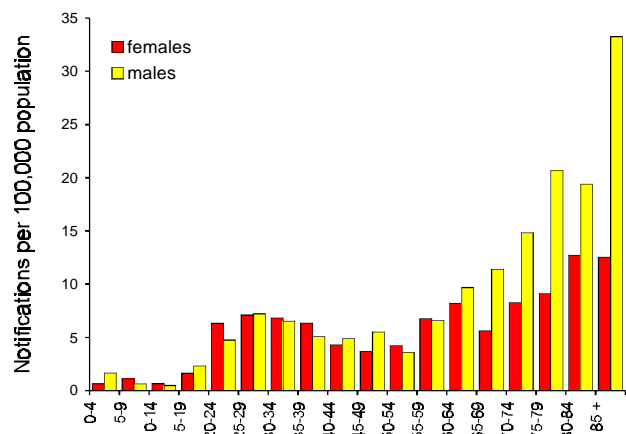


Figure 2. Tuberculosis notifications per 100,000 population, 1995, by age group and sex



National Notifiable Diseases Surveillance System

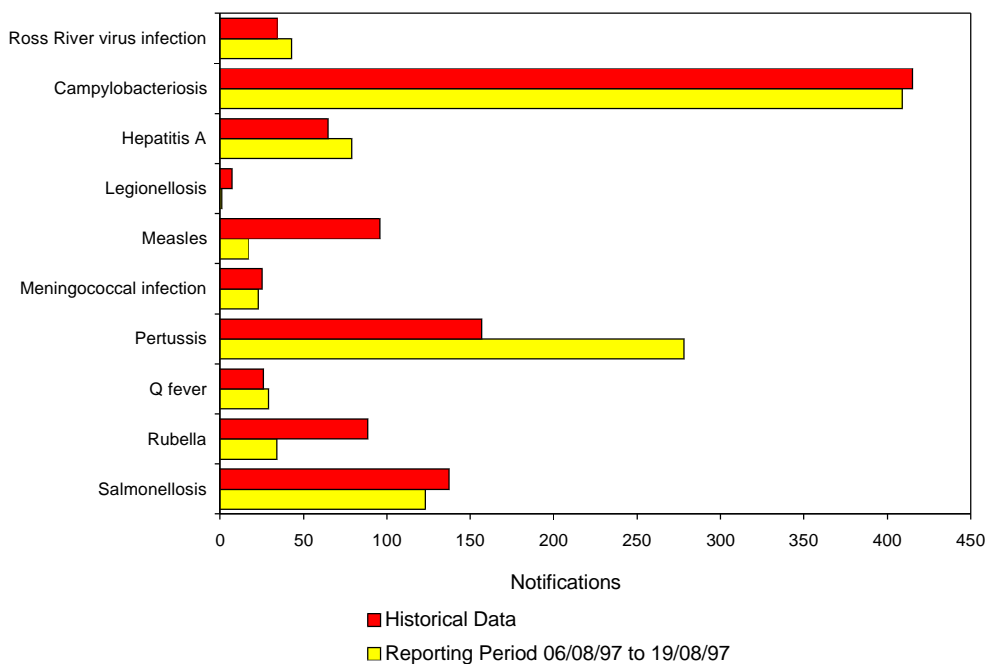
The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. The system coordinates the national surveillance of more than 40 communicable diseases or disease groups endorsed by the National Health and Medical Research Council (NHMRC). Notifications of these diseases 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 6 to 19 August 1997

There were 2,057 notifications received for this two week period (Tables 1, 2 and 3). The numbers of reports for selected diseases have been compared with historical data for corresponding periods in the previous three years (Figure 3).

A total of 2,053 notifications of hepatitis A with onset in 1997 have been received this year (Figure 4). This is higher than for any 8-month period since the inception of the scheme in 1991. The majority of notifications this year were reported from New South Wales (48%), Queensland (27%) and Victoria (13%). Following the peak in incidence in February 1997, more than 200 notifications have been received each month; these levels are substantially higher than those seen

Figure 3. Selected National Notifiable Diseases Surveillance System reports, and historical data¹



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.

Figure 4. Hepatitis A notifications, 1991 to 1997, by month of onset

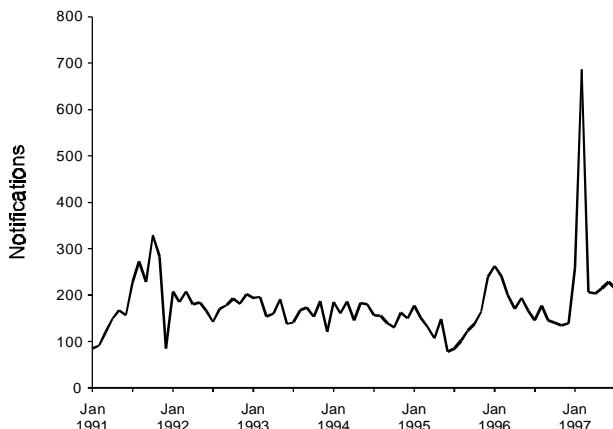


Figure 5. Ross River virus infection notifications, 1991 to 1997, by month of onset

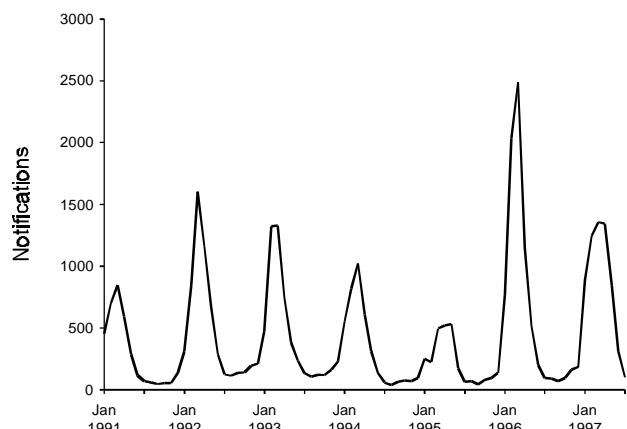


Table 1. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 6 to 19 August 1997

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
<i>Haemophilus influenzae</i> type b	0	0	0	0	0	0	0	0	0	2	33	39
Measles	4	1	0	5	1	1	1	4	17	17	364	289
Mumps	0	0	1	NN	1	0	2	0	4	5	119	73
Pertussis	6	51	1	78	79	0	33	30	278	129	4689	1937
Rubella	0	0	1	15	5	0	11	2	34	67	803	1632
Tetanus	0	0	0	0	0	0	0	0	0	0	7	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 6 to 19 August 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	0	0	1	0	0	0	0	0	1	1	109	41
Barmah Forest virus infection	0	1	-	15	0	0	1	0	17	16	514	684
Campylobacteriosis ⁴	8	-	6	144	70	13	128	40	409	466	7238	7531
Chlamydial infection (NEC) ⁵	5	NN	42	148	0	10	91	56	352	288	5216	5316
Dengue	0	0	0	0	0	-	0	0	0	1	194	27
Donovanosis	0	NN	0	0	NN	0	0	0	0	0	23	32
Gonococcal infection ⁶	1	16	50	37	0	0	17	46	167	159	3160	2649
Hepatitis A	1	21	1	44	2	0	4	6	79	100	2159	1566
Hepatitis B incident	0	1	2	1	0	1	2	0	7	4	147	147
Hepatitis C incident	0	0	0	-	0	0	-	-	0	3	9	35
Hepatitis C unspecified	6	NN	18	119	NN	12	181	16	352	387	6002	6316
Hepatitis (NEC)	0	0	0	0	0	0	0	NN	0	1	12	13
Legionellosis	0	0	0	0	0	0	1	0	1	6	102	123
Leptospirosis	0	0	0	1	0	0	0	1	2	0	80	155
Listeriosis	0	0	0	2	0	0	0	0	2	2	55	37
Malaria	1	2	0	18	1	0	3	0	25	20	526	549
Meningococcal infection	0	5	2	8	1	2	5	0	23	26	278	239
Ornithosis	0	NN	0	0	0	0	0	0	0	4	37	59
Q Fever	0	17	0	10	2	0	0	0	29	40	390	361
Ross River virus infection	0	1	4	31	0	0	0	7	43	39	6271	7391
Salmonellosis (NEC)	0	18	13	34	10	2	34	12	123	127	4855	3963
Shigellosis ⁴	0	-	3	16	1	0	2	3	25	19	560	448
Syphilis	0	7	15	6	0	0	0	7	35	60	774	1004
Tuberculosis	1	1	1	2	1	0	10	3	19	34	616	682
Typhoid ⁷	0	1	0	0	0	0	1	0	2	4	48	63
Yersiniosis (NEC) ⁴	0	-	0	5	2	0	1	0	8	9	180	165

1. For HIV and AIDS, see *CDI* 1997;21:182. 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. NT: includes Barmah Forest virus.

4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.

5. WA: genital only.

6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.

7. NSW, Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified

- Elsewhere Classified.

Table 3. Notifications of rare¹ diseases received by State and Territory health authorities in the period 6 to 19 August 1997

Disease ²	Total this period	Reporting States or Territories	Total notifications 1997
Brucellosis	1	Qld	21
Chancroid			1
Cholera			2
Hydatid infection	1	Qld	25
Leprosy	1	Qld	8

1. Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1996.
2. No notifications have been received during 1997 for the following rare diseases: botulism, lymphogranuloma venereum, plague, rabies, yellow fever, or other viral haemorrhagic fevers.

during the previous 4 years. The male:female ratio of cases with onset in 1997 is 1.5:1, somewhat lower than the ratios seen in cases with onset in 1996 (1.9:1) and 1995 (1.8:1).

The 278 notifications of pertussis received for the current period is the highest two-week total since early March this year; 53% of cases were aged between 5 and 14 years old.

The number of notifications of Ross River virus infection received in this and the previous two 2-week periods (61 and 41 cases respectively) are the lowest for any reporting periods this year. The seasonal pattern of summer peaks in incidence has been similar since 1991 (Figure 5). The number of cases notified so far with onset in 1997 is 6,092. The total for the year is unlikely to reach the 1996 total of 7,848 cases.

National Influenza Surveillance, 1997

Three types of data are included in *National Influenza Surveillance, 1997*. These are sentinel general practitioner surveillance conducted by the Australian Sentinel Practice Research Network, Department of Human Services, Victoria, Department of Health, New South Wales and

Department of Health and Community Services, Northern Territory; laboratory surveillance data from the Communicable Diseases Intelligence Virology and Serology Laboratory Reporting Scheme, LabVISE, and the World Health Organization Collaborating Centre for Influenza Reference and Research; and absenteeism surveillance conducted by Australia Post. For further information about these schemes, see *CDI 1997; 21:126*.

Overall influenza activity rose sharply from late July to early August. Laboratory reports for this period were mainly for influenza A; with reports of influenza B declining.

Laboratory Surveillance

A total of 292 reports of influenza virus were recorded by the LabVISE scheme this fortnight. Of these, 162 were for influenza A, 87 for influenza B and 43 were untyped. The epidemic of influenza B this season has reached its peak and is declining. The number of influenza A and influenza B reports received during July were 250 and 248 respectively. Prior to this, during 1997 so far there has been a greater number of influenza B reports recorded each month. For August so far, influenza A reports have been approximately double those of influenza B (Figure 6).

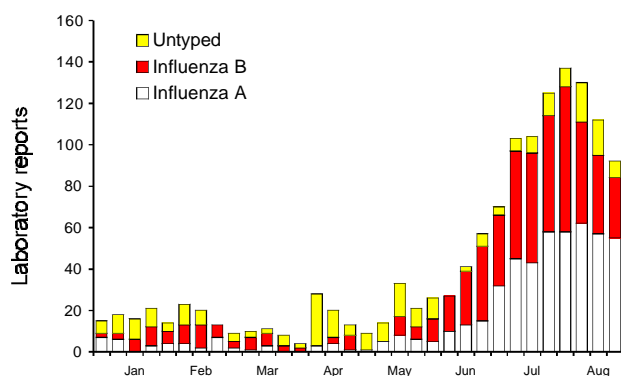
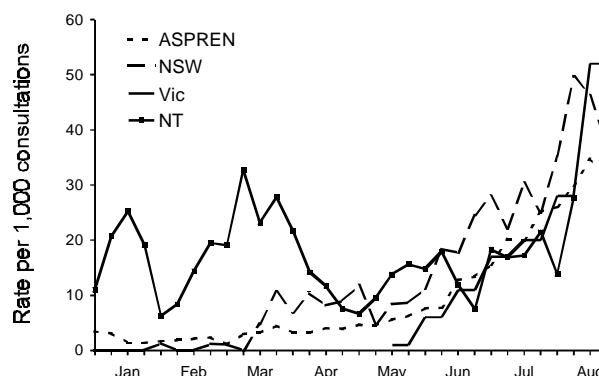
Figure 6. Laboratory reports of influenza, 1997, by type and week of specimen collection**Figure 7. Sentinel general practitioner influenza consultation rates, 1997, by week and scheme**

Table 4. Australian Sentinel Practice Research Network reports, weeks 32 and 33, 1997

Condition	Week 32 , to 10 August 1997		Week 33, to 17 August 1997	
	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Chickenpox	8	1.4	11	1.7
Gastroenteritis	64	10.9	42	6.4
HIV testing (doctor initiated)	5	0.9	14	2.1
HIV testing (patient initiated)	10	1.7	8	1.2
Influenza	188	32.0	173	26.3
Measles	0	0.0	0	0.0
Pertussis	1	0.2	1	0.2
Ross River virus infection	3	0.5	1	0.2
Rubella	1	0.2	0	0.0

Sentinel General Practitioner Surveillance

Reports of consultation rates for influenza-like illness from the New South Wales scheme continued to increase through July and reached a rate of 50 consultations per 1,000 encounters in the last week of July (Figure 7). The Department of Human Services Victoria also recorded a high rate, 52 consultations per 1,000 encounters, for the last week of July and the first week of August. The ASPREN scheme consultation rate continued to rise throughout July, and reached a peak of 35 consultations per 1,000 encounters in the first week of August. This is similar to the peak consultation rate recorded by ASPREN in recent years. The Northern Territory data indicate increased influenza activity for the latter part of July.

Absenteeism Surveillance

Australia Post recorded a national absenteeism rate of 3.0%. Nationally this has remained stable throughout the season, although higher rates were recorded for New South Wales during early July (3.3%) and for Victoria during late July to early August (3.6%).

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network (ASPREN) currently comprises 107 general practitioners from throughout the country. Up to 9,000 consultations are reported each week, with special attention to 12 conditions chosen for sentinel surveillance. Of these, CDI reports the consultation rates for chickenpox, gastroenteritis, HIV testing (doctor initiated), HIV testing (patient initiated), influenza, measles, pertussis, Ross River virus infection and rubella. For further information, including case definitions, see CDI 1997;21:6.

Data for weeks 32 and 33 ending 10 and 17 August respectively are included in this issue of CDI (Table 4). The consultation rate for gastroenteritis has remained at a low level since the beginning of June. For the current reporting weeks, the consultation rate for chickenpox has remained slightly higher than the rate for July. The consultation rate for measles, pertussis and rubella has remained low for several months. The consultation rate associated with HIV testing has remained a moderate level throughout the year.

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 1,188 reports received in the CDI Virology and Serology Laboratory Reporting Scheme this period (Tables 5 and 6).

Eighty-one reports were received for parainfluenza virus this period. These included parainfluenza virus type 2 (8) and type 3 (62). Parainfluenza virus type 2 reports are expected to peak this year as outbreaks tend to occur in alternate years in Australia. By contrast, peaks in parainfluenza virus type 3 are characteristically recorded each year during September and October (Figure 8).

Laboratory reports of *Mycoplasma pneumoniae* have continued to rise since 1996 (Figure 9). There were 80 reports received in the last fortnight. The male:female ratio was 1:1.6, with 80% in the less than 25 years age group.

Figure 8. Parainfluenza virus type 2 and type 3 laboratory reports, 1995 to 1997, by month of specimen collection

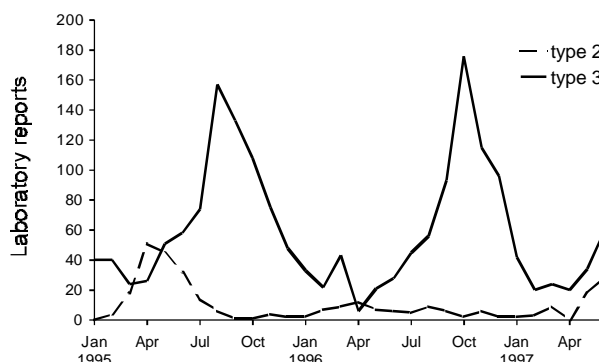


Figure 9. *Mycoplasma pneumoniae* laboratory reports, 1992 to 1997, by month of specimen collection

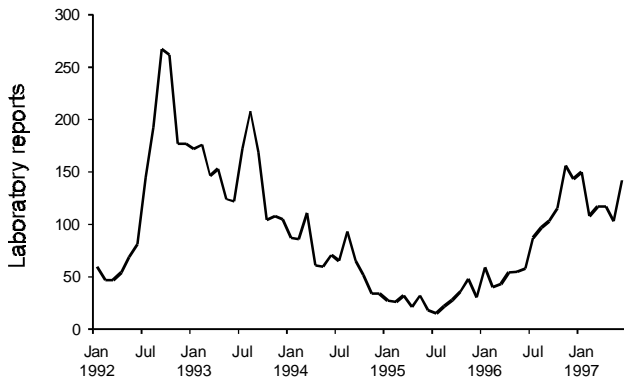
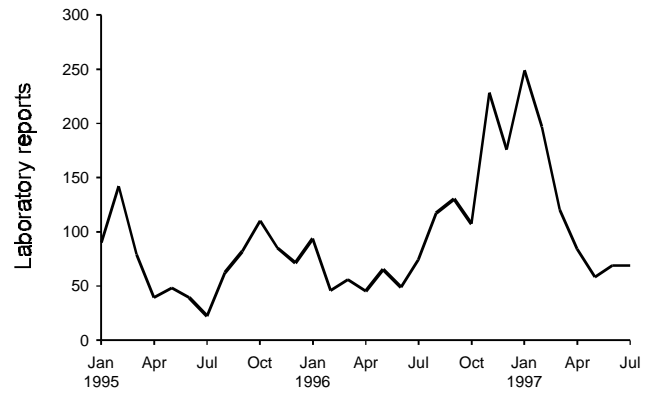


Figure 10. *B. pertussis* laboratory reports, 1995 to 1997, by month of specimen collection



Forty-two reports of pertussis were received this fortnight. The male: female ratio was 1:1 with 22 (52%) reports for children under 14 years of age. The number of reports has declined in recent months after peaking in January, when 249 reports were received. This was the highest number of reports recorded in the history of this scheme (Figure 10).

Table 5. Virology and serology laboratory reports by State or Territory¹ for the reporting period 31 July to 13 August 1997, historical data², 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			2	1.8	42
Mumps virus					1			1	1.5	29
Rubella virus				2	3			5	18	417
Hepatitis viruses										
Hepatitis A virus		1		4	2			7	12.8	548
Arboviruses										
Ross River virus			1	3	3			7	15.8	2,012
Barmah Forest virus				1				1	5.5	194
Adenoviruses										
Adenovirus type 1					1			1	1.8	20
Adenovirus type 2					1			1	1	25
Adenovirus type 40						1		1	0.5	11
Adenovirus not typed/pending		5		4	16		5	30	44.7	658
Herpes viruses										
Cytomegalovirus		20		12	6	2	5	45	55.3	833
Varicella-zoster virus		2	1	9	3	1	1	17	48.3	953
Epstein-Barr virus		11		7	25	5		48	69.5	1,796
Other DNA viruses										
Parvovirus				3	3			6	9.3	258
Picornavirus family										
Poliovirus type 1 (uncharacterised)		1						1	1	5
Rhinovirus (all types)		4		15	3			22	30	436
Enterovirus not typed/pending				12				12	28.3	442
Ortho/paramyxoviruses										
Influenza A virus		98		16	25	10	9	158	164.2	635
Influenza A virus H3N2				4				4	7.3	11
Influenza B virus		21		50	6	4	6	87	24.2	617
Influenza virus - typing pending					40		3	43	0.3	273
Parainfluenza virus type 1		1			3			4	8.3	46
Parainfluenza virus type 2		1		3	3	1		8	3.2	101
Parainfluenza virus type 3		18		13	9		22	62	30.2	565
Parainfluenza virus typing pending					7			7	2	196
Respiratory syncytial virus	2	109		99	73	25	66	374	372.2	3,165
Other RNA viruses										
Rotavirus		15			15	1	14	45	135.2	757
Other										
<i>Chlamydia trachomatis</i> not typed		4	1	24	21		4	54	115.5	3,329
<i>Chlamydia pneumoniae</i>				1				1	0	2
<i>Chlamydia</i> species		1						1	0.8	23
<i>Mycoplasma pneumoniae</i>		33		29	6	12		80	27.5	1,220
<i>Coxiella burnetii</i> (Q fever)		3	1	3				7	6.8	239
<i>Bordetella pertussis</i>		2	1	8		31		42	14.2	1,176
<i>Legionella pneumophila</i>				1				1	0.7	17
<i>Cryptococcus</i> species		2						2	0.3	16
TOTAL	2	353	5	323	276	93	135	1,188	1,258.30	21,070

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 6. Virology and serology laboratory reports by contributing laboratory for the reporting period 31 July to 13 August 1997

State or Territory	Laboratory	Reports
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	59
	New Children's Hospital, Westmead	148
	South West Area Pathology Service, Liverpool	143
Queensland	Queensland Medical Laboratory,	133
	West End State Health Laboratory, Brisbane	200
South Australia	Institute of Medical and Veterinary Science, Adelaide	276
Victoria	Monash Medical Centre, Melbourne	48
	Royal Children's Hospital, Melbourne	47
Western Australia	Princess Margaret Hospital, Perth	133
TOTAL		1187