COMMUNICABLE DISEASES SURVEILLANCE

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 41 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 legislation. De-identified core unit data are supplied fortnightly for collation, analysis and dissemination. For further information, see CDI 1996;20:9-10.

Reporting period 21 July to 3 August 1996

There were 1,658 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 1).

The number of notifications of **chlamydial infection** was 303 for the current reporting period. Notifications have shown a slight upward trend in recent years (Figure 2). It should be noted that inclusion of notifications from South Australia commenced in 1992 and from Western Australia in 1993. The condition is not yet notifiable in New South Wales. For the 10,750 cases notified since the beginning of 1995, the male:female ratio was 1:2.2. The age spectrum of cases has not altered significantly. About 85% of cases in females are in the age range 15 to 29 years; about 70% of male cases are in the same age in range (Figure 3).

There were 28 notifications of **meningococcal infection** received for the current fortnight, compared to 19 for the previous period. Cases have been reported recently from all States and Territories.

The number of notifications of **rubella** has declined in recent months, although the annual total of notifications remains higher than for 1995. Most recent notifications have been from the south-eastern corner of Queensland. Over the last two months, 88% of rubella laboratory reports in the LabVISE surveillance system have also been received from Queensland. The seasonal pattern of the previous years suggests that a rise in notifications can be expected within the next two months.

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 21 July to 3 August 1996[1]

DISEASE	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2]			
									This period 1996	This period 1995	This period 1996	This period 1995
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
Haemophilus influenzae B infection	0	1	0	0	0	0	0	0	1	2	38	47
Measles	0	3	0	4	0	0	0	1	8	32	274	941
Mumps	1	1	1	NN	0	0	0	0	3	5	62	88
Pertussis	0	28	0	24	16	0	0	3	71	162	1739	2503
Rubella	1	3	0	26	0	1	0	0	39	83	1488	1383
Tetanus	0	0	0	0	0	0	0	0	0	0	1	3

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[1] received by State and Territory health authorities in the period 21 July to 3 August 1996

DISEASE	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2]			
									This period 1996	This period 1995	This period 1996	This period 1995
Arbovirus Infection (NEC)[3,4]	0	0	1	0	0	0	0	3	4	5	132	374
Barmah Forest virus infection	0	1	-	13	0	0	-	-	14	24	600	324
Ross River virus infection	0	4	0	32	0	-	0	2	38	57	7260	2221
Dengue	0	0	0	2	0	-	0	0	2	1	26	16
Campylobacteriosis[5]	9	-	11	126	137	18	0	55	356	426	6368	6105
Chlamydial infection (NEC)[6]	9	NN	33	149	0	11	68	33	303	186	4393	3687
Donovanosis	0	NN	2	0	NN	0	0	0	2	2	32	50
Gonococcal infection[7]	0	13	28	60	0	0	30	26	157	101	2256	1800
Hepatitis A	1	18	8	14	1	0	0	1	43	36	1442	954
Hepatitis B incident	0	0	0	2	0	0	0	0	2	14	128	229
Hepatitis B unspecified	6	0	0	29	0	2	0	13	50	54	906	1012
Hepatitis C incident	0	0	2	-	0	-	-	-	2	12	17	69
Hepatitis C unspecified	12	NN	0	123	NN	17	0	34	186	394	4511	5407
Hepatitis (NEC)	0	1	0	0	1	0	0	NN	2	0	13	17
Legionellosis	0	2	0	1	1	0	0	1	5	6	110	125
Leptospirosis	0	1	0	18	0	0	0	0	19	7	154	76
Listeriosis	0	1	0	0	0	0	0	0	1	2	32	42
Malaria	0	6	0	33	1	0	0	3	43	29	521	410
Meningococcal infection	2	8	1	14	1	0	0	2	28	21	205	211
Ornithosis	0	NN	0	0	0	0	0	0	0	3	55	81
Q fever	0	4	0	3	0	0	0	2	9	23	308	275
Salmonellosis (NEC)	5	38	24	41	12	2	0	16	138	166	3808	4196
Shigellosis[5]	1	-	18	13	0	0	0	6	38	29	419	512
Syphilis	0	34	18	15	0	0	8	1	76	54	1007	1170
Tuberculosis	1	3	1	6	2	0	0	0	13	58	648	689
Typhoid[8]	0	0	0	1	0	0	0	0	1	3	51	42
Yersiniosis (NEC)[5]	0	-	0	0	1	0	0	2	3	13	154	222

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.

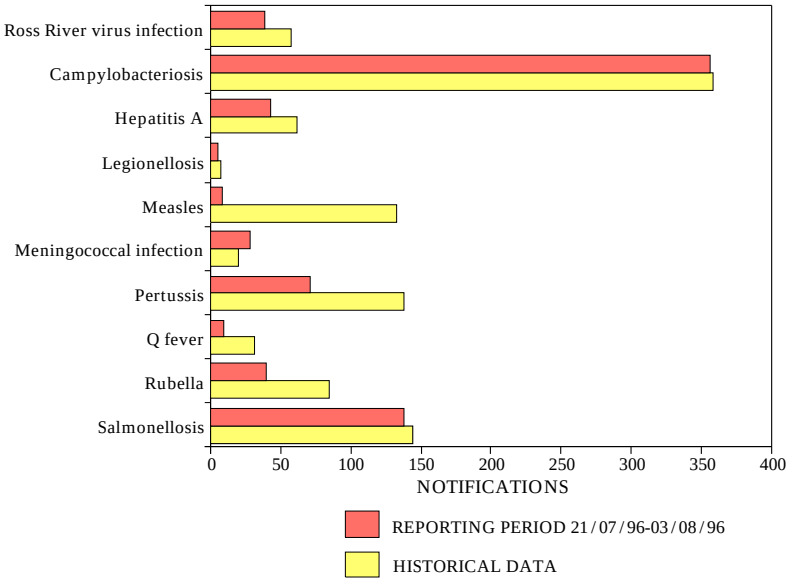
- Elsewhere Classified.

Table 3. Notifications of rare[1] diseases received by State and Territory health authorities in the period 21 July to 3 August 1996[2]

DISEASES	Total this period	Reporting States or Territories	Year to date 1996
Brucellosis	0		22
Chancroid	0		1
Cholera	0		4
Hydatid infection	0		24
Leprosy	1	WA	8

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

Figure 1. 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.

Figure 2. Chlamydial infection, notifications 1991 to 1996, by month of onset

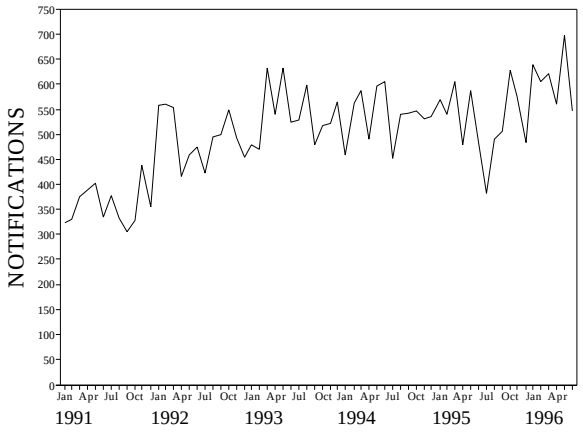


Figure 3. Chlamydial infection, notifications 1995 and 1996, by sex and age group

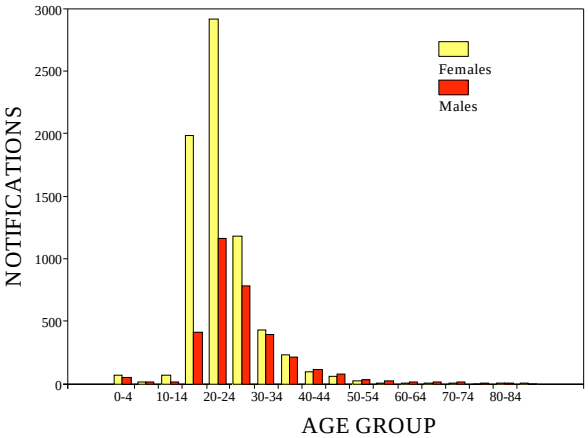


Table 4. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 29 February 1996, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This period 1996	This period 1995	Year to date 1996	Year to date 1995
HIV diagnoses	Female	0	3	0	2	0	0	1	1	7	7	12	15
	Male	1	21	1	12	1	0	16	6	58	80	120	143
	Sex not reported	0	0	0	0	0	0	0	0	0	1	2	4
	Total[1]	1	24	1	14	1	0	17	7	65	88	134	163
AIDS diagnoses	Female	0	0	0	0	0	0	0	0	0	4	0	7
	Male	0	6	0	3	1	0	6	3	19	66	49	125
	Total[1]	0	6	0	3	1	0	6	3	19	70	49	132
AIDS deaths	Female	0	0	0	1	0	0	3	0	4	4	6	6
	Male	0	19	0	2	5	0	12	0	38	66	62	121
	Total[1]	0	19	0	3	5	0	15	0	42	70	68	127

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 29 February 1996, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	15	553	4	96	44	4	159	71	946
	Male	168	9,954	81	1,575	563	70	3,355	755	16,521
	Sex not reported	0	2,049	0	0	0	0	42	0	2,091
	Total[1]	183	12,563	85	1,676	607	74	3,565	828	19,581
AIDS diagnoses	Female	5	130	0	28	18	2	47	18	248
	Male	71	3,744	25	638	267	32	1,320	275	6,372
	Total[1]	76	3,884	25	668	285	34	1,374	295	6,641
AIDS deaths	Female	2	96	0	22	13	2	36	11	185
	Male	50	2,664	20	443	186	21	1,041	201	4,626
	Total[1]	52	2,769	20	467	199	23	1,083	213	4,826

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. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

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 February 1996, as reported to 31 May 1996, are included in this issue of *CDI* (Tables 4 and 5).

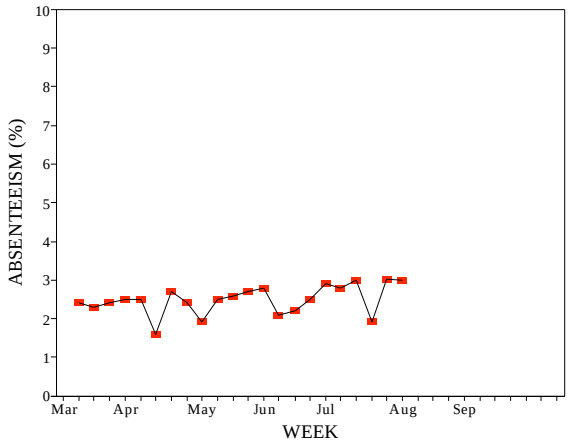
National Influenza Surveillance

Australian Sentinel Practice Research Network; Communicable Diseases Intelligence Virology and Serology Reporting Scheme Contributing Laboratories, New South Wales Department of Health; Victorian Department of Health; World Health Organisation Collaborating Centre for Influenza Reference and Research.

National Influenza Surveillance is conducted from May to September each year. Data are combined from a number of sources to provide an indication of influenza activity. Included are sentinel general practitioner surveillance, absenteeism data from a national employer, and laboratory data from LabVISE and the World Health Organization Collaborating Centre for Influenza Reference and Research. For further information, see CDI 1996;20:9-12.

The absenteeism rate for Australia Post has remained between 2.8 and 3.0% for the last six weeks, except for the third week in July when it was lower (Figure 4). Over the same period, the consultation rate for influenza-like illness increased in New South Wales and the Northern Territory, but the ASPREN reports fluctuated between 23 and 28 per 1,000 encounters (Figure 5).

Figure 4. Australia Post absenteeism, 1996, by week



As many laboratory reports of influenza A were received in the last fortnight as had been received for the year to date. While the number of reports by week of specimen collection is declining, it is still above the peak recorded last year (Figure 6). In all, 389 reports were received this fortnight, diagnosed by virus isolation (228), antigen detection (105), single high titre (45) and four-fold rise in titre (11). Of these, 54% (211 / 389) were for children under five years of age and 7% (26 / 389) were for adults over 65 years of age.

Twenty-three reports of influenza A (H3N2) were received this fortnight. Sixteen reports (70%) were for children under five years of age.

Three reports of influenza B were received this fortnight, two were diagnosed by antigen detection, the other by single high titre (Figure 7).

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network (ASPREN) comprises 99 sentinel general practitioners from throughout the country. A total of approximately 9,000 consultations are recorded each week for 12 conditions. Of these, CDI reports the consultation rate for influenza, rubella, measles, pertussis and gastroenteritis. For further information including case definitions see CDI 1996;20:98-99.

Data for weeks 30 and 31 ending 28 July and 4 August respectively are included in this issue of *CDI* (Table 6). The consultation rate for gastroenteritis in the most recent three reporting weeks is 30% higher than the rate seen in June and early July. The consultation rate for chickenpox has remained level over the last two months. The rates of reporting of rubella, measles and pertussis continue at low levels.

Figure 5. Sentinal general practitioner influenza-like illness consultation reports per 1,000 encounters, 1996, by week

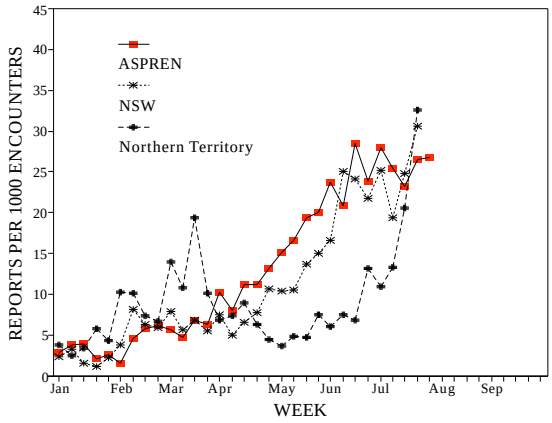


Figure 6. Influenza A laboratory reports, 1995 and 1996, by week of specimen collection

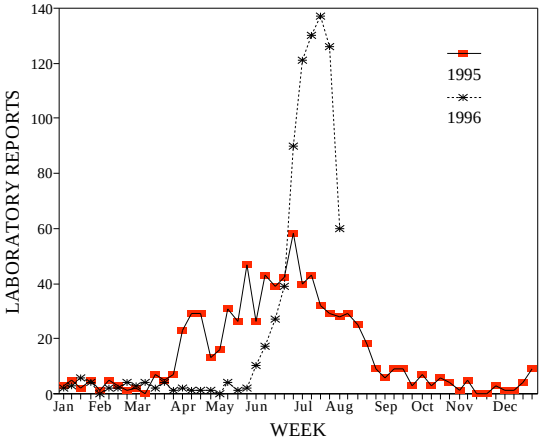


Figure 7. Influenza B laboratory reports, 1996, by method of diagnosis and week of specimen collection

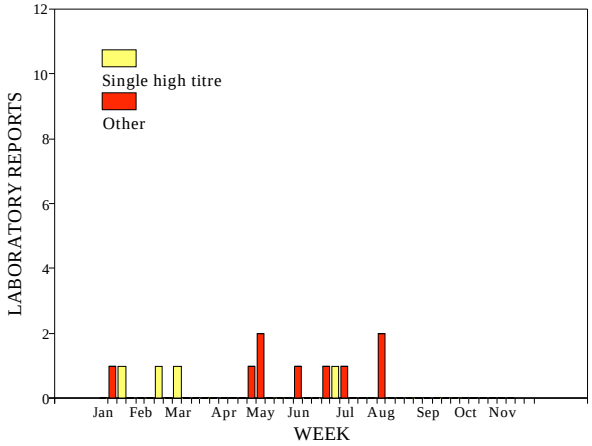


Table 6. Australian Sentinel Practice Research Network reports, weeks 30 and 31, 1996

Condition	Week 30, to 28 July 1996		Week 31, to 4 August 1996	
	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Influenza	235	26.5	230	26.7
Rubella	3	0.3	4	0.5
Measles	1	0.1	1	0.1
Chickenpox	9	1.0	17	2.0
Pertussis	5	0.6	4	0.5
Gastroenteritis	116	13.1	125	14.5

Australian Encephalitis: Sentinel Chicken Surveillance Programme

AK Broom[1], *JS Mackenzie*[2], *L Melville*[3], *DW Smith*[4] *and PI Whelan*[5]

The Sentinel Chicken Surveillance Programme is coordinated by the Arbovirus Research Laboratory in the Department of Microbiology at the University of Western Australia. The Programme provides an early warning of increased flavivirus activity by monitoring flavivirus seroconversions in chickens in sentinel flocks in Western Australia, the Northern Territory, Victoria and Queensland. Information on seroconversions from this scheme is published every two months.

1. Department of Microbiology, The University of Western Australia
2. Department of Microbiology, The University of Queensland
3. Berrimah Agricultural Research Centre, Darwin, NT
4. PathCentre, Perth
5. Medical Entomology Branch, Department of Health and Community Services, Darwin, NT.

Sentinel chicken serology was carried out for 19 of the 22 flocks in Western Australia in May and June 1996. There were no seroconversions during this period.

Four flocks of sentinel chickens from the Northern Territory were also tested in May and June. During this period there were two seroconversions to Murray Valley encephalitis in May in the flock from Coastal Plains Research Station near Darwin. There were no seroconversions to flaviviruses in June.

Correction to March-April 1996 data

In the Northern Territory chicken flocks there were no seroconversions in March 1996 and two from Coastal Plains Research Station in April 1996. One chicken seroconverted to a flavivirus (probably Kunjin) and one to Murray Valley encephalitis virus.

LabDOSS

LabDOSS is a passive surveillance scheme that reports on significant bacterial and fungal isolates from normally sterile sites. Twenty laboratories currently forward reports of sterile site isolates to the Department of Health and Family Services. LabDOSS is published in alternate issues of CDI. Data from the LabDOSS scheme should be interpreted with caution. There is a potential for geographical, testing and referral pattern biases. In addition, risk factors and clinical information are not consistently provided by laboratories. For further information, see CDI 1996;20:9-10.

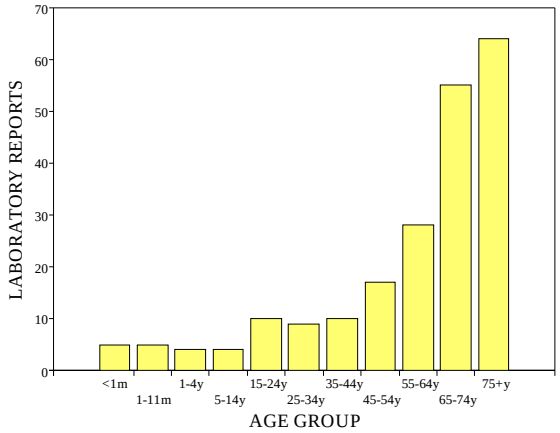
Data for this four weekly period have been provided by 6 laboratories. There were 219 reports of significant sepsis:
New South Wales: Prince of Wales Hospital 32; Royal North Shore Hospital 40.
Tasmania: Royal Hobart Hospital 20.
Queensland: Sullivan and Nicholaides and Partners 52.

Table 7. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical information						Risk factors					Total[1]
	Bone / Joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
Acinetobacter species		1						1		4	1	5
Enterobacter faecalis					2			2				6
Escherichia coli		3		3	8		4	7		5		29
Klebsiella oxytoca				1				1		1		5
Klebsiella pneumoniae				1	2				2	3		9
Proteus mirabilis					4			3		2		5
Pseudomonas aeruginosa	1				1		1	3		2		6
Staphylococcus aureus	1	3	1		2	12	5	7	6	15	1	30[2]
Staphylococcus coagulase negative				1	1	1	3	7	5	7	2	30[3]
Streptococcus pneumoniae		10					1	1				15
Streptococcus species				2		1		1	1			7

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 7.
3. Includes *Staphylococcus epidermidis.*

Figure 8. LabDOSS reports of blood isolates, by age group



Western Australia: Sir Charles Gairdner Hospital 29.
South Australia: Institute of Medical and Veterinary Science 46.

Blood isolates
Organisms reported 5 or more times from blood are detailed in Table 7. Other blood isolates not included in Table 8 were:
Gram-positive: 1 *Bacillus cereus*, 1 *Corynebacterium* species, 2 *Enterococcus faecium*, 1 *Enterococcus* species, 1 *Listeria monocytogenes*, 2 *Streptococcus* Group B, 4 *Streptococcus* Group G, 1 *Streptococcus mitis*, 1 *Streptococcus sanguis* and 1 *Streptococcus viridans*.
Gram-negative: 1 *Aeromonas* species, 1 *Alcaligenes xylosoxidans*, 1 *Campylobacter jejuni*, 1 *Campylobacter* species, 2 *Citrobacter freundii*, 3 *Citrobacter* species, 2 *Enterobacter aerogenes*, 4 *Enterobacter cloacae*, 3 *Enterobacter* species, 2 *Haemophilus influenzae*, 2 *Klebsiella* species, 1 *Leclercia adecarboxylata*, 1 *Morganella morganii*, 1 *Pseudomonas fluorescens*, 2 *Pseudomonas* species, 1 *Salmonella paratyphi*, 1 *Salmonella* species, 3 *Salmonella typhi*, 1 *Serratia marcescens* and 1 *Xanthomonas maltophilia*.
Anaerobes: 1 *Bacteroides* species, 1 *Clostridium perfringens*, 1 *Fusobacterium* species, and 2 *Propionibacterium* species.
Fungi: 1 *Candida albicans* and 1 other *Candida* species.

There were 147 (70% of total) blood isolates reported for patients over the age of 54 years (Figure 8).

Isolates from sites other than blood
CSF: Two reports of isolates from CSF or causing meningitis were received involving *Neisseria meningitidis* and *Streptococcus pneumoniae*. Both were in children under 4 years of age.
Peritoneal dialysate: Six reports were received this period. Included was 1 *Bacteroides ovatus*, 2 *Escherichia coli*, 1 *Klebsiella pneumoniae* and 2 *Pseudomonas aeruginosa*.

LabVISE

The Virology and Serology 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 1996;20:9-12.

There were 1,797 reports received in the *CDI* Virology and Serology Reporting Scheme this period (Tables 8 and 9).

In the last fortnight, 472 laboratory reports of **respiratory syncytial virus** were received. Reports have continued to increase but are below the expected peak for July (Figure 9). The July data may be incomplete so the number of reports could increase further. Diagnoses for the reports received this fortnight were by antigen detection (280), virus isolation (189), single high titre (2) and four-fold rise in titre (1). Ninety per cent of reports (427 / 472) were for children under five years of age and of these 91% (390 / 427) were under one year of age.

Reports of **parainfluenza virus type 1** have continued to decline since a peak in April (Figure10). In Australia, epidemics of parainfluenza virus type 1 occur in the autumn-winter months of alternate years. The number of reports received so far this year is similar to that for the same period in 1992 but much less than 1994. Eighteen reports were received this period, 11 were for children under five years of age.

Figure 9. Respiratory syncytial virus laboratory reports, 1991 to 1995 average and 1996, by month of specimen collection

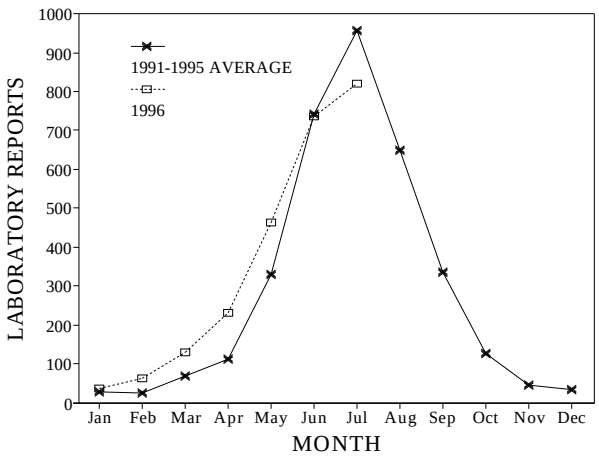


Figure 10. Parainfluenza virus type 1 laboratory reports, 1992, 1994 and 1996 by month of specimen collection

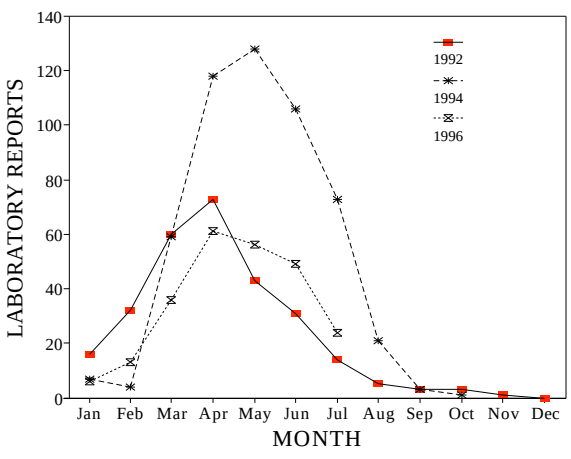


Table 8. Virology and serology laboratory reports by State or Territory[1] for the reporting period 25 July to 7 August 1996, historical data[2], and total reports for the year

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus				1					1	16.3	35
Mumps virus				1					1	3.5	28
Rubella virus				30				1	31	15.5	352
HEPATITIS VIRUSES											
Hepatitis A virus		1	6	4					11	15.5	305
ARBOVIRUSES											
Ross River virus		2	5	20				4	31	11.5	3,029
Barmah Forest virus				10				1	11	4.8	165
ADENOVIRUSES											
Adenovirus type 40							1		1	.0	24
Adenovirus not typed / pending		2		29			10	15	56	41.5	890
HERPES VIRUSES											
Herpes simplex virus type 1							3		3	189.7	2,707
Herpes simplex virus type 2							1		1	207.8	2,676
Herpes simplex not typed / pending							1	2	3	22.2	290
Cytomegalovirus		7		46		3	8	8	72	70.7	1,088
Varicella-zoster virus		5		36			3	9	53	40.3	791
Epstein-Barr virus		13	2	40			4	9	68	63.2	1,302
OTHER DNA VIRUSES											
Molluscum contagiosum								1	1	.0	3
Parvovirus				9					9	3.8	103
PICORNA VIRUS FAMILY											
Rhinovirus (all types)		1		28			2	3	34	35.5	464
Enterovirus not typed / pending				25			3	8	36	40.0	578
ORTHO / PARAMYXOVIRUSES											
Influenza A virus		24		267		1	27	70	389	96.8	817
Influenza A virus H3N2				23					23	7.0	45
Influenza B virus				1				2	3	22.2	34
Parainfluenza virus type 1		2		9			4	3	18	15.5	251
Parainfluenza virus type 2				3				1	4	6.8	54
Parainfluenza virus type 3		2		8			3	10	23	29.2	354
Parainfluenza virus type 4				1					1	.0	7
Parainfluenza virus typing pending								1	1	4.3	10
Respiratory syncytial virus	1	50		223		4	87	107	472	464.5	2,690
Paramyxovirus (unspecified)							1		1	.0	12
OTHER RNA VIRUSES											
Rotavirus		31	1			5	49	19	105	144.3	808
OTHER											
Chlamydia trachomatis not typed		17	27	96		2		28	170	104.2	2,523
Chlamydia species				1					1	1.0	64
Mycoplasma pneumoniae		10		30	1		7	2	50	22.7	419
Coxiella burnetii (Q fever)		2		1				3	6	7.7	116
Rickettsia australis		1							1	.7	12
Rickettsia spp - other								1	1	.5	5
Neisseria gonorrhoeae			1					47	48	.0	104
Bordetella pertussis							18	1	19	12.2	310
Bordetella species		2		18					20	4.8	189
Legionella longbeachae								1	1	.0	12
Legionella species				3				1	4	.3	8
Leptospira hardjo				1					1	.0	14
Leptospira australis				1					1	.0	5
Leptospira species		1		7					8	.5	42
Schistosoma species								3	3	3.3	193
TOTAL	1	173	42	972	1	15	232	361	1,797	1,730.3	23,928

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 9. Virology and serology laboratory reports by contributing laboratories for the reporting period 25 July to 7 August 1996

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	43
	Royal Prince Alfred Hospital, Camperdown	45
	South West Area Pathology Service, Liverpool	60
Queensland	Queensland Medical Laboratory, West End	473
	State Health Laboratory, Brisbane	544
Tasmania	Northern Tasmanian Pathology Service, Launceston	2
	Royal Hobart Hospital, Hobart	13
Victoria	Monash Medical Centre, Melbourne	41
	Royal Children's Hospital, Melbourne	191
Western Australia	PathCentre Virology, Perth	185
	Princess Margaret Hospital, Perth	165
	Western Diagnostic Pathology	35
TOTAL		1797