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COMMUNICABLE DISEASES NETWORK-AUSTRALIA
A National Network for Communicable Diseases Surveillance

HAEMOLYTIC URAEMIC SYNDROME (HUS) IN AUSTRALIA 1994-95

The Australian Paediatric Surveillance Unit HUS study group: Elizabeth Elliott[1], Paul Henning[2], Geoff Hogg[3,7], John Knight[4], Edward O'Loughlin[5], Harley Powell[6], Diane Redmond[1], Roy Robins-Browne[7].

The haemolytic uraemic syndromes (HUS) are a heterogeneous group of conditions characterised clinically by microangiopathic haemolytic anaemia, thrombocytopenia and acute renal impairment. Histologically, thrombosis of the renal arteriolar and glomerular microcirculations is seen[1]. Around 90% of cases occur in young children and most are associated with a prodrome of bloody diarrhoea. Causative pathogens include verotoxin producing enterohaemorrhagic *E. coli* or *Shigella dysenteriae* and are usually traced to ingestion of beef or dairy products[2].

An association between HUS and neuraminidase producing bacteria such as pneumococci and streptococci, which expose T-cryptantigen, is also recognised[3]. HUS may also be idiopathic, familial or drug related. In adults HUS may be associated with systemic disease.

In July 1994 active, prospective, national surveillance of HUS was initiated by the Australian Paediatric Surveillance Unit of the Australian College of Paediatrics[4]. Its aim was to describe the epidemiology of HUS in Australia, its clinical features, including diarrhoeal prodrome and the role of verotoxin producing organisms causing HUS. HUS is not notifiable in Australia and no national data were previously available. We report data derived from the first nine months of surveillance.

Methods

Active national surveillance of HUS was conducted prospectively through the Australian Paediatric Surveillance Unit. Paediatricians were asked to report any child less than 16 years of age presenting with HUS in the previous month. HUS was defined as microangiopathic haemolytic anaemia (with microscopic evidence of fragmented red blood cells), thrombocytopenia and acute renal impairment (oliguria or anuria with elevated serum urea and creatinine). There may or may not be a history of preceding diarrhoeal illness. Septicaemia, chronic renal failure, collagen or vascular disorders and malignant hypertension may have a similar presentation and should have been excluded. Demographic, clinical and outcome information was obtained from reporting clinicians by postal questionnaire.

Clinicians were asked to send a stool and serum sample to the Department of Microbiology and Infectious Diseases at the Royal Children's Hospital, Melbourne at the time of diagnosis for analysis for verotoxin, verotoxin producing *E. coli* and serogrouping.

Confirmed cases: seasonal and geographical distribution

From July 1994 to March 1995 inclusive, 49 cases of HUS from seven States or Territories were identified through the APSU (Figures 1 and 2). Between July and December 1994 inclusive a total of 10 cases was identified. In January 1995, 20 cases were identified, including 14 from the first reported epidemic of HUS in Australia, which occurred in South Australia[5]. Other cases in January included two from the Hunter Valley, NSW, two from Queensland and one from Tasmania which appear to be unrelated to each other or to the South Australian cases. One child from the ACT who had visited Adelaide and eaten the implicated meat products[5] was treated in Sydney.

In February 1995 an additional 14 cases, seven from South Australia (part of the epidemic), four from Vic-

Figure 1. HUS cases by month of onset, July 1994 to March 1995

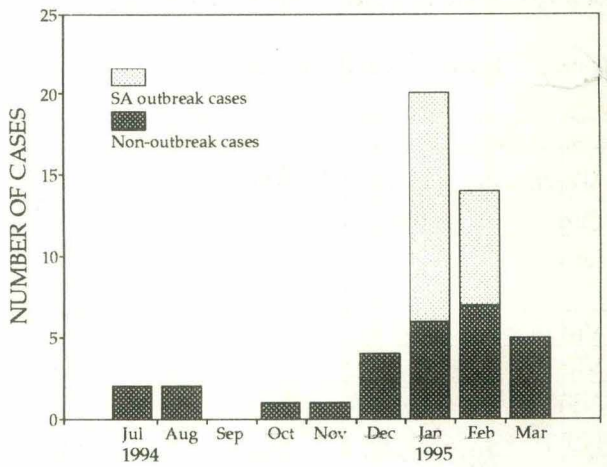

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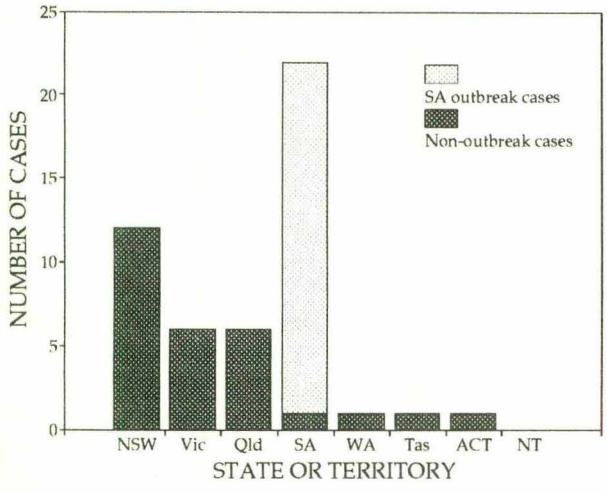
Figure 2. HUS Cases, July 1994 to March 1995, by State or Territory.



toria, two from NSW and one from Queensland were identified. During March five cases were identified. Three cases were from NSW, one of whom died, one was from Queensland and one from Western Australia.

As the epidemic cases have recently been reported[5], we describe data relating predominantly to non-epidemic cases.

Clinical and demographic features

Of the 28 non-epidemic cases, 56% were male and the mean age was 46 months (range 6 to 138 months). All but one had a diarrhoeal prodrome but only nine had bloody diarrhoea. Acute renal failure required dialysis in 50% of cases. One child died with myocarditis, three had hypertension, two had seizures and one diabetes mellitus. None had pancreatitis or end-stage renal failure. This contrasts with the epidemic cases[5]. The majority of these had bloody diarrhoea and required renal dialysis. Several had a course complicated by hypertension, seizures, diabetes mellitus and complications relating to haemorrhagic colitis; one child died.

Bacteriological features

Stool and/or serum samples from 14 of 28 non-epidemic cases were studied (Table). Only six of 14 stools from children with HUS were positive for bacterial pathogens. These included verotoxin producing *E. coli* of the serogroups 0111 (two isolates), 0113 and 026, *Campylobacter jejuni* and, in one stool, both *Salmonella* species and *Giardia lamblia*. The *E. coli* 0111 all produced verotoxins (shiga-like toxins) 1 and 2. The *E. coli* 026 produced verotoxin 1 and the *E. coli* 0113 produced verotoxin 2. The child with *Campylobacter jejuni* had serum antibodies to *E. coli* 0111 (measured by whole cell agglutination). His unaffected twin had *E. coli* 0111 identified in the stool which produced verotoxin 1 and 2. Another child whose stools were negative for verotoxin and pathogens had serum antibodies to *E. coli* 0157. Other virulence factors including plasmid and eae (*E. coli* attachment and effacement) gene are shown (Table). One child had pneumococcus associated HUS with positive blood cultures and T cryptantigen activation.

E. coli 0111 was identified in the majority of epidemic South Australian cases. Although the child from the ACT was infected in South Australia the *E. coli* 0111 in his stool differed by genetic fingerprinting from the *E. coli* 0111 isolated in the South Australian children involved in the epidemic. Recent data suggests that HUS in Australia may be more often associated with *E. coli* of serotype 0111 than with *E. coli* 0157, which is commonly implicated in outbreaks of haemorrhagic colitis and HUS in North America[6].

Table. Positive stool and serum specimens in children with HUS[1]

State or Territory	*E. coli* serotype	Verotoxin VT1	Verotoxin VT2	eae gene[2]	EHEC[3] plasmid	Serum Antibody	Other pathogens
Qld	026	+	-	+	+	No sample	
Qld	-	-	-	-	-	-	*Streptococcus pneumoniae* (blood)
Vic	-	-	-	-	-	0157	
Vic	0113	-	+	-	+	No sample	
NSW	-	-	-	-	-	0111	*Campylobacter jejuni*
NSW[4]	0111	+	+	+	+		
NSW	0111	+	+	+	+	No sample	
ACT	0111	+	+	+	+	0111	
WA	-	-	-	-	-	-	*Salmonella* species *Giardia lamblia*

1. Stools examined on 7 additional cases of HUS were negative.
2. *E.coli* attachment and effacement.
3. Enterohaemorrhagic *E.coli*.
4. Unaffected twin of HUS case with *Campylobacter* in stool.

Conclusion

HUS has not previously been monitored nationally in Australia. These preliminary data from the APSU suggest that one to two isolated cases occur per month in winter and spring with an increase to four to seven cases in the summer months. Unfortunately stool and serum samples were not available from all cases, in some instances due to a lack of funding for transport of specimens. Funding for transport of specimens has now become available. Although detection, serotyping and identification of virulence factors in stool pathogens may not influence the management of the individual patient with HUS, such analysis is crucial in identifying clusters of cases which require investigation from the public health perspective. Examination of paired sera for antibodies to specific pathogens is also valuable, particularly if the stool sample is negative for verotoxin or bacterial pathogens. Different serogroups of *E. coli* may result in different clinical presentations, complications and outcome. Serogrouping of stool pathogens in patients will permit us to examine this hypothesis.

Ongoing surveillance will also allow prospective determination of the incidence of HUS, its clinical features and evaluation of outcome. Having established national surveillance of HUS we have a unique opportunity to document the spectrum of disease in Australia.

Acknowledgements

We acknowledge the co-operation of the Australian and New Zealand Paediatric Nephrology Association, Paediatricians and other clinicians on the APSU mailing list. The APSU has received financial support from the AMP Foundation; the Clive and Vera Ramaciotti Foundation; Allen and Hanbury's; the National Centre for HIV Epidemiology and Clinical Research; the NSW Health Department; the Commonwealth Department of Human Services and Health and The Financial Markets Foundation for Children.

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RECURRENT *CAMPYLOBACTER FETUS* SUBSPECIES *FETUS* BACTERAEMIA IN A FEBRILE NEUTROPAENIC PATIENT LINKED TO TANK WATER

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Introduction

Human infections caused by *Campylobacter fetus* mostly occur in patients with a chronic underlying illness, with bacteraemia being the most common clinical presentation[1]. Although direct contact with infected animals and the ingestion of contaminated food or water have been cited as possible modes of transmission[1] no evidence of this has been forthcoming in the literature, possibly due to the sporadic nature of this type of infection. We describe a case in which the organism was isolated from the patient's tank water.

Case report

A 64 year old female presented with vomiting, diarrhoea and a temperature of 38°C. She had metastatic cancer of the cervix and was currently on chemotherapy. Her neutrophil count had fallen to 0.6 X 10^9/l. Three sets of blood cultures all grew *Campylobacter fetus* (subsequently subspeciated to subspecies *fetus* by the Victorian Institute of Animal Science using polymerase chain reaction). On admission she was given IV gentamicin and amoxycillin and was discharged on day seven on oral ciprofloxacin for one week. Twelve days post ciprofloxacin treatment the patient was readmitted with a temperature of 39°C, vomiting and superficial thrombophlebitis of the right forearm. Blood cultures again grew *C. fetus*. Treatment involved two weeks of IV gentamicin and amoxycillin after which she was discharged home on oral amoxycillin for four weeks. The patient's tank storage water was investigated as a possible source of the organism. A 200 ml sample was centrifuged and the deposit grew *C. fetus*. The tank contained rain water collected directly from the roof and was the only source of water for the

household. The patient was advised to boil tank water before consumption and has had no further recurrence of the illness.

Discussion

We believe this to be the first reported case of this rare but well known clinical entity in which the probable source has been identified as tank water. Clinicians may wish to recommend to immunocompromised patients that they boil tank water before the consumption or use of such water for food preparation. This simple measure may prevent this and other types of infection in such patients. These patients are probably more prone to infection than other immunocompetent household members due to the lower infective dose required. The recurrent nature of this disease could also be attributed to the continued consumption of the tank water. The possibility of the thrombophlebitis as a focus responsible for the relapse cannot be overlooked due to the known vascular tropism of Campylobacter species. The most appropriate antibiotic regime for this type of infection has not yet been established due to the small number of reported infections. A three to four week regime of gentamicin has previously been suggested to prevent relapse[1]. This regime may prevent relapse, but quality of life for terminal cancer patients must be considered. In the case of sensitive organisms oral antibiotics may be prescribed thus enabling the patient to return home.

Acknowledgments

We are grateful to Phil Widders at the Victorian Institute of Animal Sciences for the subspeciation of the isolate.

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NATIONAL *SALMONELLA* SURVEILLANCE SCHEME REPORT, THIRD QUARTER, 1994

Reproduced with acknowledgement from the Human Third Quarter Report 1994, National Salmonella Surveillance Scheme Report 1995;(2), editors Joan Powling, Qiming Huang, Diane Lightfoot, Petrina Adams

There were 1200 reports received by the National *Salmonella* Surveillance Scheme for the third quarter of 1994 (Table 1). There were 760 Australian acquired cases of *Salmonella* infection notified during this quarter and 122 Australian acquired cases of *Shigella* infection.

New and unusual *Salmonella* serovars notified were *S.* Albany (M/21 WA ex Pakistan, M/46 ACT ex Bali); *S.* Amsterdam var 15+ (M/48 SA); *S.* Hull (F/33 Qld ex Africa); *S.* Istanbul (M/25 NSW ex Africa); *S.* Kisarawe (F/1 NT); *S.* Manhattan (M/30 Qld); *S.* Pensacola (M/10 Vic) and *S.* Wangata (M/12 Qld). The first case of *S.* Istanbul (acquired in Malaysia) was reported in May 1993 and there have been four further overseas acquired cases from Africa and Asia.

New and unusual phage types of *S.* Typhimurium reported were PT 136 (M/2 Vic) and PT 153 (M/5 Qld). *Salmonella* Enteritidis PT 34 was reported acquired in Singapore (M/28 NSW).

Salmonella infections - case rates

The total number of *Salmonella* cases acquired in Australia for the quarter was 760. There were 87 follow-ups, two cases from migrants and refugees and 121 cases acquired overseas.

In comparison with the third quarter of 1993, there was an increase of 8% in the number of Australian acquired cases. The *Salmonella* case rate per 100,000 population increased by 81% in Victoria and 41% in South Australia and decreased in all other States and Territories

Table 1. Total reports of enteric pathogens, third quarter 1994, by State or Territory

	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total
Salmonella	10	218	235	217	105	106	22	55	968
Shigella species	0	14	30	23	9	56	1	23	156
Aeromonas species	0	0	3	2	0	0	0	0	5
Campylobacter species	0	0	44	0	0	0	0	0	44
E. coli (EPEC)	0	1	0	1	0	0	0	0	2
Plesiomonas species	0	0	0	0	0	0	0	0	0
Vibrio species	0	0	0	0	0	1	0	0	1
Yersinia species	0	3	3	18	0	0	0	0	24
Total	10	236	315	261	114	163	23	78	1200

Table 2. Case rates per 100,000 of *Salmonella* infection acquired in Australia and total reports, selected quarters, by State or Territory

	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total reports
3rd quarter 1994	2.0	2.8	4.0	5.9	5.8	4.8	3.6	26.9	757
3rd quarter 1993	4.4	2.7	2.2	7.7	4.1	7.7	4.1	49.1	704
2nd quarter 1994	5.1	4.7	4.7	14.2	6.0	10.4	5.5	52.1	1305
3rd quarter 1992	3.6	2.9	3.1	6.4	4.5	8.5	2.3	24.5	681
3rd quarter 1991	2.8	4.0	3.9	7.2	5.4	7.8	11.2	34.9	840
3rd quarter 1990	2.8	4.2	2.9	7.8	5.4	6.7	3.9	41.3	801
3rd quarter 1989	5.6	3.2	4.0	7.4	4.2	7.5	2.1	52.3	800

except New South Wales (Table 2). The figures for Queensland and Western Australia were the lowest recorded for the third quarter for at least the past six years.

Infections acquired overseas

Salmonella Enteritidis was once more the most common *Salmonella* notified from travellers returning from overseas. Forty two cases of *S.* Enteritidis were reported acquired overseas; 30 of these were of PT 4 acquired mostly in South-east Asia (Bali, Hong Kong, Singapore, Malaysia and Thailand) with one case from Poland. Other overseas acquired serovars included *S.* Hadar (8 cases), *S.* Agona and *S.* Virchow (6 cases). *Sh. sonnei* biotype a (8 cases) and biotype g (6 cases) were the most common shigellas acquired overseas.

The cases acquired overseas are listed below. They include migrants and refugees and exclude typhoid and paratyphoid.

ASIA

China: *S.* Enteritidis PT 1, *S.* Hadar, *S.* Thompson, *Sh. flexneri* 4.
Hong Kong: *S.* Newport, *S.* London (2), *S.* Saintpaul, *S.* Typhimurium PT 22, *S.* Virchow
India: *S.* Cerro, *S.* Saintpaul H_2S neg, *S.* Virchow, *S.* Worthington, *Sh. flexneri* 2b, *Sh. sonnei* and *Sh. sonnei* biotype g.
Indonesia: *S.* Agona, *S.* Blockley, *S.* Enteritidis PT 7, *S.* Heidelberg, *Sh. boydii* 1, *Sh. boydii* 4, *Sh. sonnei* biotype g.
Bali: *C. jejuni* subspecies *jejuni*, *S.* Agona (2), *S.* Albany, *S.* Amsterdam var 15+, *S.* Blockley, *S.* Enteritidis PT 1, PT 4 (17), *S.* Hadar (3), *S.* Heidelberg, *S.* Stanley, *S.* Typhimurium PT 135, *S.* Weltevreden, *Sh. sonnei* biotype a (3), *Y. enterocolitica* O:3 Bio 4.
Japan: *S.* Thompson.
Korea: *S.* Muenchen.
Malaysia: *S.* Enteritidis PT 4 (3), *S.* Enteritidis PT 7, *S.* Haardt, *S.* Virchow.
Myanmar: *Sh. sonnei.*
Pakistan: *S.* Albany, *S.* Saintpaul, *Sh. sonnei* biotype g.
Singapore: *S.* Blockley, *S.* Enteritidis PT 4 (2), PT 34 and RDNC.
Thailand: *S.* Agona, *S.* Blockley, *S.* Enteritidis PT 4, *S.* Hadar (2), *S.* Ohio, *S.* Paratyphi B biovar Java 3b var, *S.* Typhimurium untypable.
Vietnam: *S.* Enteritidis PT 1, *S.* Rissen, *Sh. flexneri* 2a, *Sh. sonnei* biotypes a and g.
Unspecified: *S.* Enteritidis PT 4 (3), *S.* Hadar (2).

AFRICA

Ethiopia: *C. jejuni* subspecies *jejuni.*
Unspecified: *S.* Hull, *S.* Virchow, *Sh. boydii* 2.

EUROPE

Britain: *S.* Virchow.
Estonia: *Sh. sonnei* biotype g.
Greece: *Sh. sonnei* biotype f.
Poland: *S.* Enteritidis PT 4.
Spain: *S.* Enteritidis PT 6a.

PACIFIC

Noumea: *S.* Typhimurium PT 141.
Papua New Guinea: *Sh. flexneri* 2a.
Solomon Islands: *S.* Mississippi.
Western Samoa: *Sh. sonnei* biotype a.

AMERICAS

USA: *S.* Typhimurium PT 68.

UNSPECIFIED COUNTRIES

S. Agona (2), *S.* Anatum, *S.* Bovismorbificans untypable, *S.* Enteritidis PT 4 (3), *S.* Enteritidis RDNC (3), *S.* Rissen, *S.* Zanzibar, *Sh. boydii* 2, *Sh. flexneri* 2a, *Sh. sonnei* (3) and *Sh. sonnei* biotypes a (2) and g.

Typhoid and paratyphoid cases

There were 10 reports of *S.* Typhi (9 cases and one carrier), 7 reports of *S.* Paratyphi A and 2 reports of *S.* Paratyphi B during the quarter (Table 3).

There were 21 cases of *S.* Paratyphi B biovar Java reported during this quarter. There were 12 cases of phage type Battersea notified; six were from South Australia, all from Adelaide (2 adults, 2 children, 1 teenager, 1 age not stated), two from the Northern Territory and two from the same family from Western Australia. There were two cases of 3b var with one case acquired in Thailand, one case of 3b var 9 and single cases of phage types Dundee (F/29 Tas, no travel), Jersey var (F/2 NT) RDNC and untypable.

Table 3. Typhoid and paratyphoid cases, third quarter 1994

(Vi)-phage type	Sex/age (years)	State or Territory	Notes
S. Typhi			
D2	M/36	WA	Aquired in Indonesia
D2	F/20	NT	UK traveller in Darwin and Hobart
D6	M/23	Vic	Travel in Bali
E2	F/3	NSW	Recently arrived from Nigeria
degraded	F/9	Qld	Holiday in the Philipines
untypable	M/26	NSW	Carrier, left Vietnam 4 years ago
untypable	M/37	NSW	Travel in Pakistan
untypable	M/8	NSW	Cambodian immigrant
untypable	F/6	NSW	Sister of above
untypable	M/44	NT	Recent travel through Suatra
S. Paratyphi A			
1	F/44	Vic	Visited Thailand and Nepal
1	M/36	NSW	Travel in Indonesia
1	F/19	Vic	Visited Thailand
1	M/24	NSW	Visited Thailand
1	M/24	WA	Travel in Indonesia
9	M/21	Vic	Traveller from Indonesia
RDNC	M/22	NSW	Overseas travel
S. Paratyphi B			
1 var 3	F/28	SA	No travel
RDNC	F/65	NSW	Previous isolate 3a var

Isolations from blood, urine and unusual sites

There were 18 reports of bacteraemia, 15 reports of urine isolates and 5 reports of isolates from unusual sites (Table 4).

Shigella infections

There was a total of 156 reports of *Shigella* infections received for this quarter. Of these, six were follow-up specimens, one was from a migrant and 29 were from travellers returning from overseas, leaving a total of 120 cases reported as acquired in Australia (Table 5).

Shigella infections acquired overseas include *Sh. boydii* 1 and 4 (Indonesia), *Sh. boydii* 2 (Africa), *Sh. flexneri* 2a (Papua New Guinea, Vietnam), *Sh. flexneri* 2b (India), *Sh. flexneri* 4 (China), *Sh. sonnei* (India), *Sh. sonnei* biotype a (Vietnam, Bali (3), Western Samoa), *Sh. sonnei* biotype f (Greece) and *Sh. sonnei* biotype g (Vietnam, Indonesia, India, Pakistan and Estonia).

Top ten *Salmonella* serovars

Of the 1200 Australian acquired cases of *Salmonella* infection, 514 (67%) were isolates from the top 10 serovars (Table 6).

The most common serovar was *S.* Typhimurium with 285 cases from 28 phage types of which the two most common were phage types 135 (63 cases) and 9 (37 cases). *S.* Paratyphi B biovar Java remained in the top ten due in part to further cases of phage type Battersea in South Australia. *S.* Enteritidis also remains in the top ten and of the 22 isolates thirteen were of PT 4 (three cases from each of Victoria, New South Wales, South Australia and Western Australia.

The top 5 phage types accounted for 64% of Australian acquired cases of *S.* Typhimurium (Table 7).

Suspected or confirmed outbreaks

New South Wales

A further 11 cases of *S.* subspecies I ser 16:l,v:- were reported from Sydney and outlying regions. This is a continuation of the outbreak reported in the second quarter of 1994.

South Australia

Twelve cases of *S.* Bovismorbificans PT 13 were reported early in September following a wine and food festival in the Barossa Valley. Regionally produced mettwurst and beerstick were suspected but were no longer available for testing by the time the outbreak was followed up.

Victoria

Sixteen cases of *S.* Typhimurium PT 135 were reported from Melbourne in late August and early September. A further eight cases of *S.* subspecies I ser 16:l,v:- were reported, as were three cases of *S.* Birkenhead, all in adults, over three days in late September.

Table 4. Isolations from blood, urine and unusual sites, third quarter 1994

Organism	Sex/age (years)	State or Territory	Organism	Sex/age (years)	State or Territory
Bacteraemias excluding enteric fever					
C. coli	F/70	Vic	*S.* Typhimurium PT 44	M/69	Vic
C. jejuni subsp *jejuni*	F/ns[1]	Vic	*S.* Typhimurium PT 135	F/68	Vic
S. Agona	F/6	NSW	*S.* Typhimurium PT 135	M/23	Vic
S. Dublin	F/<1	Vic	*S.* Typhimurium PT 135	M/60	SA
S. Enteritidis PT 4	F/45[2]	SA	*S.* Typhimurium PT 141	M/39	Vic
S. Ohio	M/40	Qld	*S.* Typhimurium RDNC	M/72	Vic
S. Typhimurium PT4	M/77	Qld	*S.* Virchow	F/41[2]	Vic
S. Typhimurium PT 22	M/39[2]	Vic	*S.* Waycross	F/74	Qld
S. Typhimurium PT 41	M/<1	SA	*Sh. flexneri* 2a	F/66	Qld
Urine Isolates					
S. Agona	F/6	Vic	*S.* Typhimurium PT9	F/ns[1]	NSW
S. Infantis	M/43	Vic	*S.* Typhimurium PT RNDC	F/31	NSW
S. Javiana	F/21	Qld	*S.* Urbana	M/1	NT
S. Kottbus	F/62	SA	*S.* Virchow	M/30	Qld
S. Mississippi	M/62	NSW	*S.* Virchow	F/19	Qld
S. Oranienburg	M/26	NSW	*S.* Waycross	F/17	NSW
S. Senftenberg	F/ns[1]	Vic	*Sh. flexneri* 2a	F/19	WA
S. Typhimurium PT 135	F/1	Vic			
Usual site isolates			Site		
S. Enteritidis RDNC	M/34[3]	Qld	colonic contents after sudden death		
S. Paratyphi A1	F/44	Vic	breast aspirate, overseas travel		
S. Typhimurium PT9	M/54	Vic	anal abscess		
S. Typhimurium RDNC	M/72	NSW	unspecified wound swab		
S. subsp I ser 16:1,v:	M/2	NSW	navicular swab		

1. ns = not specified
2. Acquired overseas (F.45 ex Bali; M/39 Hong Kong and Singapore; F/41 Malaysia)
3. Travelled in Singapore

Table 5. Cases of *Shigella* infection acquired in Australia, third quarter 1994, by State or Territory

Organism	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total
Sh. boydii 1	0	0	1	0	0	4	1	0	6
Sh. flexeri 1a	0	0	0	0	1	0	0	0	1
Sh. flexneri 1b	0	4	1	0	0	0	0	0	5
Sh. flexneri 2	0	0	0	1	0	8	0	0	9
Sh. flexneri 2a	0	2	0	12	2	0	0	10	26
Sh. flexneri 3	0	0	0	1	0	0	0	0	1
Sh. flexneri 3c	0	2	0	0	0	0	0	0	2
Sh. flexneri 4a	0	1	0	0	0	0	0	0	1
Sh. flexneri 6	0	0	0	0	1	2	0	0	3
Sh. flexneri untypable	0	0	0	0	0	0	0	1	1
Sh. sonnei	0	3	0	3	0	35	0	0	41
Sh. sonnei biotype a	0	0	1	4	4	0	0	11	20
Sh. sonnei biotype g	0	1	2	1	0	0	0	0	4
Total	0	13	5	22	8	49	1	22	120

Table 6. Top ten *Salmonella* serovars

	Position this quarter	Position in 2nd quarter 1994	Cases	% of total	rigin and number of cases
S. Typhimurium[1]	1	1	285	37.5	Vic 111, NSW 68, SA 45
S. subsp I ser 16:l,v:-[1]	2	2	37	4.9	NSW 11, Vic 9, Qld 9
S. Virchow	3	4	32	4.2	Qld 24, NSW 6
S. Bovismorbificans	4	10	30	3.9	SA 12, NSW 7, WA 5
S. Saintpaul	5	3	27	3.6	Qld 12, NT 6, NSW 5
S. Enteritidis	6	7	22	2.9	Qld 6, NSW 5, Vic 5
S. Para B bv Java	7	-	20	2.6	SA 6, NSW 3, Vic 3, WA 3, WA 3, NT 3
S. Infantis	8	-	18	2.4	NSW 6, Vic 3, NT 3
S. Birkenhead	9	9	15	2.0	Qld 7, NSW 57
S. Agona	10	-	14	1.8	NSW 5, Vic 5
S. Hadar	10	-	14	1.8	NSW 5, Vic 4, WA 3
Total			514	67.6	

1. Associated with outbreaks or incidents.

Table 7. Top five phage types of *S.* Typhimurium

Phage type	Position this quarter	Position in 2nd quarter 1994	Cases	% of total	Origin and number of cases
135	1	2	63	22.1	Vic 32, NSW 14
9	2	1	37	13.0	Vic 19, Qld 7
44	3	4	34	11.9	Vic 16, SA 13
170	4	3	16	5.6	NSW 9, Vic 7
12a	5	5	11	3.8	SA 4, NSW , WA & Tas (2)
64	5	-	11	3.8	NSW 7, Qld 4
8	5	-	11	3.8	NSW 5, Vic 4
Total			183	64.0	

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization, the Program for Monitoring Emerging Diseases and the Department of Health of the Republic of Vanuatu.

Ebola virus outbreak in Zaire

A number of additional cases of Ebola virus have been reported since the beginning of June although the acute phase of the outbreak is over.

On 21 June the total number of new and retrospectively detected cases was 289. Of the 286 cases with known outcome, 228 (80%) have died. In addition to Kikwit where most cases have occurred cases have also been detected in 20 villages in the Kwilu Sub-region of the Bandandu Region. None of these represent new foci and all could be traced back to cases in the initial outbreak. The emphasis is now on preventing the infection of household contacts of Ebola cases and ensuring that hospitalised patients receive proper care under conditions which are safe for the hospital staff and other patients. Reports of possible cases and contacts of known cases continue to be followed up. It is expected that small numbers of new cases will continue to occur in the coming weeks. Studies are also underway to identify the virus vector and reservoirs.

Typhoid in Vanuatu

Typhoid was confirmed in a 16 year old male from Vanuatu who was evacuated to New Zealand on 31 May. On 9 June the Health Department of Vanuatu confirmed another suspected case who was hospitalised in the capital, Port Vila. Both cases originate from a remote village on the island of Tanna. A medical team

visited the affected area and investigations of other possible cases and the source of infection are underway.

CDI NOTICE TO READERS

CDI reader survey

Communicable Diseases Intelligence (*CDI*) has been disseminating information on communicable disease activity in Australia to interested persons since 1977. It has included data from a range of surveillance systems and articles and other information which have been relevant to communicable disease control.

Priorities for information on communicable disease activity vary, with changing epidemiology of the diseases and changing priorities and strategies for control. To ensure that *CDI* continues to make a useful contribution to national information needs, we are seeking details as to who reads and uses *CDI*, your views on what *CDI* publishes now and what it could publish in the future.

A survey form will be included in next fortnight's issue of *CDI*. Please complete and return it by **31 July 1995**. An enclosed reply-paid envelope will be able to be used if you are in Australia. If you are overseas, please fax your completed form to +61 6 289 7791, or post it, preferably by air mail, to the address on the front of *CDI*.

We will publish the results in *CDI* later this year, and use them to determine our future directions and priorities. If you have any questions on the survey or on any other aspect of *CDI*, we can be contacted on (06) 289 8606 (Helen Longbottom, Editor) or (06) 289 7808 (Jenny Hargreaves, Deputy Editor).

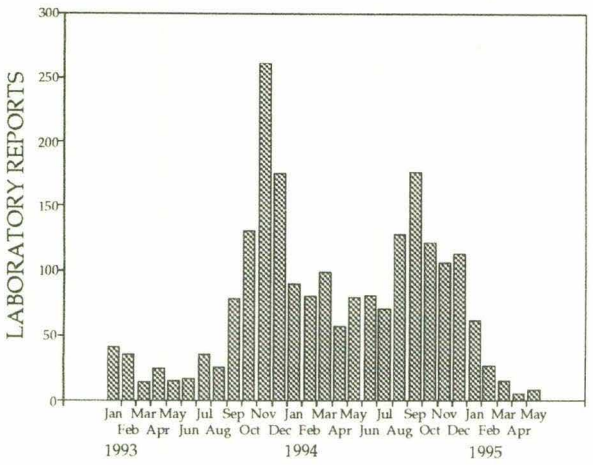
COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1310 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 6, 7 and 8).

- One report of **measles** was received for a male in the 5 to 14 year age group. The number of reports received has continued to decline in recent months (Figure 1).
- Six reports of **hepatitis A** were received this period. Included were 2 males and 2 females (2 sex not stated) all in the one to 44 year age group.
- Positive **hepatitis B** serology was reported for 78 patients this fortnight, 40 males and 38 females. Forty seven patients were in the 25 to 44 year age group, and 20 in the 15 to 24 year age group.
- One hundred and eighteen reports of positive **hepatitis C** serology were received this period. Included were 85 males and 31 females (2 sex not stated). Ninety one reports were for the 25 to 44 year age group. Included was one injecting drug user.
- **Ross River virus** was reported for 3 patients this fortnight, all diagnosed by IgM detection. The number of reports for the month of May was average for the time of year following below average figures earlier in 1995 (Figure 2).
- A report of **dengue 3** was received for a 28 year old male with fever and anaemia who had recently returned from the Cook Islands
- Fifty-one reports of **adenovirus** were received this fortnight diagnosed by virus isolation (40), antigen detection (7) and serology (4). Included were 3 adenovirus **type 1** (2 males and one female age range 11 months to 3 years, all nasopharyngeal isolates), 8 **type 3** (7 males and one female, age range 4 months to 55 years) and 2 **type 8** (eye isolates from a 42 year old male and a 55 year old female, both from Victoria).
- **Herpes simplex virus type 1** was reported for 122 patients this fortnight. Diagnosis was by virus isolation (117) and antigen detection (5).
- One hundred and seventy reports of **herpes simplex virus type 2** were received, diagnosed by virus isolation (168) and antigen detection (2).
- Fifty-nine reports of **cytomegalovirus** were received this period for 27 males and 30 females (2 sex not stated), 19 of whom were under the age of one year. Diagnosis was by virus isolation (41), antigen detection (one), fourfold rise in titre (16) and single high titre (one).
- **Varicella-zoster virus** was reported for 30 patients this period. The number of reports received has fallen in recent months (Figure 3). Method of diagnosis included virus isolation (19), antigen detection (9), fourfold rise in titre (one) and single high titre (one).

Figure 1. Measles laboratory reports, 1993 to 1995, by month of specimen collection



- Positive **parvovirus** serology was reported this fortnight for 2 females aged 29 and 38 years. The number of reports has fallen in recent months after peaking in the summer.
- A report of **coxsackievirus B3** was received for a 20 year old neutropaenic female from Tasmania.
- **Echovirus type 18** was isolated from the nasopharynx of a 2 year old South Australian female.
- **Echovirus type 31** was isolated from the CSF of an 8 month old South Australian male with meningitis.
- Three reports of **enterovirus type 71** isolation (2 skin, one nasopharynx) were received this period for 2 males aged 3 months and 2 years and a 2 month old female, all from Victoria. A total of 15 reports has been received so far for 1995 which is high for the time of year.
- **Rhinovirus** was reported for 31 patients this period, seventeen of whom were in the one to 11 months age group. The number of reports is average for the time of year.
- **Influenza A** was reported for 59 patients this fortnight from, New South Wales (11), Queensland (3), South Australia (12), Victoria (19) and Western Australia (14). Included were 3 of sub type H_1N_1 and 2 of sub type H_3N_2. Twenty reports were for patients under the age of 4 years and 12 were in the 5 to 14 year age group. Method of diagnosis included virus isolation (26, specimen collection dates early May to mid June), antigen detection (16), fourfold rise in titre (5) and single high titre (12). A total of 211 reports has been received so far this year for 122 males and 86 females (3 sex not stated). Eighty reports were for children under the age of 5 years. The number of reports received remains high for the time of year.
- Eleven reports of **influenza B** were received this period from New South Wales (2), South Australia (2), Tasmania (1), Victoria (4) and Western Australia (2). Included were 6 males and 5 females. Diagnosis was by virus isolation (5, specimen collection dates early May to mid June), antigen detection (2), fourfold rise in titre (2) and single high titre (2). A total of 46 reports has been received so far this year, 16 for patients in the 25 to 44 year age group.
- Seventeen reports of **parainfluenza virus type 2** were received this period, 5 for patients under the age of 12 months. Method of diagnosis included virus isolation (15) and antigen detection (2). This has been the most commonly reported parainfluenza virus type in recent months (Figure 4).
- **Parainfluenza virus type 3** was reported for 20 patients this fortnight, all but 2 under the age of 4 years. Diagnosis was by virus isolation (15) and antigen detection (5).
- Two hundred and sixty eight reports of **respiratory syncytial virus (RSV)** were received this fortnight, 185 for patients under one year of age and 77 in the

Figure 2. Ross River virus laboratory reports, 1990 to 1994 average and 1995 , by month of specimen collection

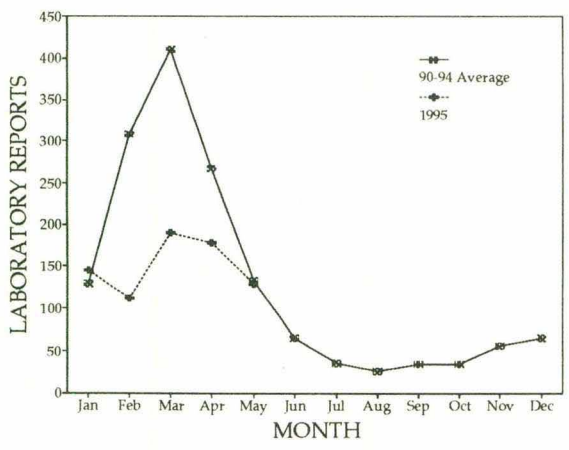


Figure 3. Varicella-zoster laboratory reports, 1993 to 1995, by method and month of specimen collection

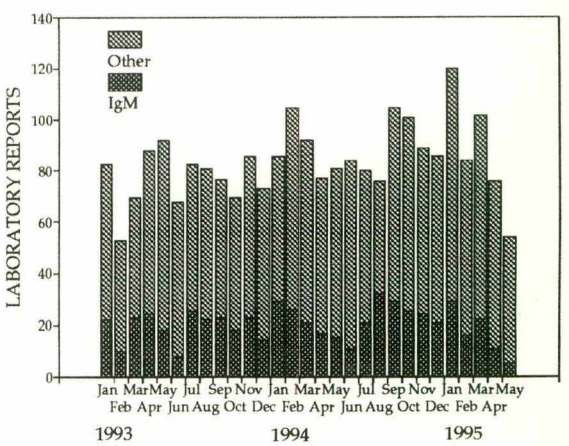


Figure 4. Parainfluenza virus laboratory reports, 1994 to 1995, by type and month of specimen collection

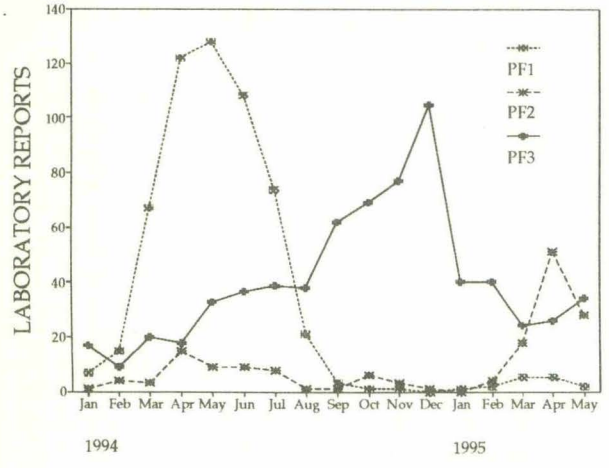
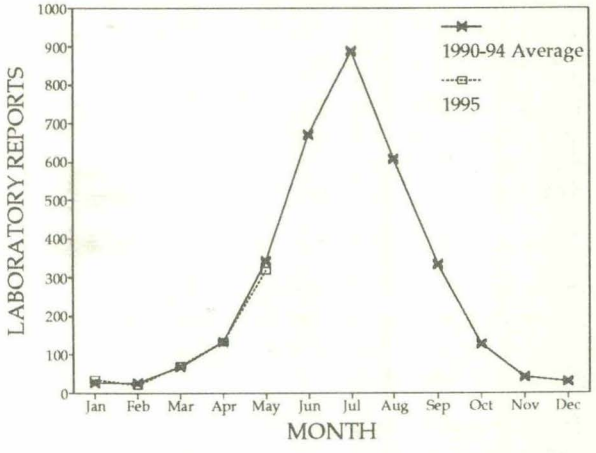


Figure 5. Respiratory syncytial virus laboratory reports, 1990 to 1994 average and 1995, by month of specimen collection



one to 4 year age group. Included was an 11 month old female with suspected pertussis. Method of diagnosis included virus isolation (79), antigen detection (186) and single high titre (3). The number of reports is average for the time of year (Figure 5).

- **Rotavirus** was reported for 32 patients this period including 16 males and 15 females (one sex not stated). Thirty one cases were 4 years of age or under.
- Forty seven reports of ***Chlamydia trachomatis*** were received this fortnight for 11 males and 35 females (one sex not stated). Thirty three patients were in the 15 to 24 year age group and 12 in the 25 to 44 year age group. Diagnosis was by isolation (31), antigen detection (14) and nucleic acid detection (2).
- ***Bordetella pertussis*** was reported for 13 patients this fortnight. Included were 6 males and 7 females, age range one month to 74 years. The number of reports has continued to decline after peaking in February.

Australian Sentinel Practice Research Network

Data for week 22 (ending 4 June) and week 23 (ending 11 June) are included in this issue of *CDI* (Table 1).

There were 7,328 consultations reported for week 22 and 7,230 for week 23. The influenza reporting rate continued to rise this fortnight, with marked increases in South Australia and Queensland. Reports of gastroenteritis have markedly declined for this fortnight.

National Influenza Surveillance 1995

Australian Capital Territory Department of Health; 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 and Community Services; South Australian Health Commision; World Health Organization (WHO) Collaborating Centre for Influenza Reference and Research, Melbourne

The rate of influenza reporting has continued to rise in the last fortnight. All sentinel practioner schemes reported an increase in the rate of consultation for influenza like illness and absenteeism rates have continued to rise.

Sentinel general practitioner surveillance (Figure 6)

- The **Australian Sentinel Practice Research Network** reported data for weeks 22 (ending 4 June, 20.9 reports per 1000 encounters) and 23 (ending 11 June, 24.6 reports per 1000 encounters). Overall the influenza reporting rate rose this fortnight, with

Table 1. Australian Sentinel Practice Research Network, weeks 22 and 23, 1995

Condition	Week 22, to 4 June 1995		Week 23, to 11 June 1995	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	153	20.9	178	24.6
Rubella	2	0.3	2	0.3
Measles	1	0.1	0	0
Chickenpox	7	1.0	8	0.1
Pertussis	0	0	0	0
Gastroenteritis	57	7.8	67	9.3

increases observed in South Australia, Victoria, and Queensland.

- **New South Wales** sentinel general practitioners reported rates of 41.67 and 50.84 per 1000 consultations for the weeks ending 28 May and 11 June respectively. The consultation rate has continued to rise since April.
- **The Australian Capital Territory Sentinel General Practitioner Sheme** reported consultation rates for influenza like illness of 19, 33 and 22 per 1000 encounters for weeks ending 4, 11 and 18 June.

Absenteeism surveillance (Figure 7)

- **New South Wales Schools Absenteeism Surveillance** reported absenteeism rates of 6.1% and 11.6% respectively for the last two weeks, higher than in previous fortnights.
- The **Australian Capital Territory Schools Absenteeism Surveillance** reported absenteeism rates of 6.4% on 13 June and 7.2% on 20 June.

Laboratory surveillance

- **Influenza A** was reported for 59 patients this fortnight from the New South Wales (11), Queensland (3), South Australia (12), Victoria (19) and Western Australia (14). Included were 3 of sub type H_1N_1 and 2 of sub type H_3N_2. Twenty reports were for patients under the age of 4 years and 12 were in the 5 to 14 year age group. Method of diagnosis included virus isolation (26, specimen collection dates early May to mid June), antigen detection (16), fourfold rise in titre (5) and single high titre (12). A total of 211 reports has been received so far this year for 122 males and 86 females (3 sex not stated). Eighty reports were for children under the age of 5 years. The number of reports received remains high (Figure 8).
- Eleven reports of **influenza B** were received this period from New South Wales (2), South Australia (2), Tasmania (one), Victoria (4) and Western Australia (2). Included were 6 males and 5 females. Diagnosis was by virus isolation (5, specimen collection dates early May to mid June), antigen detection (2), fourfold rise in titre (2) and single high titre (2). A total of 46 reports has been received so far this year, 16 for patients in the 25 to 44 year age group (Figure 9).
- **WHO Collaborating Centre for Influenza Reference and Research report :** Detailed antigenic analysis has been completed for 70 influenza A isolates and six influenza B isolates from throughout Australia. All but one of the influenza A strains are H1 subtype viruses. The majority of these viruses show minor antigenic drift from the A/Texas/36/91 vaccine strain and continue to react well with A/Texas antisera. The single influenza A H_3 subtype virus from South Australia was characterised as A/Guangdong/25/93-like. All of the Australian influenza B isolates have been confirmed as B/Beijing/184/93-like.

  Influenza B viruses received from recent outbreaks in New Zealand appear to be B/Beijing/184/93-like on preliminary analysis.

Deaths surveillance (Figure 10)

- **Victorian total deaths surveillance** reported 1423 deaths for the fortnight 22 May to 2 June 1995, a death rate of 3.2 per 10,000 population. The death rate has risen slightly since early May.
- **South Australia total deaths surveillance** reported death rates of 1.7 and 2.0 per 10,000 population for the weeks ending 4 and 11 June respectively. The death rate has risen since mid May after falling earlier in the season.

Other surveillance

- **Victorian hospital admissions surveillance** reported 35 admissions for influenza and/or pneumonia from participating hospitals for the fortnight 22 May to 2 June 1995, an admission rate of 0.9 per 100 patients admitted and an increase in the rate reported the previous fortnight.

Figure 6. Sentinel general practitioner influenza reports per 1000 encounters, by week and scheme

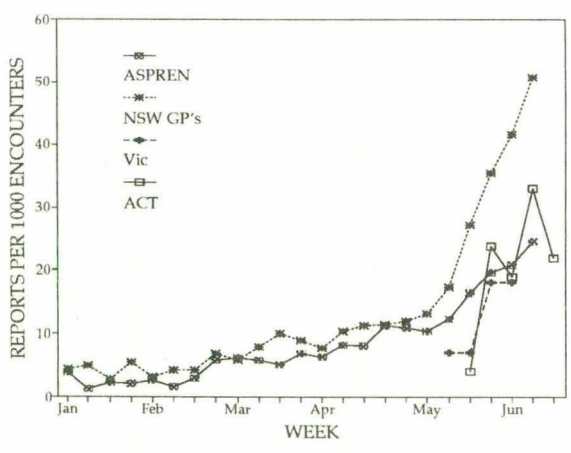


Figure 7. Absenteeism reports, 1995, by week and scheme

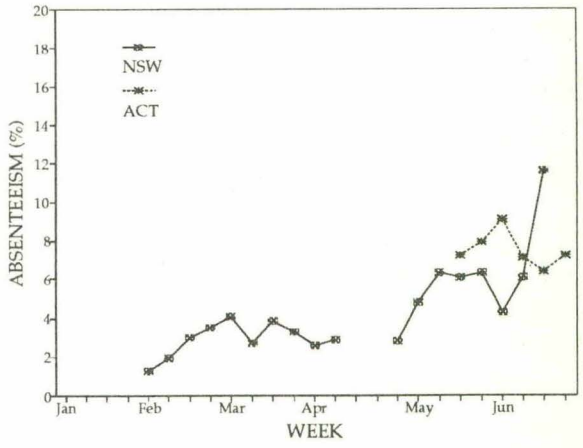


Figure 8. Influenza A laboratory reports, 1995, by method of diagnosis and week of specimen collection

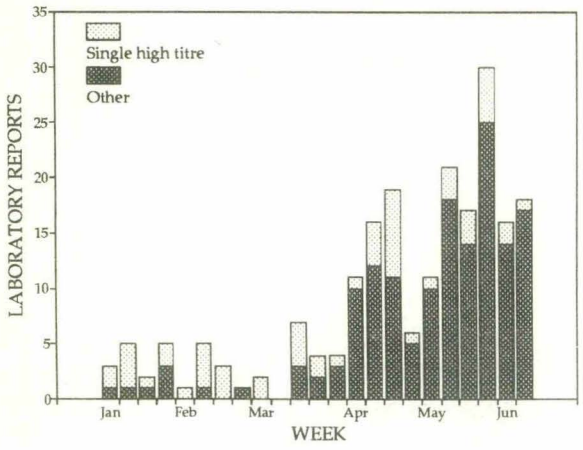


Figure 9. Influenza B laboratory reports, 1995, by method of diagnosis and week of specimen collection

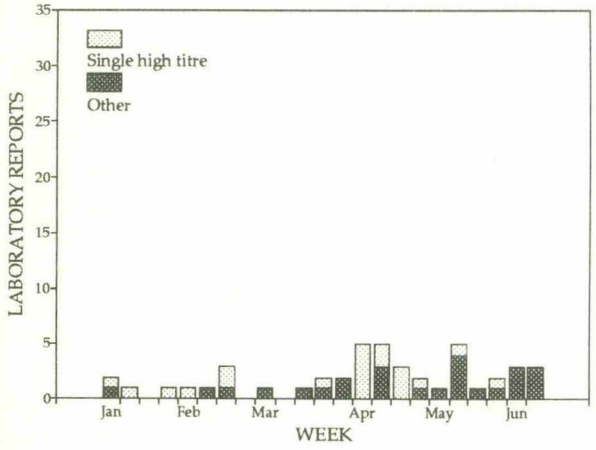
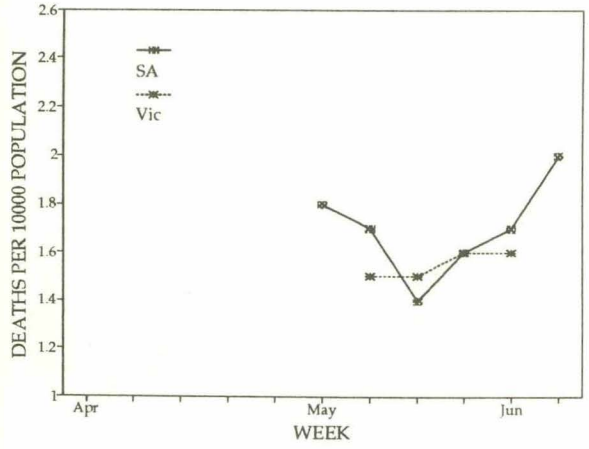


Figure 10 Total deaths surveillance, 1995, by week and State



Surveillance of serious adverse events following vaccination

It is estimated that 250,000 doses of vaccines are administered to Australian children under the age of 6 every month. Serious adverse events occur rarely following vaccination.

The Serious Adverse Events Following Vaccination Surveillance Scheme is a national surveillance scheme initiated through the National Childhood Immunisation Committee to record these events. A case of a serious adverse event following vaccination, based on the *Australian immunisation procedures handbook, fifth edition*, is defined as:

The occurrence of one or more of the following conditions within 48 hours of the administration of a vaccine:

1. persistent screaming for more than three hours
2. a temperature of 40.5°C or more, unexplained by any other cause
3. anaphylaxis
4. shock
5. hypotonic/hyporesponsive episode, or

The occurrence of one or more of the following conditions within 30 days of the administration of a vaccine:

6. encephalopathy
7. convulsions
8. aseptic meningitis
9. thrombocytopaenia
10. acute flaccid paralysis
11. death
12. other serious event thought to be associated with a vaccination.

Acceptance of a report does not imply a causal relationship between the administration of the vaccine and the medical outcome or that the report has been verified as to the accuracy of its contents.

Results for the reporting period 14 May 1995 to 10 June 1995

There were 11 reports of serious adverse events following vaccination for the reporting period 14 May to 10 June 1995. Reports were for episodes which occurred between January and May 1995. Reports have been received from the Australian Capital Territory (6), the Northern Territory (2), Queensland (1), Tasmania (1) and Victoria (1). New South Wales, South Australia and Western Australia have not yet commenced reporting.

Of the 11 reports, 3 were cases of persistent screaming, 2 of hypotonic/hyporesponsive episodes , 2 of fever over 40.5°C and 4 were other events temporally associated with vaccination (Table 1). Of the 5 'other' cases one was a report of a severe local reaction at the site of

Table 2. Adverse events following vaccination for the period 14 May 1995 to 10 June 1995

Event	Vaccines			Reporting States or Territories	Total reports for this period
	DTP	DTP/OPV/HIB	MMR		
Persistent screaming	3			ACT, Qld	3
Hypotonic/hyporesponsive episode		2		ACT, Vic	2
Fever over 40.5°C	1	1		ACT, NT	2
Other	2	2		ACT, Tas	4
Total	6	5			11

DTP injection, one a report of a possible convulsion, one a child who became pale and floppy 3 hours after vaccination and one a child with fever and probable rigors. All events were associated with DTP vaccine or occurred after the child received DTP, OPV and Hib vaccines simultaneously. One child was hospitalised following a hypotonic/hyporesponsive episode.

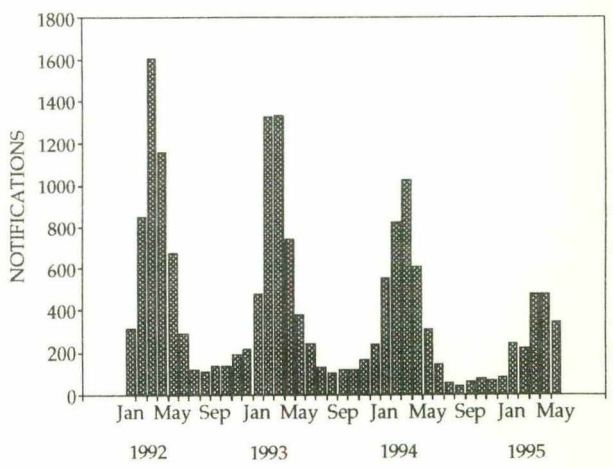
Reactions associated with DTP or DTP, OPV and Hib vaccines occurred with the first dose (3), second dose (4), third dose (2), fourth dose (1) and fifth dose (1). All children had recovered from the event at the time the initial report was sent in.

National Notifiable Diseases Surveillance System, 28 May 1995 to 10 June 1995

There were 2101 notification received in the period (Tables 3, 4 and 5 and Figures 11 and 12). Incomplete data were available from Tasmania and data on sexually transmitted diseases were not available from Victoria.

- There were 231 notifications of **Ross River virus** infection; 107 cases were male and 121 cases were female. The cases were aged between the 5-9 and the 80-84 years age groups. Recorded onset dates were March (3), April (31), May (192), and June (5).
- There were 378 reports of **campylobacteriosis**; 181 cases were male, 192 were female, and the sex of 5 was not recorded. Cases were aged between the 0-4 and the 85-89 years age groups. Twenty-six percent of cases were aged less than 5 years.
- Eighty-two reports of **gonococcal infection** were received; 56 cases were male and 26 were female. Recorded ages were between the 10-14 and the 50-54 years age groups.
- There were 3 reports of ***Haemophilus influenzae* type b** infection; one case was male and 2 cases were female. The cases were aged less than one year, 4 years, and 5 years.
- Ten incident notifications of **hepatitis B** were received; 9 cases were male and one was female. Recorded ages were between the 0-4 and the 40-44 years age groups with 5 being in the 25-29 years age group.
- There were 4 incident cases of **hepatitis C** reported. All cases were male and recorded ages were between the 20-24 and the 35-39 years age groups.
- There were two notifications of **hydatid infection**. Both cases were females in the 40-44 years age group.
- Ten notifications of **legionellosis** were received; 8 cases were male and 2 were female. Recorded ages were between the 15-19 and the 80-74 years age groups.
- A single notification of **leprosy** was received for a male in the 35-39 years age group resident in the Northern Territory.
- There were 3 notifications of **leptospirosis**; 2 cases were male and one was female. Recorded ages were between the 15-19 and the 20-24 years age groups.
- There were 2 reports of **listeriosis**. Both cases were male and they were in the 35-39 and the 60-64 years age groups respectively.
- Fifty-two cases of **malaria** were reported; 36 cases were male and 15 were female. Recorded ages

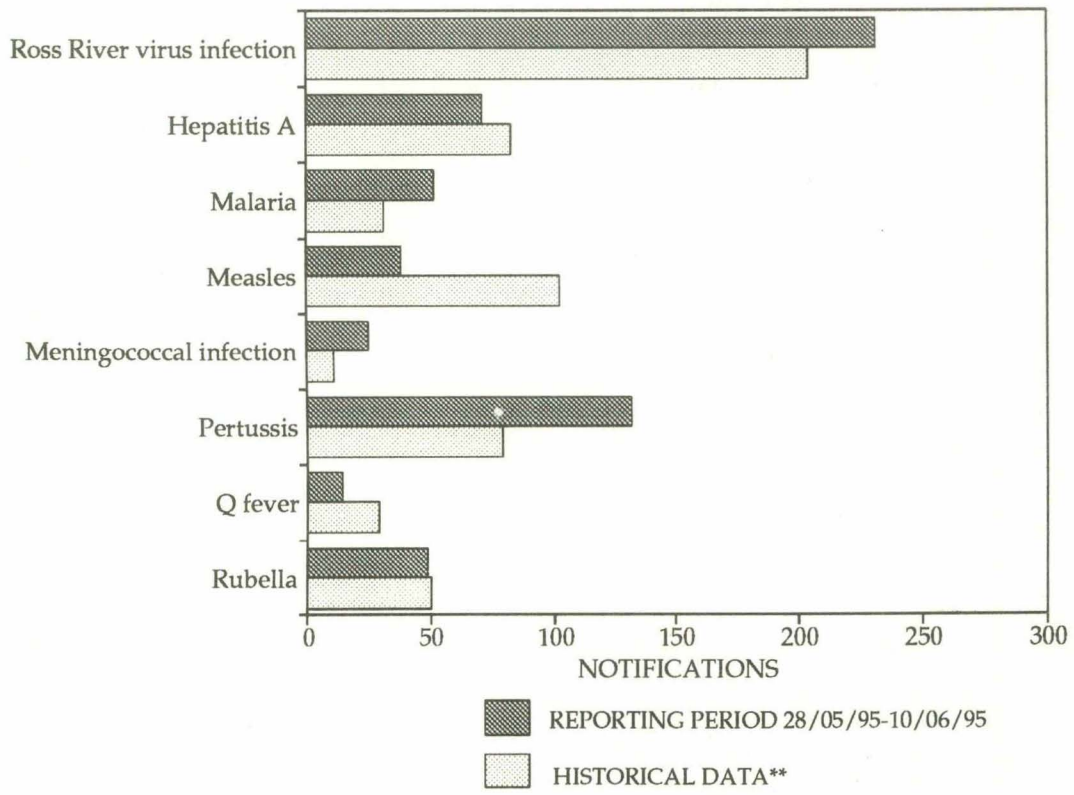
Figure 11. Ross River virus infections 1992-1995, by month of onset



were between the 10-14 and the 65-69 years age groups.

- There were 38 cases of **measles;** 18 cases were male and 20 were female. Cases were aged between the 0-4 and the 30-34 years age groups. There were 2 apparent clusters of 2 cases each in the same post-code areas in New South Wales and Queensland.
- Twenty-five case of **meningococcal infection** were reported; 17 cases were male and 8 were female. Recorded ages were between the 0-4 and the 85-89 years age groups with 16 being aged less than 20 years and 5 aged less than one year. There was one apparent cluster of three cases in the same postcode area of Queensland with onset dates within a 10 day period.
- There were 132 cases of **pertussis** reported; 61 cases were male, 70 were female, and the sex of one was not recorded. The cases were aged between the 0-4 and the 80-84 years age groups with 4 cases being aged less than one year. There were 19 apparent clusters of between 2 and 8 cases each in the same postcode area. Apparent clusters were in New South Wales (11), the Australian Capital Territory (one), Queensland (5), and Western Australia (2).
- Fourteen notifications of **Q fever** were received; 12 cases were male and 2 were female. Recorded ages were between the 10-14 and the 55-59 years age groups.
- Forty-nine notifications of **rubella** were received; 33 cases were male and 16 were female. Recorded ages were between the 0-4 and the 50-54 years age groups with 9 being recorded for females in the 15-44 years age group.
- There were 209 cases of **salmonellosis** reported; 105 cases were male, 100 were female, and the sex of 4 cases was unrecorded. Cases were aged between the 0-4 and the 85-89 years age groups with 50% of cases in the 0-4 years age groups.
- Ninety-eight cases of **syphilis** were reported; 44 cases were male, 52 were female, and the sex of 2 was not recorded. The cases were aged between the 0-4 and the 70-74 years age groups with 5 cases aged less than one year.
- Eighteen cases of **tuberculosis** were reported; 10 cases were male and 8 were female. Recorded ages were between the 15-19 and the 90-94 years age groups.
- Eleven cases of **yersinoisis** were reported; 5 cases were male and 6 were female. Recorded ages were between the 10-14 and the 50-54 years age groups.

Figure 12. Selected National Notifiable Diseases Surveillance Systemreports, 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 3. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 28 May to 10 June 1995

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1] This period 1995	This period 1994	Year to date 1995	Year to date 1994
Diphtheria	0	0	0	0	0	0	0	0	0	0	1	23
Haemophilus influenzae b infection	0	1	1	0	0	0	1	0	13	13	38	95
Measles	0	27	0	8	0	1	1	1	166	166	793	1456
Mumps	1	0	1	NN	2	0	0	2	1	1	25	9
Pertussis	2	65	2	43	4	0	10	6	171	171	1930	2612
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella	4	7	1	23	0	0	8	6	43	43	984	729
Tetanus	0	0	0	0	0	0	0	0	0	0	2	6

1. Totals comprise data from all States and Territories. Cumulative figuresare 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.

NN Not Notifiable

Table 4. Notifications of other diseases[1] received by State and Territory health authorities in the period28 May to 10 June 1995

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1995	This period 1994	Year to date 1995	Year to date 1994
Arbovirus infection												
Ross River virus infection	0	22	2	184	0	-	2	21	231	163	1834	3437
Dengue	0	0	0	0	0	-	0	0	0	1	13	12
NEC[3]	0	16	0	38	0	1	3	0	58	33	545	384
Campylobacteriosis[4]	15	0	8	89	107	4	120	35	378	372	4628	4257
Chlamydial infection (NEC)[5]	2	NN	15	133	0	4	12	11	177	280	2759	2902
Donovanosis	0	NN	4	0	NN	0	0	0	4	6	43	54
Gonococcal infection[6]	0	21	8	43	0	0	0	10	82	121	1315	1391
Hepatitis A	2	14	3	41	1	0	8	2	71	78	783	900
Hepatitis B incident	0	3	1	2	0	1	3	0	10	15	156	159
Hepatitis C incident	-	4	0	-	0	-	-	-	4	0	48	6
Hepatitis C unspecified	11	-	17	146	0	0	154	33	361	353	3671	3880
Hepatitis (NEC)	0	0	0	1	-	0	1	NN	2	3	19	22
Legionellosis	0	3	0	1	0	0	4	2	10	7	100	106
Leptospirosis	0	0	0	2	0	0	1	0	3	3	55	85
Listeriosis	0	0	0	1	0	0	1	0	2	2	36	14
Malaria	1	46	0	1	0	0	3	1	52	16	287	350
Meningococcal infection	0	8	1	8	4	0	2	2	25	15	148	125
Ornithosis	0	NN	0	1	0	0	0	0	1	7	64	50
Q fever	0	5	0	7	0	0	2	0	14	35	191	306
Salmonellosis (NEC)	0	54	13	75	17	3	26	21	209	203	3513	3145
Shigellosis[4]	0	-	8	12	7	0	2	2	31	18	402	402
Syphilis	0	39	20	37	0	0	0	2	98	100	1029	1036
Tuberculosis	0	5	1	1	3	0	8	0	18	58	460	502
Typhoid[7]	0	0	0	0	0	0	0	0	0	1	22	22
Yersiniosis (NEC)[4]	0	0	0	9	1	0	1	0	11	22	173	231

1. For HIV and AIDS, see Tables 2 and 3 *CDI* 1995;19:297. For rarely notified diseases, see Table 5.
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. 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 5. Notifications of rare[1] diseases received by State and Territory health authorities in the period 28 May to 10 June 1995

DISEASES	Total this period	Reporting States or Territories	Year to date 1995
Botulism	0		0
Brucellosis	0		15
Chancroid	0		2
Cholera	0		0
Hydatid infection	2	NSW 1, Qld 1	13
Leprosy	1	NSW	3
Lymphogranuloma venereum	0		1
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1988 to 1993.

Table 6. Virology and serology laboratory reports by State or Territory[1] for the reporting period 1 to 14 June 1995, 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	21.2	249
Mumps virus					1		1		2	3.2	43
Rubella virus					2		1		3	19.2	495
HEPATITIS VIRUSES											
Hepatitis A virus		2			1		3		6	20.2	231
Hepatitis B virus		40		6	15		17		78	128.5	1,083
Hepatitis C virus		13			88	6	11		118	267.5	2,636
Hepatitis D virus					1				1	2.3	9
ARBOVIRUSES											
Ross River virus					1	2			3	67.7	850
Dengue type 2		1							1	20.0	1
Dengue type 3		1							1	.0	1
ADENOVIRUSES											
Adenovirus type 1					2		1		3	1.8	18
Adenovirus type 2					1				1	4.8	15
Adenovirus type 3					8				8	5.2	39
Adenovirus type 6					1				1	0	1
Adenovirus type 7					1				1	0.5	13
Adenovirus type 8							2		2	0.8	15
Adenovirus not typed/pending		3		9	15		4	4	35	55.3	429
OTHER DNA VIRUSES											
Parvovirus					1		1		2	1.8	58

Table 6. Virology and serology laboratory reports by State or Territory[1] for the reporting period 1 to 14 June 1995, historical data[2], and total reports for the year and total reports for the year, continued

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
PICORNA VIRUS FAMILY											
Coxsackievirus A9							1		1	1.0	2
Coxsackievirus B3						1			1	.5	21
Echovirus type 18					1				1	.2	1
Echovirus type 22							1		1	.5	3
Echovirus type 31					1				1	.0	1
Poliovirus type 3 (uncharacterised)					1				1	1.5	5
Rhinovirus (all types)		2		7	4		18		31	34.7	330
Enterovirus type 71 (BCR)							3		3	.0	15
Enterovirus not typed/pending		3		17			7		27	39.5	442
ORTHO/PARAMYXOVIRUSES											
Influenza A virus		11			12		17	14	54	11.3	212
Influenza A virus H_1N_1				3					3	.0	21
Influenza A virus H_3N_2							2		2	.0	3
Influenza B virus		2			2	1	4	2	11	7.7	50
Influenza virus - typing pending								2	2	.0	2
Parainfluenza virus type 1					2				2	33.7	17
Parainfluenza virus type 2				4	6		7		17	6.5	106
Parainfluenza virus type 3		4		10	1		2	3	20	23.0	272
Parainfluenza virus typing pending							2	1	3	4.2	14
Respiratory syncytial virus		65		72	7	4	116	4	268	242.2	739
OTHER RNA VIRUSES											
HIV-1						1			1	1.7	39
OTHER											
Rotavirus		1				2	8	21	32	73.0	431
Chlamydia trachomatis not typed		4			20	1	22		47	97.5	1,162
Chlamydia psittaci							2		2	2.2	82
Chlamydia species					2				2	6.7	36
Mycoplasma pneumoniae					4	1	2		7	40.2	168
Coxiella burnetii (Q fever)							1		1	24.2	114
Rickettsia australis				1			1		2	.0	4
Rickettsia spp - other							1		1	.2	3
Yersinia enterocolitica	1	2							3	.7	28
Brucella species		1							1	.2	7
Bordetella pertussis		4					9		13	18.3	336
Cryptococcus species		1							1	.2	17
Leptospira hardjo							1		1	.5	10
Treponema pallidum		14							14	24.7	301
Entamoeba histolytica							1		1	.0	9
Toxoplasma gondii		17					1		18	4.2	87
TOTAL	1	225	1	235	351	23	415	59	1,310	1,949.5	18,496

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 7. Virology and serology laboratory reports by clinical information for the reporting period 1 to 14 June 1995

	Encephalitis	Meningitis	Other CNS	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA												
Measles virus											1	1
Mumps virus		1									1	2
Rubella virus							1				2	3
HEPATITIS VIRUSES												
Hepatitis A virus						3					3	6
Hepatitis B virus						11					67	78
Hepatitis C virus						24					94	118
Hepatitis D virus						1						1
ARBOVIRUSES												
Ross River virus									2		1	3
Dengue type 2											1	1
Dengue type 3											1	1
ADENOVIRUSES												
Adenovirus type 1				3								3
Adenovirus type 2				1								1
Adenovirus type 3				7				1				8
Adenovirus type 6				1								1
Adenovirus type 7				1								1
Adenovirus type 8								2				2
Adenovirus not typed/pending				21	6			3			5	35
HERPES VIRUSES												
Herpes simplex virus type 1				9	1		68	12		25	7	122
Herpes simplex virus type 2				1			40			121	8	170
Herpes simplex not typed/pending	1						5			3	1	10
Cytomegalovirus		1		25	1	1	1	1			29	59
Varicella-zoster virus							29			1		30
Epstein-Barr virus				5			1				42	48
Herpes virus group - not typed											1	1
OTHER DNA VIRUSES												
Parvovirus							2					2
PICORNA VIRUS FAMILY												
Coxsackievirus A9				1								1
Coxsackievirus B3											1	1
Echovirus type 18				1								1
Echovirus type 22				1								1
Echovirus type 31		1										1
Poliovirus type 3 (uncharacterised)					1							1
Rhinovirus (all types)				26							5	31
Enterovirus type 71 (BCR)							2				1	3
Enterovirus not typed/pending			1	15	2		2				7	27

Table 7. Virology and serology laboratory reports by clinical information for the reporting period 1 to 14 June 1995, continued

	Encephalitis	Meningitis	Other CNS	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES												
Influenza A virus				38							16	54
Influenza A virus H_1N_1				2	1							3
Influenza A virus H_3N_2				1							1	2
Influenza B virus				5							6	11
Influenza virus - typing pending				2								2
Parainfluenza virus type 1				2								2
Parainfluenza virus type 2				16							1	17
Parainfluenza virus type 3				18							2	20
Parainfluenza virus typing pending				3								3
Respiratory syncytial virus				245	1						22	268
OTHER RNA VIRUSES												
HIV-1				1								1
Rotavirus					31						1	32
OTHER												
Chlamydia trachomatis not typed				1						45	1	47
Chlamydia psittaci				1							1	2
Chlamydia species										2		2
Mycoplasma pneumoniae				6							1	7
Coxiella burnetii (Q fever)											1	1
Rickettsia australis											2	2
Rickettsia spp - other							1					1
Yersinia enterocolitica											3	3
Brucella species											1	1
Bordetella pertussis				9							4	13
Cryptococcus species											1	1
Leptospira hardjo											1	1
Treponema pallidum											14	14
Entamoeba histolytica											1	1
Toxoplasma gondii											18	18
TOTAL	1	3	1	468	44	40	152	19	2	197	383	1310

Table 8. Virology and serology laboratory reports by contributing laboratories for the reporting period 1 to 14 June 1995

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	Prince Henry / Prince of Wales Hospitals, Sydney	80
	Royal Alexandra Hospital for Children, Camperdown	45
	Royal Prince Alfred Hospital, Camperdown	9
	South West Area Pathology Service, Liverpool	92
Queensland	Nambour Hospital	4
	State Health Laboratory, Brisbane	230
South Australia	Institute of Medical and Veterinary Science, Adelaide	354
Tasmania	Northern Tasmanian Pathology Service, Launceston	6
	Royal Hobart Hospital, Hobart	11
Victoria	Microbiological Diagnostic Unit, University of Melbourne	5
	Monash Medical Centre, Melbourne	42
	Royal Children's Hospital, Melbourne	145
	Unipath Laboratories	58
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	170
Western Australia	Princess Margaret Hospital, Perth	59
TOTAL		1310