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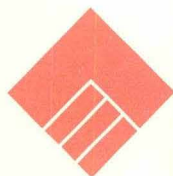
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COMMUNICABLE DISEASES NETWORK-AUSTRALIA
A National Network for Communicable Diseases Surveillance

OUTBREAK OF MENINGOCOCCAL INFECTION AT A VICTORIAN PRIMARY SCHOOL

John Carnie, Kath Taylor, Anne Murphy; Infectious Diseases Unit, Health and Community Services, Victoria

In November 1994, four cases of meningococcal infection occurred during the course of a week in a suburb south of Melbourne. Three of these cases were from a local primary school (enrolment 250) and the other was a 20 year old female:

Case A: male, 5 years, grade prep, onset 14 November

Case B: female, 20 years, onset 16 November

Case C: female, 10 years, grade 3-4, onset 16 November

Case D: female, 7 years, grade 2-3, onset 21 November

Cases A and D had siblings in the same Grade at the school as Case C. A sibling of Case C attended another school, a secondary school in the area, which a sibling of the adult female (Case B) also attended. There was no other apparent link between Case B and the primary school cases.

Investigations and actions taken

On 21 November, the Infectious Diseases Unit, Health and Community Services, Victoria sent a letter to all parents of children at the primary school and a media release was issued indicating what action was being taken. We decided to offer rifampicin to all children and staff at the school, on 22 November, and the acceptance rate was close to 100%.

We also decided to seek consent to obtain throat swabs from children and staff in order to determine the meningococcal carrier rate in this population.

While the Health and Community Services team was at the school undertaking distribution of rifampicin, a staff member from our Media Unit was on hand to handle enquiries from members of the media who had also arrived at the school.

At the time of providing rifampicin, we did not have the grouping on the *Neisseria meningitidis* isolates but within the following few days we were informed that three of the four cases were group C. The 10 year old female, though having all the clinical features of meningococcaemia, did not yield a positive culture.

At this stage a decision was taken to offer meningococcal vaccine to all the children at the school. On 24 November, another letter was sent to the parents explaining the existence of different groups of meningococcus and that vaccine was being offered because this was an outbreak involving a meningococcal group covered by the vaccine.

The acceptance rate for vaccine was also almost 100% with 255 doses being supplied, on 28 November. (This included siblings of cases.) There were no reports of adverse effects.

During the course of this investigation much information was supplied (by telephone and in writing) to other

local schools, sporting groups and members of the public. The media reporting was generally positive with accurate reporting of events.

Of 236 throat swabs obtained only two produced *N. meningitidis*, both group 29E, a carrier rate of less than 1%. The three group C isolates from the cases were shown to have identical characteristics by pulsed field gel electrophoresis, carried out at the Microbiological Diagnostic Unit, University of Melbourne.

Discussion

The occurrence of the three cases at the school gave rise to extreme anxiety among parents as well as the general community. There was much misinformation regarding mode of transmission of the infection, which was suggested to be airborne or mosquito-borne, and the children from the primary school were to some extent ostracised.

This extreme anxiety contributed to our decision to extend chemoprophylaxis to those we would not normally consider 'close contacts'. There was, in addition, much intermingling of children in the primary school, with composite classes, and the cases were from three different Grades. For these reasons rifampicin was offered to all the children and staff at the school.

Obtaining throat swabs is not routinely undertaken as a part of the investigation or control of meningococcal disease outbreaks and was only carried out here as an epidemiological exercise. Even though the carrier rate was later found to be unusually low and no group C carriers were detected, we do not believe that given the circumstances our action in providing chemoprophylaxis on a wider scale than usual was inappropriate.

The use of vaccine when dealing with outbreaks due to groups A, C, W135 or Y clearly conformed with the National Health and Medical Research Council recommendations¹, which specify consideration of the use of vaccine for contacts if more than one epidemiologically linked case occurs within a four week period, if a relatively closed population is involved. We decided to offer vaccine to all the children at the school for the same reasons as we offered chemoprophylaxis to all the children; the whole school was considered to be at risk due to class mixing, and anxiety levels were high.

The question of using vaccine for the contacts of sporadic cases of meningococcal infection is not yet resolved and we are not convinced that it is required.

Acknowledgments

We wish to thank Dr Julia Griffith of the Microbiological Diagnostic Unit, University of Melbourne for all the laboratory tests, and staff of the Health Department,

City of Frankstown for assistance in control of the outbreak.

Reference

1. National Health and Medical Research Council. *The Australian immunisation procedures handbook*. 5th ed. Canberra: Australian Government Publishing Service, 1994.

NATIONAL SALMONELLA SURVEILLANCE SCHEME REPORT, SECOND QUARTER, 1994

Reproduced with acknowledgment from the Human Second Quarter Report 1994, National Salmonella Surveillance Scheme Report 1994;(8), editors Joan Powling, Baheip Truong, Dianne Lightfoot, Petrina Adams

There were 1852 reports received by the National Salmonella Surveillance Scheme (NSSS) for the second quarter of 1994 (Table 1). A total of 1305 Australian acquired cases of *Salmonella* infection was reported during this quarter and 156 Australian acquired cases *Shigella* infection.

A *Salmonella* serovar new to the NSSS reported this quarter was *S. Mornington* (M/<1 Western Australia). Unusual serovars were *S. Albany* (M/20 New South Wales ex Thailand and mixed with *S. Virchow*), *S. Brunei* (M/1 Western Australia), *S. Muenster* (F/2 Victoria ex Korea) and *S. Zehlendorf* (F/<1 Queensland).

An unusual phage type of *S. Typhimurium* was phage type (PT) 17 (M/age not stated, from Victoria, ex Malaysia). The first case for the NSSS of *S. Bovismorbificans* PT 30 was reported from Thursday Island (F/1) in May.

Salmonella infections - case rates

The total number of *Salmonella* cases acquired in Australia for the quarter was 1305. There were 137 follow-ups, seven cases from migrants (six) and refugees (one) and 93 cases acquired overseas.

In comparison with the second quarter of 1993, there was an increase of 16% in the number of Australian acquired cases (1126 in the second quarter of 1993). There was an increase in case rates per 100,000 population in Victoria (68%), South Australia (30%) and Queensland (7%). The case rate fell in Western Australia (-35%) and the Northern Territory (-8%) and remained exactly the same in New South Wales and Tasmania (Table 2).

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

	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total
<i>Salmonella</i>	20	334	270	488	97	202	30	101	1542
<i>Shigella</i> species	0	24	22	17	11	84	0	28	186
<i>Aeromonas</i> species	0	2	6	1	0	0	0	0	9
<i>Campylobacter</i> species	0	0	76	0	0	0	0	0	76
<i>E. coli</i> (EPEC)	0	0	0	0	0	0	0	0	0
<i>Plesiomonas</i> species	0	0	0	0	0	0	0	0	0
<i>Vibrio</i> species	0	0	0	0	0	0	0	0	0
<i>Yersinia</i> species	0	9	1	29	0	0	0	0	39
Total	20	369	375	535	108	286	30	129	1852

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
2nd quarter 1994	5.1	4.7	4.7	14.2	6.0	10.4	5.5	52.1	1305
1st quarter 1994	4.4	6.6	7.6	23.2	6.3	10.7	11.3	89.8	1919
2nd quarter 1993	4.0	4.7	2.8	13.3	4.6	16.1	5.5	56.8	1126
2nd quarter 1992	2.8	3.9	4.9	15.7	6.8	11.4	8.0	63.9	1208
2nd quarter 1991	4.0	5.4	4.5	15.5	7.4	15.4	8.7	78.1	1351
2nd quarter 1990	6.4	5.7	5.2	14.7	12.9	10.7	8.0	58.8	1355

Infections acquired overseas

S. Enteritidis PT 4 was again the most commonly acquired *Salmonella* in travellers returning from overseas (11 from Indonesia, including eight from Bali; four from Malaysia; others from South-east Asia generally). Other common overseas acquired serovars were *S. Hadar* (five cases from Bali) and *S. Virchow* (three cases from Thailand and one from Fiji).

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

ASIA

Indonesia: *C. jejuni* subspecies *jejuni* (two), *S. Anatum*, *S. Enteritidis* PT 4 (three), *S. Weltevreden* and *Sh. sonnei* biotype g
Bali: *S. Amsterdam* var 15+, *S. Anatum*, *S. Derby*, *S. Emek*, *S. Enteritidis* PT 4 (eight), *S. Hadar* (five), *S. Havana*, *S. Livingstone*, *S. Thompson*, *S. Typhimurium* PT 141, *Sh. flexneri* 3a, *Sh. sonnei* biotype a.
Myanmar: *Sh. sonnei* (two).

Thailand: *S. Albany*, *S. Enteritidis* untypable, *S. Rissen*, *S. Saintpaul*, *S. Singapore*, *S. Virchow* (three), *Sh. flexneri* 6.

Malaysia: *S. Blockley*, *S. Enteritidis* PT 1, *S. Enteritidis* PT 4 (three), *S. Stanley*, *S. Typhimurium* PT 17, *S. subsp I ser 4,12:z10:-*, *Sh. flexneri* 2.

Singapore: *S. Enteritidis* PT 4 (two), *S. Typhimurium*

untypable.

Cambodia: *Sh. boydii* 18.

Vietnam: *S. Bareilly*, *S. Brunei*, *S. Rissen*, *S. Saintpaul*, *S. Thompson*, *Sh. sonnei* biotype g.

Philippines: *Sh. sonnei*.

Hong Kong: *S. Derby*, *S. Dublin*, *S. Enteritidis* PT 4, *S. Saintpaul*.

China: *S. Saintpaul*, *S. Typhimurium* RDNC, *S. Waycross*.

South Korea: *S. Muenster*.

India: *S. subsp IIIb ser 61:r:z53*, *Sh. boydii* 1, *Sh. dysenteriae* 1, *Sh. dysenteriae* 2, *Sh. flexneri* 4a, *Sh. sonnei* biotypes a and g (two).

Pakistan: *Sh. flexneri* 6.

Nepal: *S. Braenderup*, *Sh. sonnei* biotype g.

Afghanistan: *S. Infantis*.

Sri Lanka: *S. Braenderup*.

Unspecified: *S. Emek*, *S. Enteritidis* PT 4 (three), *S. Hadar*, *Sh. flexneri* 6 (north-east Asia: *S. Oranienburg*).

AFRICA

Ethiopia: *Sh. flexneri* 2.

Mauritius: *S. Aberdeen*.

Unspecified: *S. Oranienburg*, *S. Typhimurium* PT 135, *Sh. sonnei* biotype g.

EUROPE

Netherlands: *Sh. flexneri* 4a.

Table 3. Typhoid and paratyphoid cases

(Vi)-phage type	Sex/age (years)	State or Territory	Notes
<i>S. Typhi</i>			
D1 var	M/45	WA	Vietnamese immigrant - carrier
D2	M/15	NSW	Returned from India
E1a	M/3	Vic	Travelled to India
E1a	M/34	NSW	Returned from Nepal
E1a	F/33	Tas	Lived in an ashram in India
M3	M/18	WA	Migrated from Vietnam 5 years ago
M3	M/21	WA	Migrant from Vietnam
degraded	F/24	WA	Myanmar immigrant
degraded	F/10	WA	Visitor from Djakarta
untypable	F/23	NSW	Travelled to Indonesia
untypable	M/28	NSW	From Vietnam
<i>S. Paratyphi A</i>			
1	F/28	NSW	Returned from South-east Asia
1	M/29	Vic	Vaccinated in Africa, friend with typhoid
1	M/36	WA	India and Pakistan visit
1	F/41	WA	Travelled in Indonesia
2	M/27	NSW	Returned from Pakistan
3	M/26	NSW	Overseas, country not specified
RDNC	M/68	Vic	Returned from Vietnam
RDNC	F/32	WA	No details
RDNC	F/27	WA	Vietnamese, travelled to Indonesia
untypable	M/39	Vic	Travelled to Nepal
<i>S. Paratyphi B</i>			
1 var	F/3	SA	No details
3a var	M/6	Qld	No travel, family not affected

PACIFIC

Fiji: *S. Virchow*.

AMERICAS

South America: *Sh. flexneri* 6.

UNSPECIFIED COUNTRIES

S. Agona, *S. Anatum*, *S. Derby*, *S. Enteritidis* PT 4 (4),
S. Typhimurium untypable, *Sh. flexneri* 4a mannitol
 neg.

Typhoid and paratyphoid cases

There were 11 reports of *S. Typhi* (10 cases and one carrier), 10 reports of *S. Paratyphi* A and two reports of *S. Paratyphi* B during the quarter (Table 3).

There were 13 cases of *S. Paratyphi* B biovar Java reported during this quarter. Two cases were of 3b var 9 (one acquired in Thailand and the other not specified) and there were single cases of 1 var 3 (India), 1 var 5 (Bali) and 1 var 10 (no details). There were six cases of phage type Battersea, all of which were from the north

Table 4. Isolations from blood, urine and unusual sites

Organism	Sex/age (years)	State or Territory	Organism	Sex/age (years)	State or Territory
Bacteraemias excluding enteric fever					
<i>S. Agona</i>	F/15	NSW	<i>S. Typhimurium</i> PT 9	F/86	NSW
<i>S. Birkenhead</i>	M/1	Qld	<i>S. Typhimurium</i> PT 9	M/69	Qld
<i>S. Enteritidis</i> PT 26	M/12	NSW	<i>S. Typhimurium</i> PT 12a	M/67	NSW
<i>S. Enteritidis</i> PT 4	M/71	Vic	<i>S. Typhimurium</i> PT 41	F/72	NSW
<i>S. Enteritidis</i> PT 4	F/42 ¹	NSW	<i>S. Typhimurium</i> untypable	F/65	NSW
<i>S. Enteritidis</i> untypable	M/34 ¹	Vic	<i>S. Typhimurium</i> untypable	M/72	NSW
<i>S. Ohio</i>	F/54	ACT	<i>S. Virchow</i>	F/1	Qld
<i>S. Saintpaul</i>	F/60	Qld	<i>S. Waycross</i>	M/2	Qld
<i>S. Saintpaul</i>	M/3	NSW	<i>Sh. flexneri</i> 4a	F/39 ¹	Vic
<i>S. Typhimurium</i> PT 8	M/61	NSW	<i>Sh. sonnei</i>	F/10	WA
Urine isolates					
<i>S. Adelaide</i>	F/7	NSW	<i>S. Saintpaul</i>	F/3	Qld
<i>S. Agona</i>	F/75	Vic	<i>S. Saintpaul</i>	F/6	Qld
<i>S. Chester</i>	F/52	WA	<i>S. Typhimurium</i> 9	F/2	Vic
<i>S. Chester</i>	F/2	Qld	<i>S. Typhimurium</i> 9	F/2	Vic
<i>S. Chester</i>	ns ² /70	Qld	<i>S. Typhimurium</i> 135	M/65	NSW
<i>S. Hadar</i>	F/69	Vic	<i>S. Typhimurium</i> untypable	F/77	NSW
<i>S. Infantis</i>	F/65	SA	<i>S. Virchow</i>	F/35	Qld
<i>S. Infantis</i>	F/1	NT	<i>S. Virchow</i>	F/3	Vic
<i>S. Mississippi</i>	F/7	Tas	<i>S. subsp</i> I 16:l,v:-	M/3	NSW
<i>S. Orion</i>	F/19	NSW	<i>S. subsp</i> I 16:l,v:-	F/53	Vic
<i>S. Potsdam</i>	F/27	Qld	<i>S. subsp</i> I 16:l,v:-	F/27	NSW
Unusual site isolates			Site		
<i>A. hydrophila</i>	M/11	NSW	Wound		
<i>A. hydrophila</i>	M/61	NSW	Pus		
<i>A. hydrophila</i>	M/38	Qld	Knee wound		
<i>S. Bareilly</i>	M/68	Vic	Wound		
<i>S. Orientalis</i>	M/72	Qld	Wound		
<i>S. Orion</i>	F/25	NSW	Spinal aspirate		
<i>S. Orion</i>	M/15	NSW	Perforated colon		
<i>S. Poona</i>	F/38	WA	Spleen abscess		
<i>S. Saintpaul</i>	F/17	NSW	Foot wound, osteomyelitis		
<i>S. Singapore</i>	F/9	Qld	Caecal fluid		
<i>S. Typhimurium</i> PT 9	F/17	Vic	Unspecified swab		
<i>S. Typhimurium</i> PT 44	F/59	Vic	Cystic lesion		
<i>S. Virchow</i>	F/38	Vic	Caecum biopsy		
<i>S. subsp</i> IIIb ser 61:z52:z53	F/31	NT	Ovarian cyst		

1. Acquired overseas (M/43 Thailand, F/42 Bali, F/39 India).

2. ns not stated.

of the country (Katherine, Gove, Wyndham, Alice Springs and Townsville).

Isolations from blood, urine and unusual sites

There were 20 reports of bacteraemia, 22 reports of urine isolates and 14 reports of isolates from unusual sites (Table 4).

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

Organism	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total
<i>Sh. boydii</i>	0	0	0	0	0	2	0	1	3
<i>Sh. boydii</i> 4	0	0	1	0	0	0	0	0	1
<i>Sh. flexneri</i>	0	3	0	0	0	0	0	1	4
<i>Sh. flexneri</i> 1b	0	3	0	0	1	0	0	0	4
<i>Sh. flexneri</i> 2	0	0	0	0	0	28	0	0	28
<i>Sh. flexneri</i> 2a	0	3	5	6	0	0	0	9	23
<i>Sh. flexneri</i> 3c	0	1	0	0	0	0	0	0	1
<i>Sh. flexneri</i> 4a	0	0	2	0	0	0	0	0	2
<i>Sh. flexneri</i> 6	0	0	0	1	0	1	0	0	2
<i>Sh. sonnei</i>	0	2	0	4	0	48	0	0	54
<i>Sh. sonnei</i> biotype a	0	4	2	3	7	0	0	14	30
<i>Sh. sonnei</i> biotype f	0	0	0	0	0	0	0	1	1
<i>Sh. sonnei</i> biotype g	0	1	1	1	0	0	0	0	3
Total	0	17	11	15	8	79	0	26	156

Table 6. Top ten *Salmonella* serovars

	Position this quarter	Position in 1st quarter 1993	Cases	% of total	Origin and number of cases
<i>S. Typhimurium</i> ¹	1	1	426	32.6	NSW 129, Vic 126, Qld 52
<i>S. subsp I ser 16:l,v:-</i> ¹	2	-	82	6.3	NSW 30, Qld 26, Vic 12
<i>S. Saintpaul</i>	3	3	65	5.3	Qld 32, WA 15
<i>S. Virchow</i>	4	2	64	4.9	Qld 56
<i>S. Anatum</i>	5	-	39	3.0	Qld 25, NSW 7
<i>S. Chester</i>	6	7	38	3.0	Qld 22, NT 8
<i>S. Enteritidis</i>	7	5	36	2.8	Qld 19, NSW 8
<i>S. Meunchen</i>	8	6	31	2.4	Qld 14, WA 7
<i>S. Birkenhead</i>	9	4	29	2.2	Qld 21, NSW 8
<i>S. Bovismorbificans</i>	10	8	28	2.1	NSW 9, SA 5
Total			838	64.2	

1. Associated with outbreaks or incidents.

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

Phage type	Position this quarter	Position in 4th quarter 1993	Cases	% of total	Origin and number of cases
9 ¹	1	1	90	21.1	Vic 42, NSW 27, SA 12
135 ¹	2	2	81	19.0	NSW 30, Vic 25, WA 14
170 ¹	3	3	47	11.0	Vic 19, SA 13
44	4	4	34	8.0	Qld 18, NSW 10
12a ¹	5	5	30	7.1	NSW 13, SA 11
Total			282	66.2	

1. Associated with outbreaks.

Shigella infections

There was a total of 186 reports of *Shigella* infections received for this quarter. Of these, four were follow-up specimens, three were from migrants or refugees and 23 were reported from travellers returning from overseas. This left a total of 156 cases reported as acquired in Australia, an increase of 56% compared with the corresponding period of 1993.

Shigella infections acquired overseas included *Sh. boydii* 1 (India), *Sh. boydii* 4 (not stated), *Sh. boydii* 18 (Cambodia), *Sh. dysenteriae* 1 (India), *Sh. dysenteriae* 2 (India), *Sh. flexneri* 2 (Malaysia), *Sh. flexneri* 3a (Bali), *Sh. flexneri* 4a (Netherlands, India), *Sh. flexneri* 6 (Pakistan, Thailand, South America), *Sh. sonnei* (Philippines), *Sh. sonnei* biotype a (India, Bali) and *Sh. sonnei* biotype g (India two, Indonesia, Nepal, Africa).

Top ten Salmonella serovars

Of the 1305 Australian acquired cases of *Salmonella* infection, 838 (64%) were isolates from the top ten serovars (Table 6).

S. Typhimurium, with 426 cases from 24 phage types, was the most common serovar and accounted for 32% of the total Australian acquired cases. Phage types 9 and 135 were the most common phage types with 90 and 81 cases respectively, of which 72% were from New South Wales and Victoria. *S. subsp I ser 16:l,v:-* and *S. Bovismorbificans* came into the top ten, and *S. Heidelberg* and *S. Infantis* went out.

The top five phage types accounted for 66% of Australian acquired cases of *S. Typhimurium* (Table 7).

Mixed infections

There were 24 reports of mixed infections in the first quarter of 1994 and 14 reports in the second quarter (Table 8).

Suspected or confirmed outbreaks

The outbreak of *S. subsp I ser 16:l,v:-* which spread through all mainland States during this quarter is reported in separate summaries for each State. New South Wales reported the highest number of cases but, when the dates of isolation are examined, the outbreak appears to have spread south from Queensland from early April.

New South Wales

Apart from one isolated reported in January, the first nine cases of *S. subsp I ser 16:l,v:-* were reported in April. There was a peak in May with 16 cases, there were four more cases in June and the infection continued to be reported into December (see *Update*, below). Infections were reported from 21 young children (five were infants aged less than one year) and eight adults.

S. Typhimurium 135 was reported for seven cases from the Albury area (five adults - two very elderly, and two children) over three days in mid-April.

S. Typhimurium PT 9 was reported for 11 cases (7 children) from the Sydney region in May. There was a larger incident of PT 9 (30 cases) from Sydney in late January-early February 1994.

Northern Territory

There were seven cases of *S. Mbandaka* from Darwin and Katherine in one week in mid-June (four adults, two infants, one child).

Queensland

S. subsp I ser 16:l,v:- was reported for 24 cases for the quarter including seven from the far north of the State where this serovar, though rare, is usually found. The Queensland cases peaked in April with 20 for the month.

S. Typhimurium PT 170 was reported for a further eight cases (young children and teenagers) from the outbreak at Roma, for which 28 cases were reported in early to mid-March 1994.

There were 15 cases of *S. Anatum* reported from Bundaberg (nine adults, six children) from early April to early May.

S. Heidelberg was reported for six cases (both adults and children) from Brisbane on two days in late June.

South Australia

There were six cases of *S. subsp I ser 16:l,v:-* (one adult, five children) in May and June.

S. Typhimurium PT 12a was reported for seven cases (three adults, four children) in mid-May from Adelaide suburbs.

Victoria

S. subsp I ser 16:l,v:- was reported for 12 cases (six children, two adults, two teenagers, one not stated) from several regions of the State, peaking in May.

There were 11 cases of *S. Typhimurium* PT 135 in May (five adults, five children, one teenager), one from Gippsland and ten from the metropolitan area.

Western Australia

There were four reports of *S. subsp I ser 16:l,v:-*, three infants and one young child.

S. Newport was reported for 13 cases, all adults, following eight cases reported in the first quarter of 1994 from the south-west. This serovar has remained prominent in Western Australia since March 1993, when the large outbreak commenced in which 74 cases were reported.

Seven reports of *S. Typhimurium* PT 135 were received (three adults, four young children) for a period over five days in May.

Update

S. Bovismorbificans PT 13 was reported from an outbreak of food poisoning among patrons of a gourmet food festival in the Barossa Valley, South Australia, early in September.

There was an outbreak of *S. Typhimurium* PT 8 in the New South Wales town of Tamworth. The first seven cases were reported over two days in mid-October and were all adults. Thereafter until the end of October the remaining nine cases were from young children.

There was a cluster of cases of *S. Enteritidis* PT 4 from the Riverland region of South Australia in mid- to late October. Investigations are proceeding to determine

the cause of this outbreak and, by means of pulse field gel electrophoresis, whether this phage type has the same characteristics as that which caused so many problems in the United Kingdom and Europe five years ago.

S. Typhimurium PT 12a was reported for a cluster of cases among an ethnic community in the south-eastern region of Melbourne, and was traced to a small pro-

Table 8. Mixed infections, first and second quarters, 1994

Organism	Sex/age (years)	State or Territory
<i>A. hydrophila</i> , <i>Campylobacter</i> species	M/22	Vic
<i>A. hydrophila</i> , <i>C. jejuni</i> subspecies <i>jejuni</i>	M/23 ¹	Qld
<i>E. coli</i> O157, <i>Giardia</i> species, adenovirus	M/1	Vic
<i>C. jejuni</i> , <i>Sh. sonnei</i> biotype a	M/23 ¹	ACT
<i>Pl. shigelloides</i> , <i>Campylobacter</i> species	M/25	Vic
<i>S. Albany</i> , <i>S. Virchow</i>	M/20 ¹	NSW
<i>S. Anatum</i> , <i>S. Eastbourne</i>	M/38	NT
<i>S. Anatum</i> , <i>S. Hvittingfoss</i>	F/<1	Qld
<i>S. Anatum</i> , <i>S. Orion</i>	F/1	NT
<i>S. Bareilly</i> , <i>S. Chester</i>	M/25 ¹	Vic
<i>S. Bredeney</i> , <i>C. coli</i>	F/1	NT
<i>S. Bredeney</i> , <i>C. jejuni</i> , <i>S. Typhimurium</i> PT 44	M/1	Vic
<i>S. Chester</i> , <i>S. Jangwani</i>	F/1	NT
<i>S. Chester</i> , <i>Cryptosporidium</i> species	F/5	Qld
<i>S. Derby</i> , <i>Entamoeba histolytica</i> , <i>Ascaris</i> species	M/50	Vic
<i>S. Eastbourne</i> , <i>Campylobacter</i> species, <i>Strongyloides stercoralis</i>	F/3	NT
<i>S. Emek</i> , <i>S. Virchow</i>	F/28 ¹	WA
<i>S. Enteritidis</i> PT 4, <i>C. jejuni</i>	F/16	NSW
<i>S. Heidelberg</i> PT 1, <i>S. Mgulani</i>	M/<1	Qld
<i>S. Heidelberg</i> , <i>S. Singapore</i>	M/1	Qld
<i>S. Heidelberg</i> untypable, <i>S. Virchow</i>	F/53	Qld
<i>S. Heidelberg</i> , rotavirus, <i>Campylobacter</i> species	M/2	NSW
<i>S. Hvittingfoss</i> , <i>Campylobacter</i> species	M/1	Qld
<i>S. Kentucky</i> , <i>S. Montevideo</i>	M/2	Vic
<i>S. Kottbus</i> , <i>S. Typhimurium</i> PT 8	M/<1	NSW
<i>S. Meunchen</i> , <i>Sh. sonnei</i> biotype a	M/33 ¹	Vic
<i>S. Meunchen</i> , <i>Entamoeba</i> species, <i>Endolimax nana</i>	M/31	Vic
<i>S. Oranienburg</i> , <i>S. Saintpaul</i>	F/<1	WA
<i>S. Singapore</i> , <i>S. Virchow</i>	F/25	Qld
<i>S. Typhimurium</i> PT 9, <i>C. jejuni</i>	M/5	Vic
<i>S. Typhimurium</i> PT 44, rotavirus	M/<1	Vic
<i>S. Typhimurium</i> PT 179, <i>Giardia lamblia</i>	F/1	Vic
<i>S. Typhimurium</i> PT 179, <i>C. jejuni</i>	F/<1	Vic
<i>S. Typhimurium</i> PT 179, <i>C. jejuni</i>	M/40	Vic
<i>S. Typhimurium</i> RDNC, <i>Campylobacter</i> species	M/36	Vic
<i>S. Welikade</i> , rotavirus	F/<1	NSW
<i>S. subsp</i> IIIb ser 61:l,v:z35, <i>C. jejuni</i>	F/8	Qld
<i>Sh. sonnei</i> , <i>C. jejuni</i>	F/25	Qld

1. Acquired overseas (M/23 South America, M/20 Thailand, M/25 India, F/28 Bali, M/30 Mexico).

ducer of minced lamb sausages. Recent ovine isolates have also yielded *S. Typhimurium* PT 12a. Six cases of PT 12a were also reported from around Alice Springs in November.

Increased numbers of *S. Typhimurium* phage types 8 (four cases), 108 (seven cases) and 135 were reported from South Australia in November including three cases of PT 135 from children aged five to eight from Maitland on the Yorke Peninsula.

Seven cases of *S. Adelaide* were reported from Adelaide, late October to mid-November.

In December 1994, sporadic reports of *S. subsp I ser 16:l,v:-* were still being received from New South Wales, South Australia and Western Australia, all from young children.

In Victoria, a young lad and his pet kangaroo were both found to be carrying *S. Typhimurium* PT 9.

CDI NOTICE TO READERS

CDI on Internet/AARNET

The main text and tables of *CDI* have not been getting through to the FTP Internet site in Melbourne since December last year due to a fault which is currently being corrected.

Access should be restored with the missing files by the end of the first week in April

Details on how to access *CDI* via internet and AARNET were published in *CDI* 1995;19:13.

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization.

Influenza in the Northern Hemisphere

Influenza activity was declining in western Europe and approaching its peak in North America at the end on March. Switzerland was the only European country which reported a typical influenza season this year, mostly associated with influenza A H₃N₂. Influenza viruses have, however, circulated widely in Europe and both influenza A H₃N₂ and influenza B have been commonly reported.

Canada has reported mainly influenza A this season, although there have been 66 confirmed influenza B. All influenza A viruses that have been further characterised have been influenza A H₃N₂, except for one influenza A H₁N₁. In the United States, by the second week of March, influenza A had been reported in all States but two, and influenza B in 39. Six States reported widespread, 19 regional and 18 States reported sporadic activity. Mortality from influenza and pneumonia slightly exceeded the expected level in the week ending 8 January and again in the two weeks ending 26 February. All influenza A viruses that have been further characterised have been influenza A H₃N₂, except for seven isolates of influenza A H₁N₁, reported since the end of January.

Dengue in the Cook Islands

There has been an outbreak of dengue on Rarotonga in the Cook Islands. There were over 60 cases in the last two weeks of March, including four cases which pre-

sented with haemorrhagic symptoms. Laboratory confirmation is awaited but mosquito control measures are being undertaken.

Meningococcal meningitis in Niger

A total of 5815 cases of meningococcal meningitis and 605 deaths have been reported from Niger for the period 14 November 1994 and 5 March 1995. Most were from the regions in the south of the country. A vaccination campaign with priority for children aged one to 15 years was commenced in early March and a national committee and technical task force have been established to deal with the epidemic.

Niger is in the African meningitis belt and reports between 1000 and 3000 cases annually, and up to 20,000 cases in epidemics. The last major epidemic was in 1991 with 7647 cases reported.

Cholera update

In Somalia, Baidoa and Bardera Districts have recently been declared infected. Laos has reported 244 cases and 34 deaths for the first two weeks in February, and Sekong Province has been declared infected.

Cholera cases have been reported for December, January and February from Afghanistan, Angola, Brazil, Cambodia, Cameroon, Cape Verde, Chile, Djibouti, Ecuador, El Salvador, Gaza, Ghana, Guinea Bissau, Guyana, India, Iraq, Italy, Kenya, Laos, Nigeria, Philippines, Sierra Leone, and Tanzania (in Rwandan refugee camps).

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1497 reports received in the CDI Virology and Serology Reporting Scheme this fortnight (Tables 7, 8 and 9).

- Eight reports of **measles** were received this period for 4 males and 4 females, age range one to 64 years. Diagnosis was by IgM detection (7) and single high titre (one). The number of reports has declined in recent months (Figure 1).
- **Rubella** was reported for 22 patients this fortnight including 6 females (all of childbearing age, one of whom was pregnant) and 16 males. Twenty-one diagnoses were by IgM detection and one by four-fold rise in titre.
- Ten reports **hepatitis A** were received, for 5 males and 3 females, all in the 5 to 44 year age range.
- Positive **hepatitis B** serology was reported for 83 patients this fortnight, 44 males and 39 females. Forty-two patients were in the 25 to 44 year age group and 20 in the 15 to 24 year age group. Included were 14 pregnant females and one injecting drug user.
- Positive **hepatitis C** serology was reported for 243 patients this fortnight including 145 males and 91 females (7 sex not stated). One hundred and eighty-one reports were for the 25 to 44 year age group. Included were 32 injecting drug users, 3 pregnant females, 2 patients with thalassemia major and one transplant recipient.
- **Ross river virus** was reported for 66 patients this fortnight from Queensland (37), the Northern Territory (17), South Australia (5), Western Australia

(4), Victoria (2) and New South Wales (one). Two diagnoses (one from Cairns, Queensland and one from the Northern Territory) were confirmed (fourfold rise in titre). Specimen collection dates ranged from late January to mid March. The number of reports is low for the time of year. A higher proportion than usual has been received from the Northern Territory (Figure 2).

- Thirteen reports of **Barmah Forest virus** were received this period, 12 from Queensland and one from the Northern Territory. One diagnosis, for a 64 year old female from The Gap, Queensland was confirmed (fourfold rise in titre), the remainder being presumptive diagnoses ((IgM detected). Specimens were collected in late January to early March.
- **Dengue type 1** was reported for a 24 year old male with lethargy, fever and myalgia who had returned from Thailand.
- **Flavivirus (unspecified)** was reported for 6 patients this period, 4 of whom reported a recent history of overseas travel.
- Twenty-eight reports of **adenovirus** were received this fortnight, 7 virus isolations, 15 antigen detections and 6 single high titres.
- Herpes simplex virus type 1 was reported for 179 patients this fortnight. Diagnosis was by virus isolation (170) and antigen detection (9). Included was virus isolation from the urine of a 54 year old male.
- One hundred and ninety reports of **herpes simplex virus type 2** were received, diagnosed by virus isolation (187) and antigen detection (3).

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

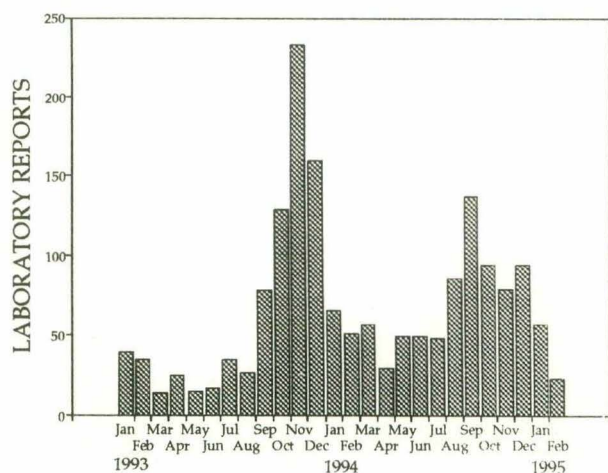
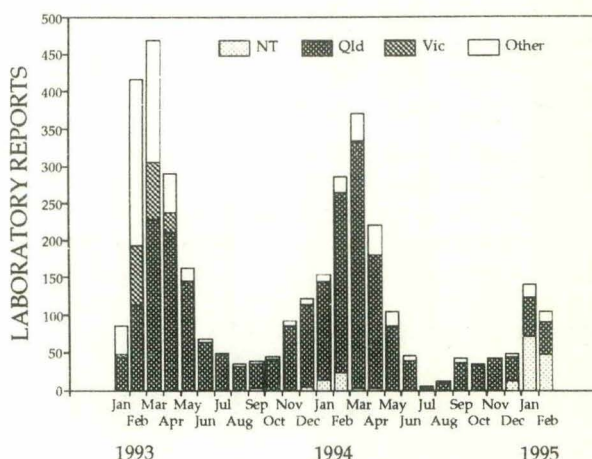


Figure 2. Ross river virus laboratory reports, 1993 to 1995, by month of specimen collection and State or Territory



- There were 56 reports of **cytomegalovirus (CMV)** this fortnight, 27 virus isolations and 29 antigen detections.
- **Varicella-zoster virus** was reported for 40 patients this period. Method of diagnosis included virus isolation (17), antigen detection (10), and IgM detection (13). An increased number of reports was received for the month on January (Figure 3).
- Forty-six reports of **rhinovirus** were received this period, 40 from Victoria. Thirty-nine patients were in the under 4 years age group, 26 being under the age of one year.
- **Influenza A** was reported for 7 patients this fortnight all diagnosed by single high titre.
- Five reports of **influenza B** were received this period. Diagnosis was by antigen detection (one, specimen collected in early March) and single high titre (4).
- Twenty-eight reports of **parainfluenza virus type 3** were received this fortnight, 17 for patients under the age of 4 years. Diagnosis was by virus isolation (20), antigen detection (7) and single high titre (one). Included was isolation from the CSF of 26 and 37 year old males and a 19 year old female. Most patients reported in the period January 1994 to March 1995 have been in the one month to 4 years age group, more males being affected than females (Figure 4).
- Thirty reports of **respiratory syncytial virus (RSV)** were received this fortnight, 19 for patients under one year of age. Diagnosis was by virus isolation (4) and antigen detection (26).
- **Rotavirus** was reported for 18 patients this period, 12 males and 6 females. All patients were under the age of 14 years, 15 being in the under 4 years age group.
- Ninety-two reports of **Chlamydia trachomatis** were received this fortnight, 28 males and 64 females. Eighty-seven patients were in the 15 to 44 year age group. Diagnosis was by culture (9), antigen detection (41) nucleic acid detection (41), and fourfold rise in titre (one).
- **Q fever** was reported for 6 patients this period, one female and 5 males, all over the age of 26 years. One was reported as a farmer.
- Forty-six reports of **Bordetella** were received this fortnight, 42 *Bordetella pertussis* and 4 *Bordetella* species. Twenty patients were male and 26 female. Twenty-two were under the age of 14 years. An increased number of reports was received for the month of February (Figure 5).

Figure 3. Varicella-zoster virus laboratory reports, 1994 to 1995, by method of diagnosis and

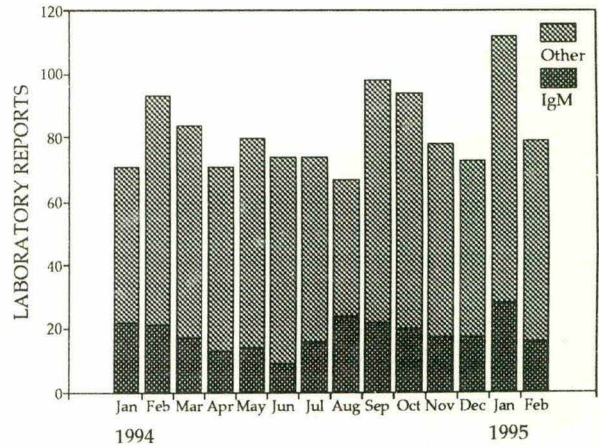


Figure 4. Parainfluenza virus type 3 laboratory reports, 1994 and 1995, by age group and sex

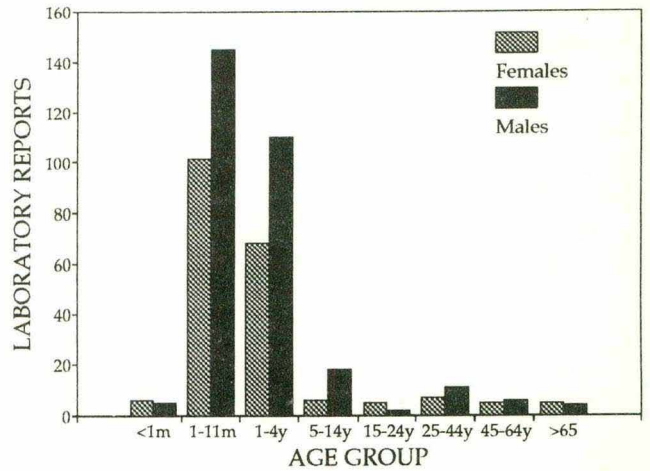
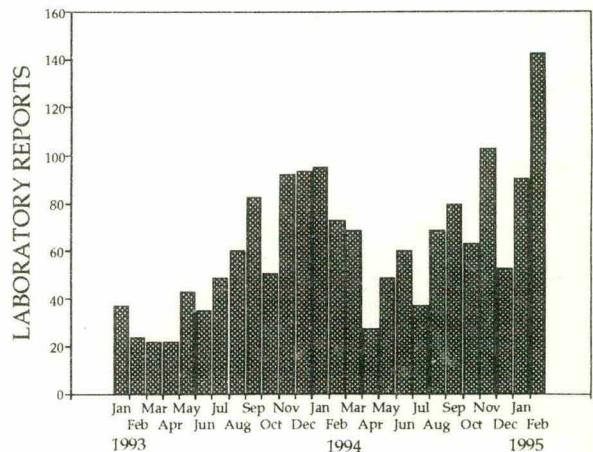


Figure 5. Bordetella pertussis and Bordetella species laboratory reports, 1993 to 1995, by month of specimen collection



HIV and AIDS Surveillance

Methodological note

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 infec-

tion 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 October 1994, as reported to 31 January 1995, are included in this issue of *CDI* (Tables 1 and 2).

Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 12 laboratories. There were 360 reports of recent significant sepsis:

New South Wales: John Hunter Hospital 21; Liverpool Hospital 60; Prince of Wales Hospital 53; Royal Prince Alfred Hospital 26.

Queensland: Ipswich General Hospital 11; Sullivan, Nicolaides and Partners 27; Toowoomba Pathology Laboratory 6.

Tasmania: Northern Tasmanian Pathology Service 15; Royal Hobart Hospital 39.

Table 1. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 31 October 1994, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This period 1994	This period 1993	Year to date 1994	Year to date 1993
HIV diagnoses	Female	0	3	0	0	2	0	1	0	6	5	66	61
	Male	2	34	1	8	5	0	27	4	81	74	753	796
	Sex not reported	0	0	0	0	0	0	0	0	0	0	10	9
	Total ¹	2	37	1	8	7	0	28	4	87	79	829	870
AIDS diagnoses	Female	0	3	0	0	0	0	0	0	3	5	23	30
	Male	2	47	0	7	6	0	12	0	74	48	622	492
	Total ¹	2	50	0	7	6	0	12	0	77	53	648	525
AIDS deaths	Female	0	0	0	1	0	0	2	0	3	1	26	19
	Male	1	18	0	7	2	1	12	0	41	51	520	494
	Total ¹	1	18	0	9	2	1	14	0	45	52	550	515

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

Table 2. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 31 October 1994, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	12	518	4	82	43	4	149	56	868
	Male	149	9564	76	1445	522	68	3137	684	15645
	Sex not reported	0	2044	0	1	0	0	43	0	2088
	Total ¹	161	12134	80	1532	565	72	3336	741	18621
AIDS diagnoses	Female	3	112	0	22	13	2	36	10	198
	Male	60	3195	23	501	233	25	1121	208	5366
	Total ¹	6	3317	23	525	246	27	1163	218	5582
AIDS deaths	Female	2	74	0	16	10	2	18	3	125
	Male	45	2209	16	339	145	21	858	136	3769
	Total ¹	47	2289	16	357	155	23	881	139	3907

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

Western Australia: Princess Margaret Hospital for Children 4; Sir Charles Gairdner Hospital 51.

South Australia: Institute of Medical and Veterinary Science 47.

An additional 146 reports of sepsis in November, December and January were reported including two cases of *Neisseria meningitidis* (34 year old male with meningitis, and a one year old male), two cases of *Haemophilus influenzae* (34 year old male with pneumonia, and a female preterm neonate), and one case of *Salmonella* Typhi (24 year old male with no reported history of overseas travel). Reports with specimen collection dates prior to the first day of the previous month are not included in the fortnightly reports in CDI however these reports are added to the annual data.

Organisms reported 5 or more times from blood are detailed in Table 3. Other blood isolates not included in Table 3 were:

Gram positive: 2 *Bacillus* species, 1 *Corynebacterium jeikeium*, 2 *Corynebacterium* species, 2 *Enterococcus* species, 1 *Lactobacillus* species, 2 *Streptococcus* Group A, 1 *Streptococcus* Group C, 1 *Streptococcus* Group F, 4 *Streptococcus* Group G, 1 *Streptococcus mitis*, 4 *Streptococcus pneumoniae*, 3 *Streptococcus sanguis*, 2 *Streptococcus 'viridans'*.

Gram negative: 4 *Acinetobacter* species, 1 *Aeromonas hydrophila*, 1 *Aeromonas sobria*, 1 *Aeromonas* species, 1 *Alcaligenes xylosoxidans*, 1 *Campylobacter jejuni*, 1 *Citro-*

bacter diversus, 1 *Citrobacter freundii*, 4 *Enterobacter* species, 1 *Gemella morbillorum*, 4 *Haemophilus influenzae* (31 year old female, no serogroup, with pneumonia from New South Wales; 21 year old male, not type b, from New South Wales; 22 year old female, type b, from Western Australia; 4 year old female, no serogroup, with epiglottitis, from Tasmania), 2 *Klebsiella oxytoca*, 1 *Klebsiella* species, 1 *Morganella morganii*, 1 *Pasteurella* species, 1 *Proteus* species, 1 *Proteus vulgaris*, 1 *Providencia* species, 1 *Pseudomonas* species, 2 *Salmonella* Paratyphi (one, type A, 39 year old male from New South Wales with a history of overseas travel; one, 34 year old woman from South Australia), 3 *Salmonella* species (89 year old male with pneumonia from New South Wales; 2 year old male from Queensland; 3 year old male from Queensland), 2 *Salmonella* Typhi (23 year old female from Western Australia, no risk factors reported; 13 year old female from New South Wales, with a history of overseas travel), 2 *Serratia marcescens*, 1 *Xanthomonas maltophilia*.

Anaerobes: 3 *Bacteroides fragilis*, 1 *Clostridium perfringens*, 2 *Clostridium* species, 1 *Propionibacterium acnes*.

Fungi: 1 *Candida albicans*, 2 *Candida* species.

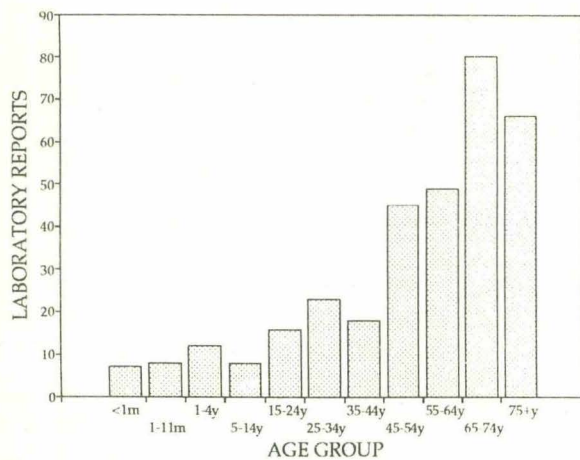
There were 15 blood isolates from patients aged less than one year and 146 from patients aged 65 years and over (Figure 6).

Table 3. 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		Neonatal
<i>Staphylococcus aureus</i>	2	3	3	1	2	11	8	8	12	1	59 ²
<i>Staphylococcus epidermidis</i>			1			1		5	3	2	27
<i>Staphylococcus coagulase negative</i>					1		2	3	9	2	29
<i>Enterococcus faecalis</i>								3	2		7
<i>Streptococcus</i> group B			1					1			5
<i>Streptococcus</i> species			4				1	4	1		9
<i>Escherichia coli</i>	1			10	21	2	4	17	3		66
<i>Enterobacter aerogenes</i>				1				1			7
<i>Enterobacter cloacae</i>		1				1	1	1	2	1	7
<i>Klebsiella pneumoniae</i>				3	1			6	3		16
<i>Proteus mirabilis</i>				1	3		1	1			5
<i>Pseudomonas aeruginosa</i>		1		3		1	1	6	5		14
<i>Bacteroides</i> species				2				2			5

1. Only organisms with 5 or more reports are included in this table.
 2. MRSA 4.

Figure 6. LabDOSS reports of blood isolates, by age group



Hospital acquired blood isolates

A total of 83 isolates was reported as hospital acquired. The five most commonly reported organisms were: 22 *Staphylococcus aureus* (including 1 MRSA), 9 *Escherichia coli*, 8 *Staphylococcus coagulase negative*, 7 *Pseudomonas aeruginosa*, 5 *Staphylococcus epidermidis*.

Meningitis and/or CSF isolate reports

There were 6 reports of meningitis and/or CSF isolates. One isolate, from blood, was *Neisseria meningitidis* reported in a one year old female from Tasmania. Three isolates were reported as *Staphylococcus epidermidis*. One isolate, from blood, was from a 38 year old male. The second isolate, from CSF, was from 17 year old male; and the third isolate, from CSF and blood, was from a 62 year old female with a risk factor of neurosurgery. All cases were from Tasmania. There were two reports of *Streptococcus pneumoniae*. One isolate was from CSF from a 2 year old female with a risk factor of neurosurgery from New South Wales. *Neisseria* species was also isolated from CSF in this patient. The second isolate was from CSF and blood from a three month old male from Queensland.

Isolates from sites other than blood or CSF

Joint fluid: 2 *Escherichia coli*, 1 *Pseudomonas aeruginosa*, 3 *Staphylococcus aureus*, 1 *Staphylococcus coagulase negative*.

Peritoneal dialysate: 1 *Candida albicans*, 1 *Staphylococcus aureus*.

Pleural fluid: 1 *Acinetobacter* species, 1 *Citrobacter diversus*, 1 *Enterococcus faecalis*, 1 *Staphylococcus aureus*, 1 *Streptococcus* Group F.

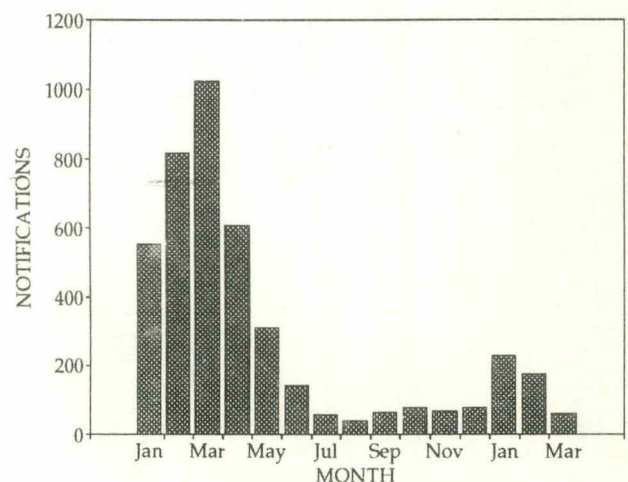
Other: 1 *Acinetobacter* species, 1 *Clostridium perfringens*, 1 *Enterobacter* species, 3 *Escherichia coli*, 1 *Pseudomonas aeruginosa*, 1 *Staphylococcus aureus*, *Streptococcus 'milleri'*.

National Notifiable Diseases Surveillance System, 5 March 1995 to 18 March 1995

There were 2190 reports received in the period (Tables 4, 5 and 6 and Figure 9).

- There were 118 notifications of **Ross River Virus infection**; 56 cases were male and 60 cases were female. Recorded ages were between the 5-9 and the 75-79 years age groups. Fifty-two per cent of the cases were from Queensland and 36% were from the Northern Territory. Onset dates were January (5), February (55) and March (58). The incidence of case reports during this period is less than the same period for last year (Figure 7).
- Three cases of **dengue** were reported, one from New South Wales and two from the Northern Territory. One female and two males in the 15-29 years age group were affected.
- There were 426 cases of **campylobacteriosis** reported; 218 cases were male, 205 were female and the sex of 3 cases was unrecorded. The cases were aged between the 0-4 and the 85-89 years age groups with 31% of cases aged less than 10 years.
- Seventy-six cases of **gonococcal infection** were reported; 45 cases were male, 30 cases were female, and the sex of one case was unrecorded. The cases were aged between the 10-14 and the 50-59 years age groups with 75% of cases in the 15-29 years age group.
- Four cases of ***Haemophilus influenzae* type b infection** were reported and all were from the 0-4 years age group.
- There were 59 cases of **hepatitis A** reported; 32 cases were male and 26 cases were female. Recorded ages were between the 5-9 and the 75-79 years age groups.

Figure 7. Ross River virus infection notifications, January 1994 to March 1995, by month of onset



- Eight incident cases of **hepatitis B** were reported; 4 cases were male and 4 were female. Recorded ages were between the 20-24 and the 35-39 years age groups.
- There were two cases of **hydatid infection** reported; one male in the 30-34 years age group and a female in the 65-69 years age group.
- There were 9 cases of **legionellosis** reported. Five cases were male and four were female and recorded ages were between the 25-29 and the 70-74 years age groups.
- Two cases of **leptospirosis** were reported; both cases were male and residents in the Gippsland Statistical Division of Victoria. Recorded ages were in the 25-29 years and the 50-54 years age groups.
- Four cases of **listeriosis** were reported; two cases were male and two cases were female. Recorded ages were in the 65-99 years age group.
- Thirteen cases of **malaria** were reported; 9 cases were male and 4 cases were female. Recorded ages were between the 20-24 and the 64-69 years age groups. Onset dates were in January (2), February (6) and March (5).
- The number of **measles** case reports for the period was 67. Thirty-nine cases were male, 27 cases were female and the sex of one case was unrecorded. Recorded ages were between the 0-4 and the 80-84 years age groups and 94% of cases were aged less than 25 years. There were 3 apparent clusters of between two and six cases each in the same post-code area. Apparent clusters were in New South Wales (2) and Queensland (one).
- There were 10 cases of **meningococcal infection** reported; 6 cases were male and 4 cases were female. Recorded ages were between the 0-4 and the 70-74 years age group with 5 cases in the 0-4 years age group. Recorded onset dates were in February (2) and March (8). There were no apparent clusters.
- There were 134 cases of **pertussis** reported; 56 cases were male, 77 cases were female and the sex of one case was unrecorded. Recorded ages were between the 0-4 and the 80-84 years age groups with 25 cases aged less than one year. There were 16 apparent clusters of between 2 and 5 cases each in the same postcode area. Clusters were in New South Wales (one), Queensland (11) and Western Australia (4).
- Fourteen notifications of **Q fever** were received; 13 cases were male and one case was female. Re-

corded ages were between the 20-24 and the 60-64 years age group.

- There were 76 cases of **rubella** reported; 49 cases were male, 26 cases were female, and the sex of one case was unrecorded. The cases were aged between the 0-4 and the 70-74 years age groups with 15 cases reported for females in the 15-44 years age group. Males aged 15-24 years have been the most commonly notified group in the period January 1994 to March 1995 (Figure 8).
- There were 379 cases of **salmonellosis** reported; 179 cases were male, 193 cases were female and the sex of 7 cases was unrecorded. The cases were aged between the 0-4 and the 90-94 years age groups with 45% of cases in the 0-4 years age group.
- Seventy-three notifications of **syphilis** were received; 36 cases were male, 35 cases were female, and the sex of 2 cases was unrecorded. Sixty-six per cent of cases were in the 15-39 years age groups.
- One case of **tetanus** was reported from Queensland and was in the 64-69 years age group; the sex of this case was unrecorded.
- There were 48 cases of **tuberculosis** reported; 26 cases were male, 14 cases were female, and the sex of eight cases was unrecorded. Cases were aged between the 0-4 and the 85-89 years age groups.
- Ten cases of **yersiniosis** were reported; 5 cases were male and 5 cases were female. Recorded ages were between the 0-4 and the 50-54 years age groups.

Figure 8. Notifications of rubella, January 1994 to March 1995, by age group and sex

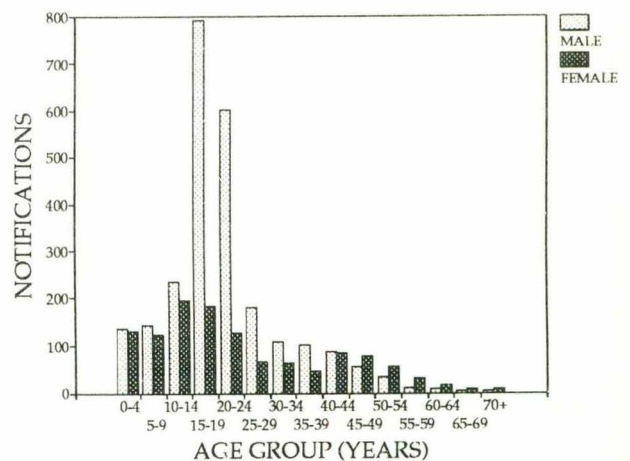
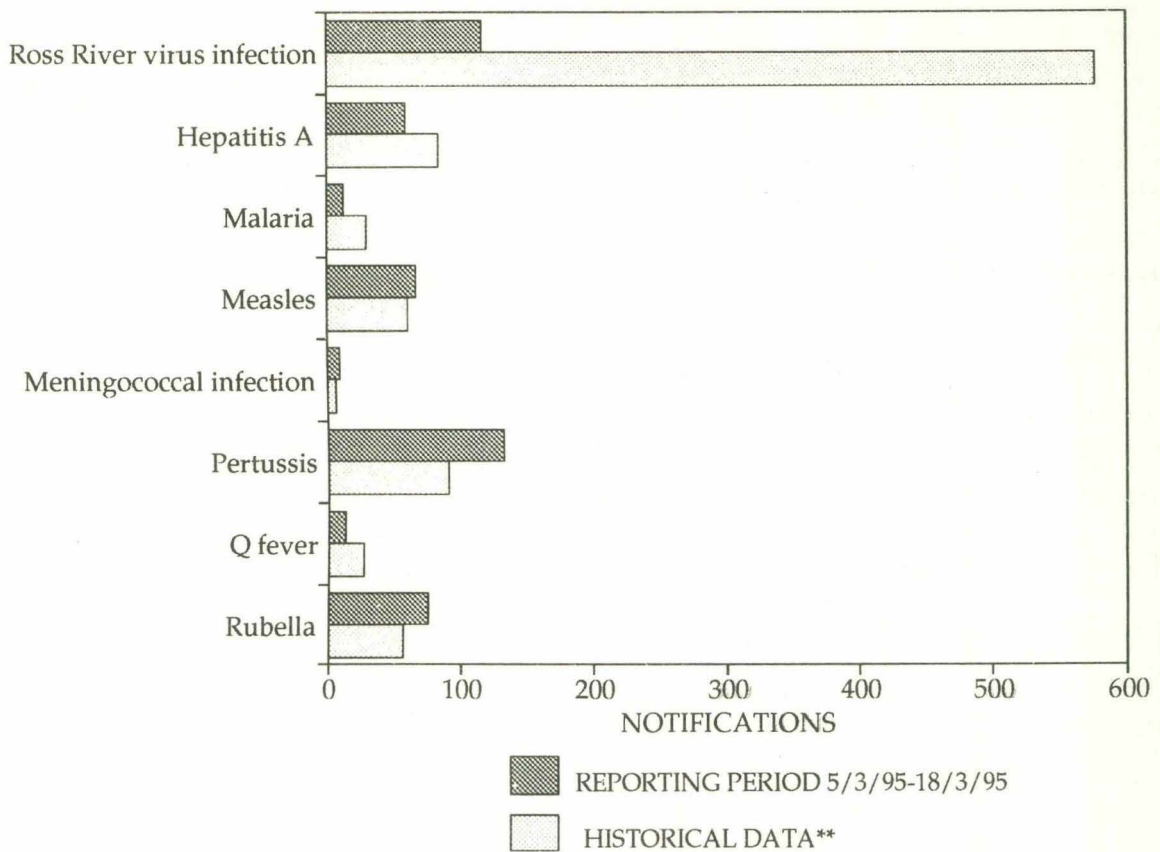


Figure 9. Selected National Notifiable Diseases Surveillance System reports, and historical data¹



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.

Table 4. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 5 to 18 March 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	6	1	11
<i>Haemophilus influenzae</i> b infection	0	1	0	0	2	0	1	0	4	8	19	47
Measles	4	21	17	18	0	0	4	3	67	91	504	837
Mumps	0	0	NN	NN	0	NN	0	0	0	0	12	5
Pertussis	3	18	5	68	2	0	10	28	134	220	1159	1632
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella ²	3	6	1	53	2	0	5	6	76	47	648	473
Tetanus	0	0	0	NN	0	0	1	0	1	1	2	2

1. 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.

2. Tas: CRS only.
 NN Not Notifiable.

Table 5. Notifications of other diseases¹ received by State and Territory health authorities in the period 5 to 18 March 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	6	42	62	3	-	4	1	118	348	536	1734	
Dengue	0	1	2	0	0	-	0	0	3	2	6	5	
NEC ³	0	5	2	24	0	0	3	0	34	35	134	147	
Campylobacteriosis ⁴	22	-	21	89	106	9	139	40	426	362	2370	2135	
Chlamydial infection (NEC) ⁵	1	NN	17	120	8	11	55	14	226	249	1370	1436	
Donovanosis	0	NN	0	4	NN	NN	0	0	4	5	22	24	
Gonococcal infection ⁶	1	8	9	40	2	0	4	12	76	115	630	667	
Hepatitis A	2	17	2	17	0	1	8	12	59	70	412	436	
Hepatitis B incident	0	0	1	2	1	0	4	0	8	11	60	56	
Hepatitis C incident	-	0	0	-	0	-	-	-	0	0	6	3	
Hepatitis C unspecified	22			116		2	112	49	301	280	1761	1903	
Hepatitis (NEC)	0	0	0	0	0	0	1	NN	1	1	11	16	
Legionellosis	1	1	0	2	1	1	2	1	9	9	45	42	
Leptospirosis	0	0	0	0	0	0	2	0	2	5	33	50	
Listeriosis	0	1	0	1	0	0	2	0	4	0	20	7	
Malaria	1	1	0	0	2	0	8	1	13	24	111	127	
Meningococcal infection	0	1	0	4	0	1	3	1	10	7	71	62	
Ornithosis	0	NN	0	0	0	0	10	0	10	2	39	24	
Q fever	0	7	0	5	0	0	2	0	14	22	97	148	
Salmonellosis (NEC)	9	54	22	114	61	7	82	30	379	344	1909	1672	
Shigellosis ⁴	1	-	12	10	5	0	4	6	38	41	217	181	
Syphilis	0	21	19	16	0	0	15	2	73	88	516	507	
Tuberculosis	0	7	0	6	1	0	33	1	48	32	228	238	
Typhoid ⁷	0	0	0	0	0	0	0	0	0	2	12	12	
Yersiniosis (NEC) ⁴	0	-	1	5	4	0	0	0	10	23	104	129	

- For HIV and AIDS, see Tables 2 and 3. For rarely notified diseases, see Table 7.
- 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.
- Tas: includes Ross River virus and dengue.
- NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.

- WA: genital only.
- NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
- NSW, Vic: includes paratyphoid.
- NN Not Notifiable.
- NEC Not Elsewhere Classified.
- Elsewhere Classified.

Table 6. Notifications of rare¹ diseases received by State and Territory health authorities in the period 5 to 18 March 1995

DISEASES	Total this period	Reporting States or Territories	Year to date 1995
Botulism	0		0
Brucellosis	0		9
Chancroid	0		1
Cholera	0		0
Hydatid infection	2	Qld 1, Vic 1	6
Leprosy	0		1
Lymphogranuloma venereum	0		0
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

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

Table 7. Virology and serology laboratory reports by State or Territory¹ for the reporting period 9 to 22 March 1995, historical data², and total reports for the year

	State or Territory ¹							Total this fortnight	Historical data ²	Total reported this year
	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA										
Measles virus			7			1		8	16.2	219
Mumps virus			1					1	2.5	21
Rubella virus	2		15	1	1		3	22	20.2	435
HEPATITIS VIRUSES										
Hepatitis A virus	2		2	1		5		10	16.5	140
Hepatitis B virus	19	2	31	3	1	28	13	97	100.8	640
Hepatitis C virus	19	6	67	48	13	14	76	243	158.3	1,776
ARBOVIRUSES										
Ross River virus	1	17	37	5		2	4	66	181.2	388
Barmah Forest virus		1	12					13	13.7	78
Dengue type 1			1					1	.0	1
Flavivirus (unspecified)			2			4		6	3.7	11
ADENOVIRUSES										
Adenovirus not typed/pending	3		9	7		8	1	28	45.2	267
HERPES VIRUSES										
Herpes simplex virus type 1	5		64	37	3	39	31	179	168.2	1,407
Herpes simplex virus type 2	4	2	103	24	3	28	26	190	174.7	1,335
Herpes simplex not typed/pending			11	1		2		14	19.5	142
Cytomegalovirus	2		33	2	1	14	4	56	63.2	409
Varicella-zoster virus	2		19	6		6	7	40	30.8	335
Epstein-Barr virus	2	2	50	19		16	5	94	63.5	660
Herpes virus group - not typed	2							2	1.0	8
OTHER DNA VIRUSES										
Parvovirus	1							1	2.3	50
PICORNA VIRUS FAMILY										
Echovirus type 3	1							1	.0	11
Echovirus type 6						1		1	.3	27
Poliovirus type 1 (uncharacterised)						1		1	.8	7
Poliovirus type 2 (uncharacterised)	1							1	.8	2
Rhinovirus (all types)	1		5			40		46	29.8	187
Enterovirus not typed/pending			27			15	8	50	37.2	249
ORTHO/PARAMYXOVIRUSES										
Influenza A virus			6				1	7	7.0	49
Influenza B virus			4			1		5	4.5	14
Parainfluenza virus type 1			1	1				2	7.2	5
Parainfluenza virus type 2						1		1	1.5	7
Parainfluenza virus type 3			21			7		28	10.2	184
Parainfluenza virus typing pending						4		4	.5	9
Respiratory syncytial virus	8		4		1	17		30	20.8	130

Table 7. Virology and serology laboratory reports by State or Territory¹ for the reporting period 9 to 22 March 1995, historical data², and total reports for the year, continued

	State or Territory ¹							Total this fortnight	Historical data ²	Total reported this year
	NSW	NT	Qld	SA	Tas	Vic	WA			
OTHER RNA VIRUSES										
Rotavirus	5			12			1	18	23.8	262
OTHER										
<i>Chlamydia trachomatis</i> not typed	3	3	59	13		3	11	92	126.0	707
<i>Chlamydia psittaci</i>			4			5		9	2.8	60
<i>Chlamydia</i> species				2				2	.2	20
<i>Mycoplasma pneumoniae</i>			10	5		2		17	55.0	108
<i>Coxiella burnetii</i> (Q fever)	3		2	1				6	16.2	82
<i>Streptococcus</i> group A	3	4	17					24	7.5	128
<i>Bordetella pertussis</i>		2				22	18	42	16.5	262
<i>Bordetella</i> species		1	3					4	4.3	52
<i>Legionella pneumophila</i>			1					1	.0	1
<i>Legionella longbeachae</i>			1					1	.2	1
<i>Legionella</i> species							2	2	.2	22
<i>Cryptococcus</i> species						1		1	.7	9
<i>Leptospira pomona</i>			2					2	.5	5
<i>Leptospira australis</i>			1					1	.2	2
<i>Leptospira</i> species			4					4	1.3	10
<i>Treponema pallidum</i>	4	2	3			1	5	15	23.7	187
<i>Entamoeba histolytica</i>			1					1	.2	4
<i>Toxoplasma gondii</i>						1		1	1.8	27
<i>Schistosoma</i> species		1					1	2	.2	9
<i>Echinococcus granulosus</i>			1					1	.5	6
TOTAL	94	43	641	188	23	291	217	1,497	1,483.7	11,177

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

Table 8. Virology and serology laboratory reports by clinical information for the reporting period 9 to 22 March 1995, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
OTHER RNA VIRUSES													
Rotavirus						16						2	18
OTHER													
<i>Chlamydia trachomatis</i> not typed					1				1		73	17	92
<i>Chlamydia psittaci</i>					5							4	9
<i>Chlamydia</i> species											1	1	2
<i>Mycoplasma pneumoniae</i>					11							6	17
<i>Coxiella burnetii</i> (Q fever)										1		5	6
<i>Streptococcus</i> group A					3			2		4		15	24
<i>Bordetella pertussis</i>					24							18	42
<i>Bordetella</i> species					3							1	4
<i>Legionella pneumophila</i>					1								1
<i>Legionella longbeachae</i>												1	1
<i>Legionella</i> species					2								2
<i>Cryptococcus</i> species												1	1
<i>Leptospira pomona</i>												2	2
<i>Leptospira australis</i>												1	1
<i>Leptospira</i> species												4	4
<i>Treponema pallidum</i>											6	9	15
<i>Entamoeba histolytica</i>												1	1
<i>Toxoplasma gondii</i>												1	1
<i>Schistosoma</i> species												2	2
<i>Echinococcus granulosus</i>												1	1
TOTAL	1	3	3	1	198	47	105	206	7	26	271	629	1497

Table 9. Virology and serology laboratory reports by contributing laboratories for the reporting period 9 to 22 March 1995

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	South West Area Pathology Service, Liverpool	63
Queensland	Queensland Medical Laboratory, West End	522
	State Health Laboratory, Brisbane	187
South Australia	Institute of Medical and Veterinary Science, Adelaide	187
Tasmania	Royal Hobart Hospital, Hobart	21
Victoria	Monash Medical Centre, Melbourne	22
	Royal Children's Hospital, Melbourne	140
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	129
Western Australia	State Health Laboratory Services, Perth	226
TOTAL		1497