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

SALMONELLA SURVEILLANCE, AUSTRALIA, THIRD QUARTER 1993

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There were 1059 reports received by the National *Salmonella* Surveillance Scheme (NSSS) for the third quarter of 1993 (Table 1).

New and unusual *Salmonella* serovars notified were *S.* Blukwa (M/ Western Australia); *S.* Bonn (M/11 New South Wales); *S.* Istanbul (M/34 Western Australia, ex overseas - 'tropics') and *S.* Matopeni (F/73 Western Australia ex Malaysia). The first record of *S.* Istanbul for the NSSS was reported in the last Report as acquired in Malaysia and another, acquired in Singapore, was reported in January 1994.

New and unusual phage types (PT) of *S.* Typhimurium were PT 53 (Northern Territory); PT 131 (New South Wales); PT 181 (Western Australia); and two cases of PT 191 (first records of this phage type for the NSSS) from the same family in Alice Springs in July.

Salmonella infections - case rates

There were 704 Australian acquired cases of *Salmonella* infection reported during this quarter, a 3.4% increase over the total number of cases for the same period in 1992. There were 43 follow-ups, 2 cases from migrants and refugees and 87 cases acquired overseas.

By comparison to the third quarter of 1992, the *Salmonella* case rate per 100,000 head of population more than doubled in the Northern Territory (Table 2) and also increased in Tasmania (78%) and in Queensland (18.5%). However, the case rate for the third quarter of 1992 was the lowest ever recorded in the Northern Territory and the 1993 rate of 49.1 per 100,000 is lower than the five year average for any other quarter, the third quarter typically being the quietest month for salmonellosis Australia-wide.

Infections acquired overseas

For the second consecutive quarter *S.* Enteritidis was the most common *Salmonella* reported from travellers returning from overseas. Twenty-two cases of *S.* Enteritidis were reported and 12 of these were of PT 4 (acquired in Cyprus, Hong Kong, Singapore, Malaysia and Indonesia including Bali). Other overseas acquired serovars included *S.* Hadar (8 cases), *S.* subsp I ser 4,5:i:- (six cases - Malaysia, Singapore, Cambodia), *S.* Agona and *S.* Stanley (four cases each), *S.* Blockley and *S.* Virchow (three cases each). The most common overseas acquired *Shigella* infections were biotypes a and g of *Sh. sonnei* with six cases each.

Table 1. Total reports of enteric pathogens, third quarter 1993, by State or Territory

	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total
Salmonella	15	168	128	219	67	135	24	80	836
Shigella	2	16	19	17	11	37	1	22	125
Aeromonas	0	0	4	1	0	0	0	0	5
Campylobacter	0	0	39	1	0	0	0	0	40
Escherichia coli (EPEC)	0	0	1	0	0	0	0	0	1
Plesiomonas	0	0	0	0	0	0	0	0	0
Vibrio	0	0	0	0	0	0	0	0	0
Yersinia	0	9	5	36	0	0	0	2	52
Total	17	193	196	274	78	172	25	104	1059

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

	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total cases
3rd quarter 1993	4.4	2.7	2.2	7.7	4.1	7.7	4.1	49.1	704
2nd quarter 1993	4.0	4.7	2.8	13.3	4.6	16.1	5.5	56.8	1123
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

The cases acquired overseas are listed as follows. They include migrants and refugees.

SOUTH-EAST ASIA

Indonesia: *S.* Emek, *S.* Javiana, *S.* Typhimurium 12a, *Sh. boydii* 12. **Bali:** *C. jejuni* subsp *jejuni*, *S.* Adelaide, *S.* Agona (3), *S.* Enteritidis PT 4, *S.* Hadar (5), *S.* Isangi, *S.* Mbandaka, *S.* Paratyphi B biovar Java 3b var 3, *S.* Paratyphi B biovar Java Dundee, *S.* Typhimurium PT 108 and PT 141, *Sh. flexneri* 2a (2), *Sh. sonnei* biotype a and biotype g.
Hong Kong: *S.* Blockley, *S.* Enteritidis PT 4 (2), PT 13a and RDNC, *S.* Stanley.
Thailand: *S.* Blockley, *S.* Derby, *S.* Enteritidis PT 5a and RDNC, *S.* Montevideo (2) *S.* Newport, *S.* Paratyphi B biovar Java, *S.* Poona, *S.* Singapore, *S.* Stanley, *S.* subsp I ser 3,10:e.h:-, *Sh. sonnei* and *Sh. sonnei* biotype g.
Malaysia: *S.* Bovismorbificans, *S.* Derby (mixed with *S.* Enteritidis PT 4), *S.* Enteritidis PT 4 and PT 7, *S.* Hadar, *S.* Lexington, *S.* Matopeni, *S.* Oslo, *S.* subsp I ser 4,5:i:-.
Singapore: *S.* Enteritidis PT 4 (2) and PT 6, *S.* Rissen, *S.* subsp I ser 4,5:i:- (2).
Cambodia: *S.* Krefeld, *S.* subsp I ser 4,5:i:-.
Philippines: *S.* Enteritidis PT 9 and untypable, *S.* Stanley.
Unspecified countries: *S.* Blockley, *S.* Enteritidis PT 4, *S.* Hadar (2), *S.* Istanbul, *S.* Kentucky.

SOUTH ASIA

India: *S.* Bareilly, *Sh. boydii* 4, *Sh. flexneri* 6.
Nepal: *S.* Enteritidis PT 1, *S.* Newport, *S.* Saintpaul.
Pakistan: *S.* Agona.
Maldives: *Sh. flexneri* 2b.

AFRICA

Unspecified countries: *Sh. flexneri* 2, *Sh. flexneri* 4.

MIDDLE EAST

Cyprus: *S.* Enteritidis PT 4.
Lebanon: *Sh. sonnei* biotype a.

EUROPE
Greece: *S.* Stanley.
Italy: *S.* Enteritidis.
Uzbekistan: *Sh. boydii* 4.
Unspecified countries: *S.* Enteritidis PT 4.

AMERICAS

Canada: *S.* Virchow.

PACIFIC

Fiji: *Sh. sonnei* biotype g (4).
Vanuatu: *Sh. sonnei* biotype a (3).
Solomon Islands: *S.* Virchow.

UNSPECIFIED COUNTRIES:

S. Enteritidis PT 4 (2), *S.* Typhimurium PT 1 and PT 104, *S.* subsp I ser 4,5:i:-, *S.* subsp I ser 9,12:-:1,5.

Typhoid and paratyphoid cases

There were four reports of *S.* Typhi (three cases and one carrier) three cases of S. Paratyphi A and no cases of *S.* Paratyphi B (Table 3).

There were 27 cases of *S.* Paratyphi B biovar Java. There were 18 cases of phage type Battersea reported during this quarter and, with three exceptions, all were from the Northern Territory. There was no information available from the exceptions (New South Wales 2, Queensland 1) to indicate interstate travel. Ten cases were notified in the latter half of September and six of these were children aged 3 to 10 years. Three cases were notified from Elliott, north of Alice Springs, on 30 September 1993. There was one case of 3b var 3 (Bali), three cases of Dundee (one acquired in Bali and the other two involving a nursing contact), one Jersey var 3 (no information supplied) and two RDNC, one of which was identified as AUS1 (M/5, Broome Western Australia).

Table 3. Typhoid and paratyphoid cases

Vi-phage type	Sex/age (years)	State or Territory	Notes
S. Typhi			
D2	M/32	Qld	Acquired in Papua New Guinea
D2	F/3	Qld	On international cargo ship via India and Sri Lanka
degraded	F/65	NSW	Carrier
degraded	M/ns	Vic	Acquired in either Singapore or Djakarta
S. Paratyphi A			
?	M/21	Vic	Visited Pakistan
4	M/23	SA	Travel in Indonesia
9	F/26	Tas	Returned from India and Nepal

ns not stated.

Isolations from blood, urine and unusual sites

During the quarter, there were 9 reports of bacteraemia excluding enteric fever, 22 reports from urines and six reports from unusual sites (Table 4).

Shigella infections

A total of 124 reports of *Shigella* infections was received for this quarter. Of these, two were follow-up specimens, one was from a migrant and 23 were notified from travellers returning from overseas. This left a total of 99 cases reported as acquired in Australia (Table 5) as against 109 for the corresponding period of 1992.

Cases of *Sh. boydii* 1 continue to be reported from the northern regions of Australia and in this quarter there were seven such reports (Northern Territory 5, Western Australia 2).

Shigella infections acquired overseas include *Sh. boydii* 12 (Indonesia), *Sh. boydii* 4 (Uzbekistan, India), *Sh. flexneri* 2 (Africa), *Sh. flexneri* 2a (Bali 2), *Sh. flexneri* 2b (Maldives), *Sh. flexneri* 4 (Africa), *Sh. flexneri* 6 (India) *Sh. sonnei* (Thailand), *Sh. sonnei* biotype a (Vanuatu (3), Bali, Lebanon) and *Sh. sonnei* biotype g (Fiji (4), Bali, Thailand).

Table 4. Isolations from blood, urine and unusual sites

Organism	Sex/age (years)	State or Territory	Notes
Bacteraemias excluding enteric fever			
S. Bredeney	F/45	NT	
S. Derby	F/77	NSW	Recently returned from Thailand
S. Heidelberg PT 1	M/3	Qld	
S. Muenchen	F/1	NT	
S. Typhimurium PT 44	M/62	Vic	
S. Virchow	F/1	Qld	
S. Virchow	F/<1	Qld	
Y. enterocolitica O:3 Bio 4	M/35	Qld	
Y. enterocolitica O:3 Bio 4	F/79	NSW	

Urines					
Organism	Sex/age (years)	State or Territory	Organism	Sex/age (years)	State or Territory
S. Abony	M/4	Qld	*S.* Infantis	F/70	NSW
S. Birkenhead	F/71	NSW	*S.* Newport	F/3	NSW
S. Cerro	F/19	Vic	*S.* Saintpaul	F/25	NT
S. Cerro	F/4	Vic	*S.* Saintpaul	F/1	Vic
S. Cerro	F/3	Qld	*S.* Typhimurium RDNC	F/28	NSW
S. Cerro	F/81	Vic	*S.* Typhimurium untyped	F/21	SA
S. Chester	F/10	NT	*S.* Virchow	F/55	NSW
S. Enteritidis PT 4	F/6	NSW	*S.* Virchow	M/50	Qld
S. Give	F/18	Qld	*S.* Virchow	M/20	Qld
S. Infantis	F/20	NSW	*S.* Waycross	M/40	Qld
S. Infantis	F/77	Vic	*S.* subsp IIIb ser 38:1,v:z53	M/63	Vic

Unusual sites			Site
A. hydrophila	M/65	Vic	Wrist aspirate
S. Cerro	F/9	Vic	Appendix
S. Rubislaw	M/44	Qld	Neck abscess
S. Saintpaul	M/76	NSW	Colostomy fluid
S. Typhimurium PT 4	M/55	NSW	Perianal abscess
S. Waycross	F/48	Vic	Gall bladder swab

Top ten *Salmonella* serovars

The top ten *Salmonella* serovars accounted for 60% of all Australian acquired cases notified to the NSSS (Table 6). The most common serovar was *S.* Typhimurium with 179 cases from 30 phage types of which the two most common were phage types 9 (34 cases) and 135 (33 cases). The most interesting newcomer to the list of the top ten was *S.* Paratyphi B biovar Java, its increased frequency being due to an outbreak of phage type Battersea in the Northern Territory in September. *S.* Enteritidis has returned to the top ten this quarter and of the 19 isolates six were of PT 4. Some of these would have been acquired overseas but notified without travel details. (An attempt is made to follow up every notification of *S.* Enteritidis PT 4 received by the NSSS and this has been our practice since 1989.)

The top five phage types of *S.* Typhimurium comprised 55.3% of the total. Phage type 9 was the most common (Table 7).

Mixed infections

There were 15 mixed infections reported for the third quarter of 1993 (Table 8).

Outbreaks, third quarter 1993

The following were suspected or confirmed outbreaks during the quarter.

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

Organism	ACT	NSW	Vic	Qld	SA	WA	Tas	NT	Total
Sh. boydii	0	0	0	0	0	1	0	0	1
Sh. boydii 1	0	0	0	0	0	2	0	5	7
Sh. flexneri 1b	0	1	0	0	2	0	0	0	3
Sh. flexneri 2	0	0	0	0	0	11	0	0	11
Sh. flexneri 2a	0	3	3	4	2	0	0	6	18
Sh. flexneri 2b	0	1	0	0	0	0	0	0	1
Sh. flexneri 3a	0	1	0	1	0	0	0	0	2
Sh. flexneri 3b	0	0	0	1	0	0	0	0	1
Sh. flexneri 4a mann neg	0	0	0	0	0	0	0	1	1
Sh. flexneri 6	0	0	0	1	0	0	0	1	2
Sh. flexneri var Y	0	1	0	0	0	0	0	0	1
Sh. sonnei	0	2	0	4	0	18	0	0	24
Sh. sonnei biotype a	0	0	2	5	6	0	0	7	20
Sh. sonnei biotype g	0	3	2	0	0	0	0	2	7
Total	0	12	7	16	10	32	0	22	99

Table 6. Top ten *Salmonella* serovars

	Position in 2nd quarter, 1993	Cases	% of total	Origin and number of cases
S. Typhimurium[1]	1	179	25.4	NSW 46, Vic 37, WA 23
S. Saintpaul	4	55	7.8	Qld 17, NSW 15, NT 7
S. Virchow	3	33	4.7	Qld 29
S. Cerro	-	28	4.0	Vic 9, Qld 6, NT 5
S. Paratyphi B biovar Java[1]	-	23	3.3	NT 15, NSW 3
S. Muenchen	5	23	3.3	Qld 8, NT 7, NSW 4
S. Newport[1]	2	22	3.1	WA 17, Qld 4
S. Chester	8	22	3.1	Qld 12, NSW 4, WA 3
S. Birkenhead	9	19	2.7	Qld 17
S. Enteritidis	-	19	2.7	Qld 6, NSW 5, SA 4
S. Heidelberg	7	19	2.7	Qld 9, NSW 6
Total			60.1	

1. associated with outbreaks or incidents.

In: *S.* Cerro, *S.* Paratyphi B biovar Java, *S.* Enteritidis.

Out: *S.* Infantis, *S* Hadar.

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

Phage type	Position in 2nd quarter, 1993	Cases	% of total	Origin and number of cases
9[1]	1	34	19.0	NSW 30, Vic 19, Tas 9
135	2	33	18.4	NSW 24, WA 9, Vic 7
44	5[2]	13	7.3	Vic 4, SA 4, NSW 2
12a	5[2]	10	5.6	NSW 9, WA 2
170	3	9	5.0	NSW 7, Vic 3
Total		99	55.3	

1. Associated with outbreaks or incidents.
2. Equal fifth position last quarter.

Northern Territory

There were 18 cases of ***S.* Paratyphi B biovar Java Battersea** for the quarter, of which 10 were reported notified in the latter part of September. The September cases were, with two exceptions (F/61, M/<1), reported from children aged from three to 10 years. Four cases were notified on 30 September 1993, three of which were from Elliott and one from Katherine.

Sporadic cases of ***Sh. boydii* 1** continued to be notified from around Katherine.

South Australia

Three cases of ***S.* Typhimurium PT 9** were reported from Adelaide on two days in mid-August, one elderly adult and two children.

Western Australia

***S.* Newport** was reported for 10 cases, both adults and children, notified from Perth and regional areas, following on from the biggest outbreak so far this year. The total number of cases for the year so far is 110.

Update

Since the beginning of January 1994 the following outbreaks and incidents of salmonellosis and other enteric disease have been reported or detected.

Thirty cases of ***S.* Typhimurium PT 9** were reported from Sydney, mid January to February and continuing.

The number of cases of ***S.* Typhimurium PT 9** and **PT 135** increased in February and March in Victoria.

***S.* Kottbus** was reported from the Brewarrina area of New South Wales, in infants and young children in early January.

There was an outbreak of ***S.* Eastbourne** among kitchen staff at a Northern Territory hospital, late December - early January.

A case of ***E. coli* O157**, mixed infection with *Giardia* and adenovirus, was reported for a one year old male from country Victoria in February.

A case of ***V. cholerae* O1 serotype Ogawa biotype El Tor** was reported for a 64 year old male who had been a tourist in Bali; seafood suspected.

Table 8. Mixed infections, third quarter 1993

Organism	Sex/age (years)	State or Territory
S. Adelaide, *S.* Senftenberg	F/<1	WA
S. Ball, *Sh. flexneri* 2	M/8	WA
S. Birkenhead, rotavirus	F/2	Qld
S. Blockley, *Plasmodium vivax* (malaria)	M/21	Vic
S. Cerro, *Giardia* species	M/4	Qld
S. Enteritidis PT 4, *S.* Derby	M/11[1]	SA
S. Hadar, *C. jejuni* subspecies *jejuni*	F/9	Vic
S. Hadar, *S.* Kentucky	F/25[1]	Qld
S. Hadar, *C. jejuni* subsp *jejuni*	F/46	Vic
S. Hadar, *Cryptosporidium* species	F/3	Vic
S. Saintpaul, *S.* Wandsbek subspecies II	M/3	NSW
S. Typhimurium PT 44, *Cryptosporidium* species	M/74	Vic
S. Typhimurium PT 179, *Campylobacter* species	M/5	Vic
S. Worthington, *Campylobacter* species	F/<1	Vic
Y. enterocolitica O:3 Bio 4, *A. caviae*	F/<1	Qld

1. Acquired overseas (M/11 Malaysia, F/25 South-east Asia).

CDI editorial comment

The National Notifiable Diseases Surveillance System received 766 notifications of salmonellosis (not elsewhere classified) with onset dates in the third quarter of 1993. As for the NSSS, this was the smallest quarterly number of salmonellosis notifications for the year, and compared with 1143 notifications with onset dates in the second quarter of the year, and 790 in the third quarter of 1992. There were six notifications of typhoid in the third quarter of 1992. Shigellosis was notified for 151 cases in the third quarter of 1993, 133 in the second quarter and 167 cases in the third quarter of 1992.

All these diseases are notifiable in all States and Territories of Australia. 'Typhoid' includes paratyphoid in New South Wales and Victoria.

SALMONELLOSIS IN FAR NORTH QUEENSLAND, 1993

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Introduction

After the Northern Territory, Queensland has the highest annual incidence of reports of *Salmonella* infections of any State or Territory. The crude rate of reporting in 1992 was 55.2 per 100,000 population, compared to the national rate of 33.0 per 100,000[1].

Within Queensland, the major focus of salmonellosis is in the Far North. Far North Queensland (FNQ) begins just north of but does not include Ingham, it includes the Cape York Peninsula and the Torres Strait. The total population is approximately 205,700. Of the 1640 *Salmonella* infections reported from Queensland in 1992, 26% were from the Far North and 20% from Brisbane[1]. The reporting rate for the Peninsula and Torres Strait region was 228 per 100,000 population, compared with 30 per 100,000 in Brisbane. This paper describes salmonellosis in FNQ in 1993, based on routine surveillance data.

Methods

We collected notifications of cases from diagnostic laboratories in FNQ; isolates were referred elsewhere for further identification. Further details were collected about each salmonellosis notification by initially contacting the treating medical practitioner and if necessary speaking further to the patient (or patient's parent). Data collected included age or date of birth, place of residence, sex, race, date of specimen collection, date of notification, clinical diagnosis, and any history of overseas travel. Rates of notification for population groups were calculated using population statistics from the Australian Bureau of Statistic's 1991 Census.

Results

There were 222 laboratory notifications of salmonellosis in FNQ during 1993, giving a crude notification rate of 108 per 100,000 population. The age distribution of notifications was unimodal, with the peak in the under five years age group. Of all notifications, 44% and 71% were in children aged less than one year, and less than five years respectively. Children aged less than one year were much more likely to have salmonellosis than all other age groups (relative risk (RR) 37.5, 95% confidence interval (CI) 27.0 - 42.3). There were no differences in notifications by sex in any age group.

Salmonellosis notifications had a seasonal pattern with the highest incidence in the rainy season; two-thirds of the notifications occurred between January and June (Figure). This seasonal pattern is similar to that seen in other tropical areas of the world[2].

Seventy-seven (35%) of the 222 cases were Aboriginal persons with 65 having a place of residence within Aboriginal communities of Cape York or in the Torres Strait. Aborigines and Torres Strait Islanders had a greater risk of salmonellosis compared to non-Aborigines (RR 4.1; 95% CI 3.1 - 5.4). The populous urban and semi-urban coastal areas of FNQ (Cardwell north to Cooktown, including Cairns and the Atherton Tablelands) had an notification rate of 81.2 per 100,000 population.

Only six of the patients with salmonellosis had a history of recent overseas travel. Five had recently been to Asia, the other to Papua New Guinea.

Figure. Salmonellosis notifications in Far North Queensland, 1993, by month

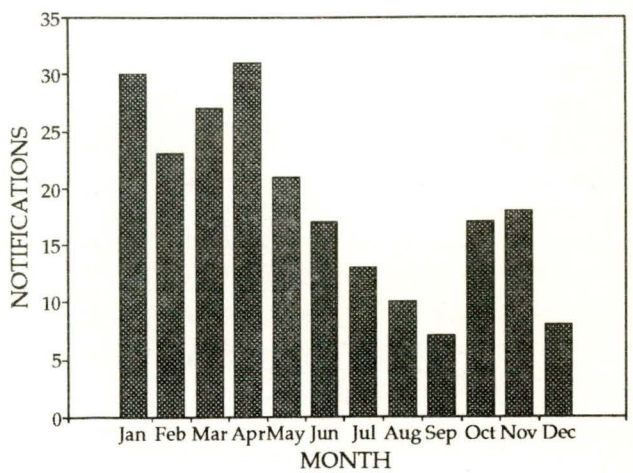

Table. Top ten *Salmonella* serovars, Far North Queensland, 1993

Serovar	Notifications	Percent of total
S. Virchow	43	20.1
S. Saintpaul	22	10.4
S. Anatum	13	5.9
S. Chester	12	5.5
S. Mgulani	11	5.2
S. Thompson	11	5.2
S. Enteritidis	9	4.3
S. Heidelberg	9	4.3
S. Aberdeen	8	3.8
S. Typhimurium	8	3.8

Two hundred and seventeen (97%) of the 1993 salmonella isolates from FNQ were serotyped. The three major serovars were *S.* Virchow, *S.* Saintpaul and *S.* Anatum (Table).

The incidence of *S.* Virchow infections in FNQ is considerably greater than elsewhere in Australia. The National *Salmonella* Surveillance Scheme reports that although *S.* Virchow is acquired Australia wide, about 85% of notifications are from Queensland, with 70% of those originating from the coastal region between Bundaberg and the Far North[1]. The role of S. *Virchow* as a potentially invasive organism has been previously reported[3]. Over 50% of the *S.* Virchow cases were less than two years of age.

There were nine notifications of *S.* Enteritidis, three PT 4, all from urban areas. S. Enteritidis PT 4 is the most commonly diagnosed *Salmonella* serotype in the northern hemisphere[4] where it has been epidemiologically linked with fresh shell eggs[5]. In Australia, no reports of *S.* Enteritidis PT 4 isolates from fresh eggs have been made, but it has recently been isolated from chicken environments[6].

Conclusion

Routine surveillance has shown that FNQ experiences a very high rate of salmonellosis. Groups identified to be most at risk of salmonellosis (compared to the rest of the FNQ population) were children aged less than one year, and Aboriginal persons. The most frequent serovar isolated was *S.* Virchow, acccounting for 20% of all notifications.

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SALMONELLA TYPHIMURIUM PHAGE TYPE 44 - REPORT OF A CASE ASSOCIATED WITH DUCKS

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On 1 February 1994 the Victorian Department of Health and Community Services notified the City of Waverley's Public Health Section that a two year old had contracted a gastrointestinal illness. The child had had onset of symptoms on 14 January and seen a doctor on 16 January. A faeces specimen was taken, and demonstrated that the illness had been caused by *Salmonella* Typhimurium phage 44. A food product was thought to have been implicated, so the Public Health Section was called to investigate.

An interview with the parents of the two year old on 1 February revealed that they thought that a canned baby food may have been responsible because it had not been tried before. The canned food was the only food out of the ordinary that had been eaten by their baby. Normally, the baby ate peanut butter and bread which had been consumed a number of times prior to the onset of symptoms. Other foods and drinks consumed by the baby had also been consumed by the parents, who had remained well.

An unopened tin of baby food was available for analysis. The tin was in good condition and intact. Despite this, it was sent for analysis. The results of analysis were negative, as expected; the contents of the tin were microbiologically sound.

At the time of the interview the parents were asked whether the family owned any chickens or ducks. The family had two ducks which were free to roam the rear yard. An environment sample of soil and duck faeces was collected on 7 February and sent for analysis. It

was reported positive for *Salmonella* Typhimurium phage type 44 on 17 February. The baby was often allowed to crawl in the rear yard whilst the parents were there and it is possible that the baby may have ingested the bacteria whilst playing in the yard or crawling over the floor or carpet which had been walked on by someone who had been in the yard.

On receipt of the confirmation that the same serovar had been isolated from both the baby and the samples of soil and duck faeces, the parents were contacted and advised to take measures to clean up the yard and prevent the baby from contacting the ducks and duck faeces. It is understood that ducks are no longer kept by the family.

This event is worth keeping in mind when investing notifications of suspected food poisoning. If no suspect food can be determined, look to the environment for a possible cause.

CDI editorial comment

Salmonella Typhimurium phage type 44 was reported to the National *Salmonella* Surveillance (NSSS) Scheme for 57 human cases in Australia in 1991[1] and 59 in 1992[2]. There has been an increasing incidence of isolates from humans since early 1993[3]; in the first nine months of the year there were 58 reports to the NSSS including 25 from Victoria, 12 from New South Wales and eight from South Australia.

There has been a marked increase of isolates of this phage type reported to the NSSS in cattle over the last decade, from one in 1985 and nine in 1986 to 140 in 1992 and 114 for the first half of 1993[3]. In 1992, 133 of these were from Victoria, predominantly from dairy cattle. Other non-human isolates in 1992[4] and the first half of 1993 included five isolates from chickens, two from Queensland crocodiles and one each from an alpaca, a koala and a topknot pigeon.

References

1. Powling J , editor. Human annual report 1991. *National Salmonella Surveillance Scheme Reports* 1992;(5).
2. Powling J , editor. Human annual report 1992. *National Salmonella Surveillance Scheme Reports* 1993;(4).
3. Powling J, Truong B, Lightfoot D , editors. Non-human first and second quarter reports 1993. *National Salmonella Surveillance Scheme Reports* 1994;(1).
4. Powling J, editor. Non-human annual report 1992. *National Salmonella Surveillance Scheme Reports* 1993;(5).

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization (WHO), the Institut Pasteur, Paris, the Communicable Diseases Surveillance Centre, London and the Department of Foreign Affairs and Trade.

Poliomyelitis in Azerbaijan

An outbreak of poliomyelitis occurred in Azerbaijan in late 1993[1]. Fifty-nine cases were recorded in the country, which has a population of 7.5 million. Prior to 1993, the routine immunisation schedule included oral polio vaccine (OPV) at 3, 4.5, 6, 9 and 18 months with boosters at 3, 5, 7 and 14 years. This system enabled a high proportion of eligible children to be vaccinated, with 93% coverage reported in 1991. Poliomyelitis has been endemic in Azerbaijan, with at least 16 cases reported each year, and there was an outbreak of 182 cases of type 2 in 1990.

A shortage of vaccines developed following independence of Azerbaijan in 1991 with reported coverage for OPV falling to 70%. During a seven month period in 1993, no OPV was available in the country.

Eleven of the 59 cases in 1993 were tested and wild type 1 poliovirus was isolated from six. Forty-five of the cases (76%) were less than three years of age. One case died. Immunisation status was only known for 34 cases; 11 had received three or more doses of OPV, seven were partially immunised and 16 had not received OPV. Seventy-one per cent of the cases lived in rural areas or small towns and 27 cases were reported from districts near the Georgia border. Only two cases occurred among children officially reported as part of the refugee population displaced by the military activity on the border with Nagorno-Karabakh and Armenia.

Vaccines began arriving in the country in November 1993 and mass campaigns administering OPV and other antigens were then started. Two doses of OPV were administered to all children from three to 35 months, regardless of prior immunisation status. Refugee children aged three to 71 months were also immunised. Immunisation campaigns administering a dose of OPV to all children less than three years of age were planned for March, April, September and October this year. If sufficient vaccine is available, a door-to-door supplemental OPV campaign (mopping up) will be conducted in districts which reported poliomyelitis in 1993.

Diphtheria in eastern Europe

The epidemic of diphtheria in the former USSR continues to grow[2]. In the Russian Federation, there were 15,211 cases in 1993 (10.1 per 100,000 population) compared with 3897 in 1992 (2.6 per 100,000) and 1869 in 1991 (1.2 per 100,000). In the Ukraine, there were 2987 cases in 1993 (5.7 per 100,000), 1553 cases in 1992 (3.0 per 100,000) and 1101 cases in 1991 (2.1 per 100,000).

Rates also increased in other countries in 1993, including Azerbaijan (2.0 per 100,000), Belarus (1.0 per 100,000), Kazakstan (0.3 per 100,000), Moldova (0.5 per 100,000), Tajikstan (4.0 per 100,000) and Uzbekistan (0.2 per 100,000). Cases with epidemiological links to the former USSR were reported in Bulgaria, Estonia, Finland, Germany, Latvia, Lithuania, Poland and Norway.

The epidemic in the Russian Federation has affected all ages. In 1993, the attack rate was 12 per 100,000 in children aged less than 15 years, and 9 per 100,000 in older children and adults. Most cases occurred in Moscow and St Petersburg, but almost all regions have been affected. Those at particular risk were health care workers, public transport employees, homeless persons and alcoholics. Low vaccine coverage in infants and children, waning vaccine-induced immunity in adults and increased population movement are all thought to have been factors contributing to the epidemic.

Influenza in the Northern Hemisphere

Influenza activity has now disappeared in western Europe and is declining in most countries of eastern Europe. The Russian Federation has reported a decline in activity, but mortality was still at epidemic levels in Volgograd and Yakutsk in mid-March.

In the second week of March, influenza activity was declining in the United States, with widespread or regional activity reported in four States only. Pneumonia and influenza death indices were back to expected levels after being elevated for nine consecutive weeks.

Ninety-nine per cent of isolations have been influenza A H_3N_2.

Influenza B has been the only influenza type isolated in Hong Kong this season. Most isolates have been from children under the age of 15 years although there have been sporadic cases in all age groups. The number of isolates has increased markedly since the beginning of February.

Malaria outbreak in Papua New Guinea

A severe outbreak of malaria has been confirmed in Milne Bay Province of Papua New Guinea, including the Trobriand Islands. The Papua New Guinean Office of National Disasters has advised that 180 deaths have been confirmed so far.

Cholera update

Cases of cholera have been reported for January, February and March from Argentina, Bolivia, Brazil, Burundi, Colombia, Ecuador, El Salvador, Guatemala, Honduras, India, Mozambique, Nicaragua, Peru and Somalia.

References

1. Expanded Programme on Immunization (EPI) Poliomyelitis outbreak. *Wkly Epidemiol Rec* 1994;**69**:101-103.
2. Task force for diphtheria in eastern Europe. *Communicable Disease Report* 1994;**4**:47.

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1274 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 9, 10 and 11).

- Twenty-six reports of **measles** were received this reporting period, 17 males and 9 females in the 0 to 28 year age group (all diagnosed by viral IgM detection).
- **Mumps** was reported for 5 patients this fortnight, 4 males and one female all in the 5 to 39 year age group (diagnosis by viral IgM detection).
- Thirteen cases of **rubella** were reported to the Scheme, 4 females (3 in the 15 to 44 year age group) and 9 males. The number of reports has continued to decline in recent months (Figure 1).
- One hundred and fifty-two reports of positive **hepatitis C** serology were received this fortnight. Included were 15 injecting drug users and one transplant recipient.

Figure 1. Rubella laboratory reports, 1993 to 1994, by month

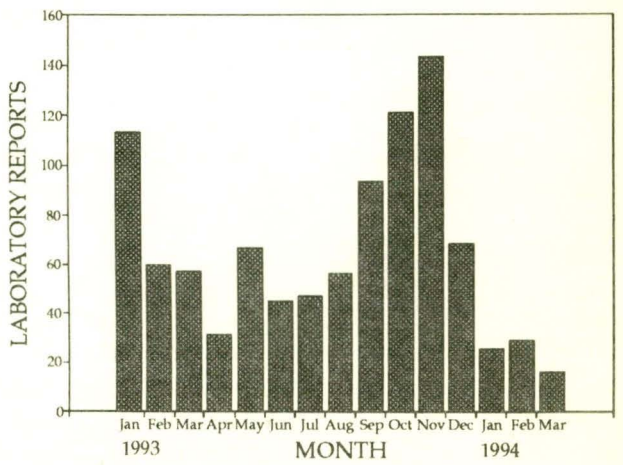
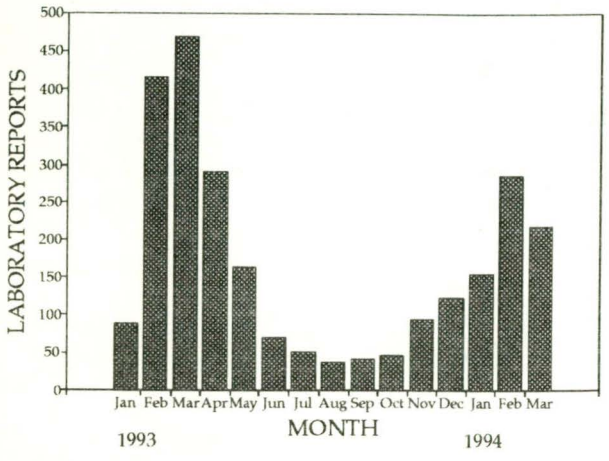


Figure 2. Ross River virus laboratory reports, 1993 to 1994, by month



- **Ross River virus** infection was reported for 184 patients this period, 166 of whom were from Queensland. Two cases were confirmed (fourfold change in titre), one from Kununurra, Western Australia and the other from Greenbushes, Western Australia. The remainder were presumptive diagnoses (IgM positive). There has been an increase in the number of Ross River virus reports in recent months, though levels remain below those of this time last year (Figure 2).
- Eleven reports of **Barmah Forest virus** were received, including 2 confirmed reports (fourfold change in titre) from Western Australia, one from Carnarvon and the other from Mullalyup.
- **Flavivirus** (unspecified) was reported for 4 patients including three males (two 26 year olds and one 10 year old), all with a recent history of travel to South-East Asia.
- Forty-one reports of **adenovirus** were received this fortnight, 24 isolations, 16 antigen detections and 1 single high titre. Eye disease was reported for 7 patients, two **adenovirus type 3**, three **adenovirus type 8** and two untyped.
- **Herpes simplex virus type 1** was isolated from the eyes of a 46 year old male and a 5 year old female.
- Untyped **herpes simplex virus** was detected in the CSF of a 76 year old female with meningitis.
- There were 46 reports of **cytomegalovirus (CMV)** this fortnight, 30 isolates and 16 serological diagnoses. Included was isolation from the heart of a 6 month old male who died of SIDS, and isolation from a cervical swab from a 26 year old pregnant female.
- **Varicella-zoster virus** infection was diagnosed for a 32 year old male and a 34 year old female both from Western Australia (viral IgM positive). Varicella-zoster was also detected by immunofluorescence in a genital specimen from a 68 year old female.
- Three reports of **parvovirus** were received this fortnight, a 42 year old male and two females (one 56 years old the other of unknown age), all diagnosed by viral IgM detection.
- **Echovirus type 25** was isolated fron the nasopharynx of an 11 year old Victorian male with an upper respiratory tract infection.
- The number of reports of **echovirus type 30** meningitis being received remains elevated (Figure 3), with 18 being received this period, 10 males and 8 females.
- Thirty-seven untyped **enterovirus** reports were received this fortnight including an isolation from an ulcer swab from a 45 year old male. The number of reports has remained elevated over the summer months (Figure 4).

Figure 3. Echovirus type 30 laboratory reports, 1993 to 1994, by month

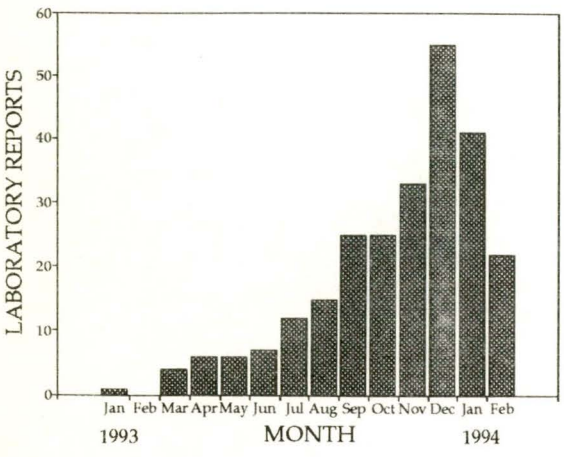
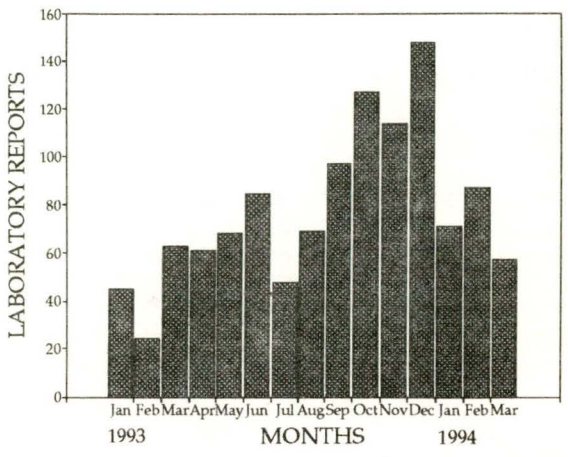
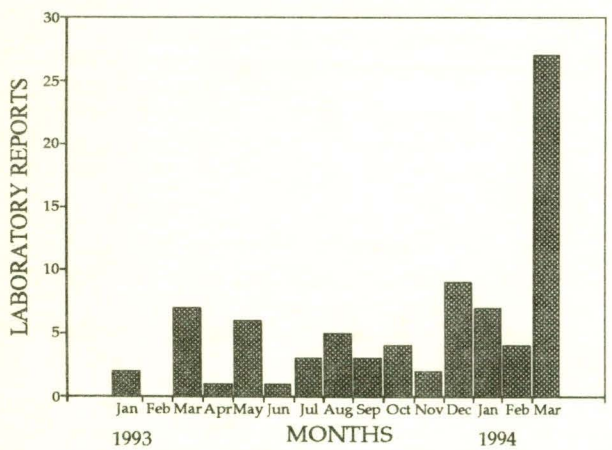


Figure 4. Untyped enterovirus laboratory reports, 1993 to 1994, by month



- Two reports of **influenza A** virus were received this fortnight, a 48 year old female from Victioria (fourfold rise in titre) and a Western Australian female in the over 65 years age group.
- **Influenza B** was reported for 2 patients this period, a 70 year old male and a 78 year old female, both from South Australia (single high titres).
- **Parainfluenza virus** was reported for 30 patients this fortnight, 19 diagnosed by virus isolation and 11 by antigen detection. Twenty-one reports were of **parainfluenza virus type 1**, 15 of which were in the one to 4 year age group. An increased number of **parainfluenza virus type 1** reports have been received recently, with specimen collection dates in March (Figure 5). This virus has had a two year periodicity in Australia recently; the last peak of reports occurred in autumn 1992. **Parainfluenza virus type 3** was reported for 7 patients, four in the one to 11 month age group and two in the one to 4 year age group.

Figure 5. Parainfluenza virus type 1 laboratory reports, 1993 to 1994, by month



- Twenty reports of **respiratory syncytial virus (RSV)** were received this fortnight. Diagnosis was by virus isolation (7) and antigen detection (13).
- ***Mycoplasma pneumoniae*** was reported for 32 patients this fortnight, 13 females and 19 males all in the age range 2 to 51 years.
- **Q fever** was reported for 10 patients, 8 males and 2 females all in the 17 to 48 year age group. Included was an abattoir worker from Victoria and a meat-worker from Queensland. Diagnosis was by fourfold rise in titre (2) and IgM detection (8).
- Thirty-three ***Bordetella*** reports were received this period, 26 ***Bordetella pertussis*** and 7 ***Bordetella* species**. Diagnosis was by isolation (1), antigen detection (2), IgM detection (6), IgA detection (24) and single high titre (1).

Australian Sentinel Practice Research Network

Data for weeks 8 to 12 are included in this issue of *CDI* (Table 1). There were 8454 patient encounters in week 8, 8370 in week 9, 9049 in week 10, 9647 in week 11 and 7122 in week 12. The rates of reporting of pertussis, measles and influenza were higher than in the first 7 weeks of the year. Influenza was reported from Western Australia at a higher rate (15.6 per 1000 encounters) than for the Network overall (4.5 per 1000 encounters) in weeks 9 to 12. Victoria, Tasmania and the Northern Territory reported influenza at lower rates for the same period. Data on gastroenteritis were not available for this report.

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 diagno-

Table 1. Australian Sentinel Practice Research Network, weeks 8 to 12 1994

Condition	Week 8, to 27 February 1994		Week 9, to 6 March 1994		Week 10, to 13 March 1994		Week 11, to 20 March 1994		Week 12, to 27 March 1994	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	22	2.6	32	3.8	42	4.6	67	6.9	29	4.1
Measles	9	1.1	10	1.2	6	0.6	8	0.8	7	1.0
Chickenpox	5	0.6	10	1.2	2	0.2	2	0.2	1	0.1
Pertussis	9	1.1	7	0.8	12	1.3	12	1.2	8	1.1

sis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly *Australian HIV Surveillance Report*, available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 332 4648 Facsimile: (02) 332 1837.

HIV and AIDS diagnoses and AIDS deaths reported for October 1993, as reported to 31 January 1994, are included in this issue of *CDI* (Tables 2 and 3).

Sterile Sites Surveillance (LabDOSS)

Eight laboratories provided 207 reports of recent significant sepsis this fortnight: Woden Valley Hospital, Australian Capital Territory 9; Sullivan Nicolaides, Queensland 10; ICPMR Westmead, New South Wales 70; Institute of Medical and Veterinary Science, South Australia 64; Ipswich General Hospital, Queensland 11; Royal Hobart Hospital, Tasmania 23; Toowoomba Pathology Laboratory, Queensland 10; Greenslopes Repatriation Hospital, Queensland 10.

ICPMR Westmead also provided 190 reports of sepsis prior to March 1994. These reports included one case of *Salmonella* Typhi sepsis in an 11 year old child; no travel history was provided. Retrospective data are not reported fortnightly in *CDI*, but are added to the total dataset.

Organisms reported 5 or more times from blood are detailed in Table 4. Other blood isolates not included in Table 4 were:

Gram positive: 1 *Bacillus* species, 1 *Corynebacterium* species, 1 *Staphylococcus haemolyticus*, 2 *Streptococcus pneumoniae*, 1 *Streptococcus* Group B, 1 *Streptococcus*

Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths from AIDS occurring in the period 1 to 31 October 1993, by sex and State or Territory in which diagnosis was made

										TOTALS FOR AUSTRALIA			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1993	This period 1992	Year to date 1993	Year to date 1992
HIV diagnoses	Female	0	2	0	2	0	0	2	0	6	8	66	79
	Male	0	34	0	11	4	0	14	1	64	85	777	947
	Sex not reported	0	0	0	0	0	0	1	0	1	0	10	15
	Total[1]	0	36	0	13	4	0	17	1	71	93	856	1043
AIDS diagnoses	Female	0	2	0	1	1	0	1	5	5	3	31	14
	Male	0	31	0	7	5	0	5	0	48	43	496	514
	Total[1]	0	33	0	8	6	0	6	0	53	46	530	535
AIDS deaths	Female	0	0	0	0	1	0	0	0	1	1	12	11
	Male	0	15	0	4	3	0	11	0	33	28	365	358
	Total[1]	0	15	0	4	4	0	11	0	34	29	379	372

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

Table 3. Cumulative diagnoses of HIV infection, AIDS and deaths from AIDS since the introduction of HIV antibody testing to 31 October 1993, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	9	491	4	75	38	3	132	42	794
	Male	139	9118	68	1272	489	68	2926	628	14708
	Sex not reported	0	2030	0	1	0	0	45	0	2076
	Total[1]	148	11647	72	1351	527	71	3110	671	17597
AIDS diagnoses	Female	2	98	0	20	12	2	26	9	169
	Male	54	2630	20	386	193	25	948	184	4440
	Total[1]	56	2733	20	408	205	27	979	193	4621
AIDS deaths	Female	2	54	0	10	6	1	11	3	87
	Male	35	1691	12	260	107	17	651	121	2984
	Total[1]	37	1749	12	271	113	18	665	124	2989

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

Table 4. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical information						Risk factors					Total[1]
	Bone/Joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
Staphylococcus aureus	2	1	1		1	4	5	2	2	1	3	29[2]
Staphylococcus epidermidis	1	1		1			2	10	2	2	2	11
Staphylococcus coagulase negative		1		1				3				21
Enterococcus species				3								6[3]
Escherichia coli		1		4	12	3	4	7	1	3		35
Enterobacter species				1				2	4		1	9
Klebsiella pneumoniae				3			1	4				11
Pseudomonas aeruginosa				4	2		2	5				8

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 3.
3. *Enterococcus faecalis* 4.
4. *Enterobacter cloacae* 5, *E. aerogenes* 2.

Table 5. LabDOSS reports of meningitis and/or CSF isolates, by organism and age group

	<1 month	1-4 years	5-14 years	15-24 years	25-34 years	55-64 years	65-74 years	75+ years	Total
Neisseria meningitidis group Y[1]		1							1
Haemophilus influenzae type b[2]	1	1							2
Streptococcus pneumoniae			1		1				2
Staphylococcus xylosis				1					1
Staphylococcus epidermis						1	1		2
Staphylococcus aureus								1	1
Streptococcus 'viridans'							1		1

1. New South Wales.
2. Both from Tasmania.

Group A, 3 *Streptococcus mitis*, 1 *Streptococcus* 'viridans', 4 *Streptococcus* species.

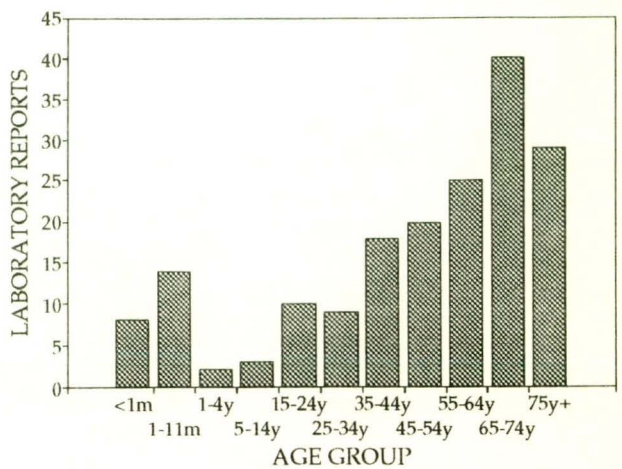
Gram negative: 1 *Yersinia enterocolitica* serotype O3 biotype 4 (70 year old male from Queensland), 1 *Haemophilus influenzae* type b (7 month old female from Queensland), 1 *Haemophilus parainfluenzae*, 1 *Neisseria sicca*, 1 *Salmonella* species (54 year old female from the Australia Capital Territory, locally acquired), 4 *Acinetobacter* species, 4 *Klebsiella oxytoca*, 1 *Aeromonas hydrophila*, 1 *Aeromonas* species, 1 *Flavobacterium* species, 3 *Proteus* species (1 *P. mirabilis*, 1 *P. vulgaris*), 1 *Pseudomonas cepacia*, 1 *Pseudomonas* species, 1 *Serratia* species, 4 *Xanthomonas maltophilia*, 1 *Morganella* species.

Anaerobes: 3 *Bacteroides fragilis*, 1 *Fusobacterium* species.

Fungi: 4 *Candida albicans*.

Most reports were for elderly persons (Figure 6).

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



CSF isolates and/or meningitis

There were 10 reports of CSF isolates and/or meningitis (Table 5).

Isolates from sites other than blood or CSF

Peritoneal dialysate: 1 *Candida parapsilosis*, 1 *Staphylococcus aureus*, 1 coagulase negative *Staphylococcus*, 1 *Staphylococcus epidermidis*.

Joint fluid: 2 *Staphylococcus aureus*.

Other: 1 *Acinetobacter calcoaceticus* subspecies *lwoffii*, 1 *Candida albicans*, 1 *Enterobacter agglomerans*, 1 MRSA, 4 *Staphylococcus aureus*, 2 coagulase negative *Staphylococcus*.

National Notifiable Diseases Surveillance System, 20 March to 2 April 1994

There were 2267 reports received for this period (Tables 6, 7 and 8 and Figure 10).

- There were 325 notifications of **Ross River virus infection** received, 150 males and 165 females. Sex was not recorded for 10 cases. The cases ranged in age between the 5-9 years and the 85-89 years age group and the mean age was 40 years. Cases were reported in Statistical Divisions of rural New South Wales, metropolitan and rural Western Australian and metropolitan and rural Queensland. The highest proportion (48%) of cases were reported from the Statistical Division of Brisbane. Reported onset dates were January (3), February (62) and March (260). Queensland continues to have the highest number of notifications, although at lower levels than in 1992 and 1993 (Figure 7).

Figure 7. Ross River virus infection notifications, 1992 to 1994, by month of onset and selected States

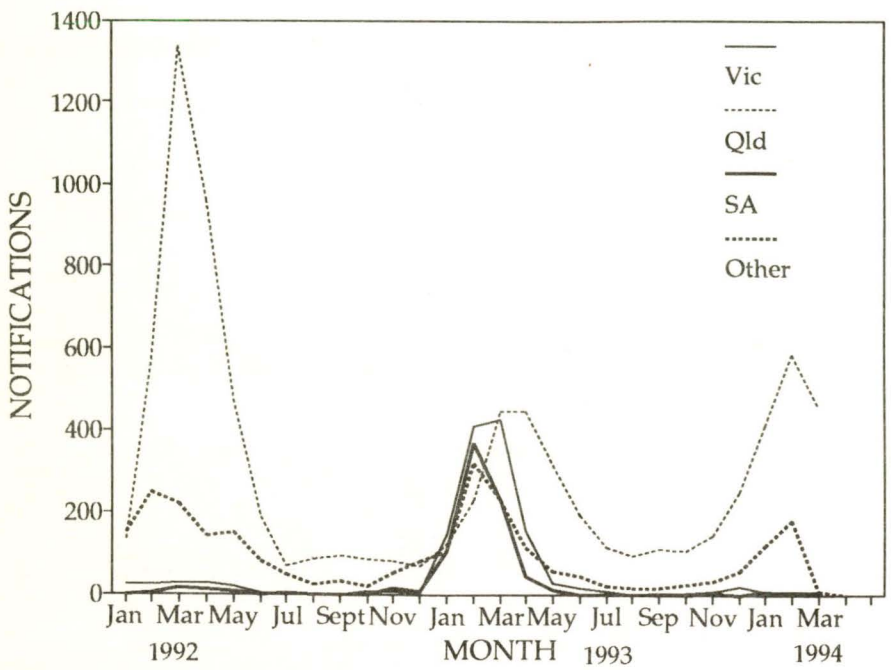
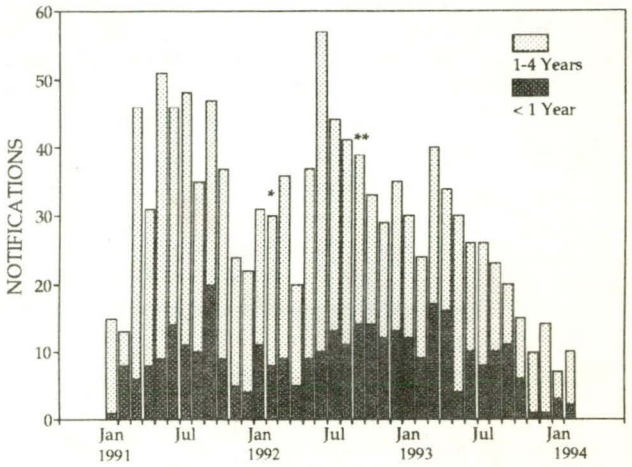


Figure 8. *Haemophilus influenzae* type b infection notifications, January 1992 to March 1994, by month of onset and age group



* PRP-D approved in February 1992.
** Infant vaccine approved in September 1992.

- A single case of **dengue** was notified in a male in the 25-29 years age group who was resident in the Northern Territory. The recorded onset date was February.
- There were 124 cases of **gonococcal infection** reported in the period. Eighty-six cases were male and 38 cases were female. Cases ranged in age from the 0-4 to the 85-89 years age group. Age was unrecorded for one case. Three cases occurred in children under 15 years of age.
- Four cases of ***Haemophilus influenzae* type b infection** were notified (Figure 8). The cases were all male. One case was recorded in a child of three months. Recorded onset dates were February (one) and March (3). There were no apparent clusters.
- Seventy-nine notifications of **hepatitis A** were recieved, 45 males and 33 females. Sex was unrecorded for one case. The cases ranged in age from the 0-4 years to the 85-89 years age group. Age was unrecorded for one case. Twenty-three of the cases were from the Far North Queensland Statistical Division and 21 were from the Brisbane Statistical Division.
- There were 54 cases of **hepatitis B** reported in the period; 9 of these cases were from States that report incident cases only.

Two of the incident cases were male and 6 were female. Sex was unrecorded for one incident case. They ranged in age between the 15-19 and the 70-75 years age groups.

- Four cases of **hydatid infection** were reported in the period. One case was male, two cases were female and sex was unrecorded for one case. The cases ranged in age from the 65-69 years age group to the 85-89 years age group. Age was unrecorded for one case.
- There were five notifications of **legionellosis** reported. Four cases were male and one case was female. The cases ranged in age between the 50-54 and 65-69 years age group. Three of the cases occurred in the Statistical Division of Melbourne. All recorded onset dates were in March.
- Eight notifications of **leptospirosis** were received. All cases were male and recorded ages ranged between the 15-19 and the 60-64 years age groups. Three cases were resident in metropolitan Brisbane, 2 in rural Queensland and 3 in rural Victoria.
- There were two cases of **listeriosis** reported. Both cases were females in the 25-29 years age group. Cases were resident in New South Wales and the Northern Territory. Recorded onset dates were in February.
- Twelve cases of **malaria** were reported; 7 cases were male and 5 cases were female. Cases ranged in age between the 15-19 and the 50-54 years age groups. Recorded onset dates were February (7) and March (5).
- Eighty-eight cases of **measles** were notified. There were 49 males and 38 females. Sex was unrecorded for one case. Recorded ages ranged from the 0-4 to the 90-94 years age group and the mean age of cases was 22.6 years. Nine cases were less than one year of age. There were 13 apparent clusters of between 2 and 11 cases each in the same postcode area. Apparent clusters occurred in New South Wales (one), Queensland (9), South Australia (3), and Western Australia (one).
- There were 12 notifications of **meningococcal infection** received. Four cases were male, 6 cases were female, and sex was unrecorded for 2 cases. Cases ranged in age from the 0-4 to the 90-94 years age group, with 4 cases in the 0-4 years age group. There were no apparent clusters.
- There were 141 cases of **pertussis** reported; 56 cases were male and 81 were female (Figure 9). Sex was unrecorded for four cases. Cases ranged in age between the 0-4 and the 90-94 years age group. Fifteen cases were aged under 5 years, of which 3 cases were aged less than one year. There were 18 apparent clusters with two or more case each in the same postcode area.
- Twenty notifications of **Q fever** were received, 18 males and 2 females. Recorded ages ranged between the 15-19 and the 50-54 years age groups. Locations reported were rural New South Wales (3), rural Victoria (one), metropolitan Brisbane (5), and rural Queensland (8).
- There were 39 notifications of **rubella** received; 26 were in males and 13 in females. Recorded ages ranged from the 0-4 to the 90-94 years age group. Age was unrecorded for one case. The mean age of cases was 36.9 years. Nine cases occurred in females in the 15-44 years age group.
- Thirty-nine cases of **syphilis** were reported; 36 were males, 30 were females and sex was unrecorded for 3 cases. Recorded ages ranged between the 15-19 and the 75-79 years age groups.
- A single cases of **tetanus** was reported for a female in the 40-44 years age group resident in Adelaide.
- Twenty-seven notifications of **tuberculosis** were received; 12 cases were male, 14 cases were female and sex was unrecorded for one case. Cases ranged in age between the 10-14 and the 80-84 years age groups.
- Two cases of **typhoid** were notified in residents of neighbouring postcode districts in Perth. One case was male and one was female. The cases were in the 75-79 years and 85-89 years age groups. Recorded onset dates were 7 days apart in March.

Figure 9. Pertussis notifications, January 1992 to March 1994, by month of onset

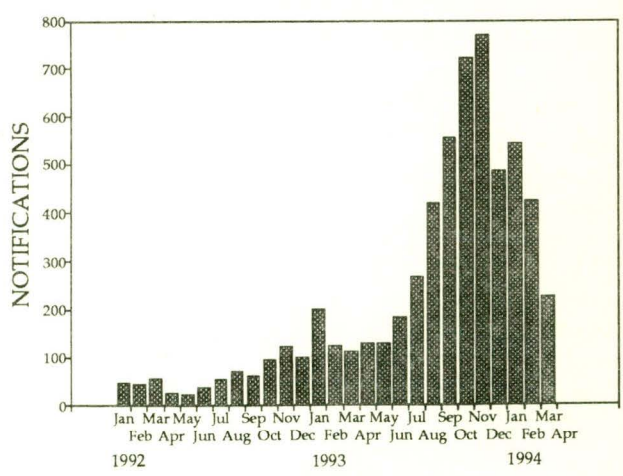
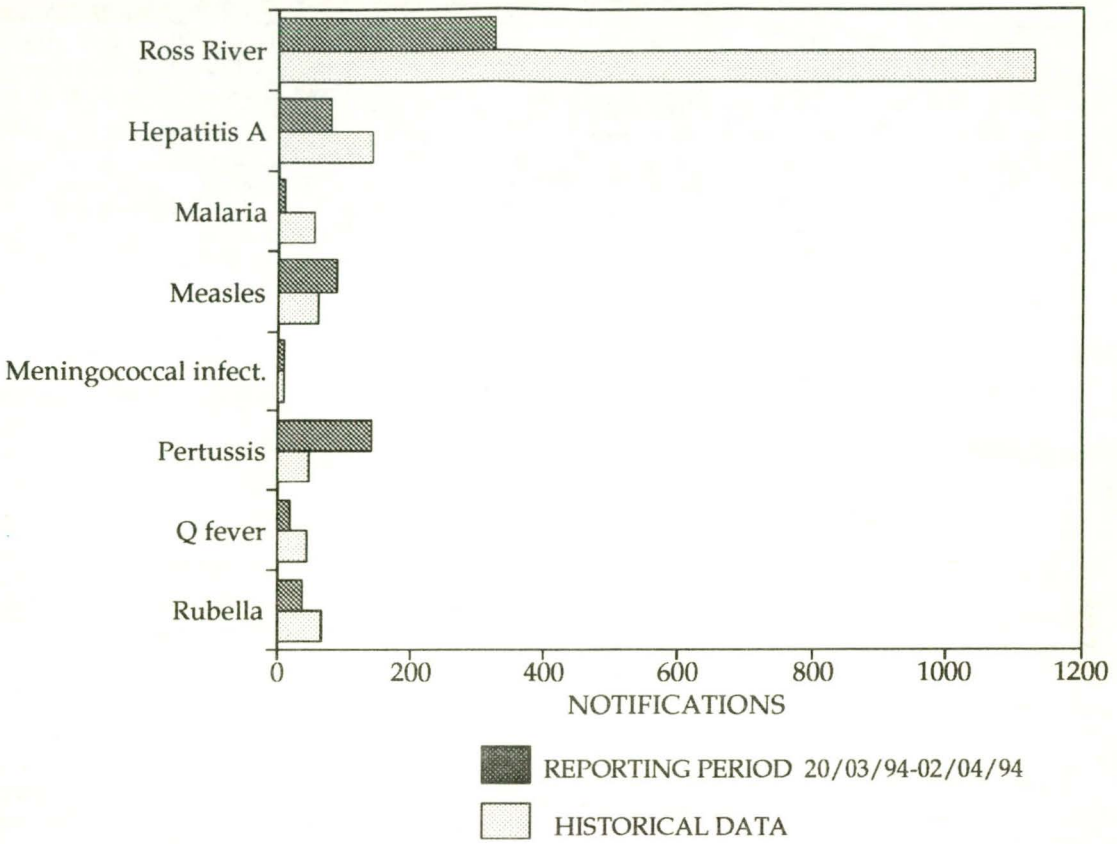


Figure 10. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



1. The historical data are the averages of the number of notifications in 6 previous 2-week reporting periods: the corresponding periods of the last 2 years and the periods immediately preceding and following those.

Table 6. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 20 March to 2 April 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1]			
									This period 1994	This period 1993	Year to date 1994	Year to date 1993
Diphtheria	0	0	0	0	0	0	0	0	0	2	5	2
Haemophilus influenzae b infection	0	1	0	0	0	1	1	1	4	25	51	46
Measles	1	6	0	62	1	2	1	15	88	31	841	66
Mumps	0	0	NN	NN	0	NN	0	0	0	0	3	0
Pertussis	2	30	0	51	33	0	12	13	141	46	1346	99
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella[2]	2	0	3	17	2	0	5	10	39	86	476	200
Tetanus	0	0	0	NN	1	0	0	0	1	0	3	0

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. NT, Tas: CRS only.

NN Not Notifiable.

Table 7. Notifications of other diseases[1] received by State and Territory health authorities in the period 20 March to 2 April 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Arbovirus infection												
Ross River virus infection	0	21	41	254	1	NN	2	6	325	616	2044	1509
Dengue	0	-	1	0	-	NN	0	NN	1	12	6	19
NEC[3]	0	3	4	36	0	6	2	0	51	48	194	101
Campylobacteriosis[4]	7	-	8	74	87	8	85	33	302	304	2338	654
Chlamydial infection (NEC)[5]	1	NN	37	115	26	10	48	18	255	250	1652	548
Donovanosis	0	NN	3	1	NN	NN	0	0	4	2	27	2
Gonococcal infection[6]	0	10	43	23	3	0	10	35	124	132	744	257
Hepatitis A	1	9	2	55	0	0	5	7	79	78	483	154
Hepatitis B[7]	2	2	3	43	0	0	1	3	54	124	436	216
Hepatitis C	22	0	4	118	0	7	118	35	304	464	2273	702
Hepatitis (NEC)	0	0	0	0	0	0	0	NN	0	11	16	11
Legionellosis	0	0	0	0	1	0	4	0	5	6	40	15
Leptospirosis	0	0	0	5	0	0	3	0	8	8	58	16
Listeriosis	0	1	NN	0	1	0	0	0	2	1	9	2
Malaria	1	1	0	2	0	0	7	1	12	43	131	55
Meningococcal infection	1	2	0	3	0	0	4	2	12	5	74	9
Ornithosis	0	NN	0	0	0	0	4	0	4	3	28	5
Q fever	0	5	0	13	0	0	2	0	20	36	144	80
Salmonellosis (NEC)	2	39	21	89	12	8	65	27	263	227	1879	490
Shigellosis[4]	6	-	4	6	2	0	1	19	38	39	213	100
Syphilis	0	26	14	27	1	0	1	0	69	66	511	200
Tuberculosis	1	11	1	1	1	1	9	2	27	34	219	79
Typhoid[8]	0	0	0	0	0	0	0	2	2	4	11	8
Yersiniosis (NEC)[4]	0	-	0	25	3	0	1	0	29	19	149	42

1. For HIV and AIDS, see Tables 2 and 3. For rarely notified diseases, see Table 9.
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. SA, 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. Acute cases only are reported by NSW, NT, SA, Tas and WA.
8. NSW and Vic: includes paratyphoid.

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

Table 8. Notifications of rare[1] diseases received by State and Territory health authorities in the period 20 March to 2 April 1994

DISEASES	Total this period	Reporting States or Territories	Year to date 1994
Botulism	0		0
Brucellosis	0		2
Chancroid	0		0
Cholera	0		1
Hydatid infection	4	NSW 1, Qld 1, Vic 2	12
Leprosy	0		1
Lymphogranuloma venereum	0		0
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 9. Virology and serology laboratory reports by State or Territory[1] for the reporting period 24 March to 4 April 1994, 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				18			1	7	26	6.2	463
Mumps virus				1			4		5	2.3	31
Rubella virus			2	5				6	13	15.7	241
HEPATITIS VIRUSES											
Hepatitis A virus		2		2			1	3	8	12.5	92
Hepatitis B virus		15		28		1	28	17	89	92.8	723
Hepatitis C virus		7		23	51	11	10	50	152	114.5	1,566
ARBOVIRUSES											
Ross River virus		5	5	166	1	1		6	184	122.0	883
Barmah Forest virus				9				2	11	13.7	92
Dengue not typed								1	1	1.3	9
Flavivirus (unspecified)							3	1	4	2.8	8
ADENOVIRUSES											
Adenovirus type 1							1		1	1.5	28
Adenovirus type 2		1							1	2.8	28
Adenovirus type 3		2					2		4	7.5	11
Adenovirus type 7		1							1	.5	3
Adenovirus type 8							3		3	1.2	43
Adenovirus type 26							1		1	.2	1
Adenovirus not typed/pending		8		6	5		5	6	30	38.8	460
HERPES VIRUSES											
Herpes simplex virus type 1		7	2	31	23	4	27	15	109	131.8	1,511
Herpes simplex virus type 2		18		43	20	3	23	39	146	154.3	1,685
Herpes simplex not typed/pending	1	9		3			1		14	24.7	201
Cytomegalovirus		6		16	1	2	20	1	46	65.7	488
Varicella-zoster virus		3	1	18	3		6	7	38	26.5	335
Epstein-Barr virus		3	1	17	25		10	11	67	56.7	519
OTHER DNA VIRUSES											
Parvovirus				1			1	1	3	3.2	26
PICORNA VIRUS FAMILY											
Coxsackievirus A16							3		3	.5	17
Coxsackievirus B2		1					1		2	.0	8
Coxsackievirus B5		1							1	1.0	7
Echovirus type 25							1		1	.3	1
Echovirus type 30						1	17		18	.2	165
Poliovirus type 1 (uncharacterised)							1		1	1.7	7
Poliovirus type 2 (uncharacterised)		1							1	.5	8
Poliovirus type 3 (uncharacterised)							1		1	1.3	6
Rhinovirus (all types)		2		4	1		15		22	29.3	307
Enterovirus not typed/pending		2		13			10	12	37	33.0	470

Table 9. Virology and serology laboratory reports by State or Territory[1] for the reporting period 24 March to 4 April 1994, historical data[2], 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			
ORTHO/PARAMYXOVIRUSES											
Influenza A virus							1	1	2	12.2	134
Influenza B virus					2				2	2.2	85
Parainfluenza virus type 1		1		7			12	1	21	15.2	54
Parainfluenza virus type 3				1	2		3	1	7	18.2	77
Parainfluenza virus typing pending							2		2	4.3	9
Respiratory syncytial virus		1		6			7	6	20	37.5	218
OTHER RNA VIRUSES											
HIV-1		1						1	2	3.0	21
Rotavirus		2	1			2	7	7	19	22.5	274
Small virus (like) particle								1	1	2.5	5
OTHER											
Chlamydia trachomatis not typed		4		20	20	2	5	1	52	112.2	840
Chlamydia psittaci							6		6	4.5	29
Mycoplasma pneumoniae		1		23	2		4	2	32	45.0	363
Mycoplasma hominis					1				1	.0	2
Coxiella burnetii (Q fever)		3		4			2	1	10	15.0	133
Streptococcus group A		1		8					9	3.8	82
Bordetella pertussis							6	20	26	3.3	209
Bordetella species		1		6					7	1.2	163
Cryptococcus species				1					1	.2	6
Leptospira species				1					1	.8	8
Treponema pallidum		5		2			1		8	18.2	101
Toxoplasma gondii							1		1	2.0	8
TOTAL	1	114	12	483	157	27	253	227	1,274	1,290.7	13,264

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 10. Virology and serology laboratory reports by clinical information for the reporting period 24 March to 4 April 1994

	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA												
Measles virus							8				18	26
Mumps virus				1							4	5
Rubella virus							6				7	13
HEPATITIS VIRUSES												
Hepatitis A virus						7					1	8
Hepatitis B virus						22					67	89
Hepatitis C virus					1	14					137	152
ARBOVIRUSES												
Ross River virus							21		82		81	184
Barmah Forest virus							2		2		7	11
Dengue not typed											1	1
Flavivirus (unspecified)											4	4
ADENOVIRUSES												
Adenovirus type 1				1								1
Adenovirus type 2				1								1
Adenovirus type 3								2			2	4
Adenovirus type 7											1	1
Adenovirus type 8								3				3
Adenovirus type 26							1					1
Adenovirus not typed/pending				9	15	1		2			3	30
HERPES VIRUSES												
Herpes simplex virus type 1				3			51	3		37	15	109
Herpes simplex virus type 2							27			111	8	146
Herpes simplex not typed/pending	1			1			4	2		1	5	14
Cytomegalovirus			2	10	1	2	1				30	46
Varicella-zoster virus							29	1			8	38
Epstein-Barr virus				5		1	1		2		58	67
OTHER DNA VIRUSES												
Parvovirus									2		1	3
PICORNA VIRUS FAMILY												
Coxsackievirus A16							3					3
Coxsackievirus B2	1						1					2
Coxsackievirus B5	1											1
Echovirus type 25											1	1
Echovirus type 30	18											18
Poliovirus type 1 (uncharacterised)				1								1
Poliovirus type 2 (uncharacterised)											1	1
Poliovirus type 3 (uncharacterised)											1	1
Rhinovirus (all types)				21							1	22
Enterovirus not typed/pending	4	2		11	3		2				15	37

Table 10. Virology and serology laboratory reports by clinical information for the reporting period 24 March to 4 April 1994, continued

	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES												
Influenza A virus				1							1	2
Influenza B virus				1							1	2
Parainfluenza virus type 1				19							2	21
Parainfluenza virus type 3				7								7
Parainfluenza virus typing pending				2								2
Respiratory syncytial virus				18							2	20
OTHER RNA VIRUSES												
HIV-1											2	2
Rotavirus					19							19
Small virus (like) particle					1							1
OTHER												
Chlamydia trachomatis not typed										44	8	52
Chlamydia psittaci				4							2	6
Mycoplasma pneumoniae				10							22	32
Mycoplasma hominis											1	1
Coxiella burnetii (Q fever)				1		2					7	10
Streptococcus group A		1		1			1				6	9
Bordetella pertussis				26								26
Bordetella species				2							5	7
Cryptococcus species				1								1
Leptospira species											1	1
Treponema pallidum						1				1	6	8
Toxoplasma gondii											1	1
TOTAL	25	3	2	157	40	50	158	13	88	194	544	1274

Table 11. Virology and serology laboratory reports by contributing laboratories for the reporting period 24 March to 4 April 1994

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	43
	Royal Alexandra Hospital for Children, Camperdown	11
	South West Area Pathology Service, Liverpool	35
Queensland	Nambour Hospital	2
	Queensland Medical Laboratory, West End	449
	State Health Laboratory, Brisbane	58
South Australia	Institute of Medical and Veterinary Science, Adelaide	157
Tasmania	Royal Hobart Hospital	23
Victoria	Microbiological Diagnostic Unit, University of Melbourne	4
	Monash Medical Centre, Melbourne	22
	Royal Children's Hospital, Melbourne	67
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	164
Western Australia	Princess Margaret Hospital, Perth	40
	State Health Laboratory Services, Perth	199
TOTAL		1274