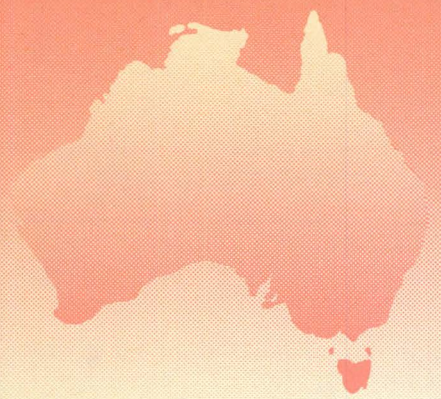

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COMMUNICABLE DISEASES NETWORK-AUSTRALIA
A National Network for Communicable Diseases Surveillance

WESTERN AUSTRALIAN 1991 ENTERIC PATHOGEN REPORT

(Compiled by the Public Health and Enteric Diseases Unit of State Health Laboratory Services, from data supplied by all State Health Branch Laboratories, all Teaching Hospitals and Private Pathology Laboratories in Western Australia)

This report summarises all the enteric pathogens (excluding viral agents) found in Western Australia for the calendar year 1991, and compares them with those found in 1990.

A few changes have taken place since the 1990 report was issued. First, the Perth Metropolitan Area has been divided into the North Metropolitan, North East Metropolitan, South Metropolitan and South East Metropolitan Divisions in line with statistical local areas as designated by the Australian Bureau of Statistics and the Health Department of Western Australia. Similarly, the previous South West Region has been divided into the South West and Great Southern Divisions; the previous South East Region has been named the Goldfields Division; the Central Region has been divided into the Central Wheat Belt and the Geraldton Midwest Divisions whilst the Pilbara and Kimberley Divisions remain unchanged.

Second, the other noteworthy change has been one of nomenclature. Ascribing to a recent edition of the Clinical Microbiology Update[1], *Giardia intestinalis* has been adopted as the more correct name for the previously reported *Giardia lamblia*.

A total of 5738 infections were detected in 5463 persons in Western Australia in 1991 (Table 1). The major enteric pathogens in both 1991 and 1990 included *Campylobacter*, *Giardia* and Salmonella (Figure 1).

Typhoid fever

There were nine cases of typhoid fever in 1991 compared with four in 1990. All patients had recently arrived from overseas (Table 2).

Paratyphoid fever

There were two isolations of Salmonella Paratyphi A in 1991 compared with one in 1990. Each was isolated from a blood culture. The first was from a two year old girl who had returned from India, and the other was from a 29 year old male mining rig worker who had returned from Indonesia.

There was one isolation of S. Choleraesuis *sensu stricto* from the blood culture of a nine month old male who had returned from Thailand. There were no isolations of S. Paratyphi B in 1991.

Figure 1. Cases of the major enteric pathogens, Western Australia, 1990 and 1991

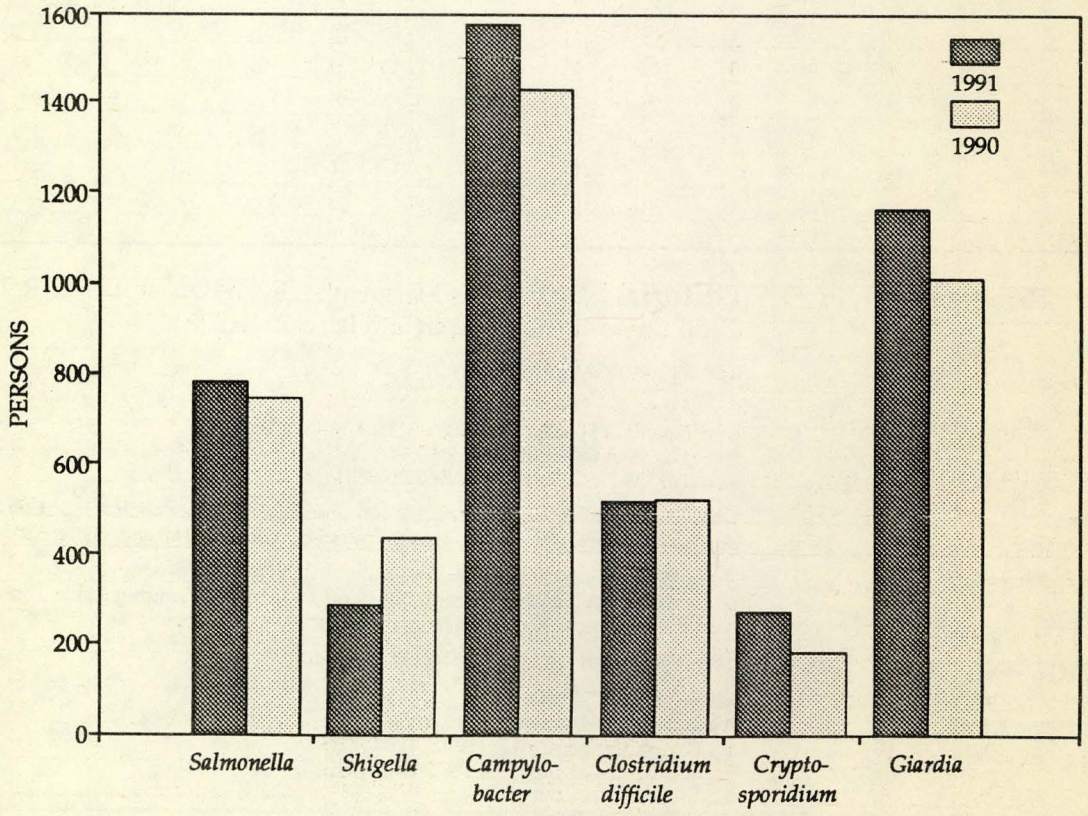


Table 1. Enteric pathogens in Western Australia, January - December 1991, by Statistical Division

	North Metro.	North East Metro.	South Metro.	South East Metro.	South West	Great Southern	Goldfields	Central Wheat Belt	Geraldton MedWest	Pilbara	Kimberley	1991 Total	1990 Total	Change 1990-1991
SALMONELLA														
S. Chester	18	4	0	3	0	0	2	2	4	7	15	55	19	
S. Muenchen	0	2	3	3	5	0	5	0	5	8	6	37	31	
S. Saintpaul	5	6	1	1	0	2	2	0	1	0	17	35	26	
S. Tennessee	3	3	3	5	5	0	4	0	5	5	10	43	14	
S. Typhimurium	50	37	30	24	26	5	12	7	13	7	6	217	267	
Other serotypes	66	49	23	38	20	4	14	13	20	37	114	398	396	
CASES	142	101	60	74	56	11	39	22	48	64	168	785	753	
PERSONS	142	100	60	74	56	11	39	22	48	64	167	783	746	+5.0%
SHIGELLA														
Sh. boydii	0	2	0	0	0	0	0	0	0	0	0	2	1	
Sh. boydii 13	0	0	0	0	0	0	0	0	0	0	0	0	1	
Sh. dysenteriae	0	0	0	0	0	0	0	0	0	0	0	0	2	
Sh. flexneri	1	0	0	0	0	0	0	0	0	0	0	1	6	
Sh. flexneri 1	2	0	0	0	0	0	0	0	0	0	0	2	1	
Sh. flexneri 2	7	5	6	1	7	2	10	5	17	45	27	132	221	
Sh. flexneri 2a	1	0	0	0	0	0	0	0	0	0	1	2	0	
Sh. flexneri 3	1	1	4	0	0	0	0	0	0	0	0	6	1	
Sh. flexneri 4	2	1	0	0	0	0	0	0	1	0	0	4	3	
Sh. flexneri 5	0	0	0	0	0	0	0	2	0	0	0	2	2	
Sh. flexneri 6	2	1	0	0	0	0	6	0	1	9	19	38	26	
Sh. flexneri X	0	0	1	0	0	0	0	0	0	0	0	1	2	
Sh. flexneri Y	1	0	0	0	0	2	0	0	0	0	1	4	6	
Sh. sonnei	2	4	0	2	7	2	1	0	16	5	50	89	158	
Shigella species	1	1	0	0	0	0	0	0	0	0	0	2	5	
CASES	20	15	11	3	14	6	17	7	35	59	98	285	435	
PERSONS	20	15	11	3	14	6	17	7	35	59	98	285	434	-34.3%
CAMPYLOBACTER														
C. coli	3	10	4	3	9	5	7	2	6	12	13	74	51	
C. jejimi	58	35	28	38	46	27	30	14	36	37	92	441	582	
C. laridis	0	0	0	0	0	0	0	0	0	0	0	0	1	
Campylobacter spp.	400	232	134	211	22	19	18	18	1	9	0	1064	797	
CASES	461	277	166	252	77	51	55	34	43	58	105	1579	1431	
PERSONS	461	277	166	252	77	51	55	34	43	58	105	1579	1430	+10.4%
OTHER BACTERIAL PATHOGENS														
Aeromonas spp.	10	12	7	6	5	4	2	1	0	2	5	54	85	
Clostridium difficile	179	137	44	78	31	4	14	4	10	14	5	520	524	-0.8%
Clostridium perfringens	1	0	0	0	0	0	0	0	0	0	0	1	14	
Edwardsiella tarda	0	0	0	0	0	0	0	0	0	0	3	3	2	
EHEC[1]	1	0	0	0	0	0	0	0	0	0	3	4	6	
EPEC[2]	0	0	0	0	0	0	0	0	0	0	1	1	0	
ETEC[3]	0	0	0	0	1	1	0	1	0	0	24	27	19	
Plesiomonas shigelloides	6	1	1	1	0	0	0	0	0	2	1	12	15	
Vibrio cholerae non O1	0	0	0	0	0	0	0	0	0	0	1	1	2	

Table 1. Enteric pathogens in Western Australia, January - December 1991, by Statistical Division, continued

	North Metro.	North East Metro.	South Metro.	South East Metro.	South West	Great Southern	Goldfields	Central Wheat Belt	Geraldton MedWest	Pilbara	Kimberley	1991 Total	1990 Total	Change 1990-1991
Vibrio parahaemolyticus	0	0	0	0	0	0	0	0	0	0	1	1	0	
Yersinia enterocolitica	2	1	0	0	0	0	0	0	0	0	0	3	2	
CASES	199	151	52	85	37	9	14	6	10	16	44	627	670	
PERSONS	199	151	52	85	37	9	14	6	10	16	44	627	670	
PARASITES														
Ascaris lumbricoides	4	5	1	2	1	0	2	0	1	0	0	16	13	
Blastocystis hominis	135	167	9	42	18	5	13	3	18	9	75	494	676	
Clonorchis sinensis	0	3	0	1	0	0	0	0	0	0	0	4	7	
Cryptosporidium sp.	15	18	14	20	20	4	32	7	13	8	122	273	181	+50.8%
Degenerated larvae	0	0	0	0	0	0	0	0	0	0	2	2	3	
Dientamoeba fragilis	3	6	0	0	0	0	3	0	1	1	8	22	2	
Entamoeba histolytica	3	8	1	1	0	0	0	1	1	0	1	16	24	
Entamoeba spp.	7	8	0	1	0	0	0	0	0	0	6	22	17	
Enterobius vermicularis	4	8	4	4	1	0	1	1	1	4	4	32	34	
Giardia intestinalis	233	138	62	81	60	16	36	26	58	55	249	1014	1168	-13.2%
Hymenolepis nana	7	7	5	6	0	3	13	4	24	14	95	178	230	
Hookworm	11	14	0	1	0	0	1	0	2	0	96	125	135	
Isospora belli	0	0	0	0	0	0	0	0	0	0	1	1	3	
Sarcocystis spp.	0	0	0	0	0	0	0	0	0	0	0	0	1	
Schistosoma haematobium	0	0	0	0	0	0	0	0	0	0	0	0	1	
Schistosoma mansoni	0	2	0	0	0	0	0	0	0	0	0	2	0	
Strongyloides stercoralis	6	6	1	1	0	0	3	0	2	4	109	132	139	
Taenia saginata	0	1	0	0	0	0	0	0	0	0	0	1	0	
Taenia spp.	0	0	0	0	0	0	0	0	0	0	0	0	1	
Trichostrongylus spp.	0	1	0	0	0	0	0	0	0	0	0	1	0	
Trichiuris trichiura	47	59	1	8	1	0	0	0	3	0	8	127	179	
CASES	475	451	98	168	101	28	104	42	124	95	776	2462	2814	
PERSONS	430	398	95	158	96	28	94	39	113	87	651	2189	2427	-9.8%
TOTALS														
PERSONS	1252	941	384	572	280	105	221	108	249	286	1065	5463	5706	-4.3%
Population[4] 331705	322007	210695	254365	125741	68166	49315	58813	50171	50381	23447	1544806			
Cases per 100,000	377	284	182	225	223	154	448	184	496	568	4542	354		

1. EHEC Enterohaemorrhagic *Escherichia coli.*
2. EPEC Enteropathogenic *Escherichia coli.*
3. ETEC Enterotoxigenic *Escherichia coli.*
4. Australian Bureau of Statistics, June 1988

Other Salmonella spp. infections

There was an overall increase of 5% in persons with salmonellosis, as cases rose from 746 in 1990 to 785 in 1991. The most noticeable increase was in S. Tennessee cases. The Health Department of Western Australia was alerted to this increase, however, their investigations were unable to pinpoint a source of this infection in the temperate areas of the State. Previously, this serovar was most commonly isolated in the tropical areas.

Shigellosis

After the increase in cases of shigellosis in 1990, particularly in *Shigella sonnei* cases, they appeared to stabilise in 1991. The total number of cases of shigellosis dropped from 434 in 1990 to 285 in 1991, representing a decrease of 34.3%.

Table 2. Cases of typhoid fever in Western Australia, 1991

AGE	SEX	COUNTRY	SITE	HISTORY
26	M	Indonesia	Blood	2/52 febrile
15	M	Indonesia	Blood	5/7 febrile
18	F	India	Blood	7/7 febrile
86	M	Germany	Faeces	Diarrhoea
25	M	Indonesia	Blood	1/52 febrile
32	F	Pakistan	Blood	PUO (resistant to chloramphenicol)
75	M	Vietnam	Faeces	Immigrant - asymptomatic
29	M	India	Blood	3/7 febrile
11	M	Vietnam	Faeces	Immigrant - asymptomatic

Table 3. Exotic infections

Pathogen	TRAVELLERS		IMMIGRANTS	
	Cases	Region of Acquisition	Cases	Region of Acquisition
SALMONELLA				
S. Agona	5	Bali (2), Thailand (2), Phillippines	1	South-East Asia
S. Anatum	1	Bali	2	South-East Asia
S. Arizonae	1	Thailand		
S. Bareilly			1	South-East Asia
S. Berta	6	Bali (5), Indonesia		
S. Blockley	9	Bali (5), Burma, Indonesia, Malaysia, Singapore	1	South-East Asia
S. Bovismorbificans	1	Bali		
S. Enteritidis	3	Hong Kong, Malaysia, Singapore		
S. Haardt	2	Malaysia		
S. Hadar	8	Bali (4), Indonesia (2), Africa, South-East Asia		
S. Heidelberg			1	South-East Asia
S. Ibadan	1	Vanuatu		
S. Infantis	1	Bali		
S. Java	3	Bali	1	South-East Asia
S. Krefeld	1	Thailand		
S. London var 15+			1	South-East Asia
S. Matopeni	1	India		
S. Newport	1	Bali		
S. Saintpaul	1	Bali		
S. Sofia	1	Thailand		
S. Stanley	2	Burma, United Kingdom		
S. Tennessee	1	Hong Kong		
S. Typhimurium	3	Bali (2), Singapore		
S. Virchow	4	Bali (3), Thailand	1	Afghanistan
S. Weltevreden	1	Singapore		
SHIGELLA				
Sh. boydii			2	Afghanistan, South-East Asia

Table 3. Exotic infections

Pathogen	TRAVELLERS		IMMIGRANTS	
	Cases	Region of Acquisition	Cases	Region of Acquisition
Sh. flexneri	8	Bali (4), Thailand (2), South-East Asia, South America	5	South-East Asia (2), Afghanistan, Africa, Unknown
Sh. sonnei	2	India, Thailand	4	South-East Asia
OTHER				
Campylobacter spp.	5	Bali (4), Malaysia	4	South-East Asia (3), Afghanistan
Aeromonas hydrophila	1	Bali	6	South-East Asia
Plesiomonas shigelloides	4	Thailand (2), Bali, Unknown	1	Unknown
Vibrio parahaemolyticus	1	Hong Kong		
Ascaris lumbricoides			3	South-East Asia
Blastocystis hominis	6	Nepal (3), Bali, Indonesia, South America	176	South-East Asia (151), Afghanistan (11), Ethiopia (6), El Salvador (4), Africa (3), Kenya
Clonorchis sinensis			3	South-East Asia
Dientamoeba fragilis	1	El Salvador	2	South-East Asia
Entamoeba histolytica	3	El Salvador, Indonesia, Nepal	3	Afghanistan, El Salvador, South-East Asia
Entamoeba spp.	1	Indonesia	1	Afghanistan
Enterobius vermicularis			1	Afghanistan
Giardia intestinalis	6	Bali (4), India, Unknown	44	South-East Asia (39), Afghanistan (4), Ethiopia
Hymenolepis nana			1	Afghanistan
Hookworm			24	South-East Asia (23), Afghanistan
Strongyloides stercoralis			6	South-East Asia
Trichuris trichiura	1	Indonesia	77	South-East Asia (75), Afghanistan, El Salvador
TOTALS	96		372	

Campylobacter infections

There have been several media releases and there is a current Health Department alert to the number of *Campylobacter* infections in the Western Australian community. *Campylobacter* infections have the highest incidence among the enteric bacterial and parasitic infections in Western Australia (Figure 1). There has been an overall increase of 10.4% in cases over the last two years from 1430 cases in 1990 to 1579 cases in 1991 (Table 1). Increased patient and food monitoring has been initiated to address this problem.

Parasite infestations

A rise of 50.8% in *Cryptosporidium* spp. detections, from 181 cases in 1990 to 273 cases in 1991, is the most significant feature. Detections in the Metropolitan Divisions rose from a total of 26 in 1990 to a total of 67 in 1991. Rises were recorded on a Statewide basis with the Pilbara Division being the exception. Detections here fell from 21 cases in 1990 to 8 cases in 1991.

Cases of *Dientamoeba fragilis* infestation also rose during 1991. The examination of permanent stains from diarrhoeal samples on a routine basis has enabled the

Clinical Enteric Section to detect this pathogen more readily.

The incidence of other parasite infections has decreased or remained fairly constant.

Exotic infections

Infections (excluding typhoid and paratyphoid fever) most probably acquired overseas were detected in 96 travellers and 372 immigrants (Table 3).

Reference

1. Walker J and Neville S. No 31. Laboratory diagnosis of gastrointestinal infections. 1. Parasites. In: *Clinical Microbiology Update Programme*. Sydney: Clinical Microbiology Update Programme, 1991.

GONOCOCCAL SURVEILLANCE - AUSTRALIA, 1 OCTOBER - 31 DECEMBER 1991

(Contributed by the Australian Gonococcal Surveillance Programme Coordinator, Dr J W Tapsall, The Prince of Wales Hospital, Sydney)

This report gives details of the penicillin sensitivity of 427 strains of *Neisseria gonorrhoeae* examined by participating laboratories throughout Australia in the December quarter of 1991. The number of isolates is slightly less than the 452 examined in the September quarter, but more than the 363 strains examined in the corresponding period of 1990.

The penicillin sensitivity of strains isolated in Brisbane, Sydney and Melbourne (the only centres with sufficient numbers of strains to analyse in terms of percentages) is shown in the Table. Strains are categorised according to criteria revised from 1 July 1991 (see *CDI* 1992; **16**:36) and compared with results obtained in the corresponding period in 1990. The number of strains resistant to penicillin by either plasmid or chromosomally mediated mechanisms (so called PPNG and CMRNG) has declined. However, strains resistant to penicillin by either mechanism still represent over 26% of Sydney isolates and 13.5% of Melbourne isolates. Thirty five PPNG were isolated throughout Australia in this quarter, less than the 48 strains of this type isolated in 1990 and considerably less than the 78 cultured in 1989. PPNG were isolated in all centres except Hobart and Darwin, but endemic spread was seen only in Sydney where 8 locally acquired infections were recorded. Infections with PPNG were acquired overseas either in South-East Asia or Pacific countries in 17 instances and in 10 cases the source of infection was not specified.

Table. Penicillin sensitivity of isolates of *Neisseria gonorrhoeae*, 1 October - 31 December 1991

Centre	Percentage of Isolates[1]			
	Sensitive[2]	Less Sensitive[3]	Relatively Resistant[4]	PPNG[5]
Brisbane	16.4 (23.5)	76 (69)	0 (0)	7.6 (7.5)
Sydney	21 (9.1)	52.4 (52.9)	15.3 (19)	11.3 (19)
Melbourne	28.3 (16.5)	58.2 (52.6)	1.5 (19.7)	12 (13.2)

1. Figures in parentheses represent data for the same period in 1990.
2. Sensitive, MIC ≤0.03 mg/L.
3. Less Sensitive, MIC 0.06 - 0.5 mg/L.
4. Relatively Resistant, MIC ≥1.0 mg/L.
5. PPNG penicillinase producing *Neisseria gonorrhoeae*.

AUSTRALIAN SALMONELLA REFERENCE LABORATORY REPORT, FOURTH QUARTER 1991

(Excerpts from the October, November and December 1991 monthly reports of the Australian Salmonella Reference Laboratory, Institute of Medical and Veterinary Science, Adelaide, South Australia; Senior Scientist Chris Murray, Scientist Dianne Davos)

A total of 2143 cultures were typed at the Australian Salmonella Reference Laboratory (ASRL) during the fourth quarter of 1991. Cultures were received from all States, the Northern Territory and the ACT, and from Singapore (Table 1).

There were 11 Salmonella serotypes for which ten or more human isolates were typed (Table 2); Salmonella Typhimurium was the most common isolate. There were 66 *Shigella* isolates and 12 *Yersinia* isolates (all from humans) (Table 3) typed at the ASRL during the quarter.

Yersinia enterocolitica Report

The November monthly report of the ASRL contained the following summaries of *Yersinia enterocolitica* isolations from humans in South Australia since 1986 and isolates by the laboratory for the previous 2 years.

There has been an increase in isolates of *Yersinia enterocolitica* from humans in South Australia over recent years (Table 4). The reasons for the increases are unknown, although increased laboratory attention may account for some of the increase.

The ASRL typed a number of isolates from various sources during 1990-91 (Table 5). There appears to be an association with types found in humans and those in pigs, suggesting that pigs may be a source of the organisms into the food chain. Isolates from milk were not those types commonly associated with human infection.

New Serovar Variants

Two new variants of Salmonella subspecies I serovars were typed at the ASRL during 1991. These were forward to the WHO Salmonella Reference Centre at the Institut Pasteur, Paris, for confirmation. This has since been received, and the variants will be included in the next Supplement of the Kauffmann White Scheme.

The new variants are:

1. O:14 positive variant of Salmonella Augustenborg (antigenic formula 6,7,14:i:1,2).

   Several isolates of this variant were typed in June. All were from avian sources in Singapore.

Table 1. Origin of Salmonella cultures typed during October, November and December 1991

	NSW	NT	Qld	SA	Tas	Vic	WA	ACT	Singapore	Total
October	203	28	511	59	18	66	4	12	12	913
November	226	25	250	65	1	11	26	7	3	614
December	99	40	345	63	14	0	21	6	28	616
Total	528	93	1106	187	33	77	51	25	43	2143

Table 2. Salmonella serotypes from human sources, October to December, 1991[1]

Serotype	NSW	NT	Qld	SA	Tas	Vic	WA	ACT	Overseas	Total
Typhimurium	14	4	25	38	3		1	2	2	89
Chester	1	2	30	6						39
Virchow	1	1	27	4						33
Saintpaul		9	18							27
Bovismorbificans	9		2	9		3	2			25
Muenchen	2	3	10	2						17
Birkenhead	7		8							15
Heidelberg	2		11	2						15
Infantis		5	61							12
Cerro			4	7						11

1. Only serotypes with 10 or more isolates from human sources are included in this Table.

A further isolate, from a porcine source in Singapore, appears in this month's report. This was also the O:14 positive variant.

2. O:1 and O:25 positive variant of Salmonella Sylvania (antigenic formula 1,6,14,25:g,p:-). This isolate is discussed below.

Table 3. *Shigella* and *Yersinia* isolates, October to December 1991

Species and Type	Isolates	Comments
Shigella flexneri type Y	2	1 overseas
Shigella flexneri type 1b	1	overseas
Shigella flexneri type 2a	14	1 overseas, 8 NT
Shigella flexneri type 3a	2	
Shigella flexneri type 4a	5	
Shigella flexneri type 6	16	1 overseas
Shigella sonnei biotype a	17	2 overseas, 10 NT
Shigella sonnei biotype d	2	
Shigella sonnei biotype g	7	2 overseas
Yersinia enterocolitica O3 biotype 4	8	5 Qld
Yersinia enterocolitica O N/T biotype 1	1	
Yersinia frederiksenii	2	
Yersinia kristensenii	1	

Table 4. *Yersinia enterocolitia* notifications from humans in South Australia 1986-1991

Year	Notifications
1986	12
1987	10
1988	44
1989	125
1990	200
1991 (48 weeks)	174

Serotypes of Interest

Salmonella Bergedorf

There was one isolate from a 1 year old girl in the Northern Territory in October. This serotype is rare in Australia. An isolate from a human source in Queensland was recorded in the ASRL July 1991 report. The only previous isolates have been from humans in 1964, 1989 and 1990 and one isolate from a goat in 1981.

Salmonella London

Isolates of this serotype were received from New South Wales in November and December. They had been isolated from a batch of seafood marinara mix imported from Thailand. Salmonella London occurs rarely in Australia. ASRL reported 2 human isolates of S. London in 1991. It is of interest that the human isolate reported in the April 1991 report was from a patient who had recently been to Thailand.

Salmonella London var 15+ (formerly Salmonella Portsmouth).

There was 1 isolate from Western Australia in October, from a six year old boy who was an immigrant from Vietnam. This phage-converted form of S. London is rare in Australia. Previous isolates from human sources have been 1 in 1981 and 2 in 1990, and there was 1 isolate from sewage effluent in 1985.

Salmonella Matopeni

There were 3 isolates from desiccated coconut in New South Wales in October. This serotype is rare in Australia. Human isolates have been 1 in 1985 and 1 in 1991. Most recent isolates from other sources have been from imported cooked prawns in 1988, and from clam meat in 1989.

Table 5. *Yersinia enterocolitica* typing, October 1989 to November 1991

Type	Human	Porcine	Bovine	Other
O3 biotype 3	9	4 (tonsil & rectum)	1	
O3 biotype 4	98	2 (rectum)		
O3 biotype 5			1	
O3 biotype N/T	11			
O5 biotype 1				Milk (2)
O1/2,3 biotype 1		1		
O N/T biotype 1	2			Milk (4), Pate (2), Cream (1)
O N/T biotype 3	2		1	
O N/T biotype 4	1			
O N/T biotype N/T	1			Milk (1)

O N/T = Not O-1, O-1/2, O-3, O-5, O-8, O-9
Biotyping using Nilehn's biotyping scheme

Table 6. Phage typing results for Salmonella Typhimurium, by source, October to December 1991

Phage Type	Human Isolates	Other Isolates	Comments	Phage Type	Human Isolates	Other Isolates	Comments
1	2	0		64	7	5	4 human from SA
2	0	3		90	1	0	
4	4	1		99	0	2	
5	1	0		101	9	2	Human: 5 Qld, 4 SA
6	0	4		104	0	6	
8	10	16	Human isolates: 1 urine, 4 SA	108	7	1	1 human isolate acquired overseas
9	14	10	9 human isolates from SA	12a	5	2	
12	1	0	Overseas acquired	120	0	6	
13	1	0		122	1	0	
21	1	1	Human isolate acquired overseas	124	2	0	
22	5	0	4 from Qld	126	7	20	'other' were all chicken-associated
25	2	0		132	1	0	
29	5	1	All Qld	135	13	34	7 human from Qld, 'Other' associated with cattle, horses and chickens
41	2	2		141	2	2	
44	2	15	11 bovine, Victoria	145	0	2	
58	0	2		Untypable	5	20	

Salmonella Panama

There was 1 isolate from urine of a patient in Queensland in October. This serotype is uncommon in Australia. Up to 6 human isolates and small numbers from other sources occur each year. Most of the human isolates have been from faeces, however, in 1989, there was one previous isolate from urine and one from blood culture.

Salmonella Richmond

There was one isolate from a male patient in Victoria in November. This serotype is rare in Australia. The last human isolate recorded by ASRL was in 1982, and the last isolate from other sources was from prepared food in 1980.

Salmonella Rissen

One isolate was received from a human source in Victoria in October. This serotype is rare in Australia, and the ASRL has only seen human isolates. The most recent of these was recorded in the May 1991 report.

Salmonella Sylvania var 25+

An isolate of this serotype was received in October from Tasmania, from a canine source. This isolate is unusual, in that it is the first O-25 variant of the serotype that ASRL has seen. Salmonella Sylvania was recorded as a new serotype by the ASRL in 1981. Isolates since then have been from New South Wales, Victoria and Queensland. This is the first isolate from Tasmania, and the first from a dog.

Salmonella Taksony

There was 1 isolate from meatmeal in Queensland in October. Isolates of Salmonella Taksony from feeds were common during the 1970s, but have been rare in recent years.

Salmonella Typhi

Isolates were received from both blood and faeces of a 22 year old man in Queensland in November. In December, a follow up specimen was received from the patient in November, and there were 2 isolates from blood culture of a 31 year old woman in South Australia who had recently been to Thailand.

Salmonella Typhi (j:-phase)

Isolates were received from 3 members in 1 family in Victoria in November. One isolate was from faeces and the other 2 were from blood culture.

Table 7. Phage typing results for Salmonella Bovismorbificans, by source, October to December, 1991

Phage Type	Human Isolates	Other Isolates	Comments
2	1	0	
3	2	0	
4	0	4	
5	2	0	
6	0	5	
7	10	0	7 from NSW
12	1	4	
13	10	5	Human isolates: 6 from SA (including 1 urine), 1 acquired overseas
14	4	16	11 chicken-associated
18	1	5	
19	1	3	
22	1	0	
23	7	4	
24	1	16	All WA
RDNC	0	3	

Salmonella Typhi (j:z_{66} phase)

In October, the following isolates were received:

1. From blood and faeces of a 22 year old woman in Queensland. This had been acquired overseas.
2. From Queensland, from a patient resident in New South Wales.
3. From a patient in Victoria.

No further information was supplied regarding the second and third isolates.

Table 8. Phage typing results for Salmonella Enteritidis, October to December 1991

Phage Type	Human Isolates	Other Isolates	Comments
4	5	0	All SA, 3 acquired overseas
12	1	0	Acquired overseas
26	5	2	Human all Qld
RDNC	4	0	
Untypable	0	1	

Table 9. Phage typing results for Salmonella Heidelberg, October to December 1991

Phage Type	Human Isolates	Other Isolates	Comments
1	19	16	Human: 16 from Qld, 1 urine isolate
2	1	2	
4	4	0	All Qld
Untypable	1	1	

Phage Typing of Salmonella Typhimurium, Salmonella Bovismorbificans, Salmonella Heidelberg and Salmonella Enteritidis.

The results of phage typing of Salmonella Typhimurium, Salmonella Bovismorbificans, Salmonella Heidelberg and Salmonella Enteritidis for the fourth quarter of 1991 are presented in Tables 6-9.

Salmonellosis Notifications in South Australia

There were 22 human cases of salmonellosis notified in South Australia in October (1.53 cases per 100,000 population), 38 cases in November (2.64 cases per 100,000) and 17 cases in December (1.18 cases per 100,000) (Figure 1).

For 1991 there were 494 cases notified in South Australia, giving an annual case rate of 34.32 per 100,000 population (Figure 2).

Figure 1. Salmonellosis notifications per 100,000 population in South Australia, 1988-1991, by month

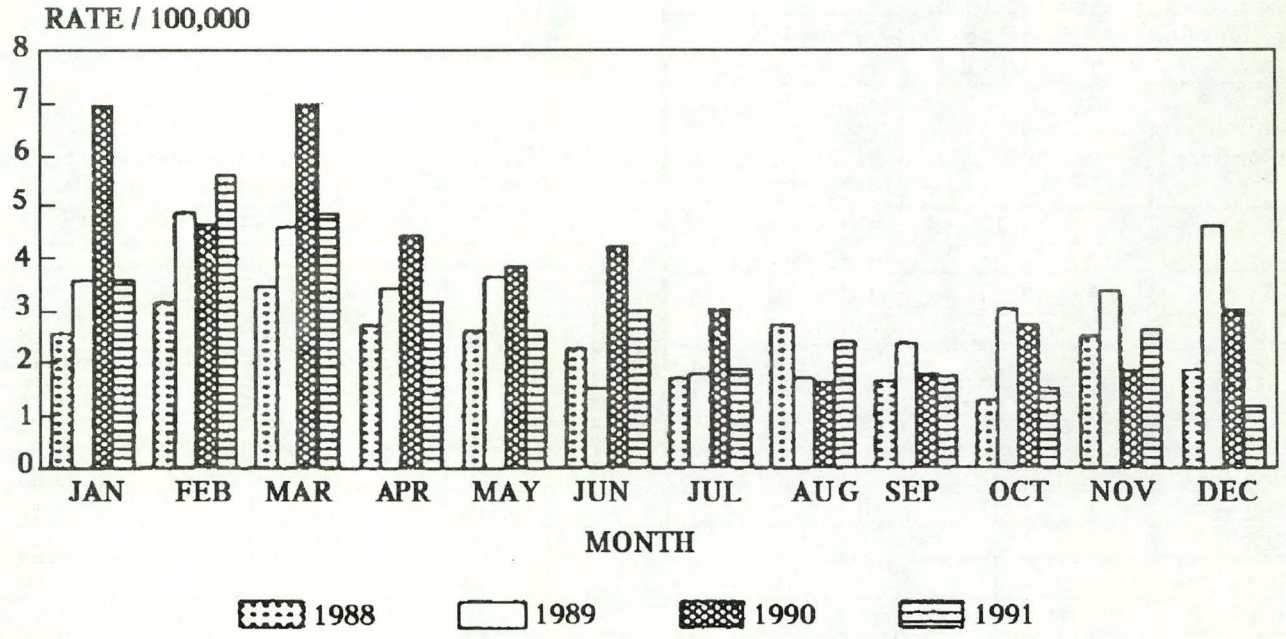
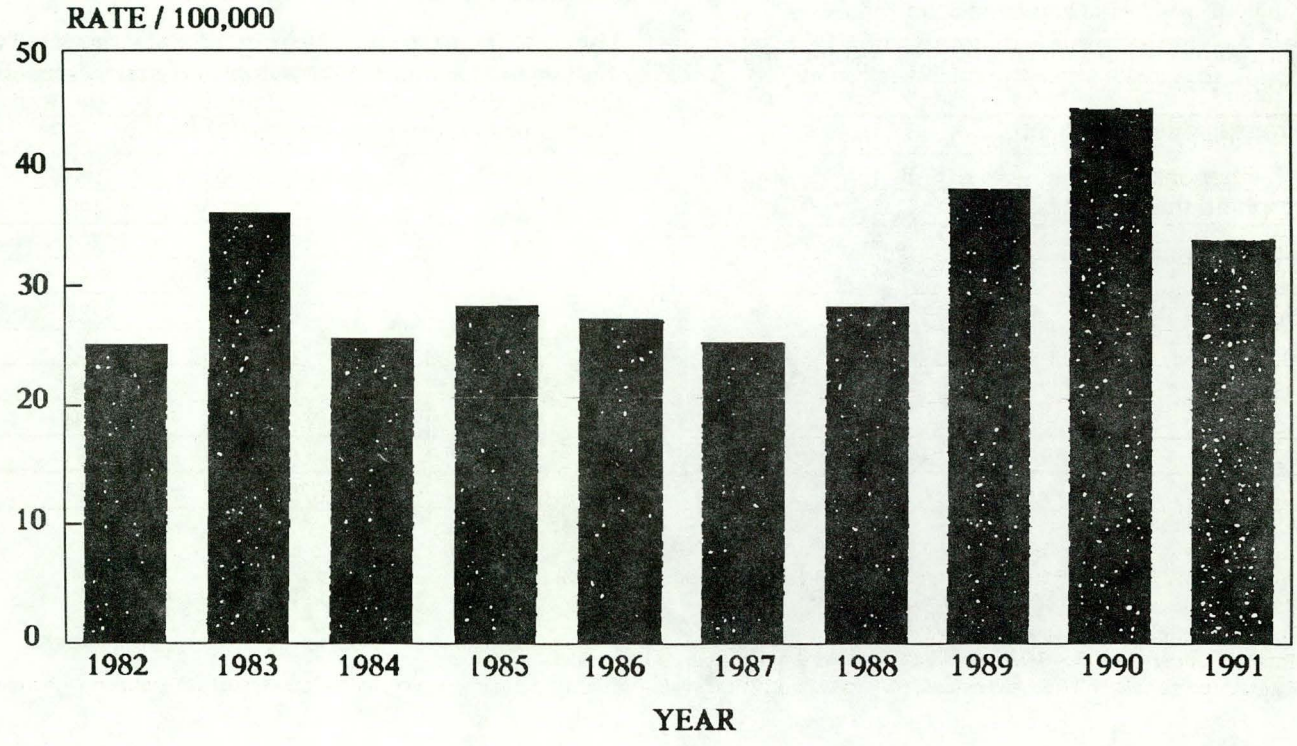


Figure 2. Annual Salmonella case rate, South Australia, 1982-1991



AUSTRALIAN HIV SURVEILLANCE REPORT, VOLUME 8 NUMBER 2, 29 FEBRUARY 1992

The National Centre in HIV Epidemiology and Clinical Research reports that as of 31 January 1992, a total of 15844 diagnoses of HIV infection and 3147 cases of AIDS had been reported in Australia. For the period 1 January to 31 January 1992, 9 new cases of AIDS and 73 new diagnoses of HIV infection were reported.

The following tables provide more detailed information on a State/Territory basis (Tables 1 and 2).

The cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new cases for the reporting month and the increment in the cumulative figure from the previous report.

Table 1. New diagnoses of AIDS and deaths from AIDS occurring during the period 1 January to 31 January 1992 and cumulative to 31 January 1992 by sex and State/Territory in which diagnosis was made*

State/ Territory	January 1992		Cumulative to 31 January 1992					
			Cases			Deaths		
	Total Cases[1]	Total Deaths[1]	Male	Female	Total	Male	Female	Total
ACT	1	1	40	2	42	27	1	28
NSW[2]	6	12	1846	58	1904	1187	36	1223
NT	0	0	10	0	10	4	0	4
Qld	0	2	241	9	250	160	7	167
SA	0	1	119	6	125	62	1	63
Tas	1	0	16	1	17	10	1	11
Vic[3]	1	7	638	13	651	419	7	426
WA	0	0	140	8	148	87	3	90
Total	9	23	3050	97	3147	1956	56	2012

1. All males unless otherwise specified.
2. Cumulative cases of AIDS for NSW includes 2 persons whose sex was reported as transsexual.
3. Cumulative cases of AIDS for Victoria includes 1 person whose sex was reported as transsexual. One death occurring in January was a female.

Table 2. Number of new diagnoses of HIV infection in the period 1 January to 31 January 1992 and cumulative diagnosis since the introduction of HIV antibody testing to 31 January 1992 by sex and State/Territory

State/ Territory	January 1992	Cumulative to 31 January 1992			
	Total[1]	Male[7]	Female	Sex not reported	Total
ACT[2]	2	124	6	0	130
NSW[3]	26	8076	414	2011	10501
NT	0	58	6	0	64
Qld[4]	24	1186	53	0	1239
SA	1	452	32	0	484
Tas	2	55	3	0	58
Vic[5]	16	2542	95	67	2704
WA	2	633	31	0	664
Total[6]	73	13126	640	2078	15844

1. All males unless otherwise specified.
2. Total for the ACT for January includes 1 female.
3. Total for NSW for January includes 2 females and 3 persons whose sex was not reported.
4. Total for Queensland for January includes 2 females.
5. Total for Victoria for January includes 2 females.
6. Total for January includes 3 persons whose sex was not reported, and 7 females.
7. Fourteen persons (4 NSW, 3 Queensland, 6 Victoria and 1 Western Australia) whose sex was reported as transsexual are grouped with males.

OVERSEAS BRIEFS

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

Cholera Update

Reports of cholera cases and deaths occurring in February and March this year have been received from:

Africa - Angola, Burundi, Mozambique, Nigeria and Zambia.

Americas - Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, El Salvador, Guatemala, Mexico, Panama, Peru, Suriname and Venezuela.

Peru continues to report the largest numbers of cases. In the period 16 to 29 February, 14,437 cases and 49 deaths were reported, and in the period 1 to 7 March, there were 11,228 cases and 20 deaths.

The largest numbers of deaths are reported from countries in Africa. Zambia, for example, reported 5532 cases with 544 deaths for the period 1 January to 2 April.

Influenza in the Northern Hemisphere Update

In both Europe and the United States, influenza activity is now very low and very few isolations are being reported.

CDI NOTICES TO READERS

Northern Territory Arbovirus Outbreak - Correction

The following clarifications relate to the article *A Concurrent Outbreak of Barmah Forest and Ross River Disease in Nhulunbuy, Northern Territory* (*CDI* **16**:110-111).

Ninety (rather than 37) serum specimens were examined for IgM to Barmah Forest and Ross River viruses (third paragraph).

The last paragraph on page 110 should read: Mosquito control operations, including larval control measures and fogging, were carried out at Nhulunbuy following the rise in mosquito numbers in December. Fogging frequency and coverage was increased around the outskirts of the residential areas from 14 February, and media announcements were made encouraging members of the public to take self protection measures against mosquito bites. These actions were followed by a dramatic decrease in the number of cases of arbovirus-like disease detected in the week ending 25 February.

Indexing of *CDI*

Indexing of *CDI* by the Australasian Medical Index (AMI), which was recently arranged for all issues published since the beginning of 1990, has now been extended to include all issues published since January 1983.

The AMI is a database which is supplementary to MEDLARS, covering Australian and New Zealand health and medical literature not covered by MEDLARS. It is on-line to the Australian MEDLINE Network, is MEDLINE-compatible, and records in the AMI file are searchable in exactly the same way as those in MEDLARS.

Further information on the AMI can be obtained from the Australian MEDLINE Network at the National Library of Australia, Canberra.

COMMUNICABLE DISEASES SURVEILLANCE

Laboratory Reporting Schemes

There were 1229 reports received in the *CDI* laboratory reporting scheme this fortnight (Tables 6,7 and 8).

- There were 23 reports of **influenza A** received (7 Victoria, 10 South Australia, 3 Western Australia). Four were further identified as H3N2, and 3 of these as A/Beijing/353/89-like. Meningitis was the reported symptom for one female patient who was serologically diagnosed.

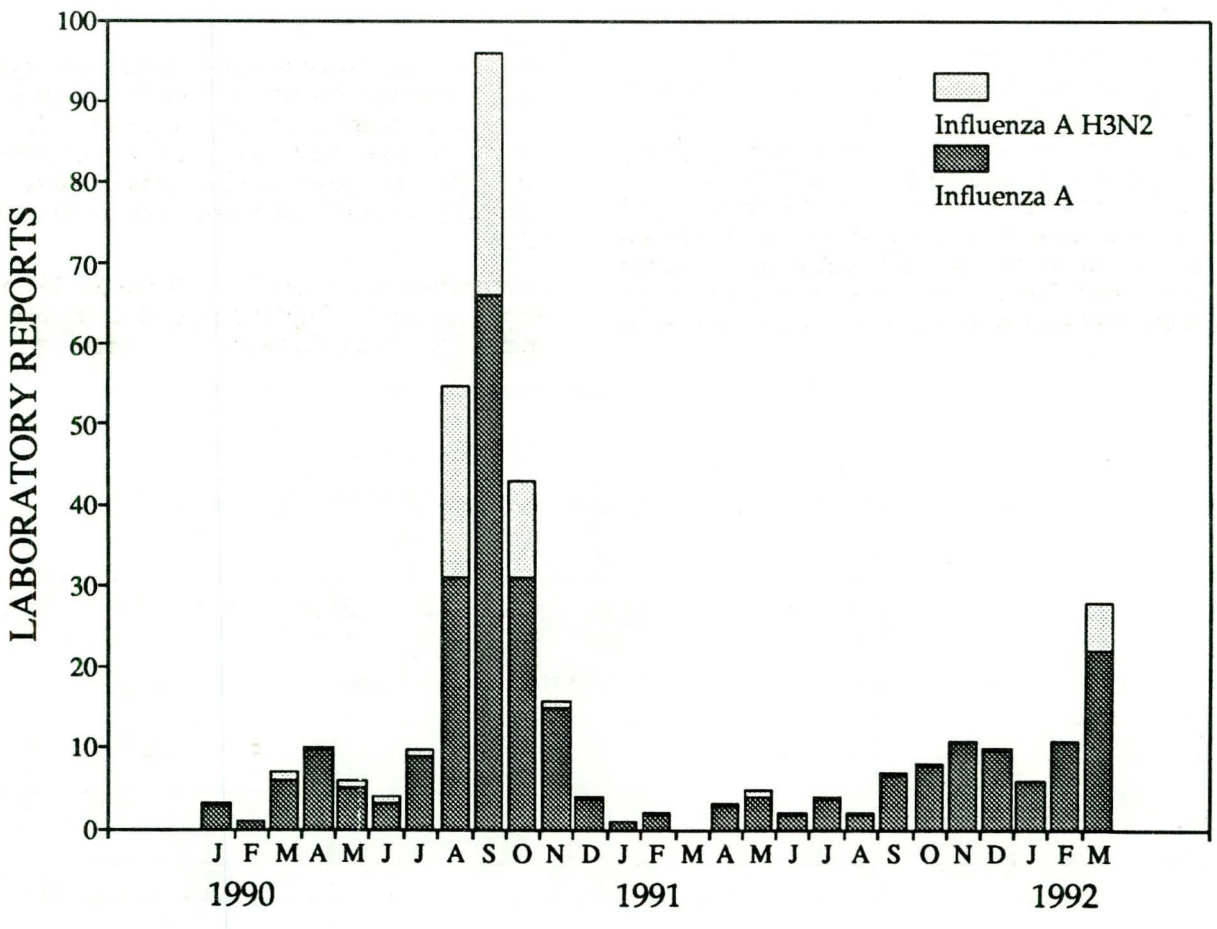
  There has been a total of 45 reports of influenza A with 1992 specimen collection dates so far (Figure 1). This is more than the number of reports for the first quarter of 1990, which, although a quiet influenza year, was the last year in which influenza A predominated in Australia. The reports received so far this year also outnumber the influenza A reports in the first quarter of 1988 (for which the largest total of influenza A reports (1280) was received for recent years) and in the first quarter of 1989 (when a total of 570 reports were received).

  There have been only 8 influenza B reports so far this year, and no influenza A (H1N1) reports since November 1991.

- **Ross River virus** infections were reported for 84 patients this fortnight (40 Queensland, 22 Western Australia, 12 Northern Territory, 6 South Australia, 2 Victoria and 2 New South Wales). Locations recorded this fortnight were Beenleigh, Brisbane, Cairns, Gold Coast, Ipswich, Mackay, Nambour, Redcliffe, Rockhampton and Townsville in Queensland; Armadale, Busselton, Denham, Derby, Halls Creek, Kununnurra, Manjimup, Margaret River, Metropolitan and Nowergup in Western Australia; Nhulunbuy, Rapid Creek, Darwin, Tennant Creek and unspecified in the Northern Territory; Clare, Greenacres, Hackam West, Kimba, Maitland and Renmark in South Australia, and Echuca and Loch in Victoria.

  For one 70 year old male patient, IgM to Ross River virus was demonstrated in synovial fluid. The patient had suffered acute illness about six weeks previously. The joint fluid was able to be collected because he was undergoing knee replacement

Figure 1. Influenza A and influenza A (H3N2) laboratory reports, 1990 to 1992, by month of specimen collection



surgery for long-standing osteoarthritis. Attempts to isolate the virus from synovium samples were not successful.

- There were 7 reports of **Barmah Forest virus** reported from Queensland. Locations recorded were Brisbane, Townsville, Cairns and Sunshine Coast.
- A further 5 cases of **echovirus type 9** infection have been reported from New South Wales and the ACT. Meningitis was reported for four of the patients. This brings to 16 the number of cases of this virus reported since November last year.
- There were 3 further reports of **echovirus type 17**, all from Victoria. For males aged 2 years and 27 years, meningitis was the reported symptom and the virus was isolated from CSF. For the third patient, a 2 year old female, the virus was isolated from a nasopharyngeal specimen.
- There were several reports of other, rare echoviruses this fortnight. **Echovirus type 1** was reported for the first time since May last year, in a female with gastrointestinal symptoms. **Echovirus type 20** was reported for the first time since January 1988, in a 3 year old female patient with gastrointestinal symptoms. The virus was isolated from a faeces sample. **Echovirus type 6** was reported from 2 patients from New South Wales: a 24 year old female with meningitis (CSF isolate) and a male who had suffered SIDS and from whose postmortem respiratory tract, spleen, lymph nodes and lower digestive tract the virus was isolated. This virus has only been reported 10 times since January 1991.
- The 2 reports of **measles** this fortnight were both associated with the recent outbreak at Tennant Creek in the Northern Territory. The patients were a 14 year old male and a 13 year old female.
- There were 4 reports of **mumps**, 1 from Western Australia and 3 from New South Wales. For a 13 year old male patient, encephalitis was the reported symptom and the virus was isolated from a throat specimen.
- There were 6 laboratory reports of **rubella** this fortnight. One was in a female of reproductive age (20 years).
- A total of 25 reports of **varicella-zoster virus** infection were received this fortnight. Encephalitis was the reported syndrome for a 10 year old male patient and 'other CNS symptoms' were reported for a 73 year old female.
- **Cytomegalovirus** infection was reported for 103 patients. Included were 6 congenitally infected infants (1 day, 4 days, 1 month, 3 months, 3 months, 4 months), patients with urinary isolates (including 2 infants aged 1 month and a six month old male who had 'failed to thrive'), a 9 month old male with febrile convulsions, a 26 year old female with Guillain Barre Syndrome, 2 patients with cardiovascular symptoms (including a 73 year old male with cardiomyopathy), a 5 month old male and a 3 month old male with meningitis, a 21 year old male with encephalitis and two pregnant females
- There were 15 reports of **Q fever**, with 4 from Victoria, 6 from New South Wales, 4 from Queensland and 1 from Western Australia. All of the patients were male and 3 worked in the meat industry.
- Five cases of ***Bordetella pertussis*** infection were reported from Queensland. The patients included adults and children and were diagnosed by demonstration of IgG.
- There was one further report of serologically diagnosed ***Brucella*** infection reported from a Queensland laboratory. The patient was a male in the age group 25 to 44 years who was described as a 'pigger'.
- A case of ***Actinomyces* sp** infection was reported. The patient was a female in the age group 25 to 44 years. The organism was identified in an ovarian tube biopsy.
- **Syphilis** was diagnosed serologically in 22 patients reported from Queensland. Three of the patients were diagnosed in antenatal screening.

Table 1. Australian Sentinel Practice Research Network, Weeks 14 and 15 1992

Condition	Week 14, to 5 April 1992		Week 15, to 12 April 1992	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	54	5.72	47	6.61
Measles	1	0.11	2	0.28
Mumps	2	0.21	1	0.14
Rubella	3	0.32	3	0.42
Pertussis	1	0.11	0	0
Genital herpes	12	1.27	3	0.42

- A case of **Toxoplasmosis** was diagnosed serologically in a female in the age group 25 to 44 years. The patient had experienced a rash following exposure to newborn kittens 10 months previously, and was diagnosed in antenatal screening.

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network collected data from 9442 patient encounters in Week 14 and 7113 patient encounters in Week 15 (Table 1). Influenza continues to be the most commonly reported condition and the rate of reports per 1000 encounters continues to increase.

Australian Encephalitis: Sentinel Chicken Surveillance Programme - Serological Results for March 1992

Sentinel chicken serology results from chickens tested in Victoria and New South Wales during March 1992 showed no evidence of flavivirus activity. These two surveillance programmes have now ceased until November/December.

Two seroconversions to Murray Valley encephalitis (MVE) virus have been observed in chickens in Western Australia, one in the flock maintained at Kununurra, and one in the flock maintained at Rabbit Flat near Broome.

Sentinel chicken flocks maintained in the Northern Territory by the Northern Australian Quarantine Strategy (NAQS) of the Australian Quarantine and Inspection Service, have now been incorporated into the flavivirus surveillance programme. Currently, 5 flocks of 12 chickens are maintained by NAQS at Howard Springs, Gove, Murgenella, Palumpa and Smith Point (Figure 1). The chickens are bled monthly by Mr Morton Bell (Northern Territory NAQS Co-ordinator) and Mr Neville Hunt (Agricultural Research Centre, Berrimah), and aliquots sent to the Arbovirus Laboratory at the Department of Microbiology, The University of Western Australia, for testing. Two seroconversions to a flavivirus were observed in sera collected in late January, one from Murgenella, and one from Smith Point, but the virus identity has not been confirmed. Two seroconversions to MVE were observed in sera collected in late February from Palumpa. In addition, 9 of 12 chickens maintained at Howard Springs were found to be seropositive for MVE, but the chickens had been exposed for over 12 months, so the time of seroconversion is unknown.

Information on the location of sentinel chicken flocks in New South Wales, Victoria and Western Australia was presented in *CDI* **16**:55-57.

(J Aldred, Victorian Institute of Animal Science; AK Broom, Department of Microbiology, The University of Western Australia; L Hueston, Virology Department, Westmead Hospital, NSW;and JS Mackenzie, Department of Microbiology, The University of Western Australia)

Figure 2. Location of sentinel chicken flocks, Northern Territory

Sterile Sites Surveillance

There has been continued support of and interest in LabDOSS (Laboratory Database of Organisms from Sterile Sites), and the system has now been sent out to 16 laboratories. Data for March have been provided by five laboratories, with the welcome additions of the Central Queensland Pathology Laboratory and the Central Coast Area Health Service (NSW).

A total of 180 reports were received for March (Westmead 48, Liverpool 28, Royal Prince Alfred 83, Central Queensland Pathology 4 and Central Coast Area Health Service 17).

Organisms reported 5 or more times from blood are detailed

in Table 2. Other interesting blood isolates reported include ***Vibrio cholerae*** in a male (unknown age) with a history of watery diarrhoea and travel to Tonga 5 weeks previously. There were two reports of ***Haemophilus influenzae***: type B in a 2 year old male with epiglottitis, and no type provided for a 30 year old female.

Other blood isolates not included in the Table were:

Gram positive: 4 *Streptococcus pneumoniae*, 1 *Streptococcus* Group A, 2 *Streptococcus* Group B, 1 *Streptococcus* Group G, 1 *Streptococcus sanguis*, 3 *Streptococcus* viridans group, 3 *Streptococcus* 'milleri', 1 *Streptococcus constellatus*, 1 *Streptococcus mitis*, 1 *Streptococcus* sp, 1 *Lactococcus cremoris*, 1 *Gemella* sp, 1 *Bacillus* sp.

Gram negative: 2 *Proteus mirabilis*, 1 *Citrobacter diversus*, 2 *Citrobacter freundi*, 3 *Xanthomonas maltophila*, 3 Salmonella spp, 1 *Eikenella corrodens*.

Anaerobes: 3 *Bacteroides fragilis*, 1 *Bacteroides uniformis*, 1 *Peptostreptococcus* sp, 2 *Clostridium perfringens*.

Fungi: 2 *Candida parapsilosis*, 1 *Candida guillermondii*, 3 *Candida albicans*, 1 *Candida* sp, 1 *Torulopsis* sp.

Mycobacteria: 1 atypical and 1 not identified.

CSF Isolates and Meningitis Reports

Listeria monocytogenes in a 49 year old male.
Neisseria meningitidis group C in a 32 year old male.
Klebsiella sp in a 16 year old male.
Staphylococcus epidermidis in males aged 64 years, 31 years, 56 years and 23 years, and females aged 45 years and 28 years. Five of these were associated with neurological surgery.
Acinetobacter calcoaceticus in a 2 week old male with a IV central line.
Pseudomonas aeruginosa in a 77 year old male.

Isolates from sites other than blood or CSF

Peritoneal dialysate: 2 *Staphylococcus epidermidis*, 1 *Streptococcus viridans*, 1 *Klebsiella oxytoca*..
Joint fluid: 1 *Staphylococcus aureus*, 1 *Staphylococcus epidermidis*, 1 *Streptococcus* group G.
Other: *Escherichia coli* (prosthetic joint tissue) and *Streptococcus* group A (retro-peritoneal abscess).

National Notifiable Diseases Reports, 22 March to 4 April 1992

A total of 663 notifications were reported this fortnight (Figure 4, Tables 3, 4 and 5).

This fortnight there were 20 **rubella** notifications reported. Seven of these were in women of chidl bearing age.

There were 578 **Ross River virus** infection notifications. Of these, 521 were from Queensland, where there continues to be widespread activity. Most cases notified this fortnight were in males aged 25 to 50 years.

Enteroviral Meningitis in Perth

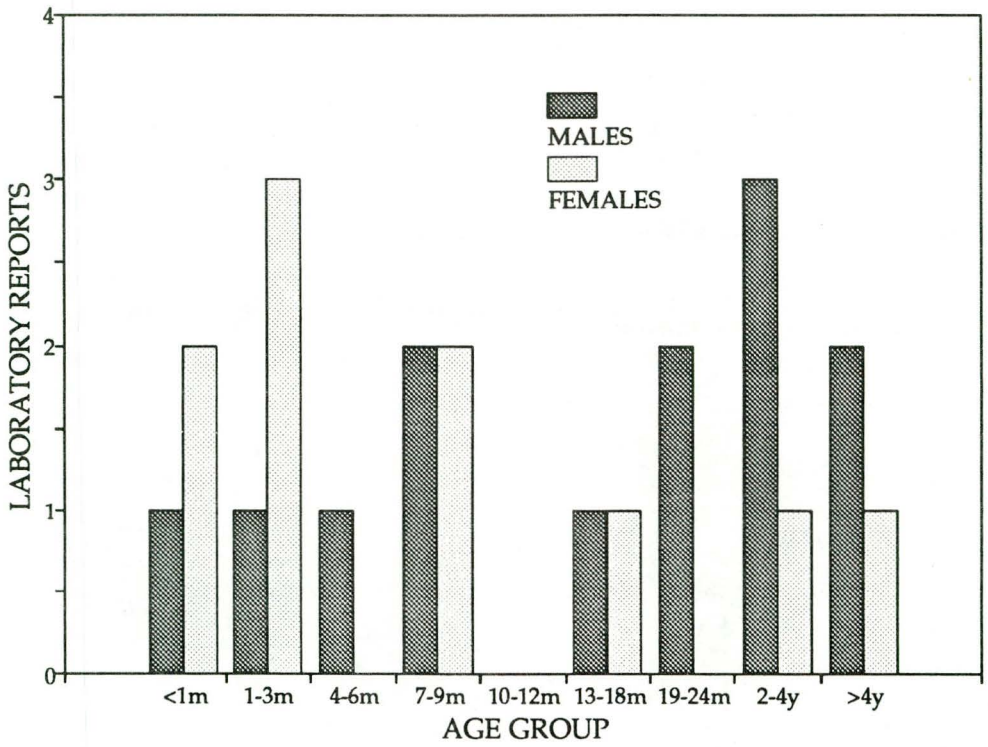
The Princess Margaret Hospital in Perth reports isolating untyped enterovirus from 23 patients clinically diagnosed with viral meningitis between 23 March and 13 April. There were 13 male patients and 10 females. The ages ranged from 8 days to 8 years, with more females in the younger age groups (Figure 3).

Table 2. Sterile sites surveillance reports of blood isolates for March 1992[1]

Organism	Total[1]	Clinical information						Risk Factors					
		Lower respiratory	Endocarditis	Gastrointestinal	Urinary Tract	Bone/Joint	Skin	Surgery	Immunosuppressed	IV line	Perinatal	Neonatal	Nosocomial
Staphylococcus aureus	19[2]	1				2	1	2	4	5			1
Staphylococcus epidermidis	22			1			1	1	5	7	1		
Staphylococcus coagulase negative	10			1					2	2			
Enterococcus species	7[3]		1				1		3			2	
Eschericia coli	25			1	15			3	8	1			2
Klebsiella species	5[4]				1				1	2			
Enterobacter species	11[5]			1	5		1	1	4	2			
Pseudomonas aeruginosa	8								2	1	1	2	

1. Only organisms with 5 or more isolations are included in this table
2. Includes 1 MRSA
3. *E. faecalis* (6) *E. faecium* (1)
4. *K. pneumoniae* (4), *Klebsiella* sp (1)

Figure 3. Viral meningitis cases at Princess Margaret Hospital, Perth, 23 March to 13 April 1992, by age group and sex



Virus was isolated from the CSF for three of the patients and from throat, faeces and/or perinasal aspirate for the others. Ten patients had cells (mainly lymphocytes) present in CSF samples.

One of the infections (in a male aged 4 months) was nosocomial. Two brothers and the father of one of the patients have also had meningitis clinically diagnosed and viral cultures are proceeding for these patients.

The State Health Laboratory in Perth is currently typing the isolates from this outbreak.

(Gavan O'Connor, Princess Margaret Hospital, Perth)

Gastroenteritis Outbreak, Darwin

The Disease Control Centre in Darwin, Northern Territory, is currently investigating an outbreak of gastroenteritis following a group dinner attended by 110 persons. With the data 81% complete, imported oysters are strongly implicated, with an odds ratio for gastroenteritis of 18.6 (95% confidence interval 4.1 - 99), and an attack rate proportional to the number of oysters eaten. A full report will follow shortly.

(Alan Ruben, Disease Control Centre, NT Department of Health and Community Services)

Arbovirus Notifications, South Australia, 1992

Ross River Virus

This season there have been only 8 notifications of Ross River virus as at 15 April 1992. The first case did not occur until 10 February, followed by 6 cases in March. The number of notifications corresponds closely to that which might be expected in a non-epidemic year in South Australia, where inter-epidemic notifications average 8 annually[1].

Four cases were reported from the Riverland, which is believed to be the main enzootic focus for the virus in South Australia. One case occurred in the Coorong in the south-east of the State, and three persons contracted the disease interstate (one from Queensland, two form western Victoria). The average age of patients was 38 years (range 25 to 46), and there were 5 males and 3 females.

Dengue Fever

A single case was notified in a 32 year old man. He had recently returned to Australia after working as a missionary in the Philippines.

Australian Arbo-Encephalitis

A single case of Murray Valley encephalitis (MVE) is suspected to have occurred, but it is still under investigation. In early February, a 43 year old woman developed fever, rash, arthralgia and severe headache

10 days after a houseboat holiday on the Murray River, on the Victorian side of the border.

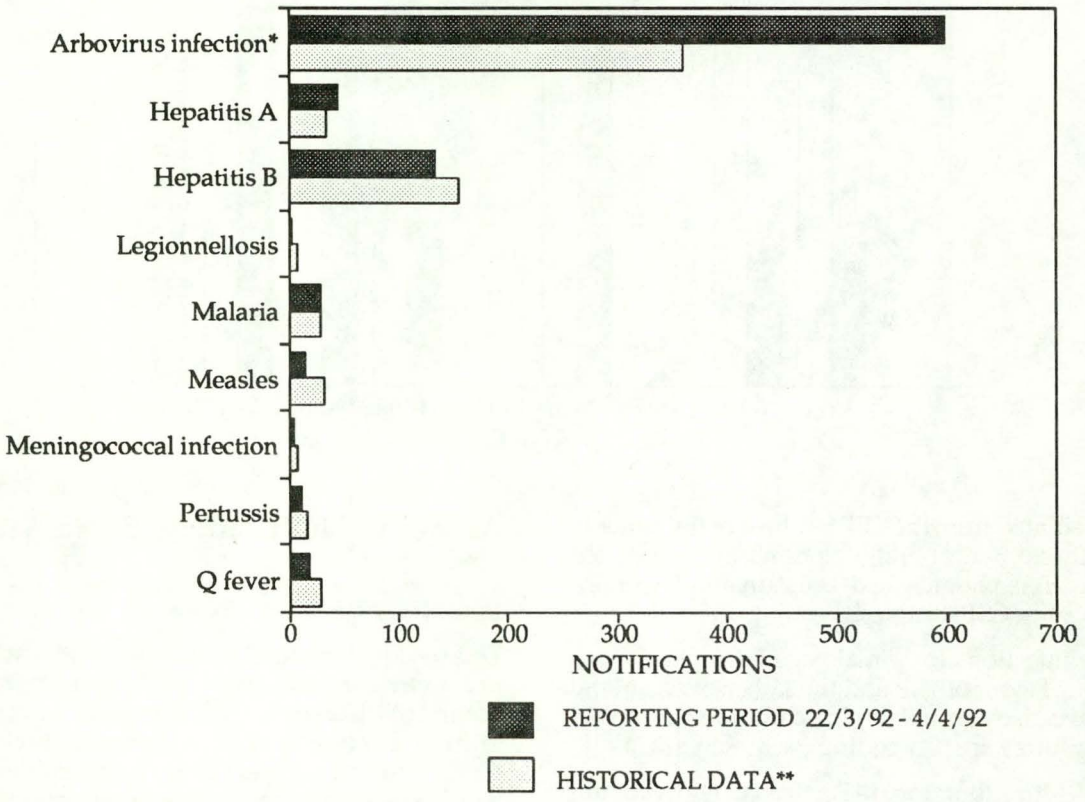
A presumptive diagnosis of MVE was made on the basis of serological testing of one blood sample, and additional samples are now being tested to clarify the picture. The presentation is unusual (arthralgia has not been recorded in MVE) and the case is also isolated: other viral causes of this woman's illness have not yet been excluded.

Reference

1.Weinstein, P. Arbovirus notifications, South Australia, 1991. *Comm Dis Intell* 1991;15:183.

(Phil Weinstein, Communicable Disease Control Unit, South Australian Health Commission)

Figure 4. Selected National Notifiable Diseases Reports, 22 March to 4 April 1992 and historical data**



*Includes Ross River virus and Dengue

**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 3. Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 22 March to 4 April 1992

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
									This Period 1992	This Period 1991	Year to Date 1992[1]	Year to Date 1991
Diphtheria	0	0	1	0	0	0	0	0	1	0	5	3
Measles	3	1	0	6	0	0	4	1	15	29	248	259
Mumps	NN	0	NN	NN	NN	NN	0	NN	0	NN	0	NN
Pertussis	1	0	0	8	0	0	2	1	12	18	116	130
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella[2]	2	0	0	11	3	0	6	0	20	17	116	91
Tetanus	0	0	0	NN	0	0	0	0	0	0	4	3

1. 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, WA: CRS only; ACT, NSW, Qld: rubella only; SA, Vic: rubella and CRS

NN Not Notifiable.

Table 4. Other Notifiable Diseases[1] for the reporting period 22 March to 4 April 1992

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
									This Period 1992	This Period 1991	Year to Date 1992[2]	Year to Date 1991
Arbovirus infection (NEC)[3]	0	0	NN	18	0	0	2	0	20	35	51	175
Ross River virus infection	NN	1	6	521	0	NN	10	40	578	424	2328	1704
Dengue	NN	-	0	0	-	NN	0	NN	0	2	4	34
Campylobacteriosis[4]	2	0	25	100	42	19	62	18	268	270	2174	1667
Chlamydial infection (NEC)[5]	2	NN	8	94	0	11	45	0	160	115	1253	902
Donovanosis	0	NN	0	1	NN	NN	0	1	2	1	13	10
Gonococcal infection[6]	0	0	17	24	0	2	11	29	83	50	592	528
Haemophilus influenzae type b[7]	1	1	0	4	2	0	15	0	23	15	127	70
Hepatitis A	3	2	1	17	2	0	19	0	44	42	508	245
Hepatitis B	1	5	0	49	0	4	69	6	134	188	1444	889
Hepatitis C	NN	4	1	130	0	1	42	0	178	49	1879	460
Hepatitis (NEC)	NN	0	0	0	0	0	2	NN	2	29	10	49
HIV infection[8]	5	0	0	0	0	0	0	0	5	1	25	8
Legionellosis	NN	0	0	0	2	0	1	0	3	9	34	29
Leptospirosis	0	0	0	1	0	1	0	0	2	4	41	35
Listeriosis	NN	0	0	1	0	0	2	0	3	1	11	8
Malaria	1	1	0	22	0	1	2	1	28	33	207	203
Meningococcal infection	0	0	0	0	1	1	2	0	4	8	35	54
Ornithosis	0	0	0	1	0	0	11	0	12	3	39	13
Q fever	0	2	0	16	1	0	0	0	19	24	107	206
Salmonellosis (NEC)	2	2	18	85	21	12	58	18	216	286	1613	1652
Shigellosis[4]	0	0	4	3	11	0	6	2	26	41	157	266
Syphilis	1	4	25	42	0	0	0	7	79	41	558	502
Tuberculosis	0	10	1	10	3	0	0	1	25	7	139	90
Typhoid[9]	0	0	0	2	0	0	0	0	2	6	18	23
Yersiniosis[4]	NN	0	0	11	13	0	1	1	26	27	184	136

1. For rarely notified diseases, see Table 5.
2. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of notifications and the increment in the cumulative figure from the previous period.
3. NSW and SA: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. ACT: trachoma only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. SA: only as 'bacterial meningitis'; meningococcal infection is separately notified; Tas: only as 'non-meningococcal meningitis'; Vic: eppiglottitis and meningitis only.
8. More complete data on new diagnoses of HIV infections are presented in the monthly *Australian HIV Surveillance Report*. ACT: AIDS only.
9. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

\- Elsewhere Classified.

Table 5. Rarely Notified Diseases[1], for the period 22 March to 4 April 1992

DISEASES	Total this period	Reporting States or Territories	Total for 1992 to Date
Botulism			0
Brucellosis	1	Qld	4
Cholera			1
Chancroid			1
Hydatid infection	5	3 Qld; 1 SA; 1 Tas	10
Leprosy			4
Lymphogranuloma venereum			1
Plague			0
Rabies			0
Yellow fever			0
Other viral haemorrhagic fevers			0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1986 to 1991.

Table 6. Laboratory reports by State or Territory of reporting laboratory for the reporting period 25 March to 7 April 1992, historical data[1], and total reports for the year

	STATE OR TERRITORY OF REPORTING LABORATORY						Total this fortnight	Historical data[1]	Total reported this year
	ACT	NSW	Qld	SA	Vic	WA			
MEASLES, MUMPS, RUBELLA									
Measles virus				2			2	6.2	62
Mumps virus		3				1	4	2.5	23
Rubella virus		1		1	4		6	21.0	69
HEPATITIS VIRUSES									
Hepatitis A virus		8	4		2	3	17	13.2	122
Hepatitis B virus	3	23	25		13	14	78	113.3	668
Hepatitis C virus	11			37		42	90	6.8	634
ARBOVIRUSES									
Ross River virus		2	41	6	2	33	84	96.3	288
Barmah Forest virus			7			8	15	2.7	26
Dengue type 3			1				1	.0	1
Flavivirus (unspecified)			3				3	1.5	6
ADENOVIRUSES									
Adenovirus type 2		1			2		3	2.3	34
Adenovirus type 3	1	2			1		4	5.2	17
Adenovirus type 4					1		1	1.5	3
Adenovirus type 7		1					1	.3	4
Adenovirus not typed/pending		8	8	2	13	1	32	34.8	293
HERPES VIRUSES									
Herpes simplex virus type 1		13	39	16	41	23	132	114.8	1,182
Herpes simplex virus type 2		29	44	25	26	33	157	157.3	1,378
Herpes simplex not typed/pending	3	18	2		3	7	33	39.3	259
Cytomegalovirus		29	18	3	44	9	103	65.2	656
Varicella-zoster virus	1	12	5	2	2	3	25	16.3	220
Epstein-Barr virus		12	6	16	9	8	51	57.2	512
Herpes virus group - not typed	2				1		3	5.5	26
OTHER DNA VIRUSES									
Contagious pustular dermatitis (Orf)						1	1	.2	3
Parvovirus					4		4	.0	43
PICORNA VIRUS FAMILY									
Coxsackievirus A not typed		3					3	.0	3
Coxsackievirus B1					1		1	.3	3
Coxsackievirus B3					1		1	.3	4
Coxsackievirus B5					1		1	1.7	19
Echovirus type 1		1					1	.5	1
Echovirus type 6		2					2	.7	3
Echovirus type 9	2	3					5	.3	16
Echovirus type 16					2		2	.0	10
Echovirus type 17					3		3	.3	19
Echovirus type 20		1					1	.0	1
Poliovirus not typed/pending		2					2	2.0	21
Enterovirus type 71 (BCR)		2					2	1.0	6
Enterovirus not typed/pending		7	17		6	13	43	35.2	296
Poliovirus type 1 (uncharacterised)		1					1	.7	13
Poliovirus type 2 (uncharacterised)		1					1	2.5	14
Poliovirus type 3 (uncharacterised)			2				2	.7	8

Table 6. Laboratory reports by State or Territory of reporting laboratory for the reporting period 25 March to 7 April 1992, historical data[1], and total reports for the year, continued

	STATE OR TERRITORY OF REPORTING LABORATORY						Total this fortnight	Historical data[1]	Total reported this year
	ACT	NSW	Qld	SA	Vic	WA			
Rhinovirus (all types)		7	5	2	17	7	38	18.7	229
ORTHO/PARAMYXOVIRUSES									
Influenza A virus H3N2					4		4	.2	6
Influenza A virus		1	1	10	4	3	19	3.8	52
Influenza B virus		2	1				3	6.0	31
Parainfluenza virus type 1	1	2	2	5	13	5	28	13.2	100
Parainfluenza virus type 3		1	6	4	5	1	17	17.5	147
Parainfluenza virus typing pending		2			3		5	2.5	28
Respiratory syncytial virus		14	11	2	13	1	41	27.2	194
OTHER RNA VIRUSES									
Rotavirus		2		1	6	1	10	25.7	309
Coronavirus		1					1	.7	11
Astrovirus		1					1	.2	4
Small virus (like) particle		1			1		2	1.7	13
HIV-1						1	1	4.0	7
OTHER									
Chlamydia trachomatis not typed	2	13	40	9	1	27	92	125.7	904
Chlamydia psittaci					9		9	5.7	51
Chlamydia spp typing pending		2					2	.2	2
Mycoplasma pneumoniae		9	1		5	5	20	12.3	200
Coxiella burnetti (Q fever)		7	4	1	2	1	15	18.0	73
TOTAL	26	250	293	144	265	251	1,229	1,092.7	9,327

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

Table 7. Laboratory reports by clinical information for the reporting period 25 March to 7 April 1992

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other	Total
MEASLES, MUMPS, RUBELLA													
Measles virus								2					2
Mumps virus	1											3	4
Rubella virus								4				2	6
HEPATITIS VIRUSES													
Hepatitis A virus							11					6	17
Hepatitis B virus							36					42	78
Hepatitis C virus							11					79	90
ARBOVIRUSES													
Ross River virus			1		2			9		35		37	84
Barmah Forest virus					1			4		2		8	15
Dengue type 3												1	1
Flavivirus (unspecified)			1									2	3

Table 7. Laboratory reports by clinical information for the reporting period 25 March to 7 April 1992, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other	Total
ADENOVIRUSES													
Adenovirus type 2				1	2								3
Adenovirus type 3					3			1					4
Adenovirus type 4									1				1
Adenovirus type 7												1	1
Adenovirus not typed/pending					10	16	1	1				4	32
HERPES VIRUSES													
Herpes simplex virus type 1					8			84	6		29	5	132
Herpes simplex virus type 2								65			84	8	157
Herpes simplex not typed/pending	1	2	1		2			14	2		2	9	33
Cytomegalovirus	1	2	1	6	19	3	5	1	1		2	62	103
Varicella-zoster virus	1		1		1			20				2	25
Epstein-Barr virus					5		5	2		1		38	51
Herpes virus group - not typed								1			2		3
OTHER DNA VIRUSES													
Contagious pustular dermatitis (Orf)								1					1
Parvovirus										4			4
PICORNA VIRUS FAMILY													
Coxsackievirus A not typed		2										1	3
Coxsackievirus B1		1											1
Coxsackievirus B3		1											1
Coxsackievirus B5		1											1
Echovirus type 1						1							1
Echovirus type 6		1										1	2
Echovirus type 9		4										1	5
Echovirus type 16		1										1	2
Echovirus type 17		2						1					3
Echovirus type 20						1							1
Poliovirus not typed/pending						2							2
Enterovirus type 71 (BCR)						1		1					2
Enterovirus not typed/pending		10	3		8	12						10	43
Poliovirus type 1 (uncharacterised)												1	1
Poliovirus type 2 (uncharacterised)												1	1
Poliovirus type 3 (uncharacterised)					2								2
Rhinovirus (all types)					29							9	38
ORTHO/PARAMYXOVIRUSES													
Influenza A virus H3N2					4								4
Influenza A virus		1			14							4	19
Influenza B virus					2							1	3
Parainfluenza virus type 1					26							2	28
Parainfluenza virus type 3					16	1							17
Parainfluenza virus typing pending					4							1	5
Respiratory syncytial virus					39							2	41

Table 7. Laboratory reports by clinical information for the reporting period 25 March to 7 April 1992, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other	Total
OTHER RNA VIRUSES													
Rotavirus						8						2	10
Coronavirus												1	1
Astrovirus						1							1
Small virus (like) particle						1						1	2
HIV-1												1	1
OTHER													
Chlamydia trachomatis not typed									5		55	32	92
Chlamydia psittaci					6			1				2	9
Chlamydia spp typing pending												2	2
Mycoplasma pneumoniae	1				14							5	20
Coxiella burnetti (Q fever)							1					14	15
TOTAL	5	28	8	7	217	47	70	212	15	42	174	404	1,229

Table 7. Laboratory reports by contributing laboratories for the reporting period 25 March to 7 April 1992

STATE	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Garran	26
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	144
	Prince Henry/Prince of Wales Hospitals, Sydney	78
	Royal Alexandra Hospital for Children, Camperdown	28
Queensland	State Health Laboratory, Brisbane	293
South Australia	Institute of Medical & Veterinary Science, Adelaide	144
Victoria	Fairfield Hospital, Melbourne	181
	Royal Children's Hospital, Melbourne	84
Western Australia	Princess Margaret Hospital, Perth	22
	State Health Laboratory Services, Perth	229
TOTAL		1229