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DEPARTMENT OF  
HEALTH, HOUSING,  
LOCAL GOVERNMENT AND  
COMMUNITY SERVICES

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

## A MISSED OPPORTUNITY TO INVESTIGATE A SOURCE OF *SALMONELLA* ENTERITIDIS PHAGE TYPE 4

(J. Hanna, Centre for Disease Control, Tropical Public Health Unit, Cairns, Queensland)

In late January, the National Salmonella Surveillance Scheme (NSSS), Melbourne, informed the Centre for Disease Control in Cairns of a case of *Salmonella* Enteritidis phage type (PT) 4 that apparently was locally acquired four months previously in north Queensland.

*S. Enteritidis* is the most commonly diagnosed *Salmonella* serotype in the northern hemisphere<sup>1</sup>, having surpassed *S. Typhimurium* as the most frequent serotype in the United Kingdom in 1988<sup>2</sup> and in the United States in 1990<sup>3</sup>. In the United Kingdom PT 4 is the most common *S. Enteritidis* phage type, whereas PTs 8 and 13 predominate in the United States<sup>1</sup>. *S. Enteritidis* has been implicated in numerous foodborne outbreaks<sup>3</sup>, and epidemiological investigations have implicated fresh shell eggs as being a particularly important source of infection<sup>3,5</sup>. The contamination of the eggs can occur either from the faecal contamination of the shell, or because *S. Enteritidis* can infect the ovaries and oviducts of egg-laying hens, with resulting infection of the eggs<sup>4</sup>.

In Australia *S. Enteritidis* is not ranked among the ten most frequently diagnosed serotypes, and less than 2% of all the *Salmonella* isolates diagnosed in 1991 were *S. Enteritidis*<sup>6</sup>. Many patients diagnosed as having *S. Enteritidis* PT 4 have a recent history of travel abroad; indeed there have been few cases of *S. Enteritidis* PT 4 which have definitely been acquired in Australia (D Lightfoot, personal communication). However, the rapidity with which it emerged elsewhere emphasises the need for national surveillance of the situation in Australia.

Upon interview, the north Queensland patient said that she had developed gastrointestinal symptoms within 14 hours of partaking in a twenty-first birthday luncheon party. Further interviews ascertained that at least 30 of the (approximately) 90 guests developed symptoms within 24 hours of the party; the majority sought medical advice and seven were hospitalised. Five patients had positive stool cultures: two were positive for *Salmonella* but the isolates were not sent for serotyping; two had *S. Anatum* and the other patient had *S. Enteritidis* PT 4 isolated.

Therefore the *S. Enteritidis* PT 4 patient was one case in a large foodborne outbreak caused by at least two different *Salmonella* serotypes. The outbreak was not notified to the health department or the local government, or to the Centre for Disease Control. Since two of the *Salmonella* isolates were not notified, and the three laboratory notified reports included two different serotypes, it is not surprising that the outbreak was not identified through routine surveillance mechanisms.

Because the party was held 4 months previously and there may have been considerable error in the recall of the food items consumed by each of the party atten-

dees, it was considered that there was little point in a retrospective investigation of the outbreak. There were about 90 guests and about 15 food items on the party menu; the food was all home-made and eggs were ingredients in the several of the food items. None of those involved in preparing or handling the food had a recent history of travel abroad, and none remembered having symptoms prior to the party.

A listing of all the human *S. Enteritidis* PT 4 and *S. Anatum* isolates from Queensland in the last 4 months of 1992 was obtained from the NSSS. There were six *S. Anatum* isolates; four were isolated from patients in north Queensland and included the two party guests and a one year old child (see below). There were five *S. Enteritidis* PT 4 isolates; three were patients with recent history of travel to the northern hemisphere. The remaining two patients were both from north Queensland; one was the party guest. The other patient was a one year old child who had a mixed *S. Enteritidis* PT 4 and *S. Anatum* infection; the child's stool sample was taken two days after the twenty-first birthday party. The child lived on a cattle station about 100km from the town in which the party was held; no one in the child's family had either attended the party or recently visited the town. There was no family history of travel abroad.

Therefore there were two cases of *S. Enteritidis* PT 4 acquired at the same time but at different sites in north Queensland. The fact that both cases were associated with coincidental *S. Anatum* infection strengthens the argument that they were infected from a common food source, and therefore that *S. Enteritidis* PT 4 is now established as a contaminant of a local foodstuff. If the outbreak had been promptly recognised, reported and investigated, a suspect food item may have been identified. Considering the public health importance of the organism elsewhere, it is unfortunate that the opportunity was lost to investigate the source of what appears to have been locally-acquired (that is, not imported) cases of *S. Enteritidis* PT 4. Further, this episode emphasises the importance of not only having laboratory notification of *Salmonella* cases, but also of having medical practitioner notification of 'foodborne disease outbreaks': incidents in which two or more persons experience a similar illness after ingestion of a common food or drink<sup>7</sup>.

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### CDI Editorial Comment

Reports of isolations of *Salmonella* Enteritidis in England and Wales increased dramatically during the 1980s, and accounted for the increase in total *Salmonella* reports from a level of 10,000 to 15,000 per year until 1986 to about 25,000 per year in the period 1988 to 1991<sup>1,2,3</sup>. In 1982, *S. Enteritidis* comprised 8% of a total of just over 12,000 human isolates; by 1986, it accounted for 27% of nearly 15,000 isolates, and by 1988, 55% of 23,821 isolates. A large and increasing proportion was due to *S. Enteritidis* PT 4; of those typed, 67% were PT 4 in 1986 and 80% were PT 4 in 1988.

*S. Enteritidis* is still the most commonly reported *Salmonella* serotype in the United Kingdom, and also in many other European countries. There has been strong

indirect evidence that eggs have often been the source of *S. Enteritidis* PT 4 infection there, and UK authorities are continuing to issue advice on how to avoid infection by avoiding uncooked or undercooked eggs<sup>4</sup>.

In Australia, as mentioned in the article above, *S. Enteritidis* accounted for less than 2% of all human *Salmonella* isolates in 1991 (98 isolates), and only 20 of these were PT 4. *Salmonella* Typhimurium was the most commonly isolated human *Salmonella* serotype in Australia in 1990 (38% of all *Salmonella* isolates) and in 1991 (29%)<sup>5</sup>.

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## CAMPYLOBACTERIOSIS OUTBREAK AT CHURCH CAMP PENGUIN, TASMANIA, JANUARY, 1993

(Tony Watson, David Coleman, Mark Jacobs, Environmental and Public Health Branch, Department of Community and Health Services, Hobart, Tasmania)

### Summary

An outbreak of campylobacteriosis occurred during a church camp held between January 18 and 23 1993 in Penguin, Tasmania,

Twenty-one of 47 people (45%) attending the camp developed an illness with abdominal pain and diarrhoea lasting at least one day. Four patients had stool cultures positive for *Campylobacter*. A 15 year old female and her twin brother were hospitalised and another 15 year old male had his appendix removed.

Stratified analysis of the food histories of the group during the camp did not implicate a specific source, but we think the regular consumption of unpasteurised milk during the camp could have been a main contrib-

uting factor to the outbreak. Other likely food sources included roast chicken, beef chow mein, hamburger, and steak.

### Introduction

Campylobacteriosis surveillance in Tasmania is based on laboratory isolation reports and investigation by Environmental Health Officers (EHOs)<sup>1</sup>.

The investigation of a twin brother and sister who were hospitalised with campylobacteriosis revealed that they had attended a church camp at Penguin two weeks previously, and that many other participants had fallen ill with similar symptoms of abdominal pain and diarrhoea.

## Methods

We contacted the camp organiser and obtained a list of all participants. They had come from many different places in Tasmania. Review of recent campylobacteriosis notifications matched two other participants.

We interviewed the food handlers and obtained the menu and sources of food and drink for the six-day camp. Unpasteurised milk had been obtained from a local farmer, all fresh meat from a local butcher, and 14 frozen chickens from a local supermarket. Some people brought extra food with them, and some purchased extra food from local shops. The water supply was fully treated. There were no other likely sources of exposure to *Campylobacter* such as animals or recreational water. No food samples were obtained.

We created a questionnaire based on the most common symptoms of campylobacteriosis<sup>2</sup> and the most likely sources of *Campylobacter*<sup>3</sup> for each meal. The questionnaires were distributed to and collected from all 47 camp participants by local EHOs.

A case was defined as a person with a positive stool culture for *Campylobacter* and/or an illness characterised by abdominal pain and diarrhoea lasting at least 24 hours. Food-specific attack rates were compared for cases and controls, and relative risks determined.

## Results

Four cases (19%) had stool cultures positive for *Campylobacter*. Two of these were the 15 year old twins who had been hospitalised. The others were the two detected through notification matching. A 15 year old boy with abdominal pain and diarrhoea had his appendix removed. He did not have a stool specimen tested and his appendix was not pathologically inflamed.

The female:male ratio was 10:11 for cases and 13:13 for controls. The age distribution of cases was from 13 to 31 years (Table 1). Diarrhoea and abdominal pain were the most commonly reported symptoms (Table 2). Eight patients consulted a doctor. The days of onset of diarrhoea for the cases were spread over a period of nine days (Figure).

Table 3 summarises the relative risks of selected foods consumed during the camp.

## Discussion

This was the first recorded outbreak of campylobacteriosis in Tasmania - most notifications in Tasmania are sporadic<sup>1</sup>. Without follow-up surveillance of notifications, this relatively small outbreak would not have been detected.

Table 1. Age distribution of cases and controls

AGE (YEARS)	CASES	CONTROLS
12		1
13	9	5
14	5	10
15	3	5
16		1
19	2	1
20	1	2
31	1	
34		1
Total	21	26

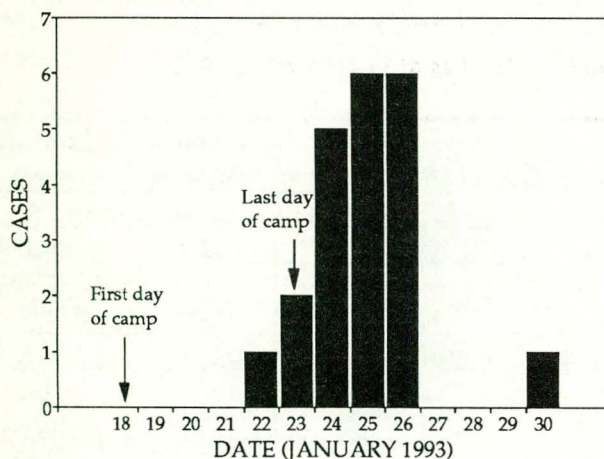
Table 2. Clinical histories of the cases

HISTORY	FREQUENCY
Headache	14 (67%)
Fever	13 (62%)
Abdominal pain	19 (91%)
Vomiting	1 (5%)
Diarrhoea	21 (100%)
Blood in stools	3 (14%)
Doctor consulted	8 (38%)
Hospitalised	3 (14%)
Appendectomy	1 (5%)

Table 3. Relative risks and 95% confidence intervals for selected foods consumed at the camp

DATE	FOOD	RELATIVE RISK	95% CONFIDENCE INTERVALS
January 18	Mince	0.86	0.43 - 1.70
January 19	Steak	1.46	0.61 - 3.48
	Milk	1.42	0.53 - 3.80
January 20	Beef chow mein	1.62	0.59 - 4.42
	Milk	1.13	0.37 - 3.48
January 21	Roast chicken	1.39	0.43 - 4.52
	Milk	1.46	0.61 - 3.48
January 22	Hamburger	1.17	0.57 - 2.41
	Milk	1.95	0.56 - 6.75
January 19 - 22	Milk	1.86	0.33 - 10.47

**Figure.** Cases of campylobacteriosis by date of onset of diarrhoea



Although no food or drink source was implicated by statistical analysis, the association between campylobacteriosis and unpasteurised milk consumption is well-documented<sup>3</sup>, and may have contributed to the outbreak. Milk was consumed by 20 of the 21 of the cases and 23 of the 26 controls during the camp. The food selection and preparation histories indicated other possible causes of *Campylobacter* contamination such as inappropriate thawing and storage.

The possibility that the patient with appendicitis had campylobacteriosis illustrates the less common syndrome of abdominal pain predominating over diarrhoea. It would be interesting to perform a cohort study of appendectomy patients examining faecal specimens for common enteric pathogens which can cause abdominal pain, (for example *Campylobacter*, *Yersinia*) to assess their impact on this illness. Campylobacteriosis has been associated with appendicitis<sup>4</sup>.

The association between *Campylobacter* infection and the Guillain-Barré Syndrome<sup>4</sup> also raises the question whether the organism can affect other neurological/immunological conditions by specific/non-specific priming/stimulation of immune responses through repeated exposure. For example, could seasonal clinical relapses be related to *Campylobacter* exposure?

This outbreak is another reminder of the increased risk of food and waterborne disease whenever there is catering for large groups of people, particularly when recommended food and drink hygiene practice is not maintained. Anyone catering for group functions needs to be fully informed about methods for preventing contamination of food and drink.

### Acknowledgements

We would like to thank the environmental health officers and camp organisers for their assistance with this investigation.

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## HIV/AIDS UPDATE, INTERNATIONAL

(Based on *Weekly Epidemiological Record* 1993;68:9-11 and *Australian HIV Surveillance Report* 1993;9(1):27)

As of 31 December 1992, a cumulative total of 611,589 cases of AIDS had been reported to the World Health Organization (WHO) (Table 1). The reported number of AIDS cases is a relatively crude indicator of worldwide trends in HIV infections and AIDS cases, because of (a) less than complete diagnosis, (b) less than complete reporting to public health authorities, (c) delays in reporting inherent to the passive case surveillance approach, and (d) the use of different surveillance case definitions of AIDS in different countries around the world. WHO estimates that a total of about 2.5 million AIDS cases in men, women and children have occurred.

Because of the relatively long interval between HIV infection and AIDS, the estimated number of HIV infections provides a more accurate picture of the HIV pandemic. WHO estimates that there have been ap-

proximately 13 million men, women and children infected with HIV since the start of the pandemic, about 1 million of whom are children. This represents an increase of about 1 million infections since mid-1992. The majority of the new infections have occurred in sub-Saharan Africa and South and South-East Asia.

The regional distribution of cumulative HIV infections in adults is estimated to be as follows: sub-Saharan Africa has had over 7.5 million HIV infections; the Americas over 2 million; South and South-East Asia over 1.5 million; Western Europe about half a million; North Africa and the Middle East about 75,000; Eastern Europe and Central Asia about 50,000; East Asia and the Pacific over 25,000. Australasia is now estimated to have had a little over 25,000 infections to date, as a result of new estimates released by Australia.

A total of 24,489 diagnoses of HIV infection and 4,885 cases of AIDS had been reported in the WHO Western Pacific Region to 30 September 1992 (Table 2). The highest AIDS rates (cumulative AIDS cases per 100,000

total current population) were reported by Australia, French Polynesia, New Caledonia, New Zealand and Guam. High HIV infection rates were reported by those regions, and by Malaysia.

**Table 1. Cumulative AIDS cases, by country/area, reported to the WHO as at 31 December 1992**

Country/Area	Number of cases	Date of report	Country/Area	Number of cases	Date of report
AFRICA			Swaziland	197	8.7.92
Algeria	92	31.8.91	Togo	1278	3.4.92
Angola	514	24.9.92	Tunisia	114	17.12.92
Benin	247	31.3.92	Uganda	34611	1.11.92
Botswana	353	30.6.92	United Republic of Tanzania	34605	31.5.92
Burkina Faso	1263	20.3.92	Zaire	18186	14.5.92
Burundi	6052	20.3.92	Zambia	6556	15.10.92
Cameroon	1407	5.10.92	Zimbabwe	12514	31.3.92
Cape Verde	52	8.2.92	TOTAL	211,032	
Central African Republic	1864	20.3.92	AMERICAS		
Chad	382	17.9.92	Anguilla	6	10.12.92
Comoros	3	11.3.92	Antigua and Barbuda	6	10.12.92
Congo	3482	30.1.92	Argentina	1820	10.12.92
Côte d'Ivoire	10792	9.3.92	Bahamas	934	10.12.92
Djibouti	265	17.12.92	Barbados	315	10.12.92
Egypt	57	17.12.92	Belize	53	10.12.92
Equatorial Guinea	13	16.5.92	Bermuda	199	10.12.92
Ethiopia	3978	11.11.92	Bolivia	49	10.12.92
Gabon	215	31.5.92	Brazil	31364	10.12.92
Gambia	180	25.2.92	British Virgin Islands	4	10.12.92
Ghana	3612	1.7.92	Canada	6889	10.12.92
Guinea	338	20.3.92	Cayman Islands	13	10.12.92
Guinea-Bissau	189	13.7.92	Chile	573	10.12.92
Kenya	31185	1.10.92	Colombia	2957	10.12.92
Lesotho	64	31.3.92	Costa Rica	419	10.12.92
Liberia	28	31.3.92	Cuba	137	10.12.92
Libyan Arab Jamahiriya	7	17.12.92	Dominica	12	10.12.92
Madagascar	2	6.11.92	Dominican Republic	1809	10.12.92
Malawi	22300	2.12.92	Ecuador	224	10.12.92
Mali	1111	17.7.92	El Salvador	382	10.12.92
Mauritania	36	19.7.92	French Guiana	232	10.12.92
Mauritius	11	29.2.92	Grenada	32	10.12.92
Morocco	121	17.12.92	Guadeloupe	182	10.12.92
Mozambique	538	10.10.92	Guatemala	273	10.12.92
Namibia	311	20.3.92	Guyana	333	10.12.92
Niger	497	7.2.92	Haiti	3086	10.12.92
Nigeria	184	12.3.92	Honduras	1976	10.12.92
Reunion	65	20.3.92	Jamaica	361	10.12.92
Rwanda	8483	12.11.92	Martinique	227	10.12.92
Sao Tome and Principe	11	3.7.92	Mexico	11034	10.12.92
Senegal	648	9.3.92	Montserrat	1	10.12.92
Seychelles	0	18.2.92	Netherlands Antilles & Aruba	110	10.12.92
Sierra Leone	40	20.3.92	Nicaragua	31	10.12.92
Somalia	13	17.12.92	Panama	388	10.12.92
South Africa	1316	30.6.92	Paraguay	51	10.12.92
Sudan	650	17.12.92	Peru	614	10.12.92

Table 1. Cumulative AIDS cases, by country/area, reported to the WHO as at 31 December 1992, continued

Country/Area	Number of cases	Date of report	Country/Area	Number of cases	Date of report
Saint Kitts and Nevis	37	10.12.92	Thailand	909	30.11.92
Saint Lucia	48	10.12.92	Turkey	89	17.12.92
Saint Vincent and the Grenadines	41	10.12.92	United Arab Emirates	8	17.12.92
Suriname	122	10.12.92	Viet Nam	0	28.4.92
Trinidad and Tobago	1085	10.12.92	Yemen	0	17.12.92
Turks and Caicos Islands	25	10.12.92	TOTAL	2582	
United States of America	242146	10.12.92	EUROPE		
Uruguay	310	10.12.92	Albania	0	30.9.92
Venezuela	2173	10.12.92	Austria	828	30.9.92
TOTAL	313083		Belarus	6	30.9.92
ASIA			Belgium	1224	17.12.92
Afghanistan	0	17.12.92	Bulgaria	16	17.12.92
Bahrain	3	31.3.92	Czechoslovakia	32	17.12.92
Bangladesh	1	30.11.92	Denmark	1072	17.12.92
Bhutan	0	30.11.92	Finland	112	17.12.92
Brunei Darussalam	2	19.12.91	France	21487	17.12.92
Cambodia	0	31.10.92	Germany	8893	17.12.92
China <sup>1</sup>	11	28.4.92	Greece	689	17.12.92
Cyprus	24	17.12.92	Hungary	105	17.12.92
Democratic PR of Korea	0	30.11.92	Iceland	22	17.12.92
Hong Kong	61	26.9.92	Ireland	294	17.12.92
India	242	30.11.92	Italy	14783	17.12.92
Indonesia	24	30.11.92	Latvia	2	30.9.92
Iran (Islamic Republic of)	56	17.12.92	Lithuania	2	30.9.92
Iraq	7	17.12.92	Luxembourg	55	17.12.92
Israel	192	17.12.92	Malta	25	17.12.92
Japan	508	4.12.92	Monaco	9	17.12.92
Jordan	24	17.12.92	Netherlands	2330	17.12.92
Kuwait	7	17.12.92	Norway	283	17.12.92
Laos	1	23.4.92	Poland	118	17.12.92
Lebanon	35	17.12.92	Portugal	1007	17.12.92
Macao	2	3.11.92	Romania	2073	17.12.92
Malaysia	46	25.5.92	Russian Federation	94	30.9.92
Maldives	0	30.11.92	San Marino	1	17.12.92
Mongolia	1	30.11.92	Spain	14991	17.12.92
Myanmar	16	30.11.92	Sweden	743	17.12.92
Nepal	12	30.11.92	Switzerland	2691	17.12.92
Oman	27	17.12.92	United Kingdom	6510	17.12.92
Pakistan	25	17.12.92	Yugoslavia <sup>2</sup>	313	30.9.92
Philippines	80	7.10.92	TOTAL	80810	
Qatar	31	17.12.92	OCEANIA		
Republic of Korea	10	19.11.92	American Samoa	0	18.11.92
Saudi Arabia	46	17.12.92	Australia	3615	2.12.92
Singapore	43	5.8.92	Cook Islands	0	18.2.92
Sri Lanka	20	30.11.92	Federated States of Micronesia	2	1.9.92
Syrian Arab Republic	19	17.12.92	Fiji	4	28.11.91

Table 1. Cumulative AIDS cases, by country/area, reported to the WHO as at 31 December 1992, continued

Country/Area	Number of cases	Date of report	Country/Area	Number of cases	Date of report
French Polynesia	27	28.11.91	Papua New Guinea	45	10.8.92
Guam	10	13.9.91	Samoa	1	18.2.92
Kiribati	0	8.11.91	Solomon Islands	0	19.12.91
Mariana Islands	4	14.10.92	Tokelau	0	18.2.92
Marshall Islands	2	18.3.91	Tonga	2	24.7.92
Nauru	0	17.12.91	Tuvalu	0	22.11.90
New Caledonia	22	26.8.92	Vanuatu	0	8.6.92
New Zealand	348	3.11.92	Wallis and Futuna Islands	0	27.5.91
Niue	0	18.2.92	TOTAL	4082	
Palau	0	15.10.92	WORLD TOTAL	611589	

1. Does not include 48 cases in the Province of Taiwan

2. Refers to Bosnia and Herzegovina, Croatia, Macedonia, Montenegro, Serbia, Slovenia

Table 2. AIDS and HIV in the WHO Western Pacific Region by country/area, based on reports available at 30 September 1992

COUNTRY/AREA	Cumulative AIDS cases				AIDS Rate <sup>1</sup>	Cumulative HIV diagnoses
	Male	Female	Children <15 years	Total		
American Samoa	0	0	0	0	0.0	0
Australia	3575	116	30	3697 <sup>2</sup>	21.2	16513
Brunei	2	0	0	2	0.7	6
Cambodia	0	0	0	0	0.0	2
China <sup>3</sup>	8	0	0	8	0.0	708
Cook Islands	0	0	0	0	0.0	0
Fed. States of Micronesia	2	0	0	2	2.0	2
Fiji	2	2	0	4	0.5	9
French Polynesia	22	5	1	27	15.0	102
Guam	10	0	0	10	8.4	34
Hong Kong	60	1	3	61	1.1	272
Japan	480	14	0	494	0.4	2272
Kiribati	0	0	0	0	0.0	2
Laos	1	0	0	1	0.0	11
Macao	2	0	0	2	0.4	6
Malaysia	40	6	2	46	0.3	2946
Marshall Islands	1	1	0	2	4.9	5
Nauru	0	0	0	0	0.0	0
New Caledonia	19	3	1	22	12.9	73
New Zealand	325	10	4	335	9.9	763
Niue	0	0	0	0	0.0	0
N. Mariana Islands	0	0	0	0	0.0	2
Palau	0	0	0	0	0.0	0
Papua New Guinea	28	17	2	45	1.0	118
Philippines	53	21	3	74	0.1	333
Republic of Korea	5	2	0	7	0.0	131
Samoa	1	0	0	1	0.6	1
Singapore	43	0	0	43	1.6	97
Solomon Islands	0	0	0	0	0.0	0

**Table 2. AIDS and HIV in the WHO Western Pacific Region by country/area, based on reports available at 30 September 1992, continued**

COUNTRY/AREA	Cumulative AIDS cases				AIDS Rate <sup>1</sup>	Cumulative HIV diagnoses
	Male	Female	Children <15 years	Total		
Tokelau	0	0	0	0	0.0	0
Tonga	2	0	0	2	1.7	5
Tuvalu	0	0	0	0	0.0	0
Vanuatu	0	0	0	0	0.0	0
Vietnam	0	0	0	0	0.0	76
Wallis and Futuna	0	0	0	0	0.0	0
<b>TOTAL</b>	<b>4681</b>	<b>198</b>	<b>46</b>	<b>4885<sup>2</sup></b>	<b>-</b>	<b>24489</b>

1. AIDS cases per 100,000 total current population.  
 2. Persons whose sex was reported as transsexual are included in the Total.  
 3. For Taiwan, 45 AIDS cases in males, 3 in females and 300 diagnoses of HIV infection were reported.

## OVERSEAS BRIEFS

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

### Yellow Fever in Kenya

The yellow fever outbreak in Kenya is continuing, and a further 18 cases were reported for the period 1 to 18 March in Baringo and Elgeyo Marakwet Districts. Suspect cases in the areas bordering Sudan and Somalia were found to be negative on investigation.

Of the 41 cases reported to 12 March, 26 were in males and 15 in females. Five were under the age of 15 years, 18 were in the age group 15 to 24 years, and the remainder were 25 years or older. Eighteen had died.

A mass immunisation campaign has been undertaken, and by 8 March, over 500,000 persons had been vaccinated. Mosquito surveys are also underway.

### Cholera Update

Rio de Janeiro State in Brazil, Mendoza and Tucuman Provinces in Argentina, and Nueva Segovia and Rio San Juan Departments in Nicaragua have recently been declared infected.

Cases have been reported for February and March from Argentina, Belize, Bolivia, Brazil, Chile, Ecuador, El

Salvador, Guatemala, Honduras, Mexico, Mozambique, Nicaragua, Panama, Peru, Zambia and Zimbabwe.

### Influenza in the Northern Hemisphere

Influenza activity is now decreasing or has disappeared in most parts of Europe. In France, 363 influenza B strains had been isolated by 9 April, 4 influenza A (H<sub>1</sub>N<sub>1</sub>) and 54 influenza A (H<sub>3</sub>N<sub>2</sub>). In the United Kingdom, activity increased in March, and there had been 153 influenza B, 45 influenza A (H<sub>1</sub>N<sub>1</sub>) and 14 influenza A (H<sub>3</sub>N<sub>2</sub>) isolated for the season by 5 April. Influenza B has also predominated in Austria, the Czech Republic, Denmark, Finland, Germany, Hungary, Italy, Poland, Portugal and Yugoslavia.

In the United States, influenza was reported in the first week of April as being sporadic in 25 States, regional in seven and widespread in eight, decreasing from previous weeks. Mortality was above the 'epidemic threshold' for the third consecutive week. Influenza B has predominated (82% of isolates), but influenza A has become more common recently, especially in the south. Influenza B has also predominated in Canada this season.

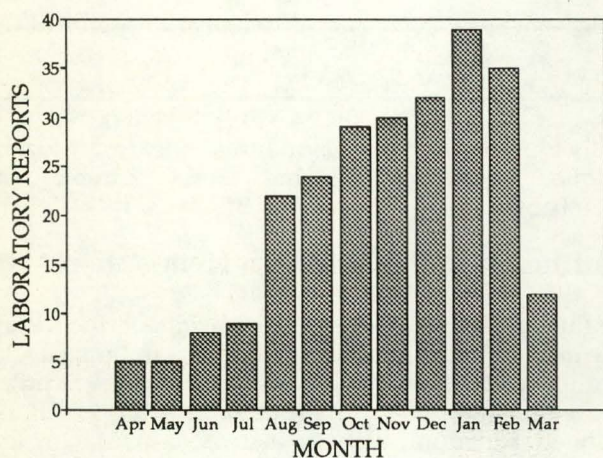
## COMMUNICABLE DISEASES SURVEILLANCE

### Laboratory Reporting Schemes

There were 1,828 reports received in the CDI Virology and Serology Reporting Scheme this fortnight (Tables 8, 9 and 10), and 131 reports of isolates from normally sterile sites (LabDOSS, Table 4).

- **Measles** was reported for 8 patients. The number of reports has been at a constant level since October (Figure 1). Reports have recently been received from laboratories in South Australia, New South Wales, Queensland and Victoria.

**Figure 1. Measles laboratory reports, April 1992 to March 1993, by month of specimen collection**

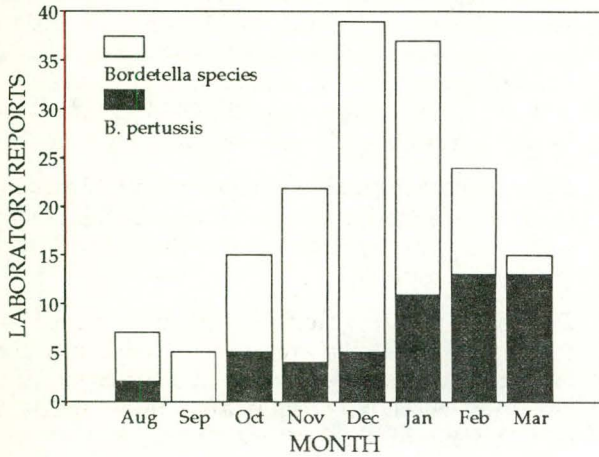


- There were 23 **rubella** reports this fortnight. Included were 5 reports in females in the age group 15 to 44 years. There has been a total of 214 reports so far this year, after a total of 753 last year.
- A total of 182 reports of **hepatitis C** was received. Included were 14 patients with a history of injecting drug use, 3 with a history of alcohol use, a 31 year old female whose husband was hepatitis C positive, and a 34 year old female who was detected by the Red Cross.
- **Ross River virus** infection was reported for 322 patients. All diagnoses were presumptive (IgM) except for one each from Victoria, Western Australia and the Northern Territory (four-fold or more changes in titre). Locations (or reporting laboratories) were Victoria (35 reports), ACT (2 reports), South Australia (128), New South Wales (7), Northern Territory (7), Western Australia (17) and Queensland (126, including 31 in Cairns, 40 in Townsville). A total of 255 had specimen collection dates in March, 65 in February and 2 in January.

So far this year, there have been 792 reports of Ross River virus. A total of 303 have been from South Australia (peak in February), 258 from Queensland (equal numbers in February and March so far), 138 from Victoria (77 in February and 57 in March so far), 61 from Western Australia, 29 from New South Wales, 2 from the ACT and one from Tasmania.

- **Barmah Forest virus** was reported for 17 patients (all IgM). There have been 58 reports of this virus so far this year, 49 from Queensland and 9 from Western Australia.
- **Dengue 2** was reported for 9 patients, all IgM, all from the Townsville area and all with specimen collection dates in January and February. Isolations of the virus have also been made in connection with this outbreak.
- **Adenovirus type 3** was reported for 28 patients this fortnight, mainly from New South Wales and South Australia. This virus is endemic in Australia, occurring in a seasonal pattern with peaks in spring most years, but also has epidemic peaks at less regular intervals. There have been a total of 37 reports this year, 15 in females and 22 in males. Respiratory tract or gastrointestinal symptoms have been reported for children up to the age of 14 years, and eye disease for patients ranging from under one year old to over 45 years old. Encephalitis was reported for a 5 year old male patient this fortnight (isolate from faeces).
- A report of **echovirus type 12** was received from a Sydney laboratory, the first report of this virus since May 1988. The patient was a 2 month old male. The virus was isolated from faeces. No clinical information was supplied.
- There were 69 reports of **cytomegalovirus** infection. Included were isolates from a placenta, from postmortem lung tissue from an immunosuppressed 89 year old female who had had bilateral interstitial lung disease, from fetal spleen tissue after death *in utero*, and from saliva, throat and urine of a preterm neonate with thrombocytopenia, hepatosplenomegaly and petechiae. There were also reports for 6 transplant patients and 8 patients who were HIV positive.
- There were 10 reports of **influenza**, 6 of **influenza A** (all single high titre) and 4 of **influenza B** (one isolation, one antigen detection, 2 single high titres). None of the patients was aged over 65 years.
- **Bordetella pertussis** infection was reported for 10 patients and **Bordetella species** infection for 2 patients (immunofluorescence and serological diagnoses). Included were 6 infants aged 3 months or less, a female aged 58 years and males aged 1 year, 10 years, 12 years, 14 years and 30 years.

**Figure 2.** *Bordetella pertussis* and *Bordetella* species laboratory reports, August 1992 to March 1993, by month of specimen collection



Reports of these organisms have been peaking over summer (Figure 2).

- There were 21 reports of **Q fever**, 3 in females (aged 16 years, 22 years and 29 years), and 18 in males in the age range 15 to 46 years. There have been more reports of Q fever than usual in recent months, and a total of 95 reports so far this year.
- *Toxoplasma gondii* infection was reported for 4 patients. Included was a female infant aged less than one month who had had classical congenital toxoplasmosis, with calcified intracranial lesions, hydrocephalus, hepatosplenomegaly, chorioretinitis and prolonged jaundice, and had died as a result. IgM was demonstrated in the infant's serum. Her mother was IgM and IgG negative when 4 months pregnant, and IgG and IgM positive a week after delivery.
- The Laboratory Reporting Schemes' first report of a diagnosis of *Schistosoma* species infection was

received from a Queensland laboratory. The 37 year old male patient had blood in his faeces and was being investigated for possible gastritis. The reported diagnosis was by demonstration of IgM.

**Australian Sentinel Practice Research Network**

The Australian Sentinel Practice Research Network collected data from 5,928 patient encounters in Week 14 and from 2,954 patient encounters in Week 15 (Table 1). Influenza was reported at a rate of 6.8 per 1,000 patient encounters in week 15, the highest rate so far this year.

**HIV and AIDS Surveillance**

HIV and AIDS surveillance data are compiled by the National Centre in HIV Epidemiology and Clinical Research (NCHECR) from data supplied to the National HIV Database and the National AIDS Registry, which are maintained by the NCHECR on behalf of the States and Territories.

HIV and AIDS reports for November this issue of *CDI* (Tables 2 and 3); AIDS diagnoses and deaths are as reported to 28 February 1993. These data are updated in *CDI* monthly but will be reported fortnightly in the near future.

**Dengue haemorrhagic fever in Queensland**

A case of dengue haemorrhagic fever (DHF) has been confirmed in Charters Towers, Queensland, where there is currently a substantial outbreak of dengue 2.

DHF can occur if a person who has previously been infected with one dengue serotype is infected with a second serotype. Dengue 1 has been considered to be endemic in Queensland, and dengue 2 has been active since this time last year, particularly in the Townsville area. Further details of this case will be included in the next edition of *CDI*.

**Table 1.** Australian Sentinel Practice Research Network, Weeks 14 and 15 1993

Condition	Week 14, to 4 April 1993		Week 15, to 11 April 1993	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	19	3.2	20	6.8
Measles	0	0	0	0
Rubella	0	0	1	0.3
Pertussis	0	0	1	0.3
Genital herpes	3	0.5	1	0.3
Gastroenteritis	52	8.8	27	9.1

**Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths from AIDS occurring in the period 1 to 30 November 1992, by sex and State or Territory in which diagnosis was made**

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
HIV Diagnoses	Female	0	3	0	1	0	0	4	0	8	8	82	70
	Male	0	51	0	12	2	0	19	3	87	100	1027	1167
	Total	0	55 <sup>1</sup>	0	13	2	0	23	3	96 <sup>2</sup>	117 <sup>3</sup>	1130 <sup>4</sup>	1327 <sup>5</sup>
AIDS Diagnoses	Female	0	2	0	0	0	0	0	0	2	2	23	15
	Male	0	14	1	2	2	0	12	2	33	28	552	571
	Total	0	16	1	2	2	0	12	2	35	30	576	588
AIDS Deaths	Female	0	0	0	0	0	0	0	0	0	0	11	9
	Male	1	13	0	4	4	0	8	2	32	30	440	427
	Total	1	13	0	4	4	0	8	2	32	30	454	437

1. Total HIV for NSW for November includes 1 person whose sex was not reported.
2. Total for November 1992 includes 1 person whose sex was not reported.
3. Total for November 1991 includes 9 persons whose sex was not reported.
4. Total for the year to date 1992 includes 2 persons whose sex was reported as transsexual and 19 persons whose sex was not reported.
5. Total for the year to date 1991 includes 1 person whose sex was not reported as transsexual and 89 persons whose sex was not reported.

**Table 3. Cumulative diagnoses of HIV infection, AIDS and deaths from AIDS since the introduction of HIV antibody testing to November 1992, by sex and State or Territory**

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV Diagnoses	Female	8	447	6	60	35	3	117	37	713
	Male	133	8681	62	1119	478	64	2742	595	13874
	Total	141	11159 <sup>1</sup>	68	1182 <sup>2</sup>	513	67	2930 <sup>3</sup>	633 <sup>4</sup>	11693 <sup>5</sup>
AIDS Diagnoses <sup>6</sup>	Female	2	75	0	14	8	2	17	8	126
	Male	43	2212	15	334	147	22	804	176	3753
	Total	45	2291	15	349	155	24	824	184	3887
AIDS Deaths <sup>6</sup>	Female	1	43	0	8	2	1	9	3	67
	Male	33	1403	6	209	87	13	546	113	2410
	Total	34	1448	6	218	89	14	557	116	2482

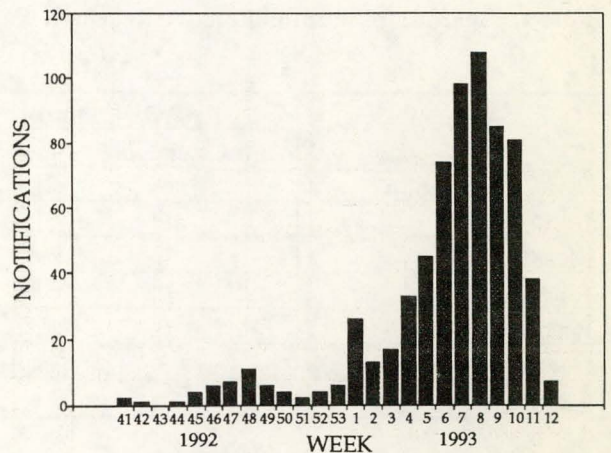
1. HIV total for NSW includes 5 persons whose sex was not reported.
2. HIV total for QLD includes 3 persons whose sex was reported as transsexual.
3. HIV total for VIC includes 7 persons whose sex was reported as transsexual and 64 persons whose sex was not reported.
4. HIV total for WA includes 1 person whose sex was reported as transsexual.
5. HIV total for Australia includes 16 persons whose sex was reported as transsexual and 2090 persons whose sex was not reported.
6. Persons whose sex was reported as transsexual are included in the totals.

### Ross River virus infection in South Australia

The number of serological/doctor notifications of Ross River virus infection received by the Communicable Disease Control Unit from the end of September 1992 to 31 March 1993 now numbers 679. The numbers being notified have continued to fall following the peak in the last week of February (Figure 3). A followup questionnaire to assess the effects of Ross River virus infection on the community is now being prepared.

(Scott Cameron, Joanne Bell, Ossama El Saadi, South Australian Health Commission; Suzanne Selden, National Centre for Epidemiology and Population Health and South Australian Health Commission)

**Figure 3. Ross River virus infection notifications, South Australia, week 41, 1992 to week 12, 1993**



### Australian Encephalitis: Sentinel Chicken Surveillance Programme Serological Results for March 1993

Sentinel chicken serology was undertaken from 24 flocks in the Kimberley and Pilbara regions of Western Australia. There have been 8/9 seroconversions to flaviviruses in chickens from Kununurra, 5 to Murray Valley Encephalitis (MVE) and 3 are dual infections with MVE and Kunjin viruses. In addition 7/12 chickens at Roebuck Plains Station near Broome and 3/10 chickens at Wyndham seroconverted to MVE, while 3/9 chickens at Fitzroy Crossing, 1/10 chickens at Halls Creek and 1/12 chickens at Derby showed evidence of infection with either MVE or MVE and Kunjin viruses. We have asked for re-bleeds from all the flocks to confirm the positive chickens and replacement flocks have been sent to Kununurra and to Roebuck Plains Station near Broome.

These results indicate considerable and widespread flavivirus activity in the Kimberley, following heavy rainfall and severe flooding in February this year. A general health warning was issued by the Health Department of Western Australia following the floods, and a specific warning of increased flavivirus activity was issued on 2 April, 1993, in response to the sentinel chicken seroconversions.

There was no increase in flavivirus activity recorded from 6 flocks tested from the Northern Territory or from the sentinel flocks in Victoria.

Victoria and New South Wales have now discontinued their sentinel chicken programmes for this season.

The sentinel chicken flocks from northern Queensland were replaced in March and no samples were tested.

Information on the location of sentinel chicken flocks was presented in *CDI* 1992;16:55-57, *CDI* 1992;16:169 and *CDI* 1993;17:123.

(A K Broom, Department of Microbiology, the University of Western Australia; L Hueston, Virology Department, Westmead Hospital, New South Wales; J S Mackenzie, Department of Microbiology, the University of Western Australia; L Smythe, State Health Laboratories, Brisbane; J Whitehead, Victorian Institute of Animal Science)

### Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 5 laboratories. A total of 131 reports has been included: 32, ICPMR Westmead; 79, Liverpool Hospital; 13, Northern Tasmanian Pathology Service; 5, Nambour Hospital; 2, Central Queensland Pathology Service.

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 *Streptococcus* Group B, 1 *Streptococcus* Group G, 1 *Streptococcus milleri*, 2 *Streptococcus sanguis* 1 *Streptococcus mitis*, 1 *Streptococcus intermedius*, 2 *Corynebacterium* species, 3 *Enterococcus* species (2 *E. faecalis*), 2 *Bacillus* species.

**Gram negative:** 4 *Acinetobacter* species (1 *A. baumannii*), 2 *Enterobacter cloacae*, 1 *Serratia marcescens*, 1 *Pseudomonas putida*, 3 *Haemophilus influenzae* (all aged 1 to 11 months, 2 type b), 1 *Salmonella* Bredeney, 2 *Morganella morganii*, 2 *Proteus mirabilis*, 1 *Chromobacterium violaceum*.

**Anaerobes:** 1 *Eubacterium* species, 4 *Bacteroides* species, (1 *B. fragilis*, 1 *B. thetaiotomicron*), 1 *Clostridium perfringens*, 2 *Peptostreptococcus* species.

### CSF Isolates and Meningitis Reports

2 *Haemophilus influenzae* type b (female aged 11 months and a male aged 2 years), *Pseudomonas aeruginosa* and *E. coli* in a female aged 3 months.

Table 4. LabDOSS reports of blood isolates

Organism	Total <sup>1</sup>	Clinical Information						Risk Factors				
		Bone/joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary Tract	Skin	Surgery	Immunosuppressed	IV line	Perinatal	Neonatal
<i>Staphylococcus aureus</i>	17 <sup>2</sup>	1		1			3	1	3			
<i>Staphylococcus coagulase negative</i>	8 <sup>3</sup>						1	1	1	4		
<i>Streptococcus pneumoniae</i>	6		6									
<i>Escherichia coli</i>	29				4	14		2	3	1		
<i>Klebsiella</i> species	7 <sup>4</sup>					2			3	2		

1. Only organisms with 5 or more reports are included in this table.  
 2. MRSA 5.  
 3. *Staphylococcus epidermidis* 1.  
 4. *Klebsiella oxytoca* 3, *K. pneumoniae* 4.

### Isolates from Sites other than Blood or CSF

**Peritoneal dialysate:** 1 *Pseudomonas aeruginosa*, 1 *Staphylococcus aureus*.

**Peritoneal fluid:** 1 *Salmonella* Typhimurium.

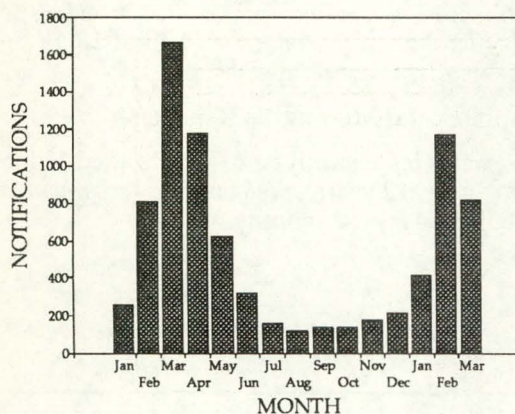
**Joint fluid:** 1 *Streptococcus* Group A (female aged 2 months), 1 *Staphylococcus aureus*.

### National Notifiable Diseases Surveillance System, 21 March to 3 April 1993

A total of 2,020 reports was received during this period (Tables 5, 6, 7, Figure 7).

- There were 343 reports received of **Ross River virus infection** to bring the total so far this year to 2,592 (Figure 4). There were 180 males, 155 females and in 8 cases sex was not reported. Ages reported ranged from the 0-4 to the 80-84 years age groups, with the 30-34 years age group contributing the most cases (49 cases). In these reports onset dates were recorded as December in 1 case, January in 9 cases, February in 46, March in 284 and April in 3. Locations were in 34 of the 68 statistical divisions in Australia covering wide areas of New South Wales, Queensland, South Australia and Victoria.

Figure 4. Notifications of Ross River virus infection, 1992-93, by month of onset



- Eleven notifications of **dengue** were reported, for 6 males and 5 females, in Townsville and surrounds. Onset dates were recorded as January (1), February (6) and March (4). Ages ranged from the 10-14 to the 50-54 years age groups. There have been 40 notifications of dengue so far this year.
- A single case of **diphtheria** was notified, the first for the year. Neither sex nor age was reported.
- **Gonococcal infection** was notified for 123 cases. There were 87 males and 36 females; ages ranged from the 10-14 to the 55-59 years age groups.
- There were 21 reports of **Haemophilus influenzae type b infection** notifications. Thirteen were males, 7 were females and sex was not reported in one case. Eight were aged less than one year, 18

were less than 5 years, one was in the 20-24 years age group and one was in the 70-74 years age group. Age was not reported for one case. There was an apparent cluster of 2 cases in a single postcode area with onset dates on subsequent days.

- Sixty-six notifications of **hepatitis A** were received. Thirty-one were recorded as male, 33 as female and sex was not reported for 2. There were 11 cases in the 10-14 years age group and 13 in the 30-34 years age group. Nineteen cases occurred in residents of the Sydney statistical division, 14 in the Brisbane statistical division, 3 in Canberra and the remainder in rural New South Wales and Queensland.
- Three cases of **hydatid infection** were notified, a male in the 5-9 years age group and 2 females in the 50-54 and 55-59 years age groups. All were from the Brisbane statistical division.
- There were 5 apparently unrelated cases of **legionellosis** notified. There were 4 males and 1 female, in the 50-54 (1 case), 55-59 (2 cases), 65-69 and 80-84 (1 case each) years age groups.
- A single case of **leprosy** was notified in an Aboriginal male of unknown age in the Far North Queensland statistical division.
- There were 6 cases of **leptospirosis** notified this period from rural New South Wales, Queensland and Victoria. All except one were males and ages ranged from the 15-19 to the 45-49 years age groups.
- There were 38 reports of **malaria**, 23 males, 14 females and sex not reported for 1 case. Locations were in statistical divisions covering rural New South Wales, far north and rural Queensland, rural Victoria, Canberra, Brisbane, Sydney, Melbourne and Perth.
- There were 25 reports of **measles** notifications. Of these, 15 were males and 10 were females. In 4 cases the age was recorded as less than one year, and the mean age was 10.9 years.
- Six reports of **meningococcal infection** were received. Of these, 3 were males and 3 were females, ages ranged from the 0-4 to the 15-19 years age groups. There was an apparent cluster of 2 cases over an interval of 4 days in adjacent postcode areas.
- **Pertussis** was notified for 38 cases to bring the total for the year to 416 (Figure 5). Twenty-one were males and 17 were females. Seven of these cases were aged less than one year and 12 were aged less than 5 years. There were 7 apparent clusters of 2 cases each, occurring in separate postcode areas. Intervals between the index and further cases ranged from onset on the same day to onset 4 days later.
- There were 33 reports of notifications of **Q fever**. Of these, 27 were males and 5 were females. Ages ranged from the 15-19 years to the 70-74 years age groups. Cases were reported from rural Queens-

Figure 5. Notifications of pertussis, 1992-93, by month of onset

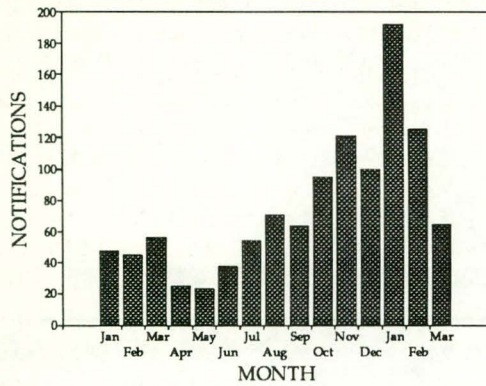
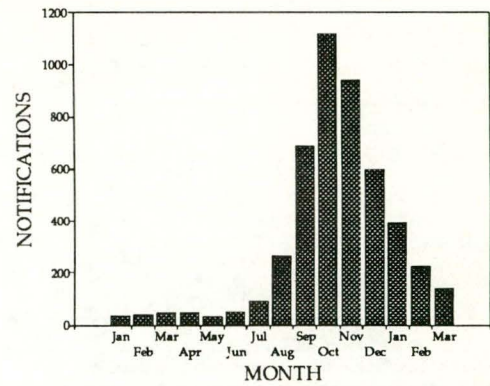


Figure 6. Notifications of rubella, 1992-93, by month of onset

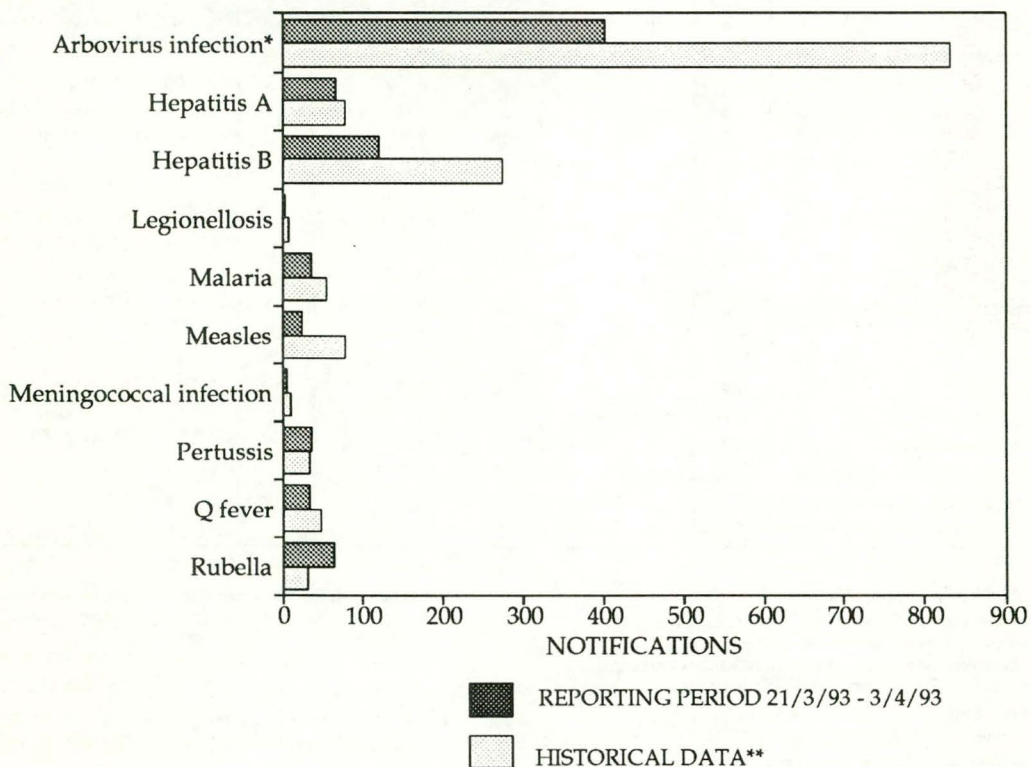


land, New South Wales and Western Australia, and from Brisbane and Sydney.

- There were 65 notifications of rubella, to bring the total for the year to date to 965 (Figure 6). Sex was recorded as male for 41 cases, female for 22 and was not reported for 2 cases. A single case was recorded as being aged less than 1 year. The mean age of cases notified was 24.2 years. There were 16 reports for females in the 15-44 years age group. There were 9 apparent clusters of 2 to 5 cases each in separate postcode areas.

- There were 62 notifications of syphilis received. Of these, 38 were males and 24 were females. The age was recorded as less than 15 years in 2 cases.
- Twenty notifications of tuberculosis were received, 9 males and 11 females. Ages ranged from the 15-19 to the 80-84 years age groups.
- Three notifications of typhoid were received. Two were males and one was female. Ages ranged from the 10-14 years to the 30-34 years age groups. All were from Brisbane and 2 had onset dates recorded on the same day in the same postcode area.

Figure 7. Selected National Notifiable Diseases Surveillance System reports, for the reporting period 21 March to 3 April 1993 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 5. Notifiable Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 21 March to 3 April 1993**

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA <sup>1</sup>			
									This Period 1993	This Period 1992	Year to Date 1993	Year to Date 1992
Diphtheria	0	0	0	0	0	0	1	0	1	1	1	4
Measles	0	14	0	5	3	0	3	0	25	40	314	274
Mumps	0	0	NN	NN	NN	NN	0	0	0	0	0	7
Pertussis	0	13	2	10	3	5	3	2	38	24	416	119
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella <sup>2</sup>	2	12	0	48	2	0	1	0	65	32	965	123
Tetanus	0	0	0	NN	0	0	0	0	0	0	3	4

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, WA: CRS only; ACT, NSW, Qld: rubella only; SA, Vic: rubella and CRS.  
NN Not Notifiable.

**Table 6. Other Notifiable Diseases<sup>1</sup>, for the reporting period 21 March to 3 April 1993**

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA <sup>2</sup>			
									This Period 1993	This Period 1992	Year to Date 1993	Year to Date 1992
Arbovirus infection (NEC) <sup>3</sup>	0	8	NN	39	0	0	2	0	49	38	196	103
Ross River virus infection	2	65	45	168	34	NN	12	17	343	624	2592	2350
Dengue	0	-	1	10	-	NN	0	NN	11	0	40	5
Campylobacteriosis <sup>4</sup>	5	-	22	104	12	19	14	31	207	297	2151	2205
Chlamydial infection (NEC)	4	NN	23	98	0	10	15	0	150	198	1439	1582
Donovanosis	0	NN	3	0	NN	NN	0	0	3	2	12	13
Gonococcal infection <sup>5</sup>	1	9	28	23	0	0	6	56	123	110	739	642
<i>Haemophilus influenzae</i> b infection <sup>6</sup>	0	4	3	6	0	2	6	0	21	24	105	112
Hepatitis A	4	24	5	33	0	0	0	0	66	104	529	545
Hepatitis B	6	3	1	85	0	9	0	17	121	208	601	1202
Hepatitis C	17	0	12	307	NN	1	16	0	353	295	1239	1985
Hepatitis (NEC)	0	0	0	11	0	0	0	NN	11	1	23	8
Legionellosis	0	2	0	0	0	0	2	1	5	6	36	32
Leptospirosis	0	2	1	2	0	0	1	0	6	4	47	30
Listeriosis	0	0	NN	0	NN	0	0	0	0	3	12	9
Malaria	1	7	0	24	0	0	4	2	38	31	183	190
Meningococcal infection	0	2	0	1	0	0	3	0	6	8	53	37
Ornithosis	0	NN	1	1	0	0	0	0	2	11	27	29
Q fever	0	20	0	10	0	0	1	2	33	25	176	113
Salmonellosis (NEC)	2	47	15	70	9	4	7	36	190	282	1565	1694
Shigellosis <sup>4</sup>	0	-	6	14	1	0	1	2	24	35	276	161
Syphilis	0	13	32	13	0	2	0	2	62	117	531	574
Tuberculosis	1	6	1	8	0	0	3	1	20	27	206	166
Typhoid <sup>7</sup>	0	0	0	3	0	0	0	0	3	3	17	21
Yersiniosis (NEC) <sup>4</sup>	0	-	0	12	0	0	0	0	12	27	122	184

1. For rarely notified diseases, see Table 7.

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.  
WA: includes dengue.

4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.

5. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.

6. SA: only as 'bacterial meningitis'; meningococcal infection is separately notified; Tas: only as 'non-meningococcal meningitis'; Vic: epiglottitis and meningitis only.

7. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

- Elsewhere Classified.

Table 7. Rarely Notified Diseases<sup>1</sup> for the reporting period 21 March to 3 April 1993

DISEASES	Total This Period	Reporting States or Territories	Year to Date 1993
Botulism	0		0
Brucellosis	0		9
Chancroid	0		1
Cholera	0		1
Hydatid infection	3	Qld	9
Leprosy	1	Qld	3
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 1987 to 1992.

Table 8. Laboratory reports by State or Territory of reporting laboratory for the reporting period 25 March to 7 April 1993, historical data<sup>1</sup>, and total reports for the year

	STATE OR TERRITORY OF REPORTING LABORATORY							Total this fortnight	Historical data <sup>1</sup>	Total reported this year
	ACT	NSW	Qld	SA	Tas	Vic	WA			
<b>MEASLES, MUMPS, RUBELLA</b>										
Measles virus			3	4		1		8	7.2	137
Mumps virus			5					5	2.2	17
Rubella virus			21	1		1		23	6.3	456
<b>HEPATITIS VIRUSES</b>										
Hepatitis A virus	2	3	7	3			1	16	16.5	218
Hepatitis B virus	2	26	23	10		12	42	115	82.8	827
Hepatitis C virus	14	6	41	62	1		58	182	53.0	1,117
<b>ARBOVIRUSES</b>										
Ross River virus	2		140	127		35	18	322	90.0	890
Barmah Forest virus			15				2	17	6.7	83
Dengue type 2			9					9	.2	20
Dengue not typed			1				1	2	1.3	11
Flavivirus (unspecified)			8					8	1.2	39
<b>ADENOVIRUSES</b>										
Adenovirus type 1		1				1		2	1.7	31
Adenovirus type 2		2						2	3.0	24
Adenovirus type 3		21		5		2		28	2.2	64
Adenovirus type 4				1		2		3	.8	48
Adenovirus type 7		1		1				2	.5	3
Adenovirus not typed/pending	1	7	22	9		11	4	54	33.8	378
<b>HERPES VIRUSES</b>										
Herpes simplex virus type 1		6	51	12	4	38	24	135	122.8	1,415
Herpes simplex virus type 2		6	57	12	3	36	67	181	152.7	1,588
Herpes simplex not typed/pending	5	9	3			2		19	30.0	202
Cytomegalovirus			32	1		36		69	69.3	518
Varicella-zoster virus	1	4	14			11	5	35	18.2	311
Epstein-Barr virus	1	2	59	4		11	5	82	58.8	695
<b>OTHER DNA VIRUSES</b>										
Poxvirus group not typed						1		1	.0	2
Parvovirus						4		4	1.7	49

Table 8. Laboratory reports by State or Territory of reporting laboratory for the reporting period 25 March to 7 April 1993, historical data<sup>1</sup>, and total reports for the year, continued

	STATE OR TERRITORY OF REPORTING LABORATORY							Total this fortnight	Historical data <sup>1</sup>	Total reported this year
	ACT	NSW	Qld	SA	Tas	Vic	WA			
<b>PICORNA VIRUS FAMILY</b>										
Coxsackievirus A9		4						4	.5	20
Coxsackievirus A16						1		1	.3	7
Coxsackievirus B1	2	1					3	6	.7	47
Echovirus type 7		4				2	1	7	.0	63
Echovirus type 9	3				1	1		5	2.0	36
Echovirus type 11	1					2		3	.0	10
Echovirus type 12		1						1	.0	1
Echovirus type 14		1						1	.5	5
Echovirus type 19						1		1	.0	2
Poliovirus type 1 (uncharacterised)		2						2	1.2	20
Poliovirus type 2 (uncharacterised)		1						1	1.5	12
Rhinovirus (all types)		3	8	2	1	6	4	24	21.0	239
Enterovirus not typed/pending		2	7			7	11	27	38.8	228
<b>ORTHO/PARAMYXOVIRUSES</b>										
Influenza A virus			6					6	9.7	43
Influenza B virus			2			2		4	2.2	20
Parainfluenza virus type 1			2			3		5	16.0	10
Parainfluenza virus type 2			1	1		1		3	5.2	7
Parainfluenza virus type 3		2		4		9		15	19.8	168
Respiratory syncytial virus		14	13		2		1	30	23.8	88
<b>OTHER RNA VIRUSES</b>										
HIV-1			3				3	6	1.8	28
Rotavirus		1	6	3		5	1	16	29.5	295
Calici virus		1						1	1.0	5
Small virus (like) particle						1	1	2	2.2	18
<b>OTHER</b>										
<i>Chlamydia trachomatis</i> not typed	5	14	71	3	8	8	21	130	104.8	991
<i>Chlamydia psittaci</i>			3			1		4	6.8	32
<i>Mycoplasma pneumoniae</i>		10	31	4	3	28	4	80	15.3	722
<i>Coxiella burnetii</i> (Q fever)		5	8	3		2	3	21	12.8	146
<i>Streptococcus</i> group A			11					11	.0	91
<i>Yersinia enterocolitica</i>			1					1	.0	2
<i>Brucella</i> species			2					2	.0	8
<i>Bordetella pertussis</i>		3	2			5		10	.0	46
<i>Bordetella</i> species			2					2	.0	83
<i>Legionella longbeachae</i>			1					1	.0	1
<i>Cryptococcus</i> species			1					1	.0	5
<i>Leptospira icterohaemorrhagiae</i>			1					1	.0	2
<i>Leptospira pomona</i>			2					2	.0	3

**Table 8. Laboratory reports by State or Territory of reporting laboratory for the reporting period 25 March to 7 April 1993, historical data<sup>1</sup>, and total reports for the year, continued**

	STATE OR TERRITORY OF REPORTING LABORATORY							Total this fortnight	Historical data <sup>1</sup>	Total reported this year
	ACT	NSW	Qld	SA	Tas	Vic	WA			
<i>Leptospira hardjo</i>			1					1	.0	2
<i>Leptospira australis</i>			1					1	.0	2
<i>Leptospira</i> species			3					3	.0	6
<i>Treponema pallidum</i>		5	51					56	.0	245
<i>Toxoplasma gondii</i>			3			1		4	.0	21
<i>Schistosoma</i> species			1					1	.0	1
<i>Echinococcus granulosus</i>			1					1	.0	4
<b>TOTAL</b>	<b>39</b>	<b>168</b>	<b>756</b>	<b>272</b>	<b>23</b>	<b>290</b>	<b>280</b>	<b>1,828</b>	<b>1,080.3</b>	<b>12,928</b>

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 9. Laboratory reports by clinical information for the reporting period 25 March to 7 April 1993**

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
<b>MEASLES, MUMPS, RUBELLA</b>													
Measles virus					1			4				3	8
Mumps virus												5	5
Rubella virus					1			11		1		10	23
<b>HEPATITIS VIRUSES</b>													
Hepatitis A virus							15					1	16
Hepatitis B virus							30					85	115
Hepatitis C virus							20					162	182
<b>ARBOVIRUSES</b>													
Ross River virus					4			22		166		130	322
Barmah Forest virus								1		4		12	17
Dengue type 2			1		1	1		1				5	9
Dengue not typed												2	2
Flavivirus (unspecified)			1					1		2		4	8
<b>ADENOVIRUSES</b>													
Adenovirus type 1					1	1							2
Adenovirus type 2					2								2
Adenovirus type 3	1				6	5			8			8	28
Adenovirus type 4					1				2				3
Adenovirus type 7						1			1				2
Adenovirus not typed/pending	1		1		18	20		1	5	1		7	54
<b>HERPES VIRUSES</b>													
Herpes simplex virus type 1	1				14			70	1		38	11	135
Herpes simplex virus type 2					1			90			77	13	181
Herpes simplex not typed/pending	1				1			11	1		1	4	19
Cytomegalovirus	1			1	17	3	5					42	69
Varicella-zoster virus								21				14	35
Epstein-Barr virus	1				10			4		5		62	82



**Table 9. Laboratory reports by clinical information for the reporting period 25 March to 7 April 1993, continued**

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
<i>Cryptococcus</i> species					1								1
<i>Leptospira icterohaemorrhagiae</i>												1	1
<i>Leptospira pomona</i>												2	2
<i>Leptospira hardjo</i>												1	1
<i>Leptospira australis</i>												1	1
<i>Leptospira</i> species												3	3
<i>Treponema pallidum</i>										1	8	47	56
<i>Toxoplasma gondii</i>				1								3	4
<i>Schistosoma</i> species						1							1
<i>Echinococcus granulosus</i>							1						1
<b>TOTAL</b>	<b>7</b>	<b>14</b>	<b>5</b>	<b>2</b>	<b>233</b>	<b>61</b>	<b>75</b>	<b>242</b>	<b>20</b>	<b>183</b>	<b>232</b>	<b>754</b>	<b>1828</b>

**Table 10. Laboratory reports by contributing laboratories for the reporting period 25 March to 7 April 1993**

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	39
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	110
	Prince Henry/Prince of Wales Hospitals, Sydney	8
	Royal Alexandra Hospital for Children, Camperdown	24
	South West Area Pathology Service, Liverpool	26
Queensland	Dr TB Lynch, Pathologist, Rockhampton	70
	Queensland Medical Laboratory, West End	303
	State Health Laboratory, Brisbane	383
South Australia	Institute of Medical & Veterinary Science, Adelaide	272
Tasmania	Northern Tas Pathology Service, Launceston General Hospital	8
	Royal Hobart Hospital, Hobart	15
Victoria	Fairfield Hospital, Melbourne	224
	Microbiological Diagnostic Unit, University of Melbourne	8
	Royal Children's Hospital, Melbourne	58
Western Australia	State Health Laboratory Services, Perth	280
<b>TOTAL</b>		<b>1828</b>