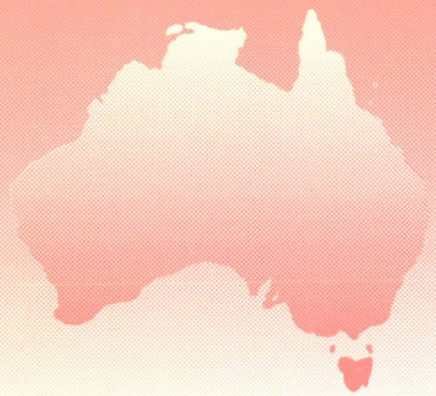


# COMMUNICABLE DISEASES INTELLIGENCE

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## CONTENTS




**Editor:** Robert Hall
**Deputy Editor:** Jenny Hargreaves

**Editorial and Production Staff:** Leslee Roberts, Margaret Curran, David Evans and Michelle Wood

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AIDS/Communicable Diseases Branch
Department of Human Services and Health
GPO Box 9848 Canberra ACT 2601
Fax: (06) 289 7791 Telephone: (06) 289 1555

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COMMONWEALTH DEPARTMENT OF HUMAN SERVICES AND HEALTH

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

# *CLOSTRIDIUM DIFFICILE*-ASSOCIATED DIARRHOEA AT A MAJOR TEACHING HOSPITAL IN WESTERN AUSTRALIA

*Thomas V Riley*[1,2], *Gael L O'Neill*[3], *Rodney A Bowman*[3,4] and *Clayton L Golledge*[3,4]

## Introduction

The laboratory diagnosis of *Clostridium difficile*-associated diarrhoea (CDAD) is based on demonstration of the organism by stool culture and/or detection of specific cytotoxin/enterotoxin in stool filtrates[1]. Methods for the laboratory diagnosis of CDAD at Sir Charles Gairdner Hospital (SCGH), a 690-bed adult teaching hospital in Western Australia, have not altered since 1983 and this had allowed us to compare yearly detection rates for *C. difficile* over a 10 year period. The aims of our investigation were to determine:

i) the distribution by age and sex of patients with CDAD,

ii) the possibility of a seasonal trend, and

iii) the influence of infection control procedures, like Body Substance Isolation (BSI), and the use of third generation cephalosporins.

## Methods

Faecal samples submitted to the Department of Clinical Microbiology, Sir Charles Gairdner Hospital, were examined for *C. difficile* if they fulfilled one or more of the following criteria:

i) stools were loose or watery;

ii) red or white blood cells were present on microscopy;

iii) there was a history of antibiotic use;

iv) there was a history of inflammatory bowel disease[2].

The methods employed for the isolation of *C. difficile* and other enteric pathogens, and the detection of *C. difficile* cytotoxin in VERO cells, have been described previously[3].

Patients from whom *C. difficile* or cytotoxin were detected were identified by examining the Department of Clinical Microbiology's laboratory records for the years 1983 to 1992. The total number of faecal specimens processed in the laboratory in each year was also determined as were occupied bed days (OBD). OBD were defined as the arithmetic difference in days between the 'in event date' (admission, transfer-in) and the 'out even date' (separation, transfer-out), including patient leave days. OBD for 'one day stay patients' were calculated as one.

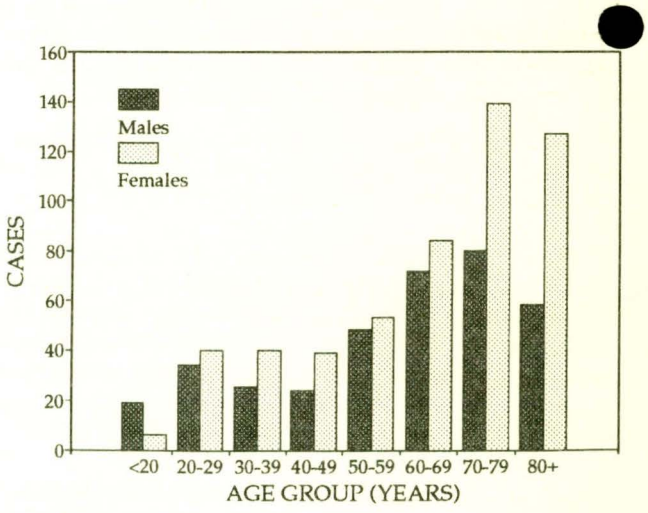
The use of third generation cephalosporins at the hospital from 1983 to 1992 was determined by obtaining the amount in grams of each antibiotic dispensed annually by the hospital pharmacy.

## Results

A total of 917 patients was identified as having been infected with *C. difficile* at SCGH between January 1983 and December 1992. Demographic details were available on 888 of the 917 patients (Figure 1). Most patients were in the older age groups; 63% were over 60 years (compared with 47% of all discharges in these age groups, $p<0.005$), but all age groups were represented. Nearly 25% of patients were aged between 70 and 79 years, the most frequently represented age group (compred with 18% of all discharges in this age group, $p<0.005$).

Fifty-nine per cent (528) of the 888 patients were females whereas the ratio of female to male patients attending the hospital was 0.9:1 overall. In the 70 years and older age group there was a strikingly increased ratio of female *C. difficile* patients to males, compared with other age groups. The ratios of female *C. difficile* patients to males in the various age groups were as follows: 19 years or less, 0.3:1; 20-29 years, 1.2:1; 30-39 years, 1.6:1; 40-49 years, 1.6:1; 50-59 years, 1.1:1; 60-69

**Figure 1. *Clostridium difficile*-associated diarrhoea cases at SCGH, 1983 to 1992, by age group and sex**




1. Health Services Statistics and Epidemiology Branch, Health Department of Western Australia, Perth.
2. National Centre for Epidemiology and Population Health, Australian National University, Canberra.
3. Department of Microbiology, The University of Western Australia, Nedlands, Western Australia.
4. Department of Clinical Microbiology, Sir Charles Gairdner Hospital, Nedlands, Western Australia.

**Figure 2. Case rates for *Clostridium difficile*-associated diarrhoea at SCGH, per 100,000 occupied bed days and per 1000 faecal specimens, 1983 to 1992, by year**

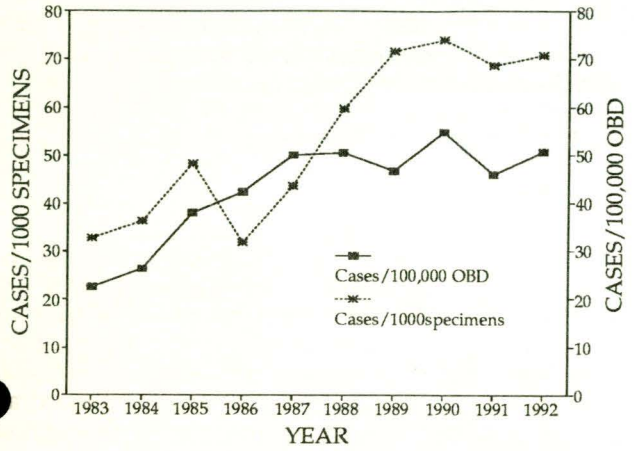
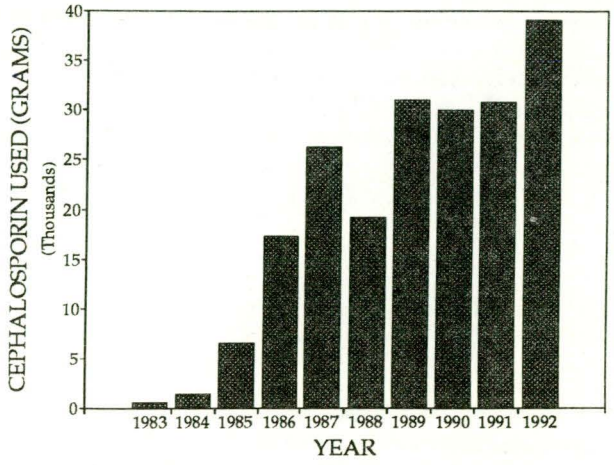



**Figure 3. Third generation cephalosporin use at SCGH, 1983 to 1992, by year**




years, 1.2:1; 70-79 years, 1.7:1; 80 years or more, 2.2:1. Using discharge data for the period 1986 to 1992, the average age specific ratios of female to male patients in hospital overall were calculated as follows: 19 years or less, 0.8:1; 20-29 years, 0.9:1; 30-39 years, 0.9:1; 40-49 years, 1.1:1; 50-59 years, 0.9:1; 60-69 years, 0.8:1; 70-79 years, 0.9:1; 80 years or more, 1.7:1.

A statistically significant seasonal variation in the isolation rate for *C. difficile* could not be demonstrated.

The number of patients infected each year with *C. difficile* ranged from a low of 49 patients in 1983 to a high of 120 patients in 1990. If the number of faecal specimens processed in the laboratory were used as the denominator, there was an increase in the proportion of positives from 1983 onwards (except for 1986), reaching a peak in 1990 (Figure 2) (Chi square for linear trend 128; $p<0.005$). If OBD were used as a denominator a similar trend was observed, with the detection rate also peaking in 1990. Since 1990, the detection rate, by both specimen number and OBD, has remained steady.

BSI and improved infection control procedures were instituted in 1989. Apart from 1988 there was a steady increase in the use of third generation cephalosporins until 1989, when a plateau was reached (Figure 3). Another substantial increase was recorded in 1992. The correlation coefficient between grams of third generation cephalosporins used at SCGH over the last 10 years and numbers of *C. difficile* isolated was 0.90 (Pearson's correlation coefficient) indicating a strong relationship.

## Discussion

The increasing importance of *C. difficile* as a cause of nosocomial diarrhoea in hospital patients prompted a retrospective analysis of our institution's laboratory records for a 10 year period. Most of our isolations of *C. difficile* came from elderly patients, a pattern similar to that reported by others[4]. Another important feature was the predominance of female patients; 59% of our patients were female. This was a real difference as there were approximately equal numbers of male and female patients in the hospital during the study period. It is interesting to speculate on reasons for the apparently greater susceptibility of female patients to infection with *C. difficile*. One possible explanation may be related to antibiotics prescribed for urinary tract infections, particularly in older females, leading to a greater predisposition to infection with *C. difficile*.

The increasing incidence of CDAD at SCGH over the last 10 years also appears to be real. When either of two different denominators, number of faecal specimens processed in the laboratory and OBD, were used to calculate incidence rates, there was an increase in the incidence of CDAD over the study period. The only marked deviation in this trend was in 1986, when the number of cases of CDAD per 1000 specimens fell. However, during that year the hospital experienced an outbreak of infection with gentamicin-resistant enterobacteria and the number of faecal specimens processed by the laboratory increased markedly as routine screening procedures were instituted.

Two factors may be particularly important in the rapid rise in infection with *C. difficile*. First, contamination of the hospital environment with *C. difficile* may present a significant problem. Environmental sampling at SCGH undertaken in 1990-91 showed that 38 (17.5%) of 217 sites sampled were contaminated with *C. difficile* (G L O'Neill and T V Riley, unpublished data). Particularly heavy contamination was found in rooms that harboured a patient infected with *C. difficile*, either at the time of sampling or within one month of discharge. These results suggest that there is a significant reservoir of *C. difficile* in the environment at SCGH.

Second, the use of certain broad-spectrum antibiotics may predispose more patients to infection with *C. difficile* at SCGH. Treatment with third generation cephalosporins is a risk factor for the development of CDAD at our institution[5]. A correlation coefficient of 0.90 suggests that the increase in incidence of CDAD at SCGH over the last 10 years is related to the substantial

and increasing amounts of third generation cephalosporins used.

The relative importance of these two factors is difficult to assess, however, it is likely that they are both significant and a reduction in either risk should lead to a reduction in disease. From our data, there is evidence that the incidence of CDAD at SCGH has not increased since 1990. This stabilisation occurred following the introduction of BSI in 1989 and it is tempting to speculate that this may be the reason for the reduction in incidence. However, given that environmental contamination with *C. difficile* is a major issue relating to CDAD, it is difficult to conclude that improved infection control procedures alone, aimed at reducing person to person transmission, will reduce the incidence of CDAD.

It is also apparent from our data that there was no substantial increase in third generation cephalosporin usage at SCGH for the three years 1989 to 1991. It is likely that this, with the change in infection control procedures, has resulted in the slight decline for CDAD from 1990 onward. In order to reduce the number of cases of CDAD further, either a reduction in levels of environmental contamination or a reduction in the usage of third generation cephalosporins may be required.

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# AN OUTBREAK OF INFLUENZA A AT A VICTORIAN NURSING HOME

*Raina MacIntyre*[1,2], *Chris Mansell*[3], *Pauline Lynch*[1], *Jack Rich*[1]

## Introduction

The National Health and Medical Research Council (NHMRC) recommends that all residents of nursing homes and chronic care facilities be immunised against influenza each year[1]. The United States' Department of Health and Human Services suggests aiming for vaccine coverage rates of 80% in institutionalised populations in order to have a significant impact on morbidity and mortality[2]. In 1993, Health and Community Services, Victoria undertook a public Health campaign to target those groups at risk for the complications of influenza. This included a letter, information, brochures and posters sent to all nursing homes in Victoria, and to all general practitioners in Victoria.

On 17 August 1993 the Infectious Diseases Program of Health and Community Services, Victoria was contacted by the director of nursing from a Melbourne metropolitan nursing home. She was concerned about an outbreak of a febrile illness with upper respiratory symptoms among residents and staff, with approximately half of the residents being ill over a two week period, some requiring hospitalisation and some dying.

We visited the nursing home the following day.

The nursing home accommodates 30 residents, with 30 nursing staff and 10 domestic/ancillary staff. Residents are cared for by 15 different general practitioners, each of whom decides whether to vaccinate their patients against influenza.

## Aims

The aims were to determine the cause of the outbreak and to take any possible preventive action. In the event of an outbreak of influenza, the aim was to determine the immunisation status of residents. In the event of an outbreak of influenza A, it was to offer amantadine prophylaxis and treatment to eligible persons.

## Methods

We used a clinical case definition of influenza. At least three of the following had to be present:

fever

sudden onset (within 24 hours)

rigors or chills

myalgia or widespread aches and pains

cough

prostration and weakness

1. Infectious Diseases Unit, Health and Community Services, Victoria.
2. National Centre for Epidemiology and Population Health, Canberra.
3. Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital.

**Table. Frequency of symptoms reported**

| Symptom | Per cent |
|---|---|
| Fever | 86 |
| Malaise | 75 |
| Cough | 68 |
| Rhinorrhoea | 68 |
| Muscle aches | 61 |
| Headache | 54 |
| Sore throat | 50 |
| Shortness of breath | 39 |
| Nausea | 36 |

There were to be no significant respiratory signs other than redness of the nasal mucosa or throat. Acute tonsillitis, otitis media and sinusitis were specifically excluded.

We collected sera, pernasal swabs and throat swabs from six acutely ill residents and four acutely ill staff, as well as from those who had been acutely ill during the previous five days. Convalescent sera were collected three weeks after the acute sera.

Laboratory testing was performed at the Victorian Infectious Diseases Reference Laboratory. Sera were tested by complement fixation and by indirect immunofluorescence for antibodies to influenza A and B. Pernasal swabs were cultured in primary monkey (cynomolgus) kidney cells (Commonwealth Serum Laboratories, Parkville, Victoria), Hela-T cells, human embryonic lung (diploid fibroblast) cells and MDCK cells.

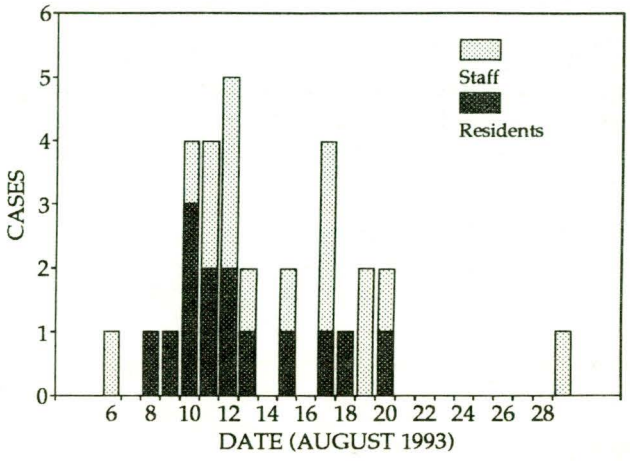
At the time of visiting the nursing home, we strongly suspected that the responsible agent was influenza virus, based on the clinical signs and symptoms of acutely ill persons. We provided a letter for attending general practitioners with advice about influenza vaccine and the use of amantadine for influenza A.

## Results

### Epidemiology

The mean age of all residents was 83 years, and staff, 43 years. There were 34 cases in total, of which 18 were staff and 16 were residents. The mean age of affected residents was 82 years, and the mean age of affected staff was 44 years. The index case occurred on 6 August 1993 in a member of staff, with a subsequent outbreak among residents peaking on August 12 (Figure 1). The outbreak among staff was more diffuse with peaks on August 12 and 17. The last case occurred on August 29.

**Figure 1. Influenza A cases at a Melbourne nursing home, August 1993, by date of onset and patient type**



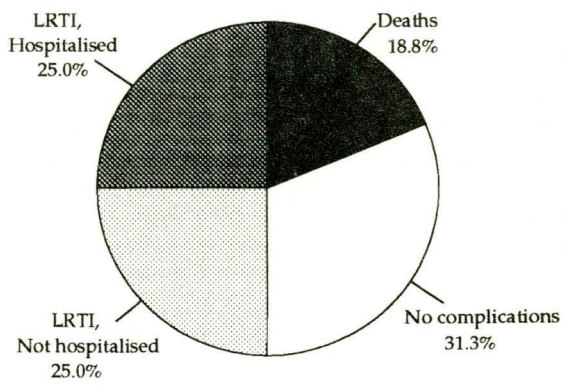

The mean duration of illness was 12 days, with a range of three to 28 days.

Fever and malaise were the most commonly reported symptoms (Table).

All complications and deaths occurred in residents. There were three deaths, four hospitalisations for pneumonia or chest infection (with eventual recovery) and four cases with respiratory complications not requiring hospitalisation.

The overall mortality rate for both ill staff and residents was 9% (3/34, 95% confidence interval (CI) 2-24%) (Figure 2). The mortality rate for ill residents was 19% (3/16, 95% CI 4-46%). The rate of hospitalisation and/or death overall was 21% (7/34, 95% CI 9-38%), and for residents alone was 44% (7/16, 95% CI 20-70%). Respiratory complications (whether requiring hospitalisation or not) and/or death occurred in 11/16 (69%, 95% CI 41-89%) of the ill residents.

**Figure 2. Influenza A cases in residents at a Melbourne nursing home, by outcome**



Only one ill resident and three well residents had been immunised against influenza in 1993. Only three staff members, none of whom were ill, had received the vaccine. None of the residents who died had received influenza vaccine that year. Only one of the eight residents who developed complications or were hospitalised had received the vaccine.

A relative risk for illness of 0.13 (0.02<RR<1.00) was calculated for vaccinated subjects. Vaccine efficacy was calculated at 0.8 (80%) in that population (staff and residents).

### Virology

The paired sera from staff and residents showed seroconversion for influenza A virus in six of the 10 cases. Influenza A virus was grown in primary monkey kidney cells from one of the 10 swabs. This was an $H_3$ type, but the isolate grows very poorly in MDCK cells and in eggs so futher typing is not yet available. Herpes simplex virus 2 was isolated from the throat swab of one subject, who also had documented seroconversion for influenza A.

## Action

Local doctors attending the residents were contacted and provided with guidelines for the use of amantadine for prophylaxis and treatment of influenza A. We recommended that amantadine be used where indicated, and also stressed the NHMRC guidelines for immunisation against influenza. Attending doctors made their own management decisions based on our advice. Only two of the remaining 14 uninfected residents were commenced on prophylactic amantadine.

Ill staff were advised to stay away from work until asymptomatic, and we recommended isolation of ill patients.

## Discussion

This outbreak of influenza A among a largely unvaccinated nursing home population emphasis several important points. The value of immunising staff of nursing homes and other health care institutions is well documented[3]. In this instance, influenza infection was introduced into the nursing home by a member of staff, resulting in an outbreak with significant morbidity and mortality. The NHMRC, however, does not recommend influenza immunisation for health care workers[1]. It recommends immunisation against influenza for persons with chronic debilitating disease, persons over the age of 65 years, residents of nursing homes and chronic care facilities and persons receiving immunosuppressive therapy. These recommendations differ somewhat from the recommendations of the United States' Immunisation Practices Advisory Committee (ACIP) of the Centers for Disease Control and Prevention[4], which include health care workers, children on long term aspirin therapy (who are at risk for developing Reye syndrome), and care givers and household contacts of any high risk person. The ACIP also recommends that any person requesting influenza vaccine should be immunised.

It is well established that residents of nursing homes and other chronic care facilities should be immunised each year against influenza. Both immunisation and antiviral therapy (amantadine and rimantadine) are effective and cost-beneficial in nursing homes, where an outbreak can be devastating in terms of morbidity and mortality[5,6,7]. Amantadine and rimantadine, however, are only effective against influenza A. Amantadine gives 50-80% protection to persons exposed to influenza A. Protection lasts as long as the drug is taken, therefore it should be continued for the duration of the outbreak.

Our results support the efficacy of influenza vaccine in a nursing home population. Immunisation is the intervention of choice for residents of chronic care facilities but in the event of an outbreak of influenza A, unimmunised subjects should be offered antiviral therapy[8].

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# SEVENTH DISEASE?

*Jane C Bell*[1,2], *Yvonne Cossart*[3], *Anthony G Capon*[1]

## Background

In June 1992, a general practitioner notified the Public Health Unit in western Sydney of a case of fifth disease in a child attending a local public school. Anecdotal reports indicated that other children at the school were also affected.

An instinctive reach for Benenson. Fifth disease is also called slapped face (or slapped cheek) disease and erythema infectiosum. It is caused by human parvovirus B19 (B19)[1]. One of us, Professor Yvonne Cossart, discovered the virus in 1975[2], calls herself the virus's grandmother, and was keen to follow up the cases. B19 activity had been low in New South Wales in recent years.

## Investigation

We contacted the school. It seemed that fifth disease was present in the infant classes. As well, there were probably cases in the adjacent preschool, because many of the children intermingle. Both the principal of the public school and the director of the preschool agreed to participate in investigating the disease.

We aimed to determine the extent of the outbreak in both schools, define the range of symptoms reported, and in the younger children, ascertain the proportion of cases with asymptomatic infection.

Information sheets and questionnaires were sent to parents of all children in both schools. Due to the difficulties diagnosing rash-like illnesses in children, and in determining recent infection (asymptomatic infections are common), we asked parents for consent to collect finger-prick blood samples. Samples were collected from children in kindergarten and year one at the public school and from all children at the preschool, where most cases had been reported. We also collected data and blood samples from staff at both schools.

## Results

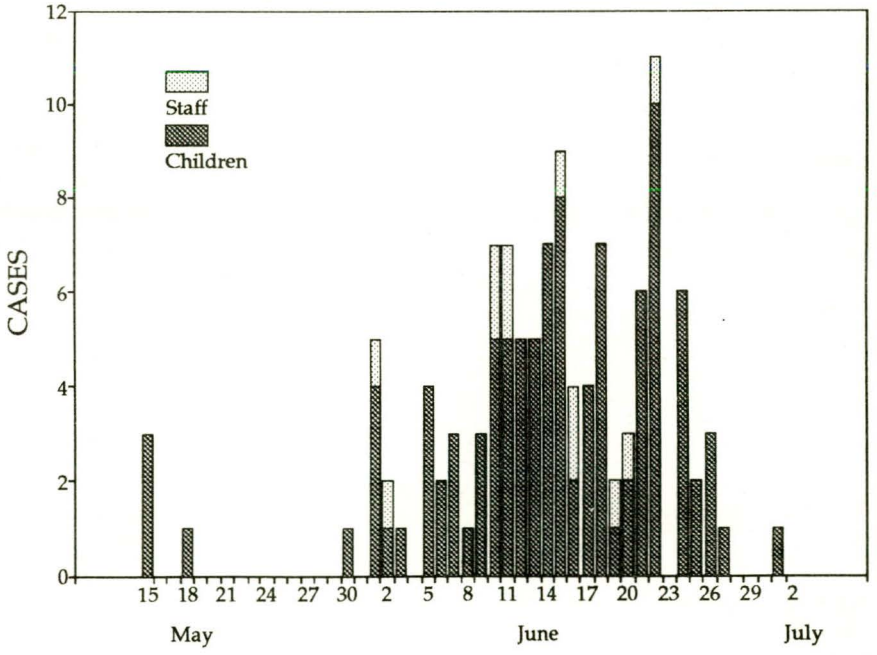
Fifty-four per cent (193/359) of children enrolled at both schools and 71% (20/28) of staff returned questionnaires. We obtained finger-prick blood samples from 61/143 (43%) children in preschool, kindergarten and year one, and venous blood samples from 16/28 staff (57%). All those we collected blood samples from returned questionnaires.

Of the 193 children who returned questionnaires, 126 (65%) reported illness. Of the staff who returned questionnaires, 12 (60%) reported being ill since the beginning of June.

Cases were defined as any person reporting illness. Dates of onset ranged between 15 May and 1 July (Figure 1).

Serological testing kits are not widely available, but a limited number of kits became available in July 1993. To attempt to confirm B19 diagnosis we selected six children with symptoms most compatible with B19 infection, including the case first notified by the general

**Figure. Cases of illness in children and staff in a preschool and in kindergarten and year one classes in a public school, 1992, by date of onset**




1. Western Sector Public Health Unit, North Parramatta, New South Wales.
2. National Centre for Epidemiology and Population Health, Canberra.
3. University of Sydney, New South Wales.

practitioner. These were tested for B19 antibodies (IgM and IgG). All were IgM negative and four were IgG positive. Using PCR, we tested the same six for B19 DNA. Again, results were negative.

As we did not collect enough blood for further testing, we could not test children's blood samples for other likely causes, such as other viruses. We tested four adults who reported being ill with the most severe symptoms for rubella. All were rubella IgM negative, but IgG positive.

## Discussion

Fifth disease is the fifth of a group of illnesses which have a similar clinical appearance, and include rubella, measles, scarlet fever, and Filatov-Dukes disease (an atypical form of scarlet fever)[3]. Roseola is known as sixth disease[4]. Fifth disease is very difficult to differentiate clinically from these.

As well as fifth disease, B19 can result in asymptomatic infection. It can also cause serious complications: transient aplastic crisis in people with chronic haemolytic anaemias and chronic anaemia in those with immunodeficiency. B19 infection during pregnancy has also been linked with fetal death[5].

The epidemic curve shows a gradual increase in the number of persons ill, consistent with the spread of an infectious agent between susceptible individuals. The decrease in cases could have been due to an exhaustion of the number of susceptible persons, to school holidays, or because active surveillance was over.

Without diagnostic testing, we could not ascribe illness to B19. Individuals vary in the symptoms they report and in the severity of their symptoms. Fifth disease is usually characterised by a facial and body rash. Joint symptoms are common, especially in adults. Appearance of the rash may be preceded by mild systemic symptoms[5].

More than a year after questionnaires and blood samples were collected, we could say that B19 did not cause the outbreak, but we were unable to identify the infectious agent. This outbreak investigation illustrates the importance of being able to clearly define cases. For diseases such as fifth disease, which have non-specific clinical features, and which may easily be confused with other diseases, case definition depends on the availability of laboratory testing procedures. As well, many B19 infections are asymptomatic and may not be recognised. Diagnostic testing is important for surveillance, defining outbreaks caused by B19, and for those at risk of serious complications.

## Acknowlegments

We thank staff, parents and students at the public school and the preschool for their help investigating the outbreak. We also thank staff from the community health centre and Stephen Crone and Marea Mears for assisting with data collection, and Aileen Plant, Mike Lane and Louisa Jorm for their helpful discussions.

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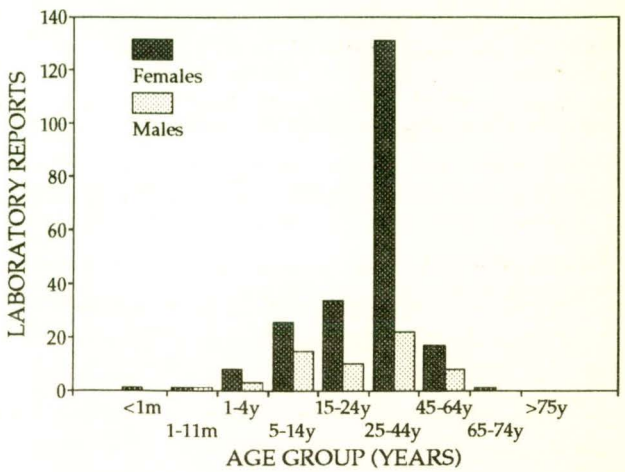
## *CDI* editorial comment

The Laboratory Reporting Schemes have received 289 reports of parvovirus infection since the first in April 1991. Three have been diagnosed by electron microscopy (parvovirus-like particles), two by detection of nucleic acid, 282 by detection of IgM and two by other serological methods. There have been 227 reports for females, 61 reports for males and one for a person whose sex was not stated. Most have been for femlales between the ages of 25 and 44 years (Figure).

Only five reports have specified fifth disease as the clinical diagnosis, but skin disease has been the reported diagnosis for another 110 patients. Muscle or joint disease was the next most commonly reported syndrome (43 reports), and anaemia or other blood cell disorders was reported for 23 patients. Fifteen patients were reported as pregnant (one as hydramnious and one with a hydropic foetus), one female with an h[illegible] dropic baby was diagnosed postpartum and one infant was diagnosed at 25 days of age. Two HIV positive patients have also been reported as having parvovirus infection.

**Figure. *CDI* parvovirus laboratory reports, by age group and sex**



# *SALMONELLA* SURVEILLANCE, AUSTRALIA, FIRST QUARTER 1993

*Reproduced with acknowledgment from the National Salmonella Surveillance Scheme's Human First Quarter Report 1993, editor Joan Powling*

There were 2254 reports received by the National *Salmonella* Surveillance Scheme (NSSS) for the first quarter of 1993 (Table 1).

There were 1583 Australian-acquired cases of *Salmonella* infection reported during the quarter which was a decrease of nearly 8% over the total number of cases for the same period in 1992. There were 168 follow-ups, one case from a migrant and 95 cases reported as acquired overseas.

There were 213 Australian acquired cases of *Shigella* as against 121 for the corresponding period, an increase of 76%, due to the high incidence of *Sh. boydii* 1 in Western Australia.

By comparison with the first quarter of 1992, there was a decrease in the *Salmonella* case rate per 100,000 population in all States and Territories except South Australia (13% increase) and New South Wales (6% increase)(Table 1). The highest percentage decrease was in Queensland (15%) and the lowest was in Victoria (4%).

The top ten *Salmonella* serovars accounted for 63% of all Australian acquired cases reported to the NSSS (62% in 1992). The most common serovar was *S.* Typhimurium with 444 cases from 45 phage types (PT) of which the most common was PT 135 (85 cases). *S.* Virchow was in second place with 119 cases, 108 of which were from Queensland. *S.* Hadar remained in the top ten with 43 cases, due mainly to the continuing increased incidence of reports of this serovar from the Sydney region since October 1992.

## Outbreaks

Several small outbreaks and incidents were recorded during the quarter. The largest was the *Sh. boydii* 1 outbreak in the northwest of Western Australia which commenced in mid-September 1992.

## New and unusual *Salmonella* serovars

New records for the NSSS were *S.* Gnesta (no details, Victoria) and *S.* Yolo (M/25 ACT ex Egypt - see below). Uncommon *Salmonella* serovars reported during the quarter were *S.* Blukwa (M/53 Western Australia), *S.* Bonn (M/29 Western Australia), *S.* Breukelen (F/36 New South Wales after travel to North Queensland), *S.* Brisbane (M/4 Western Australia), *S.* Fremantle subsp II (F/35 Western Australia), *S.* Gaminara (F/1 Queensland), *S.* Idikan (F/26 Victoria), *S.* Lindern (F/3 Queensland), *S.* Lohbruegge (F/3 Queensland), *S.* Panama (M/43 New South Wales), *S.* Treforest (M/2 Western Australia), *S.* Uganda, and *S.* Zehlendorf (F/ Victoria).

**Table 1. Total number of reports received, by State or Territory**

| | ACT | NSW | Vic | Qld | SA | WA | Tas | NT | Total |
|---|---|---|---|---|---|---|---|---|---|
| *Salmonella* | 16 | 447 | 252 | 644 | 94 | 229 | 47 | 118 | 1847 |
| *Shigella* | 1 | 27 | 40 | 44 | 26 | 81 | 0 | 25 | 244 |
| *Aeromonas* | 0 | 3 | 10 | 0 | 1 | 0 | 1 | 0 | 15 |
| *Campylobacter* | 0 | 0 | 56 | 6 | 0 | 0 | 0 | 0 | 62 |
| *E. coli* (EPEC) | 0 | 0 | 4 | 0 | 0 | 0 | 0 | 0 | 4 |
| *Plesiomonas* | 0 | 0 | 2 | 0 | 0 | 0 | 0 | 0 | 2 |
| *Vibrio* | 0 | 3 | 1 | 0 | 0 | 0 | 0 | 0 | 4 |
| *Yersinia* | 0 | 20 | 8 | 48 | 0 | 0 | 0 | 0 | 76 |
| Total | 17 | 500 | 373 | 742 | 121 | 310 | 48 | 143 | 2254 |

**Table 2. Case rates per 100,000 for *Salmonella* infection, by State or Territory**

| | ACT | NSW | Vic | Qld | SA | WA | Tas | NT | Total reports |
|---|---|---|---|---|---|---|---|---|---|
| 1st quarter 1993 | 4.4 | 7.3 | 4.8 | 21.6 | 6.7 | 13.8 | 9.8 | 63.9 | 1583 |
| 4th quarter 1992 | 1.6 | 3.9 | 3.0 | 10.7 | 3.9 | 7.9 | 5.7 | 55.5 | 890 |
| 1st quarter 1992 | 4.8 | 6.9 | 5.0 | 25.4 | 5.9 | 16.1 | 11.2 | 73.6 | 1718 |
| 1st quarter 1991 | 7.6 | 9.9 | 9.1 | 15.7 | 12.2 | 17.1 | 22.0 | 90.4 | 2039 |
| 1st quarter 1990 | 8.4 | 9.4 | 7.3 | 24.5 | 16.6 | 20.2 | 11.9 | 91.1 | 2160 |
| 1st quarter 1989 | 6.8 | 9.5 | 7.9 | 19.0 | 12.4 | 15.0 | 18.8 | 65.2 | 1901 |

New and unusual phage types of *S.* Typhimurium reported this quarter were PT 92 (F/10, SA); PT 177 (M/38 NSW); PT 125 (M/12 Victoria); PT 150 (M/63, SA) and PT 181 (F/12 WA) which was a new phage type for the NSSS.

## Typhoid and paratyphoid cases

There were 16 reports of *S.* Typhi, 11 of *S.* Paratyphi A and one report of an *S.* Paratyphi B carrier (Table 3).

## Isolations from blood, urine and unusual sites

During the quarter, there were 40 reports of bacteraemia, excluding enteric fever, 20 reports of isolates from urine and nine reports of isolates from unusual sites (Table 4).

## Infections acquired overseas

The most common infection acquired overseas was *Sh. sonnei* biotype g with 11 cases reported from travellers returning from India, Nepal, Bali, Thailand, Fiji, Mexico, Vietnam and Africa. *S.* Blockley (4 cases from Bali and one from China) and *S.* Enteritidis PT 4 (Hong Kong, Singapore, Malaysia, Sri Lanka, Germany and Italy) were also common. A new serovar for the NSSS was *S.* Yolo, reported as a mixed infection with *Sh. flexneri* 6 in a traveller from Egypt.

These cases include refugees and one case from a migrant.

**ASIA**

**Unspecified countries:** *S.* Agona, *S.* Blockley (2), *S.* Enteritidis PT 1, *S.* Javiana, *S.* Krefeld, *S.* Newport.
**Indonesia:** *S.* Amsterdam var 15+, *S.* Hadar (2), *S.* Kentucky, *S.* Lexington, *S.* Typhimurium RDNC, **Ba**
*S.* Albany, *S.* Amsterdam var 15+, *S.* Blockley (4), *S.*

**Table 3. Typhoid and paratyphoid cases**

| Vi-phage type | Sex/age (years) | State or Territory | Notes |
|---|---|---|---|
| *S.* Typhi (16) | | | |
| 46 | F/49 | Vic | No travel, mixed with *E. coli* |
| 56 | F/21 | Vic | Returned from Vietnam |
| A | M/45 | NSW | Travelled in India |
| A | F/45 | NSW | Wife of M/45 above, travelled in India |
| A | M/26 | Vic | Trekked in Nepal |
| A | M/45 | Vic | Travelled in India |
| D2 | M/23 | NSW | Recently in Indonesia |
| E1 | M/20 | WA | Travel in Pakistan |
| E1 | M/8 | Vic | Acquired in India |
| E1 | M/21 | Vic | Acquired in Indonesia |
| M1 | M/10 | NSW | Acquired in Indonesia |
| degraded | M/13 | Qld | Acquired in Bali |
| degraded | M/42 | NSW | Travelled in India |
| untypable | M/6 | WA | Visited Bali |
| untypable | M/21 | Vic | Visited Indonesia |
| untypable | F/25 | NSW | No details |
| *S.* Paratyphi A (11) | | | |
| 1 | F/28 | Vic | Returned from India |
| 1 | F/22 | Vic | Returned from India |
| 1 | M/33 | NSW | Salesman travelling in India |
| 1 | M/39 | Vic | Recent visit to Indonesia |
| 1 | M/27 | NSW | Returned from Bali |
| 2 | M/46 | NSW | Travel in Thailand and Singapore |
| 5 | F/28 | NSW | Acquired in Java |
| 5 | M/21 | Vic | Acquired in Indonesia |
| 5 | F/19 | WA | Travel in Malaysia |
| RDNC | ns/22 | Qld | Travel in Thailand |
| RDNC | M/20 | Vic | Returned from Bangladesh |
| *S.* Paratyphi B (1) | | | |
| Taunton | F/53 | NSW | Carrier, history not provided |

1. ns not stated.

**Table 4. Isolations from blood, urine and unusual sites**

| Bacteraemias excluding enteric fever (40) | | | | | |
|---|---|---|---|---|---|
| Organism | Sex/age (years) | State or Territory | Organism | Sex/age (years) | State or Territory |
| *C. jejuni* subsp *jejuni* | M/44 | Vic | *S.* Stanley | F/1 | Vic |
| *S.* Bovismorbificans 7 | F/70 | NSW | *S.* Typhimurium untypable | M/72 | Vic |
| S. Bredeney | F/14 | NSW | S. Typhimurium 101 | M/1 | NT |
| *S.* Chester | M/17 | Qld | *S.* Typhimurium 135 | M/77 | NSW |
| *S.* Dublin | F/66 | Vic | *S.* Typhimurium 179 | M/3 | NSW |
| *S.* Enteritidis 6a | M/39 | Qld | *S.* Typhimurium 29 | F/39 | ACT |
| *S.* Enteritidis RDNC | M/59 | NSW | *S.* Typhimurium 9 | F/67 | Vic |
| *S.* Heidelberg | F/9 | NSW | *S.* Typhimurium 9 | M/62 | Vic |
| *S.* Heidelberg | F/8 | NSW | *S.* Typhimurium 9 | F/73 | Vic |
| *S.* Heidelberg | F/5 | NSW | *S.* Virchow | F/12 | Qld |
| *S.* Heidelberg | F/22 | NSW | *S.* Virchow | M/17 | NSW |
| *S.* Heidelberg | M/9 | Qld | *S.* Virchow | M/19 | Qld |
| *S.* Heidelberg | M/20 | NSW | *S.* Virchow | M/25 | Qld |
| *S.* Heidelberg | M/<1 | NSW | *S.* Virchow | M/1 | Qld |
| *S.* Javiana | M/23 | Qld | *S.* Virchow | F/12 | Qld |
| *S.* Mississippi | F/76 | Tas | *S.* Welikade | F/<1 | Qld |
| *S.* Panama | M/43 | NSW | *S.* Zehlendorf | F/<1 | Vic |
| *S.* Saintpaul | F/1 | Qld | *Sh. flexneri* 6 | M/67 | NT |
| *S.* Saintpaul | M/<1 | Qld | *Y. enterocolitica* O:3 Bio 4 | F/23 | NSW |
| *S.* Saintpaul | M/88 | Qld | *Y. enterocolitica* O:3 Bio 4 | F/33 | NSW |
| Urines (20) | | | | | |
| *S.* Aberdeen | F/5 | Qld | *S.* Oranienburg | M/14 | NSW |
| *S.* Adelaide | F/4 | NSW | *S.* Orion | F/21 | Vic |
| *S.* Anatum | F/ns[1] | Qld | *S.* Senftenberg | F/81 | Vic |
| *S.* Birkenhead | F/77 | NSW | *S.* Tennessee | M/79 | Qld |
| *S.* Chester | F/8 | Qld | *S.* Typhimurium 135 | F/27 | NSW |
| *S.* Enteritidis 4 | M/59 | NSW | *S.* Typhimurium 55 | F/10 | Vic |
| *S.* Hadar | F/64 | NSW | *S.* Virchow | F/9 | Qld |
| *S.* Javiana | F/48 | NSW | *S.* Virchow | F/20 | Qld |
| *S.* Litchfield | F/32 | Qld | *S.* Virchow | F/19 | Qld |
| *S.* Mississippi | F/38 | Tas | *S.* Weltevreden | F/32 | Vic |
| Unusual Sites (9) | | | Site | | |
| *A. hydrophila* | ns/ns | NSW | Unspecified wound swab | | |
| *S.* Bredeney | M/9 | Qld | Tibia medial end swab ?ostoemyelitis | | |
| *S.* Heidelberg PT 1 | M/14 | NSW | Elbow joint fluid | | |
| *S.* Saintpaul | F/23 | Qld | Fallopian tubes, sepsis in pelvis | | |
| *S.* Typhimurium 101 | M/1 | NT | CSF, meningitis | | |
| *S.* Typhimurium 44 | M/61 | Vic | Abscess on groin | | |
| *S.* Typhimurium 9 | M/34 | NSW | Peritoneal swab | | |
| *Sh. sonnei* biotype a | M/18 | Qld | Peritoneal swab, ruptured appendix | | |
| *V. cholerae* non O1 | F/8 | NSW | Ear | | |

1. ns not specified

Haardt, *S.* Hadar, *S.* Infantis (2), *S.* Javiana (2), *S.* Litchfield, *S.* Thompson, *Sh. sonnei, Sh sonnei* biotype g, *V. cholerae* non O1.
**Thailand:** *S.* Anatum, *S.* Enteritidis PT 1, *S.* Infantis, *S.* Virchow, *Sh. sonnei* biotype g.
**Malaysia:** *S.* Derby, *S.* Enteritidis PT 4, *S.* Typhimurium RDNC, *S.* Weltevreden.
**Singapore:** *S.* Enteritidis PT 4, *S.* Hadar.
**Philippines:** *S.* Enteritidis PT 4.
**China:** *S.* Blockley, *S.* Enteritidis PT 9a.
**Hong Kong:** *S.* Enteritidis PT 4.
**Vietnam:** *Sh. sonnei* biotype g.
**India:** *S.* Enteritidis PT 28, *S.* Oslo, *S.* Worthington, *Sh. flexneri* 4a, *Sh. flexneri* 6, *Sh. sonnei* and *Sh. sonnei* biotype g.
**Nepal:** *S.* Bovismorbificans, *Sh. flexneri* 2b, *Sh. sonnei* biotype g (2).
**Sri Lanka:** *S.* Enteritidis PT 4 (2).

**AFRICA**

**Unspecified countries:** *S.* Hadar, *Sh. sonnei* biotype g.
**Botswana:** *S.* Bovismorbificans PT 13.
**Egypt:** *Sh. flexneri* 6 and *S.* Yolo (mixed).

**EUROPE**

**France:** *Y. enterocolitica* O:3 bio 4.
**Germany:** *S.* Enteritidis PT 4.
**Italy:** *S.* Enteritidis PT 4.

**PACIFIC**

**Fiji:** *S.* Anatum var 15+, *S.* Muenchen, *Sh. sonnei* biotype g (3).
**Vanuatu:** *Sh. sonnei* biotype a (3).

**AMERICAS**

**Mexico:** *Sh. sonnei* biotype g.

**UNSPECIFIED COUNTRIES:**

*S.* Anatum, *S.* Bovismorbificans, *S.* Hadar, *S.* Saintpaul, *S.* Typhimurium PT 9, *S.* Typhimurium untypable, *S.* Virchow, *Shigella* species and *Sh. sonnei.*

## *Shigella* infections

A total of 244 reports of *Shigella* infections was received for this quarter. Of these, eight were follow-up specimens, one was from a migrant or refugee and 22 were reported from travellers returning from overseas. This left a total of 213 cases reported as acquired in Australia (Table 5).

The most common were *Sh. sonnei* biotype a with 45 cases and *Sh. boydii* 1 with 35 cases, 23 of which were reported from Western Australia as part of an outbreak which began in mid-September 1992.

*Shigella* infections acquired overseas included *Sh. flexneri* 2b (Nepal), *Sh. flexneri* 4a (India), *Sh. flexneri* 6 (Egypt and India), *Sh. sonnei* (India, Bali), *Sh. sonnei* biotype a (Vanuatu, 3) and *Sh. sonnei* biotype g (India, Nepal, Thailand, Fiji, Bali, Mexico, Vietnam and Africa).

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

| Organism | ACT | NSW | Vic | Qld | SA | WA | Tas | NT | Total |
|---|---|---|---|---|---|---|---|---|---|
| *Sh. boydii* | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| *Sh. boydii* 1 | 0 | 0 | 1 | 1 | 4 | 23 | 0 | 6 | 35 |
| *Sh. dysenteriae* 6 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 |
| *Sh. flexneri* 1 | 0 | 0 | 0 | 0 | 0 | 2 | 0 | 0 | 2 |
| *Sh. flexneri* 1a | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Sh. flexneri* 1b | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 3 |
| *Sh. flexneri* 2 | 0 | 0 | 0 | 1 | 0 | 25 | 0 | 0 | 26 |
| *Sh. flexneri* 2a | 0 | 3 | 2 | 5 | 7 | 0 | 0 | 6 | 23 |
| *Sh. flexneri* 3 | 0 | 0 | 0 | 5 | 0 | 0 | 0 | 0 | 5 |
| *Sh. flexneri* 3c | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 2 |
| *Sh. flexneri* 4a | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Sh. flexneri* 4a mannitol negative | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Sh. flexneri* 4b | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 2 |
| *Sh. flexneri* 6 | 0 | 2 | 1 | 1 | 1 | 11 | 0 | 5 | 21 |
| *Sh. sonnei* | 0 | 1 | 0 | 27 | 0 | 8 | 0 | 0 | 36 |
| *Sh. sonnei* biotype a | 1 | 12 | 10 | 4 | 9 | 1 | 0 | 8 | 45 |
| *Sh. sonnei* biotype e | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 |
| *Sh. sonnei* biotype g | 0 | 1 | 3 | 0 | 3 | 0 | 0 | 0 | 7 |
| Total | 1 | 25 | 20 | 44 | 25 | 73 | 0 | 25 | 213 |

## Top ten *Salmonella* serovars

Of the 1583 Australian acquired cases of *Salmonella* infection, 1004 (63%) were isolates from the top ten serovars (Table 6).

*S.* Typhimurium, with 444 cases from 45 phage types, was the most common serovar and accounted for 28% of the total Australian acquired cases. Phage type 135 was the most common phage type with 85 cases of which 86% were from New South Wales, Queensland and Western Australia (Table 7). The top five phage types accounted for 55% of Australian acquired cases of *S.* Typhimurium.

## *CDI* editorial comment

A total of 1555 notifications of salmonellosis (not otherwise classified) was received by the National Notifiable Diseases Surveillance System for the first quarter of 1993. This compared with 780 for the fourth quarter of 1992 and 1735 for the first quarter of 1992. The corresponding figures for typhoid were 20, 6 and 21 notifications, respectively. Shigellosis was notified for 281 cases in the first quarter of 1993, 187 in the fourth quarter of 1992 and 160 in the first quarter of 1992.

All these infections are notifiable in all States and Territories of Australia. Typhoid notifications include paratyphoid in New South Wales and Victoria.

**Table 6. Top ten *Salmonella* serovars**

| | Position in fourth quarter 1992 | Number of cases | % of total | Origin/number of cases |
|---|---|---|---|---|
| *S.* Typhimurium[1] | 1 | 444 | 28.0 | NSW 164, Vic 104, Qld 75 |
| *S.* Virchow | 2 | 119 | 7.5 | Qld 108, NSW 8, Vic 3 |
| *S.* Saintpaul | 3 | 90 | 5.7 | Qld 61, NT 10 |
| *S.* Birkenhead | 7 | 61 | 3.8 | Qld 35, NSW 17 |
| *S.* Chester | 9 | 58 | 3.7 | Qld 31, NSW 10, WA 10 |
| *S.* Heidelberg[1] | 5 | 57 | 3.6 | NSW 31, Qld 22 |
| *S.* Bovismorbificans[1] | 10 | 52 | 3.3 | NSW 26, Vic 13 |
| *S.* Infantis[1] | - | 47 | 3.0 | SA 14, Vic 11 |
| *S.* Hadar[1] | 4 | 43 | 2.7 | NSW 23, WA 7 |
| *S.* Muenchen | 6 | 33 | 2.1 | WA 15, Qld 7, NT 6 |
| Total | | 1004 | 63.4 | |

In: *S.* Infantis.
Out: *S.* Welikade (21 cases).
1. Associated with outbreaks.

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

| Phage type | Position in fourth quarter 1992 | Number of cases | % of total | Origin/number of cases |
|---|---|---|---|---|
| 135[1] | 2 | 85 | 19.1 | NSW 39, Qld 20, WA 14 |
| 9 | 1 | 60 | 13.5 | Vic 27, NSW 18 |
| 12a | 3 | 37 | 8.3 | NSW 15, Qld 8, SA 7 |
| 44 | 4 | 34 | 7.7 | Vic 17, NSW 8 |
| 170 | - | 31 | 7.0 | Nsw 18, Vic 8 |
| Total | | 247 | 55.6 | |

1. Associated with outbreaks.

# OVERSEAS BRIEFS

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

## Influenza in the Northern Hemisphere

Most countries in northern and western Europe had experienced the peak of the influenza A $H_3N_2$ epidemic by the second half of December. In Norway it was the most intense season since influenza registration began in 1975. Reports from central and eastern Europe indicate a later onset of the season.

Signs of influenza activity were detected in Japan in early December when a few cases of influenza B and influenza A $H_3N_2$ were diagnosed in the western part of the country. Outbreaks associated with influenza B have been reported in Beijing, China since mid-December.

The epidemic in the United States continued to spread in North America in December. By the third week, influenza A virus had been detected in 42 States, 15 of which reported widespread activity. Influenza A also spread to Canada during December and by the end of the year had been detected in five provinces.

## Cholera update

Cases of cholera have been reported for October, November and December from Belize, Bolivia, Brazil, Costa Rica, Cote d'Ivoire, Djibouti, Ecuador, El Salvador, Guatemala, Honduras, India, Indonesia, Iran, Hong Kong, Mexico, Mozambique, Nicaragua, Rwanda, Tajikistan and Zaire.

# *CDI* NOTICES TO READERS

## NHMRC recommendations on malaria chemoprophylaxis - correction

Corrections are required for the 'NHMRC recommendations on malaria chemoprophylaxis', published in *CDI* 1993;17:594-601.

In Table 1,

- chloroquine use (with doxycycline) for long stay in areas with chloroquine resistant malaria should have a reference to footnote 2 only, and not to footnote 6,
- doxycycline use for short stays in areas with multidrug-resistant malaria should have a reference to footnote 4 rather than to footnote 3,
- footnote 4 should be amended by adding 'Efficacy of doxycycline at 50mg/day (for periods longer than 8 weeks) may not be as high as at 100mg/day but the safety of the 100mg/day dose beyond 8 weeks is not established.',
- option 2 in footnote 9 should be deleted and 'Where Fansidar resistance occurs, quinine or mefloquine presumptive self treatment is indicated.' added.

In Table 2,

- Afghanistan should be listed as having chloroquine resistant malaria from May to November,
- the Maldive Islands should be listed as malaria free,
- 'Myanmar' should be inserted in the space under 'Maldive Islands', indicating multidrug resistant malaria (including mefloquine resistance) in forests and rural areas.

## Australian Paediatric Surveillance Unit

The Australian Paediatric Surveillance Unit (APSU) was established as a Unit of the Australian College of Paediatrics (ACP) in May, 1993. The Unit has instituted an active case reporting system to enable the surveillance of rare disorders or rare complications of common disorders in childhood. It is modelled on the British Paediatrics Surveillance Unit, which has been successfully operating in the United Kingdom for seven years.

The aim of this scheme is to facilitate and improve the ascertainment of rare childhood conditions which are of sufficiently low incidence or prevalence to require case ascertainment on a national scale to generate sufficient numbers for study.

This is of particular importance in Australia where both distance and separate State health systems have made it difficult to establish national figures.

Rare conditions are monitored

- to establish and monitor trends in prevalence/incidence,
- to encourage clinicians to make accurate diagnoses of rare conditions based on specified criteria, and
- to encourage research on various aspects of rare disorders and to allow rapid recognition and investigation of new disorders.

Establishing accurate prevalence and incidence data and monitoring management will enable appropriate allocation of limited resources.

The success of the scheme is entirely dependent upon the co-operation of paediatricians and other specialists working with children. Investigators apply to the APSU for the inclusion of a condition in the system. Applications are reviewed by a scientific review panel which determines the conditions to be covered.

All paediatricians are sent monthly a report card listing the conditions being studied, protocol cards outlining the specific objectives of the studies and reporting instructions for the conditions.

Clinicians complete the card by indicating the number of cases of the specified conditions they have seen in the preceding month or by ticking the 'nothing to report' box. The reply paid card is then returned to the APSU.

No identifying patient details are requested. The reporting clinician is asked to keep a record of the patients details for future reference. The Unit aims for a monthly return rate of over 90%.

Conditions currently listed on the card are

1. Kawasaki disease
2. Rett syndrome
3. congenital rubella
4. haemorrhagic disease of the newborn
5. HIV/AIDS
6. extrahepatic biliary atresia
7. drowning/near drowning
8. childhood dementia

The APSU notifies the investigators of positive case reports. The investigators then contact the reporting clinician directly to obtain further information pertaining to the study. This usually involves mailing a short questionnaire to the clinician for completion. Duplicate reports are detected by using a patient code.

It is expected that each paediatrician would complete only one or two such questionnaires annually. The investigators provide feedback to respondents on the study.

Updates on the scheme will be published in *CDI* and in the Newsletter of the Australian College of Paediatrics and submitted for review to the *Journal of Paediatrics and Child Health*. Regular updates and an annual report of the APSU will be circulated to all participants.

Individuals interested in applying for inclusion of a condition on the APSU scheme should contact Dr Elizabeth Elliott, co-ordinator, or Mrs Hanlon, secretary APSU, University Teaching Unit, PO Box 34, Camperdown, NSW, 2050, telephone (02) 692-6648, fax (02) 692-6614.

### A note from the editor

After 5 years this is my last *CDI* as editor. I have greatly enjoyed this task and I wish to thank readers, contributors and participants in the surveillance schemes for their support. I wish also to thank the editorial and production staff who have worked on *CDI* over this time, but particularly Jenny Hargreaves and Michelle Wood, whose patience, professionalism and sheer hard work have made *CDI* what it is.

Robert Hall

## COMMUNICABLE DISEASES SURVEILLANCE

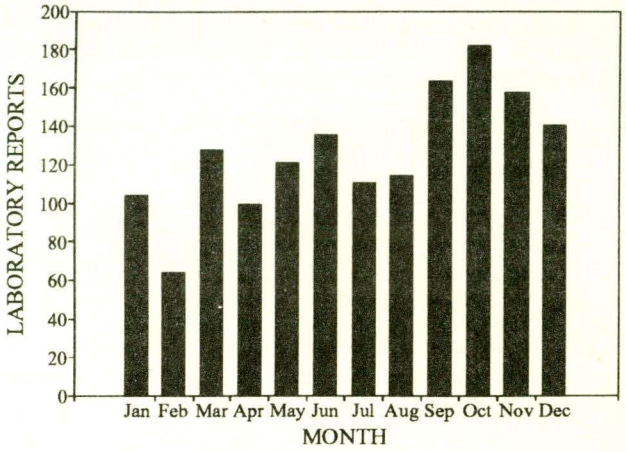
### Virology and Serology Reporting Scheme

There were 2269 reports received in the *CDI* Virology and Serology Reporting Scheme for this reporting period (Tables 8, 9 and 10). They included some reports of enteroviruses and adenoviruses with specimen collection dates ranging back to 1991, which had recently been typed by a Victorian laboratory.

- There were 42 reports of **measles** this period, 24 from Queensland and 10 from New South Wales. Reports from these 2 States have continued to rise over recent months. Thirty-eight diagnoses were by IgM detection, 3 single high titres and one antigen detection. The total number of cases with onset dates in 1993 is now 740.
- A case of **mumps** was reported in a 4 year old f rom Victoria with a history of immunisation, and another in an 11 year old from Western Australia. Both were positive for mumps IgM.
- **Rubella** was reported for 45 patients this fortnight (27 from Western Australia), incuding 7 females in the 15 to 44 year age group. An increased number of reports have been received from New South Wales, Queensland, South Australia and Western Australia in recent months. The total number of cases with onset dates in 1993 is now 881.
- Fifteen reports of **hepatitis A** were received this fortnight, including a 16 year old child-care worker from Victoria with clinical hepatitis.
- **Hepatitis C** was reported in a 9 year old male from New South Wales, and in a 15 year old female from Tasmania.
- Two cases of **hepatitis E** were reported, 35 and 36 year old males from Queensland. Diagnosis was by enzyme immunoassay and western blot.
- **Ross River virus** infection was reported for 31 patients this period, 29 from Queensland, one from the Northern Territory and one from New South Wales. All were presumptive diagnoses.

- There were 13 cases of **Barmah Forest virus** reported, 8 from Western Australia, 4 from Queensland and one from the Northern Teeritory. All were presumptive diagnoses.
- **Adenovirus type 2** was reported for 11 patients, including an isolation from the urine of a 10 month old male with encephalitis.
- Ten cases of adenovirus **type 8** were reported in patients with eye disease from Victoria in addition to 13 cases of untyped adenovirus associated with conjunctivitis from elsewhere.
- A single case of **adenovirus type 9** was reported isolated from the faeces of a 42 year old AIDS patient with diarrhoea.
- An untyped **adenovirus** was detected by immunofluorescence in a nasopharyngeal specimen from a 9 month old male with pneumonia.
- **Herpes simplex virus type 1** was reported isolated from a lung biopsy from a 68 year old female with a diagnosis of pneumonia. Eye disease associated with **herpes simplex virus type 1**was reported in 13 patients, including a 2 month old male.
- **Herpes simplex virus type 2** was isolated from the post-mortem brain tissue of a one month old female and detected in a nasopharyngeal specimen (by immunofluorescence) from a 7 day old female who died. This virus was also isolated from the products of conception from a 25 year old female.
- There were 90 reports of **cytomegalovirus (CMV)** this fortnight. Included were a 58 year old heart-lung transplant recipient, a 49 year old heart transplant patient, a renal transplant recipient with persistent fever 5 weeks following surgery and 25 and 13 year old transplant recipients. CMV was isolated from the nasopharynx of a 21 year old pregnant female, a 2 month old male with microcephaly and a history of prenatal CMV , and from the nasopharynx and urine of a 2 month old female with acute liver failure. This virus was also isolated from the cervix of a 27 year old female with genital disease.
- **Varicella-zoster** was reported in a nurse with clinical varicella and a 25 year old pregnant female (both IgM detected by immunofluorescence). Varicella-zoster virus was isolated from the skin of a 2 month old female and from an eye swab from a 69 year old male.
- Two **poxviruses** were reported, both diagnosed by electron microscopy. One was a 2 year old male with skin disease, and the second a 37 year old farmworker.
- **Parvovirus** was reported for 4 patients this fortnight (age range 4 to 63 years). Two had a rash and arthritis; clinical information was unavailable for the other two. Diagnosis was by ELISA IgM detection.

**Figure 1. Enterovirus[1] isolates by month of specimen collection, 1994**

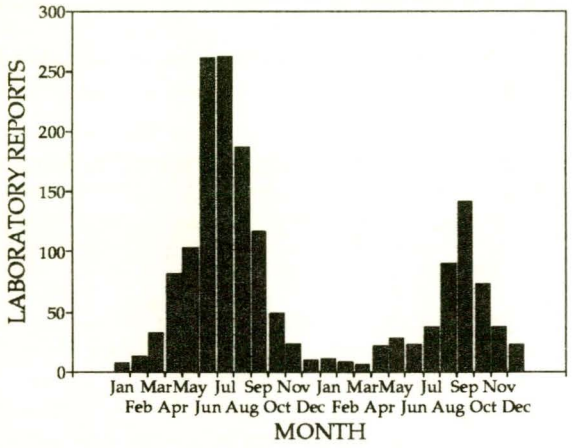



1. Excludes poliovirus isolates.

- **Coxsackievirus type B1** was reported in fourteen patients 4 of whom had meningitis. One isolate was from the urine of an 8 day old male. Several of these reports were of previously reported enteroviruses which had recently been typed.
- Fifteen cases of **echovirus type 11** were received this fortnight, including a fifteen month old female with cardiomyopathy. An increased number of reports of this virus has been received from New South Wales, Victoria and Western Australia in recent months.
- **Enterovirus** activity remains at an elevated level (Figure 1). Untyped enterovirus reports included this period were 37 cases of meningitis (including a 2 week old and a 2 month old), and a one month old female with convulsions. Virus was isolated from urine in three instances, from the pleural fluid of a 56 year old female, and from the eye of a 93 year old female.
- Influenza activity remains unusually high for the time of year, particularly in South Australia, Victoria and Western Australia. Twenty-seven reports were received this fortnight, 19 of **untyped influenza A** (1 isolation, 1 antigen detection, 3 fourfold changes, 10 single high titres and 4 IgM detections), 1 **influenza A $H_3N_2$** (isolation) and 7 reports of **influenza B** including a 2 month old with pneumonia (2 isolations, 1 antigen detection, and 4 single high titres).

- **Parainfluenza virus type 3** has been reported for 18 patients this fortnight. Seventeen of these were under 5 years of age including a 3 year old with a diagnosis of pneumonia.
- **Respiratory syncitial virus** was reported in a 13 day old female with an upper respiratory tract infection and fever.
- A single report of **human T cell lymphotrophic virus type 1 (HTLV-1)** was received for a 25 year old female.
- ***Chlamydia trachomatis*** was reported in the eyes of three infants 6, 9, and 16 days old, from Western Australia, Victoria and Tasmania.

**Figure 2. Influenza A $H_3N_2$ and untyped influenza A laboratory reports by month of specimen collection, 1992 to 1993**




- ***Mycoplasma pneumoniae*** was reported from a 7 year old male with a diagnosis of myocarditis.
- There were 61 ***Bordetella*** reports this reporting period (48 *Bordetella pertussis* and 13 *Bordetella* species) bringing the total with collection dates in 1993 to 602. Included were 35 reports of *Bordetella pertussis* IgA detection in nasopharyngeal aspirates by enzyme immunoassay. These are the first reports of this method of diagnosis submitted to this Scheme. A recent increase in the number of reports from New South Wales and Queensland has been observed in recent monhs.
- A report of ***Legionella longbeachae*** serogroup 1 was received in a 52 year old male from Tasmania.
- ***Leptospira*** species was reported in a 53 year old male abbatoir worker from Queensland.

## Sentinel surveillance for sexually transmissible diseases

*Jill Rowbottom, National Centre for HIV Epidemiology and Clinical Reserach and National Centre for Epidemiology and Population Health, Australian National University, Canberra*

Monitoring of sexually transmitted disease (STD) other than HIV is important in its own right, and it provides information on sexual practices which may represent risk of HIV transmission. Furthermore, some genital infections are known to increase the likelihood of HIV transmission.

In 1992, a project was commenced with the goal of improving national surveillance for sexually transmitted diseases other than HIV. A major component of this project is the establishment of a network of sentinel clinics to monitor incident STD infection according to risk categories used for HIV / AIDS surveillance. The first report from this surveillance system is presented here, and is based on retrospective data from participating centres.

**Table 1. Surveillance of gonorrhoea and early syphilis in sentinel sexual health centres, 1 July 1992 to 30 June 1993**

| | Gonorrhoea | | Early syphilis | |
|---|---|---|---|---|
| Characteristics of cases | Male | Female | Male | Female |
| Exposure category[1] | | | | |
| Male homosexual/bisexual contact | 91 | - | 2 | - |
| Male homosexual/bisexual contact and ID[2] use | 12 | - | 2 | - |
| Male homosexual/bisexual contact and sex work | 6 | - | 2 | - |
| Sex work (Australian born) | 4 | 3 | 1 | 0 |
| Sex work (overseas born) | 2 | 17 | 0 | 0 |
| Heterosexual contact and ID[2] use | 1 | 4 | 2 | 4 |
| Other heterosexual contact[3] | 73 | 23 | 23 | 21 |
| HIV status | | | | |
| Positive | 20 | 0 | 0 | 0 |
| Negative | 122 | 30 | 30 | 23 |
| Unknown | 47 | 17 | 2 | 2 |
| Total | 189 | 47 | 32 | 25 |

1. For most centres, exposure category applies to the year prior to diagnosis.
2. ID injecting drug.
3. No other category specified.

During the twelve month period 1 July 1992 to 30 June 1993 there were 110,076 patient attendances at participating sexual health centres. Gonorrhoea was diagnosed in 235 persons (188 males and 47 females), and early syphilis (defined as primary, secondary or early latent syphilis, and representing infection acquired in the recent past) was diag-

nosed in 57 persons (32 males and 25 females).

Gonorrhoea in males at the participating centres was predominantly acquired through homosexual contact, and 10% of all males with gonorrhoea had HIV infection (Table 1). Non-Australian born sex workers represented 36% of gonococcal infections in females. Early syphilis, in contrast to gonorrhoea, was predominantly heterosexually transmitted. Cases of gonorrhoea in overseas-born female sex workers were primarily from Sydney, while cases in homosexual men were reported from centres across Australia.

The following clinics contributed data for this first report: Brisbane Sexual Health Clinic, Queensland; Clinic 275, Adelaide, South Australia; Gilmore Clinic, Canberra, ACT; Gold Coast Sexual Health Clinic, Queensland; Kirketon Road Centre, Sydney, New South Wales; Lismore Sexual Health and AIDS Service, New South Wales; Murray Street Clinic, Perth, Western Australia; Port Kembla Sexual Health Clinic, New South Wales; Sexual Health Clinic, St George Hospital, New South Wales; and Sydney Sexual Health Centre, New South Wales. Data from Clinic 275 and Port Kembla are for the period 1 January to 31 December 1992.

## Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 11 laboratories. *CDI* welcomes Princess Margaret Hospital, Western Australia to the LabDOSS scheme.

Retrospective reports for September to November, 199 records, have been merged with data for 1993. These included

- three cases of *Neisseria meningitidis* in New South Wales (no serogroups provided; a 2 month old in September, a one year old in October and a 23 year old in November), and
- three cases of *Haemophilus influenzae* sepsis, two in New South Wales and one in Tasmania (a 62 year old in October, no type provided; a 2 year old in November, type b; a preterm neonate in November; no type provided).

There were 300 reports of sepsis in December and January this fortnight: IMVS Adelaide, South Australia 53, ICPMR Westmead, New South Wales 72, Royal North Shore Hospital, New South Wales 45, Royal Hobart Hospital, Tasmania 23, Sir Charles Gairdner Hospital, Western Australia 40, Woden Valley Hospital, ACT 13, Sullivan Nicolaides, Queensland 35, Northern Tasmanian Pathology Service, Tasmania 9, Nambour Hospital, Queensland 5, Princess Margaret Hospital, Western Australia 3, Central Queensland Pathology Service 2.

Organisms reported 5 or more times from blood are detailed in Table 2. Other blood isolates not included in Table 2 were:

**Gram positive:** 1 *Bacillus* species, 3 *Corynebacterium jekeium*, 4 *Streptococcus* Group B, 2 *Streptococcus* Group A, 1 *Streptococcus* Group C, 1 *Streptococcus* 'milleri', 4

**Table 2. LabDOSS reports of blood isolates, by organism and clinical information**

| | Clinical Information | | | | | | Risk Factors | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Organism | Bone/Joint | Lower respiratory | Endocarditis | Gastrointestinal | Urinary Tract | Skin | Surgery | Immunosuppressed | IV line | Hospital acquired | Neonatal | Total[1] |
| *Staphylococcus aureus* | 2 | 3 | | 2 | | 8 | | 5 | 4 | | 2 | 40[2] |
| *Staphylococcus* coagulase negative | | | | | | 2 | | 6 | 2 | 2 | 1 | 47 |
| Group G *Streptococcus* | | 1 | 1 | | | 3 | | 1 | | | | 7 |
| *Enterococcus* species | | | | 1 | | | | 2 | 2 | | | 9[3] |
| *Streptococcus pneumoniae* | | 9 | | 1 | | | | 1 | | | | 12 |
| *Streptococcus sanguis* | | | 2 | | | | 1 | | | | | 5 |
| *Escherichia coli* | | 1 | | 4 | 19 | | 4 | 12 | | 1 | | 46 |
| *Xanthomonas maltophilia* | | | | | | | | | | | | 5 |
| *Proteus* species | | | | | | | 1 | | | | | 7[4] |
| *Klebsiella pneumoniae* | | | | 1 | 1 | 1 | 3 | 6 | 2 | | | 18 |
| *Enterobacter* species | | 1 | | 3 | | | 1 | | | | | 9[5] |
| *Pseudomonas aeruginosa* | | | | | | | 4 | 2 | | | | 10 |

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 5.
3. *Enterococcus faecalis* 6, *E. casseliflavus* 1.
4. *Proteus mirabilis* 6, *P. vulgaris* 1.
5. *Enterobacter cloacae* 4, *E. agglomerans* 1, *E. taylorae* 1.

**Table 3. LabDOSS meningitis reports, by organism and age group**

| | 1-11 months | 1-4 years | 35-44 years | 45-54 years | 55-64 years | 65-74 years | 75+ years | Total |
|---|---|---|---|---|---|---|---|---|
| *Listeria monocytogenes* (SA) | | | | | | 1 | | 1 |
| *Neisseria meningitidis* group C | | | 1 | | | | | 1 |
| Coagulase negative *Staphylococcus* | | 1 | | 1 | 1 | 1 | | 4 |
| *Propionibacterium* species | 1 | | | | | | | 1 |
| *Haemophilus influenzae* | 1 | | | | | | | 1 |
| *Streptococcus pneumoniae* | | 1 | | | | | 1 | 2 |
| *Streptococcus sanguis* | | | 1 | | | | | 1 |
| *Klebsiella oxytoca* | | | | | | 1 | | 1 |

*Streptococcus* sanguis, 3 *Streptococcus mitis*, 1 *Streptococcus mitior*, 2 *Streptococcus* 'viridans', 1 *Streptococcus* species.

**Gram negative:** 1 *Salmonella* Typhi (55 year old female, Western Australia), 1 *Campylobacter jejuni*, 1 *Shigella flexneri* (39 male, South Australia), 3 *Acinetobacter* species, 1 *Citrobacter freundii*, 3 *Haemophilus influenzae* (1 year old with epigolottitis, type b; 6 month old with meningitis not typed; 79 year old with pneumonia, not type b), 1 *Haemophilus paraphrophilus*, 4 *Klebsiella oxytoca*, 1 *Klebsiella species*, 1 *Morganella morganii*, 1 *Pseudomonas flourescens*, 2 *Pseudomonas* species, 1 *Serratia liquefaciens*, 1 *Serratia marcescens*, 1 *Achromobacter* species, 2 *Serratia* species.

**Anaerobes:** 2 *Bacteroides* species, 1 *Bacteroides fragilis*, 1 *Peptostreptococcus* species, 1 *Veillonella* species.

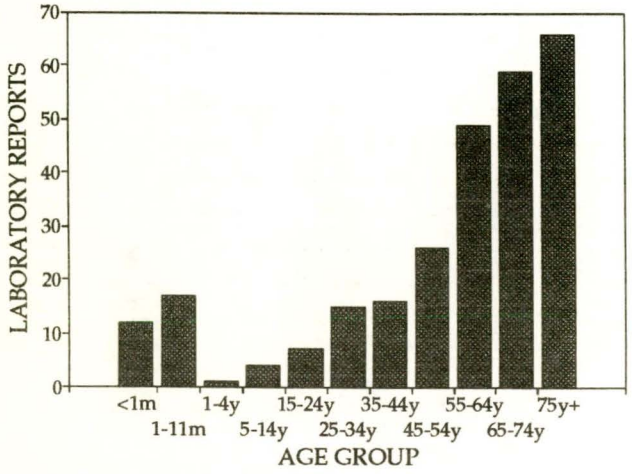
**Fungi:** 4 *Candida* species (2 *C. albicans*).

Most reports were for patients over the age of 55 years (Figure 3).

**CSF and/or meningitis reports**

There were 12 reports of isolates from CSF and/or meningitis (Table 3).

**Figure 3. LabDOSS reports of blood isolates, by age group**




**Isolates from sites other than blood or CSF**

**Peritoneal dialysate:** 1 *Acinetobacter species*, 1 *Klebsiella pneumoniae*, 1 coagulase negative *Staphylococcus*.

**Joint fluid:** 6 *Staphylococcus aureus*, 2 coagulase negative *Staphylococcus*.

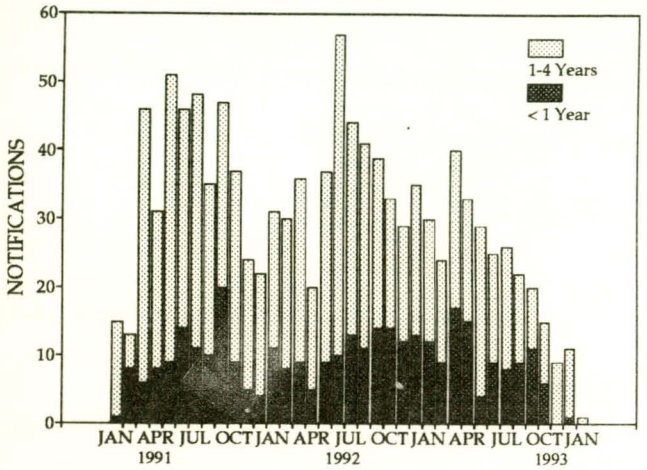
**Other:** 1 *Escherichia coli*, 2 *Staphylococcus aureus*, 1 *Streptococcus mitis*, 1 *Streptococcus* 'milleri', 1 *Bacillus cereus*.

## National Notifiable Diseases Surveillance System, 25 December 1993 to 8 January 1994

There were 1,042 reports received this period (Tables 4, 5 and 6, and Figure 8). No reports were received from Victoria and reports from the Northern Territory, South Australia and Western Australia were for the period 1 to 8 January 1994 only. Year to date figures in this commentary and in the Figures and Tables refer to the year 1994 only.

- Eighty-nine cases of **Ross River virus infection** were notified this period. There were 46 males and 43 females, and ages recorded ranged from the 10-14 to the 85-89 years age groups. Cases were reported for residents of statistical divisions in northern coastal New South Wales and Brisbane. Reported onset dates were November (2), December (75) and January (12).
- A single notification of **dengue** was received, for a male in the 20-24 years age group. The onset date was recorded as November and he was a resident of Sydney.
- Twenty-eight cases of **gonococcal infection** were notified. There were 21 males, 6 females and sex was not recorded in one case. Cases were aged between the 15-19 years and the 75-79 years age groups.
- ***Haemophilus influenzae* type b infection** was reported for 10 cases. There were 6 males and 4 females. Six of the cases were in the 0-4 years age group and one was aged less than one year. There was a single cases in each of the 5-9, 10-14, 15-19 and 60-64 years age groups. Recorded onset dates

**Figure 4. *Haemophilus influenzae* type b infection notifications by month of onset, January 1992 to January 1994**




were in December (4) and January (one) (Figure 4). There were no apparent clusters.

- Twenty-three notifications of **hepatitis A** were received this period. They were for 16 males and 7 females. Ages ranged from the 0-4 to the 65-69 years age group.
- **Hepatitis B** was notified for 32 cases. One of these cases was reported from New South Wales, which reports only incident cases (representing new infections) to the National Notifiable Diseases Surveillance System.
- There was a single case of **hydatid infection** notified, for a male in the 40-44 years age group in the ACT.
- Four cases of **legionellosis** were reported; 3 were males and one was female. Ages ranged between the 20-24 and the 70-74 years age groups. There were no apparent clusters.
- One case of **leptospirosis** was notified for a male in the 35-39 years age group from rural Queensland.

**Figure 5. Measles notifications by month of onset, January 1992 to January 1994**

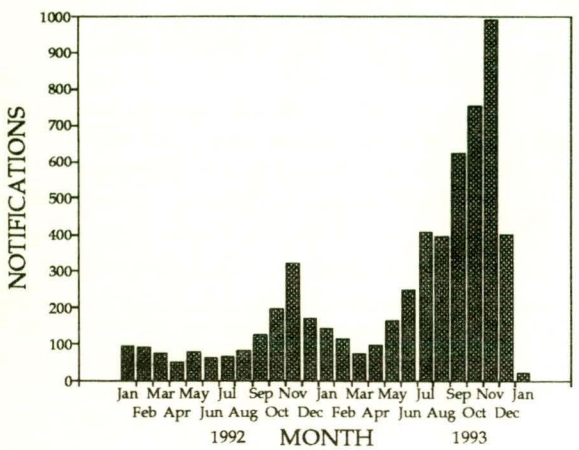
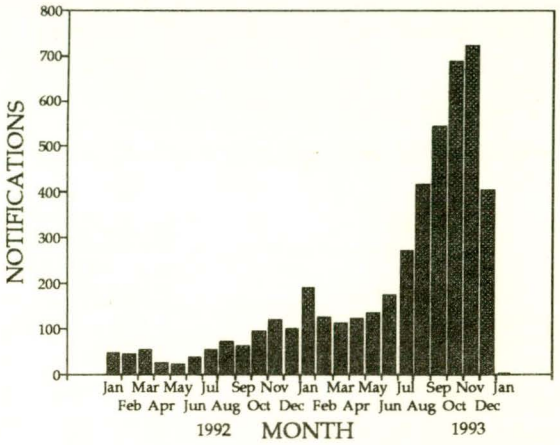
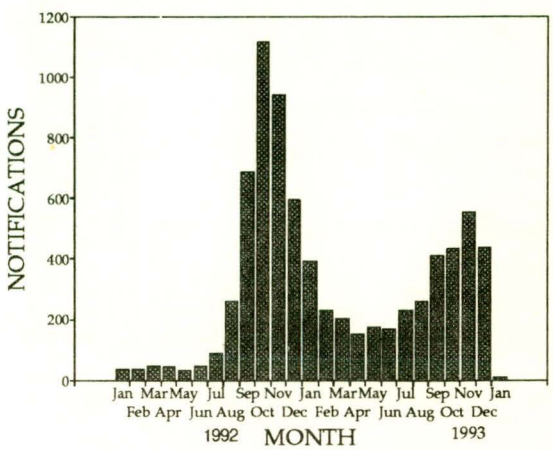



**Figure 6. Pertussis notifications, January 1992 to January 1994, by month of onset**




- A single report of **malaria** was received, for a male in the 50-54 years age group.
- There were 154 notifications of **measles** received (Figure 5), 90 for males and 64 for females. Thirteen cases were aged less than one year, and the mean age was 13.1 years.
- There were 7 notifications of **meningococcal infection**; 4 were males and 3 females. Two cases had recorded ages in the 0-4 years age group and the oldest case was in the 90-94 years age group. There were no apparent clusters.
- There were 163 cases of **pertussis** notified, 76 males, 86 females and sex was not recorded for one case (Figure 6). Five cases were aged less than one year and the oldest case was in the 90-94 years age group.
- There were 13 notifications of **Q fever**, 11 for males and 2 for females. Ages ranged from the 15-19 to the 75-79 years age groups.
- There were 45 notifications of **rubella** received, 24 males, 20 females and sex was not recorded in one

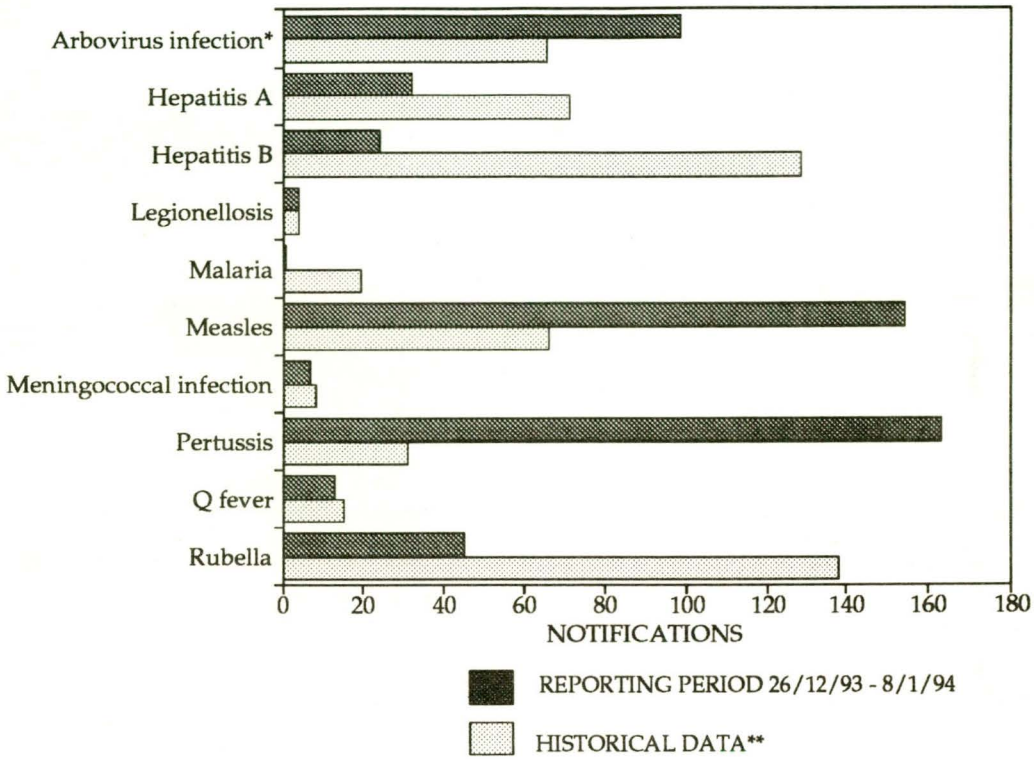
**Figure 7. Rubella notifications by month of onset, January 1992 to January 1994**



case (Figure 7). The mean age was 42.8 years and there were 6 reports for females in the 15-44 years age group.

- There were 34 notifications of **syphilis** received this period. Sixteen were for males, 17 for females and sex was not recorded in one case. Three cases were aged less than one year.
- There were 8 notifications of **tuberculosis**, 3 males and 5 females. Onset dates were recorded as November (3) and December (5). Ages ranged from the 15-19 to the 80-84 years age groups.

**Figure 8. Selected National Notifiable Diseases Surveillance System reports, 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 4. Notifiable Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 26 December 1993 to 8 January 1994**

| DISEASES | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | TOTALS FOR AUSTRALIA[1] This Period 1993-1994 | This Period 1992-1993 | Year to Date 1994 | Year to Date 1993 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Diphtheria | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| *Haemophilus influenzae* b infection[2] | 0 | 4 | 0 | 4 | 1 | 1 | | 0 | 10 | 7 | 8 | 7 |
| Measles | 1 | 81 | 0 | 70 | 0 | 1 | | 1 | 154 | 57 | 114 | 32 |
| Mumps | 0 | 1 | NN | NN | 0 | NN | | 0 | 1 | 0 | 0 | 0 |
| Pertussis | 2 | 66 | 0 | 87 | 0 | 0 | | 8 | 163 | 37 | 134 | 23 |
| Poliomyelitis | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Rubella[3] | 1 | 3 | 2 | 15 | 1 | 0 | | 23 | 45 | 0 | 45 | 147 |
| Tetanus | 0 | 0 | 0 | NN | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |

1. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

2. NT, Tas: CRS only.

NN Not Notifiable.

## Table 5. Other Notifiable Diseases[1], for the reporting period 26 December 1993 to 8 January 1994

| DISEASES | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | TOTALS FOR AUSTRALIA[2] This Period 1993-1994 | This Period 1992-1993 | Year to Date 1994 | Year to Date 1993 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Arbovirus infection (NEC)[3] | 0 | 1 | NN | 8 | 0 | 0 | | 0 | 9 | 5 | 8 | 3 |
| Ross River virus infection | 0 | 6 | 13 | 69 | - | NN | | 1 | 89 | 45 | 84 | 25 |
| Dengue | 0 | 1 | 0 | 0 | - | NN | | NN | 1 | 2 | 0 | 2 |
| Campylobacteriosis[4] | 12 | - | 0 | 75 | 22 | 17 | | 15 | 141 | 295 | 121 | 174 |
| Chlamydial infection (NEC)[5] | 0 | NN | 3 | 69 | 12 | 4 | | 12 | 100 | 164 | 100 | 132 |
| Donovanosis | 0 | NN | 0 | 1 | NN | NN | | 0 | 1 | 6 | 1 | 0 |
| Gonococcal infection[6] | 0 | 9 | 1 | 12 | 0 | 0 | | 6 | 28 | 105 | 27 | 57 |
| Hepatitis A | 2 | 8 | 2 | 12 | 0 | 0 | | 0 | 24 | 46 | 22 | 24 |
| Hepatitis B | 1 | 1 | 0 | 20 | 0 | 0 | | 10 | 32 | 89 | 31 | 65 |
| Hepatitis C | 4 | 0 | 4 | 44 | 0 | 0 | | 15 | 67 | 136 | 67 | 86 |
| Hepatitis (NEC) | 0 | 0 | 0 | 0 | 0 | 0 | | NN | 0 | 1 | 0 | 0 |
| Legionellosis | 0 | 2 | 0 | 0 | 2 | 0 | | 0 | 4 | 4 | 2 | 3 |
| Leptospirosis | 0 | 0 | 0 | 1 | 0 | 0 | | 0 | 1 | 2 | 1 | 2 |
| Listeriosis | 0 | 0 | NN | 0 | 0 | 0 | | 0 | 0 | 1 | 0 | 1 |
| Malaria | 0 | 0 | 0 | 0 | 1 | 0 | | 0 | 1 | 20 | 1 | 16 |
| Meningococcal infection | 0 | 3 | 0 | 0 | 1 | 0 | | 3 | 7 | 8 | 5 | 5 |
| Ornithosis | 0 | NN | 0 | 0 | 0 | 0 | | 0 | 0 | 7 | 0 | 6 |
| Q fever | 0 | 8 | 0 | 5 | 0 | 0 | | 0 | 13 | 7 | 9 | 7 |
| Salmonellosis (NEC) | 1 | 10 | 11 | 40 | 11 | 1 | | 8 | 82 | 133 | 64 | 82 |
| Shigellosis[4] | 0 | 0 | 0 | 2 | 1 | 0 | | 5 | 8 | 21 | 6 | 11 |
| Syphilis | 0 | 22 | 3 | 7 | 1 | 0 | | 1 | 34 | 48 | 25 | 25 |
| Tuberculosis | 0 | 6 | 0 | 2 | 0 | 0 | | 0 | 8 | 25 | 6 | 17 |
| Typhoid[7] | 0 | 0 | 0 | 0 | 0 | 0 | | 0 | 0 | 0 | 0 | 0 |
| Yersiniosis (NEC)[4] | 0 | - | 0 | 7 | 2 | 0 | | 0 | 9 | 14 | 8 | 10 |

1. For HIV and AIDS, see *CDI* 1993;17:609. 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.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

\- Elsewhere Classified.

## Table 6. Rarely Notified Diseases[1] for the reporting period 26 December 1993 to 8 January 1994

| DISEASES | Total This Period | Reporting States or Territories | Year to Date 1994 |
|---|---|---|---|
| Botulism | 0 | | 0 |
| Brucellosis | 0 | | 0 |
| Chancroid | 0 | | 0 |
| Cholera | 0 | | 0 |
| Hydatid infection | 1 | ACT | 1 |
| Leprosy | 0 | | 0 |
| Lymphogranuloma venereum | 0 | | 0 |
| Plague | 0 | | 0 |
| Rabies | 0 | | 0 |
| Yellow fever | 0 | | 0 |
| Other viral haemorrhagic fevers | 0 | | 0 |

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

**Table 7. Laboratory reports by State or Territory[1] for the reporting period 30 December 1993 to 12 January 1994, historical data[2], and total reports for the year**

| | State or Territory[1] | | | | | | | | Total this fortnight | Historical data[2] | Total reported this year |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | | | |
| MEASLES, MUMPS, RUBELLA | | | | | | | | | | | |
| Measles virus | 1 | 10 | | 24 | 2 | | 3 | 2 | 42 | 16.3 | 249 |
| Mumps virus | | | | | | | 1 | 1 | 2 | 2.0 | 12 |
| Rubella virus | 1 | 2 | 1 | 7 | 6 | | 1 | 27 | 45 | 52.5 | 151 |
| HEPATITIS VIRUSES | | | | | | | | | | | |
| Hepatitis A virus | | | | 10 | 1 | | 3 | 1 | 15 | 20.8 | 28 |
| Hepatitis B virus | 2 | | | 68 | 4 | 2 | 27 | 23 | 126 | 103.7 | 216 |
| Hepatitis C virus | 14 | 7 | | 17 | 29 | 26 | 10 | 116 | 219 | 107.7 | 519 |
| Hepatitis E virus | | | | 2 | | | | | 2 | .0 | 2 |
| ARBOVIRUSES | | | | | | | | | | | |
| Ross River virus | | 1 | 1 | 29 | | | | | 31 | 20.7 | 143 |
| Barmah Forest virus | | | 1 | 4 | | | | 8 | 13 | 2.3 | 29 |
| ADENOVIRUSES | | | | | | | | | | | |
| Adenovirus type 1 | | 1 | | | | | 2 | | 3 | 6.2 | 9 |
| Adenovirus type 2 | | 3 | | | | | 8 | | 11 | 5.5 | 12 |
| Adenovirus type 3 | | 1 | | | | | 2 | | 3 | 5.0 | 5 |
| Adenovirus type 4 | | | | | | | 1 | | 1 | 4.3 | 2 |
| Adenovirus type 5 | | | | | | | 1 | | 1 | 2.0 | 2 |
| Adenovirus type 7 | | | | | | | 1 | | 1 | .7 | 1 |
| Adenovirus type 8 | | | | | | | 10 | | 10 | 1.3 | 13 |
| Adenovirus type 9 | | | | | | | 1 | | 1 | .5 | 1 |
| Adenovirus not typed/pending | | 1 | | 54 | 13 | | 18 | 35 | 121 | 48.0 | 211 |
| HERPES VIRUSES | | | | | | | | | | | |
| Herpes simplex virus type 1 | | 6 | | 117 | 18 | 8 | 78 | 48 | 275 | 178.7 | 490 |
| Herpes simplex virus type 2 | 1 | 9 | | 153 | 24 | 1 | 66 | 94 | 348 | 217.7 | 598 |
| Herpes simplex not typed/pending | 9 | 5 | | 2 | | 1 | 2 | 4 | 23 | 31.8 | 69 |
| Cytomegalovirus | | 5 | | 48 | | 1 | 32 | 4 | 90 | 84.3 | 177 |
| Varicella-zoster virus | | 3 | | 20 | 7 | | 12 | 11 | 53 | 39.5 | 115 |
| Epstein-Barr virus | | 6 | 2 | 12 | 5 | | 13 | 18 | 56 | 85.8 | 168 |
| Herpes virus group - not typed | | | | | | | 1 | | 1 | 3.3 | 3 |
| OTHER DNA VIRUSES | | | | | | | | | | | |
| Poxvirus group not typed | | | | | | | 2 | | 2 | .0 | 2 |
| Parvovirus | | 2 | | | | | 2 | | 4 | 9.2 | 4 |
| PICORNA VIRUS FAMILY | | | | | | | | | | | |
| Coxsackievirus A9 | | | | | | 1 | 3 | | 4 | 1.2 | 5 |
| Coxsackievirus A16 | | | | | | | 2 | | 2 | 1.2 | 4 |
| Coxsackievirus A21 | | | | | | | 1 | | 1 | .0 | 1 |
| Coxsackievirus B1 | | | | | | | 14 | | 14 | 2.8 | 15 |
| Coxsackievirus B2 | | | | | | | 3 | | 3 | .3 | 3 |
| Coxsackievirus B5 | | | | | | | 2 | | 2 | 5.0 | 3 |
| Echovirus type 5 | | | | | | | 1 | | 1 | .5 | 3 |
| Echovirus type 6 | | | | | | | | 1 | 1 | .2 | 1 |
| Echovirus type 7 | | | | | | | 4 | | 4 | 3.2 | 4 |
| Echovirus type 9 | | | | | | | 1 | | 1 | 2.3 | 1 |
| Echovirus type 11 | | 2 | | | | | 13 | | 15 | .5 | 20 |
| Echovirus type 14 | | | | | | | 1 | | 1 | .3 | 2 |
| Echovirus type 22 | | | | | | | 1 | | 1 | .8 | 1 |

**Table 7. Laboratory reports by State or Territory[1] for the reporting period 30 December 1993 to 12 January 1994, historical data[2], and total reports for the year, continued**

| | State or Territory[1] | | | | | | | | Total this fortnight | Historical data[2] | Total reported this year |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | ACT | NSW | NT | Qld | SA | Tas | Vic | WA | | | |
| Echovirus type 30 | | | | | | | 52 | | 52 | .2 | 63 |
| Poliovirus type 1 (uncharacterised) | | | | | | | 3 | | 3 | 2.5 | 3 |
| Poliovirus type 3 (uncharacterised) | | | | | | | 1 | | 1 | 1.2 | 2 |
| Poliovirus not typed/pending | | | | | | | 11 | | 11 | 1.0 | 11 |
| Rhinovirus (all types) | | 2 | | 78 | 1 | 2 | 23 | 18 | 124 | 36.2 | 163 |
| Enterovirus not typed/pending | | 5 | 4 | 104 | | 1 | 39 | 17 | 170 | 39.7 | 218 |
| ORTHO/PARAMYXOVIRUSES | | | | | | | | | | | |
| Influenza A virus | | | 1 | | 3 | | 7 | 8 | 19 | 5.5 | 66 |
| Influenza A virus $H_3N_2$ | | | | | | | 1 | | 1 | .0 | 1 |
| Influenza B virus | | | | | 3 | 1 | 3 | | 7 | 3.8 | 64 |
| Parainfluenza virus type 1 | | | | | | | 3 | | 3 | 2.5 | 12 |
| Parainfluenza virus type 2 | | | | | | | 1 | 2 | 3 | 1.5 | 4 |
| Parainfluenza virus type 3 | | 4 | | 7 | | | 5 | 2 | 18 | 28.8 | 40 |
| Parainfluenza virus typing pending | | | | | | | | 4 | 4 | 2.2 | 4 |
| Respiratory syncytial virus | | | 1 | 8 | | | 9 | 22 | 40 | 18.3 | 95 |
| OTHER RNA VIRUSES | | | | | | | | | | | |
| HIV-1 | | | | 1 | | | | 1 | 2 | 2.3 | 8 |
| HTLV-1 | | | | | | | | 1 | 1 | .3 | 1 |
| Rotavirus | 6 | 3 | | | 8 | 3 | 10 | 11 | 41 | 67.2 | 121 |
| Small virus (like) particle | | | | | | | | 1 | 1 | 1.8 | 2 |
| OTHER | | | | | | | | | | | |
| *Chlamydia trachomatis* not typed | | 3 | | 19 | 9 | 7 | 4 | 50 | 92 | 120.7 | 213 |
| *Chlamydia psittaci* | | | | | | | 3 | | 3 | 5.5 | 9 |
| *Mycoplasma pneumoniae* | 2 | 1 | | 15 | 4 | 4 | 16 | 5 | 47 | 61.8 | 146 |
| *Coxiella burnetii* (Q fever) | | 2 | | 5 | 1 | | | | 8 | 10.7 | 73 |
| *Streptococcus* group A | | 1 | | 1 | | | | | 2 | 7.5 | 26 |
| *Bordetella pertussis* | | | 1 | | | | 21 | 26 | 48 | 2.5 | 69 |
| *Bordetella* species | | 3 | | 10 | | | | | 13 | 8.5 | 68 |
| *Legionella longbeachae* | | | | | | 1 | | | 1 | .0 | 1 |
| *Leptospira* species | | | | 1 | | | | | 1 | .0 | 4 |
| *Treponema pallidum* | 1 | | | 1 | | | | | 2 | 10.5 | 39 |
| *Entamoeba histolytica* | | | | 2 | | | | | 2 | .0 | 2 |
| TOTAL | 37 | 88 | 12 | 819 | 138 | 59 | 555 | 561 | 2,269 | 1,510.8 | 4,822 |

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

**Table 8. Laboratory reports by clinical information for the reporting period 30 December 1993 to 12 January 1994**

| | Encephalitis | Meningitis | Other CNS | Congenital | Respiratory | Gastrointestinal | Hepatic | Skin | Eye | Muscle/joint | Genital | Other/unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MEASLES, MUMPS, RUBELLA | | | | | | | | | | | | | |
| Measles virus | | | | | 3 | | | 19 | | | | 20 | 42 |
| Mumps virus | | | | | | | | | | | | 2 | 2 |
| Rubella virus | | | | | | | | 23 | | | | 22 | 45 |
| HEPATITIS VIRUSES | | | | | | | | | | | | | |
| Hepatitis A virus | | | | | | | 11 | | | | | 4 | 15 |
| Hepatitis B virus | | | | | 2 | | 58 | | | | | 66 | 126 |
| Hepatitis C virus | | | | | | 3 | 28 | 1 | | | | 187 | 219 |
| Hepatitis E virus | | | | | | | 1 | | | | | 1 | 2 |
| ARBOVIRUSES | | | | | | | | | | | | | |
| Ross River virus | | | | | | | 1 | | | 9 | | 21 | 31 |
| Barmah Forest virus | | | | | | | | 1 | | 1 | | 11 | 13 |
| ADENOVIRUSES | | | | | | | | | | | | | |
| Adenovirus type 1 | | | | | | | | | | | | 3 | 3 |
| Adenovirus type 2 | 1 | | | | 7 | | | | | | | 3 | 11 |
| Adenovirus type 3 | | | | | 1 | 1 | | | 1 | | | | 3 |
| Adenovirus type 4 | | | | | | | | | | | | 1 | 1 |
| Adenovirus type 5 | | | | | 1 | | | | | | | | 1 |
| Adenovirus type 7 | | | | | | | | | 1 | | | | 1 |
| Adenovirus type 8 | | | | | | | | | 10 | | | | 10 |
| Adenovirus type 9 | | | | | | 1 | | | | | | | 1 |
| Adenovirus not typed/pending | | | | | 62 | 25 | | 1 | 13 | | | 20 | 121 |
| HERPES VIRUSES | | | | | | | | | | | | | |
| Herpes simplex virus type 1 | | 1 | | | 19 | | | 132 | 13 | | 62 | 48 | 275 |
| Herpes simplex virus type 2 | | | | | 1 | | 1 | 89 | | | 174 | 83 | 348 |
| Herpes simplex not typed/pending | 1 | | | | 2 | | | 7 | | | 9 | 4 | 23 |
| Cytomegalovirus | | | | 1 | 45 | | 1 | 1 | | | 1 | 41 | 90 |
| Varicella-zoster virus | | | | | | | | 43 | 1 | | | 9 | 53 |
| Epstein-Barr virus | | | | | 2 | 1 | | 1 | | | 1 | 51 | 56 |
| Herpes virus group - not typed | | | | | | | | 1 | | | | | 1 |
| OTHER DNA VIRUSES | | | | | | | | | | | | | |
| Poxvirus group not typed | | | | | | | | 2 | | | | | 2 |
| Parvovirus | | | | | | | | 1 | | 1 | | 2 | 4 |
| PICORNA VIRUS FAMILY | | | | | | | | | | | | | |
| Coxsackievirus A9 | | 3 | | | 1 | | | | | | | | 4 |
| Coxsackievirus A16 | | | | | | | | 2 | | | | | 2 |
| Coxsackievirus A21 | | | | | 1 | | | | | | | | 1 |
| Coxsackievirus B1 | | 4 | | | 4 | 1 | | | | | | 5 | 14 |
| Coxsackievirus B2 | | | | | 1 | | | 1 | | | | 1 | 3 |
| Coxsackievirus B5 | | 2 | | | | | | | | | | | 2 |
| Echovirus type 5 | | | 1 | | | | | | | | | | 1 |
| Echovirus type 6 | | | | | | | | | | | | 1 | 1 |
| Echovirus type 7 | | 1 | | | 1 | | | | 1 | | | 1 | 4 |
| Echovirus type 9 | | | | | 1 | | | | | | | | 1 |
| Echovirus type 11 | | 2 | | | 7 | 1 | | | | | | 5 | 15 |

**Table 8. Laboratory reports by clinical information for the reporting period 30 December 1993 to 12 January 1994, continued**

| | Encephalitis | Meningitis | Other CNS | Congenital | Respiratory | Gastrointestinal | Hepatic | Skin | Eye | Muscle/joint | Genital | Other/unknown | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Echovirus type 14 | | | | | | | | | | | | 1 | 1 |
| Echovirus type 22 | | | | | 1 | | | | | | | | 1 |
| Echovirus type 30 | | 43 | 1 | | 1 | | | | | | | 7 | 52 |
| Poliovirus type 1 (uncharacterised) | | | | | 2 | 1 | | | | | | | 3 |
| Poliovirus type 3 (uncharacterised) | | | | | | | | | | | | 1 | 1 |
| Poliovirus not typed/pending | | | | | 7 | 1 | | | | | | 3 | 11 |
| Rhinovirus (all types) | | | | | 112 | | | | | | | 12 | 124 |
| Enterovirus not typed/pending | | 37 | 7 | | 71 | 14 | | 8 | 1 | | 3 | 29 | 170 |
| ORTHO/PARAMYXOVIRUSES | | | | | | | | | | | | | |
| Influenza A virus | | | | | 8 | | | | | | | 11 | 19 |
| Influenza A virus $H_3N_2$ | | | | | 1 | | | | | | | | 1 |
| Influenza B virus | 1 | | | | 3 | | | | | | | 3 | 7 |
| Parainfluenza virus type 1 | | | | | 3 | | | | | | | | 3 |
| Parainfluenza virus type 2 | | | | | 2 | | | | | | | 1 | 3 |
| Parainfluenza virus type 3 | | | | | 17 | | | | | | | 1 | 18 |
| Parainfluenza virus typing pending | | | | | 3 | | | | | | | 1 | 4 |
| Respiratory syncytial virus | | | | | 36 | | | 1 | | | | 3 | 40 |
| OTHER RNA VIRUSES | | | | | | | | | | | | | |
| HIV-1 | | | | | | | | | | | | 2 | 2 |
| HTLV-1 | | | | | | | | | | | | 1 | 1 |
| Rotavirus | | | | | | 40 | | | | | | 1 | 41 |
| Small virus (like) particle | | | | | | 1 | | | | | | | 1 |
| OTHER | | | | | | | | | | | | | |
| *Chlamydia trachomatis* not typed | | | | | | | | | 4 | | 87 | 1 | 92 |
| *Chlamydia psittaci* | | | | | 3 | | | | | | | | 3 |
| *Mycoplasma pneumoniae* | | | | | 28 | | | | | | | 19 | 47 |
| *Coxiella burnetii* (Q fever) | | | | | | | | | | 1 | | 7 | 8 |
| *Streptococcus* group A | | | | | 1 | | | 1 | | | | | 2 |
| *Bordetella pertussis* | | | | | 45 | 1 | | | | | | 2 | 48 |
| *Bordetella* species | | | | | 11 | | | | | | | 2 | 13 |
| *Legionella longbeachae* | | | | | 1 | | | | | | | | 1 |
| *Leptospira* species | | | | | | | | | | | | 1 | 1 |
| *Treponema pallidum* | | | | | | | | | | | | 2 | 2 |
| *Entamoeba histolytica* | | | | | | | | | | | | 2 | 2 |
| TOTAL | 3 | 93 | 9 | 1 | 517 | 91 | 101 | 335 | 45 | 12 | 337 | 725 | 2269 |

**Table 9. Laboratory reports by contributing laboratories for the reporting period 30 December 1993 to 12 January 1994**

| STATE OR TERRITORY | LABORATORY | REPORTS |
|---|---|---|
| Australian Capital Territory | Woden Valley Hospital, Canberra | 37 |
| New South Wales | Institute of Clinical Pathology & Medical Research, Westmead | 28 |
| | Royal Alexandra Hospital for Children, Camperdown | 27 |
| Queensland | Queensland Medical Laboratory, West End | 261 |
| | State Health Laboratory, Brisbane | 585 |
| South Australia | Institute of Medical & Veterinary Science, Adelaide | 138 |
| Tasmania | Northern Tasmanian Pathology Service, Launceston | 11 |
| | Royal Hobart Hospital | 41 |
| Victoria | Microbiological Diagnostic Unit, University of Melbourne | 3 |
| | Monash Medical Centre, Melbourne | 18 |
| | Royal Children's Hospital, Melbourne | 235 |
| | Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital | 310 |
| Western Australia | Princess Margaret Hospital, Perth | 101 |
| | State Health Laboratory Services, Perth | 474 |
| TOTAL | | 2269 |