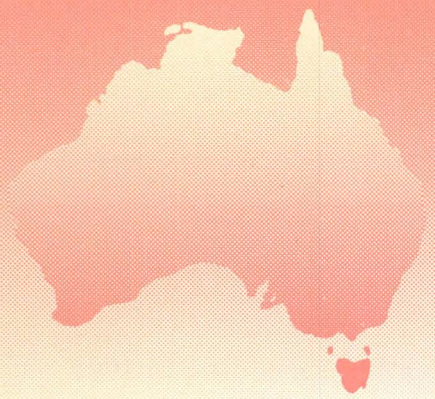

COMMUNICABLE DISEASES INTELLIGENCE

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CONTENTS

ARTICLES	Page
Notification of Legionellosis in Western Australia, 1991	358
Hospital Acquired Infections: A Cross-Sectional Prevalence Survey	360
Accidental Needlestick (Sharps) and Body Fluid Exposure Incidents at a Major Metropolitan Children's Hospital over a Seven Year Period	362
A Case of Transfusion-Transmitted Malaria	364
OVERSEAS BRIEFS	365
CDI NOTICE TO READERS	365
COMMUNICABLE DISEASES SURVEILLANCE	365

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DEPARTMENT OF HEALTH, HOUSING AND COMMUNITY SERVICES

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

NOTIFICATION OF LEGIONELLOSIS IN WESTERN AUSTRALIA, 1991

(Robert Condon[1,2], Paul Psaila-Savona[1] and John Pearman[3])

Introduction and Background

Legionnaires' Disease was made notifiable in Western Australia (WA) in May 1985. For the purposes of public health surveillance, the Health Department accepted a notification as a case of Legionnaires' Disease if the clinical presentation was compatible and certain laboratory criteria for diagnosis were met. Laboratory criteria included isolation of *Legionella pneumophila* from a clinical specimen, a four-fold rise in antibody titre against *L. pneumophila*, or demonstration of *L. pneumophila* in a clinical specimen by direct immunofluorescence.

Between May 1985 and December 1990, 29 cases of Legionnaires' Disease were notified to the Health Department of WA. A small cluster of 3 cases occurred among pearl divers in Broome, but no other geographic or seasonal clustering could be identified from the notification database[1].

Two Cases of Nosocomial Legionellosis Reported in 1990

In January 1990, two inpatients in one ward of Royal Perth Hospital (RPH) developed a respiratory illness and seroconverted to *Legionella*, one to *L. pneumophila* serogroups 4 and 5, the other to *L. pneumophila* serogroups 1, 4 and 6. The duration of their stay on the ward, and the time of onset of respiratory illness and seroconversion, indicated that both patients were likely to have acquired their infection while they were inpatients of RPH. Both patients were given erythromycin and recovered.

Following these cases of nosocomial legionellosis, samples of the water in the distribution system and in the air conditioning cooling towers at RPH were cultured. Large numbers of *Legionellae* (10,000 cfu/L) were found in the hot water storage tanks and cooling towers, and smaller numbers (1,000 cfu/L) in water from distribution points (taps and showers) in the ward involved. A more frequent cleaning and maintenance program was instituted and regular microbiological surveillance commenced.

Since January 1990, only one possible case of nosocomial legionellosis has occurred in RPH (in May 1991). This case was not confirmed by culture or serology.

Change of Notification Procedure in 1991 to Include all Species of *Legionella*

From January 1991 to May 1991, only 2 cases of 'clinical' Legionnaires' Disease had been reported in WA. One of these patients was a severely immunocompromised male who had been admitted to RPH in March 1991 with 'atypical' pneumonia; *L. pneumophila* had been cultured from his bronchial washings obtained at bronchoscopy 9 days after admission. The other patient was an inadvertently-notified case of pneumonia caused by *L. longbeachae*.

Active case finding throughout WA discovered another 8 individuals with clinical and laboratory evidence of community acquired *Legionella* infection, most of them due to *L. longbeachae*. Three of these patients (2 males and 1 female) had been admitted to the Intensive Care Unit at RPH with severe pneumonia during March and April 1991. All three had seroconverted to *L. longbeachae* shortly after admission, with titres of at least 512. No other aetiological agents were isolated from these patients' sputa.

During the late 1980s, South Australia began to document *L. longbeachae* infections acquired from potting mix[2]. After cases of *L. longbeachae* infection were identified in WA, the statutory notification criteria were extended to include a clinically compatible illness, with appropriate laboratory evidence, caused by any species of *Legionella*.

Notifications During 1991

During 1991, the Department received a total of 19 notifications of *Legionella* infection (Figure 1).

All infections presented as an acute respiratory illness. The severity ranged from fever and localised pneumonia to gross infiltrating pneumonitis with respiratory failure requiring mechanical ventilation. Three patients died, giving a case fatality rate of 15.8%.

Legionella longbeachae was implicated in most of the cases (Table 1).

Patients' ages ranged from 20 to 79 years, with a mean of 47.5 years. The mean age of patients with *L. pneumophila* infection was 43.2 years, and the mean age of patients with *L. longbeachae* infection was 49.0 years (difference not significant; p=0.3, Student's t-test).

1. Health Department of Western Australia
2. National Centre for Epidemiology and Population Health, Australian National University
3. Microbiology Department, Royal Perth Hospital

Figure 1. Legionella infections in Western Australia, 1991, by month of onset of symptoms

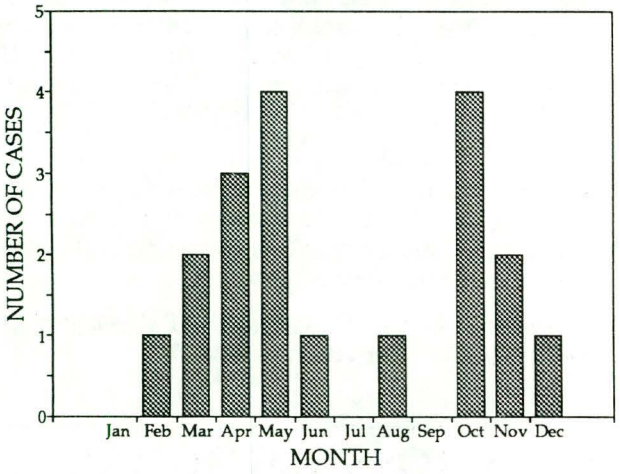

Table 1. Species of *Legionella* identified in Western Australian patients, 1991

SPECIES	NUMBER
L. pneumophila	5
L. longbeachae	13
Unknown	1

Table 2. Risk factors for *Legionella* infection, Western Australia, 1991

RISK FACTOR	NUMBER OF CASES
Immunosuppression	4
Alcoholism	3
Diabetes mellitus	3
Para/tetraplegia	2
Age > 75 years	4
None	3
TOTAL	19

The patients included 14 males and 5 females (male:female ratio of 2.8:1). The annual age-standardised notification rate[3] was 1.27 per 100,000 for men and 0.54 per 100,000 for women. Four of the five patients with *L. pneumophila* infection were males.

Sixteen patients showed some underlying medical condition, chronic debility or other risk factor (Table 2). Only three individuals were confirmed smokers.

Three patients had recent exposure to potting mix. Two of these individuals had *L. longbeachae* infection, while the third had *L. pneumophila*. The medium used for culturing *Legionellae* from environmental samples in WA was modified in May 1992, so we have only recently begun to isolate *L. longbeachae* from potting mix.

Discussion

In common with other States of Australia, *L. longbeachae* is emerging as the principal organism causing legionellosis in WA. Our patients' sex and age distribution is similar to that reported elsewhere in Australia[4], although we have seen *L. longbeachae* infection in younger patients with impaired immunity or a chronic debilitating illness.

The possibility of nosocomial legionellosis makes it essential for all hospitals to have an effective program for cleaning and maintaining water distribution systems and air conditioning cooling towers.

Cold water should be supplied directly from the mains wherever possible[5]. All water storage tanks (both hot and cold) should be drained and cleaned regularly. *Legionellae* survive for only short periods of time in water at 60°C. The temperature at the outflow point (top) of all hot water storage tanks should be kept at 60 ± 2.5°C[5], and a sufficient volume of water stored at this temperature to ensure that all water leaving the tank has been kept at 60°C for at least 5 minutes[5]. The whole water content of each hot water storage tank should be raised to 60°C for approximately 1 hour in each 24 hour period[5]. Shower heads and hoses used by high risk patients (Table 2) should be changed, cleaned and heat-disinfected on a regular basis.

Air conditioning cooling towers need to be drained and cleaned regularly, and after maintenance. Internal wetted surfaces should be thoroughly cleaned[6] by high pressure water from the top of the tower downwards. Cleaning personnel must wear respiratory protection. Filtration of the recirculating water removes organic material and sludge, and drift eliminators reduce drift from 1% of circulating water volume to less than 0.02%[6].

Microbiological surveillance involves periodic sampling of water from hot and cold water storage tanks, some outlets from the water distribution systems (shower heads and taps) and air conditioning cooling towers.

We have not shown any definite association between legionellosis and potting mix in WA. All but one of our patients with *L. longbeachae* infection were immunocompromised or elderly. No cases were recorded in potting mix industry workers. The 'healthy worker effect'[7], may explain the absence of immunocompromised or debilitated workers in such occupations, which involve heavy manual labour.

In an attempt to minimise possible health risks, new warning labels and packaging requirements have been recommended for bagged potting mix. The label would indicate that the product may contain living organisms which on some occasions have been associated with human illness. Packages would be required to have fine perforations to prevent a build-up of pressure as a result of heating or biological action.

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HOSPITAL ACQUIRED INFECTIONS: A CROSS SECTIONAL PREVALENCE SURVEY

(Reproduced with acknowledgement from Monthly Infectious Diseases Report, Royal Alexandra Hospital for Children, No. 29, March 1992, Editor D Isaacs)

In February 1992 we performed the fourth of our 6-monthly cross-sectional surveys of hospital-acquired infection (HAI).

The previous three studies were reported in *Monthly Infectious Diseases Report* No. 10 (August 1990), No. 16 (February 1991) and No. 24 (July 1991)(*CDI* **15**:36-39, **15**:289-292 and **16**:8-9).

These studies are 'point prevalence' surveys in which every child in the hospital on a certain day is reviewed to see in they have an HAI. This gives us a 'snapshot' of HAI, although it is unable to give us the true incidence of HAI, since it does not take into account children whose HAI first declares itself after discharge (which will reduce the number) but it does include children who remain in hospital because of their HAI (which will increase the number).

The definitions used were as in the previous surveys. The statistical analysis is by odds ratio, with 95% confidence intervals (CI) given in brackets, and is statistically significant (p) if the lower CI is greater than 1.

Number of inpatients on study day: 176

Number with hospital-acquired infection: 9 (5.1%)

Number with community-acquired infection: 35 (19.9%).

Various risk factor known or suspected to be associated with HAI were examined. The results of these examinations are presented in Tables 1-13 below.

Table 1. Duration of hospital stay and prevalence of HAI[1]

Hospital stay (days)	HAI (%)	Total
0-7	2 (1.7%)	121
8-14	1 (4.8%)	21
15-21	2 (33.3%)	6
>21	4 (14.3%)	28

1. Odds ratio (95% CI) for >14 days vs ≤14 = 8.4 (2.3 to 29.8).

Table 2. Age and prevalence of HAI[1]

Age (months)	HAI (%)	Total
<1	1 (4.8%)	21
1-6	3 (12%)	25
7-12	0	18
13-24	0	15
25-36	1 (6.7%)	15
37-48	0	17
49-60	0	7
>60	4 (6.9%)	58

1. Odds ratio for ≤6 months vs >6m = 2.3 (0.6 to 8.1).

Table 3. Sex and prevalence of HAI[1]

Sex	HAI	Total
Male	4	102
Female	5	74

1. Odds Ratio for female vs male = 1.7 (0.5 to 6.2).

Table 4. Intensive care and prevalence of HAI[1]

Intensive Care	HAI (%)	Total
Yes	3 (15%)	20
No	6 (3.8%)	156

1. Odds ratio = 3.9 (1.1 to 14.4).

Table 5. Hospital service and prevalence of HAI[1]

Service	HAI	Total
General medical	2 (6.0%)	33
Oncology	3 (23.1%)	13
Other medical	0	24
ALL MEDICAL[2]	5 (7.1%)	70
General surgical	1 (11.1%)	9
Neurosurgery	1 (5.9%)	17
Other surgical	0	56
ALL SURGICAL[2]	2 (2.4%)	82
Neonatal medial	2 (11.1%)	18
Neonatal surgical	0	5
Neonatal surg + med	0	1
ALL NEONATAL	2 (8.5%)	24

1. p >0.05.
2. Excluding neonates.

Table 6. Surgery this admission and prevalence of HAI[1]

Recent surgery	HAI	Total
Yes	4 (5%)	81
No	5 (5.3%)	95

1. Not significant.

Table 7. Immunosuppression and HAI[1]

Immuno-suppression	HAI (%)	Total
Yes	2 (10%)	20
No	7 (4.5%)	156

1. Odds Ratio = 2.2 (0.5 to 10).

Table 8. Presence of endotracheal tube (ETT) and HAI[1]

ETT	HAI	Total
Yes	2 (16.7%)	12
No	7 (4.3%)	164

1. Odds ratio =3.9 (0.9 to 16.8).

Discussion

For the fourth successive survey we have observed a decrease in the prevalence of hospital-acquired infections. This particular survey was performed in the summer, and there were relatively few patients hospitalised with community-acquired infections, which might explain the low prevalence of HAI. We expect the prevalence to be higher next August.

The Oncology Department has continued to use fewer antibiotics on average per patient. The rate of fall suggests they may not be using antibiotics at all by 1993.

Our profound thanks, as always, go to Maraia Bale and Mark Hanlon for their help with the data entry and statistical analysis of the questionnaires.

Table 9. Presence of urinary catheter and prevalence of HAI[1]

Urinary catheter	HAI (%)	Total
Yes	1 (7.7%)	13
No	7 (4.3%)	163

1. Not significant.

Table 10. Presence of intravascular cannula and prevalence of HAI[1]

Any intravascular catheter	HAI (%)	Total
Yes	9 (13.5%)	67
No	0	109

1. P<0.01.

Table 11. Nature of hospital-acquired infection

Nature of Infection	Number
Infected intravascular catheter	3
Pneumonia	3
Respiratory infection	1
Gastroenteritis	1
Shunt infection	1
Total	9

Table 12. Was the HAI preventable?

Category	Number
Not preventable	0
Possibly preventable	7
Definitely preventable	2
Total	9

Table 13. Antibiotic use in oncology patients

	Mean number (SD) of antibiotics per patient
Feb. 1991	3.94 (2.28)
Aug. 1992	2.07 (1.73)
Feb. 1992	2.10 (1.52)

ACCIDENTAL NEEDLESTICK (SHARPS) AND BODY FLUID EXPOSURE INCIDENTS AT A MAJOR METROPOLITAN CHILDREN'S HOSPITAL OVER A SEVEN YEAR PERIOD

(J. Faoagali, Director, Infection Control Unit, Royal Brisbane Hospital, and R. Hohrmann, Infection Control Nurse, Royal Children's Hospital, Brisbane)

Introduction

This descriptive analysis of reported sharps injuries and body fluids splashes to the staff of a 200 bed metropolitan children's hospital over a 7 year period shows a continual low level of reporting in spite of continuing inservice education and a high profile infection control program.

The range of injuries reported is different to those reported from adult hospitals and includes penetrating injuries with safety (nappy) pins as well as injuries from biting and scratching associated with the control of struggling children. This analysis has enabled high risk techniques to be determined and has indicated staff groups requiring further education.

Rigid walled sharps containers have been used here for the disposal of sharps since 1986. Between 1986 and 1989 the units were centralised and from 1989, individual, 'point of use' containers have been provided for sharps disposal.

Method

Staff have always been encouraged to report penetrating sharps injuries and splashes with body fluids, and special report forms are available for this purpose. Since 1989, the Workplace Health and Safety Act has required staff to report these accidents as soon as possible after their occurrence. All reported sharps injuries are reviewed by the Infection Control Nurse as soon as they are reported. This ensures adequate and appropriate follow up and enables review of the mode of injury for unsafe practices.

Sharps incidents and body fluids splashes reported between June 1985 and June 1992 were analysed for agent and mode of injury, and staff categories and work locations involved.

Results

Table 1 documents the reported causes of injury. Needles were involved in the majority of sharps events each year and overall. Safety pins were the cause of 31 injuries over the period.

The modes of injury are summarised in Table 2. Needlesticks sustained during procedures were the most commonly reported type of injury.

Registered Nurses were involved in the majority of reported incidents (Table 3), with 108 of the 192 reports (56.3%). This staff group also makes up 340 of the 574 established posts (60%) and 69% of staff responsible for direct patient care. No medical staff reported sharps incidents in any of the periods reviewed. Reports from other areas and staff groups have remained reasonably stable.

Analysis of the work areas involved in the incidents shows that reports were most commonly associated with surgical and occupational therapy locations, and the Intensive Care Unit (Table 4).

Discussion

Monitoring of sharps injuries has enabled problem areas to be highlighted and interventions to be developed.

The high proportion of safety pin injuries reported since 1989 resulted in the institution of a comparative trial of a non-pin nappy fastener. This trial successfully eliminated pin injuries and the non-pin fastener is now used in all areas, at a comparable cost to the safety pin.

Needle re-capping has been proscribed since 1985 and no reports of injury due to this procedure have been reported.

Table 1. Reported agent of the accident, 1985 to 1992, by year

ITEM	YEAR						
	1985-1987	1987-1988	1988-1989	1989-1990	1990-1991	1991-1992	TOTAL
Undifferentiated contaminated/uncontaminated needlestick	10	20	12	18	11	21	92
Safety pin	3	2	4	6	3	13	31
Other sharps injury	16	3	12	4	5	6	46
Blood splash	5	4	3	4	1	3	20
Scratching/biting	0	1	1	0	1	0	3
TOTAL	34	30	32	32	21	43	192

Table 2. Mode of injury, 1985 to 1992, by year

MODE	YEAR						TOTAL
	1985-87	1987-88	1988-89	1989-90	1990-91	1991-92	
Re-capping	N/S	N/S	0	N/S	0	0	0
Piercing blood bag	N/S	N/S	N/S	0	0	4	4
Emptying rubbish	1	2	1	0	1	6	11
Needlestick during procedure	18	N/S	11	26	0	25	80
Disposing of sharp	N/S	N/S	N/S	1	4	0	5
Assisting with struggling child	N/S	N/S	1	5	6	6	18
Not stated	15	28	19	0	10	2	74
TOTAL	34	30	32	32	21	43	192

Table 3. Staff category reporting injuries, 1985 to 1992, by year

CATEGORY	YEAR						TOTAL
	1985-87	1987-88	1988-89	1989-90	1990-91	1991-92	
Registered Nurse	15	12	20	25	8	28	108
Student Nurse	8	8	8	4	3	5	36
Enrolled Nurse	1	3	1	2	4	5	16
Pupil Nurse	0	0	0	1	0	0	1
Assistant Nurse	0	0	1	0	2	0	3
Wardsman	0	4	1	0	1	1	7
Domestic	0	0	0	0	1	4	5
Doctor	0	0	0	0	0	0	0
Physiotherapist	0	0	0	0	2	0	2
CSSD Staff	10	3	0	0	0	0	13
Clerical	0	0	1	0	0	0	1
TOTAL	34	30	32	32	21	43	192

Table 4. Work areas where incidents occurred, 1985 to 1992, by year

LOCATION	YEAR						TOTAL
	1985-87	1987-88	1988-89	1989-90	1990-91	1991-92	
OPD	0	0	0	0	0	0	0
X-Ray	0	0	0	0	0	0	0
Babies' Ward	0	3	6	1	3	3	16
ICU	4	5	6	6	1	4	26
Occupational Therapy	0	10	6	2	0	9	27
CSSD	10	3	1	0	2	1	17
Surgical	2	2	7	12	3	7	33
Oncology	0	3	1	2	3	3	12
Burns	0	0	0	0	0	0	0
Respiratory	3	1	3	3	2	4	16
General Medicine	10	2	1	1	4	4	22
Infectious Ward	4	0	1	4	1	5	15
Accident and Emergency	1	0	0	0	2	3	6
Not stated/other	0	1	0	1	0	0	2
TOTAL	34	30	32	32	21	43	192

The numbers of incidents from the Central Sterile Supply Department (CSSD) have decreased over the study period. CSSD staff work in a controlled and closely supervised environment and are requested to report all incidents. The figures from this area probably reflect the true rate of sharps injuries here compared with those reported from the uncontrolled environments such as the operating theatres, wards and Accident and Emergency departments.

The fluctuating number of reports from the theatres is under investigation as are the reasons why no medical staff have reported sharps incidents during the period under review.

It is recognised that there will be under reporting of these incidents. The reasons for this are multiple and have included 'lack of time', 'ignorance' and complacency. Hopefully, all staff are now aware of their responsibilities to themselves and ignorance cannot be used as a reason for underreporting here in 1992. The increased reporting in 1991 - 1992 probably reflects the increasing recognition of sharps accidents as hazardous incidents.

It is proposed to continue reviews such as this to help to ensure that a safe working environment and safe practices are maintained.

A CASE OF TRANSFUSION-TRANSMITTED MALARIA

(Gordon White, Director, Red Cross Blood Bank Victoria)

An 85 year old woman, who had been treated for myelodysplastic syndrome for the previous 18 months, required regular blood transfusions. Twenty-two days after transfusion of several units of red cell concentrate, she was admitted with a high fever for several days, unresponsive to antibiotics. Diagnosis of *Plasmodium falciparum* was made two days later and was then successfully treated. However, the patient died 25 days after admission from cerebral haemorrhage.

The presumptive donor was a resident of a malarial area, who had been in Australia for eight months. A history of malaria six years before had been obtained and antimalarials had been taken up to the time of arrival in Australia. On review, no parasites were found in the donor's blood on thick and thin films. None of the other donors had risk factors for malaria.

Donor Selection Guidelines of the National Blood Transfusion Committee of the Australian Red Cross Society indicate that fresh products should not be used within one year of a visit to a malarious area by a donor or two years after an episode of malaria or exposure to antimalarials. However, the plasma may be fractionated during this time.

This is the first case of transfusion-transmitted malaria in Australia reported since 1960[1]. As about one million blood donations are collected each year in Australia, the screening systems used by the Red Cross Blood Banks are highly effective. The comparative figures in the United States are 0.25 per million donations[2] and eight in 36 million donations in the UK[3]. In 1988 there were over a million visits by Australians to malarious areas[4] and 3% of Melbourne donors have a current malarial flag on their records.

The identification of blood only for fractionation depends on human systems, which failed on this occasion. Systems failure can be reduced by educating donors, by increasing the intensity of donor assessment and by devising secure internal systems. The security of the internal systems can be improved by electronic means, by selection of staff, by adequate training and by reducing distracting influences on staff. A small residual risk of malarial transmission remains from asymptomatic long term residents of malarious areas whose parasitaemia extends beyond the limits selected.

P. falciparum infections rarely exceed one year in subjects not previously exposed; in the great majority of cases involving transmission by blood, the donation took place within three years of the donor leaving the malarious area. However, some individuals who have lived in endemic areas for a long time may retain discrete asymptomatic parasitaemia for periods of up to 8 to 13 years, and perhaps longer. Infections with *P. vivax* are believed to resolve within 3 or 4 years after an acute attack, although transmission has been reported to occur after 6 to 8 years[5].

Mortality related to transfusion-transmitted malaria is high because patients are already sick when they are transfused, because they are often elderly and may have depressed immune systems, and because of delay in diagnosis.

Clinicians are advised always to balance the risk of transfusion against the risk of not transfusing. Clinicians should also inquire for a history of transfusion in patients who present with a pyrexia of unknown origin unresponsive to antibiotics.

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OVERSEAS BRIEFS

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

Cholera Update

Newly infected areas are the Inambane Province of Mozambique, the El Alto, Riberalta and Tupiza Departments of Bolivia, Cortes Department of Honduras, and Guarico, Merida and Sucre States of Venezuela.

Cases for July and August have been reported for Argentina, Bolivia, Brazil, El Salvador, Guatemala, Honduras, Iraq, Mozambique, Nepal, Nicaragua, Panama, Peru, Tuvalu and Venezuela.

Influenza Update

Local outbreaks of influenza have been reported from the Labasa area, Northern Division in Fiji from February to April, and in Suva from March to June. Influenza A (H_3N_2) was isolated from one case. The influenza activity coincided with outbreaks of dengue and dengue haemorrhagic fever.

Influenza A and B viruses have continued to be isolated in South Africa, although since mid-June, influenza A has been more common than influenza B. All isolates have been influenza A (H_3N_2).

Yellow Fever Update

Cases of yellow fever and resultant deaths have been reported recently from Brazil, and a further five Municipios within Mato Grosso State have been declared infected.

Any person over the age of one year who arrives in Australia within six days of being in Mato Grosso State, or in any other yellow fever infected area, must have a valid certificate of vaccination against yellow fever.

CDI NOTICES TO READERS

Correction - Annual Report of the National Notifiable Diseases Surveillance System, 1991

Three corrections are required for the *Annual Report of the National Notifiable Diseases Surveillance System, 1991*, published in *CDI* 1992;**16**:334-346.

At the top of page 337, the total number of notifications should be 44,155, as in Table 2.

On page 342, hepatitis B notifications are referred to as peaking in August. This should read 'July', as indicated in Figure 14.

On page 345, the second sentence on rubella should read 'Prior to 1991 rubella was not nationally notifiable and trends over time cannot be described'.

COMMUNICABLE DISEASES SURVEILLANCE

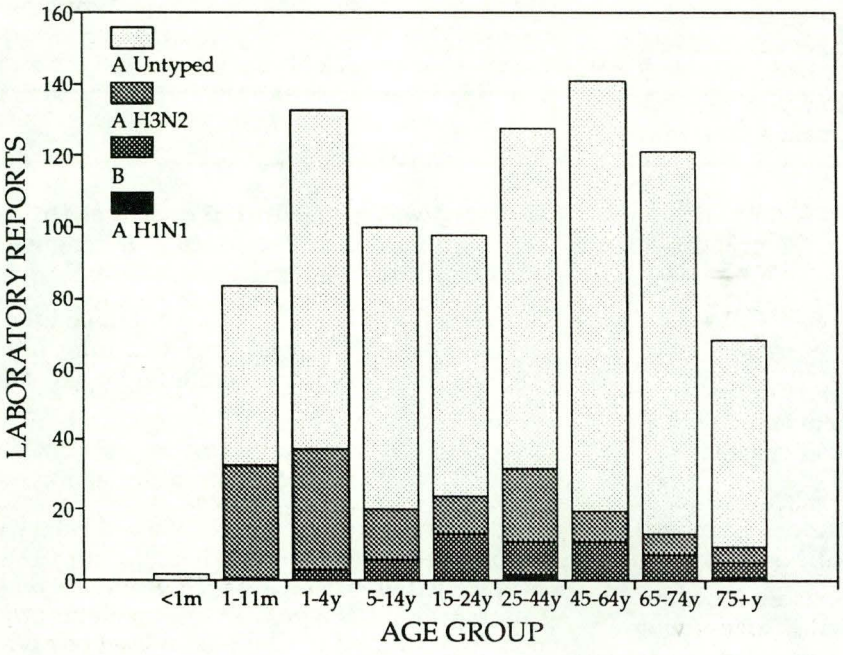
Laboratory Reporting Schemes

There were 1,887 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 7, 8 and 9) and 394 reports received of bacterial isolates from sterile sites for July (Table 3). This fortnight, we welcome the Queensland Medical Laboratory as a new contributor to the Virology and Serology Reporting Scheme.

- There were 148 reports of **influenza**. There were 132 reports of untyped **influenza A** (23 isolations, 8 antigen detections and 105 serological diagnoses), 8 of **influenza A H_3N_2** (8 isolations, 7 antigen detections), 7 of **influenza B** (1 antigen detection, 6 serological diagnoses) and 1 of **influenza A H_1N_1** (serology).

  Forty reports of untyped influenza A this fortnight were in persons over the age of 65 years, as was 1 report each for influenza A H_3N_2, influenza A H_1N_1 and influenza B. A total of 190 reports of influenza in persons over the age of 65 years has now been received for the year, and 69 of these have been in persons over the age of 75 years (Figure 1).

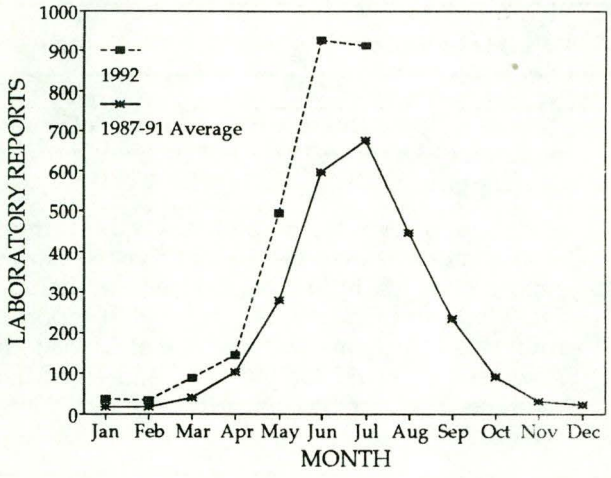
Figure 1. Influenza laboratory reports, 1992, by age group and influenza type



Most reports this fortnight were from South Australia and Western Australia. Meningitis was reported for a 1 year old male and other CNS symptoms were reported for a 2 month old female and a 2 year old male (all isolates from nasopharyngeal specimens).

- **Respiratory syncytial virus** was reported for a total of 315 patients this fortnight - 105 reported from Victorian laboratories, 82 from South Australia, and 87 from New South Wales. The totals are now 912 for July and 2679 for the year, more than has been the average for recent years (Figure 2). Patients this fortnight included a 1 day old female, and coinfections with parainfluenza type 3 and cytomegalovirus were reported.

Figure 2. Respiratory syncytial virus reports, 1992 and 1987-91 average, by month of specimen collection



- Seventy-one reports of ***Mycoplasma pneumoniae*** infection were received this fortnight, bringing the total for July to 102 and for the year to 459. This is more than for any year since 1989, and similar to 1987, which was when the last 2-year peak of activity of this organism began in Australia. Stevens-Johnson Syndrome was reported for a 10 year old male patient, and an altered conscious state was reported for a 5 year old female.

- **Ross River virus** infection was reported for 38 patients this period. Specimen collection dates for most were in June or July, and locations were mainly Queensland (Barcaldine, Bundaberg, Brisbane, Cairns, Gladstone, Ipswich, Mackay, Nambour, Redcliff, Townsville and Toowoomba) and Western Australia (Carnarvon, Esperance, Geraldton, Subiaco), and there were 2 from New South Wales and 1 from Victoria.

- A further 22 reports of **Barmah Forest virus** infection were received this fortnight, bringing the total for the year to 176. Most of the year's reports have been from Queensland laboratories (specimen collection dates mainly in March, April and May), and Western Australia (most from the Northern Territory, with specimen collection dates in February and March).

- There were a further 74 reports of **dengue 2** and 7 reports of **dengue untyped** this fortnight, most from the Townsville area, and with specimen collection dates in May and June. There have now been 55 reports of untyped dengue and 147 reports of dengue 2 received for this year.

- **Rubella** was reported for 7 patients this fortnight. Three were females of reproductive age (28 years, 30 years and 44 years).

- A single case of **mumps** was reported. The patient was a 15 year old male and meningitis was the reported symptom.

- Three reports of **echovirus type 6** infection were received. All were reported from laboratories in

Western Australia and were of meningitis and/or CSF isolates.

- **Echovirus type 9** was reported for 13 patients, 7 from Western Australian laboratories and 6 from New South Wales. Meningitis and/or CSF isolates were reported for 7 of the patients, and one report was of the isolation of the virus from post mortem upper digestive tract tissue of a male infant who had suffered SIDS.
- **Hepatitis C** was reported for 100 patients. A history of injecting drug was reported for 14 patients, and 1 patient was a 78 year old male haemophiliac.
- **Herpes simplex virus** reports this fortnight included a disseminated infection of type 1 in a 6 year old male.
- There were 66 reports of **cytomegalovirus** infection reported. Included were 4 HIV positive patients, 3 with a history of transplant (1 liver, 1 renal, 1 not stated), 1 asplenic patient, and 2 who were pregnant (1 25 weeks, 1 not stated). Four congenital infections were reported, including one detected by isolation of the virus from urine of a newborn infant, and 1 for which congenital deafness was reported.
- **Q fever** was reported for 27 patients, 26 males and 1 female. The ages ranged from 3 to 61 years, and locations recorded were from many areas of New South Wales and Queensland, and from an abattoir in Mildura where many workers were infected. Five of the other cases were reported as being meat workers, graziers or stationhands, or as having animal exposure as a risk factor.

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network collected data from 8,173 patient encounters in Week 32 and 6,565 patient encounters in Week 33 (Table 1). The rate of reporting of influenza has declined this fortnight from between 14 and 20 reports per 1,000 encounters registered for the previous 8 weeks. Gastroenteritis continues to be reported at a rate of between 7 and 12 reports per 1,000 encounters, as for the each week since the end of May.

Cholera Case in Queensland

The case of cholera which was reported in last fortnight's notifications (page 350) was imported into Queensland in early July. The patient was a 44 year old male who became ill 2 days after returning from Nepal. He suffered diarrhoea but his illness was not considered to be particularly serious. *Vibrio cholerae* O1 Ogawa was identified as the causative organism.

Viral Meningitis Outbreak in Darwin

In 1990 and 1991, two and four patients respectively were diagnosed as having viral meningitis at Royal Darwin Hospital. Between 28 March and 30 May this year, 12 patients were admitted to the Royal Darwin Hospital with viral meningitis. All patients had clinical features consistent with this diagnosis and CSF leukocytosis. The CSF leukocyte count ranged from 10 to 495 cells mm^{-3}, some with a predominance of polymorphs. The age range was 1 month to 35 years with a mean of 17 years.

Our culture results reveal that this outbreak is likely to be due to echovirus type 9. In three patients echovirus type 9 was cultured in CSF plus at least one other site (throat swab or faeces). In one other patient echovirus type 9 grew from faeces but not CSF. A fifth patient was culture positive for an 'untypable' enterovirus in specimens from throat, urine and faeces. In the remaining six patients, cultures were negative or not done. Our only other positive enterovirus result during this time was in a stool culture in an adult with encephalitis. This specimen grew an echovirus type 21 while his CSF was culture negative.

Unlike the current outbreak in Perth (*CDI* 1992;**16**:325), our epidemic was brief and we have had no cases in the 8 weeks since 30 May. Echovirus type 9 is the only virus we have been able to identify. All our patients were apparently epidemiologically unrelated and no connection with Western Australia or other States was found. The high CSF leukocyte count with polymorph predominance in some cases has also been found in Western Australia, where counts up to 6,500 cells mm^{-3} have been seen.

(D Fisher, B Currie, A Ruben, D Smith, Royal Darwin Hospital and Disease Control Centre, Darwin, Menzies

Table 1. Australian Sentinel Practice Research Network, Weeks 32 and 33, 1992

Condition	Week 32, to 9 August 1992		Week 33, to 16 August 1992	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	95	11.6	83	12.6
Measles	2	0.2	0	0
Mumps	1	0.1	0	0
Rubella	2	0.2	2	0.3
Pertussis	0	0	0	0
Genital herpes	3	0.4	4	0.6
Gastroenteritis	83	10.2	57	8.7

School of Health Research and WA State Health Laboratory Services)

WHO Influenza Reference Laboratory Typing Results

The WHO Influenza Reference Laboratory had received 234 influenza isolates from *CDI* contributing laboratories by 1 August (Table 2). All but 2 of these have been influenza A, and 147 have been typed as influenza A H_3N_2. Forty-three of these have been typed as like A/Shanghai/6/90, 18 as A/Washington/15/91, 11 as A/Beijing/352/89, 12 as intermediate between A/Shanghai/6/90 and A/Beijing/352/89 and 3 as A/Shanghai/24/90. One new variant has been identified: A/South Australia/66/92. There have been 4 isolates of influenza A H_1N_1, 2 typed as like A/Texas/36/91 and 1 as A/Victoria/36/88.

(Alan Hampson, WHO Influenza Reference Centre, CSL, Melbourne)

Sterile Sites Surveillance (LabDOSS)

Data for July have been provided by ten laboratories, and Concord Hospital, Gosford Hospital, Northern Tasmania Pathology Service, Central Queensland Pathology Laboratory and Royal Hobart Hospital have also provided data for June.

A total of 394 reports have been included for this report (Royal Prince Alfred 53, Royal Hobart Hospital 14, Liverpool Hospital 90, Concord Hospital 91, Royal North Shore Hospital 33, Gosford Hospital 56, Northern Tasmania Pathology Service 25, Central Queensland Pathology Laboratory 10 Nambour Hospital 9 and Toowoomba Hospital 13).

Sixty four isolates of *Staphylococcus aureus* were reported during this period. Of these, thirty isolates were further identified as methicillin resistant *Staphylococcus aureus* (MRSA) and were reported by six laboratories (Liverpool Hospital 3, Royal Prince Alfred Hospital 17,

Table 2. WHO Influenza Reference Laboratory typing results, 1992, by State or Territory

STATE OR TERRITORY	TOTAL	B	A			REFERENCE STRAINS
			TOTAL	H_3	H_1	
ACT	6	0	6	4	0	
NSW	55	1	54	47	1	A/Shanghai/6/90 (2) A/Shanghai/24/90 (1)
NT	15	0	15	11	0	A/Shanghai/6/90 (3) A/Washington/15/91 (1) A/Beij-Shanghai/6/90[1] (1)
SA	105	1	104	63	0	A/Shanghai/6/90 (30) A/Washington/15/91 (12) A/Beij-Shanghai/6/90[1] (9) A/Beijing/352/89 (6) A/Shanghai/24/90 (1) A/South Australia/66/92 (2)
Tas	3	0	3	3	0	A/Beij-Shanghai/6/90[1] (2) A/Washington/15/91 (1)
Vic	20	0	20	13	3	A/Texas/36/91 (2) A/Victoria/36/88 (1) A/Shanghai/6/90 (4) A/Washington/15/91 (3) A/Beijing/352/89 (4)
WA	30	0	30	6	0	A/Shanghai/6/90 (4) A/Shanghai/24/90 (1) A/Washington/15/91 (1) A/Beijing/352/89 (1)
TOTAL	234	2	232	147	4	A/Texas/36/91 (2) A/Victoria/36/88 (1) A/Shanghai/6/90 (43) A/Washington/15/91 (18) A/Beij-Shanghai/6/90[1] (12) A/Beijing/352/89 (11) A/Shanghai/24/90 (3) A/South Australia/66/92 (2)

1. Intermediate between A/Beijing/352/89 and A/Shanghai/6/90.

Gosford Hospital 3, Toowoomba Hospital 2, Northern Tasmania Pathology Service 4 and Royal Hobart Hospital 1). These isolates were obtained from patients aged between 40 and 89.

Concord Hospital reported a case of enteric fever in a 12 year old male. *Salmonella paratyphi* was isolated from a blood sample of this patient who probably acquired the infection in Sri Lanka.

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

Gram positive: 2 *Streptococcus* Group A, 4 *Streptococcus* Group B, 1 *Streptococcus* Group G, 1 *Streptococcus milleri*, 2 *Streptococcus viridans*, 1 *Streptococcus mitis*, 1 *Listeria monocytogenes*, 1 *Corynebacterium* Group JK, 1 *Corynebacterium xerosis*, 1 *Corynebacterium* species.

Gram negative: 2 *Campylobacter jejuni*, 1 *Campylobacter* species, 3 *Klebsiella* species, 1 *Enterobacter aerogenes*, 1 *Serratia marcescens*, 1 *Proteus* species, 4 *Xanthomonas maltophilia*, 4 *Acinetobacter* species, 2 *Citrobacter freundii*, 1 *Citrobacter diversus*, 1 *Citrobacter* species, 1 *Aeromonas hydrophila*, 1 *Aeromonas* species, 1 *Flavobacterium* species.

Anaerobes: 1 *Bacteroides* species, 4 *Bacteroides fragilis*, 1 *Bacteroides loescheii*, 1 *Peptostreptococcus* species, 2 *Clostridium* species, 1 *Clostridium perfrigens*, 1 *Fusobacterium nucleatum*, 1 *Fusobacterium* species.

Fungi: 2 *Candida* species, 1 *Debryomyeces hansenii*.

CSF Isolates and Meningitis Reports

There were 20 reports of meningitis during this period. *Haemophilus influenzae* type b was isolated from 5 cases. All were under the age of 4 years and one isolate was reported as methicillin resistant. There was one isolate of *Haemophilus parainfluenzae* reported, from a 23 year old male following surgery. *Neisseria meningitidis* was isolated from 5 cases. Three cases were under the age of 1 year and one isolate was reported in a 15 year old female. One *Staphylococcus aureus* was reported in a 67 year old male following lower respiratory tract infection. *Streptococcus pneumoniae* was reported in 2 females under the age of 1 year. *Streptococcus sanguis* was reported in a 77 year old female following surgery. *Corynebacterium* species was isolated from 2 females, aged 25 and 28, following shunt surgery. *Cryptococcus neoformans* was isolated from 2 immunocompromised males. *Salmonella* species was reported from a 29 year old female.

Isolates from Sites other than Blood or CSF

Peritoneal dialysate: 9 *Staphylococcus aureus* isolates were reported during this period; chronic ambulatory peritoneal dialysis was the risk factor for 7 of these. *Staphylococcus epidermidis* was reported from a 76 year old with chronic liver disease. *Enterobacter faecalis* was reported from a male and a female, both aged 74 years. Other isolates were *Escherichia coli* in a 70 year old male, *Klebsiella pneumonia* in a 74 year old female, *Acinetobacter* species in a 42 year old female with peritonitis, *Citrobacter freundii* in a 70 year old male with chronic renal failure, 1 *Streptococcus sanguis*, 1 *Streptococcus* Group B, 1 *Streptococcus* species, 1 *Pseudomonas aeruginosa*.

Table 3. LabDOSS reports of blood isolates for July 1992

Organism	Total[1]	Clinical Information						Risk Factors					
		Lower respiratory	Endocarditis	Gastrointestinal	Urinary Tract	Bone/Joint	Skin	Surgery	Immunosuppressed	IV line	Perinatal	Neonatal	Nosocomial
Staphylococcus aureus	64	4	7	1	2	6	8	3	10	16		1	
Staphylococcus epidermidis	22			1	2		1	2	3	10		1	
Straphlococcus coagulase negative	8								1	1			
Streptococcus pneumoniae	33	23							3				
Streptococcus sanguis	7		2			1			1				
Streptococcus species	7			3			1		4				
Enterococcus faecalis	9		1	1	4				3	1			
Escherichia coli	60			8	21	1		5	11	1			
Haemophilus influenzae type b	9	1					1						
Klebsiella oxytoca	6				1			1		1		1	1
Klebsiella pneumoniae	5			1	1					2		1	1
Proteus mirabilis	9				3		2		3	2			
Pseudomonas aeruginosa	13	2		1	2			1	7		1		
Candida albicans	6								1	4		1	

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

Joint fluid: 5 *Staphylococcus aureus* reported from males whose ages ranged from 28 to 64 years. There were 2 reports of *Staphylococcus epidermidis*, one from a 70 year old male with an infected prosthetic knee joint, and the other from a 78 year old male with osteoarthritis. *Streptococcus* Group A was reported from a 23 year old male with pre-patellar bursitis, *Peptostreptococcus* species was reported from 84 year old female, *Pseudomonas* species reported from a 69 year old male, and *Yersinia enterocolitica* from a 27 year old female with chronic ambulatory peritoneal dialysis as a risk factor.

Pleural fluid: 5 *Staphylococcus aureus* reported from males whose ages ranged from 56 to 87 years. Clinical diagnosis of these cases included lung abscess, empyema, perforated oesophagus and mediastinitis. *Staphylococcus epidermidis* was reported from a 66 year old male with aspiration pneumonia, *Streptococcus sanguis* from a 21 year old male with lower respiratory tract infection, *Streptococcus milleri* from a 39 year old male with empyema, 1 *Pseudomonas aeruginosa*, 1 *Klebsiella pneumoniae*, 2 *Enterobacter aerogenes* (one from a 71 year old male with a perforated oesophagus), and 1 *Candida albicans* from a 71 year old male with empyema.

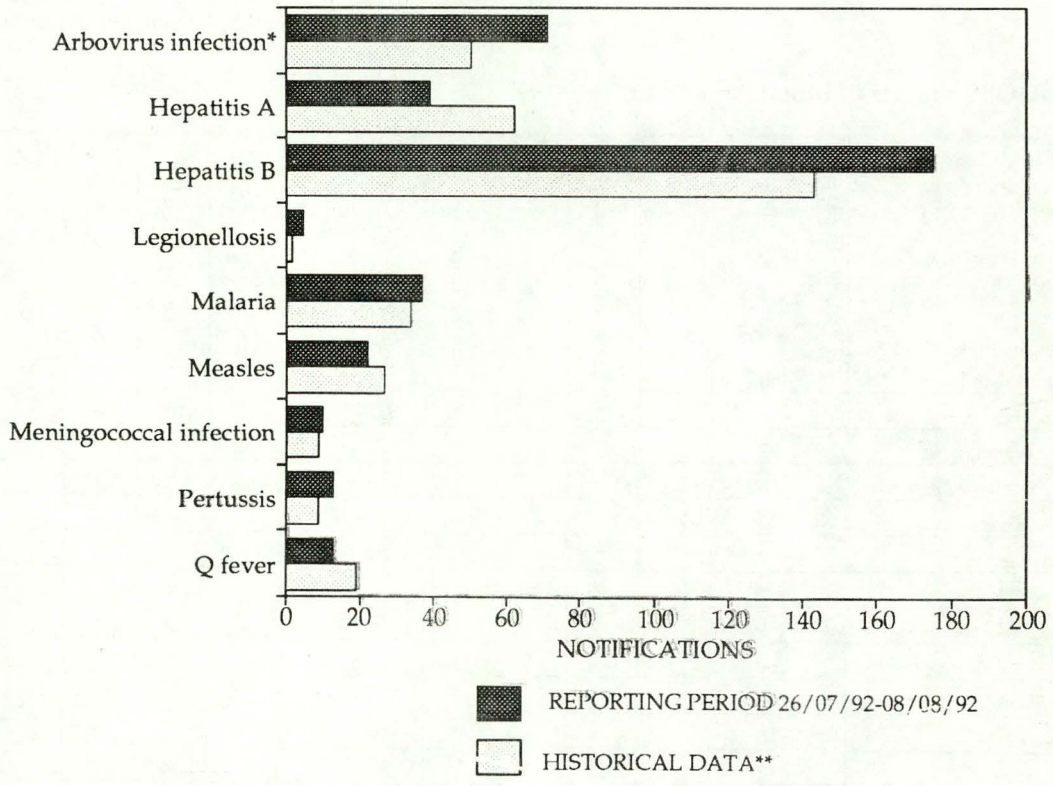
Other: 1 *Candida albicans* and 1 *Candida* species from renal cysts of 2 male patients.

National Notifiable Diseases Reports, 26 July to 8 August 1992

For the period 26 July to 8 August 1992, 1445 reports were received. All reports were in a form suitable for analysis.

- This period there were 39 notifications of **Ross River virus infection**. There were 19 males and 11 females with ages ranging from the 10-14 to the 80-84 year age groups. Notifications were received from 27 postcode areas (2 unknown postcode).
- There were 27 reports this period of **dengue**, an increase from the 9 received last period. Of these, 26 were from Townsville or surrounding areas and all had onset dates in June.
- There were 2 reports of **brucellosis**, in a male in the 50-54 years age group and in a female in the 40-44 years age group both in rural Queensland.
- There were 93 notifications of **gonococcal infection**. Of these, 1 was in the 0-4 years age group, 1 in the 5-9 years age group, and 2 in the 10-14 years age group.
- There were 11 reports of ***Haemophilus influenzae*** type b received this period, 6 males and 5 females. Three were aged less than 1 year and 9 were aged

Figure 3. Selected National Notifiable Diseases 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: tge corresponding periods of the last 2 years and the periods immediately preceding and following those.

less than 5 years. Two cases occurred within 3 days in the same postcode area.

- A single case of **hydatid disease** was notified in a a female in the 20-24 years age group from rural Queensland.
- Five cases of **legionellosis** were notified, 3 males and 2 female. Four were between the ages of 40 and 69, and 1 was of unknown age. There was no apparent clustering of cases.
- There were 3 cases of **leptospirosis** notified, all in males between the ages of 15 and 59 years.
- A single case of **listeriosis** was notified, in a female in the 55-59 years age group.
- There were 22 cases of **measles** notified, 12 males and 10 females. Of these, 20 were over the age of 12 months. There was no apparent clustering of cases.
- There were 10 notifications received of **meningococcal disease**. Four were in males and 6 in females, and 4 were aged less than 5 years.
- There were 13 notifications received of **pertussis**. Of these cases, 6 males and 7 were females. Two were aged less than 1 year and 3 aged 5 years or less.
- Thirteen notifications were received of **Q fever**, 12 were in males and 1 was in a female. Ages were between 15 and 99 years.
- There were 22 notifications received of **rubella**. All cases were aged above 1 year (one case was of unknown age), and 14 were males and 8 were females. Five of the females were aged between 15 and 44 years.
- Two cases of **tetanus** were notified, one in a male aged 1 year and one in a female of unknown age.
- There were 3 cases of **typhoid** notified, all in males. Ages of the cases were between 2 and 49 years.

Table 4. Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 26 July to 8 August 1992

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1] This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
Diphtheria	0	0	0	0	0	0	0	0	0	0	11	5
Measles	1	2	0	6	4	0	9	0	22	56	516	739
Mumps	0	0	NN	NN	NN	NN	0	NN	0	NN	14	NN
Pertussis	0	2	0	8	1	0	2	0	13	9	250	216
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella[2]	0	0	0	8	1	0	13	0	22	16	291	259
Tetanus	0	0	0	NN	0	2	0	0	2	0	9	5

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 5. Rarely Notified Diseases[1] for the reporting period 26 July to 8 August 1992

DISEASES	Total this period	Reporting States or Territories	Year to date 1992
Botulism			0
Brucellosis	2	Qld	12
Cholera			3
Chancroid			3
Hydatid infection	1	Qld	23
Leprosy			8
Lymphogranuloma venereum			1
Plague			0
Rabies			0
Yellow fever			0
Other viral haemorrhagic fevers			0

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

Table 6. Other Notifiable Diseases[1], for the reporting period 26 July to 8 August 1992

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
Arbovirus infection (NEC)[3]	0	0	NN	5	0	0	0	0	5	1	243	167
Ross River virus infection	0	-	2	28	0	NN	0	9	39	42	4842	3264
Dengue	0	-	0	27	-	NN	0	NN	27	0	188	40
Campylobacteriosis[4]	0	-	17	53	86	16	60	41	273	371	4737	4800
Chlamydial infection (NEC)	2	NN	23	53	0	9	34	0	121	210	3523	2481
Donovanosis	0	NN	3	0	NN	NN	0	0	3	1	50	37
Gonococcal infection[5]	1	9	35	24	0	0	12	12	93	122	1758	1481
Haemophilus influenzae type b[6]	0	1	NN	2	3	0	5	NN	11	26	282	309
Hepatitis A	1	16	4	8	2	0	8	0	39	125	1194	972
Hepatitis B	2	29	7	54	0	3	65	15	175	172	3721	2241
Hepatitis C	3	42	4	122	NN	7	66	NN	244	137	4849	1972
Hepatitis (NEC)	0	0	0	1	0	0	0	NN	1	1	41	226
HIV infection[7]	0	8	0	0	0	1	0	1	11	2	171	20
Legionellosis	0	0	0	1	2	0	1	1	5	5	121	72
Leptospirosis	0	0	0	2	0	0	1	0	3	2	59	86
Listeriosis	0	0	NN	0	NN	0	1	0	1	2	23	23
Malaria	1	1	2	16	1	0	12	4	37	36	466	516
Meningococcal infection	0	2	2	2	0	0	2	2	10	14	146	160
Ornithosis	0	NN	0	0	1	0	1	0	2	9	58	68
Q fever	0	3	0	9	1	0	0	0	13	27	278	420
Salmonellosis (NEC)	0	19	8	10	16	5	34	31	123	179	3229	3819
Shigellosis[4]	0	-	7	0	1	1	5	10	24	27	376	584
Syphilis	0	18	23	25	0	0	3	6	75	61	1517	1164
Tuberculosis	1	11	3	5	4	0	2	0	26	34	438	294
Typhoid[8]	0	0	0	0	2	0	0	1	3	7	45	51
Yersiniosis[4]	0	0	1	3	9	1	3	0	17	16	405	367

1. For rarely notified diseases, see Table 5.
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. NSW, 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. More complete data on new diagnoses of HIV infections are presented in the monthly *Australian HIV Surveillance Report*.
8. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

\- Elsewhere Classified.

Table 7. Laboratory reports by State or Territory of reporting laboratory for the reporting period 29 July to 11 August 1992, historical data[1], and total reports for the year

	STATE OR TERRITORY OF REPORTING LABORATORY ACT	NSW	Qld	SA	Tas	Vic	WA	Total this fortnight	Historical data[1]	Total reported this year
MEASLES, MUMPS, RUBELLA										
Measles virus			6			3		9	11.2	97
Mumps virus		1						1	1.2	29
Rubella virus			2			2	3	7	5.2	112
HEPATITIS VIRUSES										
Hepatitis A virus		13	3	1		1		18	12.3	202
Hepatitis B virus		29	24	2	1	7	17	80	99.3	1,359
Hepatitis C virus	6		19	41	6		28	100	54.3	1,325
Hepatitis D virus							1	1	1.0	27
ARBOVIRUSES										
Ross River virus			26				12	38	19.5	1,129
Barmah Forest virus			19				3	22	2.0	182
Dengue type 2			74					74	.2	147

Table 7. Laboratory reports by State or Territory of reporting laboratory for the reporting period 29 July to 11 August 1992, historical data[1], and total reports for the year, continued

	STATE OR TERRITORY OF REPORTING LABORATORY							Total this fortnight	Historical data[1]	Total reported this year
	ACT	NSW	Qld	SA	Tas	Vic	WA			
Dengue not typed			7					7	.5	58
Flavivirus (unspecified)			5			2		7	2.3	22
ADENOVIRUSES										
Adenovirus type 1		3				3		6	4.3	58
Adenovirus type 2		4						4	5.5	61
Adenovirus type 3		2						2	4.8	23
Adenovirus type 4		2						2	1.7	10
Adenovirus type 5						1		1	1.3	15
Adenovirus type 8						1		1	.8	13
Adenovirus not typed/pending		10		13		9	5	37	43.7	625
HERPES VIRUSES										
Herpes simplex virus type 1		22	37	17	2	51	20	149	132.7	2,204
Herpes simplex virus type 2		49	62	17	2	30	44	204	176.7	2,702
Herpes simplex not typed/pending	5	33	2			2		42	40.7	560
Cytomegalovirus	1	22	24		2	16	1	66	76.0	1,181
Varicella-zoster virus	1	5	11			5	4	26	16.5	400
Epstein-Barr virus	1	9	17			9	13	49	44.5	956
OTHER DNA VIRUSES										
Papovavirus group		1						1	.2	13
Parvovirus					1	7		8	.7	91
PICORNA VIRUS FAMILY										
Coxsackievirus A16		1					1	2	1.5	10
Coxsackievirus B1						1		1	.0	12
Coxsackievirus B3		2						2	.8	7
Coxsackievirus B5				1				1	1.2	27
Echovirus type 6							3	3	1.0	77
Echovirus type 9		6					7	13	.2	145
Echovirus type 11						1		1	1.0	7
Echovirus type 22		1						1	1.0	6
Echovirus not typed/pending		1						1	.5	1
Poliovirus type 1 (uncharacterised)		3		2				5	3.0	39
Poliovirus type 2 (uncharacterised)		4		3				7	3.5	35
Poliovirus type 3 (uncharacterised)		1						1	2.3	19
Poliovirus not typed/pending							1	1	4.0	43
Rhinovirus (all types)		5				13	1	19	29.2	405
Enterovirus not typed/pending		19			1	8	4	32	27.0	594
ORTHO/PARAMYXOVIRUSES										
Influenza A virus	3	9	31	42	3	6	38	132	3.5	729
Influenza A virus H_1N_1				1				1	.0	4
Influenza A virus H_3N_2	1	3				4		8	.5	143
Influenza B virus		1		4			2	7	13.7	77
Parainfluenza virus type 1		6		3				9	6.8	263
Parainfluenza virus type 2						1		1	4.2	54
Parainfluenza virus type 3	1	5		2		7		15	14.5	279
Respiratory syncytial virus	7	87	7	82	25	105	2	315	308.2	2,752
OTHER RNA VIRUSES										
HIV-1							2	2	1.3	19
Rotavirus		61		4	2	17	1	85	129.2	754

Table 7. Laboratory reports by State or Territory of reporting laboratory for the reporting period 29 July to 11 August 1992, historical data[1], and total reports for the year, continued

	STATE OR TERRITORY OF REPORTING LABORATORY							Total this fortnight	Historical data[1]	Total reported this year
	ACT	NSW	Qld	SA	Tas	Vic	WA			
Astrovirus		1						1	2.0	6
Coronavirus		2				2		4	1.2	25
Small virus (like) particle		3						3	1.5	41
OTHER										
Chlamydia trachomatis not typed	1	8	68	7		7	22	113	102.7	1,634
Chlamydia spp typing pending		1		3				4	.0	10
Mycoplasma pneumoniae		23	27	9		9	3	71	11.7	533
Coxiella burnetti (Q fever)		7	18			2		27	9.3	162
Streptococcus group A			6					6	.0	6
Streptococcus group B			1					1	.0	1
Brucella species			3					3	.0	5
Bordetella species			1					1	.0	1
Cryptococcus species			4					4	.0	4
Leptospira pomona			1					1	.0	3
Leptospira hardjo			1					1	.0	4
Leptospira species			2					2	.0	4
Treponema pallidum			14					14	.0	35
Entamoeba histolytica			1					1	.0	1
Toxoplasma gondii			1					1	.0	6
Echinococcus granulosus			2					2	.0	2
TOTAL	27	465	526	254	45	332	238	1,887	1,445.3	22,585

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 8. Laboratory reports by clinical information for the reporting period 29 July to 11 August 1992

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					1			5	1			2	9
Mumps virus		1											1
Rubella virus					1			1		1		4	7
HEPATITIS VIRUSES													
Hepatitis A virus							13	1				4	18
Hepatitis B virus							17					63	80
Hepatitis C virus							37					63	100
Hepatitis D virus												1	1
ARBOVIRUSES													
Ross River virus							1	1		6		30	38
Barmah Forest virus						1	1	1		4		15	22
Dengue type 2					1	2		8		8		55	74
Dengue not typed												7	7
Flavivirus (unspecified)												7	7

Table 8. Laboratory reports by clinical information for the reporting period 29 July to 11 August 1992, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ADENOVIRUSES													
Adenovirus type 1					3	3							6
Adenovirus type 2						3		1					4
Adenovirus type 3					1							1	2
Adenovirus type 4					1				1				2
Adenovirus type 5					1								1
Adenovirus type 8									1				1
Adenovirus not typed/pending			1		13	11			1			11	37
HERPES VIRUSES													
Herpes simplex virus type 1					7			78	4		56	4	149
Herpes simplex virus type 2								66	1		131	6	204
Herpes simplex not typed/pending					1			25			7	9	42
Cytomegalovirus				4	25		2		1			34	66
Varicella-zoster virus	1							19				6	26
Epstein-Barr virus					6		4	1				38	49
OTHER DNA VIRUSES													
Papovavirus group						1							1
Parvovirus								4		1		3	8
PICORNA VIRUS FAMILY													
Coxsackievirus A16								1				1	2
Coxsackievirus B1												1	1
Coxsackievirus B3												2	2
Coxsackievirus B5												1	1
Echovirus type 6		2										1	3
Echovirus type 9		6			2	1						4	13
Echovirus type 11		1											1
Echovirus type 22												1	1
Echovirus not typed/pending					1								1
Poliovirus type 1 (uncharacterised)					2							3	5
Poliovirus type 2 (uncharacterised)						2						5	7
Poliovirus type 3 (uncharacterised)												1	1
Poliovirus not typed/pending					1								1
Rhinovirus (all types)					16			1	1			1	19
Enterovirus not typed/pending					9	13		1		1		8	32
ORTHO/PARAMYXOVIRUSES													
Influenza A virus		1	2		84	2				2		41	132
Influenza A virus H_1N_1					1								1
Influenza A virus H_3N_2					8								8
Influenza B virus					2			1				4	7
Parainfluenza virus type 1					8							1	9
Parainfluenza virus type 2					1								1
Parainfluenza virus type 3					15								15
Respiratory syncytial virus					297	1						17	315
OTHER RNA VIRUSES													
HIV-1												2	2

Table 8. Laboratory reports by clinical information for the reporting period 29 July to 11 August 1992, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
Rotavirus						72						13	85
Astrovirus						1							1
Coronavirus					2	1						1	4
Small virus (like) particle						3							3
OTHER													
Chlamydia trachomatis not typed									1		84	28	113
Chlamydia spp typing pending											2	2	4
Mycoplasma pneumoniae			1		43			1		1		25	71
Coxiella burnetti (Q fever)							2			1		24	27
Streptococcus group A												6	6
Streptococcus group B												1	1
Brucella species												3	3
Bordetella species												1	1
Cryptococcus species		2										2	4
Leptospira pomona												1	1
Leptospira hardjo							1						1
Leptospira species												2	2
Treponema pallidum					1						3	10	14
Entamoeba histolytica												1	1
Toxoplasma gondii												1	1
Echinococcus granulosus												2	2
TOTAL	1	14	4	4	553	117	78	216	12	25	283	580	1887

Table 9. Laboratory reports by contributing laboratories for the reporting period 29 July to 11 August 1992

STATE	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	27
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	245
	Prince Henry/Prince of Wales Hospitals, Sydney	150
	Royal Alexandra Hospital for Children, Camperdown	70
Queensland	Queensland Medical Laboratory, West End	262
	State Health Laboratory, Brisbane	264
South Australia	Institute of Medical & Veterinary Science, Adelaide	254
Tasmania	Royal Hobart Hospital, Hobart	45
Victoria	Fairfield Hospital, Melbourne	224
	Microbiological Diagnostic Unit, University of Melbourne	7
	Royal Children's Hospital, Melbourne	101
Western Australia	State Health Laboratory Services, Perth	238
TOTAL		1887