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COMMUNICABLE DISEASES NETWORK-AUSTRALIA
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IMMUNISATION UPTAKE AT SCHOOL ENTRY: REGIONAL WESTERN AUSTRALIA CONTINUES TO DO WELL

Heath Kelly, Public Health Physician, Southern Health Authority, Health Department of Western Australia

Introduction

Immunisation status continues to be assessed in Australia by means of surveys[1-3]. Some surveys assess the timelines of the immunisation schedule[1,2] while others assess only coverage at a certain time, usually at school entry[3]. A school entry survey of the Great Southern Region in Western Australia confirmed that regional immunisation in the south of the State was satisfactory by school entry, except for the scheduled five year combined diphtheria-tetanus (CDT) and oral polio vaccine (OPV) boosters. Aboriginal and non-Aboriginal children were equally well covered.

Method

For each school in the Great Southern Region, school health nurses checked the immunisation status of all children in grade one in 1994 using immunisation records, school records or parental reports. Efforts were made to follow up every child in grade one in the region by phone, letter or direct contact at school. The results were summarised and entered into Epi Info[4] for analysis.

Results

The Great Southern Region has a population of about 67,000 and extends from 100 km south of Perth to the south coast of Western Australia. In 1994 there were 1220 children enrolled in grade one in the region, with approximately equal numbers of boys and girls. Of all children, 6.6% were described as being of Aboriginal descent. This contrasted with figures from the Australian Bureau of Statistics which estimated that 3.2% of the population of the region was Aboriginal[5].

By the time of school entry 95.3% of all children had completed their first three scheduled immunisations, diphtheria-tetanus-pertussis (DTP) and oral polio vaccine (OPV). There was no apparent difference between boys and girls or Aboriginal and non-Aboriginal children (Table). Coverage at 12 months for measles-mumps-rubella (MMR) was equally good at 95.2%, as was the 18 month DTP booster (94.8%). Coverage at five years for OPV and combined diphtheria-tetanus (CDT) was inadequate (80%), although this may represent problems with documentation as well as failure to vaccinate.

Haemophilus influenzae type b (Hib) uptake was also checked for this group of children who would have been immunised as part of a catch up program and not as part of the childhood schedule. More than half of the Aboriginal girls had received a Hib immunisation, while in the other groups of children only about a quarter had been immunised (Table).

Follow up was completed for 98.5% of all children. Immunisation cards were the main source of information (58%) with school records (26%) and parental reports (16%) providing the remainder of the data.

Discussion

There is continued discussion in Australia on the merits of a national immunisation database, as is used in the United Kingdom[6]. However, without capitation, and with the number of different immunisation providers in Australia, including general practitioners, community health nurses and doctors, doctors from the Royal Flying Doctor Service, Aboriginal Medical Services and local governments, a national immunisation database remains an expensive option which will be difficult to organise. The other alternatives for Australia are a compulsory review of the child's immunisation record at school entry, as has been adopted in Victoria[7], systematic notification of vaccine preventable diseases and occasional surveys of immunisation coverage. However, these surveys must be thorough since the method of data collection will have a significant impact on the results. Australian Bureau of Statistics surveys, for instance, consistently record lower immunisation

Table. Immunisation uptake at school entry in the Great Southern Region of Western Australia 1994

Immunisations completed	Girls		Boys	
	Aboriginal	Non-Aboriginal	Aboriginal	Non-Aboriginal
2 month DTP + OPV	33 (94.3%)	546 (96.3%)	42 (91.3%)	550 (96.2%)
4 month DTP + OPV	33 (94.3%)	544 (95.9%)	42 (91.3%)	549 (96.0%)
6 month DTP + OPV	32 (91.4%)	541 (95.4%)	42 (91.3%)	548 (95.8%)
12 month MMR	32 (91.4%)	541 (95.4%)	40 (87.0%)	549 (96.0%)
18 month DTP	32 (91.4%)	540 (95.2%)	39 (84.8%)	546 (95.5%)
5 years CDT + OPV	27 (77.1%)	439 (77.4%)	35 (76.1%)	476 (83.2%)
Hib	20 (57.1%)	127 (22.3%)	10 (21.7%)	107 (18.7%)
Total enrolment	35	567	46	572

coverage than school or community based surveys[8]. Probably the best current option for Australia is to continue to monitor vaccine preventable diseases, including outbreaks[9,10] and to perform regular surveys either at school entry or earlier. However, in the absence of a national immunisation database, it is important for both evaluations, that is, surveys of immunisation status and notification of vaccine preventable diseases, to be done on a continuing, regular and validated basis. If community health staff can be mobilised throughout Australia, it would seem possible that immunisation coverage, at least at school entry, could be assessed nationwide, at no additional cost to the health budget.

Acknowledgments

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References

1. Hanna JN, Wakefield JE, Doolan CJ, Messner JL. Childhood immunisation: failure to complete the schedule. *Aust J Public Health* 1994;**18**:15-21.
2. Guthridge S, Patel M. High immunisation uptake for two year olds in the remote Northern Territory. *Comm Dis Intell* 1993;**17**:566-567.
3. Kelly H. Childhood immunisation in rural Western Australia: Aboriginal children do better in the more remote areas. *Comm Dis Intell* 1993;**17**:30-31.
4. Dean AG, Dean JA, Burton AH, Dicker RC. Epi Info, Version 5; a word processing, database and statistics program for epidemiology on microcomputers. Atlanta: Centers for Disease Control, 1990.
5. Australian Bureau of Statistics. Census counts for small areas. Western Australia. 1991 Census. Catalogue number 2730.5. Canberra: Australian Government Publishing Service, 1992.
6. Hinman AR, Orenstein WA, Williams WW. Current immunisation practice in developed countries In: Hall R, Riches J, editors. Immunisation: the old and the new. Proceedings of the Second National Immunisation Conference May 27-29, 1991, Canberra. Canberra: Public Health Association of Australia, 1992:5-7.
7. Stewart T. The school entry immunisation certificate in Victoria. *Comm Dis Intell* 1993;**17**:54-55.
8. Australian Bureau of Statistics. 1989-90 National health survey children's immunisation, Australia. Cat 4379.0. Canberra: Australian Government Publishing Service, 1992.
9. Taylor L. Catching a measles outbreak. *New South Wales Public Health Bulletin* 1991;7:65-69.
10. Ashwell M. Pertussis outbreak in Western Australia. *Comm Dis Intell* 1993;**17**:378-380.

CDI editorial comment

Immunisation coverage data are important for targetting interventions to increase coverage and for the efficient management of disease outbreaks. Numerous approaches for obtaining these data are being debated, each with advantages and disadvantages. Immunisation uptake studies of a community incur additional cost to locate the children in the community. Access to children is easier when the children are grouped together such as at school entry. However, assessment of immunisation status on school entry is years later than when the majority of childhood immunisations were recommended, and thereby gives a delayed view of the effectiveness of immunisation programs. In any option, validation of reports of immunisation status is essential, yet is expensive, difficult and time consuming to perform. At present, the gold standard for evidence of receipt of immunisation in Australia is the immunisation record signed at the time of immunisation by the immunisation provider. Validation of immunisation status may be done by an informed investigator sighting this record, or by contact with immunisation providers where cards are inadequate.

Most investigators agree that our knowledge of immunisation uptake is inadequate. Immunisation coverage assessments currently include school entry review in Victoria, New South Wales and the Australian Capital Territory. Also included are the Divisions of General Practice local register pilot programs, an Australian Bureau of Statistics and Commonwealth Department of Human Services and Health pilot community study, and surveys by local public health workers.

MEASLES CLUSTER IN UNVACCINATED CHILDREN IN SOUTH AUSTRALIA

Sylvia Petrony, Joanne Bell, Communicable Disease Control Unit, South Australian Health Commission

An extended family of six, resident in Asia, recently travelled to South Australia for a holiday where they stayed with relatives. Within ten days of arrival a 25 year old male member of the party became ill. Over the next 12 days he made four visits to a public hospital and one to a local general practitioner. His symptoms included fever, morbilliform rash on face, neck, trunk and limbs, sore throat, vomiting and diarrhoea and enlarged lymph nodes. He was suspected of having glandular fever but test results proved negative. He was not tested for, nor suspected of having, measles.

Ten days after the onset of symptoms in the above case (20 days after arrival in Australia), the nine year old son of this family became unwell. He was admitted to hospital with uncontrolled fever, peeling rash and vomiting and was initially suspected of having Kawasaki Syndrome. Eleven days later his four year old brother became ill with a 'typical measles rash', cough and fever. Both boys were subsequently tested and found to be measles IgM positive. The hospital informed us that neither boy had been vaccinated because their parents did not believe in immunisation.

The relatives with whom the family were staying have two children aged four and two. These children developed fever, Koplik's spots, generalised rash and cough on the same day as the four year old. Luckily, none of the children had attended school or childcare during the infectious period and no further cases were reported.

Each of the four children were unwell for approximately 11 days with reported complications of weight loss and bronchitis. None of the children had been immunised against measles.

The incubation period for measles is seven to 18 days from exposure to onset of fever, usually 10 days[1]. From this it is unclear whether the index case was infected overseas, en route, or on arrival in Australia. It is highly probable however that he was the source of infection for all four children.

This outbreak supports the following:

- the susceptibility of unimmunised children to measles infection
- the likelihood of moderate to severe illness with the subsequent risk of complications and
- measles in adults may not be suspected or diagnosed.

South Australia has a high level of measles immunisation cover in pre-school children (95%), but the disease continues to occur in small clusters of unimmunised persons.

Reference

1. Benenson AS, editor. *Control of Communicable Diseases in Man*. 15th ed. Washington: American Public Health Association, 1990.

HOSPITAL-ACQUIRED INFECTION SURVEY IN A CHILDREN'S HOSPITAL

Reproduced with acknowledgment from the Children's Hospital Camperdown , New South Wales, Monthly Infectious Disease Report, No 52, March 1994; editor D Isaacs

In February 1994, a team consisting of Dianne Dalton, Cheryl Jones, Alyson Kakakios, David McIntosh, Kerry Sherred, Melanie Wong and David Isaacs performed our eighth six-monthly cross-sectional survey of hospital-acquired infection. The team visited every patient in hospital on a single day, and recorded on proformas demographic information, presence of an infection, whether it was hospital or community-acquired, and if hospital-acquired, whether it was felt to be preventable. Hospital-acquired infection (HAI) referred to a child who was symptomatic or receiving antimicrobial therapy for an infection which developed in hospital outside the incubation period of that illness or occurred as a result of a previous hospital-based procedure, for example, shunt or line infection. Data were entered into computer by Francine Sanhard and analysed by Mark Hanlon and David Isaacs.

We examined risk factors for HAI, as in previous surveys (Tables 1 to 12). There were 168 in-patients at the

Table 1. Duration of hospital stay and prevalence of HAI

Stay (days)	HAI (%)[1]	Total
0-7	1 (0.9%)	110
8-14	2 (11.8%)	17
15-21	3 (21.4%)	14
>21	4 (14.8%)	27

1. Relative risk (95% CI) for > 14 days vs ≤ 14 = 7.2 (2.0 to 26.7); > 7 days vs < 7 = 17.1 (2.2 to 131.3).

Table 2. Age and prevalence of HAI

Age (months)	HAI[1] (%)	Total
<1	2 (14%)	14
1-6	2 (7%)	28
7-12	1 (4%)	23
13-24	0	10
25-36	1 (11%)	9
37-48	0	13
49-60	1 (11%)	9
>60	3 (5%)	62

1. No significant association with age.

Table 3. Sex

Sex	HAI[1] (%)	Total
Male	7 (7%)	99
Female	3 (4%)	69

1. Relative risk (95% CI) = 1.6 (0.4 to 6.1), not significant.

Table 4. Intensive care and prevalence of HAI

Intensive care	HAI[1] (%)	Total
Yes	1 (6%)	16
No	9 (4%)	152

1. Relative risk (95% CI) = 1.1 (0.1 to 8.1), not significant.

Table 5. Service and prevalence of HAI

Service		HAI[1] (%)	Total
Medical	General	2 (8%)	25
	Oncology	2 (10%)	19
	Other	0	31
	All	4 (8%)	75
Surgical	General	1 (9%)	11
	Orthopaedic	0	12
	Neurosurgery	3 (23%)	13
	Other	1 (3%)	37
	All	5 (7%)	73
Neonatal	Medical	0	9
	Surgical	0	2
	Medical & Surgical	1 (20%)	5
	All	1 (6%)	16

1. No significant differences.

Table 6. Surgery this admission and prevalence of HAI

Surgery	HAI[1] (%)	Total
Yes	7 (9%)	79
No	3 (3%)	89

1. Relative risk (95% CI) = 2.6 (0.7 to 9.8), not significant.

Table 7. Immunosuppression and prevalence of HAI

Immunosuppression	HAI[1] (%)	Total
Yes	2 (8.5%)	24
No	8 (5.5%)	144

1. Relative risk (95% CI) = 1.5 (0.3 to 6.7), not significant.

Table 8. Endotracheal tube in situ and prevalence of HAI

ETT in situ	HAI (%)	Total
Yes	0	8
No	10	160

Table 9. Urinary catheter in situ and prevalence of HAI

Urinary catheter	HAI[1] (%)	Total
Yes	1 (9%)	11
No	9 (6%)	157

1. Relative risk (95% CI) = 1.6 (0.2 to 11.5), not significant.

Table 10. Intravascular cannula in situ and prevalence of HAI

Intravascular cannula	HAI[1] (%)	Total
Yes	5	82
No	5	86

1. Relative risk (95% CI) = 1.0 (0.3 to 3.5), not significant.

Table 11. Nature of HAI

Nature of infection	Cases
Wound infection	4
Catheter-related infection	2
Urinary tract infection	2
Septicaemia	1
Conjunctivitis	1

Table 12. Was the HAI preventable?

Preventable?	Cases
Not preventable	4
Definitely preventable	4
Possibly preventable	2

time of the survey, 10 (6%) with HAI and 29 (17%) with a community-acquired infection (CAI).

Discussion

This has been a good year in the hospital with regard to hospital-acquired infections. In February, we reported a decline in the annual number of HAI due to RSV, rotavirus and chickenpox, determined by longitudinal surveillance (*CDI* 1994;**18**:211-212).

Our cross-sectional or 'point prevalence' survey of HAI also shows a decrease in the number of HAI, approaching our lowest proportion of admissions ever, which was 5.1%. Previous year's figures for HAI were:

August 1990: 12.6%
February 1991: 9.2%
August 1991: 7.0%
February 1992: 5.1%
August 1992: 5.4%
February 1993: 7.8%
August 1993: 8.5%

There is a trend towards increased proportions of HAI during the winter months, which does not reach statistical significance. Perhaps this is not surprising, since many of our HAI are not caused by common winter viral pathogens, but occur as a result of hospital-based procedures. Indeed, the four HAI deemed not preventable in this survey were wound infections.

WHEN ISLAND EYES AREN'T SMILING

Dr Glenn Brown, Senior Medical Officer, Mr Allan Kingsley, Scientist in Charge, Thursday Island Hospital, Queensland

We wish to report an unusual case of human ophthalmomyiasis in the Torres Strait.

A 26 year old patient presented to Thursday Island Hospital with a twenty-four hour history of a 'gritty' feeling in her left eye associated with redness and excess lacrimation. She said a friend had noticed a 'worm' in her left eyelid earlier that day and had removed it with a pair of tweezers. They had kept the 'worm' in a jar. The patient believed the 'worm' to be alive upon its removal from her eye as it was still moving. The offending 'worm' was white, non-motile, thread like, round in cross-section and about one centimetre in length.

The patient was from Boigu Island, a northern island in the Torres Strait adjacent to the Papua Niugini (Papua New Guinea) coastline. She denied having recently travelled to Papua Niugini and had no ophthalmic history.

Clinical evaluation revealed a red left eye with conjunctival suffusion. Visual acuity was normal, there was no corneal ulceration and slit lamp examination was unremarkable.

After discussion amongst the medical officers present we decided the most likely diagnosis to be ascaris or hookworm migrating up the naso-lacrimal duct and causing subsequent conjunctivitis.

The patient was discharged with 0.5% chloramphenicol eye drops to prevent secondary bacterial infections. Symptoms resolved within forty-eight hours. The 'worm' was put in 10% formalin and sent to the laboratory for identification.

The 'worm' was identified by Alan Westcott of New South Wales Agriculture as a larva of the Therevidae family, probably close to *Scinopinus* species. These flies are apparently predacious as larvae although they are only documented as being parasitic on African black beetle (Dr Garry Levot, personal communication).

To our knowledge the only recorded cause of specific ophthalmomyiasis in Australia is the larva of *Oestris ovis* (sheep nasal bot fly, Order: Diptera). The clinical presentation is similar to that of our patient. Transmission is usually by the female fly ejecting larvae into the eye.

The fact that this patient lived within several kilometres of the Papuan coastline of course raises the possibility of ophthalmomyiasis caused by *Chrysomya hominivorax* (Old World screw worm)[1] larvae, however this was not confirmed by laboratory analysis.

We believe this to be the first reported case of clinical ophthalmomyiasis due to larvae of the *Scinopinus* species of fly in Australia.

References

1. Norris KR, Murray MD. Notes on the screw-worm fly *Chrysomya bezziana* (Diptera: Calliphoridae) as a pest of cattle in New Guinea. Canberra: CSIRO, 1964; Technical Paper, Division of Entomology No 6.

COMMENTARY

The following comment has been received about the article 'Interception of larvae on an exotic fly pest in skin lesions in Australian Travellers', published in *CDI* 1994;18:229-230.

Medical Entomology Service

Richard Russell, Department of Medical Entomology, Westmead Hospital, Westmead, New South Wales

In recent years there has been a number of reports in *CDI* of 'unusual' insects or infestations of arthropods of medical or public health importance. These reports have sometimes revealed that the specimens were finally identified after following a relatively circuitous route through various entomologists in CSIRO or State or Territory departments of agriculture. A recent example is the article by Gary Levot (*CDI* 1994;18:229-230) on the finding of the human bot fly, *Dermatobia hominis*, in a traveller returning from South America. The patient had consulted a general practitioner in Sydney, who referred the problem to a physician at Royal North Shore Hospital. The physician contacted the Stock and Stations Agents Association, and they in turn referred it on to the New South Wales Department of Agriculture. Another case concerned the report by Spradbery et al of an infestation of the chigoe flea *Tunga penetrans* in an overseas traveller (CDI 1993;17:571-572).

While in no way meaning to detract from the involvement of the co-opted scientists associated with these reports, there is a specialist expert service in medical entomology available in Sydney to anyone throughout Australia.

At Westmead Hospital, the Department of Medical Entomology is located in the Centre for Infectious Diseases and Microbiology (a joint facility of the University of Sydney and Westmead Hospital, Institute of Clinical Pathology and Medical Research). The Department of Medical Entomology provides a service for the identification of insects and other arthropods associated with human infestation or other nuisance contact causing pathology of any sort, and provides advice on treatment and control. The myiasis situation referred to is not unknown, and larvae of the fly species involved, and other from similar situations involving unfamiliar local and exotic insects, have been identified by the Medical Entomology Department on a number of occasions in recent years.

The Department of Medical Entomology laboratory at Westmead was transferred from the School of Public Health and Tropical Medicine at the University of Sydney in 1987, and has expertise in all areas of the discipline. It provides: (i) identification of arthropod pests and vectors of disease, including myiasis specimens, (ii) isolation and identification of pathogens from vector arthropods, (iii) extraction and identification of mites associated with human infestation from dust and stored products, (iv) provision of clinical, treatment and control advice pertaining to infestations with personal pests such as lice, fleas, ticks, mites; venomous arthropods such as bees, ants, wasps, spiders, scorpions and caterpillars; biting insects such as mosquitoes, biting midges, blackflies, march flies, stable flies; household pests of possible public health concern such as cockroaches, flies and ants.

For enquiries, please contact the Director, Dr Richard Russell (phone (02) 633 7279) or the Laboratory Manager, Ms Merilyn Geary (phone (02) 633 7548; fax (02) 633 5314).

OVERSEAS BRIEFS

In the past two weeks the following information has been supplied by the World Health Organization (WHO), the Communicable Disease Surveillance Centre, Public Health Laboratory Service in London, and the Department of Foreign Affairs and Trade.

Dengue Haemorrhagic Fever in Myanmar

There is a serious outbreak of dengue haemorrhagic fever in Myanmar. Dengue is normally prevalent during the monsoon period (May-September), but unseasonal rains in March led to an early outbreak. Incidence of the disease so far this year has already exceeded total incidence for the past several years and the outbreak shows no signs of abating. To 31 May, 43 children have died at the Children's Hospital alone.

Cholera Update

Somalia has reported 7907 cases and 297 deaths from 9 April to 6 May.

Newly infected areas in the last fortnight are Luangnamtha, Ouodomxay, and Saravanne Provinces in the Lao People's Democratic Republic.

Diphtheria in the United Kingdom

Two imported case of diphtheria have recently been reported to the Communicable Disease Surveillance Centre in London.

The first case was a 57 year old man who was admitted to hospital with a sore throat, fever, and tightness of the chest, three days after he had returned from Bangladesh. A toxigenic strain of *Corynebacterium diphtheriae*

var *mitis* was isolated from a throat swab. The man made an uneventful recovery.

The second case was a 69 year old woman who was admitted to hospital with a sore throat which had not responded to treatment with antibiotics. She had recently returned from Italy. A diagnosis of diphtheria was made because of the presence of a greyish white membrane covering the posterior nares and nasopharynx. A toxigenic strain of *Corynebacterium ulcerans* was isolated from nose swab. The woman was treated with benzylpenicillin and antitoxin and recovered.

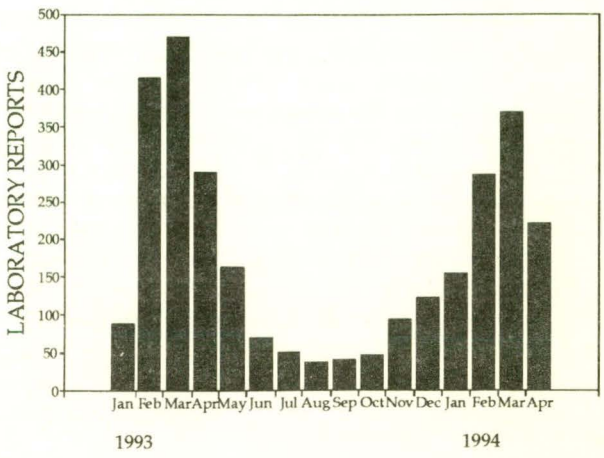
COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1525 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 9, 10 and 11).

- Twenty-five reports of **measles** were received this period, 8 males and 17 females. Eleven reports were for patients in the 15 to 24 year age group. Ten diagnoses were by IgM detection and fifteen by single high titre.
- **Rubella** was reported for 8 patients this fortnight, 4 males and 4 females, including 3 females in the 15 to 44 year age group. Diagnosis was by IgM detection (7) and single high titre (1). Included was a 23 year old female who had delivered a still-born child (IgM positive).
- Sixteen reports of **hepatitis A** were received, 9 males and 7 females, age range 5 to 64 years.
- Positive **hepatitis B** serology was reported for 94 patients this fortnight, 50 males and 40 females (4 sex not stated). Forty-six patients were in the 25 to 44 year age group, and 24 in the 15 to 24 year age group. Included were 9 pregnant females and a 2 year old female whose mother was a carrier.
- Positive **hepatitis C** serology was reported for 208 patients this fortnight, 130 males and 68 females (10 sex not stated). One hundred and sixty-four reports were for the 25 to 44 year age group. Included were a 27 year old male and a 72 year old female, both index cases in needle stick injuries, and 20 injecting drug users.
- **Ross River virus** infection was reported for 68 patients this period, 54 from Queensland. One report, from South Hedland, Western Australia, was confirmed (fourfold change in titre). The number of reports declined in the month of April (Figure 1).
- Eighteen reports of **Barmah Forest virus** were received, all from Queensland. All were presumptive diagnoses (IgM positive).
- Forty-seven reports of **adenovirus** were received this fortnight, 34 isolations and 13 antigen detections. **Untyped adenovirus** was isolated from the eyes of 3 year old and 44 year old males. This virus was also detected in the nasopharynx of a 6 month old male with conjunctvitis, a 3 year old male with suspected pertussis, and a 10 month old male with a diagnosis of cytomegalovirus also.
- **Herpes simplex virus type 1** was reported for 136 patients this fortnight, 126 isolations and 10 antigen detections. Included was isolation from a genital swab from a 19 year old pregnant female at 24 weeks gestation who reported recent genital blisters. This virus was also detected in bronchial washings from a 54 year old male, and a 35 year old female (both lung transplant recipients) and a 61 year old female renal transplant recipient. Herpes simplex virus type 1 was also isolated from the eye of a 57 year old male.
- One hundred and seventy-eight reports of **herpes simplex virus type 2** were recieved this period, all diagnosed by virus isolation. Included was isolation from a vulval swab from a 21 year old pregnant female at 20 weeks gestation.
- There were 70 reports of **cytomegalovirus** this fortnight, 46 virus isolates, 23 IgM detections and one single high titre. Included were 4 HIV/AIDS patients, 6 transplant recipients (including virus isolation from a lung biopsy from a bone marrow transplant recipient) and 1 pregnant female. This virus was isolated from leucocytes from a 24 year old female with lupus who was also reported to be bacteraemic and very ill. CMV IgM was detected in a 20 year old male with a 2 week history of pyrexia.
- **Varicella zoster** was reported for 33 patients this fortnight, 9 virus isolations, 13 antigen detections, 7 IgM detections and 4 single high titres. Included was a 17 year old Queensland male with clinical chickenpox, and a report of encephalitis.

Figure 1. Ross River virus reports, 1993 to 1994, by month of specimen collection



- A single report of **parvovirus** was recieved this fortnight for a 29 year old Western Australian female who reported a recent rubella-like illness.
- **Coxsackievirus type B1** was isolated from the CSF of a 1 month old female with pyrexia.
- **Coxsackievirus type B2** was isolated from the nasopharynx of a 4 month old female with pneumonia.
- Eleven reports of **echovirus type 6** were recieved this fortnight including 4 reports of meningitis. An increased number of reports were received for the month of April (Figure 2).
- Fifty **untyped enterovirus** reports were received this period. Included was virus isolation from the faeces of a 2 month old female with meningitis.
- **Rhinovirus** was reported for 36 patients this fortnight, 22 of whom were in the one to 4 year age group.
- **Influenza A** was reported for 4 patients this fortnight, including one isolate from the nasopharynx of a 3 year old Victorian male with a specimen collection date in early May. Also included were 3 single high titres, a 31 year old New South Wales female and 21 year old and 80 year old males, both from Western Australia.
- Two reports of **influenza B** were received, one B/Panama-like isolate recovered from the nasopharynx of a 2 year old Victorian male (specimen collected mid-May), and one single high titre reported for a 31 year old female.
- **Parainfluenza virus type 1** was reported for 72 patients this period including 36 from Victoria and 22 from Queensland. Sixty-seven patients were under 4 years of age. Thirty-six diagnoses were by virus isolation and 36 by antigen detection.
- Sixteen reports of **parainfluenza virus type 3** were received this fortnight, 15 under the age of 4 years. Diagnosis was by virus isolation (5) and antigen detection (11).
- One hundred and twenty reports of **respiratory syncytial virus (RSV)** were received this fortnight, 76 for patients under one year of age and a total of 116 under the age of 4 years. Diagnosis was by virus isolation (28) and antigen detection (92). Included was detection by immunofluorescence in a post-mortem lung specimen from a one year old female. This virus was also diagnosed for siblings, a one year old male and a 4 year old female both with suspected pertussis (the 4 year old female also had adenovirus infection). The number of RSV reports has risen in the last 2 months (Figure 3).
- **Rotavirus** was reported for 39 patients this period, 26 males and 13 females. Thirty-five patients were under 4 years of age.
- **Small virus (like) particles** were detected by electron microscopy in the faeces of a 2 year old female and a one year old male both with gastroenteritis from Western Australia.
- Eighty-seven reports of ***Chlamydia trachomatis*** were received this fortnight, 58 females and 28 males (1 sex not stated). Eighty patients were in the 15 to 44 year age group. Diagnosis was by culture (72), and antigen detection (15). Included was isolation from the eyes of 8 day old and 4 week old males, and from a genital specimen from a 16 year old female with pelvic inflammatory disease.
- **Q fever** was reported for 3 patients this period, all males in the age range 19 to 40 years. All diagnoses were by IgM detection.
- Positive ***Brucella*** serology was reported for a 56 year old New South Wales male.
- Two reports of ***Leptospira*** species were received this fortnight for 23 and 69 year old Queensland males, both diagnosed by IgM detection.
- ***Toxoplasma gondii*** was reported for 3 patients this period including a pregnant female at 18 weeks gestation (IgM positive).

Figure 2. Echovirus type 6 reports, 1993 to 1994, by month of specimen collection

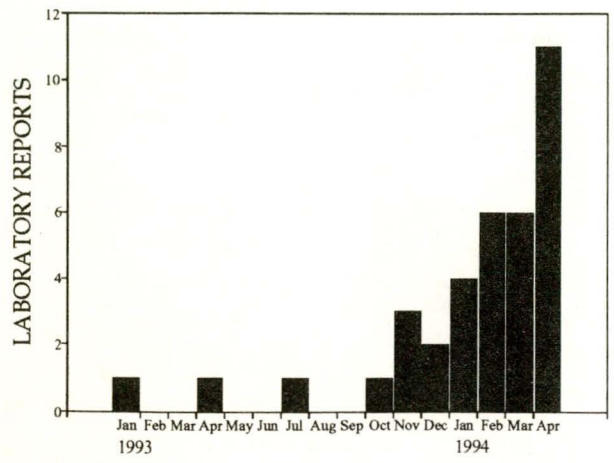


Figure 3. Respiratory syncytial virus laboratory reports, 1989-93 average, and 1994, by month of specimen collection

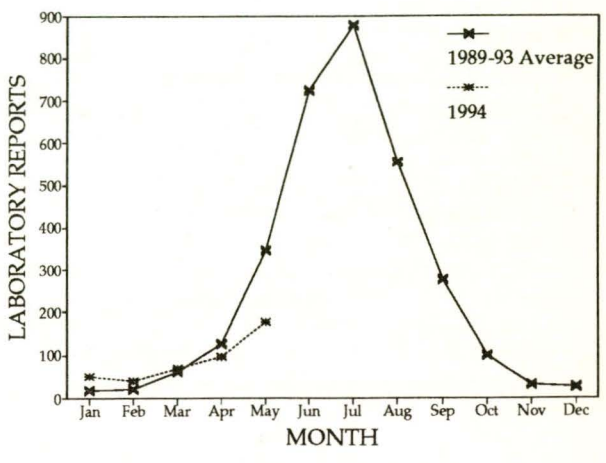


Table 1. Australian Sentinel Practice Research Network, weeks 20 and 21, 1994

Condition	Week 20, to 22 May 1994		Week 21, to 29 May 1994	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	85	9.0	105	10.9
Measles	2	0.2	3	0.3
Chickenpox	18	1.9	30	3.1
Pertussis	1	0.1	2	0.2
Gastroenteritis	136	14.4	120	12.5

Australian Sentinel Practice Research Network

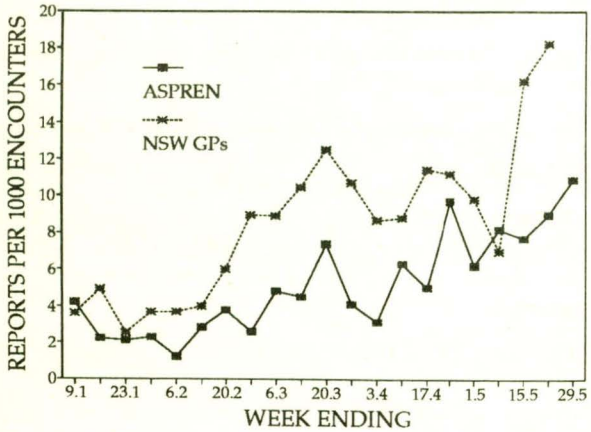
Data for weeks 20 and 21 are included in this issue of *CDI* (Table 1). There were 9477 consultations for week 20 and 9605 for week 21. Chickenpox was reported at 3.1 cases per 1000 encounters for week 21, the highest rate recorded this year.

National Influenza Surveillance 1994

Australian Capital Territory Department of Health; Australian Defence Force; Australian Sentinel Practice Research Network; Communicable Diseases Intelligence Virology and Serology Reporting Scheme Contributing Laboratories; New South Wales Department of Health; Telecom Australia; Victorian Department of Health and Community Services; World Health Organization (WHO) Collaborating Centre for Influenza Reference and Research, Melbourne

Overall this fortnight the number of reports of influenza-like illness from sentinel general practitioners continues to rise. Laboratory diagnoses of influenza virus remain low. The B/Panama-like influenza strain reported from Victoria is related to the B/Panama/45/90-like virus, a component of this years vaccine. Absenteeism data for the year demonstrate no apparent trend.

Figure 4. Sentinel general practitioner influenza



SENTINEL GENERAL PRACTIONER SURVEILLANCE

Australian Sentinel Practice Research Network

ASPREN reports have been received this fortnight for weeks 20 (ending 22 May) and 21 (ending 29 May). There were 85 reports of influenza in week 20 (9.0 per 1000 encounters) and 105 reports in week 21 (10.9 per 1000 encounters). The rate continues to rise (Figure 4).

New South Wales Sentinel General Practitioner Scheme

Results from the New South Wales Sentinel General Practitioner Surveillance Scheme were received for the weeks ending 15 May and 22 May. The number of influenza cases (and the number of cases per 1000 consulations) each week were 235 (16.2) and 201 (18.2). The rate of influenza reporting for this scheme demonstrated a sharp rise over the last two reporting periods (Figure 4).

Australian Capital Territory Sentinel General Practitioner Scheme

The Australian Capital Territory Sentinel General Practitioner Scheme reported 13 cases of influenza for the week ending 5 June, a rate of 18.9 cases per 1000 consultations.

Victorian Sentinel Practitioner Scheme

The Victorian Sentinel Practitioner Scheme reported 30 cases of influenza in the fortnight beginning 16 May, 7.0 cases per 1000 patient encounters.

Figure 5. Absenteeism rates per 100 employers or students, by week and scheme

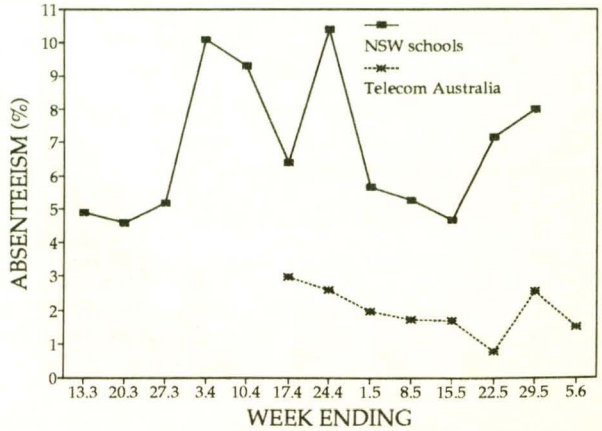


Figure 6. Influenza A laboratory reports, 1994, by method of diagnosis and week of specimen collection

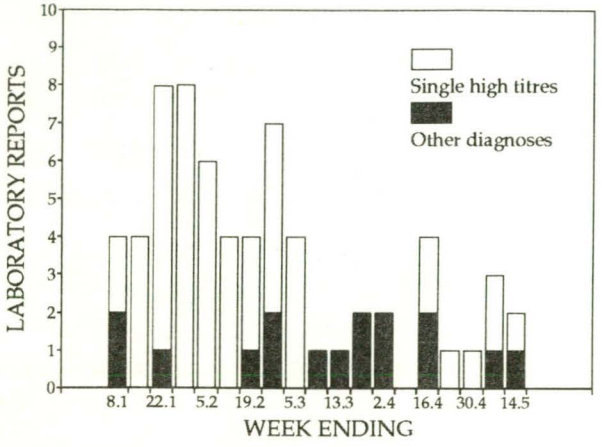
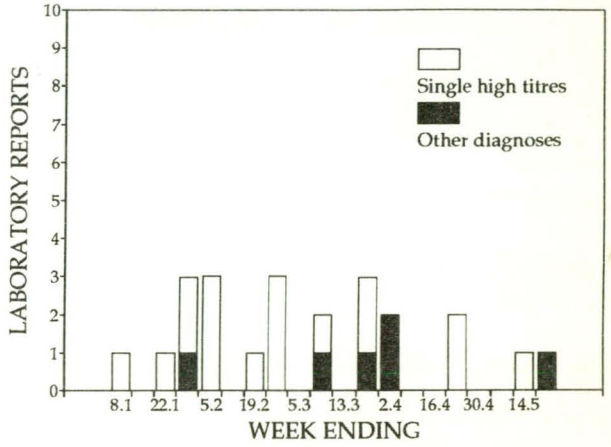


Figure 7. Influenza B laboratory reports, 1994, by method of diagnosis and week of specimen collection



ABSENTEEISM SURVEILLANCE

Telecom Australia Absenteeism Surveillance

Telecom Australia reported absenteeism rates of 2.6% on the 25 May and 1.5% on the 1 June (Figure 5).

New South Wales Schools Absenteeism Surveillance

New South Wales schools absenteeism surveillance data has been received for the weeks ending 22 May (updated) and 29 May. The average student absenteeism rates per week were 7.2% and 8.0% (Figure 5).

Australian Capital Territory Schools Absenteeism Surveillance

The Australian Capital Territory schools absenteeism surveillance scheme reported absenteeism rates of 6.6% for 31 May and 6.6% for 7 June.

OTHER SURVEILLANCE

Victorian total deaths surveillance

There were 1290 deaths reported in Victoria in the fortnight beginning 16 May, a rate of 2.8 per 10,000 population. There has been no increase since the last reporting period.

Victorian hospital admissions

There were 30 admissions for influenza and/or pneumonia in two Victorian hospitals in the fortnight beginning 2 May. One hospital was unable to provide data this fortnight.

Pharmaceutical consumption

The Australian Defence Force pharmaceutical consumption surveillance will commence in the near future.

LABORATORY SURVEILLANCE

CDI Virology and Serology Reporting Scheme

So far this year the *CDI* Virology and Serology Reporting Scheme has received 68 reports of influenza A. Included were 18 diagnosed by methods other than single high titre, ie. diagnosis by virus isolation, antigen detection or fourfold rise in titre (Figure 6).

Influenza A was reported for 4 patients this fortnight, including one isolate from the nasopharynx of a 3 year old Victorian male with a specimen collection date in early May. Also included were 3 single high titres, a 31 year old New South Wales female and 21 and 80 year old males, both from Western Australia.

There have been 24 reports of influenza B for the year to date, including 6 other than single high titre. (Figure 7).

Two reports of influenza B were received this fortnight, a B/Panama-like isolate was recovered from the nasopharynx of a 2 year old Victorian male (specimen collected mid-May), and a single high titre was reported for a 31 year old female.

Sterile Sites Surveillance (LabDOSS)

Review of Group A *Streptococcus*

Following reports from the United Kingdom of group A streptococcal disease (*CDI* 1994;**18**:267) we present a review of Australian Group A *Streptococcus* reports from the *CDI* laboratory database of organisms from Sterile Sites (LabDOSS) surveillance scheme.

Ninety-three reports of invasive group A *Streptococcus* disease were received by the *CDI* LabDOSS scheme from January 1992 to May 1994. Eighty-five percent of reports were of group A *Streptococcus* isolated from blood culture, 4 percent from joint fluid and 10 percent from other normally sterile sites (including peritoneal aspirates).

The proportion of reports of invasive Group A streptococcal infection has remained stable since the beginning of LabDOSS surveillance in 1992. We have enabled comparison of periods with varying numbers of participating laboratories by presenting the proportion of Group A *Streptococcus* reported per 10

Figure 8. Reports of Group A *Streptococcus* per 10 contributing laboratory months, *CDI* LabDOSS, January 1992 to May 1994

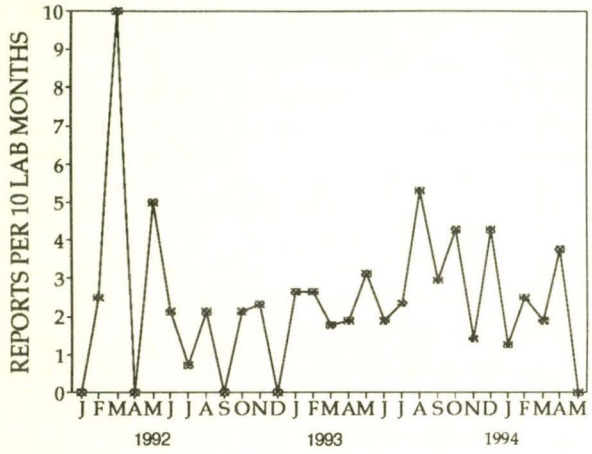


Figure 9. Reports of Group A *Streptococcus* sepsis by age group, *CDI* LabDOSS January 1992 to May 1994

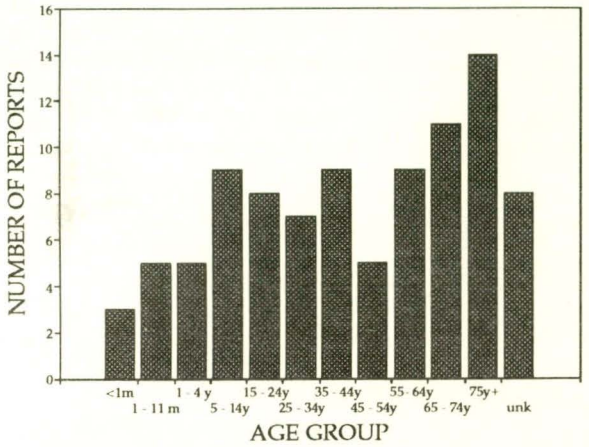


Table 2. Clinical diagnosis provided in 93 reports of invasive Group A *Streptococcus* sepsis, LabDOSS January 1992 to May 1994

Clinical information	Percentage of reports
Skin/cellulitis/wound infection	29%
Septic arthritis	8%
Lower respiratory tract infection	8%
Meningitis	4%
Osteomyelitis	2%
Gastrointestinal disease	2%
No clinical information	47%
Total	100%

contributing laboratory months. One contributing laboratory month is defined as one laboratory having provided reports for one month (Figure 8). The initial peak of reports in early 1992 represents commencement of surveillance with a referral pattern bias. Only 4 reports were received in March 1992 from 4 teaching hospital laboratories.

There was a slight predominance of Group A streptococcal sepsis in males, the male to female ratio being 1.25:1. Cases occurred in all age groups, however sepsis was more frequently reported in the elderly (Figure 9).

Clinical information was provided for 55 percent of cases (Table 2). Clinical information is considered incomplete and needs to be interpreted with caution in laboratory based surveillance schemes. Invasive infections were most commonly reported in association with skin infection, cellulitis or wound infection. Sepsis associated with skin infection was reported in most age groups and was more frequently reported in the elderly. Osteomyelitis and septic arthritis were more frequently reported in children (Table 3).

Table 3. Clinical diagnosis provided for 49 (53%) of 93 reports of invasive Group A *Streptococcus* sepsis by agegroup, LabDOSS January 1992 to May 1994

	1-11 mths	1-4 yrs	5-14 yrs	15-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55-64 yrs	65-74 yrs	75+ yrs	Unknown	Total
Skin/cellulitis/wound infection	1	1	1		2	3	2	8	4	4	1	27
Septic arthritis and Osteomyelitis	1		3	2		1		1			1	9
Lower respiratory tract infection		1			1	2		1	1	1		7
Meningitis			2	1						1		2
Gastrointestinal disease							1		1			2
Total	2	2	6	3	3	6	3	10	6	6	2	49

A risk factor predisposing to sepsis was provided for only 26 percent of Group A *Streptococcus* reports. Recent surgery was reported as the risk factor in 9 percent of cases (Table 4). In comparison surgery is reported as a risk factor for 10 percent of all organisms reported in LabDOSS.

The absence of risk factor data most likely represents incomplete ascertainment of patient status. However it may represent a trend of invasive Group A streptococcal disease in healthy persons.

Four cases were reported to have died, one with skin/cellulitis or wound infection and one with congestive cardiac failure. No history was provided for the other 2 deaths. The data for outcome are not likely to be complete. However, this represents a case fatality rate of at least 4 percent. The case fatality rate for invasive group A streptococcal sepsis has been reported to be between 10 and 20 percent (1).

Serotyping of nearly 1700 Group A *Streptococci* from 1980 to 1990 in the United Kingdom has shown that the incidence of sepsis from some serotypes (M3 and M12) does not vary greatly from year to year (2). However, nationwide epidemics of strains of serotypes M1 and M49 have been shown. Serotypes M1 and M3 were associated with severe and fatal disease. The isolates from recent cases in the United Kingdom were four different serotypes; M1(2), M3, M5 and untypable. Serotyping data for LabDOSS reports of Group A *Streptococci* are not available.

References

1. Invasive Group A Streptococcal Infection United Kingdom, 1994 MMWR 1994;43(21):401 - 402
2. Colman G, Tanna A, Efstratiou A, Gaworxewska E, The serotypes of *Streptococcus pyogenes* present in Britain during 1980-1990 and their association with disease. *J Med Microbiol* 1993;**39**:165-78

Update

Futher information has been provided by Royal Hobart Hospital for the case of *Vibrio Vulnificus* sepsis in April 1994 (*CDI* 1994;**18**:240). The case was a 70 year old male who developed sepsis following an injury to a finger with a fish hook. He was febrile with a raised white cell count and developed disseminated intravascular coagulation. He was treated with gentamicin and tetracycline and recovered from the invasive infection.

LabDOSS Fortnightly Surveillance

Data for this fortnight have been provided by 10 laboratories. There were 191 reports of recent sepsis: South West Area Pathology Health Service, Liverpool, New South Wales 38; Gosford Central Coast Hospital Service, New South Wales 14; ICPMR, Westmead, New South Wales 65; Nambour General Hospital, Queensland 14; Northern Tasmanian Pathology Service, Tasmania 10; Princess Margaret Hospital for Children, Western Australia 2; Sir Charles Gairdner Hospital, Western Australia 5; Sullivan Nicolaides, Queensland 20; Woden Valley Hospital, Australian Capital Territory 12; Greenslopes Repatriation Hospital, Queensland 11.

Table 4. Risk factor for sepsis in 93 reports of invasive Group A Streptococcus sepsis, LabDOSS January 1992 to May 1994

Risk factor	Percentage of reports
Diabetes	3%
Transplant	2%
IV drug use	1%
Renal failure	1%
Malignancy	1%
Surgery - orthopaedic	3%
Surgery - not specified	2%
Surgery - neurological	3%
Surgery - vascular	1%
Pregnant or postnatal	3%
IV line - central	2%
IV line - peripheral	2%
Hospital acquired	2%
No risk factor reported	74%
Total	100%

Gosford Central Coast Hospital Service also supplied 259 reports of sepsis prior to 1 May 1994. These data have been included in the annual LabDOSS data file. Reports included 3 cases of *Neisseria meningitidis* sepsis. One case occurred in January - serogroup C in a 16 year old, one in February - no group provided in a 2 year old and one in March - serogroup B in a 3 month old. Six cases of *Haemophilus influenzae* sepsis (5 type b in children) and 8 cases of *Streptococcus pneumoniae* sepsis were reported.

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

Gram positive: 1 *Listeria monocytogenes* (77 year old female from Queensland), 1 *Corynebacterium* species, 2 *Streptococcus* Group A, 3 *Streptococcus* Group B, 1 *Streptococcus* Group G, 1 Streptococcus 'viridans', 3 *Streptococcus* species.

Gram negative: 1 *Neisseria meningitidis* not groupable (20 month old New South Wales), 3 *Haemophilus influenzae* (2 type b; 3 year old in New South Wales and an 11 month old with epiglottitis in Western Australia, 1 type not provided in an 81 year old in New South Wales), 4 *Acinetobacter* species, 1 *Campylobacter* species, 2 *Citrobacter* species, 1 *Flavobacterium* species, 2 *Klebsiella oxytoca*, 1 *Klebsiella* species, 1 *Morganella morganii*, 2 *Proteus mirabilis*, 1 *Proteus* species, 1 *Providencia* species, 1 *Pseudomonas putida*, 1 *Pseudomonas* species, 1 *Serratia marcescens*, 2 *Serratia* species, 1 *Xanthomonas maltophilia*, 1 *Yersinia* species (71 year old immunocompromised male New South Wales).

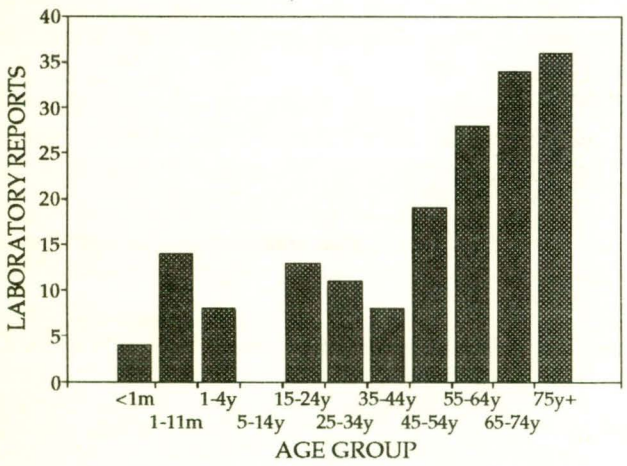
Anaerobes: 1 *Bacteroides fragilis*, 1 *Clostridium tertium*.

Table 5. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical information						Risk factors					Total[1]
	Bone/Joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
Staphylococcus aureus	1			2		1	4	7	1			23[2]
Staphylococcus coagulase negative		2		1	1	3	2	8	3		3	31[3]
Streptococcus pneumoniae		4						1				10
Enterococcus faecalis								3				7
Escherichia coli		1		5	11		3	11		1	1	42
Enterobacter species				1	1			2				5[4]
Klebsiella pneumoniae				2				5				10
Pseudomonas aeruginosa				2	1			2		1		5

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 2.
3. *Staphylococcus epidermidis* 3.
4. *Enterobacter cloacae* 3.

Figure 10. LabDOSS reports of blood isolates, by age group



Fungi: 1 *Candida albicans*.

Most reports of blood isolates were for patients over the age of 55 years (Figure 10).

Meningitis

One report of meningitis was received this fortnight, *Neisseria meningitidis* serogroup C in a 9 month old from New South Wales.

Isolates from sites other than blood or CSF

Joint fluid: *1 Bacillus cereus*, 1 *Streptococcus* group C.

Peritoneal Dialysate: 2 *Staphylococcus aureus* , 2 *Serratia marcescens*, 1 coagulase negative *Staphylococcus*, 1 *Escherichia coli*, 1 *Enterococcus* species.

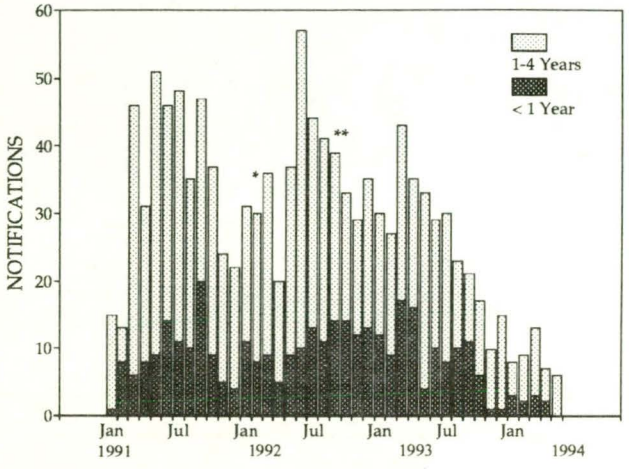
Other: 2 *Staphylococcus aureus*, 2 Group A *Streptococcus*, 1 *Pseudomonas pickettii*.

National Notifiable Diseases Surveillance System, 15 May to 28 May 1994

There were 1982 reports received for this period. Data from Victoria were not available (Tables 6, 7 and 8 and Figure 12).

- There were 276 notifications of **Ross River virus infection** received; 124 cases were male, 147 were female and sex was not recorded for 5 cases. Ages ranged from the 0-4 to the 85-89 year age group. The highest proportions of cases were resident in the Statistical Divisions of Brisbane (28%) and Northern Queensland (25%). Recorded onset dates were March (18), April (125), and May (133).
- Two cases of **brucellosis** were reported. The cases were in a male and a female, both in the 25-29 years age group. Onset dates were in May.
- A single cases of **cholera** was reported in a male in the 0-4 years age group who was resident in Queensland. Recorded onset data was April.
- There were 88 notifications of **gonococcal infection** received; 57 cases were male, 30 cases were female, and sex was unrecorded for one case. Recorded ages ranged from the 0-4 to the 60-64 years age group with one case aged less than one year.
- Four cases of ***haemophilus influenzae* type b infection** were reported (Figure 11). Two cases were male and two female. One of the cases was aged 5 years and two were in the 0-4 years age group. Recorded onset dates were April (one) and May (3). There were no apparent clusters.
- Ninety-three notifications of **hepatitis A** were received; 53 cases were male, 39 case were female, and sex was unrecorded for one case. Recorded

Figure 11. *Haemophilus influenzae* type b infection notifications by age and month of onset, January 1991 to May 1994

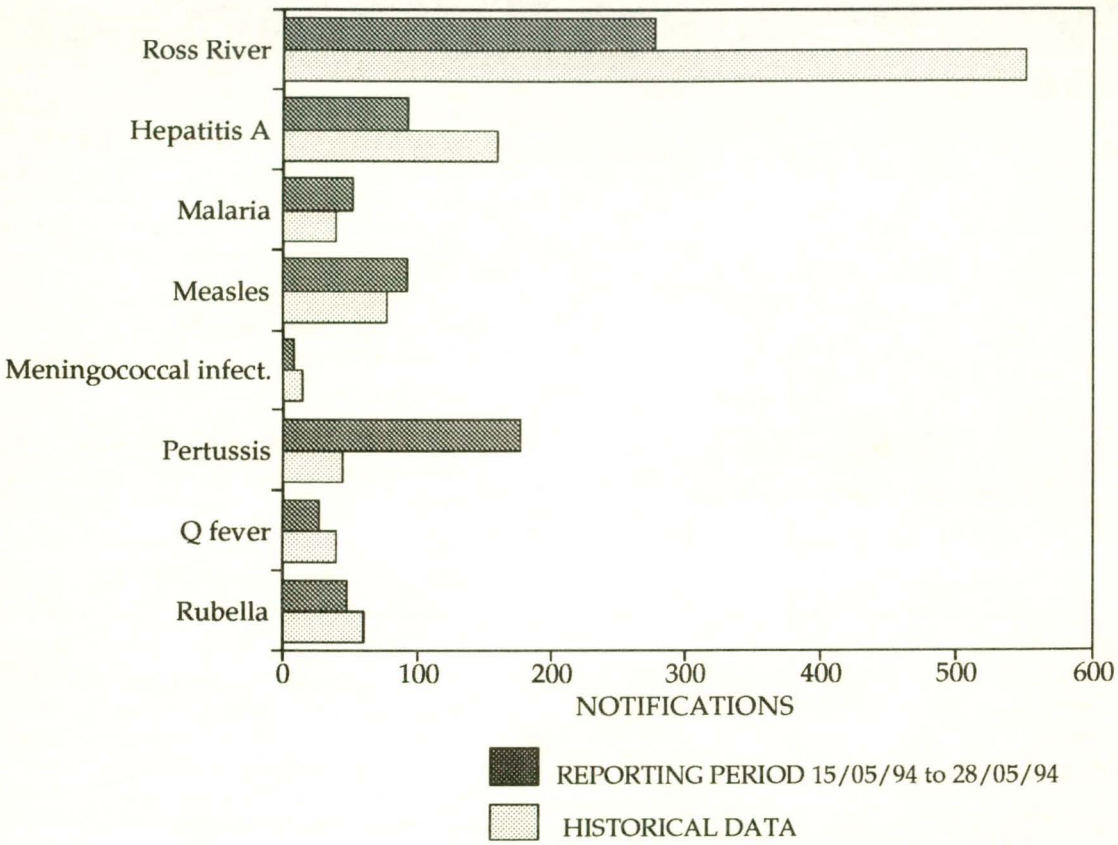


* PRP-D approved in February 1992.
** Infant vaccine approved in September 1992.

ages ranged from the 0-4 to the 70-74 years age group with 75% of cases aged less than 35 years.

- There were 86 case of **hepatitis B** reported; 11 were from states that report incident cases only. Of the incident cases, 7 were male and 4 were female. Recorded ages of these cases ranged from the 20 -24 to the 60-64 years age group.
- Four cases of **legionellosis** were reported in the period; 3 cases were male and one case was female. Cases ranged in age from the 30-34 to the 75-79 years age group. Cases were resident in the Statistical Divisions of Sydney (3) and Adelaide (one). All recorded onset dates were in April.
- There were 7 cases of **leptospirosis** reported. All cases were male and they ranged in age from the 20-24 to the 60-69 years age group. Recorded onset dates were March (2), April (3), and May (2).
- Fifty-two notifications of **malaria** were received; 37 case were male and 15 were female. Cases ranged in age from the 0-4 to the 80-84 years age group. Recorded onset dates were January (one), February (19), March (13), April (6), and May (13).
- There were 93 cases of **measles** reported in the period. Thirty-eight cases were male and 55 were female. Recorded ages ranged from the 0-4 to the 75-79 years age group with a mean age of 17 years. There were 13 apparent clusters with two or more cases each in the same postcode area. Apparent clusters occurred in Queensland (12) and South Australia (one).
- There were 8 cases of **meningococcal infection** reported; 4 cases were male and 4 were female. Cases ranged in age from the 0-4 to the 70-74 years age group with 6 cases aged less than 20 years. Recorded onset dates were April (one) and May (7). There were no apparent clusters.
- One hundred and seventy-seven notifications of **pertussis** were received; 77 cases were male and 100 were female. Cases were aged between the 0-4 and the 75-79 years age group. There were 23 apparent clusters of two or more cases each in the same postcode area. A cluster in New South Wales had 38 cases and a cluster in Queensland had 9 cases.
- There were 28 notifications of **Q fever** received; 20 cases were male and 8 cases were female. Recorded ages ranged from the 15-19 to the 65-69 years age group.
- Forty-eight cases of **rubella** were reported; 31 cases were male, 16 cases were female and the sex of one case was not recorded. Cases ranged in age from the 0-4 to the 65-69 years age group with a mean age of 21 years. Ten cases occurred in females in the 15-44 years age group.
- There were 33 cases of **syphilis** reported; 18 cases were male, 14 cases were female, and the sex of one case was unrecorded. Cases ranged in age from the 10-14 to the 65-69 years age group.
- A single case of **tetanus** was notified for a female in the 75-79 years age group resident in rural New South Wales.
- There were 25 cases of **tuberculosis** reported; 17 were male, 6 were female, and the sex of two cases was unrecorded. Cases ranged in age from the 0-4 to the 80-84 years age group. Recorded onset dates were June (one), January (2), February (3), March (4), April (5), and May (9).
- A single case of **typhoid** was notified in a male in the 15-19 years age group resident in the Perth Statistical Division. Recorded onset date was May.

Figure 12. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



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

Table 6. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 15 to 28 May 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Diphtheria	0	0	0	0	0	0		0	0	0	20	12
Haemophilus influenzae b infection	0	2	0	2	0	0		0	4	18	78	193
Measles	2	6	0	76	6	0		3	93	77	1207	550
Mumps	0	0	NN	NN	0	NN		0	0	1	3	1
Pertussis	0	67	0	77	25	1		7	177	67	2234	645
Poliomyelitis	0	0	0	0	0	0		0	0	0	0	0
Rubella[2]	2	1	4	32	1	0		8	48	92	641	1308
Tetanus	0	1	0	NN	0	0		0	1	1	8	4

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

2. NT, Tas: CRS only.

NN Not Notifiable.

Table 7. Notifications of other diseases[1] received by State and Territory health authorities in the period 15 to 28 May 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Arbovirus infection												
Ross River virus infection	0	21	4	246	-	NN		5	276	223	3238	4193
Dengue	0	-	0	0	-	NN		NN	0	64	11	164
NEC[3]	0	8	1	45	0	2		0	56	26	344	300
Campylobacteriosis[4]	10	-	5	114	80	24		31	264	283	3716	3335
Chlamydial infection (NEC)[5]	1	NN	3	124	27	10		34	199	304	2538	2834
Donovanosis	0	NN	1	1	NN	NN		0	2	4	46	23
Gonococcal infection[6]	0	8	11	28	7	1		33	88	100	1231	1292
Hepatitis A	0	20	0	53	4	1		15	93	96	804	859
Hepatitis B[7]	11	0	0	64	1	5		5	86	103	714	1015
Hepatitis C	11	0	NN	136	0	9		59	215	302	3396	2519
Hepatitis (NEC)	0	0	0	0	0	0		NN	0	2	17	34
Legionellosis	0	3	0	0	1	0		0	4	5	82	75
Leptospirosis	0	1	1	5	0	0		0	7	4	79	77
Listeriosis	0	0	NN	0	0	0		0	0	2	13	21
Malaria	1	4	0	37	2	0		8	52	37	317	298
Meningococcal infection	1	4	0	3	0	0		0	8	11	108	92
Ornithosis	0	NN	0	0	3	0		0	3	3	41	40
Q fever	0	7	0	21	0	0		0	28	39	242	327
Salmonellosis (NEC)	0	34	16	74	18	7		33	182	224	2853	2398
Shigellosis[4]	0	-	2	6	1	0		15	24	16	374	374
Syphilis	0	17	3	9	0	0		4	33	93	849	962
Tuberculosis	4	10	0	5	5	1		0	25	37	362	345
Typhoid[8]	0	0	0	0	0	0		1	1	0	19	23
Yersiniosis (NEC)[4]	0	-	0	8	2	0		0	10	19	210	203

1. For rarely notified diseases, see Table 8.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. SA, Tas: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. Acute cases only are reported by NSW, NT, SA, Tas and WA.
8. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

\- Elsewhere Classified.

Table 8. Notifications of rare[1] diseases received by State and Territory health authorities in the period 15 to 28 May 1994

DISEASES	Total this period	Reporting States or Territories	Year to date 1994
Botulism	0		0
Brucellosis	2	Qld	6
Chancroid	0		0
Cholera	1	Qld	3
Hydatid infection	0		17
Leprosy	0		3
Lymphogranuloma venereum	0		0
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

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

Table 9. Virology and serology laboratory reports by State or Territory[1] for the reporting period 19 May to 1 June 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				24				1	25	4.7	539
Mumps virus				1			1		2	2.2	35
Rubella virus		2		5			1		8	12.8	278
HEPATITIS VIRUSES											
Hepatitis A virus		3		4			3	6	16	16.0	152
Hepatitis B virus	3	26		26		1	18	20	94	88.2	1,107
Hepatitis C virus	6	55		27		8	13	99	208	119.7	2,437
Hepatitis D virus		1							1	2.2	11
ARBOVIRUSES											
Ross River virus		5		54				9	68	111.3	1,315
Barmah Forest virus				18					18	10.8	149
Flavivirus (unspecified)							1		1	2.3	9
ADENOVIRUSES											
Adenovirus type 1							2		2	1.7	34
Adenovirus type 2							1		1	5.2	33
Adenovirus type 3							2		2	3.2	22
Adenovirus type 8							3		3	.7	61
Adenovirus not typed/pending	1	10		8			12	8	39	37.7	585
HERPES VIRUSES											
Herpes simplex virus type 1		19	1	40		3	46	27	136	131.2	2,136
Herpes simplex virus type 2		49	1	58		2	25	43	178	154.8	2,382
Herpes simplex not typed/pending	8	16		4			2	2	32	27.8	326
Cytomegalovirus		11		30		2	23	4	70	58.0	734
Varicella-zoster virus		5		14			9	5	33	27.5	471
Epstein-Barr virus	2	2		4			7	5	20	58.0	685
OTHER DNA VIRUSES											
Parvovirus								1	1	3.7	33
PICORNA VIRUS FAMILY											
Coxsackievirus A9		1							1	.5	6
Coxsackievirus A16							1		1	.5	28
Coxsackievirus B1		2							2	1.7	19
Coxsackievirus B2		2							2	.2	14
Coxsackievirus B5							1		1	.7	11
Echovirus type 6	2	9							11	7.7	33
Echovirus type 11		2							2	1.7	34
Echovirus type 14		1							1	.5	3
Echovirus type 30		9				3	5		17	1.5	223
Poliovirus type 1 (uncharacterised)		2					1		3	1.8	12
Poliovirus type 2 (uncharacterised)						2	2		4	2.2	15
Rhinovirus (all types)		12		2			16	6	36	25.5	425
Enterovirus not typed/pending	1	12		22			7	8	50	32.7	666

Table 9. Virology and serology laboratory reports by State or Territory[1] for the reporting period 19 May to 1 June 1994, historical data[2], and total reports for the year, continued

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
ORTHO/PARAMYXOVIRUSES											
Influenza A virus		1					1	2	4	30.0	148
Influenza B virus		1					1		2	6.5	92
Parainfluenza virus type 1	1	10		22			36	3	72	12.8	268
Parainfluenza virus type 2							1	2	3	6.8	34
Parainfluenza virus type 3		2		3			9	2	16	12.7	116
Parainfluenza virus typing pending							4		4	4.5	26
Respiratory syncytial virus	1	50		29			14	26	120	213.5	519
OTHER RNA VIRUSES											
HIV-1						1		1	2	2.2	46
Rotavirus	2	12					14	11	39	52.0	423
Small virus (like) particle								2	2	2.0	9
OTHER											
Chlamydia trachomatis not typed	8	9		18		4	20	28	87	105.7	1,225
Chlamydia psittaci							2		2	2.3	34
Mycoplasma pneumoniae	1	2		11			7	1	22	45.5	480
Coxiella burnetii (Q fever)		1		2					3	15.7	153
Streptococcus group A		2		13					15	3.8	126
Yersinia enterocolitica		1							1	.2	5
Brucella species		1							1	.0	1
Bordetella pertussis				1			10	9	20	5.7	278
Leptospira species		1		1					2	.3	13
Treponema pallidum		13		2					15	15.3	169
Toxoplasma gondii	1	1					1		3	1.8	20
Echinococcus granulosus		1							1	.7	7
TOTAL	37	364	2	443		26	322	331	1,525	1,496.5	19,215

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

Table 10. Virology and serology laboratory reports by clinical information for the reporting period 19 May to 1 June 1994

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					1			9				15	25
Mumps virus												2	2
Rubella virus								3		1		4	8
HEPATITIS VIRUSES													
Hepatitis A virus							6					10	16
Hepatitis B virus							22					72	94
Hepatitis C virus						3	13					192	208
Hepatitis D virus												1	1
ARBOVIRUSES													
Ross River virus								7		32		29	68
Barmah Forest virus								2		4		12	18
Flavivirus (unspecified)												1	1
ADENOVIRUSES													
Adenovirus type 1					2								2
Adenovirus type 2					1								1
Adenovirus type 3						1			1				2
Adenovirus type 8									3				3
Adenovirus not typed/pending					14	12			5			8	39
HERPES VIRUSES													
Herpes simplex virus type 1					7	1		62	13		40	13	136
Herpes simplex virus type 2								29			120	29	178
Herpes simplex not typed/pending								12			6	14	32
Cytomegalovirus			1		24	1		2		1		41	70
Varicella-zoster virus	1		1					20				11	33
Epstein-Barr virus					1							19	20
OTHER DNA VIRUSES													
Parvovirus												1	1
PICORNA VIRUS FAMILY													
Coxsackievirus A9						1							1
Coxsackievirus A16					1								1
Coxsackievirus B1												2	2
Coxsackievirus B2					1	1							2
Coxsackievirus B5												1	1
Echovirus type 6		4			1	2						4	11
Echovirus type 11			1									1	2
Echovirus type 14						1							1
Echovirus type 30		11	2		1							3	17
Poliovirus type 1 (uncharacterised)												3	3
Poliovirus type 2 (uncharacterised)					3							1	4
Rhinovirus (all types)					29							7	36
Enterovirus not typed/pending		2	6		23	6						13	50

Table 10. Virology and serology laboratory reports by clinical information for the reporting period 19 May to 1 June 1994, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					3							1	4
Influenza B virus					1							1	2
Parainfluenza virus type 1					62							10	72
Parainfluenza virus type 2					3								3
Parainfluenza virus type 3					15							1	16
Parainfluenza virus typing pending					3							1	4
Respiratory syncytial virus					94							26	120
OTHER RNA VIRUSES													
HIV-1			1									1	2
Rotavirus						30						9	39
Small virus (like) particle						2							2
OTHER													
Chlamydia trachomatis not typed					1				3		66	17	87
Chlamydia psittaci					1							1	2
Mycoplasma pneumoniae					12							10	22
Coxiella burnetii (Q fever)							1					2	3
Streptococcus group A					2			1		1	1	10	15
Yersinia enterocolitica												1	1
Brucella species												1	1
Bordetella pertussis					19							1	20
Leptospira species												2	2
Treponema pallidum												15	15
Toxoplasma gondii												3	3
Echinococcus granulosus												1	1
TOTAL	1	17	12		325	61	42	147	25	39	233	623	1525

Table 11. Virology and serology laboratory reports by contributing laboratories for the reporting period 19 May to 1 June 1994

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	35
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	94
	Prince Henry/Prince of Wales Hospitals, Sydney	149
	Royal Alexandra Hospital for Children, Camperdown	50
	South West Area Pathology Service, Liverpool	40
Queensland	Nambour Hospital	3
	Queensland Medical Laboratory, West End	317
	State Health Laboratory, Brisbane	155
Tasmania	Northern Tasmanian Pathology Service, Launceston	3
	Royal Hobart Hospital	17
	Royal Hobart Hospital, Hobart	1
Victoria	Commonwealth Serum Laboratories, Melbourne	2
	Microbiological Diagnostic Unit, University of Melbourne	14
	Monash Medical Centre, Melbourne	27
	Royal Children's Hospital, Melbourne	135
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	147
Western Australia	Princess Margaret Hospital, Perth	66
	State Health Laboratory Services, Perth	270
TOTAL		1525