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

PENICILLIN SENSITIVITIES AND SEROTYPE/AUXOTYPE COMBINATIONS OF *NEISSERIA GONORRHOEAE* ISOLATED IN QUEENSLAND FROM 1 JANUARY 1991 TO 30 SEPTEMBER 1993

John Bates, Denise Murphy, Vicki Hicks. Queensland Health Neisseria Reference Laboratory, Laboratory of Microbiology and Pathology, Brisbane

The Microbiology Laboratory of the Laboratory of Microbiology and Pathology in Brisbane has been the Queensland laboratory for the Australian Gonococcal Surveillance Programme (AGSP) since the inception of the Programme. In 1991, the laboratory commenced sending isolates of *Neisseria gonorrhoeae* to the Microbiological Diagnostic Unit (MDU) at the University of Melbourne for serotyping and auxotyping. This followed discussions between the two laboratories concerning the need for more data to be generated on the isolates of *Neisseria gonorrhoeae* being found in Australia. In 1992, the Microbiology Laboratory set up its own serotyping and auxotyping facility with the assistance of the MDU. This report summarises the isolates examined between 1 January 1991 and 30 September

1993. Whilst the overall levels of penicillin sensitivity for the whole of Queensland have been published regularly in *CDI* under the auspices of the AGSP, this information has never been presented for different parts of the State. This is the first time that serotyping and auxotyping data have been published for Queensland.

The patterns of reporting have changed considerably in this time, with a greater number of country laboratories sending their isolates for the first time, and more information being provided on local isolates to enable accurate data to be generated for each region examined. The data for Brisbane and environs shows a strong bias as many of these isolates came from private pathology practices operating in Brisbane and no data were provided on the locality from which the patient came. There are probably a number of isolates from southern Queensland and northern New South Wales in this group.

Figure 1. Gonococcal isolates, Queensland, 1 January 1991 to 30 September 1993, by penicillin MICs

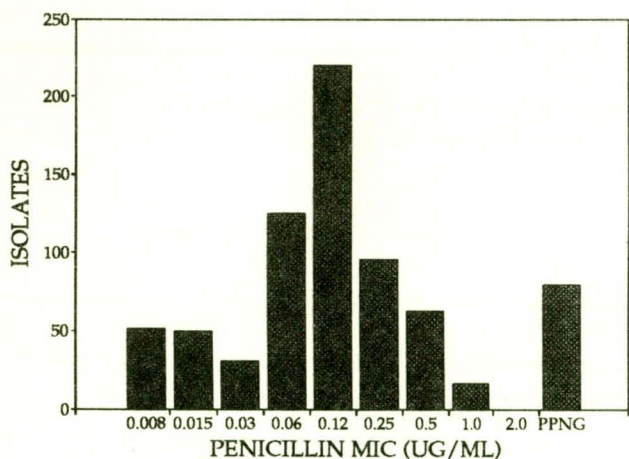


Figure 2. Gonococcal isolates, northern Queensland, 1 January 1991 to 30 September 1993, by penicillin MICs

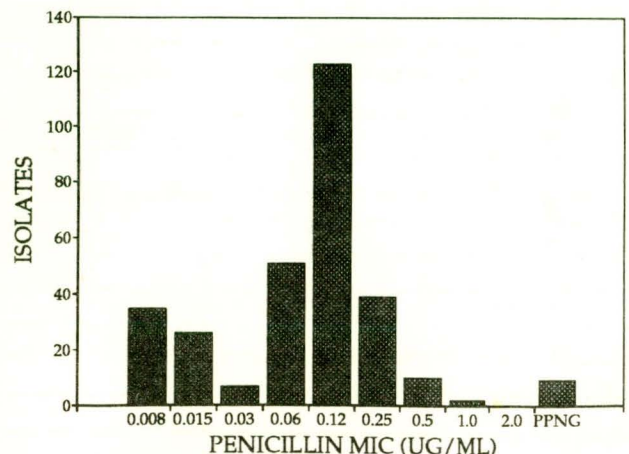
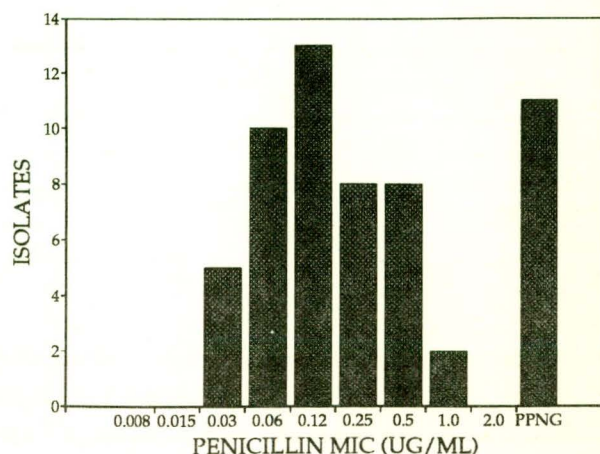


Figure 3. Gonococcal isolates, central Queensland, 1 January 1991 to 30 September 1993, by penicillin MICs



Penicillin sensitivity patterns

Penicillin minimum inhibitory concentrations (MICs) were determined for all isolates, grouped into the geographical regions of Brisbane and environs, southern Queensland (Bundaberg, Maryborough, Gympie, Nambour, Gold Coast, Toowoomba and environs), central Queensland (Gladstone, Rockhampton, Mackay and environs) and northern Queensland (Townsville, Cairns, Mt Isa and environs). The proportion of penicillinase producing *Neisseria gonorrhoeae* (PPNG) was considerably higher for Brisbane and environs than for the State overall, or for southern Queensland, northern Queensland and central Queensland (Figures 1, 2, 3, 4, 5). This is possibly a

Figure 4. Gonococcal isolates, southern Queensland (excluding Brisbane), 1 January 1991 to 30 September 1993, by penicillin MICs

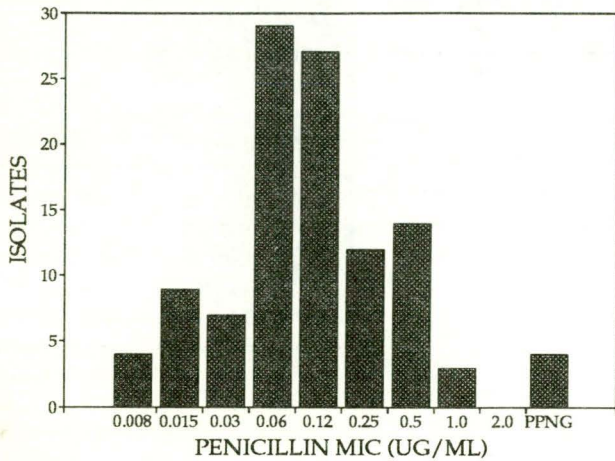
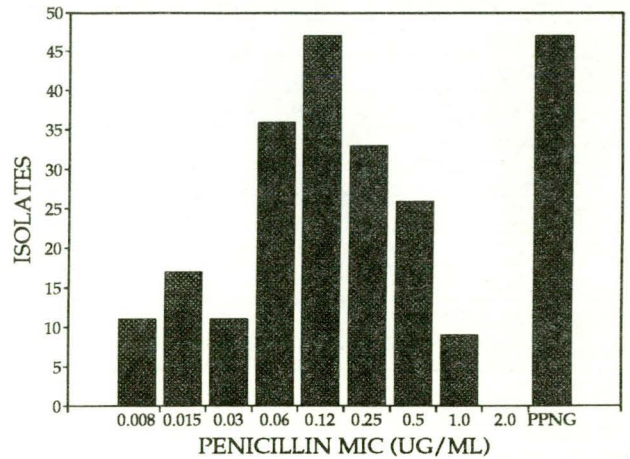


Figure 5. Gonococcal isolates, Brisbane and environs, 1 January 1991 to 30 September 1993, by penicillin MICs



reflection of the practice of patients stopping in Brisbane for treatment before proceeding on their journey. Data is rarely obtained on whether these infections are locally or overseas-acquired. When data are provided, the majority of the isolates are from patients who have recently travelled to South-East Asia.

The majority of isolates fall into the Less Sensitive category of penicillin sensitivity (0.06 - 0.5g/mL). To date, only low numbers of isolates demonstrating intrinsic or chromosomally-mediated resistance have been recorded. PPNGs have been the major cause of penicillin resistance.

Serotype patterns

Serotyping results for the isolates were analysed by geographical region (Table 1). Serotype B-O3 was the most common serotype recorded in Queensland. Serotype A-O4 was the next most common serotype, the majority occurring in northern Queensland. In that area of the State, the dominant serotypes were A-O4, B-O3 and B-O4. In central Queensland, the dominant serotype was A-O4, but the poor level of reporting from this area does not enable further details to be discussed. In southern Queensland, serotype B-O3 dominated the

Table 1. Gonococcal serotyping results, Queensland, 1 January 1991 to 30 September 1993, by region

Serotype	Northern Queensland	Central Queensland	Southern Queensland (excluding Brisbane)	Brisbane and environs	Queensland total
A-1,2	1	1	5	9	16
A-02	0	2	4	16	22
A-04	41	8	1	10	60
A-05	23	2	1	5	31
A-06	21	6	2	13	42
A-16	5	0	1	0	6
B-01	4	5	6	22	37
B-02	0	2	5	20	27
B-03	55	7	35	24	121
B-04	8	4	9	31	52
B-05	7	2	0	0	9
B-06	11	1	8	19	39
B-07	24	1	5	17	47
B-08	7	1	6	18	32
B-11	9	3	0	0	12
B-17	0	2	0	0	2
B-18	4	5	2	0	11
B-32	0	0	7	0	7

Table 2. Gonococcal serotype/auxotype associations, 1 January 1991 to 30 September 1993, by region

Serotype/auxotype	Northern Queensland (Rockhampton and north)	Southern Queensland (South of Rockhampton)
A-1, 2:PRO ¹		8
A-02:PRO		18
A-4:PRO-ARG ²	24	
A-04:PRO	6	
A-05:PRO	11	
A-06:PRO	18	8
A-16:PRO	6	
B-02:NON ³		10
B-03:PRO-ARG		19
B-03:NON	21	8
B-03:PRO		12
B-03:HYP ⁴	10	
B-04:NON		33
B-05:PRO	6	
B-06:PRO	10	13
B-06:NON		11
B-07:PRO	18	13
B-08:PRO	9	16
B-08:NON		9
B-18:PRO	6	
B-32:PRO		10

1. ARG arginine requiring.

2. PRO proline requiring.

3. NON non requiring.

4. HYP hypoxanthine requiring.

Table 3. Penicillinase producing *Neisseria gonorrhoeae* (PPNG) serotype/auxotype associations, 1 January 1991 to 30 September 1993

Serotype/auxotype	PPNG isolates
A-04:ARG ¹	2
A-04:PRO ² -ARG	2
A-06:NON ³	4
A-06:PRO	3
A-06:PRO-ARG	3
B-01:PRO	6
B-01:NON	6
B-02:NON	4
B-02:PRO	2
B-03:NON	3
B-03:PRO	3
B-06:PRO	4
B-07:PRO	2
B-08:PRO	3

1. ARG arginine requiring.

2. PRO proline requiring.

3. NON non requiring.

recorded isolates. In Brisbane, serotypes B-03 and B-04 were the most commonly recorded isolates.

Serotype/auxotype associations

Isolate auxotyping results were analysed, revealing certain serotype/auxotype associations, particularly in isolates from northern Queensland. A more detailed analysis of these results will be prepared in the future, however, a number of general observations can be made. In northern Queensland, the largest group consisted of serotype A-04 auxotype PRO-ARG (proline and arginine-requiring). This combination seems to be almost unique to northern Queensland where the majority of isolates have come from Aboriginal communities. Other major combinations are A-06/PRO, B-03/non requiring (NON, second most common) and B-07/PRO. In southern Queensland, the spread of combinations is a lot broader, with B-04/NON

being predominant, followed by A-02/PRO, B-03/PRO-ARG (Table 2). For isolates demonstrating penicillinase resistance, the predominant serotype/auxotype combinations were B-01/PRO and B-01/NON. However, there is a spread of sero/auxotypes amongst the PPNG (Table 3), and on the number available for analysis, no one combination predominated.

These data provide an overview of the patterns of gonococcal infection in Queensland in recent years. Further articles are planned examining the distribution of specific sero/auxotypes in populations from northern Queensland.

WORLD HEALTH ORGANIZATION WESTERN PACIFIC REGION GONOCOCCAL SURVEILLANCE, 1992 ANNUAL REPORT

Adapted with permission from the 1992 Annual Report of the WHO/WPRO Gonococcal Antibiotic Susceptibility Programme; co-ordinator JW Tapsall, Prince of Wales Hospital, Sydney, New South Wales

Introduction

At a meeting of a World Health Organization (WHO) Western Pacific Region working group on surveillance of sexually transmissible diseases and bacterial resistance in Hong Kong in December 1991, a number of recommendations was made concerning surveillance of antibiotic resistance in general and in gonococci in particular.

With respect to surveillance of resistance in *Neisseria gonorrhoeae*, a key recommendation was to establish a regional reference centre in the Microbiology Department, The Prince of Wales Hospital, Sydney, New South Wales. The centre was to endeavour to expand the number of participating focal points in the region and the number of strains examined by them.

The regional reference centre has prepared and distribute technical guidelines and provided technical support, including distribution of WHO reference cultures, and external quality assessment activities.

The centre was also given the task of preparing annual reports. This is the first, for the strains examined in 1992.

Results

The nominated commencement date for surveillance reporting was 1 July 1992 and most focal points have

contributed data on isolates examined to 31 December 1992. (Some centres nominated a later commencement date and provided data for the first time in 1993.)

A total of about 6000 strains was examined by participants in the Programme. However, not all the focal points tested the resistance of all strains to all antibiotics. The Tables therefore show the resistance to each antibiotic in each centre and the number of strains examined for that resistance by that centre.

The data presented are aggregated for each centre. Different sensitivity patterns may however exist in different parts of some countries. For example, in Australia in 1992, endemic infections with penicillinase-producing *Neisseria gonorrhoeae* (PPNG) and chromosomally-mediated resistant strains (CMRNG) were found in significant numbers in Sydney and Melbourne. In contrast, in other parts of the country, a high proportion of strains remained penicillin sensitive. If significant differences such as these appear in other countries, they too will be commented upon in future reports.

Penicillins

As expected, resistance to the penicillins is generally high throughout the WHO Western Pacific Region, with both PPNG and CMRNG in evidence (Table 1). PPNG rates were high in Brunei, Malaysia, Hong Kong, the Philippines, the Solomon Islands and Vietnam, but

Table 1. Penicillin resistance¹ in gonococci, WHO Western Pacific Region, July to December 1992

Country	Stains tested	Lactamase mediated (PPNG%)	Chromosomal resistance (CMRNG%)	All penicillin resistance (PPNG+CMRNG%)
Australian	923	8.8	8.1	16.9
Brunei	20	40	0	40
China ²		0.3 (323)	61.8 (396)	62.1
Fiji	848	9.9	0.6	10.5
Hong Kong	1063	21.8	44.4	66.6
Japan ²		4.3 (115)	3.6 (82)	7.9
Korea ²		71 (52)	38 (13)	80
Malaysia ²		41 (356)	19 (111)	60
New Caledonia	46	0	0	0
New Zealand	80	6.3	3.8	10.1
Philippines	79	80	3.7	83.7
Singapore ²		35.4 (1755)	7.5 (130)	43
Solomon Islands ²		36.1 (357)		
Tonga ²		18.7 (32)		
Vietnam	56	55	0	55

1. Data on the percentage of strains less sensitive to penicillin have not been included.

2. For countries where not all strains were tested for PPNG and CMRNG, the number of strains tested for each resistance are shown in the brackets.

Table 2. Ceftriaxone resistance in gonococci, WHO Western Pacific Region, July to December, 1992

Country	Strains tested	Resistant (%)
Australia	782	0
Brunei	20	0
China	109	0
Japan	82	0
Korea	43	0
New Caledonia	46	0
Malaysia	185	0
Singapore	130	0
Vietnam	19	0

Table 3. Spectinomycin resistance in gonococci, WHO Western Pacific Region, July to December 1992

Country	Strains tested	Resistant (%)
Australia	782	0
Brunei	20	0
China	109	12.8
Japan	82	0
Malaysia	185	0
New Caledonia	46	0
Singapore	130	0
Vietnam	19	0

Table 4. Quinolone resistance in gonococci, WHO Western Pacific Region, July to December 1992

Country	Strains tested	Resistant (%)	Less sensitive (%)
Australia	782	0.13	2.9
Brunei	20	0	0
Japan	41	0	0
Korea	43	0	9
Malaysia	185	0	0
New Caledonia	46	0	6.5
New Zealand	12	0	0
Vietnam	19	0	0

low in Japan and zero in New Caledonia. CMRNG, when sought, were found in all centres except Brunei, New Caledonia and Vietnam, with the highest rates detected in China, Hong Kong and Korea.

Ceftriaxone

All strains tested (1416 in nine centres) were susceptible to ceftriaxone (Table 2).

Spectinomycin

Spectinomycin resistance was found only in one (China) of the eight centres which tested for this resistance (Table 3).

Quinolones

Only a low rate of quinolone resistance was recorded in three of eight focal points who assessed resistance to these compounds. Because of the interest in this group of antibiotics, the incidence of strains 'less sensitive' to this group of agents is also recorded (Table 4).

High level tetracycline resistance

High level tetracycline resistance (TRNG) was found in strains examined in Australia, China, New Caledonia, Fiji, Korea, Vietnam, the Philippines, Malaysia and Sin

Table 5. High level tetracycline resistance (TRNG) in gonococci, WHO Western Pacific Region, July to December 1992

Country	Strains tested	TRNG (%)
Australia	782	2.3
Brunei	20	0
China	117	15.4
Fiji	848	0.4
Japan	82	0
Korea	43	2.3
Malaysia	185	31
New Caledonia	46	8.7
New Zealand	12	0
Philippines	59	22
Singapore	130	43.8
Tonga	32	0
Vietnam	41	7.3

Table 6. Resistance to other antimicrobials in gonococci, WHO Western Pacific Region, July to December 1992

Antimicrobial	Country	Strains tested	Resistant (%)
Kanamycin	Malaysia	185	1.6
Cefuroxime	Malaysia	185	0
Chloramphenicol	Fiji	848	0
	New Caledonia	46	0
	Vietnam	56	14.3
Spiramycin	New Caledonia	46	2.2
Augmentin	Fiji	795	0

gapore (Table 5), that is, nine of the 13 focal points who examined strains for this type of resistance. A high proportion of TRNG was found in the latter three centres.

Other antimicrobials

Other antimicrobials were tested only in Fiji, Malaysia, New Caledonia and Vietnam (Table 6). A small percentage of Malaysian strains were kanamycin resistant. In Vietnam, chloramphenicol resistance was noted.

Comment

The data received thus far are most valuable, but are best regarded as a point prevalence study of the status of antibiotic resistance in the gonococcus in the Region. This information will be considerably enhanced in value when the study becomes continuous and the trends in antibiotic susceptibility patterns can be monitored as well as identified. It is hoped to introduce quarterly reporting if at all practicable to increase the immediacy and relevance of the data.

SYPHILIS IN ABORIGINAL PRISONERS IN WESTERN NEW SOUTH WALES

Donald Howard, Helen Connolly; Broken Hill Prison, New South Wales

Between 1 December 1992 and 11 August 1993 there were 115 prisoners admitted to Broken Hill Prison. This figure excludes prisoners who were re-admitted during that period. Whenever possible these prisoners were offered a number of health screening procedures and were offered immunisations if their immunisations were not up to date.

The main tests routinely offered were an RPR for syphilis, a random blood sugar level for diabetes and a skin test for tuberculosis. So far, only the results of the syphilis testing have been analysed.

Of the 115 new prisoners, 57 underwent syphilis screening. Of these 57, 24 were assessed as belonging to the Aboriginal community and one was assessed as having been a member of both the Aboriginal community and the non-Aboriginal community at various times in his life. The remainder were assessed as being members of the non-Aboriginal community.

Of the 24 members of the Aboriginal community, five (21%) were found to have positive RPR, TPHA and FTA tests. Of these five, four could give no history of treatment for syphilis nor a convincing history of having been treated with high doses of penicillin for any other condition in the recent past. The prisoner who had an indeterminant racial membership also had positive RPR, TPHA and FTA tests. None of the non-Aboriginal prisoners had positive syphilis serology.

All of the prisoners with positive syphilis serology who did not have evidence of previous treatment accepted treatment and received 14 days of 1.5g of procaine penicillin plus probenecid. They also all accepted the need for and co-operated with contact tracing.

These figures reveal the potential for an alarmingly high incidence of syphilis among the Aboriginal population of western New South Wales. The prisoners with positive syphilis serology came from as far away as Bourke and Dareton, which represents the entire length of the Darling River in New South Wales.

The Prison population is very biased sample in which young Aboriginal males are very much over-represented. Nevertheless, our testing at the Prison seems to indicate a very significant syphilis problem in the region, particularly in the Aboriginal community. It would also seem to indicate that wider screening of that community and much better sexually transmissible disease education is needed in that community. We hope that this brief publication leads to such actions being taken.

Acknowledgment

We wish to thank Mr M Hall, the Superintendent of Broken Hill Prison, Sr Cathy Visser of the Prison Medical Services, the Broken Hill Base Hospital Pathology Services and Darriea Turley, the local HIV and STD co-ordinator, for their assistance in this study.

CDI editorial comment

Syphilis is a notifiable disease in each of the States and Territories of Australia. A total of 2695 notifications of syphilis was made to the National Notifiable Diseases Surveillance System (NNDSS) in 1992¹, and the provisional total for 1993 is 2220. The case definition recommended by the National Health and Medical Research Council is:

- a compatible clinical illness or past history, and
- demonstration of *Treponema pallidum* in clinical specimens by darkfield, fluorescent antibody or equivalent microscopy methods, or
- reactive treponemal tests (for example FTA-ABS, TPHA).

The proportion of notifications which meet the case definition is unknown.

The 1992 notifications were made at an annual rate of 16.0 per 100,000 population overall. Rates varied considerably between different areas. The rate in the Northern Territory was 374.57 per 100,000, and high rates were also reported for Statistical Divisions in northern Western Australia, northern Queensland and western New South Wales. In the Far West Statistical Division of New South Wales (which includes Broken Hill), the rate was 85.0 per 100,000 and in the North Western Statistical Division (including Bourke), the rate was 77.8 per 100,000.

Aboriginality was reported for 55% of the 1992 syphilis notifications and 46% of the 1993 notifications. Seventy-three per cent of those were Aborigines in 1992, and 82% in 1993 (NNDSS, unpublished data).

Reference

1. Hall R. Annual Report of the National Notifiable Diseases Surveillance System, 1992. *Comm Dis Intell*;17:466-487 and 502-511.

COMMENTARY

The following comment has been received about the article 'Public Health response to a suspected case of Lassa fever', published in *CDI* 1993;17:567-569.

'Public Health response to a suspected case of Lassa fever' - response by the National High Security Quarantine Laboratory, Fairfield Hospital

Bryan Speed, Margery Kennett, Marie Gerrard; Fairfield Hospital, Fairfield, Victoria

On the evening of 24 May 1993, the Chief Quarantine Medical officer for Victoria was contacted by the Intensive Care Unit of St George Hospital, Sydney, regarding a traveller from Ghana being treated in the Unit over the previous three days.

Differential diagnoses were discussed and the possibility of Lassa fever raised. As a consequence of the discussion, it was recommended that the New South Wales Health Department be notified if this had not already been done, that serum should be despatched that night to the National High Security Quarantine Laboratory for testing, and arrangements made to send ribavirin from the Fairfield Hospital pharmacy (intravenous preparation) to St George Hospital. The National High Security Quarantine Laboratory staff were notified, and communicated directly with St George Hospital.

The first serum specimen was received the next morning and the negative result was communicated to St George Hospital that afternoon. As the specimen was taken in the first week of illness (on 22 May 1993), a negative IF result did not rule out the possibility of one of the haemorrhagic fevers so further specimens were requested. These were taken on 24 May 1993 and 27 May 1993 and the negative results on each specimen relayed to St George Hospital and the relevant health departments. As the patient's illness remained consistent with Lassa fever, the viral culture facility of the National High Security Quarantine Laboratory was activated on 2 June 1993 and cells inoculated with the patient's early serum.

Electron microscope grids were prepared from the early sample in the National High Security Quarantine Laboratory, removed via the dunk tank and examined. They were found to be negative for virus particles. These negative results were subsequently confirmed at the United States' Centers for Disease Control and Prevention and the diagnosis of leptospirosis made.

The National High Security Quarantine Laboratory at Fairfield has facilities for antibody testing and virus isolation for the haemorrhagic fever viruses and can be activated at short notice. The Fairfield Hospital pharmacy keeps a stock of intravenous and oral ribavirin for use in quarantine incidents around Australia.

OVERSEAS BRIEFS

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

Influenza in the Northern Hemisphere

In Europe, influenza activity has declined or disappeared in most northern and western countries. However, in the second half of December, there was increased activity in Austria, Germany, Italy and Switzerland, and there has been recent increased activity reported from Croatia, Romania and Spain. Influenza A was identified in Croatia and influenza A H₃N₂ was isolated from cases in Romania and Spain. A few influenza B isolates have been reported from the Netherlands. There has been no activity reported from the Russian Federation.

In the United States, influenza activity continues to increase. Widespread activity has been reported from three States (Florida, Maine and Oregon), regional in 12 and sporadic in 20. Influenza A H₃N₂ has been identified in almost all of the country (42 States) and there have been a few influenza A H₁N₁ viruses isolated recently. Outbreaks occurred in retirement homes and schools in December and January, and deaths from pneumonia and influenza recorded in 121 cities increased above expected levels in the first week of January. In Canada influenza A H₃N₂ continues to spread, especially in Alberta.

Influenza B has been the predominant type reported from China and Thailand. There has been no evidence of influenza activity in Israel.

Cholera update

Cabo Delgado and Nampula Provinces in Mozambique have recently been declared cholera infected.

Cases of cholera have been reported for November and December from Belize, Brazil, China, Costa Rica, Djibouti, El Salvador, Iran, Hong Kong, Mexico and Zaire.

Cholera caused by *Vibrio cholerae* O139 has spread to several Asian countries in recent months¹. Indigenous cases have now been reported by Bangladesh, China, India, Malaysia, Nepal and Pakistan. Imported cases have been notified by Estonia, Germany and the United States. Since the populations living in endemic countries have no immunity to this new serogroup, the proportion of adults among the cholera cases reported in the affected areas is abnormally high. The tendency for *V. cholerae* to spread raised the fear that it might

replace *V. cholerae* O1 El Tor as the latter replaced the classical *V. cholerae* from the mid-1960s onward. Recent observations seem to show, however, that epidemics caused by *V. cholerae* O139 are followed by an endemic situation in which *V. cholerae* O1 reappears.

Yellow fever in Brazil

Thirty-two cases of yellow fever and three deaths have been reported from the Mirador Municipio, Maranhao State in Brazil for the period 2 April 1993 to 26 July 1993. Mirador Municipio, Careiro Municipio in Amazonas State and Agua Azul do Norte, Sao Felix do Xingu and Tucuma Municipios in Para State have recently been declared infected.

Vaccination requirements for pilgrimage to Mecca (Hajj)

The Saudi Arabian requirements for the forthcoming Hajj season are as follows:

1. All travellers arriving from a country, any part of which is infected by yellow fever, are required to produce a valid vaccination certificate, in accordance with the country's normal requirements. Travellers arriving in Saudi Arabia without the required certificate will be vaccinated on arrival and placed under strict surveillance for six days from the day of vaccination, but freedom of movement will be permitted.
2. Pilgrims and 'Umra' visitors are required to produce a certificate of vaccination against meningococcal meningitis issued not more than three years and not less than 10 days before arrival in Saudi Arabia. Pilgrims coming from countries with diseases subject to the International Health Regulations (cholera, plague, yellow fever) and countries where meningitis is endemic shall be examined. Suspect cases shall be isolated and contacts put under close observation.
3. Foodstuffs carried by travellers, including pilgrims, shall not be allowed into the country, except for small quantities for the use of road travellers during their journey, provided that they are placed in containers which are easy to open and inspect.

Reference

1. Cholera update, end of 1993. *WHO Wkly Epidemiol Rec* 1994;69:13-17.

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1316 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 9, 10 and 11).

- There were 56 reports of **measles** this period including 54 from Queensland. Fifty-five of the cases were diagnosed by IgM detection.
- **Mumps** was reported for 3 patients this fortnight, all by virus specific IgM detection.
- **Rubella** was reported for 28 patients this fortnight (12 from Western Australia and 10 from Queensland). Included was a 35 year old female from Victoria who was 17 weeks pregnant, and 8 other females in the 15 to 44 years age group. Diagnosis was by viral IgM detection in 27 cases.
- Thirteen reports of **hepatitis A** were received this fortnight. The total number of reported cases with specimen collection dates in 1993 is now 446 (Figure 1).
- A 35 year old pregnant female with a history of blood transfusion and a 70 year old female with abnormal liver function tests were reported positive for **hepatitis C virus** by serology.
- **Hepatitis D** was reported for 5 patients this fortnight, including a 25 year old female injecting drug user who died, a 22 year old female and a 42 year old male, all with clinical hepatitis.
- **Ross River virus** infection was reported for 66 patients this period, 55 from Queensland, 4 from New South Wales, 3 from the Northern Territory, 3 from Western Australia and one from Victoria. One was a confirmed case (fourfold rise in titre) from Victoria with a specimen collection date in

December. The remainder were presumptive diagnoses with specimen collection dates in January for 25 and December for 40 (Figure 2). There has been a recent increase in the number of reports received from Queensland, and 4 reports each recently from the Northern Territory and South Australia, the first since last season.

- There were 10 cases of **Barmah Forest virus** reported, 3 from Western Australia, 4 from Queensland and 3 from the Northern Territory. All were presumptive diagnoses. Specimen collection dates were in December for 8 and in January for 2.
- Forty two reports of **adenoviruses** were received, 14 from Victoria, 12 from South Australia, 11 from Western Australia and 5 from New South Wales. Included was an untyped adenovirus isolated from the urine of a 39 year old female with haematuria, and six cases of conjunctivitis.
- **Herpes simplex virus** was reported for a 4 year old female with encephalitis, and a 40 year old male with meningitis, both diagnosed by IgM detection.
- **Herpes simplex virus type 1** was reported isolated from a 2 day old male from South Australia (site of specimen collection unspecified).
- Biopsy specimens of the lung and liver from a 10 day old child yielded **herpes simplex virus type 2** by virus isolation.
- There were 48 reports of **cytomegalovirus (CMV)** this fortnight. The virus was isolated from the urine of a 3 month old female who had been born prematurely in Bali, given multiple transfusions and pooled breast milk, and was also diagnosed as having malaria. Cytomegalovirus was also reported isolated from the urine of a 22 year old

Figure 1. Hepatitis A laboratory reports 1987 to 1993, by year of specimen collection

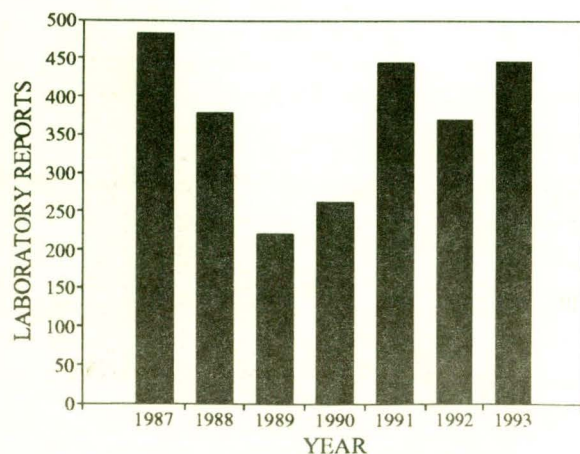
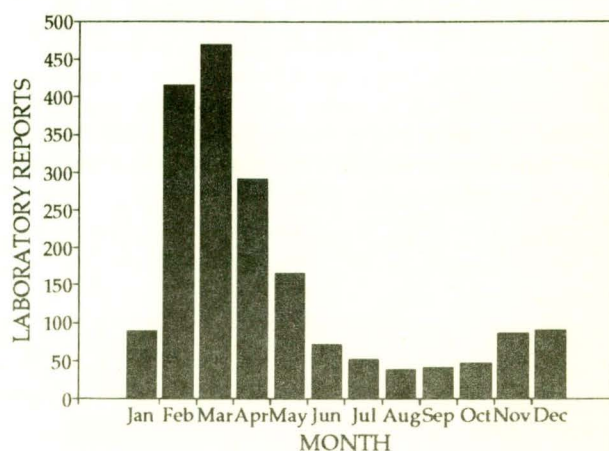


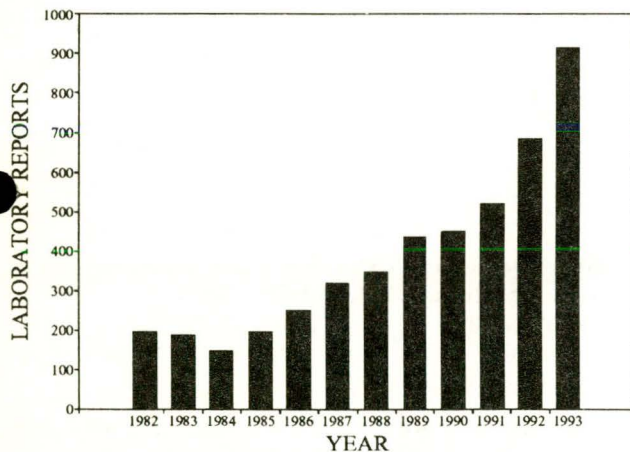
Figure 2. Ross River virus laboratory reports, 1993, by month of specimen collection



pregnant female with probable primary CMV infection in the first 10 weeks of pregnancy and from the urine of a one day old female. A number of reports of CMV in immunosuppressed patients was also received including isolation from the leucocytes of both a 33 year old AIDS patient with suspected CMV retinitis and a 47 year old renal transplant recipient, a broncho-alveolar lavage specimen from a 33 year old lung transplant recipient, a caecum biopsy from a 59 year old HIV positive patient and a lung biopsy from a 29 year old HIV positive patient. Thirty-four of the CMV reports received were of virus isolates and the remaining 14 of viral IgM detection.

- Thirty-six reports of **varicella-zoster virus** were received this fortnight including a March 1993 case in which nucleic acid was detected in the CSF of 28 year old female with a diagnosis of meningitis and clinical zoster. This is only the second report of varicella-zoster virus diagnosis by nucleic acid detection to this Scheme; the first was from the serum of a 26 year old female in April 1993. Of the other reports this fortnight, 14 were diagnosed by virus isolation, 13 by antigen detection, and 8 by detection of virus specific IgM. A total of 913 reports of varicella-zoster virus with specimen collection dates in 1993 have been received, more than ever before by this Scheme (Figure 3).

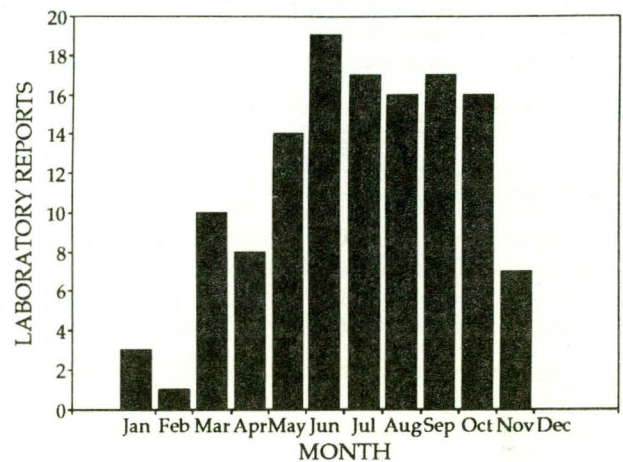
Figure 3. Varicella-zoster laboratory reports 1982 to 1993, by year of specimen collection



- **Parvovirus** was reported for 3 patients this fortnight, two of whom are known to have had a rash and arthritis.
- **Coxsackievirus type B5** was reported isolated from the nasopharynx of a 2 month old female from South Australia.
- An 8 month old female with a respiratory tract infection from South Australia was reported as having **echovirus type 5** (virus isolated from the nasopharynx).

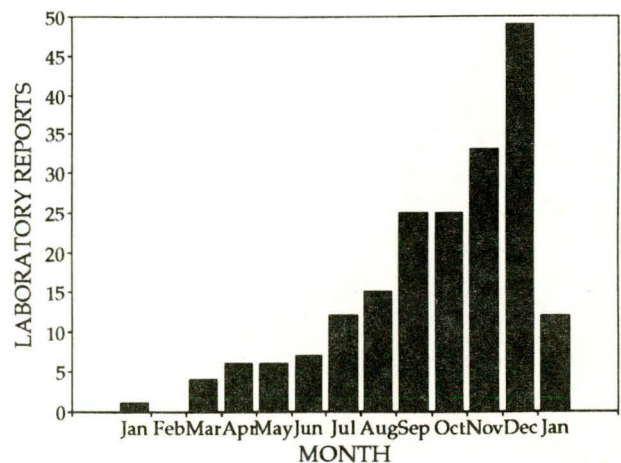
- One report of **echovirus type 11** was received this fortnight, bringing the total with specimen collection dates in 1993 to 128 reports (Figure 4), the most since the last epidemic period, over the summer of 1986-87.

Figure 4. Echovirus type 11 laboratory reports, 1993, by month of specimen collection



- **Echovirus type 17** was isolated from the faeces of a 7 month old South Australian male with a fever.
- Thirty-eight reports of **echovirus type 30** (29 from Victoria) were received this fortnight, including 31 cases of meningitis. Most recent reports received have been from Victoria, however this fortnight 5 have been received from Western Australia and 3 from Tasmania. A total of 183 echovirus reports with specimen collection dates in 1993 has been received, and 12 so far for this year (Figure 5).

Figure 5. Echovirus type 30 laboratory reports by month of specimen collection, January 1993 to January 1994



- **Influenza A** activity remains unusually high for the time of year, particularly in South Australia, Victoria, Western Australia and Tasmania. Fourteen reports were received this fortnight, 2 of virus isolation, one fourfold change, 6 single high titres and 5 IgM detections. Included was a 6 month old female with pneumonia. There was one report of **influenza B**, diagnosed by single high titre.
- Twenty-two reports of **respiratory syncytial virus** were received this fortnight, 13 from Western Australia. Included was a 3 month old male with a nosocomial infection.
- Three cases of **calicivirus** were reported from New South Wales including a 2 month old and a 7 month old with gastroenteritis. Diagnosis was by electron microscopy.
- **Chlamydia trachomatis** was reported for 95 patients, 3 of whom had eye disease, including a 6 day old male. Sixty-five diagnoses were by isolation, 32 by antigen detection and one by single high titre.
- A single case of **Rickettsia australis** was reported in a 23 year old South Australian resident with a 3 week history of pyrexia and suspected meningitis following recent travel to North Queensland.
- There were 41 **Bordetella** reports this reporting period (28 *Bordetella pertussis* and 13 *Bordetella* species) bringing the total with collection dates in 1993 to 612.

Australian Sentinel Practice Research Network

Data for one week only are presented in this issue of CDI (Table 1). There was a total of 3048 patient encounters in Week 1 of 1994. Measles was reported at about the same rate as before Christmas last year.

Table 1. Australian Sentinel Practice Research Network, Week 1, 1994

Condition	Week 1, to 2 January 1994	
	Reports	Rate per 1000 encounters
Influenza	6	2.0
Measles	3	1.0
Rubella	0	0
Pertussis	1	0.3
Genital herpes	0	0
Gastroenteritis	56	18.4

Australian Encephalitis Sentinel Chicken Programme: Serological Results - November and December 1993

AK Broom³, L Hueston², JS Mackenzie¹, L Melville³, D Phillips⁴, L Smythe⁴, J Whitehead⁵

Sentinel chicken serology was undertaken for 25 flocks in the Kimberley and Pilbara regions of Western Australia in November and December 1993. Eight out of 12 chickens in the Kununurra flock seroconverted to Murray Valley encephalitis virus during this period, 7 in November and one in December. There was no other evidence of flavivirus activity elsewhere in the north-west.

There was no evidence of flavivirus activity in the sentinel chicken flocks from the Northern Territory, northern Queensland, New South Wales or Victoria in November and December 1993.

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HIV and AIDS Surveillance

Methodological note

National surveillance for HIV disease is coordinated by the National Centre in HIV Epidemiology and Clinical Research (NCHECR), in collaboration with State and Territory health authorities and the Commonwealth of Australia. Cases of HIV infection are notified to the National HIV Database on the first occasion of diagnosis in Australia, by either the diagnosing laboratory (ACT, New South Wales, Tasmania, Victoria) or by a combination of laboratory and doctor sources (Northern Territory, Queensland, South Australia, Western Australia). Cases of AIDS are notified through the State and Territory health authorities to the National AIDS Registry. Diagnoses of both HIV infection and AIDS are notified with the person's date of birth and name code, to minimise duplicate notifications while maintaining confidentiality.

Tabulations of diagnoses of HIV infection and AIDS are based on data available three months after the end of the reporting interval indicated, to allow for reporting delay and to incorporate newly available information. More detailed information on diagnoses of HIV infection and AIDS is published in the quarterly *Australian HIV Surveillance Report*, available from the National Centre in HIV Epidemiology and Clinical Research, 376 Victoria Street, Darlinghurst NSW 2010. Telephone: (02) 332 4648 Facsimile: (02) 332 1837.

HIV and AIDS diagnoses and AIDS deaths reported for August 1993, and cumulative to 31 August 1993 as reported to 30 November 1993, are included in this issue of CDI (Tables 2 and 3).

Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths from AIDS occurring in the period 1 to 31 August 1993, by sex and State or Territory in which diagnosis was made

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This Period	This Period	Year to Date	Year to Date
										1993	1992	1993	1992
HIV diagnoses	Female	0	3	0	1	0	0	1	0	5	9	57	68
	Male	0	41	0	19	5	0	19	2	86	89	719	831
	Sex not reported	0	2	0	0	0	0	0	0	2	0	9	14
	Total ¹	0	46	0	20	5	0	20	2	93	98	788	915
AIDS diagnoses	Female	0	2	0	1	0	0	1	0	4	1	23	11
	Male	0	16	1	4	5	0	13	0	39	44	352	359
	Total ¹	0	18	1	5	5	0	14	0	43	45	377	371
AIDS deaths	Female	0	0	0	0	0	0	1	0	1	0	10	11
	Male	0	13	2	2	2	0	15	0	34	46	316	355
	Total ¹	0	13	2	2	2	0	16	0	35	46	328	368

1. Persons whose sex was reported as transsexual are included in the totals.

Table 3. Cumulative diagnoses of HIV infection, AIDS and deaths from AIDS since the introduction of HIV antibody testing to 31 August 1993, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	10	491	6	73	37	3	129	42	791
	Male	138	9226	61	1237	523	50	2890	622	14747
	Sex not reported	0	2031	0	0	0	0	44	0	2075
	Total ¹	148	11756	67	1313	560	53	3070	665	17632
AIDS diagnoses	Female	2	94	0	18	11	2	25	9	161
	Male	53	2516	18	374	179	24	923	183	4270
	Total ¹	55	2615	18	394	190	26	952	192	4442
AIDS deaths	Female	2	52	0	11	5	1	11	3	85
	Male	36	1686	11	259	106	17	656	122	2893
	Total ¹	38	1742	11	271	111	18	670	125	2986

1. Persons whose sex was reported as transsexual are included in the totals.

Sterile Sites Surveillance (LabDOSS)

Data for this fortnight have been provided by 5 laboratories. CDI welcomes Alice Springs Hospital, Northern Territory to the LabDOSS scheme.

There were 64 reports of recent sepsis: Sir Charles Gairdner Hospital, Western Australia 15, Woden Valley Hospital, ACT 30, Sullivan Nicolaides, Queensland 12, Royal Hobart Hospital, Tasmania 2, Alice Springs Hospital, Northern Territory 5. Thirty reports of cases of sepsis in December have been merged with data for 1992.

Organisms reported 5 or more times from blood are detailed in Table 4.

Other blood isolates not included in Table 4 were:

Gram positive: 1 *Enterococcus faecalis*, 1 *Streptococcus* Group C, 1 *Streptococcus* Group B, 1 *Streptococcus* group D, 2 *Streptococcus pneumoniae*, 1 *Streptococcus mitis*, 1 *Bacillus* species.

Gram negative: 1 *Haemophilus influenzae* (22 month old, not type b), 3 *Salmonella* species (30 year old male from Queensland, *S. Anatum* from a 9 month old female in

the Northern Territory and *S. Bredeney* from a 2 year old female also from the Northern Territory) 1 *Acinetobacter* species, 3 *Enterobacter cloacae*, 2 *Klebsiella pneumoniae*, 1 *Klebsiella oxytoca*, 1 *Pseudomonas aeruginosa*, 1 *Serratia marcescens*.

Figure 6. LabDOSS blood isolates, by age group

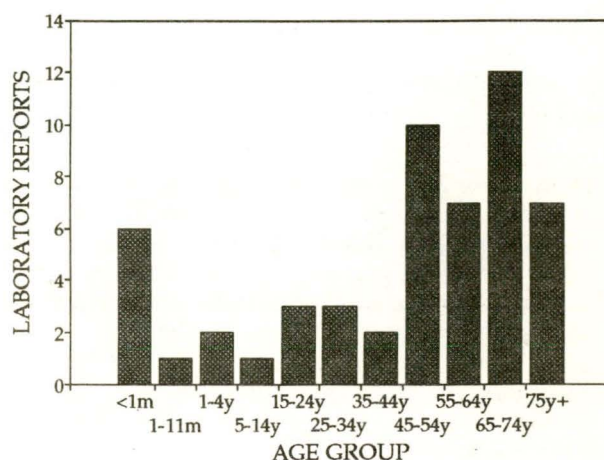


Table 4. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical Information						Risk Factors					Total ¹
	Bone /joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary Tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
<i>Staphylococcus aureus</i>		3						3	1	1		8
<i>Staphylococcus coagulase negative</i>								1				5 ²
<i>Escherichia coli</i>				2	4		1	6			1	16

1. Only organisms with 5 or more reports are included in this table.
 2. 1 *Staphylococcus epidermidis*, *Staphylococcus warneri*.

Table 5. LabDOSS meningitis reports, by organism and age group

	15-24 years	45-54 years	Total
<i>Neisseria meningitidis</i> serogroup C ¹	1		1
Group B <i>Streptococcus</i>		1	1

1. Western Australia.

Anaerobes: 1 *Clostridium perfringens*, 1 *Clostridium tertium*, 1 *Peptostreptococcus* species.

Fungi: 2 *Candida albicans*.

Most reports were for patients over the age of 45 years (Figure 6).

CSF and/or meningitis reports

There were two reports of CSF isolates and/or meningitis (Table 5).

Isolates from sites other than blood or CSF

Joint fluid: 1 *Neisseria gonorrhoeae* (15 year old female from the Northern Territory), 3 *Staphylococcus aureus*.

Other: 1 *Streptococcus 'milleri'*, 1 *Propionibacterium* species, 1 *Pseudomonas aeruginosa*.

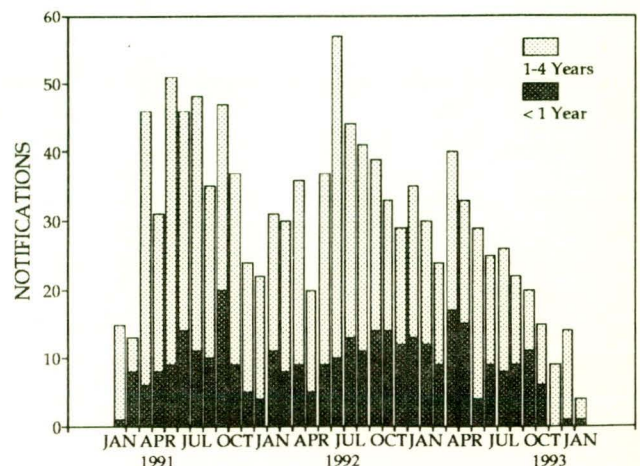
National Notifiable Diseases Surveillance System, 9 January 1994 to 22 January 1994

There were 1,920 reports for this period (Tables 6, 7 and 8, and Figure 9). No reports were received from Victoria.

- There were 202 notifications of **Ross River virus infection** for the period. These were for 96 males and 106 females. Recorded ages ranged from the 0-4 to the 80-84 years age group. Cases were reported for residents of statistical divisions in northern New South Wales, Brisbane and rural Queensland, and Perth and south-west Western Australia. The reported onset dates were September (2), October (one), November (28), December (51), and January (120).

- There was a single notification of **dengue** for a female in the 45-49 years age group who was a resident of the Northern Territory. The onset date was recorded as December.
- A case of **brucellosis** was reported for a female in the 35 to 39 years age group who lived in rural Queensland. The onset date was December.
- Ninety-two notifications of **gonococcal infection** were received in this period. There were 61 males, 30 females, and sex was unrecorded for one case. They were aged between the 0-4 years and 75-79 years age groups.
- **Haemophilus influenzae type b infection** was reported for 8 cases (Figure 7). There were 5 males and 3 females. Three of the cases were in the 0-4 years age group (one aged less than one year, one aged 3 years and one aged 4 years), and one case was aged 5 years. The remaining cases were in the 65-69 years (one), 70-74 years (2), and 90-94 years (one) age groups. Recorded onset dates were in November (one) and January (7). There were no apparent clusters of cases.

Figure 7. Haemophilus influenzae type b infection notifications, January 1992 to January 1994, by month of onset and age group



- There were 59 notifications of hepatitis A for this period. There were 34 males and 25 females. Recorded ages ranged from the 0-4 years to the 85-89 years age groups. Peak ages were in the 35-39 years (11) and the 30-34 years (9) age groups.
- Hepatitis B was notified for 118 cases. There were no reports from New South Wales or South Australia who report only incident cases (representing new infections) to the National Notifiable Diseases Surveillance System.
- Six cases of legionellosis were reported; 3 were males and 3 were females. Ages ranged between the 25-29 years and 65-69 years age groups. There were no apparent clusters of cases.
- There were 8 cases of leptospirosis notified for the period. Two cases were females and six were males. Ages ranged between the 15-19 years and the 60-64 years age groups. The cases were from Brisbane (2), rural Queensland (4), rural New South Wales (one), and rural Tasmania (one).
- One case of listeriosis was notified in a female in the 40-44 years age group. The onset date was January.
- Six cases of malaria were reported; one case was a female and the remainder were males. Recorded ages ranged between the 15-19 years and 50-54 years age groups. One case was for a resident of the 'malaria receptive zone'. Onset dates were recorded as December (one) and January (4). Information on date of onset was unrecorded for one case.
- There were 183 notifications of measles received for the period (Figure 8). Eighty-two of the cases were males, 100 were females, and sex was not recorded for one case. Twelve of the cases were aged less than one year and the mean age was 14.1 years. There were 30 apparent clusters with up to 10 cases each in separate postcode areas. Apparent clusters were in New South Wales and the Australian Capital Territory (9), Queensland (20), and Tasmania (one).

lian Capital Territory (9), Queensland (20), and Tasmania (one).

- There were 11 notifications of meningococcal infection; 8 were males, 2 were females, and sex was unrecorded for one case. Four cases were in the 0-4 age group and the oldest case was in the 70-74 year age group. There was one apparent cluster of 2 cases in the same postcode area with recorded onset dates separated by an interval of 11 days.
- One hundred and sixty-four cases of pertussis were notified; 72 were males, 91 were females, and sex was unrecorded for one case. Three cases were aged less than one year, 14 were less than 5 years and ages ranged up to the 90-94 years age group. There were 35 apparent clusters with 2 to 6 cases each in separate postcode areas. Apparent clusters were in New South Wales and the Australian Capital Territory (3), Queensland (29), Western Australia (2) and the Northern Territory (one).
- There were 22 notifications for Q fever; 20 were males and 2 were females. Ages ranged from the 15-19 years to the 45-49 years age groups.
- There were 88 notifications for rubella in the period. Forty-nine cases were males, 38 cases were females, and sex was unrecorded for one case. The mean age of the cases was 42.7 years and there were 14 cases recorded for females in the 15-44 years age group. There were 13 apparent clusters with 2 to 5 cases each in separate postcode areas. Apparent clusters were in New South Wales and the Australian Capital Territory (2), Queensland (4), South Australia (one), and Western Australia (6).
- Sixty-one notifications for syphilis were received for the period; 28 were males, 32 were females, and sex was unrecorded for one case.
- There were 19 notifications of tuberculosis received; 14 were males and 5 were females. Ages ranged from the 0-4 years to the 85-89 years age groups. Recorded onset dates were July (one), September (2), October (2), November (3), December (6), and January (5).
- A single case of typhoid was notified, for a female in the 85-89 year age group who was resident in Perth.

Figure 8. Measles notifications, January, 1992 to January 1994, by month of onset

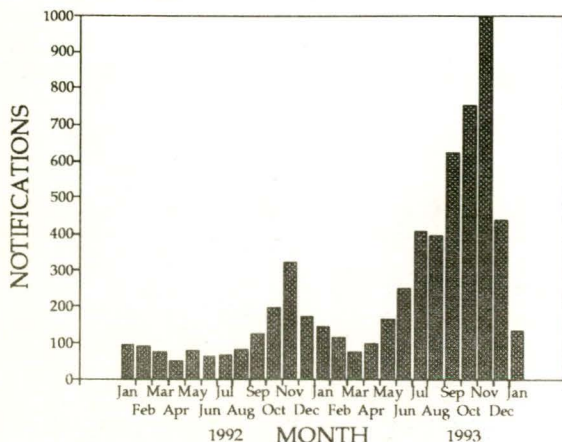
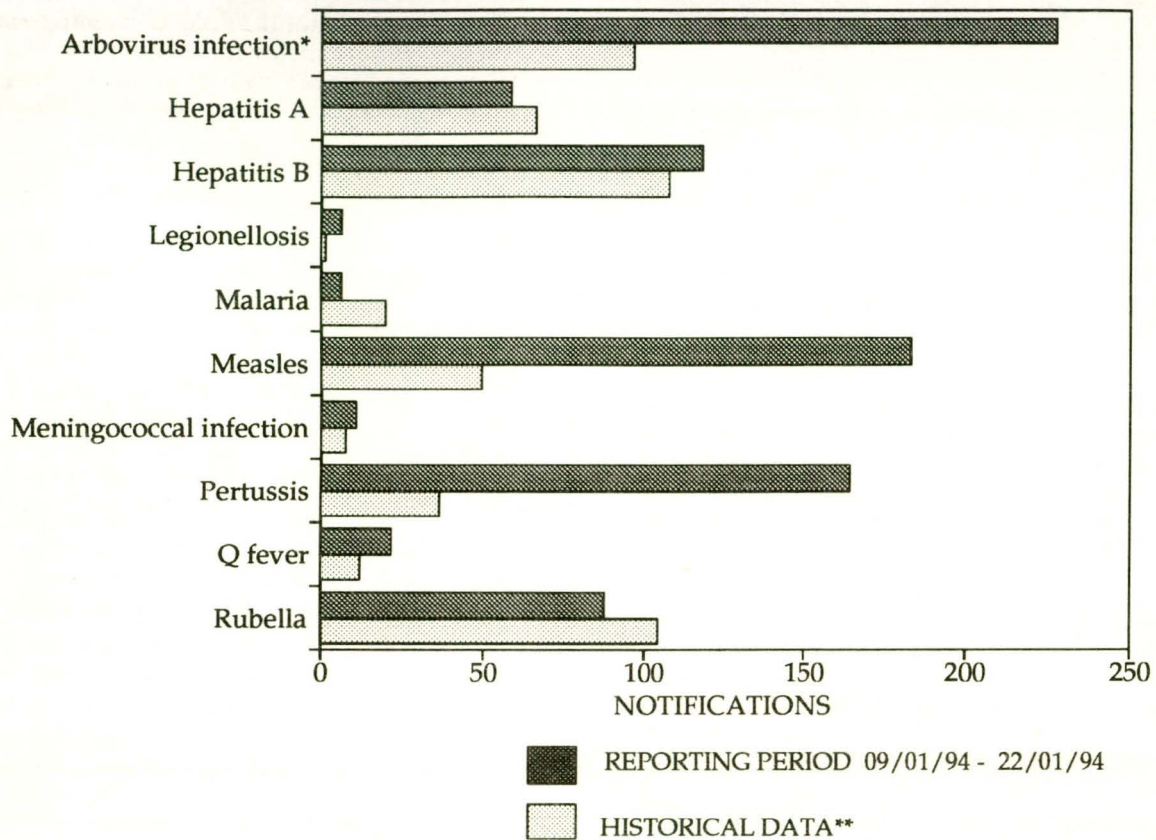


Figure 9. Selected National Notifiable Diseases Surveillance System reports, and historical data **



* Includes Ross River virus and Dengue

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

Table 6. Notifiable Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 9 to 22 January 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	0	
<i>Haemophilus influenzae</i> b infection ²	0	2	0	3	2	0		1	8	15	22	
Measles	6	45	0	123	2	4		3	183	72	275	
Mumps	0	0	NN	NN	0	NN		0	0	0	0	
Pertussis	1	24	0	117	3	0		19	164	55	263	
Poliomyelitis	0	0	0	0	0	0		0	0	0	0	
Rubella ³	7	1	3	36	6	0		35	88	191	338	
Tetanus	0	0	0	NN	0	0		0	0	0	0	

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

2. NT, Tas: CRS only.
NN Not Notifiable.

Table 7. Other Notifiable Diseases¹, for the reporting period 9 to 22 January 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 (NEC) ³	0	1	NN	24	0	0		0	25	9	33	13
Ross River virus infection	0	3	8	187	-	NN		4	202	94	285	123
Dengue	0	-	1	0	-	NN		NN	1	3	1	5
Campylobacteriosis ⁴	14	-	5	86	62	29		43	239	365	364	547
Chlamydial infection (NEC) ⁵	1	NN	4	132	0	7		29	173	211	265	354
Donovanosis	0	NN	0	1	NN	NN		0	1	1	2	2
Gonococcal infection ⁶	1	8	10	48	0	0		25	92	105	121	179
Hepatitis A	1	12	0	43	0	0		3	59	77	75	106
Hepatitis B	6	0	1	90	0	0		21	118	98	151	164
Hepatitis C	25	1	7	128	0	4		65	230	181	298	270
Hepatitis (NEC)	0	1	0	3	0	0		NN	4	2	4	2
Legionellosis	0	0	0	4	0	0		2	6	1	6	4
Leptospirosis	0	1	0	6	0	1		0	8	6	9	8
Listeriosis	1	0	NN	0	0	0		0	1	4	1	5
Malaria	1	0	0	2	0	2		1	6	22	8	38
Meningococcal infection	0	2	0	8	0	0		1	11	14	15	19
Ornithosis	0	NN	0	0	0	0		0	0	1	0	7
Q fever	0	3	0	19	0	0		0	22	18	27	25
Salmonellosis (NEC)	2	21	22	65	15	3		22	150	216	211	316
Shigellosis ⁴	0	NN	4	4	3	0		12	23	45	30	62
Syphilis	1	11	4	43	0	0		2	61	63	83	96
Tuberculosis	0	3	2	9	1	1		3	19	30	21	48
Typhoid ⁷	0	0	0	0	0	0		1	1	6	1	6
Yersiniosis (NEC) ⁴	0	-	0	20	4	0		0	24	26	32	36

1. For HIV and AIDS, see Tables 2 and 3. 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. NSW and Vic: includes paratyphoid.
- NN Not Notifiable.
 NEC Not Elsewhere Classified.
 - Elsewhere Classified.

Table 8. Rarely Notified Diseases¹ for the reporting period 9 to 22 January 1994

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

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1987 to 1992.

Table 9. Laboratory reports by State or Territory¹ for the reporting period 13 to 26 January 1994, historical data², and total reports for the year

	State or Territory ¹								Total this fortnight	Historical data ²	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus		1		54			1		56	15.2	305
Mumps virus				2			1		3	2.5	15
Rubella virus		2		10	3		1	12	28	33.5	179
HEPATITIS VIRUSES											
Hepatitis A virus				5			2	6	13	16.3	41
Hepatitis B virus		1		13	5		15	22	56	77.8	266
Hepatitis C virus		6		26	55	3	3	64	157	91.2	676
Hepatitis D virus				1			4		5	1.0	5
ARBOVIRUSES											
Ross River virus		4	3	55			1	3	66	25.0	209
Barmah Forest virus			3	4				3	10	4.0	39
Flavivirus (unspecified)							1		1	3.5	2
ADENOVIRUSES											
Adenovirus type 1		1					1		2	4.8	11
Adenovirus type 2		1							1	3.0	13
Adenovirus type 4		1							1	4.5	3
Adenovirus type 8							3		3	.8	16
Adenovirus type 12		1							1	.0	1
Adenovirus not typed/pending		1			12		10	11	34	37.3	245
HERPES VIRUSES											
Herpes simplex virus type 1	2	16		37	14	3	38	37	147	155.8	637
Herpes simplex virus type 2		15		44	32	1	24	51	167	168.8	764
Herpes simplex not typed/pending	1	18		3		1	2	3	28	22.8	97
Cytomegalovirus		3	1	9			30	5	48	66.7	225
Varicella-zoster virus		2	1	12	7		9	5	36	35.0	151
Epstein-Barr virus		2		16	35		5	8	66	64.5	234
Herpes virus group - not typed				1	1				2	2.2	5
OTHER DNA VIRUSES											
Contagious pustular dermatitis (Orf virus)								1	1	.3	1
Parvovirus		2					1		3	8.2	7
PICORNA VIRUS FAMILY											
Coxsackievirus A16		1					4		5	.7	9
Coxsackievirus B2							1		1	.2	4
Coxsackievirus B5					1				1	3.5	4
Echovirus type 5					1				1	.5	4
Echovirus type 6								1	1	.2	2
Echovirus type 11							1		1	1.0	21
Echovirus type 17					1				1	1.2	1
Echovirus type 30					1	3	29	5	38	.3	101
Echovirus not typed/pending		1							1	.0	1
Poliovirus type 2 (uncharacterised)		1							1	1.5	1
Poliovirus type 3 (uncharacterised)					1				1	.3	3
Rhinovirus (all types)		2		1		1	9	6	19	26.2	182
Enterovirus not typed/pending		3		4			17	12	36	31.2	260

Table 9. Laboratory reports by State or Territory¹ for the reporting period 13 to 26 January 1994, historical data², 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					3	2	6	3	14	4.3	80
Influenza B virus								1	1	1.8	65
Parainfluenza virus type 1		1						1	2	3.8	14
Parainfluenza virus type 3							6		6	20.2	46
Respiratory syncytial virus			2		2		5	13	22	10.5	117
OTHER RNA VIRUSES											
HIV-1				1			1		2	2.0	10
Rotavirus		8			2	1	6	7	24	27.2	145
Calici virus		3							3	1.0	3
Small virus (like) particle							1		1	1.5	3
OTHER											
<i>Chlamydia trachomatis</i> not typed		20		22	12		18	23	95	103.3	308
<i>Chlamydia psittaci</i>							3		3	6.2	12
<i>Mycoplasma pneumoniae</i>		1		33	2		2	1	39	54.8	185
<i>Coxiella burnetii</i> (Q fever)		1		5			1	1	8	14.0	81
<i>Rickettsia australis</i>					1				1	.0	1
<i>Streptococcus</i> group A		2		7				1	10	5.7	36
<i>Bordetella pertussis</i>							14	14	28	2.3	97
<i>Bordetella</i> species		2		11					13	6.3	81
<i>Treponema pallidum</i>				1					1	17.5	40
<i>Strongyloides stercoralis</i>							1		1	.0	1
TOTAL	3	123	10	377	191	15	277	320	1,316	1,194.0	6,065

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. Laboratory reports by clinical information for the reporting period 13 to 26 January 1994

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					4			17		1		34	56
Mumps virus												3	3
Rubella virus								10		3		15	28
HEPATITIS VIRUSES													
Hepatitis A virus							9					4	13
Hepatitis B virus							7			1		48	56
Hepatitis C virus							13					144	157
Hepatitis D virus							5						5
ARBOVIRUSES													
Ross River virus								1		31		34	66
Barmah Forest virus										3		7	10
Flavivirus (unspecified)												1	1
ADENOVIRUSES													
Adenovirus type 1					1							1	2
Adenovirus type 2												1	1
Adenovirus type 4												1	1
Adenovirus type 8									3				3
Adenovirus type 12												1	1
Adenovirus not typed/pending					10	10			3			11	34
HERPES VIRUSES													
Herpes simplex virus type 1	1							69	6		55	16	147
Herpes simplex virus type 2								43	2		108	14	167
Herpes simplex not typed/pending		2			1	1		8			1	15	28
Cytomegalovirus				2	11		2		1	1		31	48
Varicella-zoster virus		1						27			1	7	36
Epstein-Barr virus							4	2				60	66
Herpes virus group - not typed								1				1	2
OTHER DNA VIRUSES													
Contagious pustular dermatitis (Orf virus)												1	1
Parvovirus								2				1	3
PICORNA VIRUS FAMILY													
Coxsackievirus A16								5					5
Coxsackievirus B2												1	1
Coxsackievirus B5												1	1
Echovirus type 5					1								1
Echovirus type 6			1										1
Echovirus type 11		1											1
Echovirus type 17												1	1
Echovirus type 30		31			3							4	38
Echovirus not typed/pending													1
Poliovirus type 2 (uncharacterised)													1
Poliovirus type 3 (uncharacterised)												1	1
Rhinovirus (all types)					12							7	19
Enterovirus not typed/pending		14			3			2				17	36

Table 10. Laboratory reports by clinical information for the reporting period 13 to 26 January 1994, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					11							3	14
Influenza B virus												1	1
Parainfluenza virus type 1					2								2
Parainfluenza virus type 3					6								6
Respiratory syncytial virus					21							1	22
OTHER RNA VIRUSES													
HIV-1												2	2
Rotavirus					1	22						1	24
Calici virus						2						1	3
Small virus (like) particle						1							1
OTHER													
<i>Chlamydia trachomatis</i> not typed									3		77	15	95
<i>Chlamydia psittaci</i>					2							1	3
<i>Mycoplasma pneumoniae</i>					20			1				18	39
<i>Coxiella burnetii</i> (Q fever)								1				7	8
<i>Rickettsia australis</i>												1	1
GRAM POSITIVE BACTERIA													
<i>Streptococcus</i> group A					3			2				5	10
<i>Bordetella pertussis</i>					28								28
<i>Bordetella</i> species					8							5	13
<i>Treponema pallidum</i>											1		1
<i>Strongyloides stercoralis</i>												1	1
TOTAL	1	49	1	2	148	38	40	191	18	40	243	545	1316

Table 11. Laboratory reports by contributing laboratories for the reporting period 13 to 26 January 1994

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	81
	Royal Alexandra Hospital for Children, Camperdown	9
Queensland	Queensland Medical Laboratory, West End	405
	State Health Laboratory, Brisbane	6
South Australia	Institute of Medical & Veterinary Science, Adelaide	189
Tasmania	Northern Tasmanian Pathology Service, Launceston	3
	Royal Hobart Hospital	4
Victoria	Microbiological Diagnostic Unit, University of Melbourne	17
	Monash Medical Centre, Melbourne	17
	Royal Children's Hospital, Melbourne	70
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	184
Western Australia	Princess Margaret Hospital, Perth	50
	State Health Laboratory Services, Perth	281
TOTAL		1316