

# Communicable Diseases Surveillance

Communicable Diseases Surveillance consists of data from varying sources. The National Notifiable Diseases Surveillance System (NNDSS) is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. The *CDI* Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel surveillance scheme. In this report, data from the NNDSS are referred to as 'notifications' while data from the LabVISE scheme are referred to as 'laboratory reports'.

## Vaccine preventable diseases

The number of notifications of measles has shown a continuing decline since October 1997 when 147 cases were reported with onset in that month. The number of rubella cases also continued to decline after peaking in September 1997 with 165 cases. Similar trends were observed in the sentinel laboratory data.

Although the number of reports of pertussis appeared to peak in October and has since declined, the number of cases being reported remained high. A total of 9,862 notifications were reported with onset in 1997, the highest number ever recorded by the NNDSS. Most reports were from New South Wales (36%), Queensland (19%), South Australia (16%) and Victoria (14%).

## Arboviruses

The number of notifications of Ross River virus infection remained low with 123 and 90 cases reported with onset in December and January respectively. Of these 39% were from Queensland and 28% from Western Australia. Most cases usually occur in the late summer and early autumn months. The number of notifications of Barmah Forest virus infection remain low.

## Hepatitis A

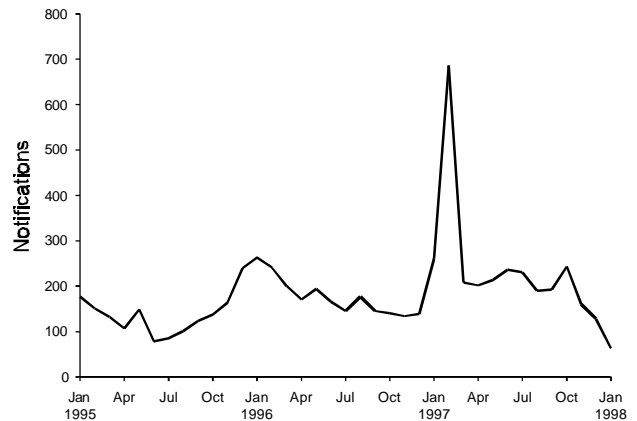
One hundred and eighty-one notifications of hepatitis A were received during the current reporting period, bringing the total with onset since October 1997 to 594 cases (Figure 1). Of these, 109 (18%) were reported from the Statistical Division of Brisbane and 103 (17%) and 44 (7%) respectively from the New South Wales Statistical Divisions of Sydney and Richmond-Tweed. One hundred and eighty notifications (30%) were for males aged 20-34 years (Figure 3)

The LabVISE scheme demonstrated a similar pattern of reporting to that observed in the notification data (Figure 2). The number of reports has fallen in recent months after the large peak in early 1997, followed by a second smaller peak in September. Twenty-one laboratory reports of hepatitis A were received this period. A total of 624 laboratory reports was received for 1997, of which 45% were for the 25 to 44 years age group. The male:female ratio was 2:1 for this age group whilst the overall male:female ratio was 1.5:1.

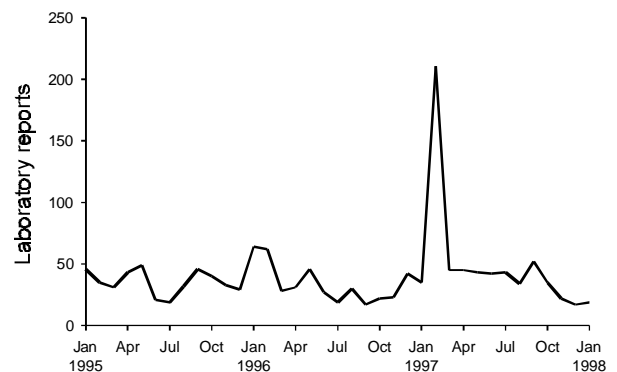
## Salmonellosis

The number of notifications of salmonellosis has fluctuated after peaking in March of last year (Figure 4). Of 1,761

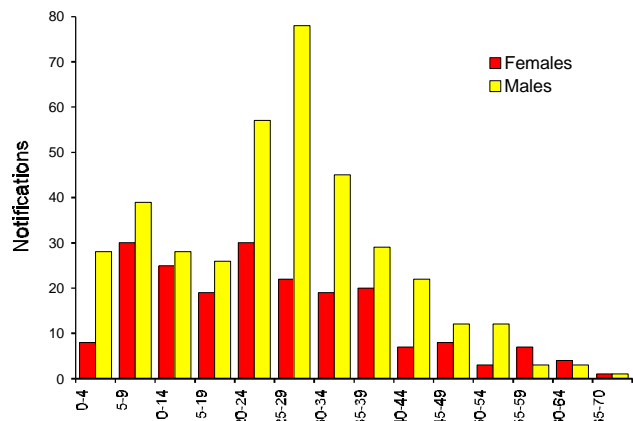
**Figure 1. Notifications of hepatitis A, 1995 to 1998, by month of onset**



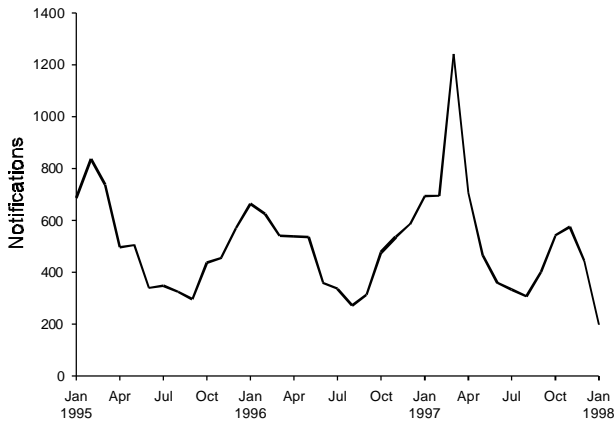
**Figure 2. Laboratory reports of hepatitis A, 1995 to 1998, by month of specimen collection**



**Figure 3. Notifications of hepatitis A, October 1997 to February 1998, by age group and sex**



**Figure 4. Notifications of salmonellosis, 1995 to 1998, by month of onset**

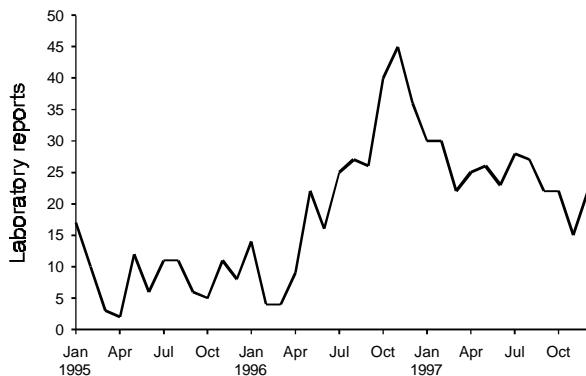


notifications with a date of onset in October 1997 or later, 37% were reported from Queensland, 21% from New South Wales and 20% from Victoria. The male:female ratio of reported cases was 1.1:1; 628 cases (38%) were in children under 5 years of age (Figure 5).

### Parvovirus

Twenty-one laboratory reports of parvovirus were received this reporting period. Included were 15 females, nine of whom were in the 15 to 44 years age group, and six males. The number of reports has remained elevated after rising in mid 1996 (Figure 6).

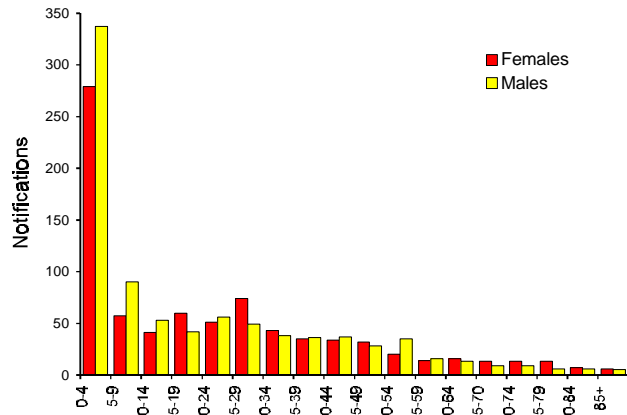
**Figure 6. Laboratory reports of parvovirus, 1995 to 1998, by month of specimen collection**



There were 4,482 notifications to the National Notifiable Diseases Surveillance System (NNDSS) for this four week period, 7 January to 3 February 1998 (Tables 1, 2 and 3). The numbers of reports for selected diseases have been compared with historical data for corresponding periods in the previous three years (Figure 7).

NNDSS is conducted under the auspices of the Communicable Diseases Network Australia New Zealand.

**Figure 5. Notifications of salmonellosis with onset from October 1997 to February 1998, by age group and sex.**



The system coordinates the national surveillance of more than 40 communicable diseases or disease groups endorsed by the National Health and Medical Research Council (NHMRC). Notifications of these diseases are made to State and Territory health authorities under the provisions of their respective public health legislations. De-identified core unit data are supplied fortnightly for collation, analysis and dissemination. For further information, see CDI 1998;22:4-5.

There were 1,498 reports received in the CDI Virology and Serology Laboratory Reporting Scheme this four week period, 1 January to 28 January (Tables 4 and 5).

The Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel reporting scheme. Twenty-one laboratories contribute data on the laboratory identification of viruses and other organisms. Data are collated and published in Communicable Diseases Intelligence each four weeks. These data should be interpreted with caution as the number and type of reports received is subject to a number of biases. For further information, see CDI 1998;22:8.

**Table 1. Notifications of rare<sup>1</sup> diseases received by State and Territory health authorities in the period 7 January to 3 February 1998**

Disease <sup>2</sup>	Total this period	Reporting States or Territories	Total notifications 1998
Brucellosis	9	ACT, Qld, Vic	9
Hydatid infection	7	SA, Qld, Vic	7

1. Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1998.
2. No notifications have been received during 1998 for the following rare diseases: botulism, lymphogranuloma venereum, plague, rabies, yellow fever, or other viral haemorrhagic fevers.

**Table 2. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 7 January 1998 to 3 February 1998**

Disease <sup>1,2</sup>	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1998	This period 1997	Year to date 1998	Year to date 1997
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> type b	0	0	0	0	0	0	0	0	0	8	1	8
Measles	1	7	1	15	0	5	9	3	41	35	45	38
Mumps	0	1	0	2	2	0	4	1	10	18	10	20
Pertussis	3	254	1	281	124	2	28	100	793	718	1,005	809
Rubella	2	1	0	27	4	2	10	1	47	213	52	227
Tetanus	0	1	0	0	0	0	0	0	1	0	1	1

NN. Not Notifiable

1. No notifications of poliomyelitis have been reported since 1986.

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.

**Table 3. Notifications of other diseases received by State and Territory health authorities in the period 7 January 1998 to 3 February 1998**

Disease <sup>1,2</sup>	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1998	This period 1997	Year to date 1998	Year to date 1997
Arbovirus infection (NEC) <sup>3</sup>	0	0	1	5	0	0	0	0	6	21	6	21
Barmah Forest virus infection	0	5	-	35	0	0	1	-	45	75	52	78
Campylobacteriosis <sup>4</sup>	25	-	18	398	98	38	17	102	696	1108	834	1229
Chlamydial infection (NEC) <sup>5</sup>	10	NN	61	301	0	11	134	91	608	623	668	671
Dengue	0	3	0	9	1	0	2	2	17	56	18	56
Donovanosis	0	NN	8	1	NN	0	0	0	9	1	9	1
Gonococcal infection <sup>6</sup>	3	19	91	70	0	1	36	81	301	241	335	259
Hepatitis A	8	82	2	55	11	0	21	2	181	146	219	181
Hepatitis B incident	0	2	0	5	0	0	3	0	10	15	13	18
Hepatitis C incident	0	4	0	-	0	1	-	-	5	1	6	1
Hepatitis C unspecified	13	NN	22	274	NN	17	1	73	400	675	435	774
Hepatitis (NEC)	0	0	0	0	0	0	0	NN	0	4	0	5
Legionellosis	0	2	0	3	2	0	1	3	11	14	13	18
Leptospirosis	0	2	1	11	0	0	2	0	16	13	16	14
Listeriosis	0	5	0	0	0	0	0	0	5	8	6	9
Malaria	0	7	0	26	1	1	2	4	41	75	44	80
Meningococcal infection	0	7	0	3	0	0	1	2	13	24	16	30
Ornithosis	0	NN	0	0	1	1	0	0	2	6	2	6
Q Fever	0	5	0	21	1	0	0	2	29	57	30	61
Ross River virus infection	0	15	18	84	8	0	3	80	208	512	244	535
Salmonellosis (NEC)	5	108	39	332	41	12	111	73	721	700	810	757
Shigellosis <sup>4</sup>	1	-	6	18	12	0	16	9	62	79	67	87
Syphilis	2	12	24	33	0	1	0	6	78	87	87	92
Tuberculosis	0	19	3	11	5	2	20	3	63	80	67	85
Typhoid <sup>7</sup>	0	3	0	1	0	0	1	3	8	10	10	10
Yersiniosis (NEC) <sup>4</sup>	0	-	1	28	3	0	6	0	38	39	43	39

1. For HIV and AIDS, see *CDI/1997; 21:362*. For rarely notified diseases, see Table 3.

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. NT: includes Barmah Forest virus.

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

5. WA: genital only.

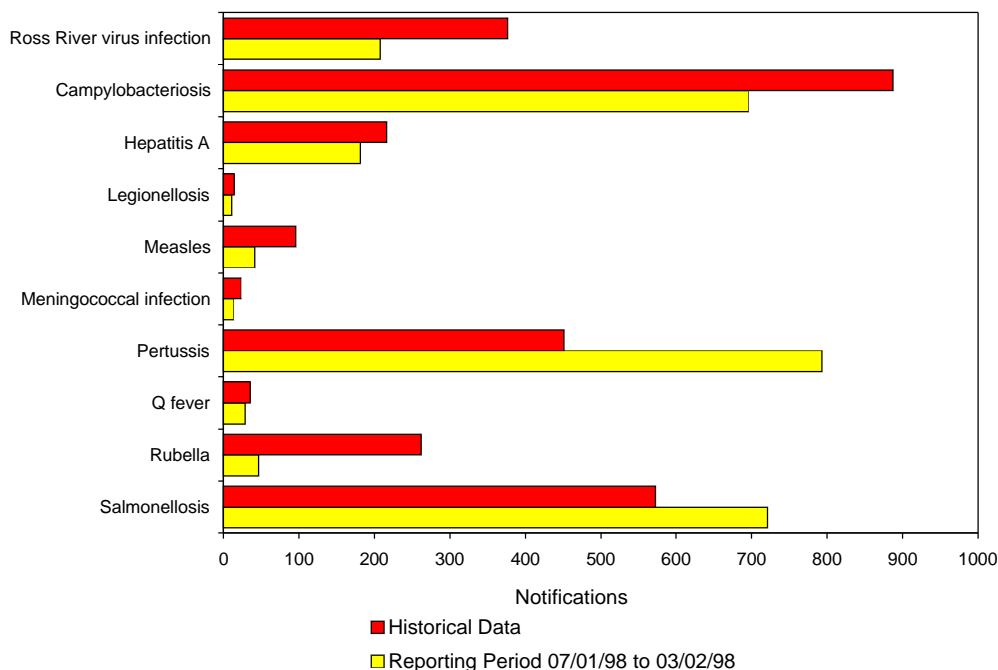
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.

7. NSW, Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified

- Elsewhere Classified.

**Figure 7. Selected National Notifiable Diseases Surveillance System reports, and historical data<sup>1</sup>**

1. The historical data are the averages of the number of notifications in the corresponding 4 week periods of the last three years and the two week periods immediately preceding and following these.

**Table 4. Virology and serology laboratory reports by State or Territory<sup>1</sup> for the reporting period 1 January to 28 January 1998, and total reports for the year**

	State or Territory <sup>1</sup>								Total this period	Total reported in CDI in 1997
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA		
<b>Measles, mumps, rubella</b>										
Measles virus							2	1	3	78
Mumps virus								3	3	49
Rubella virus				4	1		3	1	9	563
<b>Hepatitis viruses</b>										
Hepatitis A virus	2		2	7	4		1	5	21	723
Hepatitis D virus				1					1	20
<b>Arboviruses</b>										
Ross River virus		2	14	37	4		1	50	108	2,245
Barmah Forest virus							2	4	6	240
Dengue not typed								2	2	63
Flavivirus (unspecified)				3					3	28
<b>Adenoviruses</b>										
Adenovirus type 1					1		1		2	34
Adenovirus type 2					4				4	47
Adenovirus type 3					3				3	27
Adenovirus type 7					1		1		2	12
Adenovirus not typed/pending	1	5			28		1	12	47	1,109
<b>Herpes viruses</b>										
Cytomegalovirus		7		18	11		28	22	86	1,223
Varicella-zoster virus	2	4	1	24	24		34	29	118	1,532
Epstein-Barr virus		2	1	30	69	1	22	33	158	2,691

**Table 4. Virology and serology laboratory reports by State or Territory<sup>1</sup> for the reporting period 1 January to 28 January 1998, and total reports for the year, continued**

	State or Territory <sup>1</sup>								Total this period	Total reported in <i>CDI</i> in 1997
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA		
<b>Other DNA viruses</b>										
Parvovirus				2	2		14	3	21	366
<b>Picornavirus family</b>										
Coxsackievirus A9							1		1	10
Coxsackievirus A16							1		1	11
Coxsackievirus B3							1		1	13
Echovirus type 11							1		1	2
Poliovirus type 1 (uncharacterised)					1		1		2	10
Rhinovirus (all types)		7	1	1	8		9	12	38	682
Enterovirus not typed/pending			2		3		2	31	38	642
<b>Ortho/paramyxoviruses</b>										
Influenza A virus				1	14		3	6	24	1,469
Influenza B virus					7		1	1	9	956
Parainfluenza virus type 1		4			1		2	5	12	84
Parainfluenza virus type 2							1	1	2	121
Parainfluenza virus type 3		6		2	4		14	31	57	1,249
Respiratory syncytial virus	1	2			2		6	26	37	4,835
<b>Other RNA viruses</b>										
HTLV-1			2					2	4	20
Rotavirus		2				7		15	24	1,585
Astrovirus							2		2	8
Norwalk agent							12		12	104
Small virus (like) particle							1		1	3
<b>Other</b>										
<i>Chlamydia trachomatis</i> not typed	17	13	50	57	75	2	5	107	326	5,001
<i>Chlamydia psittaci</i>							7	2	9	68
<i>Chlamydia</i> species				1					1	32
<i>Mycoplasma pneumoniae</i>		1	5	63	46	1	27	8	151	2,077
<i>Coxiella burnetii</i> (Q fever)		3		4			1	2	10	314
<i>Rickettsia australis</i>						1			1	15
<i>Salmonella</i> species								4	4	7
<i>Bordetella pertussis</i>	1	4		32		1	52	35	125	2,217
<i>Legionella longbeachae</i>					1				1	41
<i>Cryptococcus</i> species	3	1				1	1		6	29
<i>Leptospira hardjo</i>								1	1	15
<b>TOTAL</b>	<b>27</b>	<b>63</b>	<b>78</b>	<b>287</b>	<b>314</b>	<b>14</b>	<b>261</b>	<b>454</b>	<b>1,498</b>	<b>32,670</b>

1. State or Territory of postcode, if reported, otherwise State or Territory of reporting laboratory.

**Table 5. Virology and serology laboratory reports by contributing laboratories for the reporting period 1 January to 28 January 1998**

State or Territory	Laboratory	Reports
Australian Capital Territory	Woden Valley Hospital, Canberra	28
New South Wales	New Children's Hospital, Westmead	26
	Royal Prince Alfred Hospital, Camperdown	20
Queensland	Queensland Medical Laboratory, West End	318
South Australia	Institute of Medical and Veterinary Science, Adelaide	312
Tasmania	Northern Tasmanian Pathology Service, Launceston	15
Victoria	Microbiological Diagnostic Unit, University of Melbourne	3
	Monash Medical Centre, Melbourne	63
	Royal Children's Hospital, Melbourne	68
	Victorian Infectious Diseases Reference Laboratory, Fairfield	129
Western Australia	PathCentre Virology, Perth	343
	Princess Margaret Hospital, Perth	64
	Western Diagnostic Pathology	109
TOTAL		1,498

## *Australian Sentinel Practice Research Network*

*The Australian Sentinel Practice Research Network (ASPREN) currently comprises about 100 general practitioners from throughout the country. Up to 9,000 consultations are reported each week, with special attention to 12 conditions chosen for sentinel surveillance. CDI reports the consultation rates for all of these. For further information, including case definitions, see CDI 1998;22:5-6.*

Data for weeks 1 to 4, ending 11, 18, 25 January and 1 February 1998 respectively, are included in this issue of *CDI* (Table 6). Consultations for vaccination of older children and adults with tetanus/diphtheria (Td) vaccine, and of children with any pertussis-containing vaccine are included for the first time, along with adverse reactions to pertussis vaccines given at the reporting clinic. During this reporting period, the consultation rates for chickenpox and pertussis have remained moderately high. However, consultation rates for other conditions, including rubella and measles, have remained low or steady. No increase in the consultation rate for Ross River virus infection has been reported so far.

**Table 6. Australian Sentinel Practice Research Network reports, weeks 1 to 4, 1998**

Week number	1		2		3		4	
Week ending on	11 January 1998		18 January 1998		25 January 1998		1 February 1998	
Doctors reporting	21		49		48		31	
Total consultations	2,112		5,979		6,155		3,055	
Condition	Rate per 1,000		Rate per 1,000		Rate per 1,000		Rate per 1,000	
	Reports	population	Reports	population	Reports	population	Reports	population
Influenza	4	1.9	11	1.8	7	1.1	1	0.3
Rubella	1	0.5	2	0.3	1	0.2	1	0.3
Measles	0	0.0	0	0.0	1	0.2	0	0.0
Chickenpox	7	3.3	12	2.0	7	1.1	5	1.6
Pertussis	3	1.4	3	0.5	4	0.6	2	0.7
HIV testing (patient initiated)	4	1.9	17	2.8	9	1.5	4	1.3
HIV testing (doctor initiated)	4	1.9	11	1.8	7	1.1	1	0.3
Td (ADT) vaccine	15	7.1	50	8.4	49	8.0	30	9.8
Pertussis vaccination	22	10.4	70	11.7	71	11.5	41	13.4
Reaction to pertussis vaccine	2	0.9	0	0.0	3	0.5	0	0.0
Ross River virus infection	0	0.0	2	0.3	0	0.0	1	0.3
Gastroenteritis	28	13.3	72	12.0	76	12.3	38	12.4

## Gonococcal surveillance

John Tapsall, The Prince of Wales Hospital, Randwick, NSW, 2031 for the Australian Gonococcal Surveillance Programme

The Australian Gonococcal Surveillance Programme (AGSP) reference laboratories in the various States and Territories report data on sensitivity to an agreed 'core' group of antimicrobial agents on a quarterly basis. The antibiotics which are currently routinely surveyed are the penicillins, ceftriaxone, ciprofloxacin and spectinomycin, all of which are administered as single dose regimens. When *in vitro* resistance to a recommended agent is demonstrated in 5% or more of isolates, it is usual to reconsider the inclusion of that agent in current treatment schedules. Additional data are also provided on other antibiotics from time to time. At present all laboratories also test isolates for the presence of high level resistance to the tetracyclines. Tetracyclines are however not a recommended therapy for gonorrhoea. Comparability of data is achieved by means of a standardised system of testing and a programme-specific quality assurance process. Because of the substantial geographic differences in susceptibility patterns in Australia, regional as well as aggregated data are presented.

### Reporting period 1 April to 30 June 1997

The AGSP laboratories examined 757 isolates of *Neisseria gonorrhoeae* (*N. gonorrhoeae*) for sensitivity to the penicillins, ceftriaxone, quinolones and spectinomycin and for high level resistance to the tetracyclines in the June quarter of 1997.

### Penicillins

Resistance to this group of antibiotics (penicillin, ampicillin, amoxycillin) was present in a high proportion of isolates examined in Adelaide (42%) Sydney (39%) and Melbourne (30%). In Perth the proportion of penicillin-resistant strains was 10% and lower in other centres. Figure 8 shows the proportion of isolates fully sensitive, less sensitive or relatively resistant to the penicillins by chromosomal mechanisms and the proportion of penicillinase-producing *N. gonorrhoeae* (PPNG) in different regions and as aggregated data for Australia. PPNG and relatively resistant isolates usually fail to respond to therapy with the penicillins. Those in the fully sensitive and less sensitive categories (minimal inhibitory concentration - MIC  $\leq$  0.5 mg/L) usually respond to a regimen of standard treatment with the above penicillins.

There were 43 PPNG identified in this reporting period (5.7% of all isolates). These were distributed widely with 18 PPNG reported from Sydney (8.3% of isolates), 12 (8.9%) from Perth, 5 (5.6%) from Melbourne, 4 (2.7%) from Brisbane, 3 (2.3%) from the Northern Territory and a single PPNG in Adelaide. Infections with PPNG were acquired locally but more frequently in southeast Asian countries often visited by Australians.

One hundred and ten (14.5%) of all isolates were resistant to the penicillins by separate chromosomal mechanisms. These strains of *N. gonorrhoeae* (CMRNG) were most often seen in Sydney (68 strains, 31%), Melbourne (22 strains, 25%) and Adelaide (16 strains, 39%). No relatively resistant isolates were seen in Perth or the Northern Territory.

### Ceftriaxone and spectinomycin.

Although all isolates from all parts of Australia were sensitive to these injectable agents, a small number of isolates showed some decreased sensitivity to ceftriaxone.

### Quinolone antibiotics

This group of antibiotics includes ciprofloxacin, norfloxacin and enoxacin. Forty-two isolates (5.5%) throughout Australia had altered resistance to this group of antibiotics, with 30 of these showing high level resistance. These quinolone resistant *N. gonorrhoeae* (QRNG) were mainly concentrated in Sydney where 30 QRNG (14%) were detected. Four QRNG were isolated in Melbourne (4.5%), 4 (2.7%) in Brisbane, 3 in Perth, and a single QRNG detected in both Adelaide and Darwin.

In the previous quarter, an increase in rates of isolation of QRNG and the appearance of QRNG in locally acquired infections in Sydney and Melbourne were specifically mentioned. The high rate of locally acquired QRNG was maintained in Sydney in the June quarter. Although one instance of local acquisition of QRNG was again recorded in Melbourne, the total number of QRNG decreased in that centre.

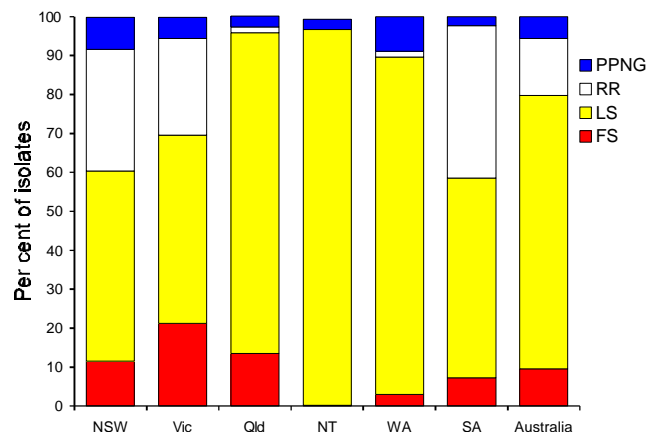
In the corresponding period of 1996, QRNG comprised 3.4% of all Australian isolates and the infections were acquired overseas.

The quinolone agents are the oral agents most often used in centres where penicillins are ineffective. If resistance to the quinolones continues to increase, options for successful treatment will be substantially reduced.

### High level tetracycline resistance

Forty-three tetracycline resistant *N. gonorrhoeae* (TRNG) were detected throughout Australia (5.7% of all strains) with isolates of this type again present in most centres. The highest proportion of TRNG was again found in Brisbane

Figure 8. Penicillin resistance of *N. gonorrhoeae*, Australia, 1 April to 30 June 1997, by region



FS Fully sensitive to penicillin, MIC  $\leq$  0.03 mg/L  
 LS Less sensitive to penicillin, MIC 0.06 - 0.5 mg/L  
 RR Relatively resistant to penicillin, MIC  $\geq$  1 mg/L  
 PPNG Penicillinase producing *N. gonorrhoeae*

where the 15 TRNG represented 10% of all isolates. TRNG were again prominent in Perth where the 12 TRNG represented 8.9% of all isolates. TRNG were also found in Sydney (12 isolates, 5.5%), Melbourne (5 isolates, 5.6%) and there was a single TRNG in Darwin. Indonesia was the overseas source of acquisition most often identified. Local acquisition was also recorded.

## *Sentinel Chicken Surveillance Programme*

*Sentinel chicken flocks are used to monitor flavivirus activity in Australia. The main viruses of concern are Murray Valley encephalitis (MVE) and Kunjin which cause the potentially fatal disease Australian encephalitis in humans. Currently 26 flocks are maintained in the north of Western Australia, seven in the Northern Territory, nine in New South Wales and ten in Victoria. The flocks in Western Australia and the Northern Territory are tested year round but those in New South Wales and Victoria are tested only from November to March, during the main risk season.*

*Results are coordinated by the Arbovirus Laboratory in Perth and reported bimonthly. For more information see CDI 1998;22:7*

AK Broom<sup>1</sup>, J Aзуolas<sup>2</sup>, L Hueston<sup>3</sup>, JS Mackenzie<sup>4</sup>, L Melville<sup>5</sup>, DW Smith<sup>6</sup> and PI Whelan<sup>7</sup>

1. Department of Microbiology, The University of Western Australia
2. Veterinary Research Institute, Victoria
3. Virology Department, Westmead Hospital, NSW
4. Department of Microbiology, The University of Queensland
5. Berrimah Agricultural Research Centre, Darwin
6. PathCentre, Perth
7. Department of Health and Community Services, Darwin

Sentinel chicken serology was carried out for 20 of the 28 flocks in Western Australia in December 1997. There were no seroconversions to flaviviruses in December. The November seroconversion to MVE in the Derby flock was confirmed, but because these chickens had not been bled since August it was impossible to determine when the chickens actually seroconverted.

Five flocks of sentinel chickens from the Northern Territory were tested in December 1997, and there were no seroconversions recorded.

The sentinel chicken programmes in New South Wales and Victoria commenced at the beginning of November 1997. There have been no seroconversions to flaviviruses in November or December 1997 from these regions.