

# Communicable Diseases Intelligence



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## Communicable Diseases Network - Australia

A national network for communicable diseases surveillance



Commonwealth  
Department of  
Health and  
Family Services

# Review of leptospirosis notifications in Queensland 1985 to 1996

Lee Smythe<sup>1</sup>, Michael Dohnt<sup>1</sup>, Michelle Norris<sup>1</sup>, Meegan Symonds<sup>1</sup> and John Scott<sup>2</sup>

## Abstract

To provide an overview of leptospirosis in Queensland, the World Health Organization/Food and Agriculture Organization Collaborating Centre for Reference and Research on Leptospirosis undertook a study of notifications of the disease from 1985 to 1996. The review encompassed information drawn from notifications to Queensland Health and questionnaires sent to doctors. Notifications were highest between February and July and the highest population rates were identified in the Central West and Peninsula Health Regions. Ninety-one per cent of notifications were for males. At risk population groups included meat workers, those working with farm animals and banana workers. The study found the incidence of leptospirosis was higher in 1996 than in previous years. Improved diagnosis and surveillance will aid our understanding of the preventable risk factors for leptospirosis, especially in geographic areas not considered at high risk and in groups not in occupations traditionally linked to the disease. *Comm Dis Intell* 1997;21:17-20.

## Introduction

Leptospirosis was first recognised in Queensland in 1934 among cane cutters of Ingham, north Queensland<sup>1</sup>. Leptospirosis is an acute febrile disease occurring in humans and animals in all parts of the world<sup>2</sup>. There are more than 250 pathogenic serovars of *Leptospira interrogans*. The disease is potentially lethal, with involvement of the hepatic,

renal and central nervous systems. The source of infection is water or soil which has been contaminated with the infected urine of wild, feral or domestic animals<sup>3</sup>.

Leptospirosis occurs in all parts of Australia, with the highest incidence of the disease in Queensland and Victoria<sup>4</sup>.

Leptospirosis is a notifiable disease in all States and Territories of Australia. A

laboratory based notification system was introduced in Queensland from 1988, requiring all laboratory diagnoses to be reported to the Communicable Diseases Branch of Queensland Health. Prior to 1988 all notifications were practitioner initiated.

## Methods

The World Health Organization/ Food and Agriculture

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Organization Collaborating Centre for Reference and Research on Leptospirosis sought information on notifications of leptospirosis from 1985 to 1996 in Queensland through notifications to Queensland Health and a mail questionnaire. Notifications of leptospirosis since 1988 were based on isolation of the organism or positive serology. Positive serology was defined as a four-fold or greater change in *Leptospira* Microscopic Agglutination Test (MAT) titre or a single raised MAT titre equal to or greater than 400 with an elevated IgM result.

The Centre reference laboratory receives either tertiary specimens for confirmation by MAT or primary specimens on which MAT and enzyme linked immunosorbent assay (ELISA) serology is performed. The reference laboratory is the only laboratory in Queensland performing *Leptospira* isolation studies, and is the only laboratory able to provide confirmatory leptospirosis serology in the State.

The reference laboratory used a panel of live leptospiral antigens for analysis, represented by the serovars *pomona*, *hardjo*, *tarassovi*, *grippityphosa*, *celledoni*, *copenhageni*, *australis*, *zanoni*, *robinsoni*, *canicola*, *kremastos*, *szwajizak*, *medanensis* and *bulgarica*. These serovars are representative of the leptospiral serovars that are known to exist in Australia.

Rates were calculated using Australian Bureau of Statistics 1991 census data to provide the

populations of statistical divisions. The denominators used in the calculations were the populations of the regions.

The questionnaire component of the study commenced in 1991 and was analysed from January 1992 to July 1996. It sought information on occupation, animal contacts, outdoor recreational activities, travel, age, gender, symptoms and location of residence prior to onset of symptoms. Two hundred and sixty-four questionnaires were sent to the referring doctors of those patients whose leptospiral serology was positive or for whom a leptospiral isolate was recovered.

The data were analysed using Epi Info version 6.01.

## Results

For the period 1985 to 1995, 710 notifications of leptospirosis were sent to the Communicable Diseases Branch of Queensland Health (Figure 1). This represented a mean annual cumulative incidence of 1.9 per 100,000 population. In 1996, 105 cases were reported. Of 1,072 specimens submitted to the reference laboratory between 1991 and 1995, 27 isolates were recovered but not recorded as notifications. The majority (65%) of notifications were received between February and July (Figure 2). There was a major increase in notifications of serovar *hardjo* from April to October. Notifications of serovar *australis* increased in February to

March and in May. There was no significant seasonality in other serovars. No seasonal variation in notifications was evident when analysed by occupation.

The highest number of notifications (35 %) was reported from the Peninsula Health Region (Table 1). There was a relatively high crude rate in this Region of 8.2 per 100,000 population. The Central West Region had a lower number of notifications, but had the highest crude rate, at 8.4 per 100,000 population, although the population of this Region is small.

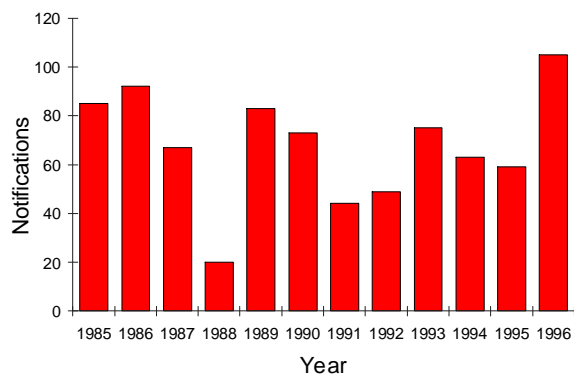
For 1985 to 1995, 91% of notifications were for males. The largest proportion (14%) of

**Table 1. Leptospirosis notifications by health region, Queensland, 1985 to 1995**

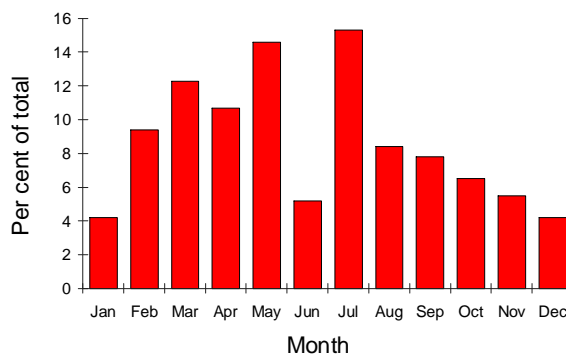
Health region	Notifications	Crude rate <sup>1</sup>
Brisbane North	101	1.1
Brisbane South	28	0.6
Central	24	2.0
Central West	10	8.4
Darling Downs	47	2.1
Gold Coast	11	0.2
Mackay	18	1.6
Northern	44	1.6
Peninsula	178	8.2
Sunshine Coast	14	0.3
South West	10	2.1
Wide Bay	19	0.8
<b>Queensland</b>	<b>504</b>	<b>1.9</b>

1. Crude rates calculated for 1989 to 1994.

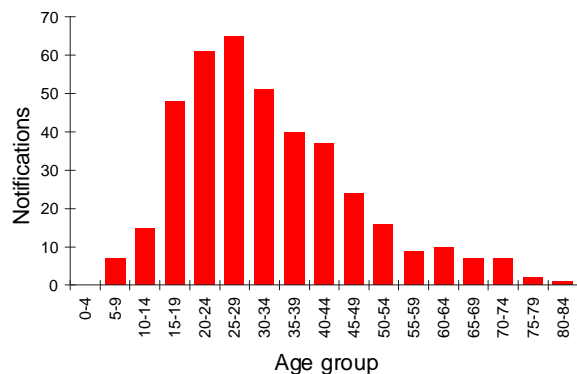
**Figure 1. Leptospirosis notifications by year, Queensland, 1985 to 1995**



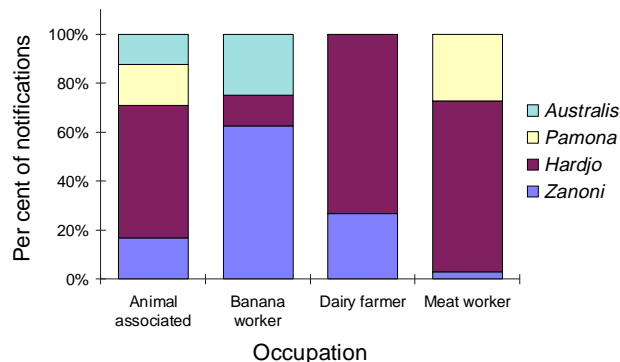
**Figure 2. Leptospirosis notifications by month, Queensland, 1985 to 1995**



**Figure 3. Leptospirosis notifications for males by age group, Queensland, 1985 to 1995**



**Figure 4. Leptospirosis notifications, by serovar and occupation, Queensland, 1992 to 1996**



**Table 2. Leptospirosis notifications by occupation, Queensland, 1992 to 1996**

Occupation	Number (%)
Agriculture worker	8 (3)
Animal associated	32 (13)
Banana worker	20 (8)
Cane farmer	9 (4)
Dairy farmer	16 (7)
Meatworker	37 (16)
Shooter	3 (1)
Student	8 (3)
Unemployed	3 (1)
Miscellaneous	38 (16)
Unknown	64 (27)
<b>Total</b>	<b>238 (100)</b>

notifications was for males in the 25-29 years age group (Figure 3).

The response rate from the questionnaire was 73%, with 61% of non-respondents residing in the Peninsula Region. Meat workers accounted for 16%, animal-associated occupations (mainly graziers, farm hands and stockmen) 13% and banana industry workers 8% (Table 2). Other notifications included persons identified as hermit, retired, home duties, clerical, builders, cruise operators, white-water rafters, tourists, council workers, mechanics, labourers and prospectors. The majority of the 16 notifications from the dairy farming industry occurred in the Peninsula Region with only one notification each from the Sunshine Coast, Wide Bay and Darling Downs Regions. All

**Table 3. Leptospirosis notification rates by serovar, Queensland, 1992 to 1996**

Serovar	Number (%)
<i>Australis</i>	28 (12)
<i>Broomi</i>	1 (0)
<i>Bulgarica</i>	3 (1)
<i>Canicola</i>	6 (3)
<i>Celledoni</i>	3 (1)
<i>Copenhageni</i>	6 (3)
<i>Hardjo</i>	73 (32)
<i>Kremastos</i>	6 (3)
<i>Pomona</i>	23 (10)
<i>Robinsoni</i>	6 (3)
<i>Szwajizak</i>	9 (4)
<i>Tarassovi</i>	13 (6)
<i>Zanoni</i>	53 (23)
<i>Non pathogen</i>	1 (0)
<b>Total</b>	<b>231 (100)</b>

except one of the notifications from the banana industry occurred in the Peninsula Region, and 17 of the 32 notifications from animal-associated occupations were also from this Region. Of 32 meat worker notifications, 15 were from the Darling Downs Region.

The recorded serovars are shown in Table 3. Serovars *tarassovi*, *hardjo*, *zanoni*, *pomona*, *szwajizak* and *australis* represented 87% of the notifications in the State.

The clinical symptoms most commonly reported in the questionnaires were fever (90%), headaches (65%), myalgia (55%), arthralgia (38%), vomiting (36%),

respiratory symptoms (21%), rigors (19%), and renal and hepatic involvement (14%). There appeared to be no significant difference in symptoms associated with each of the major serovars. The proportion of serovars varied between the major occupational groups (Figure 4).

## Discussion

Unlike many other notifiable diseases, notifications of leptospirosis did not increase in Queensland following the introduction of laboratory notification in 1988. However, the data show that the 1996 notifications were higher than in previous years. The low 1988 figure could be due to incomplete data collection following a change in collection methods. The 1996 increase may suggest a greater practitioner appreciation and interest in the disease, or a greater number of people involved in at-risk exposures.

The increased notifications in summer and autumn coincide with peak rainfall in the north of the State. The reduced average incidence reported in June represented a fall in incidence of the three major serovars. While the survey data are not sufficient to confidently identify a cause, possible explanations include reduced prevalence of the organism in the environment, or reduced occupational or recreational exposure of humans to the organism.

Leptospirosis remains an endemic disease in the Peninsula Region of Queensland. This Region, especially the east coast, differs from the rest of the State in having high rainfall and

tropical temperatures. These climatic conditions support significant rodent and marsupial populations, known hosts of leptospirosis<sup>1</sup>. Many persons of certain occupational groups in north Queensland work in close association with these animal hosts. Notifications in this Region occurred mainly in the dairy and banana industries.

Leptospirosis in the sugar cane industry dates back to the days of manual harvesting methods. With mechanical harvesting, exposures and consequent risks have changed. The banana industry has assumed many of the manual work practices previously associated with the cane industry. Greater prevention and control measures on banana plantations are recommended. The risk of leptospirosis in dairy communities is well recognised in north Queensland. McClintock (Queensland Department of Primary Industries, personal communication) showed in 1994 seroprevalence for antibodies to leptospirosis of 21% in dairy farmer groups on the Atherton Tableland. Work practices associated with an increased risk of infection are well recognised in this industry, as is the need for further education of farmers and associated workers.

The number of notifications from the Central West Health Region was small and the high rate should be interpreted with caution. Notifications from this Region may reflect contact with animals through activities such as slaughtering on properties, or recreational or professional shooting.

Meat workers represented the largest occupational group in responses to the questionnaire. The majority of meat worker notifications were from the Darling Downs Region. This is possibly explained by the number of abattoirs in this region and the work practice-related nature of the disease in this industry.

While potential occupational exposures to leptospirosis are well described, some exposures may reflect recreational pursuits, especially in Far North Queensland where the organism is common. Further study needs to be undertaken to identify common non-occupational risk factors. Clinicians need to be aware of the non-specific nature of the symptoms of leptospirosis, and maintain it as a differential diagnosis even when an occupational risk is not identified.

Awareness of leptospirosis as a potential diagnosis is also needed

among clinicians working in geographical areas outside those considered to be at most risk. Clinicians should not discount leptospirosis in their differential diagnosis because they think it is a disease of the hot tropics. Knowledge of the incidence of leptospirosis is restricted by the nonspecific nature of the symptoms of the disease, potential misdiagnosis by clinicians and the lack of laboratory confirmation of clinical diagnoses. Improved identification of leptospirosis cases will improve our knowledge of preventable risk factors for the disease.

## References

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# Notice to readers

## *National Communicable Diseases Surveillance Strategy*

The National Communicable Diseases Surveillance Strategy (NCDSS) was recently endorsed by

the chief health officers of Australia. An implementation group has now been established. The group will, under the auspices of the National Public Health Partnership, facilitate the implementation of the recommendations of the strategy. The inaugural meeting of the NCDSS

Implementation Group was held in Canberra on 17 December 1996.

Copies of the strategy are available from Michelle Charlton, telephone (06) 289 8245, fax (06) 289 7791.

# Communicable Diseases Surveillance

## National Notifiable Diseases Surveillance System

The National Notifiable Diseases Surveillance System (NNDSS) is conducted under the auspices of the Communicable Diseases Network Australia New Zealand. 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

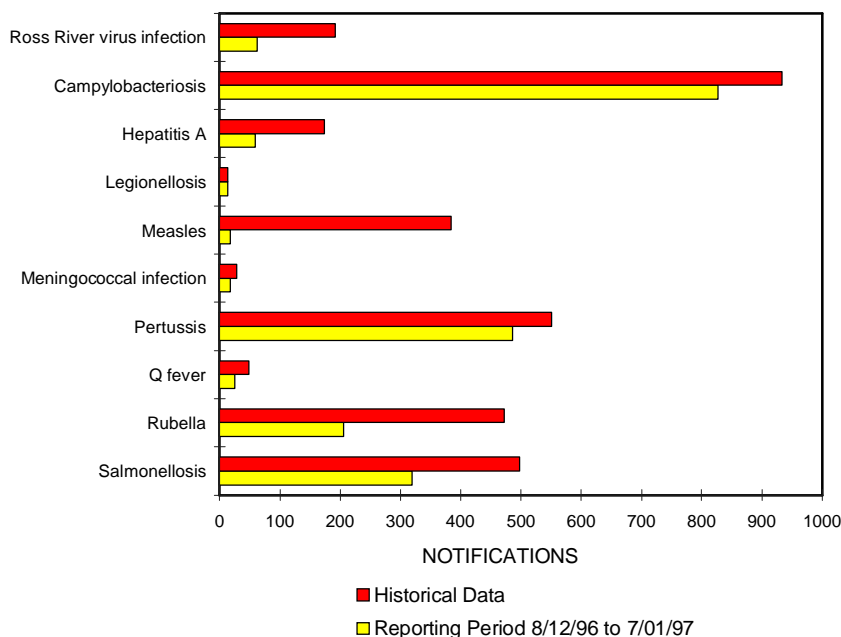
collation, analysis and dissemination. For further information, see CDI 1997;21:5.

**Reporting period 8 December 1996 to 7 January 1997 inclusive.**

There were 3,243 notifications received for this four-week period (Tables 1, 2 and 3). The number of reports for selected diseases have been compared with average data for this period in the previous three years (Figure 1).

Eight hundred and twenty-seven notifications of campylobacteriosis were received this period. The 0-4 years age group accounted for 180 (22%) of these. Infection is the most frequently reported in this age group.

**Figure 1. 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 9 previous 1-month reporting periods: the corresponding periods of the last 3 years and the periods immediately preceding and following those.

**Table 1. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 8 December 1996 to 7 January 1997**

Disease <sup>1,2</sup>									This	This	Total	Total
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	period 1996-97	period 1995-96	notifications 1996	notifications 1995
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
<i>Haemophilus influenzae</i> type B	0	0	0	1	0	0	0	0	1	12	51	74
Measles	0	0	6	5	0	1	6	0	18	59	489	1324
Mumps	0	0	0	NN	0	0	1	1	2	7	122	153
Pertussis	10	1	1	71	183	6	210	4	486	295	4257	4297
Rubella	1	0	0	47	124	0	32	1	205	454	2747	4379
Tetanus	0	0	0	0	0	0	0	0	0	2	2	7

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 2. Notifications of other diseases received by State and Territory health authorities in the period 8 December 1996 to 7 January 1997**

Disease <sup>1,2</sup>	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1996-97	This period 1995-96	Total notifications 1996	Total notifications 1995
Arbovirus Infection (NEC) <sup>3,4</sup>	0	0	0	0	0	0	2	0	2	1	99	67
Barmah Forest virus infection	0	0	-	14	1	0	0	-	15	22	778	756
Ross River virus infection	0	0	10	40	7	0	3	2	62	42	7763	2602
Dengue	0	0	0	2	0	-	0	0	2	3	42	34
Campylobacteriosis <sup>5</sup>	23	-	15	254	192	49	273	21	827	854	11985	10933
Chlamydial infection (NEC) <sup>6</sup>	8	NN	35	156	0	33	106	9	347	467	7343	6411
Donovanosis	0	NN	0	0	NN	0	0	0	0	10	46	85
Gonococcal infection <sup>7</sup>	1	0	66	71	0	0	16	11	165	303	3790	3259
Hepatitis A	4	0	8	10	9	0	25	3	59	159	2113	1600
Hepatitis B incident	0	0	1	0	0	1	1	1	4	16	190	322
Hepatitis C incident	0	0	0	-	0	0	-	-	0	3	36	69
Hepatitis C unspecified	23	NN	21	108	NN	19	204	7	382	544	8960	9601
Hepatitis (NEC)	0	0	0	0	0	1	0	NN	1	1	18	12
Legionellosis	0	0	0	4	5	0	2	2	13	10	181	160
Leptospirosis	0	0	0	4	0	0	3	0	7	12	224	148
Listeriosis	0	0	0	0	1	0	2	0	3	7	65	58
Malaria	1	0	0	34	2	0	10	0	47	37	832	625
Meningococcal infection	1	0	0	4	2	3	8	0	18	21	414	382
Ornithosis	0	NN	0	0	0	0	8	0	8	17	77	176
Q Fever	0	0	0	19	2	0	4	0	25	26	516	473
Salmonellosis (NEC)	8	0	21	158	42	15	65	11	320	377	5691	5895
Shigellosis <sup>5</sup>	1	-	18	13	6	1	4	2	45	37	662	734
Syphilis	1	0	38	11	0	0	1	2	53	93	1435	1829
Tuberculosis	1	0	0	4	1	0	34	1	41	92	1078	1073
Typhoid <sup>8</sup>	0	0	0	0	0	0	1	0	1	4	77	69
Yersiniosis (NEC) <sup>5</sup>	0	-	0	15	2	0	1	0	18	12	268	306

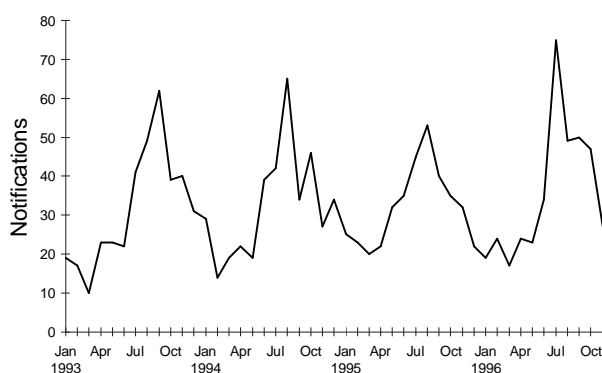
- For HIV and AIDS, see Tables 4 and 5. For rarely notified diseases, see Table 3.
- Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
- Tas: includes Ross River virus and dengue.
- NT, Vic and WA: includes Barmah Forest virus.
- NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
- WA: genital only.
- NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
- NSW, Vic: includes paratyphoid.
- NN Not Notifiable.
- NEC Not Elsewhere Classified.
- Elsewhere Classified.

**Table 3. Notifications of rare<sup>1</sup> diseases received by State and Territory health authorities in the period 8 December 1996 to 7 January 1997**

Disease <sup>2</sup>	Total this period	Reporting States or Territories	Total notifications 1996
Brucellosis	3	Qld	38
Chancroid			1
Cholera			4
Hydatid infection	3	Qld	45
Leprosy			9

- Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1995.
- No notifications were received during 1996 for the following rare diseases: botulism; lymphogranuloma venereum; plague; rabies; yellow fever; or other viral haemorrhagic fevers.

**Figure 2. Meningococcal infection notifications, 1993 to 1996, by month of onset**



Gonococcal infection was reported for 165 persons this period. Persons in the 15-34 years age group represented 80% of the total notifications. The male: female ratio was 1.3:1.

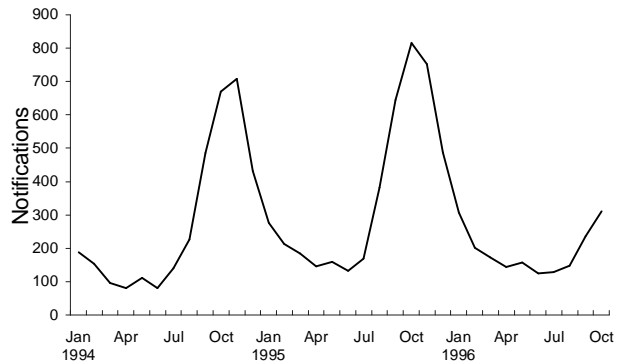
There were 18 cases of meningococcal infection reported this period. Eight of these were in the 0-4 years age group. The peak in notifications for meningococcal disease is usually in the winter months (Figure 2).

Pertussis was reported for 478 persons this period. Numbers of notifications continue to be high, with 210 and 183 cases reported in Victoria and South Australia respectively. One hundred and eight and 124 cases were seen in the 5-9 and 10-14 years age groups respectively.

Rubella was reported for 205 persons this period, with 124 notifications from South Australia. The number of notifications has been high in recent months, following a seasonal pattern similar to that recorded during the last three years (Figure 3). One hundred and two cases (50%) were for adults aged 15-24 years. There was a predominance of males, with the male:female ratio being 2.9:1.

Salmonellosis was reported for 320 persons this period. One hundred and forty of the cases were in the 0-4 years age group. Included were apparent clusters of 3 or more

**Figure 3. Rubella notifications, 1994 to 1996, by month of onset**



cases in postcode regions of Queensland (6), Victoria (1), South Australia (1) and Tasmania (1). Notifications of salmonellosis are expected to rise in January and February.

**Table 4. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 31 August 1996, by sex and State or Territory of diagnosis**

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Totals for Australia			
										This period 1996	This period 1995	Year to date 1996	Year to date 1995
HIV diagnoses	Female	0	1	0	0	1	0	0	2	4	3	50	60
	Male	0	23	0	13	5	1	15	2	59	68	516	526
	Sex not reported	0	0	0	0	0	0	0	0	0	0	4	8
	Total <sup>1</sup>	0	24	0	13	6	1	15	4	63	71	571	596
AIDS diagnoses	Female	0	0	0	0	0	0	0	0	0	5	10	24
	Male	0	7	0	2	0	0	1	0	10	66	250	481
	Total <sup>1</sup>	0	7	0	2	0	0	1	0	10	71	260	506
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	2	13	28
	Male	0	10	0	1	2	0	1	3	17	44	280	418
	Total <sup>1</sup>	0	10	0	1	2	0	1	3	17	46	293	447

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

**Table 5. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 31 August 1996, by sex and State or Territory**

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
HIV diagnoses	Female	15	571	3	102	45	4	169	76	985
	Male	171	10159	84	1647	582	76	3437	778	16934
	Sex not reported	0	2048	0	0	0	0	42	0	2090
	Total <sup>1</sup>	186	12786	87	1754	627	80	3657	856	20033
AIDS diagnoses	Female	5	138	0	30	18	2	48	17	258
	Male	76	3887	26	668	284	32	1373	293	6639
	Total <sup>1</sup>	81	4035	26	700	302	34	1428	312	6918
AIDS deaths	Female	2	104	0	24	13	2	37	11	193
	Male	50	2815	21	470	197	21	1084	220	4878
	Total <sup>1</sup>	52	2925	21	496	210	23	1127	232	5086

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



# HIV and AIDS Surveillance

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 (Australian Capital Territory, 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) 9332 4648 Facsimile: (02) 9332 1837.

HIV and AIDS diagnoses and deaths following AIDS reported for August 1996, as reported to 30 November 1996, are included in this issue of *CDI* (Tables 4 and 5).

## Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network (ASPREN) comprises 99 sentinel general practitioners from throughout the country. Approximately 9,000 consultations are recorded each week for 12 conditions. Of these, *CDI* reports the consultation rate for influenza, rubella, measles, chickenpox, pertussis and gastroenteritis. For further information including case definitions see *CDI* 1997;21:6.

Data for weeks 50, 51 and 52 ending 15, 22 and 29 December 1996 respectively are included in this issue of *CDI* (Table 6). The consultation rate for influenza-like illness has remained at low levels since the beginning of October. There has been no appreciable change in the consultation rate for gastroenteritis over recent months. Consultation rates for chickenpox for the current reporting weeks are higher than rates reported during winter and spring. The numbers of reported cases of rubella and pertussis have remained low. Four cases of measles were reported, compared with only three cases in the previous eight months.

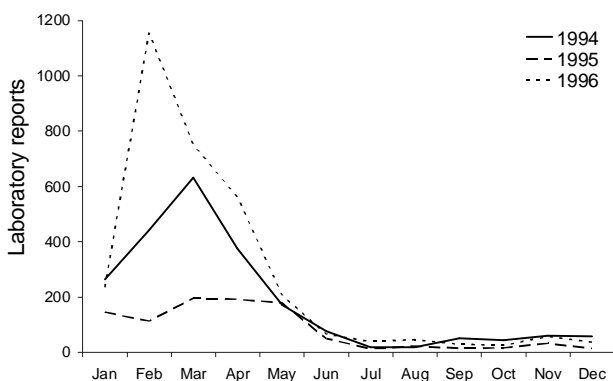
## LabVISE

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 *CDI* each fortnight. 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* 1997;21:8-9.

There were 1,099 reports received in this period (Tables 7 and 8).

Sixty-two reports of Ross River virus were received this period. The total number of laboratory reports received during 1996 were the highest on record (3,208). The majority of reports were between January and May (Figure 4).

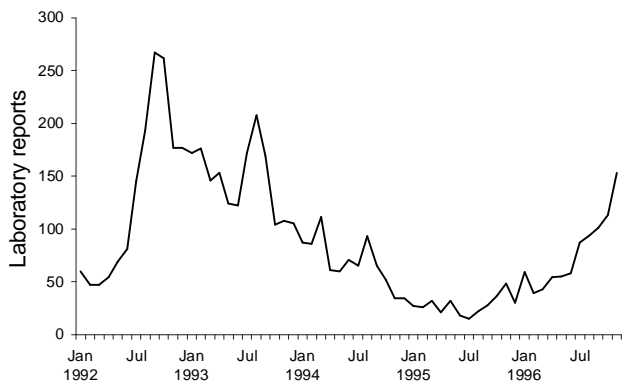
**Figure 4. Ross River virus laboratory reports, 1994 to 1996, by month of specimen collection**



**Table 6. Australian Sentinel Practice Research Network reports, weeks 50, 51 and 52, 1996**

Condition	Week 50, to 15 December 1996		Week 51, to 22 December 1996		Week 52, to 29 December 1996	
	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Influenza	18	2.3	14	1.7	15	3.4
Rubella	9	1.2	2	0.2	1	0.2
Measles	3	0.4	1	0.1	0	0.0
Chickenpox	37	4.7	28	3.5	22	5.0
Pertussis	7	0.9	3	0.4	5	1.1
Gastroenteritis	150	19.2	146	18.1	96	21.8

**Figure 5. *Mycoplasma pneumoniae* laboratory reports, 1992 to 1996, by month of specimen collection**

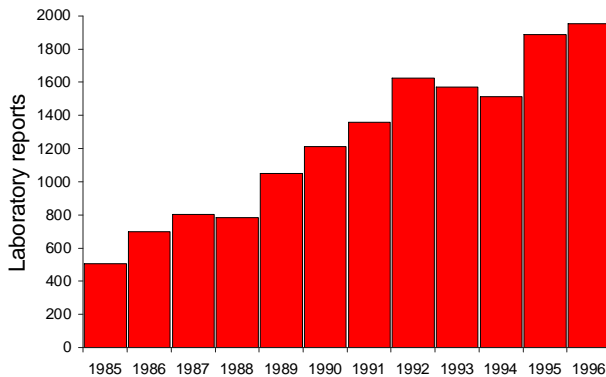


Reports of *Mycoplasma pneumoniae* continued to increase during November (Figure 5). A total of 93 reports were received this period with diagnosis by IgM detection (41), single high titre (34), total antibody detection (12), four-fold rise in titre (4), IgA detection (one) and virus isolation (one). The majority of reports (59%) were for children under 15 years of age.

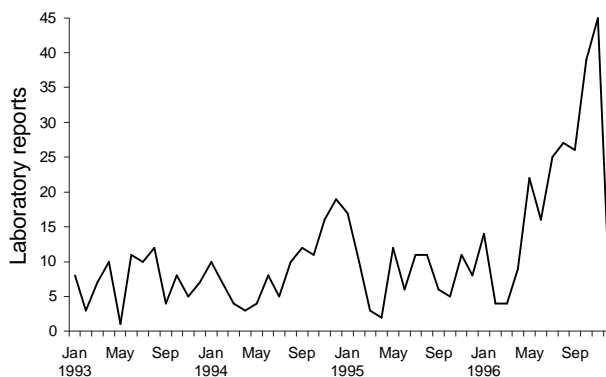
There were 97 reports of Epstein-Barr virus received this period with diagnosis by IgM detection (91), total antibody detection (5) and antigen detection (one). The total number of laboratory reports received for 1996 is the highest on record (Figure 6).

Laboratory reports of parvovirus may be declining after peaking in November (Figure 7), only one report was received this period.

**Figure 6. Epstein-Barr virus laboratory reports, 1985 to 1996, by month of specimen collection**



**Figure 7. Parvovirus laboratory reports, 1993 to 1996, by month of specimen collection**



**Table 7. Virology and serology laboratory reports by State or Territory<sup>1</sup> for the reporting period 12 December 1996 to 1 January 1997, historical data<sup>2</sup>, and total reports for the year**

	State or Territory <sup>1</sup>								Total this fortnight	Historical data <sup>2</sup>	Total 1996
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
<b>Measles, mumps, rubella</b>											
Measles virus				2					2	24.7	60
Rubella virus				5	19		1	9	34	62.8	821
<b>Hepatitis viruses</b>											
Hepatitis A virus			5		5			12	22	18.7	415
Hepatitis D virus					2				2	.7	22
<b>Arboviruses</b>											
Ross River virus			6	8	2			46	62	20.0	3236
Barmah Forest virus			1	5				3	9	8.3	227
Dengue not typed								1	1	.2	17
<b>Adenoviruses</b>											
Adenovirus type 40								1	1	.0	34
Adenovirus not typed/pending		3		32	6		7	12	60	67.3	1426
<b>Herpes viruses</b>											
Cytomegalovirus		2		12	2		10	5	31	67.2	1518
Varicella-zoster virus		4		6	10		3	14	37	48.8	1209
Epstein-Barr virus		12		4	25		12	44	97	87.2	2217
<b>Other DNA viruses</b>											
Parvovirus					1				1	6.5	258
<b>Picornavirus family</b>											
Coxsackievirus B2		1							1	.8	15
Coxsackievirus B4		1							1	.0	8
Echovirus type 7							2		2	.0	16
Poliovirus type 1 (uncharacterised)		1							1	.7	14
Poliovirus not typed/pending								1	1	.0	2
Rhinovirus (all types)		5		12				8	25	37.7	755
Enterovirus not typed/pending		1		18				25	44	43.0	880
<b>Ortho/Paramyxoviruses</b>											
Influenza A virus		1		41					42	9.0	1580
Influenza B virus				6	5			3	14	3.5	80
Influenza virus - typing pending								1	1	.0	21
Parainfluenza virus type 1					2			3	5	1.0	319
Parainfluenza virus type 2				6				1	7	1.2	79
Parainfluenza virus type 3		11		24	3		14	5	57	45.8	863
Respiratory syncytial virus		1		2			4	1	8	36.7	4124
<b>Other RNA viruses</b>											
Rotavirus		3			20	2	5	5	35	61.2	1640
Norwalk agent							1		1	2.8	43
<b>Other</b>											
<i>Chlamydia trachomatis</i> not typed		25	54		25	1	10	74	189	100.2	3975
<i>Chlamydia</i> species		1							1	2.8	53
<i>Mycoplasma pneumoniae</i>		19	1	8	4	1	26	34	93	16.7	987
<i>Coxiella burnetii</i> (Q fever)		6		16				2	24	12.2	218
<i>Bordetella pertussis</i>							164	11	175	26.5	951
<i>Legionella longbeachae</i>								3	3	.3	20
<i>Cryptococcus</i> species								1	1	1.0	21
<i>Leptospira pomona</i>				4					4	.2	8
<i>Leptospira hardjo</i>				3	1				4	.5	24
<i>Leptospira</i> species		1							1	1.0	64
<b>TOTAL</b>		<b>98</b>	<b>67</b>	<b>214</b>	<b>132</b>	<b>4</b>	<b>259</b>	<b>325</b>	<b>1,099</b>	<b>817.0</b>	<b>28,211</b>

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

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

**Table 8. Virology and serology laboratory reports by contributing laboratories for the reporting period 12 December 1996 to 1 January 1997**

State or Territory	Laboratory	Reports
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	44
	Royal Alexandra Hospital for Children, Camperdown	6
	Royal Prince Alfred Hospital, Camperdown	23
	South West Area Pathology Service, Liverpool	24
Queensland	State Health Laboratory, Brisbane	216
South Australia	Institute of Medical and Veterinary Science, Adelaide	131
Tasmania	Northern Tasmanian Pathology Service, Launceston	4
Victoria	Microbiological Diagnostic Unit, University of Melbourne	10
	Monash Medical Centre, Melbourne	30
	Royal Children's Hospital, Melbourne	219
Western Australia	PathCentre Virology, Perth	197
	Royal Perth Hospital	6
	Western Diagnostic Pathology	189
TOTAL		1099

# Overseas briefs

Source: World Health Organization (WHO)

## ***Ebola haemorrhagic fever, Gabon***

A total of 58 cases with 43 deaths had occurred up to 8 January in the outbreak of Ebola haemorrhagic fever in Gabon. The last fatal case occurred on 8 January. One patient is still hospitalised and 14 have recovered.

## ***Cholera, Burundi***

An outbreak of cholera has been reported in Rumonge Province, in the south of Burundi bordering Lake Tanganyika. Up to 13 January, 482 cases with 21 deaths had been reported. A breakdown of water supplies after the affected village was the target of an armed group, continuing poor hygiene practices and an increase in the number of displaced persons in the area have all contributed to this outbreak. A national cholera control committee has been established with the support of WHO and other agencies. A plan of action which puts emphasis on improved case management, surveillance and prevention of the spread of the disease has been prepared.

## ***Measles, Guadeloupe***

The Ministry of Health of France has notified the Pan-American Health Organization (PAHO) of a measles outbreak in Guadeloupe. As of 15 January 1997, a total of 12 laboratory confirmed cases had been reported. Most cases have occurred among unvaccinated adolescents in the city of St. François, located approximately 20 km from Pointe-à-Pitre. The first reported measles case had rash onset in mid-October 1996 and the most recent case had rash onset on 14 January 1997. The source of the outbreak is unknown. Outbreak response activities include heightened measles surveillance and the identification and vaccination of previously unvaccinated children and adolescents.

## ***Dengue type 2, French Polynesia***

Around 70 confirmed cases of dengue type 2 have been reported from French Polynesia between August and November 1996. Dengue type 2 has not been found in French Polynesia since 1976. In recent years almost all dengue in the Pacific Islands has been dengue types 3 or 4, and therefore there is likely to be widespread susceptibility to dengue type 2.

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Contributions covering any aspects of communicable disease are invited. Instructions to authors can be found in *CDI* 1997;21:9.

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