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

TUBERCULOSIS NOTIFICATIONS IN AUSTRALIA, 1993

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Introduction

In recent years tuberculosis notification rates have increased in many parts of the world, including both developing¹ and developed countries². In the United States, the resurgence is thought to have been due to the HIV epidemic, immigration and the deterioration of control programs. These factors have also been suggested as contributing to increases in notification rates in England and Wales³.

The increasing rates overseas, the potential for the HIV epidemic to contribute to higher rates of tuberculosis and the changing overall epidemiology of the disease emphasise the need for accurate tuberculosis surveillance. In Australia, tuberculosis activity is primarily monitored through the National Mycobacterial Surveillance System, which was instituted in 1991 and replaced the previous systems by which the States and Territories reported tuberculosis notifications nationally. It was established to strengthen monitoring of tuberculosis notification rates and contemporary risk factors such as HIV infection and birth in a country with a high prevalence of tuberculosis. The first annual report of this System was published for the 1991 data in 1992⁴ and the second, for the 1992 data, in 1994⁵. This is the annual report of the System for 1993.

Methods

Data were collected by the health authorities in each of the States and Territories and provided in computerised format for the national analysis. The standard dataset included the core dataset in common with the National Notifiable Diseases Surveillance System (unique identifier for each notification, disease code, postcode of residence, date of birth and sex of the patient, dates of onset and report, Aboriginality, con-

firmation status and transmission period). It also included a supplementary dataset comprising ethnicity, country of birth, length of residence in Australia, pathogen, principal site of disease, methods of diagnosis, antimicrobials used at the time of notification, BCG status, HIV status and reactivation status. Standard datasets were received from most States and Territories; where standard datasets were not received, information was recoded to the standard format where possible.

The definitions used were the same as those used since 1986⁶:

1. Tuberculosis (new case)

- a case which has been confirmed by the identification of *Mycobacterium tuberculosis* (or *M. africanum* or *M. bovis*) culture or by microscopy, or
- a case which has been diagnosed to be active clinically and which has been accepted as such by the State or Territory Director of Tuberculosis.

2. Tuberculosis (relapse or reactivation)

- a case of active tuberculosis diagnosed again (bacteriologically, radiologically or clinically) following previous full treatment (as deemed appropriate by the State or Territory Director of Tuberculosis) and considered to be inactive or quiescent.

3. Atypical mycobacterial infection

Clinical features consistent with one or more of the following:

Table 1. Notifications of new and reactivated cases of tuberculosis and rates per 100,000 population, 1993, by State or Territory

State or Territory	New cases		Reactivations		Total	
	Notifications	Rate per 100,000	Notifications	Rate per 100,000	Notifications	Rate per 100,000
ACT	10	3.34	3	1.00	13	4.35
NSW	378	6.30	12	0.20	390	6.50
NT	26	15.36	1	0.59	27	15.95
Qld	98	3.14	9	0.29	107	3.43
SA	65	4.44	2	0.14	67	4.58
Tas	14	2.97	1	0.21	15	3.18
Vic	288	6.45	16	0.36	304	6.81
WA	65	3.88	3	0.18	68	4.06
Total	944	5.35	47	0.27	991	5.61

- presence of a compatible disease process which is clinically, radiologically and/or pathologically not due to other causes,
- consistent repeated recovery of the same organism from the same site in moderate to abundant amounts,
- recovery of atypical mycobacteria from sites which are normally sterile.

Denominator population data and data on tuberculosis deaths were obtained from the Australian Bureau of

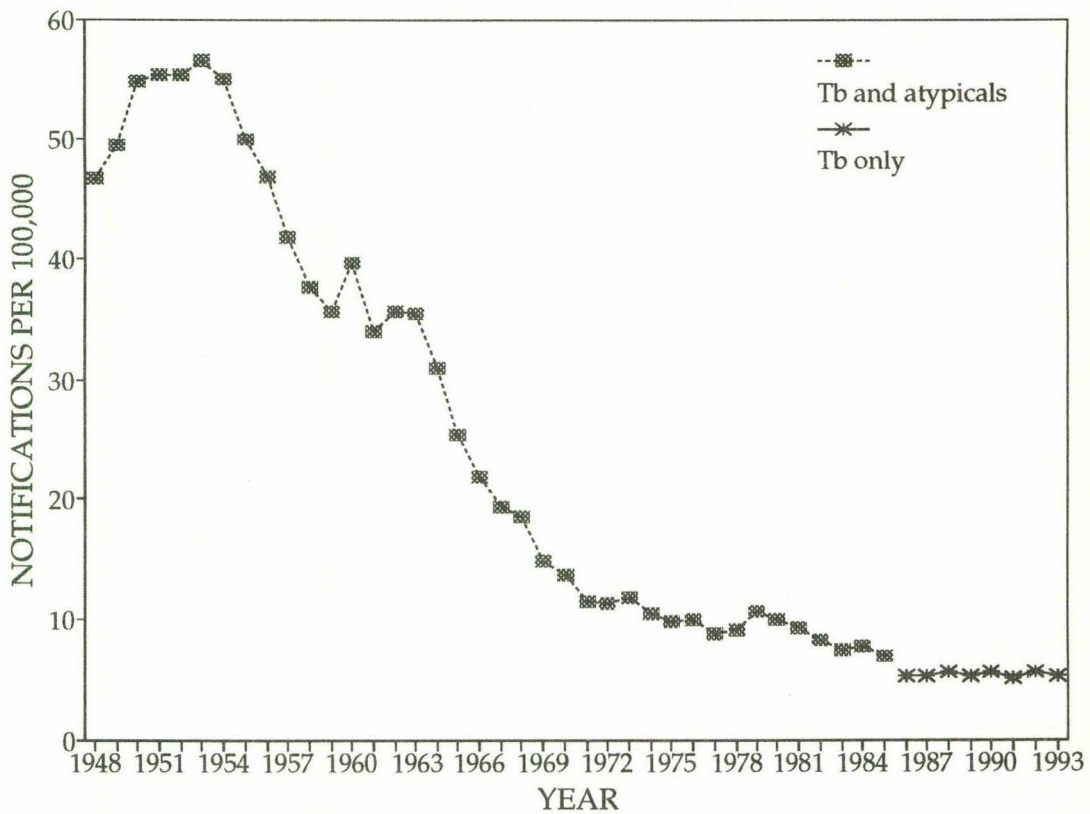
Statistics. All denominator data were estimated resident populations as at 30 June in the relevant year. The exception was the estimate of the Aboriginal and Torres Strait Islander population which was for 1994.

Results

States and Territories

There was a total of 991 notifications of tuberculosis received for 1993, 944 new cases and 47 reactivations (Table 1). This corresponded to rates of 5.35 per 100,000

Figure 1. Notifications of new cases of tuberculosis¹ per 100,000 population, 1948 to 1993, by year



1. Notifications from 1948 to 1985 include atypical disease
Tb Tuberculosis

Table 2. Notifications of new and reactivated cases of tuberculosis and rates per 100,000 population, 1986 to 1993, by State or Territory

Year	New cases		Reactivations		Total	
	Notifications	Rate per 100,000	Notifications	Rate per 100,000	Notifications	Rate per 100,000
1986	863	5.39	43	0.27	906	5.65
1987	868	5.34	39	0.24	907	5.58
1988	925	5.59	29	0.18	954	5.77
1989	902	5.36	50	0.30	952	5.66
1990	979	5.73	37	0.22	1016	5.95
1991	903	5.21	47	0.27	950	5.48
1992	983	5.62	28	0.16	1011	5.78
1993	944	5.35	47	0.27	991	5.61

Figure 2. Notifications of new cases of tuberculosis per 100,000 population, 1993, by Statistical Division of residence

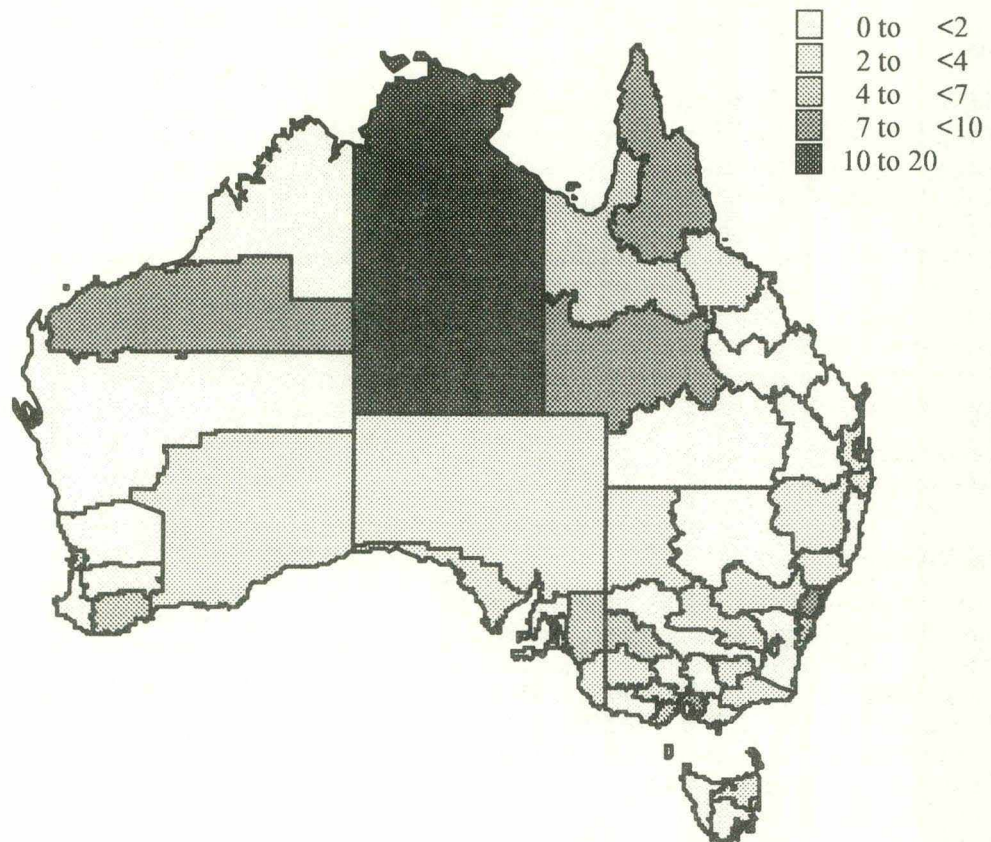


Table 3. Notifications of new cases of tuberculosis per 100,000 population, 1993, by age group and sex

Age group (years)	Females		Males		Total	
	Notifications	Rate per 100,000	Notifications	Rate per 100,000	Notifications	Rate per 100,000
0-4	12	1.91	9	1.36	21	1.63
5-9	3	0.48	5	0.76	8	0.63
10-14	7	1.14	1	0.15	8	0.63
15-19	15	2.38	10	1.50	25	1.93
20-24	31	4.35	43	5.84	74	5.10
25-29	49	7.21	42	6.14	91	6.68
30-34	57	7.81	39	5.34	96	6.57
35-39	42	6.13	48	7.04	90	6.58
40-44	35	5.40	40	6.11	75	5.76
45-49	21	3.66	28	4.70	49	4.19
50-54	18	4.15	19	4.16	37	4.15
55-59	27	7.20	36	9.38	63	8.30
60-64	24	6.71	25	7.02	49	6.87
65-69	25	7.02	48	14.51	73	10.63
70-74	23	7.58	25	9.99	48	8.67
75-79	14	6.05	36	21.98	50	12.66
80-84	20	12.70	24	25.79	44	17.56
85+	6	4.93	17	33.44	23	13.32
Unknown	10	-	10	-	20	-
Total	439	4.95	505	5.74	944	5.35

per year for new cases, 0.27 per 100,000 for reactivations and 5.61 per 100,000 for total notifications. The highest numbers of new notifications were reported by New South Wales (378), Victoria (288) and Queensland (98). The highest rates of new disease were reported by the Northern Territory (15.36 per 100,000), Victoria (6.45 per 100,000) and New South Wales (6.30 per 100,000).

The number of notifications and the notification rates for 1993 were similar to the those reported since the introduction of the current case definitions in 1986 (Table 2). Compared with 1992 there was a decrease in total notifications of 2.0% and a decrease in the total notification rate of 2.9%, but compared with 1991, there were increases of 4.2% and 2.4%, respectively. All States and Territories had fewer total and new disease notification rates in 1993 than in 1992, except for Victoria (14% and 10% increases, respectively) and South Australia (12% and 11% increases, respectively).

Over a longer period, the tuberculosis notification rate has fallen since the peak recorded in the 1950s (Figure 1).

Statistical Division

Postcode of residence was provided with 943 notifications of new disease, thus all but one notification could be allocated to a Statistical Division. The notification rates varied widely (Figure 2). The highest rates were for the Northern Territory (17.7 per 100,000), Pilbara, Western Australia (9.2), Sydney (8.5), Far North Queensland (8.4), Melbourne (7.9) and Central West Queensland (7.6). The Northern Territory, Pilbara, Far North Queensland and Central West Queensland similarly had the highest notification rates in 1992, with Northwest Queensland. (The mapped rate for the Northern Territory for 1993 was higher than that for notifications reported by the Northern Territory as several notifications reported by the States had Northern Territory postcodes.)

Age and sex

There were 505 notifications of new disease for males and 439 for females (M:F ratio 1.00:0.87), corresponding to rates of 5.74 per 100,000 and 4.95 per 100,000 respec-

tively (M:F ratio 1.00:0.86), both slightly lower than for 1992.

The highest number of new cases was reported for the 20 to 44 year age group for both sexes (Table 3). There were two peaks in the age group specific rates for persons, males and females. The first, smaller peak was in the 20 to 44 year age group; the second was in the over 55 years age group. The highest age group specific rates were in the 80 to 84 years age group for persons (17.56 per 100,000), the over 85 years age group for males (33.44) and the 80 to 84 years age group for females (12.70). This distribution was similar to that reported for 1992 notifications.

Principal site of disease

The principal site of disease was reported for 852 notifications of new disease (90.3%). Of these, 557 (65.4%) were pulmonary and 132 (15.5%) were lymphatic (Table 4). Pulmonary disease was more commonly reported for males and lymphatic and bone/joint disease were more common in females. Pulmonary disease was reported for persons in all age groups but was most commonly reported for those over the age of 45 years (290; 52% of those with pulmonary disease and known age). In contrast, lymphatic disease was reported mainly for persons under the age of 45 years (97; 75% of those with lymphatic disease and known age). Pleural disease was reported for persons in a wide age range (from the five to nine year age group to the 85 to 89 year age group). With two exceptions, bone/joint, genito-urinary, miliary, meningeal and peritoneal disease was only reported for persons over the age of 20 years.

Pathogen

The causative organism was reported for 697 notifications of new disease (73.8%). *M. tuberculosis* was reported for 692 (73.3%), *M. bovis* for three (0.3%) and *M. africanum* for two (0.2%). A number of these did not report culture confirmation and are therefore assumed to be presumptive diagnoses.

Table 4. Notifications of new cases of tuberculosis, 1993, by principal site of disease and sex

Site	Females		Males		Total	
	Notifications	% of known	Notifications	% of known	Notifications	% of known
Pulmonary	233	59.1	324	70.7	557	65.4
Pleural	23	5.8	33	7.2	56	6.6
Lymphatic	83	21.1	49	10.7	132	15.5
Bone/Joint	17	4.3	9	2.0	26	3.1
Genito-urinary	14	3.6	15	3.3	29	3.4
Miliary	6	1.5	5	1.1	11	1.3
Meningeal	6	1.5	4	0.9	10	1.2
Peritoneal	3	0.8	5	1.1	8	0.9
Other	9	2.3	14	3.1	23	2.7
Unknown	45	-	47	-	92	-
Total	439	-	505	-	944	-

Table 5. Notifications of new cases of tuberculosis, 1993, by reported method of diagnosis¹

	Notifications	% of total ¹	% of notifications for which use of the method was reported
Culture	561	59.4	80.8
Microscopy	403	42.7	62.8
Histology	81	8.6	25.7
Tuberculin test	203	21.5	49.8
Clinical signs	294	31.1	70.2
Radiology	300	31.8	75.2

1. More than one method of diagnosis can be reported for each notification.

Methods of diagnosis

Seventy-nine per cent of notifications of new cases of tuberculosis included information on the methods of diagnosis. Overall, 561 notifications were reported as culture confirmed (59.4% of total notifications, 80.8% of notifications with information on whether the diagnosis was culture confirmed). There is a discrepancy between the number of culture confirmed reports and the number reporting a causative organism.

Microscopy, histology, tuberculin testing, radiology and clinical signs were also reported as methods of diagnosis for each notification; microscopy, radiology and clinical signs were the most common (Table 5). The 383 notifications not reported as culture confirmed had no information reported (198; 21.0%) or were reported as diagnosed by tuberculin test and/or clinical signs only (17) or by tuberculin test and/or clinical signs and microscopy (45), radiology (70), histology (30), radiology and microscopy (seven), histology and microscopy (11) and histology and radiology (five).

Antimicrobials

For each notification, the use of antimicrobials at the notification date was reported separately for isoniazid, rifampicin, pyrazinamide, ethambutol, streptomycin, ethionamide, prothionamide, cycloserine and others.

Some information was reported for 704 notifications of new disease (74.6%). However, the proportion of notifications which included information on the use of each individual drug was lower, ranging from 60.0% which included information on whether isoniazid was used, to 6.9% which included information on whether prothionamide was used.

The most common drug combination reported was isoniazid, rifampicin, pyrazinamide and ethambutol (Table 6), reported for 344 notifications (48.9% of those with information). A further 94 notifications reported these four drugs in combination with streptomycin, and for 170 notifications, three of these drugs were used, with or without streptomycin.

BCG status

BCG status was reported for 426 notifications of new cases of tuberculosis (45.1%). Of these, 184 had previously had BCG vaccination (19.5% of total notifications) and 242 were BCG negative. Of those who had been vaccinated, 98 were female (age range one to 80 years) and 86 were male (age range four to 90 years). Three were under the age of five years, a female aged one year with lymphatic disease and two four year old males with pulmonary disease.

Table 6. Antimicrobials¹ used at notification date

Drug(s)	Notifications	% of known
Isoniazid + rifampicin	24	3.4
Isoniazid + rifampicin + streptomycin	4	0.6
Isomazid + rifamicin + ethambutol	33	4.7
Isoniazid + rifampicin + ethambutol + streptomycin	25	3.6
Isoniazid + rifampicin + pyrazinamide	99	14.1
Isoniazid + rifampicin + pyrazinamide + streptomycin	4	0.6
rifampicin + pyrazinamide + ethambutol	5	0.7
Rifampicin + pyrazinamide + ethambutol + streptomycin	4	0.6
Isoniazid + rifampicin + pyrazinamide + ethambutol	344	48.9
Isoniazid + rifampicin + pyrazinamide + ethambutol + streptomycin	94	13.4
Other	68	9.7
Unknown	240	-
Total	944	-

1. Antimicrobials other than isoniazid, rifampicin, pyrazinamide, ethambutol and streptomycin are not included in this table.

HIV status

HIV status was reported for only 74 notifications of new tuberculosis (7.8%). Twenty-one were HIV positive and 53 were HIV negative. The HIV positive patients comprised fifteen males (age range 25-59 years; median 38 years) and six females (age range 31-80 years; median 33 years; one unknown). Pulmonary disease was reported for 11 cases (10 males and one female), lymphatic for four males and unknown for six cases (five females and one male).

Of the HIV positive cases, 11 were born in Australia, two in the United Kingdom/Ireland, one each in India, Malaysia, Fiji and Laos; four had unreported country of birth.

Aboriginality

Aboriginality was reported for some or all notifications of new cases of tuberculosis by seven of the eight States and Territories. For those States and Territories, 96% of notifications had information on Aboriginality, and 37 cases were reported as Aboriginal. This corresponded to a rate of 13.0 per 100,000 Aboriginal and Torres Strait Islander population of the reporting States and Territories.

There were 21 females in the age range one to 83 years (median 42.7 years), and 16 males, age range 25 to 68 years (median 48.1 years). Twenty-three reports were for pulmonary disease (12 females and 11 males), six

for pleural disease (three females and three males), five for lymphatic disease (four females and one male), one for a male with bone/joint disease and two for females with miliary disease. Most cases were reported to be resident in Statistical Divisions in the north of the country.

Ethnicity

Ethnicity was detailed in few notifications and is not included in this report.

Country of birth

Information on the country of birth was included in 835 notifications (88.5%). There were 245 notifications for persons born in Australia, made at a rate of 1.80 per 100,000 Australian born population. This was slightly higher than the corresponding rate for 1992 (1.62 per 100,000).

There were 590 notifications for persons born overseas (70.7% of notifications for which country of birth information was available; Table 7), corresponding to a rate of 14.63 per 100,000 overseas born population, slightly lower than the rate in 1992 (15.10 per 100,000). The highest number of notifications were received for persons born in Vietnam (129), the Philippines (81) and China (55). The highest notification rates were for persons born in the Philippines (94.7 per 100,000 Philippines born population), Vietnam (94.0), Indonesia (61.8), China (60.1), 'other' South Asia (mainly

Figure 3. Notifications of new cases of tuberculosis per 100,000 population for selected countries of birth, 1986 to 1993, by year and country of birth

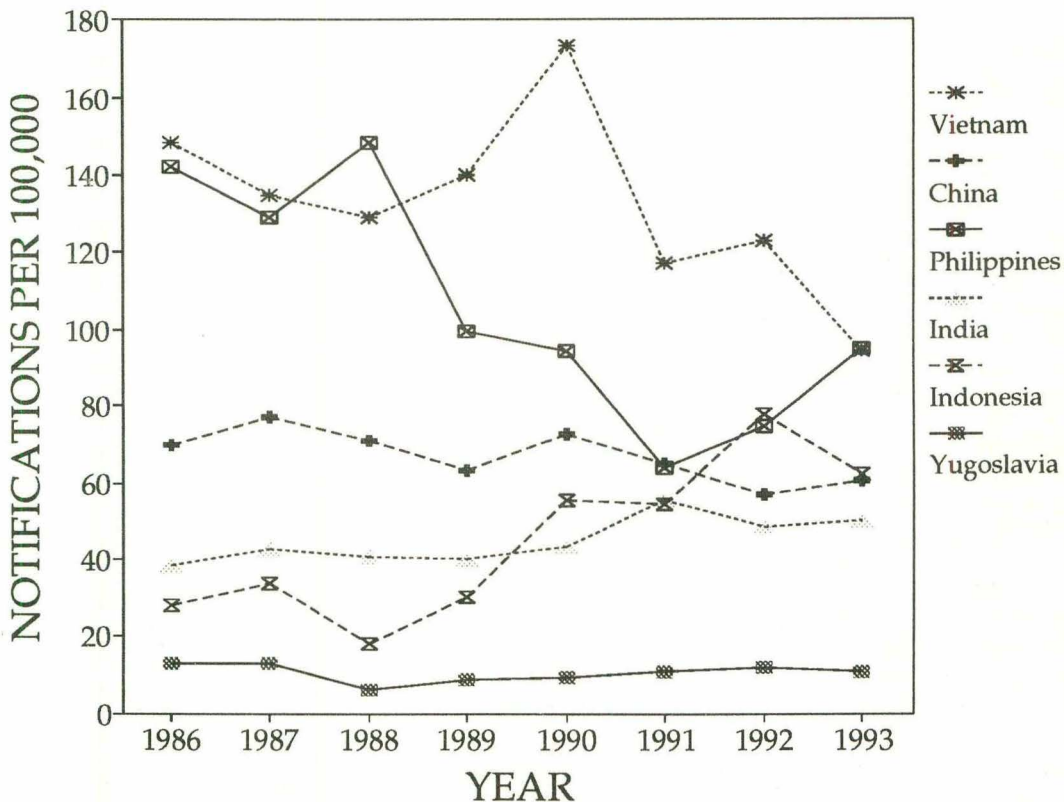


Table 7. Notifications of new cases of tuberculosis, rate per 100,000 population, median length of residence in Australian and median age, by country of birth

Country/Area	Notifications	Rate per 100,000 population	% of known	Median length of residence in Australia (years)	Median age (years)
Fiji	7	19.7	0.8	2	42
New Zealand	9	3.2	1.1	7	39
Other Oceania	9	17.7	1.1	2.5	33
Germany	6	5.0	0.7	32	52
Greece	11	7.5	1.3	22	62
Italy	12	4.5	1.4	33	65
Poland	6	8.7	0.7	12	65
United Kingdom & Ireland	30	2.4	3.6	24	66
Former USSR	5	10.8	0.6	18	70
Former Yugoslavia	18	10.5	2.2	13	47
Other Europe	14	4.3	1.7	36	62.5
Middle East and North Africa	10	4.9	1.2	6.5	37.5
Indonesia	23	61.8	2.8	8	33
Malaysia	10	11.8	1.4	12	36
Philippines	81	94.7	9.7	5	33
Vietnam	129	94.0	15.4	5.5	33
Other South-East Asia	29	34.2	4.1	10	33
China	55	60.1	6.6	2	43
Hong Kong and Macao	19	23.5	2.3	3	38
Other North-East Asia	15	23.7	1.8	7.5	37
India	36	49.7	4.3	10	40
Sri Lanka	8	18.3	1.0	6	67
Other South Asia	8	53.3	1.0	4	47.5
Americas	9	5.5	1.1	2	36
Africa	10	9.1	1.2	1	29.5
Overseas, not specified	21		2.5	7	49.5
Overseas total	590	14.63	70.7	7	39
Australia	245	1.8	29.3	-	59
Unknown	109	-	-	-	-
Total	944	5.35	-	-	43

1. Denominators are the estimated numbers of persons born in the countries or areas resident in Australia on 30 June 1992.

Pakistan; 53.3) and India (49.7). The notification rate for Vietnam born persons has fallen over the last few years (Figure 3), and those for the Philippines and Indonesia have risen.

The length of time that overseas born persons had been resident in Australia was reported for 461 notifications (78.1%). They ranged from less than one year (52 notifications) to 91 years; the median was seven years (Figure 4). One hundred and ninety-nine (43%) had been notified within the first five years of residence. Median lengths of residence were less than 10 years for persons born in most areas of Oceania and Asia, whereas they were more than 10 years for persons born in Europe.

The age and sex distributions of the overseas born persons were different from those of the total notifica-

tions. There were 301 males notified (14.73 per 100,000) and 289 females (14.52 per 100,000). The M:F ratio for notifications was 1.00:0.96 and for rates it was 1.00:0.99 (Figure 5). The peak in number of notifications occurred in the 20 to 44 year age group as for total notifications (Table 8), but there were two equal peaks in notification rates, one in the 20 to 39 year age group and the other in the over 65 year age group (Figure 6). In contrast, there was a single peak in both notifications and notification rates in persons who were Australian born. The median ages were less than 40 years for persons born in most areas of Oceania and Asia, whereas they were more than 40 years for persons born in Europe (Table 7).

The site of disease reported for overseas born persons also differed from that reported for Australian born persons, reflecting the different age and sex distribu-

Figure 4. Notifications of new cases of tuberculosis in persons born overseas, 1993, by length of residence in Australia

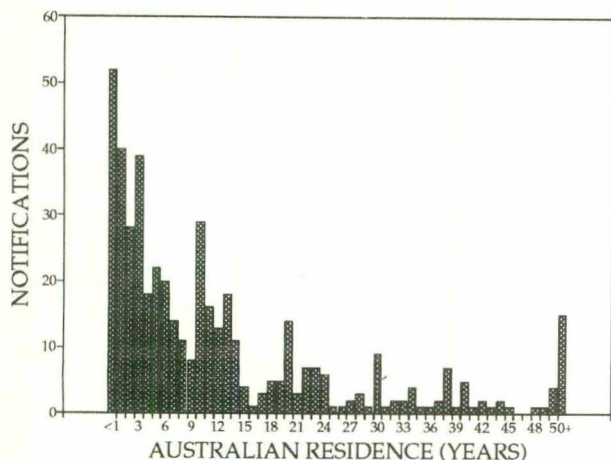


Figure 5. Notifications of new cases of tuberculosis per 100,000 population, 1993, by sex and place of birth

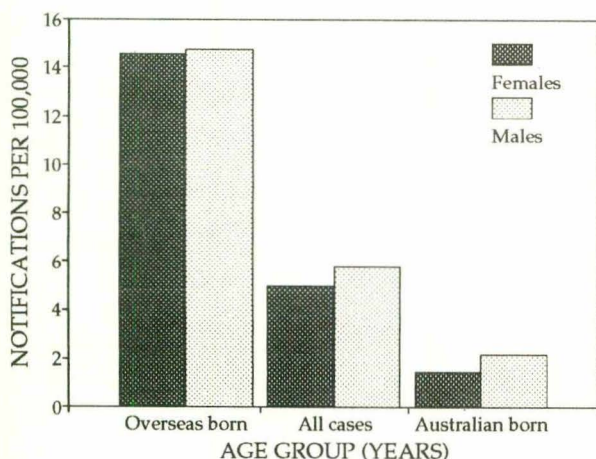
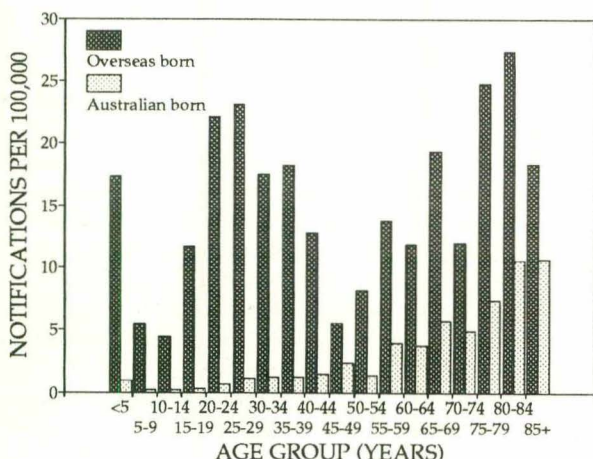


Figure 6. Notifications of new cases of tuberculosis per 100,000 population, 1993, by age group and place of birth



tions of the overseas born persons. Pulmonary disease was reported for 72.7% of Australian born persons, but only 60.5% of overseas born persons. In contrast, lymphatic disease was reported for 6.5% of Australian born persons, but 18.6% of overseas born persons.

Reactivations

Forty-seven reactivated cases of tuberculosis were notified (Table 1). These comprised 5.0% of total notifications and represented a notification rate of 0.27 per 100,000, about the same as in recent years (Table 2).

There were 21 females (aged 26 to 83 years) and 26 males (aged 22 to 88 years). Site of disease was reported for 45; 16 females and 20 males had pulmonary disease, four females had genito-urinary disease (19% of reactivations, compared with 3.6% of new cases) and there were five reports of other disease. For 46, country of birth was reported. Fifteen were born in Australia, four in China, three in Vietnam, two in Hong Kong, two in India, three in Indonesia, two in Italy, two in the Philippines, four in Vietnam and nine elsewhere overseas.

Deaths

The Australian Bureau of Statistics reported 57 tuberculosis deaths for 1993, a death rate of 0.32 per 100,000 population. Forty deaths were males (32 pulmonary, one meningeal, five miliary, two other) and 17 were females (16 pulmonary and one miliary). Most deaths were for persons over the age of 65 years (Figure 7). The number of deaths reported each year since 1986 has ranged between 54 and 63.

Atypical mycobacterial infection

Atypical mycobacterial infection notifications were received from six States and Territories. There was a total of 198 reports, for a rate of 2.75 per 100,000, about the same as for 1992 (2.73 per 100,000). There were 128 males, age range from less than one year to 86 years, and 70 females, age range one to 87 years. Half of the cases were in the 30 to 65 year age group, as were 61% of the male cases. Twenty-four cases were children under the age of five years (14 females and 19 males). HIV status was reported for 51 cases. Forty-eight were HIV positive, one female and 47 males.

Country of birth was reported as Australia for 128 (65%), United Kingdom/Ireland for 12, Hong Kong for four, Italy for three, Greece for two and others or unknown for the remainder.

Organisms reported were *M. kansasii* (seven notifications), *M. avium/intracellulare* (141), *M. chelonae/fortuitum* (19), *M. scrofulaceum* (14) and others/unknown (17).

Discussion

The results from this surveillance system should be interpreted with caution as the proportion of total cases reported is unknown, as are the biases determining which cases are notified. The proportion notified can vary with time and from State to State, as did the completeness of information in each notification. Information on methods of diagnosis, antimicrobials

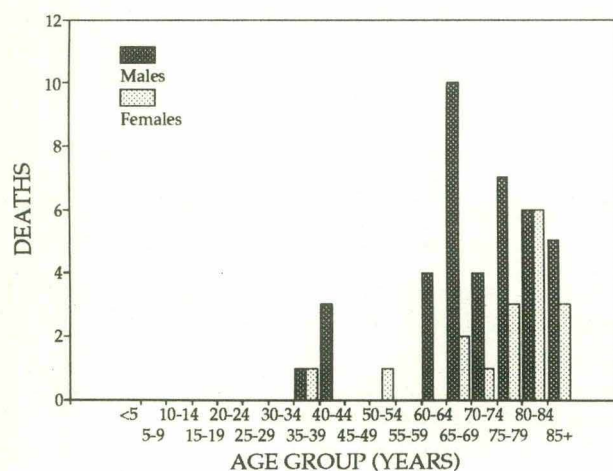
Table 8. Notifications of new cases of tuberculosis, 1993, by age group and place of birth

Age group (years)	Australian born	Overseas born	Unknown	Total
0-4	12	5	4	21
5-9	3	5	0	8
10-14	2	6	0	8
15-19	4	20	1	25
20-24	8	53	13	74
25-29	12	74	5	91
30-34	13	68	15	96
35-39	12	72	6	90
40-44	13	54	8	75
45-49	18	23	8	49
50-54	8	26	3	37
55-59	19	38	6	63
60-64	18	28	3	49
65-69	27	42	4	73
70-74	19	20	9	48
75-79	22	24	4	50
80-84	19	19	6	44
85+	13	9	1	23
Unknown	3	4	13	20
Total	245	590	109	944

used, BCG status, HIV status, reactivation status, Aboriginality, country of birth and length of residence in Australia was all markedly incomplete.

These data should also be compared cautiously with those from the National Notifiable Diseases Surveillance System⁷ and the Tuberculosis Laboratory Surveillance System⁸ as there are different case definitions and reporting arrangements for each system. The laboratory system reports more culture confirmed cases; this may be due to better information ascertainment or to different reporting arrangements.

Figure 7. Tuberculosis deaths, 1993, by age group and sex



The notification rate for 1993 was lower than that for 1992, so it appears that Australia is not experiencing a resurgence of the disease as has occurred in other countries; the notification rate has been essentially stable since 1986.

The number of cases notified as HIV positive was small (21), however, this was an increase over the number notified in 1992 (12). Both this surveillance system and the national HIV surveillance systems are continuing to monitor HIV-tuberculosis co-infections closely.

The notification rate in Australia compares very favourably with those in other countries. For example, the United States reported a rate of 9.8 cases per 100,000 in 1993², England and Wales reported a rate of 11.2 per 100,000³ and France reported a rate of 17.2 cases per 100,000⁹.

Acknowledgments

I would like to acknowledge Htoo Myint for assistance in the data conversions and mapping. For compiling and contributing the State and Territory datasets, I would like to thank the members of the Communicable Diseases Network of Australia and New Zealand and others involved in the States and Territories including Cathy Mead and Irene Passaris in the Australian Capital Territory, Michael Levy and Rob Menzies in New South Wales, Vicki Krause in the Northern Territory, Anil Patel and Patrick Derhy in Queensland, Scott Cameron and Ral Antic in South Australia, Avner Misrachi in Tasmania, John Carnie in Victoria, Jag Gill in Western Australia.

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TUBERCULOSIS IN AUSTRALIA: BACTERIOLOGICALLY CONFIRMED CASES AND DRUG RESISTANCE, 1993

Margaret Curran¹ and David Dawson²

Introduction

Worldwide tuberculosis (TB) remains a major threat to public health, causing approximately three million deaths annually¹. While Africa, Asia and the Americas carry the major burden of tuberculous infection, TB has re-emerged as an important disease in several developed countries². In recent years the United States has experienced an increase in the prevalence of strains resistant to the standard anti-tuberculosis drugs³.

Surveillance for TB is an important component of public health programs. In Australia this is achieved through (i) notification by the States and Territories (under the auspices of the Communicable Diseases Network of Australia) to the National Mycobacterial Surveillance System; (ii) notification to the National Notifiable Diseases Surveillance System and (iii) reporting of isolates by the five State tuberculosis reference laboratories to the Tuberculosis Laboratory Reporting Scheme. Data from these schemes are published in *CDI* and more detailed reports on the latter are published in medical and scientific journals^{4,5}. The Laboratory Reporting Scheme provides data on initial drug resistance.

We present details of *Mycobacterium tuberculosis* isolates reported by Australian laboratories in 1993.

Methods

The Australian Tuberculosis Laboratory Reporting Scheme is a joint project of the Special Interest Group in Mycobacteria of the Australian Society for Microbi-

ology and the Department of Human Services and Health. Data are collected on organisms of the *Mycobacterium tuberculosis* complex (MTBC) including *M. bovis* and geographic variants such as *M. africanum*. Records include patient demographics, source of specimen, microscopy result, species isolated and results of drug susceptibility tests; HIV status is recorded if known.

The annual rate was calculated using the Australian Bureau of Statistics 1993 mid year population estimates.

Results

During 1993 Australian reference laboratories recorded a total of 685 new isolates of MTBC thus the rate of bacteriologically proven TB was 3.9 cases per 100,000 population. Six isolates were identified as *M. bovis* and two as *M. africanum*.

Overall the male:female ratio was 1.2:1, with elderly males having the highest rates of disease compared to other groups. The majority of cases (440, 64%) were pulmonary. Of the 130 cases of pulmonary disease for whom a microscopy result was available 82 (63%) were positive.

Eight patients (1.4% of total) were reported to be HIV positive. Four of these were from Victoria, three from New South Wales and one from Tasmania. The site of disease was pulmonary (five) and lymphatic (three).

Details of *in vitro* susceptibility testing to isoniazid (H), rifampicin (R) and ethambutol (E) was recorded for 684

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Table 1. Drug resistance in Australian isolates of *Mycobacterium tuberculosis* complex, 1993

Resistance pattern	Number tested	Resistant isolates	
		Number	% isolates tested
At least one drug ^{a,b}	685	123	18.0
One drug only ^{a,b}	685	105	15.3
Two drugs only ^{a,b}	685	9	1.3
More than two drugs ^{a,b}	685	9	1.3
Streptomycin (alone or in combination)	443	89	20.0
Isoniazid (alone or in combination)	684	41	6.0
Ethambutol (alone or in combination)	684	4	0.6
Rifampicin (alone or in combination)	684	11	1.6
Pyrazinamide (alone or in combination) ^c	376	10	2.7
Isoniazid and rifampicin in combination	683	10	1.5

a. 242 isolates were not tested against streptomycin

b. 309 isolates were not tested against pyrazinamide

c. Strains of *M bovis* are naturally resistant to pyrazinamide. Therefore isolates were recorded as resistant, whether they were tested or not

of the 685 isolates. However only 376 (55%) and 443 (65%) were tested against pyrazinamide (Z) and streptomycin (S) respectively. Susceptibility test results are summarised in the Table. Resistance to one or more drugs was detected in 123 isolates (18% of total). Eighteen isolates (2.6%) were resistant to two or more drugs. The highest rates of resistance were to S (20% of tested isolates) and H (6%). Resistance to R was reported for 11 isolates (1.6%).

Ten strains (1.6% of total) were resistant to both H and R and are thus regarded as 'multi-drug resistant' (MDR). Seven of these were resistant to H, R and S and one was resistant to H, R, E and Z. The gender of patients with MDR strains was male (five), female (four) and unknown (one); ages ranged from 25 to 81 years. None were reported to be HIV positive.

Discussion

Information available to laboratories is limited to patient demographics, specimen details and the results of tests performed. Clinical and epidemiological data on TB in Australia are provided by the National Mycobacterial Surveillance System⁶.

The incidence of bacteriologically proven TB in Australia in 1993 was 3.9 cases per 100,000 population. Results for the years 1989 through 1992 were 3.7, 3.8, 3.6 and 3.5 cases per 100,000 population respectively, thus rates have remained stable over the past five years.

Of the total bacteriologically proven TB cases 1.4% were reported in association with HIV infection. These data probably underestimate the true prevalence of HIV seropositivity in TB patients⁶ as laboratories are frequently unaware of patients' HIV status. Whilst this figure reflects the increased risk of TB in HIV positive persons it demonstrates a relatively infrequent association in Australia when compared to the global picture⁷.

In the absence of more detailed clinical information data concerning drug susceptibility must be inter-

preted as a measure of *initial* resistance (resistance in newly presenting patients). The issue of *primary* resistance (resistance present prior to treatment) versus *secondary* resistance (resistance developing during treatment) can only be addressed when laboratory and clinical databases are linked. Notification data for 1993 suggests that around 5% of Australian TB cases are relapses⁶ but we are unable to determine the contribution of such cases to the total number of isolates showing resistance.

In keeping with earlier reports^{4,5} drug susceptibility results suggest that the majority of cases of TB in Australia should have responded to the standard regimen of H,R,E and Z. Approximately one third of isolates were not tested against S as this is not part of the standard regimen thus there is an underestimation of the number of isolates resistant to one, two and three or more drugs.

Results for R are similar to those for previous years⁵ although there are signs of an upward trend in the prevalence of MDR strains (those resistant to both H and R). The figure for 1993 was 1.5% while the previous four years it averaged only 0.8%. The frequent association of MDR-TB with HIV/AIDS has caused alarm in the United States; these data provide no evidence of such a trend in Australia.

Acknowledgments.

Data is provided to the Australian Tuberculosis Laboratory Reporting Scheme by the following:

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Richard Lumb, Institute of Medical and Veterinary Science, Adelaide, (South Australia.)

Frank Haverkort, Western Australian Centre for Pathology and Medical Research, (Perth, Western Australia.)

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TUBERCULOSIS INTERNATIONAL UPDATE

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Notifications of new and relapse cases of tuberculosis (TB) as reported to the World Health Organisation (WHO) by December 1994 are presented. Most data were provided by WHO Member States through the WHO Regional and Country Offices or directly from the National Tuberculosis Control Programs (NTP). In addition, information was obtained through the International Union Against Tuberculosis and Lung Diseases and through a review of the literature.

WHO Member States and some other countries and territories (a total of 214) were requested in July 1994 to verify and update the tuberculosis data available to WHO. By December 1994, 118 countries and territories (55%), corresponding to 62% of the global population, had responded. Data for the most recent years were sometimes incomplete but alternative sources of infor-

mation improved the coverage. Data are available for 1990 to 1993, with countries covering 96% of the global population for 1990, 77% for 1991, 59% for 1992 and 51% for 1993. Trend assessments have been produced by comparing the average annual notifications in the periods 1984-1986 and 1990-1993.

Data on tuberculosis notifications must be interpreted with caution because they reflect both case finding and reporting activities of the NTP. In many instances, the performance of the NTP is poor, thus reducing the reliability of reported figures. In addition, case definitions vary among countries. For this reason data is presented on both new and relapse cases rather than new cases only which are not readily available in some countries. Although case notifications do not always reflect incidence trends, they may be a reasonable

Table 1. Average annual tuberculosis notifications, 1984-1986 and 1990-1993, by WHO Region

WHO Region	1984-1986		1990-1993		Change (per cent)	
	Number of cases	Case rate per 100,000 population	Number of cases	Case rate per 100,000 population	Number of cases	Case rate per 100,000 population
Africa	273,825	67.9	414,542	79.3	51.4	16.8
Americas	227,232	34.2	235,794	32.1	3.8	-6.2
Eastern Mediterranean	213,534	65.0	261,284	66.2	22.4	1.7
Europe	304,415	37.0	251,032	29.5	-17.5	-20.4
South-East Asia	1,339,896	115.5	1,839,133	141.2	37.3	22.3
Western Pacific	600,195	42.6	781,163	50.4	30.2	18.3
Global	2,959,097	61.8	3,782,948	70.7	27.8	14.2

Figure 1. Average annual tuberculosis rates per 100,000 population, 1990-1993, by country

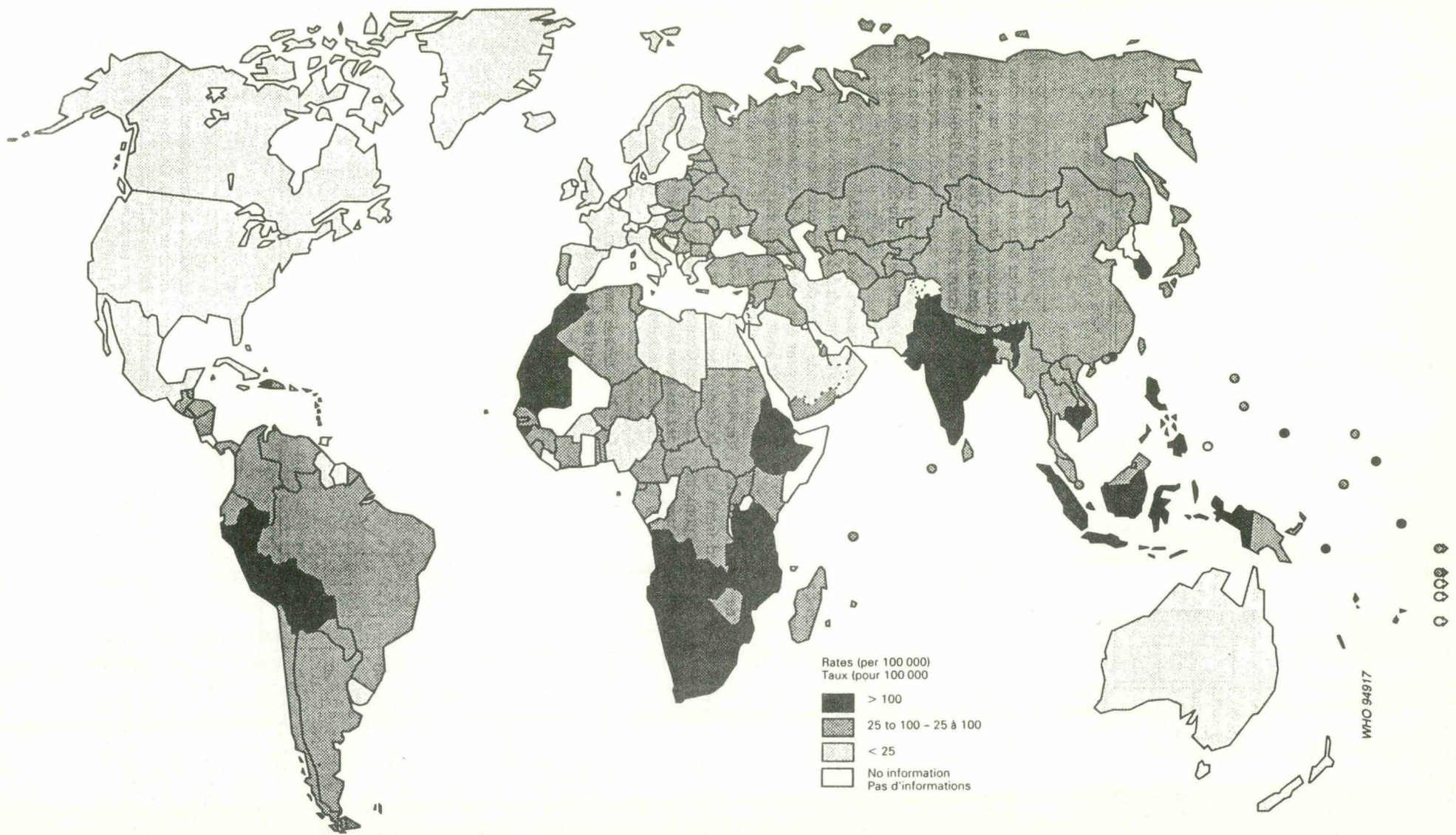
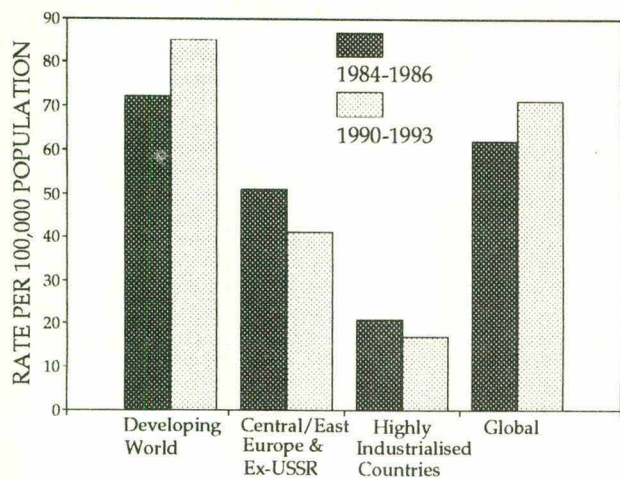


Figure 2. Average annual tuberculosis rates per 100,000 population by economic status,



proxy of the trend of the incidence of tuberculosis in many developed and some developing countries with well established NTP.

An average of 3.8 million cases of TB were reported annually in the period 1990-1993: 48.6% in the South-East Asia Region, 20.6% in the Western Pacific Region, 11.0% in the African Region, 6.9% in the Eastern Mediterranean Region, 6.6% in the European Region and 6.2% in the Region of the Americas. Notification rates were highest in the South-Eastern Asia, African and Eastern Mediterranean Regions (Figure 1).

Trends between 1984-1986 and 1990-1993

The notification rates per 100,000 population increased by 14.2% between the 1984-1986 period and the 1990-1993 period (Table). This increase occurred in all Regions except the Americas and Europe.

The increase in notification rates in the Eastern Mediterranean Region was 1.7% between 1984-1986 and 1990-1993, although most countries in the Region reported a decrease during the same period; this decrease

was offset by marked increases in countries where notifications have fluctuated widely, notably Egypt, Iraq, the Libyan Arab Jamahiriya and Sudan.

The increase in notification rates ranged between 16.8% and 22.3% in the African, South-East Asia and Western Pacific Regions. Much of the increase in the South-East Asia Region can be ascribed to population growth and to improved case ascertainment in India. India has notified over 80% of all cases in the Region and 40% of the total number of cases notified to WHO. Similarly, in the Western Pacific Region, notifications in China, which increased from an average of 214,519 (45% of all cases in the Region) in 1984-1986 to 346,281 in 1990-1993, greatly influenced the regional trend.

The 20.4% decrease in average notification rates in the European Region was particularly marked in Central and Eastern Europe and countries of the former USSR which, however, notified a higher number of cases than the Western European countries. Twelve countries (Bulgaria, Denmark, Israel, Italy, Kyrgyzstan, Liechtenstein, Lithuania, Malta, the Netherlands, Romania, Switzerland and Turkmenistan) reported more cases on average in the 1990-1993 period than in the 1984-1986 period. In three of these countries (Denmark, Romania and Turkmenistan) the average increased by more than 15%.

The average number of cases in the Region of the Americas increased by 3.8% between the 1984-1986 and the 1990-1993 periods. However, because of demographic factors, the case notification rate decreased by 6.2% between the two periods.

The difference in regional trends between the 1984-1986 and the 1990-1993 periods becomes more evident when the industrialised countries and Eastern and Central Europe and countries of the former USSR are separated from the developing countries (Figure 2). While decreases are observed in the former USSR, in developing countries the average notification rates increased by 17.3%.

OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organisation and the Program for Monitoring Emerging Diseases.

Viral encephalitis in India

An outbreak of viral encephalitis has been reported in the Muzaffarpur district, Bihar State. Between 6 and 28 June 466 cases with 167 deaths occurred, mainly in children. Most of the cases were detected in three primary health care centres. Although the diagnosis was viral encephalitis, the causative organism is currently unknown. Japanese Encephalitis (JE) is suspected as outbreaks of JE have occurred in Bihar State in the past. Experts from the National Institute of

Communicable Diseases in Delhi and Patna are assisting the local health authorities in controlling the outbreak.

Cholera update

In Sierra Leone an outbreak of cholera in the capital Freetown has caused 1709 cases with 57 deaths up to 21 June. The Department of Health in Sierra Leone, supported by the World Health Organisation and UNICEF, has set up five cholera treatment centres in the capital.

In Liberia 102 cases of cholera with 21 deaths were reported up to 12 June.

CDI NOTICE TO READERS

CDI reader survey

Communicable Diseases Intelligence (*CDI*) has been disseminating information on communicable disease activity in Australia to interested persons since 1977. It has included data from a range of surveillance systems and articles and other information which have been relevant to communicable disease control.

Priorities for information on communicable disease activity vary, with changing epidemiology of the diseases and changing priorities and strategies for control. To ensure that *CDI* continues to make a useful contribution to national information needs, we are seeking details of who reads and uses *CDI*, and your views on what *CDI* publishes now and what it could publish in the future.

A survey form is included with this issue of *CDI*. Please complete and return it by **31 July 1995**. If you are in Australia, please use the enclosed reply-paid envelope; if you are overseas, please fax your completed form to +61 6 289 7791, or post it, preferably by air mail, to the address on the front of *CDI*.

We will publish the results of the survey in *CDI* later this year, and use them to determine our future directions and priorities. If you have any questions on the survey or on any other aspect of *CDI*, we can be contacted on (06) 289 8606 (Helen Longbottom, Editor) or (06) 289 7808 (Jenny Hargreaves, Deputy Editor).

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 3060 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 8, 9 and 10). Included were a number of reports with specimen collection dates dating back to March.

- **Measles** was reported for 2 patients this period, both diagnosed by IgM detection. The number of reports received for the month of April was the lowest since May 1992.
- Fourteen reports of **rubella** were received this fortnight for 5 females (2 in the 15 to 44 year age group) and 9 males, all in the age range 16 to 45 years. The number of reports received continues to decline (Figure 1).
- Thirty seven reports of **hepatitis A** were received this period for 24 males and 13 females. Six reports were from a single postcode region of Queensland all with specimen collection dates from mid to late May.
- Positive **hepatitis B** serology was reported for 183 patients this fortnight including 99 males and 80 females. Ninety three patients were in the 25 to 44 year age group and 46 in the 15 to 24 year age group. Included were 3 injecting drug users.
- Five hundred and thirty five reports of positive **hepatitis C** serology were received this period. Included were 324 males and 192 females (19 sex not stated). Four hundred and thirteen reports were for the 25 to 44 year age group. Included were 59 injecting drug users, 2 patients with thalassemia major and one pregnant female.
- **Hepatitis E** was reported for a 22 year old female

who had recently returned from India and a 13 year old male, both of whom had a diagnosis of hepatitis.

- **Ross River virus** was reported for 88 patients this fortnight diagnosed by IgM detection (80) and four-fold rise in titre (8). All confirmed diagnoses (fourfold rises in titre) were from Western Australia, one report each from Broome, Leonora, Geraldton, Bencubbin, Mundiwini, Baynton, and Reedy. Specimen collection dates ranged from late March to early June. Most reports for the year to date have been received from Queensland as has been the case in previous years. For the months of January and February more reports than usual were received from the Northern Territory (Figure 2).
- Sixteen reports of **Barmah Forest virus** were received this period, all from Queensland. Included were 5 males and 11 females, age range 19 to 65 years. All diagnoses were presumptive with specimen collection dates from mid-May to early June. The number of reports remained high through the month of May.
- **Kunjin virus** was reported for 2 patients this period, both females from Western Australia aged 25 and 26 years. One diagnosis was confirmed (four-fold change in titre) and the other presumptive (IgM detected). Specimen collection dates were in late April and early May.
- Forty two reports of **adenovirus** were received this fortnight diagnosed by virus isolation (32), antigen detection (8) and single high titre (2). Included was **adenovirus type 30** isolated from a rectal biopsy from a 33 year old male.

Figure 1. Rubella laboratory reports, 1993 to 1995, by month of specimen collection

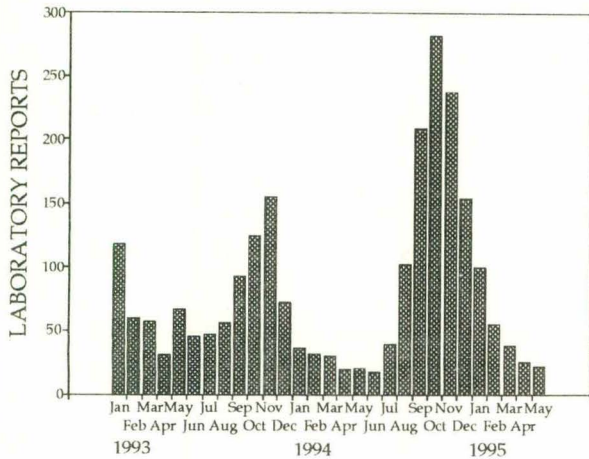
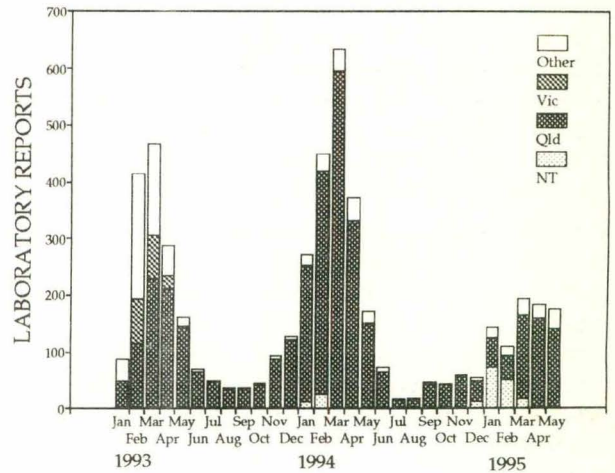


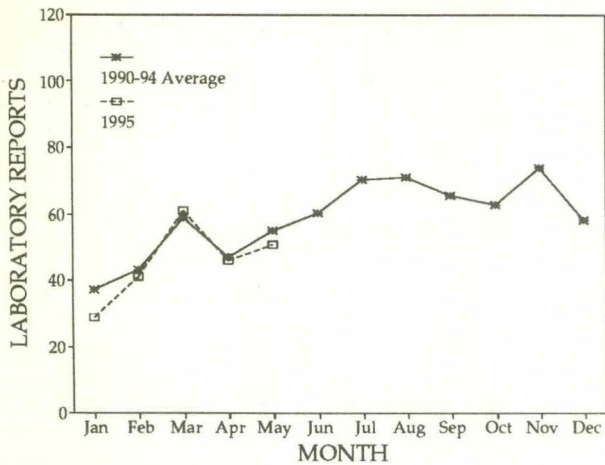
Figure 2. Ross River virus laboratory reports, 1993 to 1995, by State/Territory and month of specimen collection



- **Herpes simplex virus type 1** was reported for 368 patients this fortnight. Diagnosis was by virus isolation (360) and antigen detection (8).
- Three hundred and sixty four reports of **herpes simplex virus type 2** were received, diagnosed by virus isolation (357) and antigen detection (7).
- Sixty five reports of **cytomegalovirus** were received this period for 43 males and 22 females, 19 of whom were under the age of one year. Diagnosis was by virus isolation (48), and IgM detection (17).
- **Varicella zoster virus** was reported for 62 patients this period including a 25 year old male transplant recipient from New South Wales with chicken pox. Method of diagnosis included virus isolation (43), antigen detection (12), fourfold rise in titre (one) and IgM detection (6).
- Positive **parvovirus** serology was reported for 14 patients this fortnight. Included were 11 females, 10 in the 24 to 44 year age group one of whom was pregnant (one age not stated) and 3 males in the 5 to 44 year age group.
- Four reports of **coxsackievirus B3** were received from New South Wales. Included was a 7 day old female (virus isolated from CSF) and 3 males all one year of age or under. Two patients had a diagnosis of gastroenteritis and one upper respiratory tract symptoms.
- **Echovirus type 3** was reported for 5 patients this period including 3 males and 2 females all in the one month to 44 year age range. One patient reported meningitis (virus isolated from CSF), one eye disease (virus isolated from eye) and 3 gastroenteritis.
- Seven reports of **echovirus type 30** were received this period. Included were 3 males and 4 females one of whom was 2 days old. Five patients had meningitis (all CSF isolates).

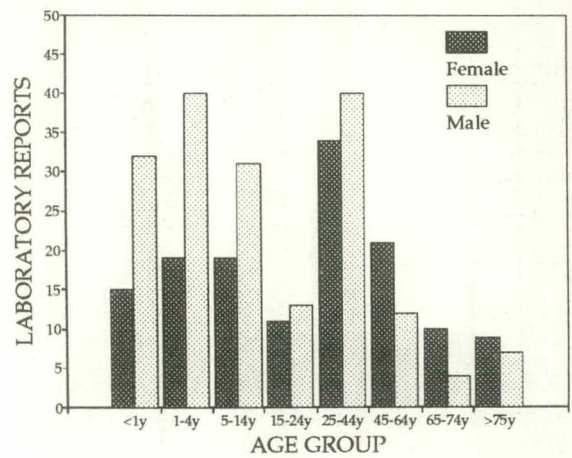
- Four reports of **enterovirus type 71** were received this period, all for males aged one (2), 8 and 10 years.
- **Rhinovirus** was reported for 20 patients this period 15 of whom were under the age of 5 years. The number of reports is average for the time of year (Figure 3).
- **Influenza A** was reported for 119 patients this fortnight. Included were 7 reports of subtype H₁N₁ and 2 of subtype H₃N₂. Diagnosis was by virus isolation (55, specimen collection dates from late March to late June), antigen detection (8), fourfold rise in titre (14), IgM detection (one), and single high titre (41). Included were 63 males and 55 females (one sex not stated), 13 of whom were in the over 65 year age group. Reports were received from the New South Wales (2), the Northern Territory (4), Queensland (one), South Australia (13), Victoria (24) and Western Australia (75). A total of 329 reports has been received for the year to date of which 28 were H₁N₁ subtypes and 5 H₃N₂ subtypes. One hundred and seven influenza A reports with 1995 collection dates (33%) were for children under the age of 5 years. More males than females were reported for the under 44 years age group whilst more females than males were reported over 45 years (Figure 4).
- Eleven reports of **influenza B** were received this period for 4 males and 3 females (one sex not stated). Diagnosis was by virus isolation (3, specimen collection dates from late March to late June), antigen detection (2), fourfold rise in titre (one) and single high titre (5). Reports were received from Queensland (one), South Australia (one), Victoria (2) and Western Australia (7). A total of 57 reports has been received so far this year including 5 for patients over the age of 65 years.

Figure 3. Rhinovirus laboratory reports, 1990 to 1994 average and 1995, by month of specimen collection



- Eighteen reports of **parainfluenza virus type 2** were received this period, 14 for patients under the age of 5 years. Method of diagnosis included virus isolation (16) and antigen detection (2). The number of reports received remained high through the month of May.
- **Parainfluenza virus type 3** was reported for 23 patients this fortnight, all but 2 for patients under the age of 4 years. Diagnosis was by virus isolation (16) and antigen detection (7). Included was a 31 year old female with meningitis (virus isolation from CSF) and a one year old male with viral pneumonia. The number of reports received increased in the month of May.
- Three hundred and thirty six reports of **respiratory syncytial virus (RSV)** were received this fortnight, 210 for patients under one year of age and 103 in the one to 4 year age group. Method of diagnosis included virus isolation (115), antigen detection

Figure 4. Influenza A laboratory reports, 1995, by age group and sex



- (219) and single high titre (2). The number of reports is average for the time of year.
- **Rotavirus** was reported for 41 patients this period including 23 males and 18 females. Thirty seven cases were 4 years of age or under. The number of reports received for the month of May was below the average figure for the previous 5 years (Figure 5).
- **Astrovirus** was reported for 3 patients this period (2 males, one sex not stated) all of whom were part of a gastroenteritis outbreak at a childcare centre. **Calicivirus** was also reported for one of these patients.
- One hundred and seventy eight reports of **Chlamydia trachomatis** were received this fortnight for 55 males and 123 females. One hundred and eleven patients were in the 15 to 24 year age group and 54 in the 25 to 44 year age group. Diagnosis was by

Figure 5. Rotavirus laboratory reports, 1990 to 1994 average and 1995, by month of specimen collection

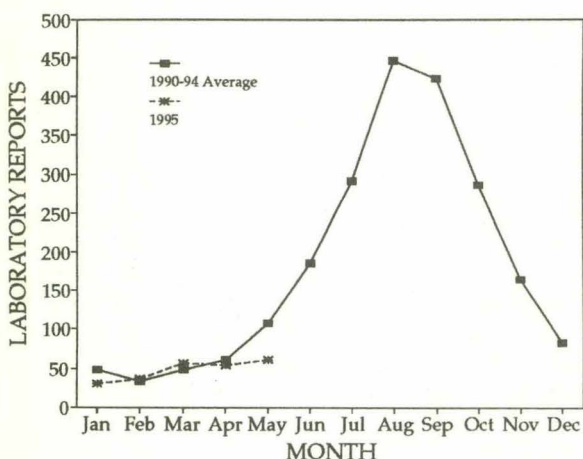


Figure 6. Mycoplasma pneumoniae laboratory reports, 1993 to 1995, by month of specimen collection

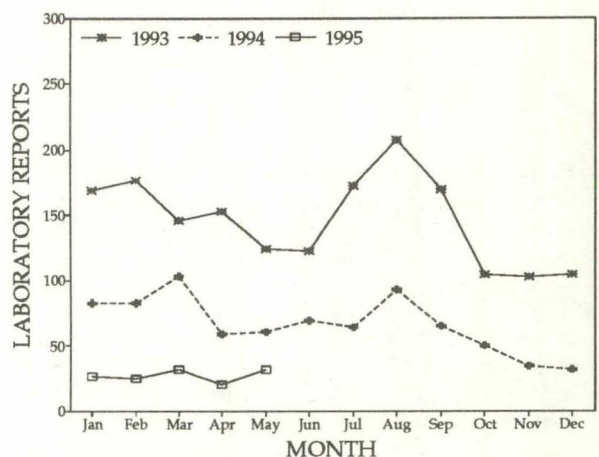


Table 1. Australian Sentinel Practice Research Network, weeks 24 and 25, 1995

Condition	Week 24, to 18 June 1995		Week 25, to 25 June 1995	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	150	20.9	197	27.6
Rubella	0	0	1	0.1
Measles	0	0	1	0.1
Chickenpox	11	1.5	10	1.4
Pertussis	0	0	9	1.3
Gastroenteritis	70	9.8	88	12.3

isolation (24), antigen detection (135) and nucleic acid detection (19).

- Fifteen reports of *Mycoplasma pneumoniae* were received this period for 7 males and 8 females, age range one to 64 years. The number of reports received in recent months is low compared to the same period for the last 2 years (Figure 6).
- Pertussis was reported for 81 patients this fortnight, 73 *Bordetella pertussis* and 8 *Bordetella* species. Included were 33 males and 48 females, age range one month to 74 years. The number of reports rose in May.

Australian Sentinel Practice Research Network

Data for weeks 24 (ending 18 June) and 25 (ending 25 June) are included in this issue of *CDI* (Table 1). There were 7,180 consultations for week 24 and 7,144 consultations for week 25. The influenza reporting rate rose in Queensland and Western Australia, whilst a decrease was observed in Victoria. The measles reporting rate continued at low level and reports of gastroenteritis were slightly higher than last fortnight.

HIV/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 deaths following AIDS reported for January 1995, as reported to 30 April 1995, are included in this issue of *CDI* (Tables 2 and 3).

Table 2. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period to 31 January 1995, by sex and State or Territory of diagnosis

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA			
										This period 1995	This period 1994	Year to date 1995	Year to date 1994
HIV diagnoses	Female	0	8	0	1	0	0	0	1	10	6	10	6
	Male	1	44	0	10	3	0	14	0	72	75	72	75
	Sex not reported	0	3	0	0	0	0	0	0	3	2	3	2
	Total ¹	1	55	0	11	3	0	14	1	85	83	85	83
AIDS diagnoses	Female	0	0	0	0	0	0	0	0	0	0	0	0
	Male	0	13	1	4	4	0	9	0	31	38	31	38
	Total ¹	0	13	1	4	4	0	9	0	31	38	31	38
AIDS deaths	Female	0	0	0	1	0	0	1	0	2	4	2	4
	Male	0	23	0	4	2	0	10	2	41	49	41	49
	Total ¹	0	23	0	5	2	0	11	2	43	53	43	53

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

Table 3. Cumulative diagnoses of HIV infection, AIDS and deaths following AIDS since the introduction of HIV antibody testing to 31 January 1995, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	AUSTRALIA
HIV diagnoses	Female	13	529	4	86	43	4	154	59	892
	Male	153	9662	78	1474	531	69	3186	696	15849
	Sex not reported	0	2048	0	0	0	0	43	0	2091
	Total ¹	166	12247	82	1564	574	73	3390	756	18852
AIDS diagnoses	Female	3	114	0	23	14	2	37	12	205
	Male	64	3276	24	525	242	31	1164	228	5554
	Total ¹	67	3400	24	550	256	33	1207	240	5777
AIDS deaths	Female	2	75	0	18	10	2	20	7	134
	Male	46	2289	17	364	150	21	889	165	3941
	Total ¹	48	2370	17	384	160	23	915	172	4089

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

National Influenza Surveillance 1995

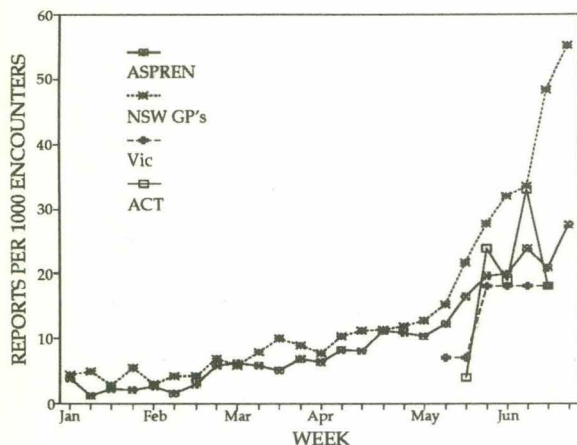
Australian Capital Territory Department of Health; Australian Sentinel Practice Research Network; Communicable Diseases Intelligence Virology and Serology Reporting Scheme Contributing Laboratories; New South Wales Department of Health; Australia Post; Victorian Department of Health and Community Services;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

Overall influenza reporting has continued to rise in the last fortnight. Sentinel practitioner schemes reported increased rates of consultation for influenza like illness and school absenteeism rates have continued to rise.

Sentinel general practitioner surveillance (Figure 7)

- The **Australian Sentinel Practice Research Network** reported 20.9 and 27.6 reports per 1000 encounters for the weeks ending 11 and 18 June respectively. Overall the influenza reporting rate continued to rise this fortnight, with marked increases being observed in Queensland and Western Australia.

Figure 7. Sentinel general practitioner influenza reports per 1000 encounters, 1995, by week and scheme

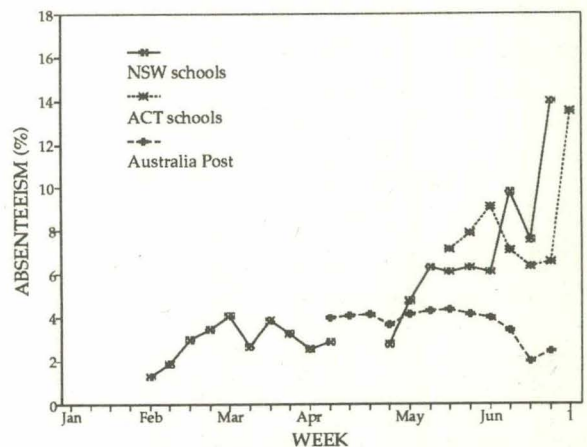


- **New South Wales** sentinel general practitioners reported rates of 48.4 and 55.2 per 1000 consultations for the weeks ending 18 and 25 June respectively. The consultation rate has risen markedly in recent weeks.
- The **Australian Capital Territory Sentinel General Practitioner Scheme** reported a consultation rates for influenza like illness of 20 and 12 per 1000 encounters for the weeks ending 25 June and 2 July respectively.

Absenteeism surveillance (Figure 8)

- **Australia Post** has provided national absenteeism data from the beginning of April. Overall absenteeism rates have fallen from 4% on 5 April to 2.5% on 21 June. Victoria reported higher absenteeism rates than other States through the months of April and May but the rate has declined since the beginning of June. The rate of absenteeism reported for New South Wales rose markedly on the 21 June.
- **New South Wales Schools Absenteeism Surveillance** reported absenteeism rates of 7.6% and 14% respectively for the last two weeks. There has been

Figure 8. Absenteeism reports, 1995, by week and scheme



a sustained rise in absenteeism since mid-May with a more marked rise in the last fortnight.

- The Australian Capital Territory Schools Absenteeism Surveillance reported an absenteeism rate of 13.5% on 27 June, an increase compared to the previous week.

Laboratory surveillance

- The CDI Virology and Serology Reporting Scheme received 119 reports of Influenza A this fortnight. Included were 7 reports of subtype H₁N₁ and 2 of subtype H₃N₂. Diagnosis was by virus isolation (55, specimen collection dates from late March to late June), antigen detection (8), fourfold rise in titre (14), IgM detection (one), and single high titre (41). Included were 63 males and 55 females (one sex not stated), 13 of whom were in the over 65 year age group. Reports were received from the New South Wales (2), the Northern Territory (4), Queensland (one), South Australia (13), Victoria (24) and Western Australia (75). The number of reports received remains high (Figure 9). A total of 329 reports has been received for the year to date of which 28 were H₁N₁ subtype and 5 H₃N₂ subtype. One hundred and seven influenza A reports with 1995 collection dates (33%) were for children under the age of 5 years (Figure 4). More males than females were reported for the under 44 years age group whilst more females than males were reported over 45 years.

- Eleven reports of influenza B were received this period for 4 males and 3 females (one sex not stated). Diagnosis was by virus isolation (3, specimen collection dates from late March to late June), antigen detection (2), fourfold rise in titre (one) and single high titre (5). Reports were received from Queensland (one), South Australia (one), Victoria (2) and Western Australia (7). A total of 57 reports has been received so far this year, 5 for patients over the age of 65 years. The number of reports received remains low (Figure 10).

Deaths surveillance (Figure 11)

- Victorian total deaths surveillance reported 1040 deaths for the fortnight 5 to 19 June 1995, a death rate of 2.4 per 10,000 population. This is a decrease on the death rate of 3.2 per 10,000 population reported last fortnight.
- South Australia deaths surveillance reported death rates of 1.1, 1.2 and 2.2 per 10,000 population for the weeks ending 18 and 25 June and 2 July respectively. The death rate has fluctuated since the beginning of May.

Other surveillance

- Victorian hospital admissions surveillance reported 19 admissions for influenza and/or pneumonia from participating hospitals for the fortnight 5 to 19 June 1995, an admission rate of 0.5 per 100 patients admitted, a decrease from the rate reported the previous fortnight.

Figure 9. Influenza A laboratory reports, 1995, by method of diagnosis and week of specimen collection

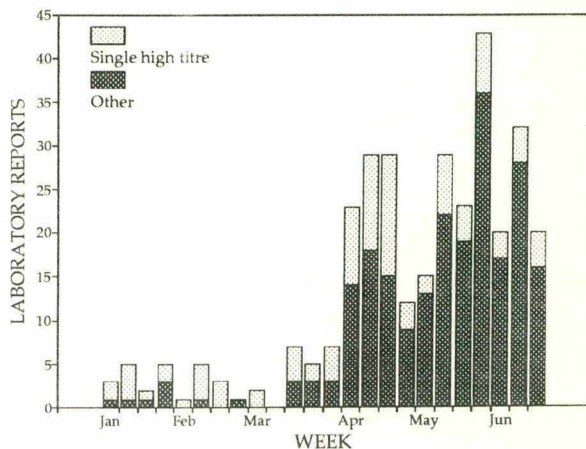


Figure 10. Influenza B laboratory reports, 1995, by method of diagnosis and week of specimen collection

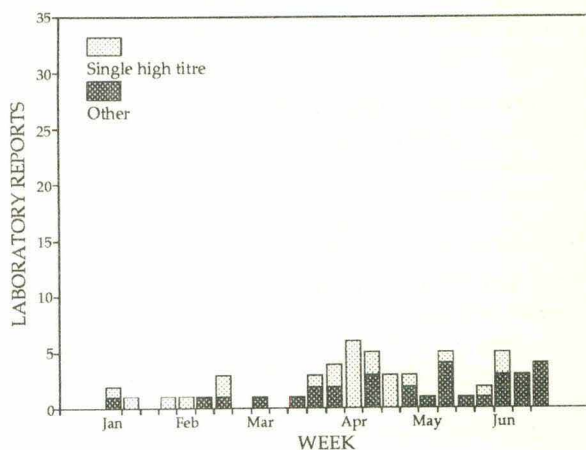
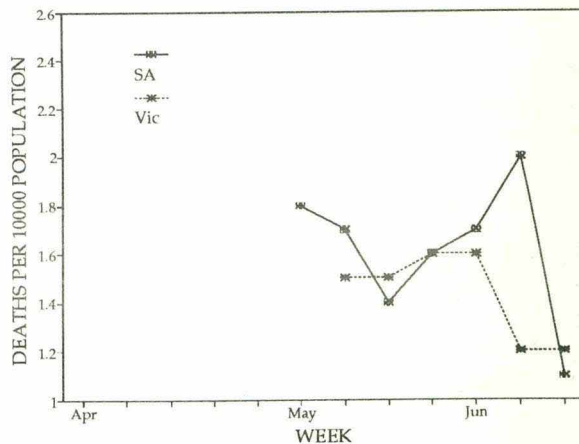


Figure 11. Total deaths surveillance, 1995, by week and State



Sterile Sites Surveillance (LabDOSS)

Data for this four weekly period have been provided by 18 laboratories. There were 647 reports of significant sepsis:

New South Wales: Hunter Area Pathology Service 16; South West Area Pathology Service, Liverpool 28; Prince of Wales, Sydney 92; Royal North Shore Hospital 44; Royal Prince Alfred Hospital 33.

Tasmania: Royal Hobart Hospital 25; Northern Tasmania Pathology Service 11.

Western Australia: Princess Margaret Hospital for Children 6; Sir Charles Gairdner Hospital 32.

Queensland: Central Queensland Pathology Laboratory, Mackay 7; Ipswich General Hospital 12; Nambour Hospital 14; Royal Brisbane Hospital 113; Sullivan Nicholaides and Partners 38; Toowoomba Pathology Laboratory 45.

South Australia: Institute of Medical and Veterinary Science, Adelaide 53.

Australian Capital Territory: Woden Valley Hospital 55.

Northern Territory: Alice Springs Hospital 23.

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

Other blood isolates not included in Table 4 were:

Gram positive: 2 *Bacillus* species, 2 *Corynebacterium jeikeium*, 2 *Enterococcus* species, 1 *Erysipelothrix rhusiopathiae*, 1 *Lactococcus* species, 2 *Listeria monocytogenes* (36 year old male with malignancy and 56 year old male), 1 *Micrococcus* species, 1 *Streptococcus* Group C, 1 *Streptococcus* Group D, 3 *Streptococcus* Group G, 4 *Streptococcus 'milleri'* and 1 *Streptococcus viridans*.

Gram negative: 1 *Aeromonas hydrophila*, 1 *Aeromonas* species, 3 *Campylobacter jejuni*, 4 *Campylobacter* species, 1 *Citrobacter freundii*, 1 *Enterobacter aerogenes*, 1 *Flavobacterium* species, 1 *Haemophilus influenzae* (32 year old female with pneumonia), 1 *Haemophilus parainfluenzae*, 1 *Hafnia alvei*, 1 *Moraxella* species, 4 *Morganella morganii*, 1 *Pasteurella* species, 2 *Proteus vulgaris*, 2 *Providencia* species, 1 *Pseudomonas cepacia*, 2 *Salmonella* species, 2 *Salmonella typhi* (5 year old male and 48 year old male, both with a recent history of overseas travel), 3 *Serratia marcescens*, 4 *Xanthomonas maltophilia* (1 immunocompromised male and female, both over the age of 48 years, and one 49 year old male following surgery), and 1 *Yersinia enterocolitica*.

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	Neonatal	
<i>Enterococcus faecalis</i>		2		3	1		4	4	2		17
<i>Enterococcus faecium</i>				3				2			5
<i>Staphylococcus aureus</i>	6	6	2	3	3	16	7	11	24	1	103 ²
<i>Staphylococcus epidermidis</i>		3	1			1	2	6	8	1	34
<i>Staphylococcus coagulase negative</i>		3				2	3	7	17	1	50
<i>Streptococcus</i> Group A		2				2		1	1		6
<i>Streptococcus</i> Group B	1		1			3					13
<i>Streptococcus pneumoniae</i>		15					2		1		24
<i>Streptococcus</i> species								2	1		6
<i>Streptococcus viridans</i>								4	1		8
<i>Streptococcus sanguis</i>		1		1				2			5
<i>Escherichia coli</i>		3		18	28	1	4	21	4	3	105
<i>Acinetobacter</i> species						1	2	2	1		12
<i>Enterobacter</i> species								2			5
<i>Enterobacter cloacae</i>		3		3	1	3	7	3	1		14
<i>Bacteroides fragilis</i>				3			1	1			5
<i>Klebsiella pneumoniae</i>		1		7	1			6	2		28
<i>Klebsiella oxytoca</i>				2							6
<i>Neisseria meningitidis</i>	1										5
<i>Proteus mirabilis</i>				1	3	2	2	3			9
<i>Pseudomonas aeruginosa</i>		1		3	2	5	1	11	4		27
<i>Candida albicans</i>								2	2		7

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

2. MRSA 16

Table 5. LabDOSS reports of meningitis and/or CSF isolates, by organism and age group

	1-11 months	1-4 years	5-14 years	15-24 years	25-34 years	35-44 years	45-64 years	75+ years	Total
<i>Staphylococcus aureus</i>							1		1
<i>Staphylococcus coagulase negative</i>				2				1	3
<i>Staphylococcus epidermidis</i>		1					1		2
<i>Streptococcus 'milleri'</i>						1			1
<i>Streptococcus pneumoniae</i>		1	1						2
<i>Streptococcus sanguis</i>						1			1
<i>Cryptococcus neoformans</i> var <i>neoformans</i>					1				1
<i>Neisseria meningitidis</i>	2		1	1	1				5

Anaerobes: 1 *Bacteroides* species, 3 *Clostridium perfringens*, 2 *Clostridium* species, 1 *Fusobacterium* species, 2 *Peptostreptococcus* species and 1 *Propionibacterium acnes*.
Fungi: 3 *Candida* species and 1 *Scedosporium* species.

There were 300 blood isolates reported for patients over the age of 54 years (Figure 12).

Hospital acquired blood isolates

A total of 139 isolates were reported as being hospital acquired. The most commonly reported organisms were *Enterobacter cloacae*, (12), *Escherichia coli* (11), *Pseudomonas aeruginosa* (11), *Staphylococcus aureus* (28, including 7 MRSA), *Staphylococcus coagulase negative*(17), and *Staphylococcus epidermidis* (9).

Meningitis and/or CSF isolate reports

There were 16 reports of meningitis and/or CSF isolates. Included was 1 *Cryptococcus neoformans* var *neoformans* (26 year old male with HIV), 5 *Neisseria meningitidis*, 1 *Staphylococcus aureus* (64 year old male with malignancy), 3 *Staphylococcus coagulase negative*, 2 *Staphylococcus epidermidis*, 1 *Streptococcus 'milleri'* (43

year old male injecting drug user), 2 *Streptococcus pneumoniae* (1 year old male and 11 year old), and 1 *Streptococcus sanguis*.

Isolates from Sites other than Blood or CSF

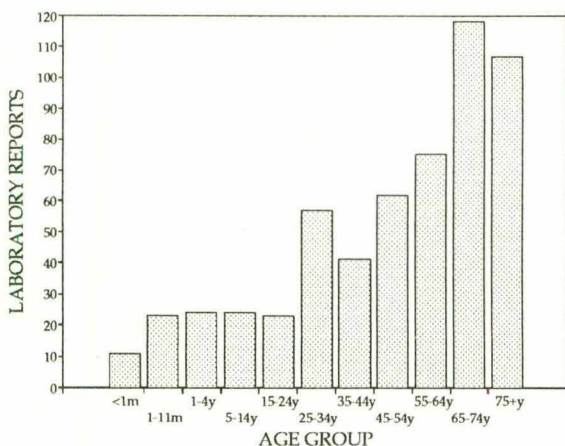
Joint fluid: Twenty three reports were received this period including 1 *Bacillus* species, 1 *Enterobacter* speceies, 1 *Enterococcus faecalis*, 1 *Escherichia coli*, 1 *Klebsiella pneumoniae*, 1 *Neisseria gonorrhoeae* (32 year old female with septic arthritis), 14 *Staphylococcus aureus* (11 males and 3 females, age range 1 to 80 years), 1 *Staphylococcus coagulase negative*, 1 *Streptococcus pneumoniae* (2 year old female) and 1 *Streptococcus viridans* (8 year old male).

Peritoneal dialysate: A total of 10 reports was received for 6 males and 4 females, age range 15 to 67 years. Included was 1 *Aeromonas hydrophila*, 1 *Candida* species, 1 *Enterobacter cloacae*, 1 *Escherichia coli*, 1 methicillin resistant *Staphylococcus aureus*, 1 *Pseudomonas aeruginosa*, 1 *Staphylococcus aureus*, 1 *Staphylococcus epidermidis*, and 3 *Staphylococcus coagulase negative*.

Pleural fluid: Seven reports of organisms isolated from pleural fluid were received this period for 5 males and 2 females, age range 5 to 72 years. Included was 1 *Candida albicans*, 2 *Staphylococcus aureus*, 1 *Staphylococcus coagulase negative*, 1 *Streptococcus pneumoniae* and 2 *Streptococcus 'milleri'*.

Other: 2 *Candida albicans*, 1 *Enterobacter* species, 1 *Enterobacter cloacae*, 3 *Enterococcus faecalis*, 3 *Escherichia coli*, 1 *Klebsiella pneumoniae*, 1 *Pseudomaonas aeruginosa*, 1 *Pseudomonas* species, 11 *Staphylococcus aureus*, 1 *Streptococcus* Group B and 1 *Xanthomonas maltophilia*.

Figure 12. LabDOSS reports of blood isolates, by age group



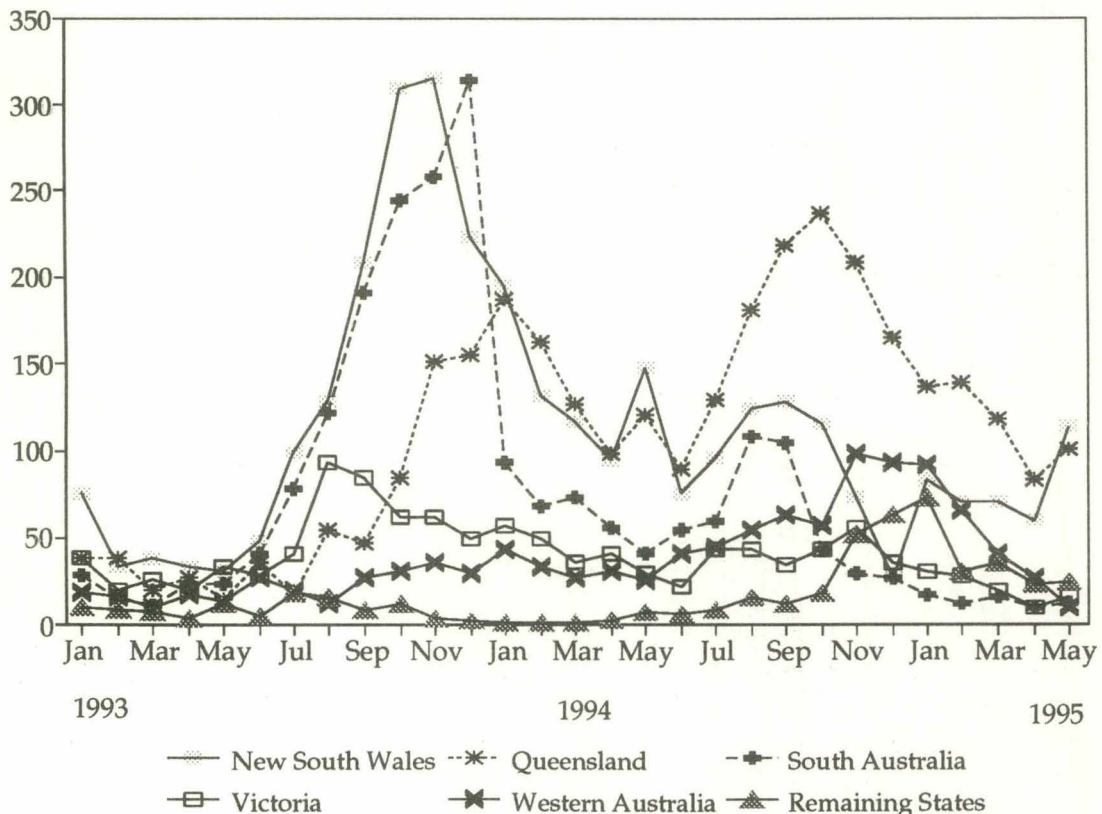
National Notifiable Diseases Surveillance System 11 June 1995 to 24 June 1995

There were 1969 notifications received in the period. (Figure 14 and Tables 6, 7 and 8)

- There were 218 cases of **Ross River virus infection**; 106 cases were male, 109 cases were female, and the sex of 3 cases was unrecorded. The cases were aged between the 5-9 and the 75-79 years age group.
- A single notification of **dengue** was received for a male in the 25-29 years age group.
- A single notification of **brucellosis** was received for a male in the 30-34 years age group.
- There were 361 notifications of **campylobacteriosis** received; 177 cases were male, 180 cases were female, and the sex of 4 cases was unrecorded. The cases were aged between the 0-4 and the 85-89 years age group.
- Eighty-five cases of **gonococcal infection** were reported; 55 cases were male, 29 case were female, and the sex of one case was unrecorded. The cases were aged between the 0-4 and the 55-59 years age group with 71% of cases in the 15-29 years age group. Two cases were reported for children aged less than one year.

- There were 5 cases of *Haemophilus influenzae* type **b** reported; 3 cases were male and 2 cases were female. All were aged less than one year and onset dates were in June.
- Thirty-nine cases of **hepatitis A** were reported; 17 cases were male and 22 cases were female. Recorded ages were between the 0-4 and the 85-89 years age group with 72% of cases aged less than 50 years.
- Nine incident notifications of **hepatitis B** were received; 4 cases were male and 5 cases were female. Recorded ages were between the 15-19 and the 40-44 years age group.
- There were two notifications of **hydatid infection**. One case was a male in the 75-79 years age group and the other was a female in the 40-44 years age group.
- There were 8 notifications of **legionellosis**; 5 cases were male and 3 cases were female. Recorded ages were between the 50-54 and the 70-74 years age group.
- A single case of **leprosy** was reported for a male in the 30-34 years age group resident in the statistical division of Far North Queensland.
- Four notifications of **leptospirosis** were received; 3 cases were male and one case was female. Re-

Figure 13. Notifications of pertussis, 1993 to 1995, by month of onset and State/Territory of residence

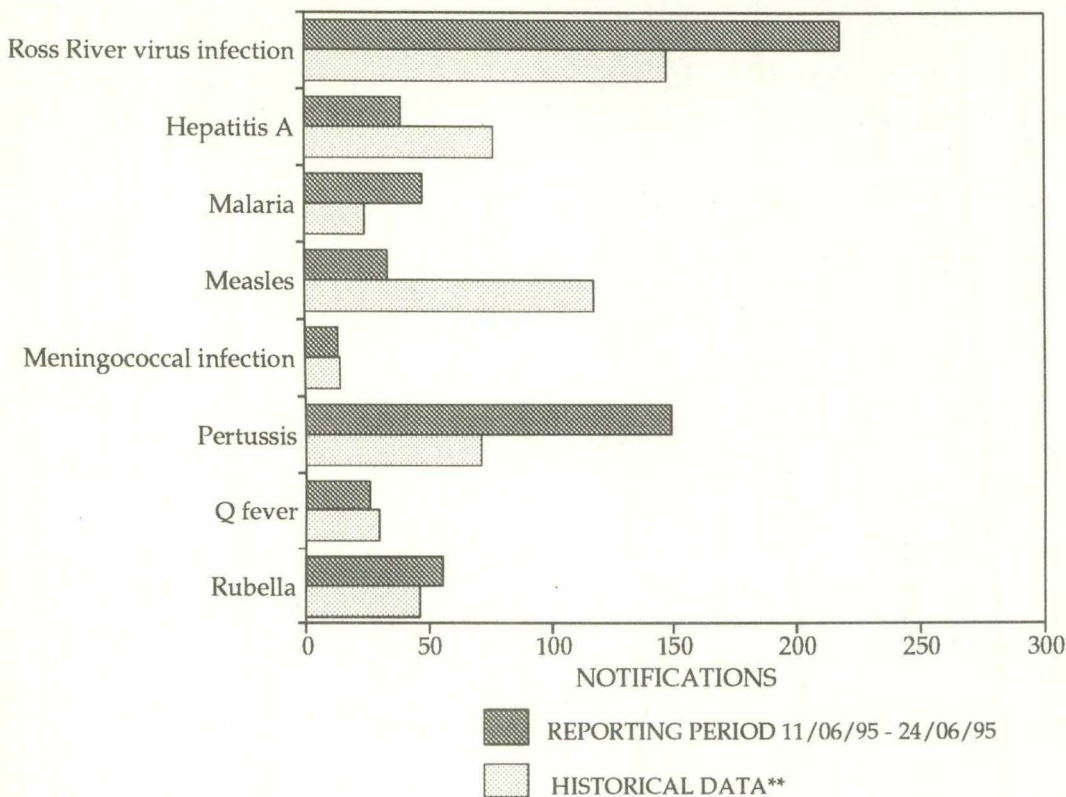


corded ages were between the 25-29 and the 65-69 years age groups.

- A single case of **listeriosis** was reported for a male in the 45-49 years age group.
- Forty-seven cases of **malaria** were reported; 41 cases were male and 6 cases were female. Recorded ages were between the 5-9 and the 70-74 years age groups.
- There were 34 notifications of **measles**; 20 cases were male and 14 cases were female. Recorded ages were between the 0-4 and the 45-49 years age groups with 5 cases aged less than one year. There were 3 apparent clusters of 2 cases each in the same postcode area. Apparent clusters were in New South Wales (one) and Queensland (2).
- Thirteen cases of **meningococcal infection** were reported; 6 cases were male, six cases were female, and the sex of one case was unrecorded. The cases were aged between the 0-4 and the 80-84 years age groups with 8 cases aged less than 20 years.
- The **pertussis** epidemic continues with 149 cases reported for the period; 66 cases were male and 83 cases were female (Figure 13). Recorded ages were 0-4 and the 75-79 years age group with 7 cases aged less than one year. There were 19 apparent clusters of between 2 and 5 cases each in the same postcode area. Apparent clusters were in New South Wales(6), Queensland (11), Western Australia (one), and Tasmania (one).

- Twenty-six cases of **Q fever** were received; 23 cases were male and 3 cases were female. Recorded ages were between the 10-14 and the 70-74 years age group.
- There were 56 notifications of **rubella**; 40 cases were male and 16 cases were female. Recorded ages were between the 0-4 and the 55-59 years age groups with 6 cases reported for females in the 15-44 years age group.
- There were 201 cases of **salmonellosis** reported; 93 cases were male, 102 cases were female, and the sex of 6 cases were not reported. The cases were aged between the 0-4 and the 80-84 years age groups with 48% being in the 0-4 years age group.
- Fifty-five cases of **syphilis** were reported; 29 cases were male, 24 cases were female, and the sex of 2 cases was unrecorded. The cases were aged between the 0-4 and the 80-84 years age groups with a single case aged less than one year.
- There were 32 notifications of **tuberculosis**; 14 cases were male, 16 cases were female, and sex of 2 cases was unrecorded. The cases were aged between the 0-4 and the 80-84 years age groups.
- Eighteen cases of **yersiniosis** were reported; 13 cases were male and 5 cases were female. Recorded cases were between the 0-4 and the 55-59 years age groups.

Correction: In *CDI* 1995; 19:323 a case of leprosy was reported in the Northern Territory. This notification was from New South Waes.

Figure 14. Selected National Notifiable Diseases Surveillance System reports, and historical data¹

1. The historical data are the averages of the number of notifications in 9 previous 2-week reporting periods: the corresponding periods of the last 3 years and the periods immediately preceding and following those.

Table 6. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 11 to 24 June 1995

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA ¹			
									This period 1995	This period 1994	Year to date 1995	Year to date 1994
Diphtheria	0	0	0	0	0	0	0	0	0	0	1	0
<i>Haemophilus influenzae</i> b infection	0	2	0	1	0	1	0	1	5	9	43	104
Measles	1	13	2	9	0	4	4	1	34	267	830	1717
Mumps	2	1	0	NN	0	0	0	1	4	1	29	10
Pertussis	2	45	7	61	3	5	18	8	149	120	2083	2729
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella	3	1	2	30	1	4	13	2	56	48	1047	778
Tetanus	0	0	0	0	0	0	0	0	0	1	2	7

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.

NN Not Notifiable.

Table 7. Notifications of other diseases¹ received by State and Territory health authorities in the period 11 to 24 June 1995

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA ²				
									This period 1995	This period 1994	Year to date 1995	Year to date 1994	
Arbovirus infection													
Ross River virus infection	0	5	12	190	0	-	1	10	218	99	2060	3533	
Dengue	0	0	0	1	0	-	0	0	1	0	14	12	
NEC ³	0	10	1	45	0	1	3	1	61	29	607	412	
Campylobacteriosis ⁴	6	0	8	104	85	26	103	29	361	348	4995	4605	
Chlamydial infection (NEC) ⁵	2	NN	7	117	7	20	37	31	221	272	3088	3070	
Donovanosis	0	NN	1	0	NN	0	0	3	4	2	47	56	
Gonococcal infection ⁶	0	10	5	27	2	0	10	31	85	91	1420	1483	
Hepatitis A	0	13	1	19	4	1	0	1	39	78	825	975	
Hepatitis B incident	0	0	0	2	0	0	2	5	9	9	169	160	
Hepatitis B unspecified	3	0	0	0	0	0	0	15	18	40	330	306	
Hepatitis C incident	-	1	0	-	0	-	-	-	1	2	49	7	
Hepatitis C unspecified	23	-	-	100	-	0	100	36	259	426	3971	4321	
Hepatitis (NEC)	0	1	0	1	0	0	0	NN	2	1	20	22	
Legionellosis	0	2	1	3	0	1	1	0	8	4	109	109	
Leptospirosis	0	0	0	4	0	0	0	0	4	2	59	87	
Listeriosis	0	0	0	1	0	0	0	0	1	2	38	16	
Malaria	0	5	7	26	3	0	7	0	48	35	338	384	
Meningococcal infection	1	3	0	2	3	0	0	4	13	15	162	139	
Ornithosis	0	NN	0	1	0	0	3	0	4	1	68	51	
Q fever	0	5	0	20	0	0	1	0	26	24	217	330	
Salmonellosis (NEC)	0	29	9	73	16	6	35	33	201	165	3748	3302	
Shigellosis ⁴	0	-	4	16	3	0	1	3	27	14	428	416	
Syphilis	0	16	14	16	0	0	9	0	55	98	1105	1231	
Tuberculosis	0	8	0	7	2	1	14	0	32	36	507	544	
Typhoid ⁷	0	0	0	0	0	0	0	0	0	1	23	23	
Yersiniosis (NEC) ⁴	0	-	0	14	4	0	0	0	18	13	194	244	

- For HIV and AIDS, see Tables 2 and 3 CDI 1995;19:297. For rarely notified diseases, see Table 6.
- 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.
- 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 8. Notifications of rare¹ diseases received by State and Territory health authorities in the period 11 to 24 June 1995

DISEASES	Total this period	Reporting States or Territories	Year to date 1995
Botulism	0		0
Brucellosis	1	Qld	16
Chancroid	0		2
Cholera	1	WA	1
Hydatid infection	2	NSW, Tas	15
Leprosy	1	Qld	4
Lymphogranuloma venereum	0		1
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

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

Table 9. Virology and serology laboratory reports by State or Territory¹ for the reporting period 15 to 28 June 1995, historical data², and total reports for the year

	State or Territory								Total this fortnight	Historical data 2	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus				1				1	2	15.5	251
Mumps virus		1							1	4.0	44
Rubella virus		1		4	2	4	1	2	14	20.5	509
HEPATITIS VIRUSES											
Hepatitis A virus			1	12			3	21	37	19.3	268
Hepatitis B virus			4	28	4	1	20	126	183	97.2	1,266
Hepatitis C virus		3	14	54	31	25	12	396	535	227.5	3,171
Hepatitis D virus					1				1	1.7	10
Hepatitis E virus							2		2	.2	7
ARBOVIRUSES											
Ross River virus		1		35	2			50	88	55.7	938
Barmah Forest virus				16					16	10.7	172
Dengue not typed			2						2	5.0	9
Kunjin virus								2	2	.0	2
Flavivirus (unspecified)							1		1	4.5	27
ADENOVIRUSES											
Adenovirus type 2							1		1	3.7	16
Adenovirus type 8							1		1	.2	16
Adenovirus type 9							1		1	.2	2
Adenovirus type 30							1		1	.0	1
Adenovirus not typed/pending		6	2	5	2		5	18	38	46.7	467
HERPES VIRUSES											
Herpes simplex virus type 1		26	1	81	8	2	61	189	368	173.5	2,663
Herpes simplex virus type 2	1	13	5	81	10	1	38	215	364	205.5	2,708
Herpes simplex not typed/pending		11			3		1		15	27.2	265
Cytomegalovirus		6		18	3	2	20	16	65	65.7	804
Varicella-zoster virus		6		16	1		4	35	62	41.2	609
Epstein-Barr virus			1	15	9		6	41	72	62.8	1,073
Herpes virus group - not typed								1	1	1.5	12
OTHER DNA VIRUSES											
Parvovirus					3			11	14	3.7	72
PICORNA VIRUS FAMILY											
Coxsackievirus A9		2							2	.8	4
Coxsackievirus A16					1				1	2.0	1
Coxsackievirus B3		4							4	1.0	25
Coxsackievirus B5							1		1	.3	7
Echovirus type 3	1	4							5	.0	21
Echovirus type 9		2							2	.3	5
Echovirus type 14		1							1	1.7	2
Echovirus type 30		5					2		7	4.8	41
Rhinovirus (all types)		5		2			12	1	20	32.7	350
Enterovirus type 71 (BCR)							4		4	.0	19
Enterovirus not typed/pending			1	15			14	50	80	40.2	522

Table 9. Virology and serology laboratory reports by State or Territory¹ for the reporting period 15 to 28 June 1995, historical data², and total reports for the year, continued

	State or Territory								Total this fortnight	Historical data 2	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
ORTHO/PARAMYXOVIRUSES											
Influenza A virus			4		13		19	74	110	25.3	321
Influenza A virus H1N1		2		1			4		7	.0	28
Influenza A virus H3N2							1	1	2	.3	5
Influenza B virus				1	1		2	7	11	11.0	61
Parainfluenza virus type 1					1		1		2	28.3	19
Parainfluenza virus type 2				11	1		5	1	18	6.2	124
Parainfluenza virus type 3		1		11	1		6	4	23	17.5	295
Respiratory syncytial virus		16		92	22	5	179	22	336	323.8	1,075
OTHER RNA VIRUSES											
HIV-1				4			1	7	12	3.0	51
Rotavirus		3				2	11	25	41	110.0	472
Astrovirus							3		3	.3	4
Calici virus							1		1	.2	2
Norwalk agent							2		2	.8	5
Small virus (like) particle							2		2	1.5	6
OTHER											
<i>Chlamydia trachomatis</i> not typed		7	4	55	7	2	9	94	178	110.8	1,340
<i>Chlamydia psittaci</i>							1		1	2.5	83
<i>Mycoplasma pneumoniae</i>		2	1	10				2	15	49.5	183
<i>Coxiella burnetii</i> (Q fever)				4			1	2	7	19.0	121
<i>Rickettsia</i> spp - other								1	1	.2	4
<i>Streptococcus</i> group A		1	132	10					143	13.8	347
<i>Salmonella</i> species								1	1	.0	1
<i>Yersinia enterocolitica</i>								1	1	.5	29
<i>Campylobacter jejuni</i>							2		2	.0	3
<i>Bordetella pertussis</i>			8	1			12	52	73	18.8	409
<i>Bordetella</i> species		1	1	6					8	4.5	83
<i>Legionella longbeachae</i>								8	8	.2	11
<i>Cryptococcus</i> species		2							2	.5	19
<i>Leptospira</i> species				1					1	.3	15
<i>Treponema pallidum</i>		1	4	3			1	2	11	19.3	312
<i>Entamoeba histolytica</i>							1	1	2	.5	11
<i>Toxoplasma gondii</i>							1		1	6.0	88
<i>Schistosoma</i> species					1		2	16	19	.2	52
<i>Strongyloides stercoralis</i>							2		2	.0	5
TOTAL	2	133	185	593	127	44	480	1496	3,060	1,952.2	21,963

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

Table 10. Virology and serology laboratory reports by clinical information for the reporting period 15 to 28 June 1995

	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA												
Measles virus							1				1	2
Mumps virus											1	1
Rubella virus							7				7	14
HEPATITIS VIRUSES												
Hepatitis A virus		1			1	27					8	37
Hepatitis B virus						24					159	183
Hepatitis C virus						64					471	535
Hepatitis D virus											1	1
Hepatitis E virus						2						2
ARBOVIRUSES												
Ross River virus				1			11		41		35	88
Barmah Forest virus							3		4		9	16
Dengue not typed											2	2
Kunjin virus											2	2
Flavivirus (unspecified)											1	1
ADENOVIRUSES												
Adenovirus type 2				1								1
Adenovirus type 8								1				1
Adenovirus type 9							1					1
Adenovirus type 30											1	1
Adenovirus not typed/pending				11	20			3			4	38
HERPES VIRUSES												
Herpes simplex virus type 1		2		14			194	22		122	14	368
Herpes simplex virus type 2							130			226	8	364
Herpes simplex not typed/pending		1		1			7			6		15
Cytomegalovirus	1	1	1	21	2		2	1	1		35	65
Varicella-zoster virus				1			57				4	62
Epstein-Barr virus				1		1					70	72
Herpes virus group - not typed							1					1
OTHER DNA VIRUSES												
Parvovirus							3		1		10	14
PICORNA VIRUS FAMILY												
Coxsackievirus A9				2								2
Coxsackievirus A16							1					1
Coxsackievirus B3			1	1	2							4
Coxsackievirus B5	1											1
Echovirus type 3	1				3			1				5
Echovirus type 9				1	1							2
Echovirus type 14					1							1
Echovirus type 30	5			1							1	7
Rhinovirus (all types)				16							4	20
Enterovirus type 71 (BCR)	1			1			2					4
Enterovirus not typed/pending	8	1		26	17		3				25	80

Table 10. Virology and serology laboratory reports by clinical information for the reporting period 15 to 28 June 1995, continued

	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
ORTHO/PARAMYXOVIRUSES												
Influenza A virus				53							57	110
Influenza A virus H1N1				7								7
Influenza A virus H3N2				1							1	2
Influenza B virus				5					1		5	11
Parainfluenza virus type 1				2								2
Parainfluenza virus type 2				18								18
Parainfluenza virus type 3	1			22								23
Respiratory syncytial virus				319	1		1				15	336
OTHER RNA VIRUSES												
HIV-1											12	12
Rotavirus					40						1	41
Astrovirus					3							3
Calici virus					1							1
Norwalk agent					2							2
Small virus (like) particle					2							2
OTHER												
<i>Chlamydia trachomatis</i> not typed				1			1	4		124	48	178
<i>Chlamydia psittaci</i>				1								1
<i>Mycoplasma pneumoniae</i>				8							7	15
<i>Coxiella burnetii</i> (Q fever)											7	7
<i>Rickettsia</i> spp - other											1	1
<i>Streptococcus</i> group A				1			2		2		138	143
<i>Salmonella</i> species											1	1
<i>Yersinia enterocolitica</i>					1							1
<i>Campylobacter jejuni</i>											2	2
<i>Bordetella pertussis</i>				69							4	73
<i>Bordetella</i> species				4							4	8
<i>Legionella longbeachae</i>				7							1	8
<i>Cryptococcus</i> species											2	2
<i>Leptospira</i> species											1	1
<i>Treponema pallidum</i>			1	1						1	8	11
<i>Entamoeba histolytica</i>											2	2
<i>Toxoplasma gondii</i>											1	1
<i>Schistosoma</i> species											19	19
<i>Strongyloides stercoralis</i>											2	2
TOTAL	18	6	3	618	97	118	427	32	50	479	1212	3060

Table 11. Virology and serology laboratory reports by contributing laboratories for the reporting period 15 to 28 June 1995

STATE OR TERRITORY	LABORATORY	REPORTS
New South Wales	Royal North Shore Hospital, St Leonards	100
	Royal Prince Alfred Hospital, Camperdown	16
Queensland	Queensland Medical Laboratory, West End	587
	State Health Laboratory, Brisbane	178
South Australia	Institute of Medical and Veterinary Science, Adelaide	125
Tasmania	Royal Hobart Hospital, Hobart	39
Victoria	Microbiological Diagnostic Unit, University of Melbourne	5
	Monash Medical Centre, Melbourne	63
	Royal Children's Hospital, Melbourne	213
	Unipath Laboratories	26
	Victorian Infectious Diseases Reference Laboratory, Fairfield	175
Western Australia	Princess Margaret Hospital, Perth	67
	State Health Laboratory Services, Perth	1466
TOTAL		3060