Tuberculosis notifications in Australia, 1995

Graeme Oliver and Bronwen Harvey, for the Communicable Diseases Network Australia New Zealand, National Centre for Disease Control, Department of Health and Family Services, GPO Box 9848, Canberra, ACT, 2601.

Abstract

This is the fifth annual report of the National Mycobacterial Surveillance System (NMSS), for new and relapsed cases of tuberculosis notified to State and Territory health authorities in 1995. Cases of atypical mycobacterial infection notified to the scheme are also briefly summarised. The notification rate for new cases of tuberculosis was 5.47 per 100,000 population, and for relapsed cases 0.28 per 100,000. These rates have remained stable for a number of years in Australia, and are low compared with rates in other countries. Some identifiable groups in the Australian community continue to experience higher rates of tuberculosis, including members of indigenous communities and some groups born overseas. Surveillance through the NMSS has a major role to play in the control of tuberculosis. *Comm Dis Intell* 1997;21:261-269.

Introduction

Tuberculosis and other mycobacterial infections are a major public health concern in both developing and developed countries[1 - 4]. The incidence of new infections has risen over recent years in several developed countries for various reasons including: immigration from high incidence countries, reductions in health services and the increased prevalence of HIV infection. High rates of new disease are seen in many countries in the Australian region. In Australia, as in other developed countries, an increased risk is recognised in several identifiable sub-populations, including: homeless persons of all ages, elderly men living alone, prison populations, HIV-positive persons, members of indigenous populations, refugees and members of some migrant groups[5 -9]. The risk of nosocomial transmission is another concern[10]. Although the increasing multi-drug resistance observed in some other countries, has not yet occurred in Australia[11-15], it remains a potential problem for effective tuberculosis control.

The National Mycobacterial Surveillance System (NMSS) was instituted in 1991 under the auspices of the Communicable Diseases Network Australia New Zealand (CDNANZ). Its role was to enhance the previously existing mechanisms of national surveillance of tuberculosis and other mycobacterial diseases, with the aim of providing more comprehensive data to facilitate prevention and control measures. This report is the fifth from this system, comprising analysis of notifications for the calendar year 1995. Previous reports have been published for the years 1991 to 1994[16 - 19].

Prior to the institution of the NMSS in its present form, tabulations of national data were prepared for many years up to 1985[20]. These tabulations comprised collated data on tuberculosis notifications from the States and Territories, and included information on many of the data items currently

ISSN 0725-3141
Volume 21
Number 19
18 September 1997

Contents

Table 1. Notifications of new and relapsed cases of tuberculosis, and rates per 100,000 population, Australia, 1986 to 1995, by year

Year	New Cases		Relapsed cases		Total Cases	
	Number	Rate	Number	Rate	Number	Rate
1986	863	5.39	43	0.27	906	5.66
1987	868	5.34	39	0.24	907	5.58
1988	925	5.60	29	0.18	954	5.77
1989	902	5.36	50	0.30	952	5.66
1990	979	5.74	37	0.22	1016	5.95
1991	903	5.22	47	0.27	950	5.50
1992	983	5.62	28	0.16	1011	5.78
1993	944	5.35	47	0.27	991	5.61
1994 [1]	996	5.58	61	0.34	1057	5.93
1995	988	5.47	50	0.28	1038	5.75

1. The number and rate of notifications of new and relapsed cases was previously reported incorrectly [19].

Table 2. Notifications of new and relapsed cases of tuberculosis and rates per 100,000 population, Australia, 1995, by State and Territory

	New Cases		Relapsed cases		Total Cases	
	Number	Rate	Number	Rate	Number	Rate
Australian Capital Territory	8	2.63	0	-	8	2.63
New South Wales	406	6.64	33	0.54	439	7.18
Northern Territory	39	22.43	0	-	39	22.43
Queensland	115	3.51	10	0.31	125	3.81
South Australia	52	3.53	1	0.07	53	3.60
Tasmania	12	2.54	0	-	12	2.54
Victoria	281	6.24	5	0.11	286	6.35
Western Australia	75	4.33	1	0.06	76	4.39
Total	988	5.47	50	0.28	1038	5.75

collected and analysed in the NMSS.

Three reports published in 1991 and 1992 [21 - 23] provided a brief analyses of national data on tuberculosis notifications for the period 1986 to 1990.

Methods

Data were collected by health authorities in each of the States and Territories, de-identified, and provided to the NMSS in computerised format for national collation and analysis. The data set included the following core fields in common with the National Notifiable Diseases Surveillance System (NNDSS): [24] unique identifier for each notification, disease code, postcode of residence, sex of the person, dates of onset and report, indigenous status, and confirmation status of the report. It also included the following supplementary data: date of birth, ethnicity, country of birth, length of residence in Australia for overseas-born persons, species of the pathogen, principal site of the disease, methods of diagnosis (culture techniques, microscopy, tissue specimen histology, tuberculin skin testing, radiological techniques and clinical examination), antimicrobials used at the time of notification, BCG status, HIV status and relapse status (new diagnosis or relapse).

The definitions used were the same as those used since 1986 [21]:

1. Tuberculosis (new case)

- a case which has been confirmed by the identification of *Mycobacterium tuberculosis* (or *M. africanum* or *M. bovis*) by culture or 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)

- 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;
  - 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.

Mortality data for tuberculosis, and denominator population data for the calculation of rates, were obtained from the Australian Bureau of Statistics (ABS) [25 - 27]. Denominator data were estimates of relevant population sizes as at 30 June, 1995. The classification and grouping of countries was according to the ABS standard

Table 3. Notifications of new cases of tuberculosis and rates per 100,000 population, Australia 1995, by age group and sex

Age group	Males		Females		Persons [1]	
(years)	Number	Rate	Number	Rate	Number	Rate
0-4	17	2.57	10	1.59	28	2.17
5-9	6	0.91	10	1.60	16	1.24
10-14	6	0.91	6	0.95	12	0.93
15-19	23	3.53	26	4.21	50	3.94
20-24	36	4.89	55	7.76	92	6.36
25-29	48	6.92	42	6.11	91	6.59
30-34	49	6.73	57	7.80	106	7.27
35-39	37	5.23	48	6.77	85	6.00
40-44	32	4.84	36	5.42	68	5.13
45-49	31	4.86	22	3.55	53	4.22
50-54	24	4.83	27	5.67	52	5.35
55-59	32	7.82	24	6.06	56	6.95
60-64	28	8.03	12	3.41	40	5.71
65-69	31	9.21	24	6.75	56	8.09
70-74	47	17.42	23	7.14	72	12.16
75-79	30	17.58	22	9.33	53	13.04
80-84	21	20.49	13	7.58	34	12.40
85 +	11	19.40	13	9.75	24	12.63
Total	509	5.66	470	5.19	988	5.47

1. The sex of 9 persons was not reported

classification of countries for social statistics[28].

Results

Notification rates

In 1995, 988 notifications of new cases of tuberculosis were received by the NMSS, and 50 cases of relapse, making a total of 1038 cases (Table 1). The corresponding annual rates of 5.47 per 100,000 persons for new cases, 0.28 per 100,000 for relapses and 5.75 per 100,000 for total cases, are similar to rates seen in recent years. The rates have remained low in Australia since the mid-1980s (Figure 1). Rates of notification of both new and relapsed cases varied considerably between States and Territories (Table 2). The rates of notification of new cases varied from a high of 22.43 per 100,000 reported by the Northern Territory, to a low of 2.54 per 100,000 in Tasmania. The most populous States (New South Wales and Victoria) reported intermediate rates of new disease.

Age and Sex

There were 509 notifications of new disease for males and 470 for females, with a male:female ratio of 1.08:1. The crude annual incidence rates were 5.66 and 5.19 per 100,000 for males and females respectively (Table 3). In nine cases, the sex of the person was not reported.

Age-specific rates for both males and females were highest in the elderly (Table 3), the rates for older males being generally at least twice the rates for females in the same age group. There was also a slight peak in rates

Figure 1. Notifications and deaths, per 100,000 population, Australia, 1968 to 1995, by year

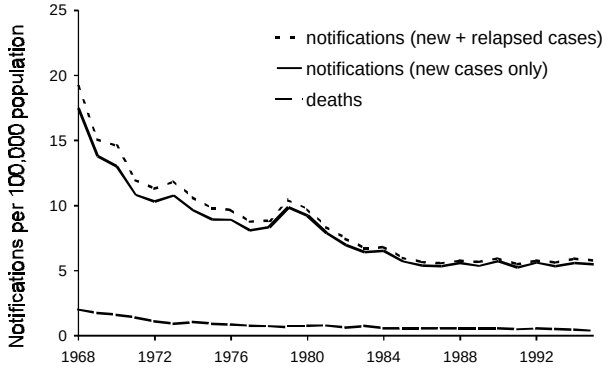


Figure 2. Notifications of new tuberculosis cases in overseas and Australian born, per 100,000 population, Australia, 1986 to 1995

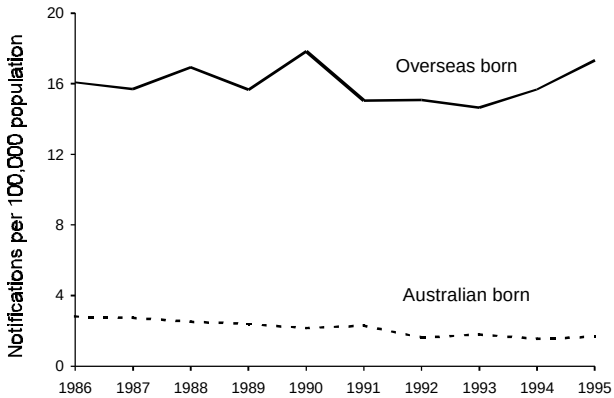


Table 4. Notifications of new cases of tuberculosis, Australia 1995, by reported principal site and sex

Site	Males	Per cent	Females	Per cent	Total	Per cent
Pulmonary	344	67.6	248	52.8	600[1]	60.7
Pleural	23	4.5	17	3.6	40	4.0
Lymphatic	54	10.6	108	23.0	163[2]	16.5
Bone and joint	11	2.2	22	4.7	33	3.3
Genito-urinary	22	4.3	18	3.8	40	4.0
Miliary	5	1.0	5	1.1	10	1.0
Meningeal and CNS	7	1.4	5	1.1	12	1.2
Peritoneal	11	2.2	13	2.8	24	2.4
Other sites[3]	13	2.6	12	2.6	25	2.5
Not stated	19	3.7	22	4.7	41	4.1
Total	509	-	470	-	988	-

1. In 8 cases, the sex of the person was not reported.
2. In 1 case, the sex of the person was not reported.
3. "Other" principal sites included larynx (5 cases), pericardium (5), specified abdominal organs (3) and soft tissues (3 cases); in 9 cases, "other" site was not further defined.

Table 5. Notifications of new cases of tuberculosis, 1995, by diagnostic techniques

Diagnostic technique	Positive result recorded[1]	Per cent of total cases
Culture of specimen	630	63.8
Microscopic examination	358	36.2
Histological examination	156	15.8
Tuberculin skin testing	375	38.0
Radiological examination	329	33.3
Clinical examination	296	30.0
No information available	52	5.3
Total	988	100.0

1. A positive result was often recorded for more than one diagnostic technique.

for both sexes in the early 30s. This pattern is similar to those observed over the last few years.

The number of new cases notified in 1995 in children less than 5 years of age (28) was higher than for any year since 1991, when 37 cases were recorded. Notifications in the age groups 5 - 9 years and 10 - 14 years (16 and 12 respectively) were also higher than the numbers for 1993 and 1994. They were however, similar to those for 1992, and lower than the 1991 total for this age range (33) [16-19].

Principal sites of disease

A principal site of disease was reported for 947 (96%) notifications of new cases of disease. Of these, 600 (61%) reported the principal site as pulmonary, and 163 (17%) as lymphatic (Table 4). As has been reported in previous years, pulmonary disease was more commonly reported for males, and lymphatic disease was more common in females. Pleural and genito-urinary disease were also commonly reported.

In children under ten years of age the principal site of disease was pulmonary in 57% of cases and lymphatic in 14% of cases. For adolescents (10 - 19 years old) the proportions were 53% and 23% respectively.

Methods of diagnosis

Ninety-five per cent of notifications of new cases of tuberculosis included information on the methods of diagnosis. Overall, 630 cases were reported as culture-confirmed (63.8% of total notifications), including 411 (68.5%) of the 600 cases of pulmonary disease.

Microscopy, histology, tuberculin skin tests, radiological and clinical examination were also reported as methods of diagnosis (Table 5). In cases without culture confirmation, microscopy was positive in 68, and histology in a further 81. In cases lacking positive culture, microscopy or histology, tuberculin skin testing was reported positive in 110, with radiological or clinical signs reported in 90 of these. Radiological and/or clinical signs alone were reported for 47 cases.

Pathogen

The species of organism was reported for 889 notifications of new disease (90% of the total). This was considerably higher than the proportion reported for previous years. *M. tuberculosis* was reported for 884 cases (99.4%), *M. bovis* for 4 cases (0.4%) and *M. africanum* for 1 case (0.1%).

Use of Antimicrobial Drugs

The antimicrobial drugs used in initial treatment following diagnosis were reported for 877 (88%) of the 988 cases of new disease (Table 6). Treatment was initiated with four or more anti-tuberculosis drugs in 667 (76%) of these 877 cases. The most commonly recorded initial combination, used in 653 (74%) of the cases for which data were available, was the four-drug regimen of isoniazid + rifampicin + ethambutol + pyrazinamide. In 9 cases, the four drugs were used in combination with one or more other antimicrobial drugs. In two cases the initial combination included 7 drugs. The additional drugs used included one or more of the following: streptomycin, prothionamide, cycloserine, capreomycin, ciprofloxacin, clarithromycin and amikacin.

The use of three-drug combinations was reported in 175 (20%) of those for whom data was recorded. The

Table 6. Notifications of new cases of tuberculosis, Australia 1995, by initial drug regimen

Drug combination	Number	Per cent of reported cases
Isoniazid + rifampicin + pyrazinamide + ethambutol + other drugs	8	0.9
Other combinations of 5 or more drugs	2	0.2
Isoniazid + rifampicin + pyrazinamide + ethambutol	653	74.5
Isoniazid + rifampicin + pyrazinamide + another drug	2	0.2
Isoniazid + rifampicin + ethambutol + another drug	2	0.2
Isoniazid + rifampicin + pyrazinamide	142	16.2
Isoniazid + rifampicin + ethambutol	26	3.0
Isoniazid + rifampicin + streptomycin	2	0.2
Other 3 drug combinations	5	0.6
Isoniazid + rifampicin	16	1.8
Other 2 drug combinations	2	0.2
Isoniazid	4	0.5
Ethambutol	1	0.1
Nil treatment	12	1.4
Not reported	111	-
Total	988	-

common three-drug combinations were: isoniazid + rifampicin + ethambutol, used in 26 cases (3%), and isoniazid + rifampicin + pyrazinamide, used in 142 cases (16%). In 2 cases, isoniazid + rifampicin + streptomycin was used.

Two-drug combinations were recorded at initiation of treatment in 18 cases: isoniazid + rifampicin in 16 cases, and ethambutol + rifampicin and ethambutol + streptomycin in 1 case each. Two cases were recorded as having single drug therapy, one with isoniazid and the other with ethambutol.

Pyridoxine (Vitamin B6) was mentioned as standard adjuvant therapy in the Northern Territory. The use of corticosteroids was reported in a few cases.

In 12 cases it was reported that no antimicrobial treatment had been used, for reasons including emigration, terminal status and post-mortem diagnosis.

For the 425 cases of reported culture-positive pulmonary tuberculosis, initial drug treatment was recorded in 388 (91%). Of these, 318 (82%) received four or more drugs, 59 (15%) received three drugs and 7 (2%) two drugs. One person received isoniazid alone and three persons were reported to have received no treatment.

BCG status

BCG status was reported for 417 (42%) of notifications of new cases of tuberculosis. Of these, 219 (53%) persons were reported to have received BCG vaccination.

HIV status

Of the 988 notifications of new cases of tuberculosis, HIV status was reported for 82 (8.3%) cases, of whom 6 were reported to be HIV-positive. Five of these were males aged 29 - 59 years, and one was a 4 year old child. Five, including the child, were reported to have pulmonary disease, and one meningeal disease.

In view of the significant under-reporting of HIV status, these data provide inadequate information on which to base inferences regarding the extent of tuberculosis-HIV co-infection.

Country of birth

Information on country of birth was included in 948 (96%) of the 988 notifications of new cases of disease (Table 7). Of these, 233 (24.6%) were reported as Australian-born, corresponding to an annual crude incidence rate of 1.67 per 100,000 persons. This rate is similar to those reported for the last five years.

The remaining 715 cases (75.4%) were reported as having been born overseas; a specific country of birth was reported for 712 of these. The annual crude incidence rate for non-Australian born persons was 17.34 per 100,000. This is slightly higher than the rates reported for the years 1992 - 1994[17-19] but is similar to the rate of 17.99 per 100,000 recorded in 1990[22] (Figure 2). However, caution should be exercised in interpreting these rates, as birthplace data was missing in 13% of cases reported for the years 1992 - 1994.

The highest numbers of notifications for countries of birth other than Australia were received for persons born in Vietnam (167), China (62), the Philippines (61), India (56) and Indonesia (45).

The highest rates in overseas-born persons (greater than 100 per 100,000) were for persons born in Vietnam and Indonesia (Table 7). Rates greater than 50 per 100,000 per annum were observed for persons born in India, China, the Philippines, Korea, Myanmar, Cambodia and Laos (note that for some of these, the rates were based on small numbers of cases, and require caution in interpretation).

The notification rate for 1995 for Vietnamese-born persons is slightly higher than the rate recorded for 1994 and 1993 (98.6 and 94.0 per 100,000 persons respectively), but is lower than the rate for 1992 (122.6 per 100,000 persons).

The age distribution of cases in the overseas-born is markedly different from the distribution in the Australian-born. More than half of the Australian born cases were over 55 years of age (Figure 3). In the overseas-born, more than half were younger than 40 years old. This may be partly explained by differences in the age distribution of the two populations. However, in the overseas-born, the age group distribution revealed three separate peaks: in the very young, in young adults, and in the very elderly (Figure 4). For overseas-born females, the

Table 7. Notifications of new cases of tuberculosis, Australia 1995, number and estimated rates per 100,000 population, by reported country and region [1] of birth.

Country / Region	Number	Rate	Median Age (years)	Population (100,000s)
Australia	233	1.67	56	139.32
New Zealand	13	4.5	48	2.90
Papua New Guinea	13	46.9	24	0.28
Oceania (other)	16	-	-	na
Oceania (total)	42	11.1	-	3.79
United Kingdom / Northern Ireland	21	1.7	67	12.11
Greece	9	6.2	52	1.45
Italy	11	4.2	70	2.61
Yugoslavia (former)	22	12.2	50	1.80
Germany	9	7.6	66	1.19
Poland	7	10.4	72	0.67
Former USSR	7	14.6	53	0.48
Europe (other)	12	-	-	na
Europe (total)	98	4.1	-	23.74
Lebanon	7	8.5	40	0.82
Turkey	4	12.1	41	0.33
Middle East / north Africa (other)	9	-	-	na
Middle East / north Africa (total)	20	9.3	-	2.14
Cambodia	12	55.0	38	0.22
Indonesia (includes East Timor)	45	107.1	36	0.42
Laos	6	54.9	26	0.11
Malaysia	13	14.2	45	0.92
Myanmar (Burma)	7	70.5	44	0.10
Philippines	61	66.4	40	0.92
Singapore	5	13.8	46	0.36
Thailand	11	65.4	36	0.17
Vietnam	167	113.9	33	1.47
South East Asia (total)	327	69.9	-	4.68
China	62	66.9	39	0.93
Hong Kong	22	24.1	42	0.91
Republic of Korea	20	81.2	27	0.25
Taiwan	5	-	23	na
North East Asia (total)	109	42.9	-	2.54
Bangladesh	5	-	52	na
India	56	70.9	32	0.79
Pakistan	7	-	29	na
Sri Lanka	13	27.8	52	0.47
South Asia (other)	5	-	-	na
South Asia (total)	86	59.7	-	1.44
North America (total)	1	1.1	-	0.87
Chile	4	14.5	47	0.28
Peru	3	-	39	na
South / Central America (other)	3	-	-	na
South / Central America (total)	10	11.8	-	0.85
Eritrea	3	-	55	na
Ethiopia	5	-	23	na
Somalia	7	-	26	na
Africa excluding north Africa (other)	4	-	-	na
Africa excluding north Africa (total)	19	16.28	-	1.17
Overseas (not further defined)	3	-	-	na
Overseas (total)	715	17.34	38	41.22
Not stated	40	-	-	na
Total	988	5.47	40	180.54

1. "Regions" are as defined in the Australian Standard Classification of Countries for Social Statistics.

na = Population data are not available for Australian resisdents born in these countries.

Table 8. Notifications of new cases of tuberculosis, Australia, 1995: overseas born persons, by region [1] of birthplace and duration of residence

Duration of residence	Oceania	Europe	Middle East & north Africa	South East Asia	North East Asia	Southern Asia	North/South & Central America	Africa excluding north Africa	Total Overseas born [2]
1 year	13	2	3	22	10	10	0	3	63
1 - 2 years	3	4	3	41	12	6	0	2	71
2 - 3 years	2	0	1	23	9	5	0	2	42
3 - 5 years	2	2	2	40	17	12	1	0	76
5 - 10 years	8	5	3	59	30	16	3	3	127
10 - 20 years	4	6	4	79	14	11	1	1	120
20 - 40 years	3	35	2	7	2	5	1	1	56
40 + years	1	21	1	5	2	0	0	0	30
Not stated	6	23	1	51	13	21	5	7	127
Total	42	98	20	327	109	86	11	19	712

1. "Regions" are as defined by the Australian Standard Classification of Countries for Social Statistics.
2. In 3 cases, the birth-place of persons notified as overseas-born was not further described.

peaks in the age groups 0 - 4 years and 20 - 24 years were most pronounced. For males the highest peaks were in the age groups 0 - 4 years and 75 - 79 years.

The length of time that overseas-born persons had been resident in Australia was reported for 585 notifications (82% of those reported as born overseas). Reported duration of residence ranged from less than one year to 74 years (Table 8), with a median duration of residence of 6 years. In 252 cases (43%), notification of new disease had been made within 5 years of arrival. Length of residence of less than 5 years was common for persons born in Asian regions. Periods of residence greater than 20 years were recorded for the majority of persons born in European countries. Persons from countries in the Oceania region tended to have been resident in Australia for periods between these extremes.

Indigenous persons

Indigenous status was reported for all of the 233 new cases of tuberculosis in Australian-born persons; 52 (22%) of these were reported as being Aboriginal or Torres Strait Islander persons. Based on an estimate of the mid-1995 population of indigenous persons, this corresponds to an annual crude rate of 15.5 per 100,000 persons. The rate is approximately three times the rate for Australia as a whole, and almost 12 times the rate of 1.33 per 100,000 for non-indigenous Australian-born persons. Aboriginal and Torres Strait Islander persons included 26 females in the age range from 5 years to 81 years (median 33 years), and 26 males in the age range 5 to 78 years (median 37 years).

Pulmonary disease was reported for 18 females and 22 males. Several other primary sites of infection were reported, including miliary disease in a teenage male and an elderly female. Three males (aged in their 40s, 50s and 80s respectively) with relapsed pulmonary disease were reported.

Relapsed Cases

Fifty cases of tuberculosis specified as relapsed were notified (Table 2). These comprised 4.8% of total notifications and represented a notification rate of 0.28 per 100,000 persons, which is comparable with rates reported over the last 10 years.

Of the 50 relapsed cases, 19 were females (18 - 77 years; median 51 years) and 31 were males (24 - 86 years; median 61 years). In 36 (72%) of these 50 cases, the person was

Figure 3. Notifications of new cases of tuberculosis in Australian born persons, per 100,000 population, Australia, 1995, by age group and sex

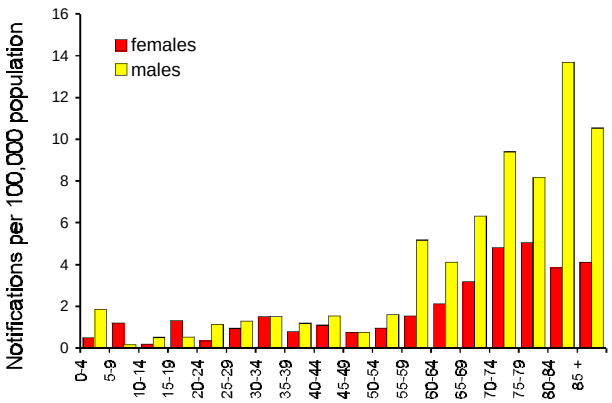
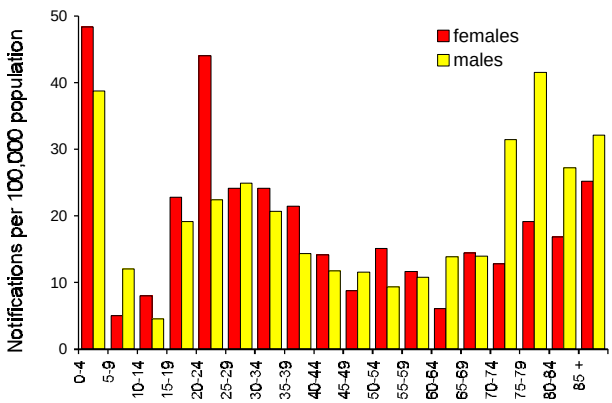


Figure 4. Notifications of new cases of tuberculosis in overseas born persons, per 100,000 population, Australia, 1995, by age group and sex



reported to have been born overseas. No country was extensively represented. The period of residence of overseas-born persons was less than 1 year in 4 cases. In 12 cases the person had been resident in Australia for between 1 and 10 years, and in 13 cases for more than 10 years. In 7 cases the period of residence was not reported.

The primary site of disease was reported for 49 of the 50 cases; 36 had pulmonary disease, 9 lymphatic disease, 3 had bone/joint disease and 1 genito-urinary disease. HIV status was reported for 13 cases, and was negative in all of these.

Almost all of the relapsed cases were reported from 3 jurisdictions. Of the 33 cases notified in New South Wales, 23 were pulmonary (13 culture positive) and 6 lymphatic (3 culture positive). The Queensland cases comprised 7 cases of pulmonary disease (3 culture positive) and 3 lymphatic disease (2 culture positive). Of the 5 cases notified from Victoria, 4 were pulmonary (1 of which was culture positive).

Mortality

The NMSS database currently provides very limited information on mortality in notified cases; for 1995, this information was recorded in only 2 cases.

During 1995, the Australian Bureau of Statistics recorded 28 deaths, for which the cause was reported as tuberculosis of a specified site, and a further 43 deaths ascribed to late effects of tuberculosis; a total of 71 deaths in which the primary underlying cause of death was tuberculosis[25]. This corresponds to an annual death rate of 0.39 per 100,000 persons (Figure 1). Forty-three deaths were males; 13 due to pulmonary disease, 1 each to central nervous system, intestinal and genito-urinary disease, 3 to miliary tuberculosis, and 24 to late effects of tuberculosis. The 28 deaths in females comprised 9 from pulmonary disease and 19 from late effects.

Atypical mycobacterial infection

Data on notifications of cases of atypical mycobacterial infection were received from seven States and Territories. There was a total of 696 reports. HIV status was reported for 90 cases (13%) of whom 84 (93%) were reported to be HIV-positive.

Organisms identified included *M. avium-intracellulare* (491 notifications), *M. fortuitum-chelonae* (53), *M. gordonae* (32), *M. scrofulaceum* (12), *M. terrae* (35), *M. marinum* (13), *M. kansasii* (7), *M. flavescens* (4), *M. xenopii* (5), *M. gastrii* (1), *M. simiae* (1), *M. ulcerans* (2), *M. abscessii* (4), *M. haemophilum* (1), and unknown/not reported (18 cases).

Of the 84 HIV-positive cases, 79 were males in the 23 - 69 years age range (median 37 years) and one was a male infant under 1 year old. The 4 females were aged 4, 38, 46 and 66 years. Reported infections included pulmonary disease (12 cases), pleural disease (9), septicaemia (11) and disseminated infection (32 cases).

Discussion

The results of data analysis from the NMSS should be interpreted in conjunction with reports derived from analysis of other Australian data. These include the Australian Mycobacterium Reference Laboratory Network[14, 31], and the NNDSS[24].

The level of reporting to the NMSS is uncertain; however, the number of notifications reported to this system for 1995 is consistent with data available from the other sources[24, 31].

Compared with the data received for the years 1993 and 1994, the information in the 1995 database was considerably more complete, particularly for the following fields: country of birth, period of residence (for the overseas-born), indigenous status, primary site of disease, and antimicrobials used in initial treatment.

The six data fields for methods of diagnosis were also considerably more complete. However, these data continue to be subject to difficulties in the variety of recording formats used, and in the ambiguity of their interpretation. BCG status and HIV status continued to be inadequately documented.

Notification rates of new cases of tuberculosis have remained stable in Australia for several years, and remain equal to the lowest rates recorded for any country in the world[4]. However, some groups in the Australian community are disproportionately affected. These include indigenous persons and several migrant groups. The high notification rate in the Northern Territory (Table 2) reflects notifications of cases in Aboriginal or Torres Strait Islander persons (62% of notifications),and persons born overseas (38% of notifications).

Rates of reported disease in some overseas-born groups are many times the rates in the Australian-born. This reflects the high rates of primary infection experienced by persons growing up in these countries.

The rate of notified new disease in Australian-born persons has declined over the last 10 years, from 2.8 cases per 100,000 in 1986 to 1.7 per 100,000 in 1995. In contrast, the rate in overseas-born persons has risen slightly during this period.

The maintenance of very low rates of new disease in Australian-born persons, in spite of continuing migration from countries of high incidence, suggests that no significant transmission of disease is occurring from migrants to the Australian-born. A survey of Australian-born and overseas-born children from 24 Sydney schools also supports this view[29, 30].

Allowing for missing data, the high proportion of cases in which a four-drug regimen was used to initiate treatment is notable. In the absence of individual clinical data and information on subsequent changes to the regimen, the total length of treatment and whether cure was achieved, it is not possible to comment further on the overall adequacy of the recorded treatment regimens.

The notification rate for new cases of tuberculosis in Australia (an average of less than 5.5 per 100,000 per annum over the last 10 years) compares very favourably with rates in other countries (for example, the reported rates for 1994 of 5.6 per 100,000 in Norway, 6.1 in Sweden, 10.7 in the United Kingdom, 7.0 in Canada, 9.3 in the United States of America and 10.0 in New Zealand[4]). The continuing low rate of mortality from the disease also compares favourably. These achievements, together with the low rates of multi-drug resistant organisms in Australia[14, 15, 31] can be attributed to the quality of public health services in their management and control of tuberculosis.

However, in view of the global nature of tuberculosis and the presence within the population of groups with high rates of disease, Australia must continue to maintain and develop its tuberculosis control activities.

Good surveillance is essential for good disease control. This report has highlighted some areas within the existing database where better data collection is needed. However, there is also a need to expand the database to allow for better outcome surveillance. This has been recommended in the Draft Report of the National Health and Medical Research Council (NHMRC) Tuberculosis Working Party, which was released for public comment in 1996. The Final Report is to be published later this year. Improvements in surveillance procedures can be expected as a result of implementation of its recommendations.

Acknowledgments

Acknowledgement is extended to Htoo Myint for assistance with data management. The members of the Communicable Diseases Network Australia New Zealand are warmly thanked for supporting this surveillance initiative, together with the State and Territory Directors of Tuberculosis, and other Health Department personnel in the States and Territories involved in compiling the individual datasets. Special thanks is offered to Irene Passaris in the Australian Capital Territory, Rob Menzies in New South Wales, Vicki Krause and Mary Verus in the Northern Territory, Anil Patel, Tom Konstantinos and Patrick Derhy in Queensland, Scott Cameron and Ral Antic in South Australia, Avner Misrachi and David Coleman in Tasmania, John Carnie and Sheila Beaton in Victoria, and Jag Gill in Western Australia.

Correction:

In the report of the NMSS for the year 1994 [19], the number of relapsed cases was incorrectly reported (for Victoria, and for the total) in Tables 1 and 2, and in the text. The number has been corrected in Table 1 of this report.

References

1. Tuberculosis (Editorial). *Wkly Epidemiol Rec* 1995;70:73-77.
2. Expanded tuberculosis surveillance and tuberculosis morbidity - United States, 1993 (Editorial). *MMWR Morb Mort Wkly Rep* 1994;43:361-366.
3. World Health Organization. WHO Tuberculosis Programme - framework for effective tuberculosis control. Geneva: WHO, 1996.
4. World Health Organization.Tuberculosis - a global emergency: case notification update. Geneva: WHO, 1996.
5. Michael JM, Michael MA. Health Status of the Australian aboriginal people and the native Americans - a summary comparison. *Asia Pac J Public Hlth* 1994;7 (2):132-136.
6. Tuberculosis: old reasons for a new increase?(Editorial). *Brit Med J*. 1995;310: 954-955.
7. Tuberculosis in homeless people (Editorial). *CDR Weekly* 1995; 5(18):85.
8. van Cleeff MR, Chum HJ. The proportion of tuberculosis cases in Tanzania attributable to human immunodeficiency virus. *Int J Epidemiol* 1995;24(3):637-642.
9. Drobniewski FA, Pozniak AL, Uttley AH. Tuberculosis and AIDS. *J Med Microbiol* 1995;43(2):85-91.
10. deWit D. Hospital-acquired tuberculosis. *Med J Aust* 1995;163:428-431.
11. Drug-resistant tuberculosis: factors associated with rise in resistance in an HIV-infected urban population. *Mt Sinai J Med* 1994;61(4):341-348.
12. Nosocomial transmission of multi-drug resistant *Mycobacterium tuberculosis* in Spain (Dispatch). *Emerg Inf Dis* 1996;2:125-129.
13. Williamson ZB, Martin JN, Reingold AL *et al*. The changing epidemiology of acquired drug-resistant tuberculosis in San Francisco, USA. *Lancet* 1996;348:928-931.
14. Curran M, Dawson D. Tuberculosis in Australia: bacteriologically confirmed cases and drug resistance, 1993. *Comm Dis Intell* 1995;19**:**343-345.
15. Dawson DJ, Cheah DF, Chew WK, *et al*. Tuberculosis in Australia, 1989-1992: bacteriologically confirmed cases and drug resistance. *Med J Ast* 1995;162:287-290.
16. Cheah D. Tuberculosis notification rates, Australia, 1991. *Comm Dis Intell* 1992; 16:398-400.
17. Hargreaves J. Tuberculosis notifications in Australia, 1992. *Comm Dis Intell* 1994; 18:330-337.
18. Hargreaves J. Tuberculosis notifications in Australia, 1993. *Comm Dis Intell* 1995; 19:332-341.
19. Oliver G. Tuberculosis notifications in Australia, 1994. *Comm Dis Intell* 1996; 20: 108-115.
20. Tuberculosis Statistics. Annual Reports, 1968-1985. Canberra: Australian Department of Health.
21. Tuberculosis briefs 1 - notification rates (Editorial). *Comm Dis Intell* 1991;15: 267-269.
22. Tuberculosis briefs 2 - an analysis by country of birth (Editorial). *Comm Dis Intell* 1991;15: 440-442.
23. Cheah D. Tuberculosis notification rates, Australia - final data for 1986 to 1990. *Comm Dis Intell*. 1992;16:234-236.
24. Herceg A, Oliver G, Myint H, *et al*. Annual report of the National Notifiable Diseases Surveillance System, 1995. *Comm Dis Intell* 1996;20:440-464.
25. Australian Bureau of Statistics. Mortality Tabulations, 1968-1995. Standard Data Service (Microfiche). Canberra: Australian Government Publishing Service, 1996.
26. Australian Bureau of Statistics. Australian demographic statistics. (Cat. 3101.0). Canberra: Australian Government Publishing Service, 1996.
27. Australian Bureau of Statistics. Migration. (Cat. 3412.0). Canberra: Australian Government Publishing Service, 1996.
28. Australian Bureau of Statistics. Australian standard classification of countries for social statistics. (Cat. 1269.0). Canberra: Australian Government Publishing Service, 1990 (plus Revisions 1.01, 1.02, 1.03; 1990-1994).
29. Alperstein G, Morgan KR, Fett MJ, Nossar V, Stewart G. Prevalence of tuberculosis infection among primary school-entry children in Sydney. *Aust N Z J Public Health* 1996;20:123-128.
30. Thompson JE. Tuberculosis infection among children (letter). *Aust N Z J Public Health* 1996;20:440.
31. Dawson D. Tuberculosis in Australia: bacteriologically confirmed cases and drug resistance, 1994 and 1995. *Comm Dis Intell* 1997; 21:245-249

Communicable Diseases Surveillance

Parainfluenza viruses

The parainfluenza viruses are important respiratory pathogens belonging to the *Paramyxoviridae* family. Four distinct serological types have been isolated from humans, types 1, 2, 3 and 4 (subtypes 4a and 4b). Each of the four types causes acute respiratory tract disease, particularly during the childhood years. These viruses cause a spectrum of disease which varies from inapparent infection to severe lower respiratory tract disease. Parainfluenza virus type 1 is the principal cause of croup (laryngotracheobronchitis) in children. Parainfluenza virus type 2 has similar clinical manifestations to the type 1 virus, but symptoms tend to be less severe. Parainfluenza virus type 3 is a major cause of pneumonia and bronchiolitis in infants under the age of six months. It is second only to respiratory syncytial virus as a cause of lower respiratory tract infection in neonates and young infants. Reports of the type 4 virus are less common and illness tends to be milder.

The parainfluenza viruses are spread directly from person to person or via droplets. The incubation period is between two and six days. Outbreaks in the childcare setting are common. In Australia, epidemics of parainfluenza virus type 1 have been recorded biennially, with reports peaking during the autumn months of April and May (Figure 1). Outbreaks of the type 2 virus have alternated with the type 1 virus, occurring biennially during the autumn months every other year. By contrast Australia has recorded a peak in parainfluenza type 3 activity each year, with reports peaking later, during the winter and early spring months. More reports have been received for males than for females for all virus types, the male:female ratio being approximately 1.5:1 in all cases. The age distribution however, differs with the type of virus. Fifty per cent of the type 3 virus reports were for infants under the age of one year (Figure 2). By contrast a higher percentage of type 1 and 2 reports were seen in the 1 - 4 years age group. Hence infection with the type 3 virus tends to occur earlier in life than does that with the other types.

National Notifiable Diseases Surveillance System

The 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 20 August to 2 September 1997

There were 1,860 notifications received for this two week period (Tables 1, 2 and 3). The numbers of reports for selected diseases have been compared with historical data for corresponding periods in the previous three years (Figure 3).

There were 23 notifications of meningococcal infection for the current period, bringing the total for the year so far to 310. This is greater than the number for the same period last year. Of the 310 reports, *Neisseria meningitidis* was identified in 112 cases: 16 serogroup A, 65 group B, 27 group C, 2 group W-135, and 2 group Y. In the remaining 198 cases, the serogroup was not stated.

Eleven notifications of mumps were received for the current reporting period. The number of reports has been higher this year than in previous years (Figure 4). The male:female ratio of cases notified since January 1996 was 1:1.1. Fourty seven per cent of cases were aged under 10 years (Figure 5).

The 304 notifications of pertussis received for the current period constitutes a further increase from the 278 reported

Figure 1. Parainfluenza virus laboratory reports, 1995 to 1997, by type and month of specimen collection

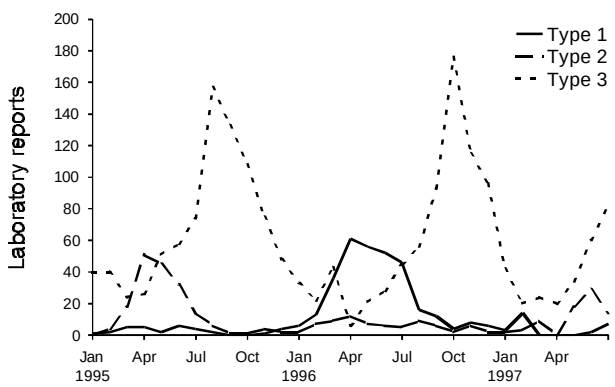


Figure 2. Parainfluenza virus laboratory reports, 1990 to 1997, as a percentage of total reports for that type, and age group

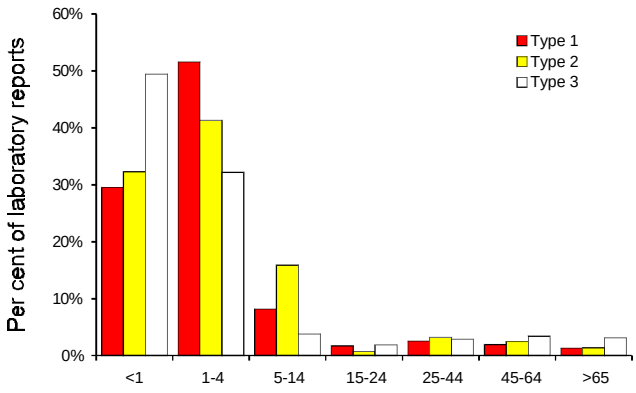
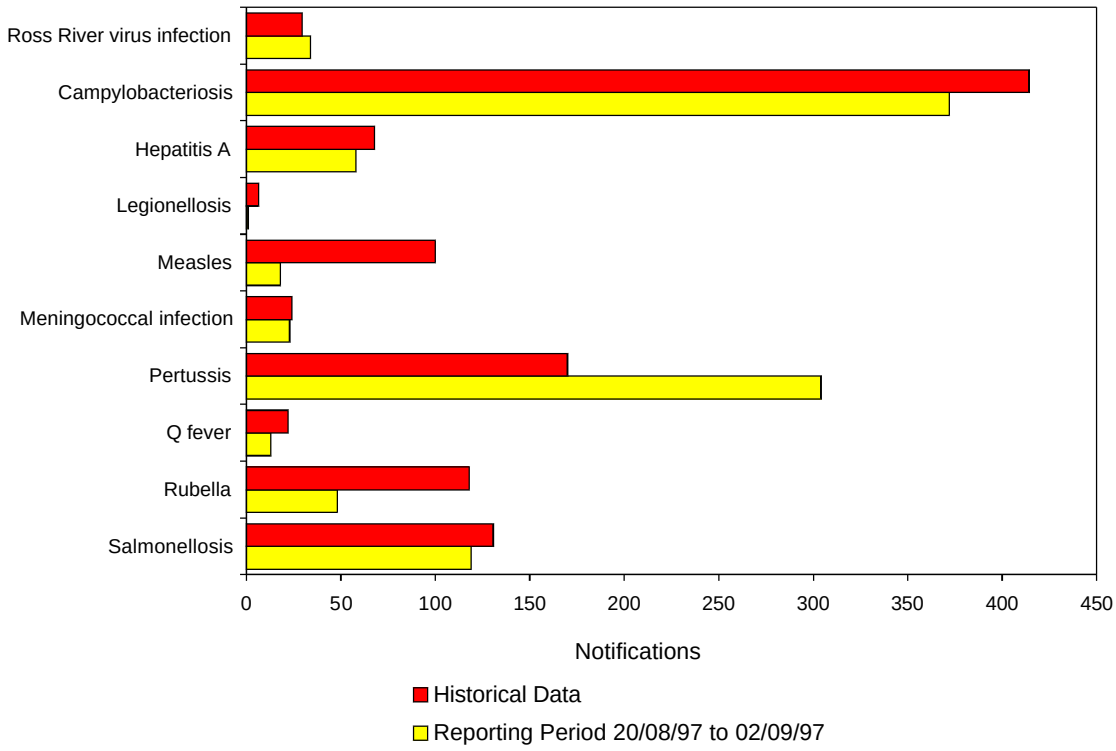


Figure 3. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



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.

Figure 4. Mumps notifications, 1993 to 1997, by month of onset

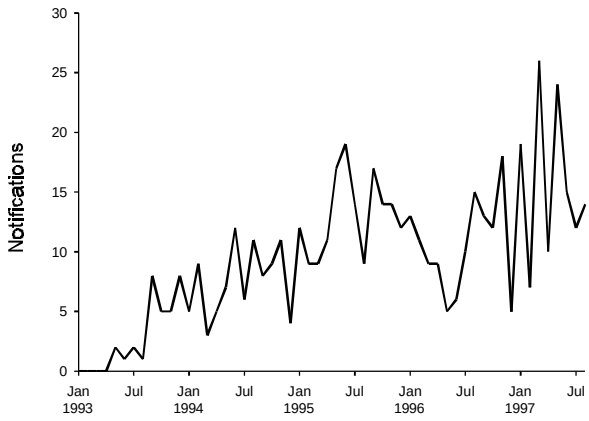
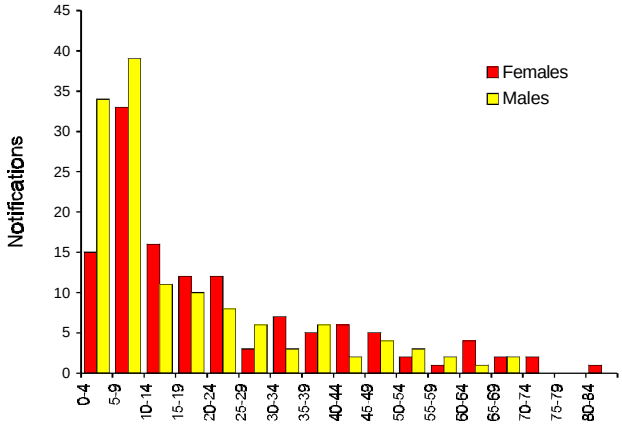


Figure 5. Mumps notifications, 1996 and 1997, by age group and sex



for the previous two week period, these being the highest totals for any reporting period since early March this year.

National Influenza Surveillance, 1997

Three types of data are included in National Influenza Surveillance, 1997. These are sentinel general practitioner surveillance conducted by the Australian Sentinel Practice Research Network, Department of Human Services, Victoria, Department of Health, New South Wales and Department of Health and Community Services, Northern Territory; laboratory surveillance data from the Communicable Diseases Intelligence Virology and Serology Laboratory Reporting Scheme, LabVISE, and the World Health Organization Collaborating Centre for Influenza Reference and Research; and absenteeism surveillance conducted by Australia Post. For further information about these schemes, see CDI 1997; 21:126.

Overall influenza activity started to decline during mid to late August, having peaked in the latter parts of July.

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 20 August to 2 September 1997

Disease[1,2]	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1997	This period 1996	Year to date 1997	Year to date 1996
Diphtheria	0	0	0	0	0	0	0	0	0	0	0	0
Haemophilus influenzae type b	0	0	1	0	0	0	0	0	1	3	35	42
Measles	3	5	0	3	0	0	4	3	18	31	394	320
Mumps	0	1	0	NN	1	1	4	4	11	6	130	79
Pertussis	3	65	0	80	65	5	45	41	304	117	5127	2054
Rubella	3	3	0	14	9	0	17	2	48	74	856	1706
Tetanus	0	0	0	0	0	0	0	0	0	0	7	1

NN. Not Notifiable

1. No notifications of poliomyelitis have been reported since 1986.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision, so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.

Table 2. Notifications of other diseases received by State and Territory health authorities in the period 20 August to 2 September 1997

Disease[1,2]	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1997	This period 1996	Year to date 1997	Year to date 1996
Arbovirus Infection (NEC)[3]	0	0	1	0	0	0	1	0	2	0	110	41
Barmah Forest virus infection	0	0	-	6	0	0	1	0	7	18	522	702
Campylobacteriosis[4]	8	-	5	150	69	10	95	35	372	394	7648	7925
Chlamydial infection (NEC)[5]	3	NN	14	207	0	6	61	35	326	361	5549	5677
Dengue	0	0	0	0	0	-	0	1	1	1	195	28
Donovanosis	0	NN	0	0	NN	0	0	0	0	1	23	33
Gonococcal infection[6]	2	10	19	45	0	0	3	31	110	181	3275	2830
Hepatitis A	2	14	4	32	0	1	1	4	58	67	2239	1633
Hepatitis B incident	0	0	1	4	0	0	3	0	8	6	158	153
Hepatitis C incident	0	0	0	-	0	0	-	-	0	3	11	38
Hepatitis C unspecified	18	NN	20	103	NN	9	102	15	267	383	6378	6699
Hepatitis (NEC)	0	0	0	0	0	0	0	NN	0	0	14	13
Legionellosis	0	1	0	0	0	0	0	0	1	8	104	131
Leptospirosis	0	0	0	2	1	0	1	0	4	11	85	166
Listeriosis	0	1	0	0	0	0	0	0	1	2	57	39
Malaria	1	6	0	23	1	0	1	0	32	53	562	602
Meningococcal infection	1	9	1	2	2	0	4	4	23	23	310	262
Ornithosis	0	NN	0	0	0	0	2	0	2	0	39	59
Q Fever	0	4	0	8	0	0	0	1	13	30	406	391
Ross River virus infection	0	12	1	13	0	0	1	7	34	45	6325	7436
Salmonellosis (NEC)	5	20	7	36	6	1	34	10	119	127	4995	4090
Shigellosis[4]	0	-	5	6	3	0	3	2	19	23	577	471
Syphilis	0	10	15	13	0	0	0	0	38	71	819	1075
Tuberculosis	1	9	2	4	1	1	7	1	26	31	643	713
Typhoid[7]	0	0	0	0	1	0	1	0	2	3	51	66
Yersiniosis (NEC)[4]	0	-	0	4	1	0	0	0	5	9	185	174

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

NN Not Notifiable.

NEC Not Elsewhere Classified

\- Elsewhere Classified.

Table 3. Notifications of rare[1] diseases received by State and Territory health authorities in the period 20 August to 2 September 1997

Disease[2]	Total this period	Reporting States or Territories	Total notifications 1997
Brucellosis	1	Qld	22
Chancroid			1
Cholera			2
Hydatid infection	6	Vic	31
Leprosy			8

1. Fewer than 60 cases of each of these diseases were notified each year during the period 1988 to 1996.
2. No notifications have been received during 1997 for the following rare diseases: botulism, lymphogranuloma venereum, plague, rabies, yellow fever, or other viral haemorrhagic fevers.

Figure 6. Laboratory reports of influenza, 1997, by type and week of specimen collection

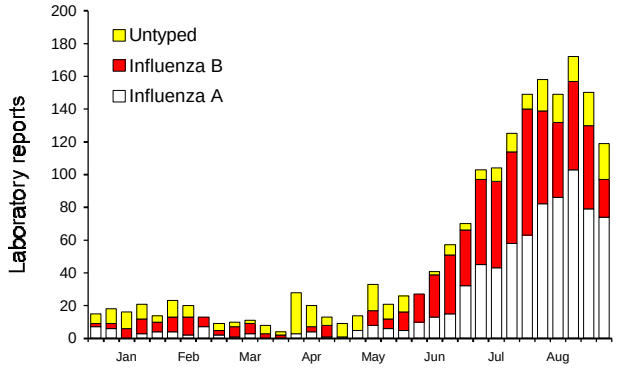
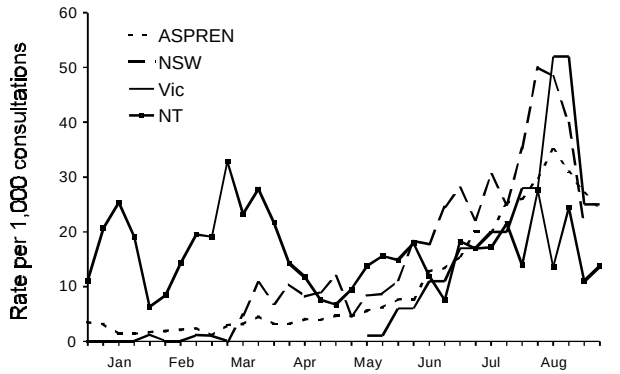


Figure 7. Sentinel general practitioner influenza consultation rates, 1997, by week and scheme



Approximately two thirds of laboratory reports for this period were for influenza A.

Laboratory Surveillance

A total of 449 reports of influenza virus were recorded by the LabVISE scheme this fortnight. Of these 277 were for influenza A, 125 for influenza B and 48 were untyped (Figure 6). The epidemic of influenza B this season is continuing to decline, while a greater proportion of influenza A reports have been received since late July. The number of influenza A and influenza B reports received during August were 336 and 157 respectively.

Sentinel General Practitioner Surveillance

Reports of consultation rates for influenza-like illness from the New South Wales scheme started to decline through August, having reached a peak rate of 50 consultations per 1,000 in late July (Figure 7). The Department of Human Services Victoria and the Northern Territory scheme, also recorded a lower consultation rate during mid to late August. The ASPREN scheme consultation rate has also fallen since early August.

Absenteeism Surveillance

Australia Post recorded a national absenteeism rate of 2.6% for the last week of August, having peaked at 3.1% in late July . A particularly low rate, 0.9%, was recorded in South Australia during this week.

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 (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) 9332 4648 Facsimile: (02) 9332 1837.

HIV and AIDS diagnoses and deaths following AIDS reported for April 1997, as reported to 31 July 1997, are included in this issue of *CDI* (Tables 4 and 5).

Table 4. New diagnoses of HIV infection, new diagnoses of AIDS and deaths following AIDS occurring in the period 1 to 30 April 1997, by sex and State or Territory of diagnosis

										Totals for Australia			
		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	This period 1997	This period 1996	Year to date 1997	Year to date 1996
HIV diagnoses	Female	0	0	1	0	0	0	3	0	4	7	26	32
	Male	1	0	0	14	2	0	12	3	32	50	202	251
	Sex not reported	0	0	0	0	0	0	0	0	0	1	12	3
	Total[1]	1	0	1	14	2	0	15	3	36	58	240	286
AIDS diagnoses	Female	0	0	0	2	0	0	1	0	3	2	9	8
	Male	0	7	0	4	1	1	6	0	19	41	79	224
	Total[1]	0	7	0	6	1	1	7	0	22	43	88	232
AIDS deaths	Female	0	0	0	0	0	0	0	0	0	0	3	8
	Male	0	4	0	2	0	0	3	1	10	34	62	177
	Total[1]	0	4	0	2	0	0	3	1	10	34	65	185

1. Persons whose sex was reported as transgender 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 30 April 1997, by sex and State or Territory

		ACT	NSW	NT	Qld	SA	Tas	Vic	WA	Australia
HIV diagnoses	Female	21	486	5	108	46	4	185	76	931
	Male	179	10422	91	1753	609	78	3557	815	17504
	Sex not reported	0	2055	0	0	0	0	28	0	2083
	Total[1]	200	12976	96	1866	655	82	3779	894	20548
AIDS diagnoses	Female	7	150	0	37	19	2	58	20	293
	Male	80	4136	28	716	305	40	1475	321	7101
	Total[1]	87	4297	28	755	324	42	1540	343	7416
AIDS deaths	Female	2	107	0	27	14	2	39	13	204
	Male	52	2923	22	501	206	26	1155	234	5119
	Total[1]	54	3036	22	530	220	28	1200	248	5338

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

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network (ASPREN) currently comprises 107 general practitioners from throughout the country. Up to 9,000 consultations are reported each week, with special attention to 12 conditions chosen for sentinel surveillance. Of these, CDI reports the consultation rates for chickenpox, gastroenteritis, HIV testing (doctor initiated), HIV testing (patient initiated), influenza, measles, pertussis, Ross River virus infection and rubella. For further information, including case definitions, see CDI 1997;21:6.

Data for weeks 34 and 35 ending 24 and 31 August respectively are included in this issue of *CDI* (Table 6). The consultation rate for gastroenteritis has remained at a low level since the beginning of June. During August, the consultation rate for chickenpox was higher than that for July, but remained slightly lower than the rates seen during June. The consultation rates for measles, pertussis, rubella and Ross River virus infection have remained low for several months. The consultation rates associated with HIV testing have remained at moderate levels throughout the year.

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 Communicable Diseases Intelligence 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 1,629 reports received in the *CDI* Virology and Serology Laboratory Reporting Scheme this period (Tables 7 and 8).

Table 6. Australian Sentinel Practice Research Network reports, weeks 34 and 35, 1997

Condition	*Week 34, to 24 August 1997*		*Week 35, to 31 August 1997*	
	Reports	Rate per 1,000 encounters	Reports	Rate per 1,000 encounters
Chickenpox	6	0.9	11	1.9
Gastroenteritis	47	6.8	51	8.9
HIV testing (doctor initiated)	2	0.3	7	1.2
HIV testing (patient initiated)	9	1.3	11	1.9
Influenza	168	24.1	124	21.6
Measles	0	0.0	0	0.0
Pertussis	2	0.3	3	0.5
Ross River virus infection	2	0.3	0	0.0
Rubella	3	0.4	1	0.2

Figure 8. Parvovirus laboratory reports, 1995 to 1997, by month of specimen collection

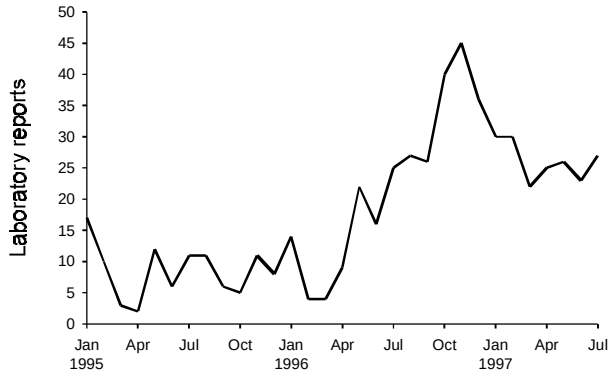
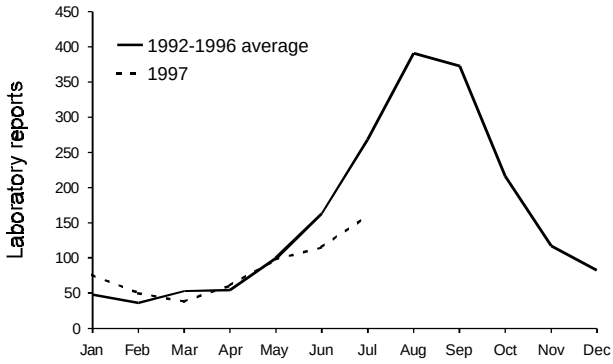


Figure 9. Rotavirus laboratory reports, 1992 to 1996 average and 1997, by month of specimen collection



Eleven reports of Ross River virus were received this fortnight; 91% of these were from Western Australia. The number of reports has fallen in the past few months after peaking in March.

The number of parvovirus reports has declined after peaking in November 1996 (Figure 8). There were 8 reports of parvovirus received this fortnight. For the year to date, 197 reports have been received. Most were for females in the 25 - 44 years age range.

One hundred and twenty-nine reports of rotavirus were received this period, for 53 females and 76 males. Ninety-five per cent of reports were for children under five years of age. The total number of reports for the year to date so far is lower than in previous years (Figure 9).

Two reports of Q fever were received this period. The number of reports has declined after peaking in June 1997. The highest number of Q fever reports received in this scheme was in August 1993 (Figure 10).

Figure 10. Q fever laboratory reports, 1992 to 1997, by month of specimen collection.

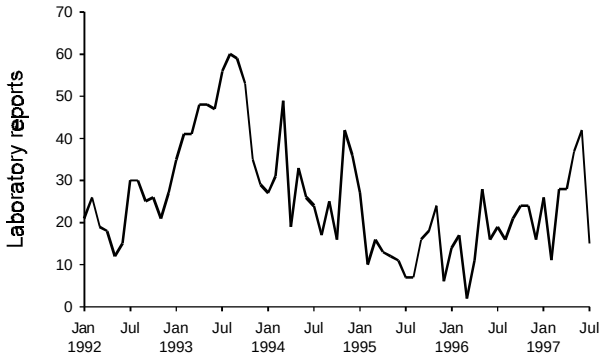


Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 14 to 27 August 1997, historical data[2], and total reports for the year

	States and Territory[1]							Total this fortnight	Historical data[2]	Total reported In *CDI* in 1997
	NSW	NT	Qld	SA	Tas	Vic	WA			
Measles, mumps, rubella										
Measles virus			1					1	2	43
Mumps virus							3	3	1.8	32
Rubella virus			2	2		1	3	8	19.8	425
Hepatitis viruses										
Hepatitis A virus		2					13	15	14.5	563
Arboviruses										
Ross River virus				1			10	11	14.3	2,023
Dengue not typed							3	3	1.3	57
Adenoviruses										
Adenovirus type 2						2		2	1.3	27
Adenovirus type 3						1		1	1.7	19
Adenovirus type 5						1		1	1.2	6
Adenovirus type 7						2		2	0.5	7
Adenovirus type 40						1		1	0.7	12
Adenovirus not typed/pending	3		16	11		11	5	46	50	704
Herpes viruses										
Cytomegalovirus	6		2	9		7	3	27	53.3	860
Varicella-zoster virus				4	1	12	29	46	46.8	999
Epstein-Barr virus	11	2		26		2	20	61	75.3	1,857
Other DNA viruses										
Parvovirus				2		5	1	8	10.3	266
Picorna virus family										
Coxsackievirus A9						1		1	0.2	7
Rhinovirus (all types)			28			1	4	33	30	469
Enterovirus not typed/pending			8				16	24	36	466
Ortho/paramyxoviruses										
Influenza A virus	48		9	50		80	40	227	115.3	862
Influenza A virus H1N1			1					1	4.3	1
Influenza A virus H3N2			49					49	3.8	60
Influenza B virus	7		39	35		19	24	124	27.8	741
Influenza virus - typing pending				48				48	0.3	321
Parainfluenza virus type 1	1			2		2		5	7.2	51
Parainfluenza virus type 2	1			6		2		9	2.5	110
Parainfluenza virus type 3	6		32	7		14	28	87	44.8	652
Parainfluenza virus typing pending				3			1	4	2.5	200
Respiratory syncytial virus	22		34	139	5	155	82	437	299.2	3,602
Paramyxovirus (unspecified)						2		2	0.7	15

Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 14 to 27 August 1997, historical data[2], and total reports for the year, continued

	States and Territory[1]							Total this fortnight	Historical data[2]	Total reported In *CDI* in 1997
	NSW	NT	Qld	SA	Tas	Vic	WA			
Other RNA viruses										
Rotavirus	21			20	3	71	14	129	152	886
Norwalk agent						1		1	2	68
Other										
Chlamydia trachomatis not typed	5	17	20	16	2	4	76	140	129.5	3,469
Chlamydia psittaci						1	1	2	4.2	49
Mycoplasma pneumoniae	5	1		6	3	5	6	26	27.7	1,246
Coxiella burnetii (Q fever)						1	1	2	5.7	241
Rickettsia tsutsugamushi			1					1	1.5	21
Bordetella pertussis						16	20	36	29	1,212
Legionella longbeachae							3	3	0.5	22
TOTAL	136	22	244	387	14	420	406	1,629	1,221.80	22,676

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 14 to 27 August 1997

State or Territory	Laboratory	Reports
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	26
	Royal Prince Alfred Hospital, Camperdown	25
	South West Area Pathology Service, Liverpool	86
Queensland	State Health Laboratory, Brisbane	241
South Australia	Institute of Medical and Veterinary Science, Adelaide	386
Tasmania	Northern Tasmanian Pathology Service, Launceston	14
Victoria	Microbiological Diagnostic Unit, University of Melbourne	2
	Monash Medical Centre, Melbourne	33
	Royal Children's Hospital, Melbourne	295
	Victorian Infectious Diseases Reference Laboratory, Fairfield	90
Western Australia	PathCentre Virology, Perth	257
	Princess Margaret Hospital, Perth	124
	Western Diagnostic Pathology	50
TOTAL		1629

Overseas briefs

Source: World Health Organization (WHO)

Meningitis, Democratic Republic of the Congo

Since the beginning of this year 1,210 cases of meningitis have been reported in the Democratic Republic of the Congo. Of these, at least 191 have resulted in death, giving a case fatality rate of over 16%. Most of the cases occurred in June, July and August.

Preliminary tests have identified serogroup A *Neisseria meningitidis* as being the cause of the outbreak. The WHO has supplied extra vaccine and oily chloramphenicol to the Democratic Republic of the Congo to complement existing supplies. The situation is being monitored by a WHO team in collaboration with MSF. The neighbouring countries of Burundi, Rwanda, the United Republic of Tanzania, Uganda, and Zambia have been informed by WHO of the situation.

Zimbabwe

The Ministry of Health has reported an increase in the number of cases of meningitis in Bulawayo, mainly in the townships of Mzilikazi and Makokoba. Preliminary diagnosis indicates meningococcal meningitis, and investigation of the serogroup is currently underway. Vaccines, diagnostic kits and media for preserving isolates during transport have been shipped to Harare.

Encephalitis, Nepal

A total of 247 cases of encephalitis has been reported this year. Of these, 223 cases occurred between April and August, with 24 deaths. Three cases were in persons from neighbouring states in India. Age and sex information was available for 139 cases. Sixty-two per cent were male and 38% were female. Sixty-one per cent of cases were aged under 15 years, and 30% were in the 15 - 44 years age group. Cases of encephalitis are reported throughout the year in Nepal and usually increase between June and October. The diagnosis is frequently made on clinical grounds. However, it appears that many of the cases are due to Japanese encephalitis.

Cholera, Mozambique

An outbreak of cholera has been confirmed in Maputo City. The first cases were diagnosed on 13 August and 49 cases have been reported to date. Control activities have been implemented, including community health education, improvement of the water supply services and sanitation. The National Cholera Commission has been reactivated. A special ward for the treatment of cases has been set up in Maputo Central Hospital. WHO is giving technical and financial support to the Ministry of Health for the implementation of these activities. No cholera cases had occurred in Mozambique since mid-1994.

CDI is produced fortnightly by the National Centre for Disease Control, Department of Health and Family Services, GPO Box 9848 Canberra ACT 2601; fax: (02) 6289 7791, phone: (02) 6289 6895. For subscriptions or change of address please fax (02) 6269 1212 or write to PO Box 462, Fyshwick ACT 2609.