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AIDS/Communicable Diseases Branch
Department of Human Services and Health
GPO Box 9848 Canberra ACT 2601
Fax: (06) 289 7791 Telephone: (06) 289 1555

COMMONWEALTH DEPARTMENT OF HUMAN SERVICES AND HEALTH

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

TUBERCULOSIS NOTIFICATIONS IN AUSTRALIA, 1992

Jenny Hargreaves, for the Communicable Diseases Network of Australia, AIDS and Communicable Diseases Branch, Department of Human Services and Health, Canberra

Introduction

In 1991, the National Mycobacterial Surveillance System commenced under the auspices of the Communicable Diseases Network of Australia, and replaced the previous system by which the States and Territories reported tuberculosis notifications nationally. All States agreed to provide data in a standard computerised EpiInfo-based format for compilation into a national dataset. The first annual report of this System was published for the 1991 data in 1992[1]. This is the annual report of the System for 1992.

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, confirmation status and transmission week). It also included a supplementary dataset comprising ethnicity, country of birth, length of residence in Australia, mycobacterial species, 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 for tuberculosis notifications since 1986[2]:

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:

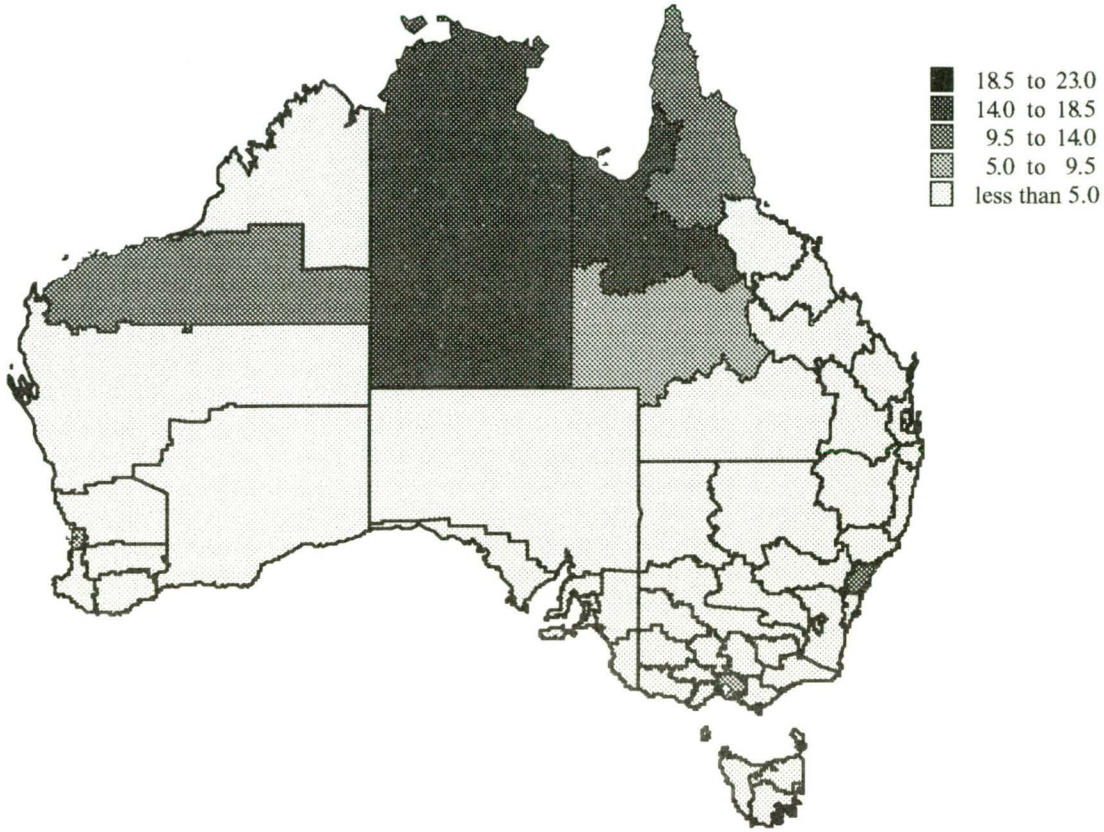
- presence of a compatible disease process which is clinically, radiologically and/or pathologically not due to other causes,
- consistent repeated recovery of the same organism from the same site in moderate to abundant amounts,
- recovery of atypical mycobacteria from sites which are normally sterile.

Denominator population data and data on tuberculosis deaths were obtained from the Australian Bureau of Statistics. All denominator data were estimated resi-

Table 1. Notifications of new and reactivated cases of tuberculosis and rates per 100,000 population, 1992, 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	14	4.72	3	1.01	17	5.74
NSW	415	6.95	6	0.10	421	7.05
NT	32	18.97	0	0	32	18.97
Qld	104	3.42	9	0.30	113	3.72
SA	58	3.97	2	0.14	60	4.11
Tas	15	3.18	1	0.21	16	3.40
Vic	261	5.85	5	0.11	266	5.97
WA	84	5.05	2	0.12	86	5.17
Total	983	5.62	28	0.16	1011	5.78

Figure 1. Notifications of new cases of tuberculosis per 100,000 population per year, 1992, by Statistical Division of residence



dent populations as at 30 June in the relevant year. The exception was for the calculation of the rates for new disease for Statistical Divisions, for which the Australian Bureau of Statistics' 1991 Census population data were used.

Results

There was a total of 1011 notifications of tuberculosis received for 1992, 983 new cases and 28 reactivations (Table 1). This corresponded to rates of 5.62 per 100,000 per year for new cases, 0.16 per 100,000 for reactivations and 5.78 per 100,000 for total notifications. The highest numbers of notifications were reported by New South Wales (421), Victoria (266) and Queensland (113). The highest rates were reported by the Northern Territory (18.97 per 100,000), New South Wales (7.05 per 100,000) and Victoria (5.97 per 100,000).

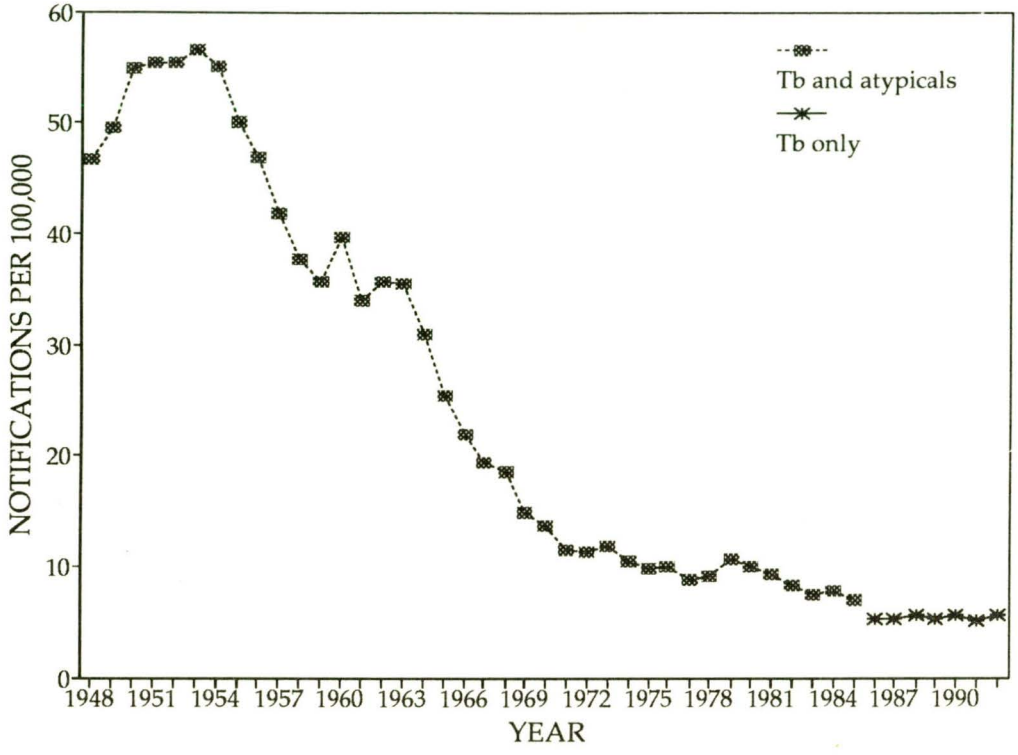
Postcode of residence was provided with 974 notifications of new disease (99.1%) allowing allocation to Statistical Divisions. The notification rates varied widely with Statistical Division (Figure 1). The highest rates were for the Divisions of Darwin (23.0 per 100,000), Balance of the Northern Territory (16.6), Northwest Queensland (15.3), Far North Queensland (10.4) and Pilbara, Western Australia (10.3).

Compared with previous years, the number of notifications and the notification rate for 1992 was similar to those reported since the introduction of the current case definitions in 1986 (Table 2). Compared with 1991, there was an increase in total notifications of 6.4% and

Table 2. Notifications of new and reactivated cases of tuberculosis and rates per 100,000 population, 1986 to 1992, by year

	New cases		Reactivations		Total	
Year	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

Figure 2. Notifications of new cases of tuberculosis[1] per 100,000 population, 1948 to 1992, by year



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

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

	Females		Males		Total[1]	
Age group (years)	Notifications	Rate per 100,000	Notifications	Rate per 100,000	Notifications	Rate per 100,000
0-4	11	1.77	7	1.07	18	1.41
5-9	8	1.28	6	0.92	14	1.10
10-14	6	0.99	7	1.09	13	1.04
15-19	12	2.01	11	1.62	24	1.81
20-24	40	5.67	35	4.82	75	5.24
25-29	48	6.97	53	7.66	101	7.32
30-34	52	7.18	48	6.62	100	6.90
35-39	44	6.51	56	8.32	100	7.41
40-44	28	4.36	30	4.58	59	4.55
45-49	18	3.34	25	4.45	43	3.91
50-54	25	5.89	33	7.38	58	6.66
55-59	20	5.47	33	8.84	53	7.17
60-64	22	6.03	37	10.22	59	8.12
65-69	24	6.80	40	12.30	64	9.44
70-74	30	10.24	34	14.22	65	12.22
75-79	19	8.28	35	21.56	54	13.78
80-84	17	11.22	26	29.40	43	17.92
85+	7	6.03	13	27.18	20	12.20
Unknown	8		12		20	
Total	439	5.00	541	6.21	983	5.62

1. Totals include three notifications with unknown sex.

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

Site	Females		Males		Total[1]	
	Notifications	% of known	Notifications	% of known	Notifications	% of known
Pulmonary	202	62.0	301	74.9	505	69.2
Pleural	6	1.8	19	4.7	25	3.4
Lymphatic	66	20.2	27	6.7	93	12.7
Bone/Joint	11	3.4	9	2.2	20	2.7
Genito-urinary	6	1.8	15	3.7	21	2.9
Miliary	3	0.9	9	2.2	12	1.6
Meningeal	3	0.9	4	1.0	7	1.0
Peritoneal	3	0.9	2	0.5	5	0.7
Other	26	8.0	16	4.0	42	0.6
Unknown	113		139		253	
Total	439		541		983	

1. Totals include three notifications with unknown sex.

an increase in the total notification rate of 5.5%, but compared with 1990, there were decreases of 0.4% and 2.9%, respecitively. The recent static pattern of notification rates contrasts with the fall in the rates which occurred between the mid-1950s and the mid-1980s (Figure 2).

Age and sex distribution

There were 541 notifications of new disease for males and 439 for females (M:F ratio 1.00:0.82), corresponding to rates of 6.21 per 100,000 and 5.00 per 100,000 respectively (M:F ratio 1.00:0.81). The highest number of new cases was reported for the 20 to 39 years 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 25 to 39 year age group; the second was in the over 70 years age group. The highest age group specific rates were in the 80 to 84 years age group for persons (17.92), males (29.40) and females (11.22).

Principal site of disease

The principal site of disease was reported for 730 notifications of new disease (74.3%). Of these, 505 (69.2%) were pulmonary and 93 (12.7%) were lymphatic (Table 4). As reported for 1991[1], pulmonary disease was more common in males and lymphatic disease was more common in females. Pulmonary disease occurred mainly in persons over the age of 40 years (280; 57% of those with pulmonary disease and known age). In contrast, lymphatic disease was reported mainly for persons under the age of 40 years (65; 71% of those with lymphatic disease and known age).

Mycobacterial species

The causative organism was reported for 716 notifications of new disease (72.8%). *M. tuberculosis* was reported for 692 (70.4%), presumed *M. tuberculosis* for 24 (2.4%), *M. bovis* for 4 (4.1%) and *M. africanum* for one (0.1%).

Methods of diagnosis

Overall, 536 (54.5%) notifications of new cases of tuberculosis were culture confirmed (Table 5). The proportion of notifications culture confirmed varied from 96.2% in Queensland to 35.7% in the Australian Capital Territory and Western Australia.

Table 5. Notifications of culture confirmed new cases of tuberculosis, by State or Territory

State or Territory	Notifications culture confirmed	Total notifications	% of total
ACT	5	14	35.7
NSW	181	415	43.6
NT	23	32	71.9
Qld	100	104	96.2
SA	41	58	70.7
Tas	9	15	60.0
Vic	147	261	56.3
WA	30	84	35.7
Total	536	983	54.5

Table 6. Notifications of new cases of tuberculosis, by reported method of diagnosis

	Notifications	% of total[1]
Radiology	480	48.8
Microscopy	238	24.2
Histology	181	18.4
Tuberculin test	185	32.6
Clinical signs	369	65.0
Culture	536	54.5

1. Total for those States or Territories reporting the diagnostic method. More than one method diagnosis could be reported for each notification.

Microscopy, histology, tuberculin testing, radiology and clinical signs were also able to be reported as methods of diagnosis for each notification. At least one diagnostic method was reported for 789 notifications (80.3%); clinical signs, culture and radiology were the most common (Table 6). Of the 536 notifications diagnosed by culture, 356 (36.2%) were also diagnosed by radiology. A further 124 (12.6%) were diagnosed by radiology alone.

The 323 notifications not reported as diagnosed by either culture or radiology had no information reported (194; 19.7%) or were reported as diagnosed by other methods (80 by unspecified laboratory methods, 19 by histology, 16 by microscopy, four by histology, tuberculin test and clinical signs, three by histology and clinical signs, two by tuberculin test and clinical signs, two by clinical signs alone, one each by microscopy and clinical signs, microscopy and histology, and microscopy, tuberculin test and clinical signs).

Antimicrobials

For each notification, the use of antimicrobials at the notification date was able to be reported separately for isoniazid, rifampicin, pyrazinamide, ethambutol, streptomycin, ethionamide, prothionamide, cycloserine and others. Information was reported for 681 notifications of new disease (69.3%). The most common drug combination reported was isoniazid, rifampicin, pyrazinamide and ethambutol (Table 7). They were reported for 446 notifications (65.5% of those with information); a further six notifications reported those four drugs in combination with others (a total of 452 or 66.4%).

BCG status

BCG status was reported for 423 notifications of new cases of tuberculosis (43.0%). Of these, 170 had previously had BCG vaccination (40.2%) and 253 were BCG negative.

HIV status

HIV status was reported for only 51 notifications of new tuberculosis cases (5.2%). Twelve patients were HIV positive, ten males (aged 26, 26, 29, 32, 40, 42, 43, 45, 46 and 56 years) and two females (31 years and 78 years).

Ethnicity/Aboriginality

Ethnicity/Aboriginality was not reported consistently by all States and Territories and is not included in this report.

Country of birth

Information on the country of birth was included in 824 notifications (83.4%). There were 218 notifications for persons born in Australia, made at a rate of 1.62 per 100,000 Australian born population per year.

A total of 606 notifications were for persons born overseas (Table 8), corresponding to a rate of 15.10 per 100,000 overseas born population. The highest number of notifications were received for persons born in Vietnam (163), the Philippines (62) and China (52). The highest notification rates were for persons born in Vietnam (122.6 per 100,000 Vietnam born population), Indonesia (77.3 per 100,000), the Philippines (74.3 per 100,000), 'other' South Asia (mainly Pakistan; 71.9 per 100,000) and China (56.9 per 100,000).

Table 7. Antimicrobials used at notification date

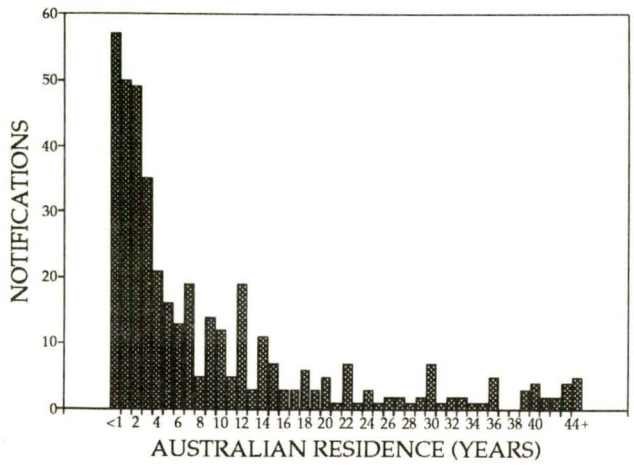
Drug(s)	Notifications	% of known
Isoniazid	5	0.7
Isoniazid + Rifampicin	33	4.8
Isoniazid + Pyrazinamide	4	0.6
Isoniazid + Ethambutol	1	0.1
Rifampicin + Pyrazinamide	1	0.1
Isoniazid + Rifampicin + Pyrazinamide	141	20.7
Isoniazid + Rifampicin + Ethambutol	24	3.5
Isoniazid + Pyrazinamide + Ethambutol	2	0.3
Rifampicin + Pyrazinamide + Ethambutol	3	0.4
Isoniazid + Rifampicin + Pyrazinamide + Streptomycin	1	0.1
Isoniazid + Rifampicin + Pyrazinamide + Ethambutol	446	65.5
Isoniazid + Rifampicin + Pyrazinamide + Ethambutol + Streptomycin	3	0.4
Isoniazid + Rifampicin + Pyrazinamide + Ethambutol + Ethionamide	1	0.1
Isoniazid + Rifampicin + Pyrazinamide + Ethambutol + Ciprofloxacin	1	0.1
Isoniazid + Rifampicin + Pyrazinamide + Ethambutol + Ethionamide + Prothionamide	1	0.1
Nil/not commenced/deceased	14	2.1
Unknown	302	
Total	983	

Table 8. Notifications of new cases of tuberculosis and rate per 100,000 population, by country of birth

Country/Area	Notifications	Rate per 100,000 population[1]	% of known
Fiji	12	34.1	1.5
New Zealand	8	3.2	1.0
Other Oceania	14	27.6	1.7
Greece	8	5.5	1.0
Italy	15	5.6	1.8
Poland	7	10.1	0.8
UK & Ireland	29	2.3	3.5
Former USSR	8	17.7	1.0
Former Yugoslavia	20	11.8	2.4
Other Europe	20	4.3	2.4
Lebanon	5	6.3	0.6
Turkey	4	12.5	0.5
Other Middle East	4	4.5	0.5
Indonesia	28	77.3	3.4
Malaysia	11	13.3	1.3
Philippines	62	74.3	7.5
Vietnam	163	122.6	19.8
Other South-East Asia	32	38.8	3.9
China	52	56.7	6.3
Hong Kong and Macao	15	20.2	1.8
Other North-East Asia	12	19.9	1.5
India	34	48.4	4.1
Sri Lanka	6	14.1	0.7
Other South Asia	10	71.9	1.2
Americas	12	7.4	1.5
Africa	15	13.9	1.8
Overseas total	606	15.10	73.5
Australia	218	1.62	26.5
Unknown	159		
Total	983	5.62	

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

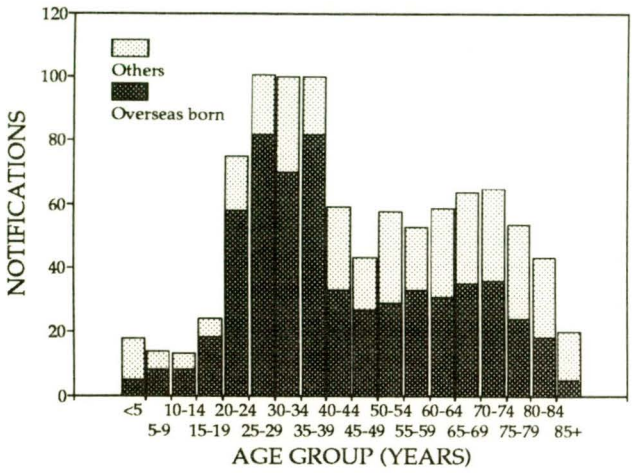
Figure 3. Notifications of tuberculosis in persons born overseas, by length of residence in Australia



The length of time that overseas born persons had been resident in Australia was reported for 415 notifications (68.5%). They ranged from less than one year (57 notifications) to 78 years; the median was four years (Figure 3).

The age and sex distributions of the overseas born notifications were different to those of the total notifications. There were 308 males notified and 298 females (M:F ratio 1.00:0.97). The peak in number of notifications occurred in the 20 to 39 year age group as for total notifications (Figure 4), but there were two equal peaks in notification rates, one in the 30 to 39 year age group and the other in the 70 to 84 year age group (Figure 5).

Figure 4. Notifications of new cases of tuberculosis, by age group and place of birth[1]



1. Others comprise Australian born persons and persons whose place of birth was not reported.

Figure 5. Notifications of new cases of tuberculosis in overseas born persons per 100,000 overseas born population, by age group

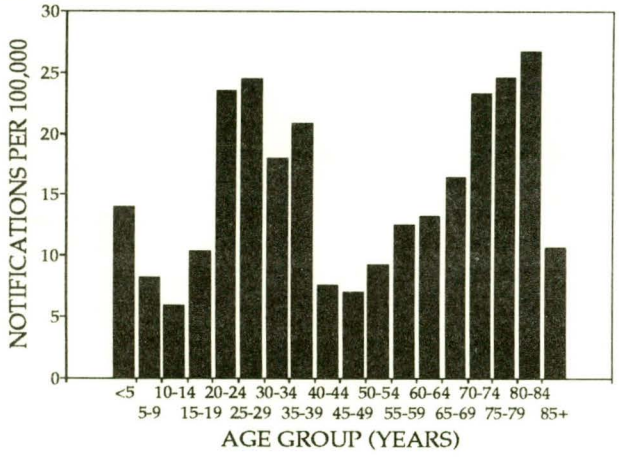
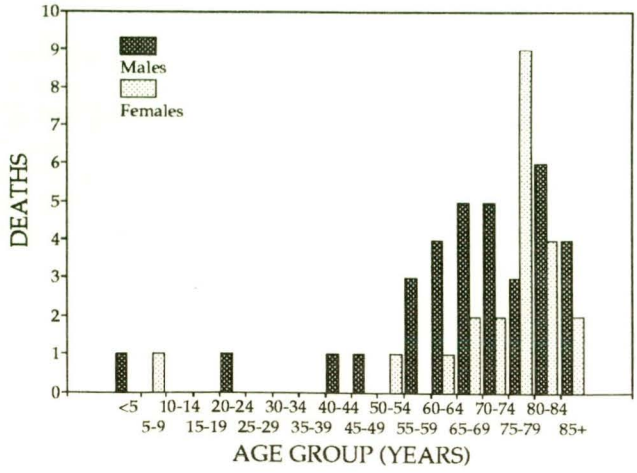


Figure 6. Tuberculosis deaths, 1992, by age group and sex



Reactivations

Twenty-eight reactivated cases of tuberculosis were notified. There were 10 females and 18 males. Ages ranged from 21 years to 93 years; most (19) were over the age of 60 years. For 25, country of birth was reported. Six were born in Australia, four in China, three in the United Kingdom/Ireland, three in Vietnam, two in Hong Kong, two in Papua New Guinea and five elsewhere overseas.

Deaths

The Australian Bureau of Statistics reported 56 tuberculosis deaths in 1992. Thirty-four were males (29 pulmonary, 2 miliary, one each primary, other respiratory and and genitourinary) and 22 were females (19 pulmonary and one each meningeal, bones/joints and miliary). Most deaths were for persons over the age of 75 years (Figure 6). The number of deaths reported each year since 1986 has ranged between 54 and 63.

Atypical mycobacterial infection

Atypical mycobacterial infection notifications were only received from five States and Territories and are therefore not reported in detail. There was a total of 181 notifications. This corresponded to a rate of 2.73 per 100,000 population per year, higher than the rates reported for the period 1986 to 1990[3]. Organisms reported were *M. kansasii* (2 notifications), *M. avium/intracellulare* (123), *M. cheloneifortuitum* (30), *M. scrofulaceum* (11) and others/unknown (15). HIV status was reported for 41; 39 were HIV positive.

Discussion

The results from this surveillance system should be interpreted with caution as the proportion of cases notified is unknown and may vary from State to State, as may the completeness of the information in each notification. The results should also be compared cautiously with those from the National Notifiable Diseases Surveillance System (NNDSS)[4] and those from the tuberculosis laboratory surveillance system[5]. The NNDSS reported 970 tuberculosis notifications for 1992, but has a different case definition and reporting arrangements. The laboratory based system has reported more culture confirmed cases; this may be due to deficits in information supplied in notifications and/or to differences in the datasets arising from diagnosis delays.

The rate of tuberculosis notification has remained static in Australia over the last few years; rates have not increased as in the United States[6]. The overall rate (5.78 per 100,000) compares favourably with those reported for New Zealand (9.2 per 100,000)[7], France (15.9)[8], the United States (10.5)[6], Canada (7.7)[9], and the United Kingdom (10.5)[9]. The proportion of notifications made for overseas born persons increased in 1992 (73.5%) over 1991(66.0%). This proportion has generally increased since 1986, when it was 60.3%.

Only 54.5% of notifications were reported as culture confirmed, many fewer than in 1991 (74.7%). However,

there was a discrepancy between the number reported as culture confirmed (536) and the number for which the mycobacterial species was reported (716) which may have been related to different reporting formats and codes used by some States. More information on the 80 reported as diagnosed by unspecified laboratory methods would have been useful in helping to resolve this issue.

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LABORATORY SURVEILLANCE OF *MYCOBACTERIUM TUBERCULOSIS* ISOLATES IN AUSTRALIA, 1992

Margaret Curran[1], *David Dawson*[2] *and David Cheah*[1]

Introduction

In recent years certain parts of the world, notably the United States and Africa, have experienced an increase in the incidence of tuberculosis concurrently with the HIV/AIDS epidemic[1,3,5].

Mycobacterium tuberculosis is well known for its ability to rapidly develop resistance to anti-tuberculosis drugs, thus compromising both treatment and control programs. In the past this effect has been minimised by the adoption of combination drug therapy, and the continuation of treatment until cure[9]. In the United States and Europe recent outbreaks due to multi-drug resistant tuberculosis have been reported, frequently in hospitals treating AIDS patients, and in penal institutions[5].

The first line drugs used in the treatment of tuberculosis are isoniazid, rifampicin, ethambutol, streptomycin, and pyrazinamide. Organisms resistant to isoniazid and rifampicin, with or without resistance to other drugs, are said to be multi-drug resistant[5].

Methods

In Australia *Mycobacterium tuberculosis* isolates are referred by diagnostic laboratories to one of the five tuberculosis reference laboratories located in New South Wales, Queensland, South Australia, Victoria and Western Australia for further identification and drug susceptibility testing. Information is collected by each of the reference laboratories in questionnaire format and analysed using EpiInfo version 5.1[8]. Included is year of birth, sex, State or Territory of residence, HIV status, site of specimen collection and antibiotic susceptibility patterns.

1. Department of Human Services and Health, Canberra.
2. Special Interest Group in Mycobacteria, Australian Society for Microbiology.

Table 1. Drug resistance of *Mycobacterium tuberculosis* complex isolates, 1992

Drug	Number tested	Number of resistant isolates	% of tested isolates resistant	% of total isolates resistant
Isoniazid	604	29	4.8	4.8
Rifampicin	605	1	0.2	0.2
Streptomycin[a]	417	19	4.6	3.1
Ethambutol	605	2	0.3	0.3
Pyrazinamide[b]	312	7	2.2	1.2
Isoniazid and Rifampicin*	603	2	0.3	0.3
Isoniazid and Ethambutol	603	1	0.2	0.2
Streptomycin[a] and Isoniazid	415	8	1.9	1.3
Streptomycin[a] and Ethambutol	416	1	0.2	0.2
Streptomycin[a], Isoniazid and Rifampicin*	417	3	0.7	0.5
Streptomycin[a], Isoniazid and Ethambutol	417	1	0.2	0.2
Streptomycin[a], Isoniazid, Rifampicin and Ethambutol*	417	1	0.2	0.2
TOTAL		75		

* Multi-drug resistant.
a. 31% of isolates not streptomycin sensitivity tested.
b. 49% of isolates not pyrazinamide sensitivity tested.

The pattern of resistance for each isolate, and demographic data for each patient are collated and analysed annually as a joint project of the Special Interest Group in Mycobacteria of the Australian Society for Microbiology and the Commonwealth Department of Human Services and Health.

The annual rate was calculated using the estimated mid-year population supplied by the Australian Bureau of Statistics.

Results

A total of 606 *Mycobacterium tuberculosis* isolates was reported from the five reference laboratories during 1992. The overall rate of bacteriologically proven *M. tuberculosis* was 3.6 cases per 100,000 population.

With respect to HIV status, 10 patients (2%) were known to be antibody positive, 497 (82%) antibody negative and 99 (16%) of unknown status.

The species was identified as *M.tuberculosis* in 598 (98.7%) of cases, *M. africanum* in two (0.3%) and *M.bovis* in six (1%).

In 1992 more than 99% of isolates were tested for susceptibility to isoniazid, rifampicin and ethambutol. Sixty-nine per cent of isolates were tested for streptomycin susceptibility (streptomycin is not included in the current standard regimen) and 52% for pyrazinamide susceptibility.

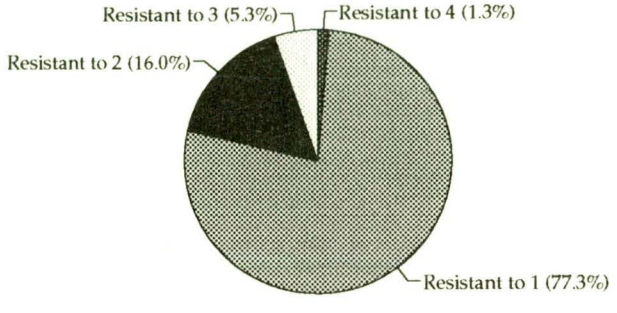
Of the 606 isolates tested 75 (12%) were resistant to one or more drug (Table 1). Of these, 58 (78%) were resistant to one, and 17 (22%) were resistant to two or more drugs (Figure).

Forty-five isolates (7.4%) were resistant to isoniazid, 29 (4.8%) to isoniazid alone, and 16 (2.6%) to both isoniazid and other antimicrbials (Table 1).

Rifampicin resistance occurred in seven isolates (1.2%), one (0.2%) being resistant to rifampicin alone, the remaining six (1%) being resistant to rifampicin plus other drugs.

For streptomycin, 189 isolates (31.2%) were of unknown susceptibility whilst 33 (5.4%) were resistant, 19 (3.1%) to streptomycin alone, and 14 (2.3%) in combination with other drugs.

Figure. Proportion of resistant isolates resistant to the stated number of anti-tuberculosis drugs



Ethambutol resistance occurred in six isolates (1%), two (0.3%) being resistant to ethambutol alone, the remaining four (0.8%) also resistant to other drugs.

For pyrazinamide, seven (1.2%) isolates were resistant, 294 (48.5%) being of unknown susceptibility to this drug.

Six isolates (1%) were multi-drug resistant, that is resistant to both isoniazid and rifampicin. Of these, two were resistant to isoniazid and rifampicin only, three were resistant to isoniazid, rifampicin and streptomycin, and one was resistant to isoniazid, rifampicin, streptomycin and ethambutol. For the multi-drug resistant isolates, two patients were male, two female and two were of unknown sex; all were in the 30 to 54 year age group. Five patients were known to be HIV antibody negative; the remaining one was of unknown HIV antibody status. Ethnicity was unknown in all cases. Three patients resided in New South Wales, two in Victoria and one in Queensland.

Discussion

The involvement of all State mycobacterial reference laboratories in this surveillance scheme ensured that case ascertainment was high.

During 1992 the incidence of bacteriologically proven tuberculosis remained at 3.4 cases per 100,000 population as was the case in 1986-1988[2].

Although numbers were small, of the six patients with multi-drug resistant tuberculosis, none were known to be HIV antibody positive, thus multi-drug resistant tuberculosis does not appear to be prevalent in HIV/AIDS patients as has been documented in the United States[4] and other countries[6].

Resistance to one or more drugs was detected in 12.4% of isolates which compares favourably with figures for 1988 (12.7%)[2] and 1991 (15%)[3]. With respect to multi-drug resistance, 1% of the 1992 isolates were resistant to both isoniazid and rifampicin compared to 2% of isolates in 1991[3], thus indicating no rise in the incidence of multi-drug resistant tuberculosis in Australia during this time. A recent United States study[7] which included both new and reactivated cases found 14.2% of all isolates to be resistant to one or more drugs, and 3.5% to be multi-drug resistant.

No information is available with respect to previous anti-tuberculosis drug therapy, thus a distinction cannot be made between resistance which is primary (organisms resistant prior to treatment) and acquired (organisms which develop resistance, usually as a result of inadequate therapy).

Unsuccessfully treated patients with multi-drug resistant tuberculosis pose a major public health problem. A national surveillance system is essential to accurately monitor the frequency and patterns of drug resistant tuberculosis.

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OVERSEAS BRIEFS

In the last two weeks, the following information has been supplied by the World Health Organization (WHO).

Yellow fever update

Several areas of Brazil have been added to the WHO yellow fever infected areas list, and many have been removed. Currently infected areas are Macapa Municipio in Amapa Territory, Careiro Municipio in Amazonas State, Barra do Corda and Mirador Municipios in Maranhao State and Agua Azul do Norte, Alenquer, Sao Felix do Xingu and Tucuma Municipios in Para State. There are no longer any infected areas within Roraima Territory or within Goais, Mato Grosso, Minas Gerais and Rondonia States.

Cholera update

Parts or all of the following countries were considered cholera infected by the WHO on 2 June 1994: Afghanistan, Angola, Argentina, Belize, Benin, Bhutan, Bolivia, Brazil, Burkina Faso, Burundi, Cambodia, Cameroon, Chad, Chile, China, Colombia, Costa Rica, Cote d'Ivoire, Djibouti, Ecuador, El Salvador, French Guiana, Ghana, Guatemala, Guinea, Guyana, Honduras, India, Indonesia, Iran, Kenya, Laos, Liberai, Malawi, Malaysia, Mali, Mauritania, Mexico, Mozambique, Myanmar, Nepal, Nicaragua, Niger, Nigeria, Panama, Peru, Rwanda, Soa Tome and Principe, Somalia, Sri Lanka, Suriname, Swaziland, Tanzania, Togo, Tuvalu, Uganda, Ukraine, Venezuela, Vietnam, Zaire and Zambia.

Somalia continues to report large numbers of cholera cases. Cases have also been reported for recent months from Brazil, Costa Rica, El Salvador, Ghana, India, Laos and Myanmar.

COMMUNICABLE DISEASES SURVEILLANCE

Virology and Serology Reporting Scheme

There were 1845 reports received in the *CDI* Virology and Serology Reporting Scheme this fortnight (Tables 8, 9 and 10).

- Twenty-nine reports of **measles** were received this period, 16 males and 13 females; 22 were in the 5 to 24 year age group. All diagnoses were by IgM detection.
- **Mumps** was reported for 4 patients this fortnight, a 17 year old male and 3 females aged 23 to 57 years. Diagnosis was by viral IgM detection in all cases.
- **Rubella** was reported for 15 patients this fortnight, 9 males and 6 females, all in the 15 to 44 year age group.
- Twenty-four reports of **hepatitis A** were received, 16 males and 8 females; 10 were in the 5 to 14 year age group.
- Positive **hepatitis B** serology was reported for 120 patients this fortnight, 68 males and 49 females (3 sex not stated). Sixty-two patients were in the 25 to 44 year age group, and 25 in the 15 to 24 year age group. Included were 5 pregnant females and one injecting drug user.
- Positive **hepatitis C** serology was reported for 197 patients this fortnight, 127 males and 69 females (one sex not stated). One hundred and forty-eight reports were for the 25 to 44 year age group. Included were 2 HIV positive patients, 3 transplant recipients and one patient with a malignancy. Also included was a 30 year old pregnant female (27 weeks' gestation) who had a history of injecting drug use, a 24 year old male who was the index case in a needle stick injury and a 42 year old male whose partner was also positive for hepatitis C.
- **Ross River virus** was reported for 65 patients this period, including 58 from Queensland. All were presumptive diagnoses (viral IgM detection). The number of reports received continued to decline in May (Figure 1).

Figure 1. Ross River virus laboratory reports, 1993 to 1994, by month of specimen collection

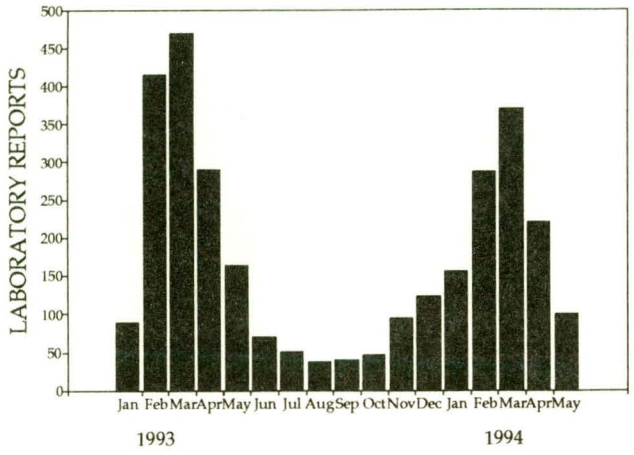
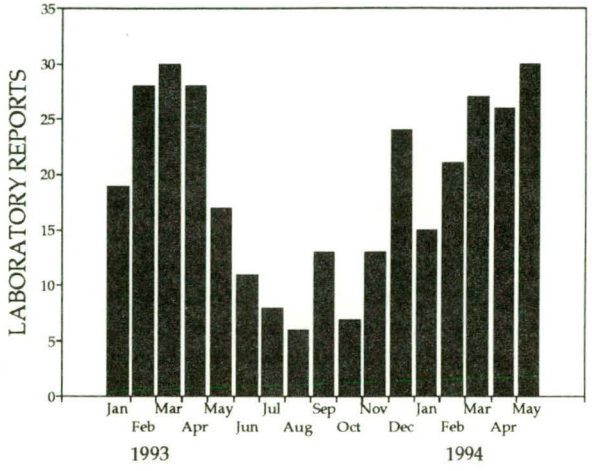
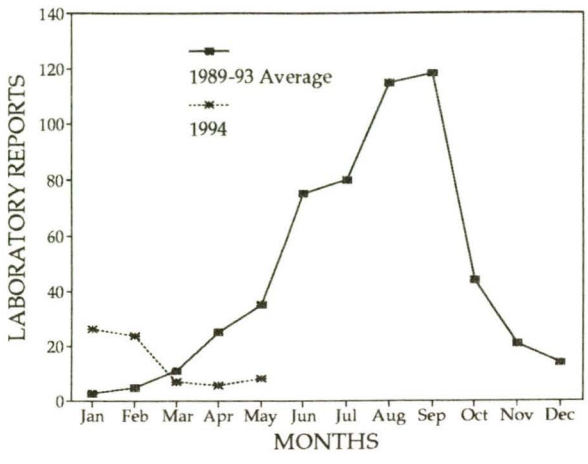


Figure 2. Barmah forest virus laboratory reports, 1993 to 1994, by month of specimen collection



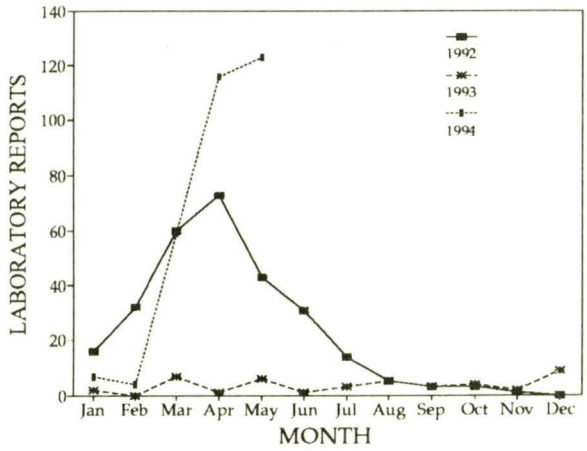
- **Barmah forest virus** was reported for 22 patients this fortnight, 19 from Queensland and 3 from New South Wales. All were presumptive diagnoses (IgM posive). More reports were received for the month of May than for any month this year (Figure 2).
- Twenty-four reports of **adenovirus** were received this fortnight, 16 virus isolations and 8 antigen detections. Included was **adenovirus type 2** isolated from the nasopharynx of a 7 month old male with an upper respiratory tract infection and **adenovirus type 3** diagnosed for a 4 year old male with Kawasaki disease. An **untyped adenovirus** was isolated from the urine of a 40 year old female renal transplant recipient.
- **Herpes simplex virus type 1** was reported for 192 patients this fortnight, 184 isolations and 8 antigen detections. Included was virus detected by immunofluorescence in a brain biopsy from a 20 male with encephalitis (nucleic acid also detected in CSF). This virus was also isolated from the eyes of 30 and 48 year old males with eye disease.
- One hundred and ninety-seven reports of **herpes simplex virus type 2** were recieved this period, one diagnosed by antigen detection, the remainder by virus isolation.
- There were 59 reports of **cytomegalovirus** this fortnight, 40 virus isolates, 2 antigen detections, 16 IgM detections and one single high titre. Included were 3 transplant recipients, one patient with a malignancy, one pregnant female and 2 HIV positive patients (one a 29 year old male with retinitis).
- **Varicella-zoster virus** was reported for 50 patients this fortnight, 18 virus isolations, 22 antigen detections, 8 IgM detections and 2 single high titres.
- **Papovavirus** was isolated from the urine of a 43 year old bone marrow transplant recipient (identified by electron microscopy).
- Three reports of **parvovirus** were received this fortnight including a 37 year old Western Australian female with a measles-like illness. All diagnoses were by IgM detection.
- **Coxsackievirus B2** was isolated from the faeces of a 3 year old male with acute flaccid paralysis.
- **Echovirus type 11** was isolated from the CSF of a one month old male with pyrexia.
- Forty-seven untyped **enterovirus** reports were received this period, 45 virus isolations and 2 nucleic acid detections. Included were 5 reports of meningitis, 3 of other CNS disease, 10 of respiratory tract infection, 8 reports of gastrointestinal diease and one report of skin disease.
- **Rhinovirus** was reported for 36 patients this fortnight, 28 of whom were under the age of 4 years.
- **Influenza A** was reported for 9 patients this fortnight. Three were diagnosed by immunofluorescence on nasopharyngeal specimens, a 6 month old male from New South Wales and a one year old female and a 48 year old male, both from Victoria. A thirty-six year old female from New South Wales had a fourfold rise in titre. Five single high titres were also reported, all from Western Australia (10 year old male, 25 year old male, 30 year old female, 56 year old female and 63 year old male). The number of reports received remained low for the time of year through May (Figure 3).
- One report of **influenza B** was received, for a 56 year old female from Western Australia (single high titre).

Figure 3. Influenza A laboratory reports, 1989 to 1993 average and 1994, by month of specimen collection



- **Parainfluenza virus type 1** was reported for 51 patients this period, 44 of whom were under the age of 4 years. Twenty-seven diagnoses were by virus isolation and 24 by antigen detection. The number of reports received this year is higher than in 1992, the last year when this virus was epidemic (Figure 4).
- Fourteen reports of **parainfluenza virus type 3** were received this fortnight, all under the age of 4 years. Diagnosis was by virus isolation (3) and antigen detection (11). Included was a report of a detection by immunofluorescence in the nasopharynx of a 3 month old male with pneumonia who also had respiratory syncytial virus.
- Untyped **parainfluenza virus** was reported for 8 patients this period, 7 under the age of 4 years. Included was a 2 month old female with pneumonia for whom respiratory syncytial virus was also reported.
- Three hundred and seventeen reports of **respiratory syncytial virus (RSV)** were received this fortnight, 204 for patients under one year of age and a total of 290 under the age of 4 years. Diagnosis was by virus isolation (81), antigen detection (234) and single high titre (2). Included was a 2 year old female with chickenpox, a 15 month old male with viral excerbation of fibrosing alveolitis and a set of one month old twins.
- **Rotavirus** was reported for 74 patients this period, 34 males and 38 females (2 sex not stated). All patients were less than 4 years of age, 24 being in the under one year age group. The number of reports increased in May.
- Ninety-one reports of *Chlamydia trachomatis* were received this fortnight, 70 females (60 in the 15 to 44 year age group) and 20 males (1 sex not stated). Diagnosis was by culture (78), antigen detection (11) and single high titre (2). Included were reports of detections in the nasopharynx of a one week old male with pneumonia and in the eye of a one year old male (both diagnosed by immunofluorescence).
- Thirty-nine reports of *Mycoplasma pneumoniae* were received, 12 males and 27 females, age range one to 64 years.

Figure 4. Parainfluenza virus laboratory reports, 1992 to 1994, by year and month of specimen collection



- **Q fever** was reported for 14 patients this period, all from Queensland. There were 8 males and 6 females, age range 20 to 63 years. Diagnosis was by IgM detection (13) and fourfold rise in titre (one).
- Thirty-one reports of ***Bordetella*** were recieved this fortnight, 29 ***Bordetella pertussis*** and 2 ***Bordetella* species**. Diagnosis was by IgA detection (24), IgM detection (4), isolation (2), and antigen detection (1).
- Positive **syphilis** serology was reported for 15 patients this period, 8 males and 5 females (2 sex not stated), age range 15 to 74 years.

Australian Sentinel Practice Research Network

Data for weeks 24 and 25 are included in this issue of *CDI* (Table 1). There were 9039 consultations reported for week 24 and 10306 for week 25. Influenza was reported at a markedly higher rate this fortnight than previously this year. Gastroenteritis continues to be reported at rates between 11 and 15 per 1000 encounters. The rate of reporting of chickenpox continues to be higher than earlier in the year, and that for pertussis is lower.

Table 1. Australian Sentinel Practice Research Network, weeks 24 and 25, 1994

Condition	Week 24, to 19 June 1994		Week 25, to 26 June 1994	
	Reports	Rate per 1000 encounters	Reports	Rate per 1000 encounters
Influenza	151	16.7	257	24.9
Measles	4	0.4	2	0.2
Chickenpox	19	2.1	22	2.1
Pertussis	2	0.2	2	0.2
Gastroenteritis	100	11.1	137	13.3

National Influenza Surveillance 1994

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

Overall this fortnight, there was a small number of laboratory reports of influenza received, mainly influenza A. Not many influenza laboratory reports have been received in the last few weeks, however, Princess Margaret Hospital in Perth isolated 10 influenza A viruses in the week ending 7 July. They have not yet been incorporated into the *CDI* Virology and Serology Reporting Scheme, but will be included next fortnight. The rate of influenza reporting from sentinel general practitioner surveillance increased this fortnight and the reported rate of absenteeism decreased.

Sentinel general practitioner surveillance (Figure 5)

- The **Australian Sentinel Practice Research Network** reported for 9039 consultations for week 24 (ending 19 June) and 10306 consultations for week 25 (ending 26 June). There were 151 reports of influenza in week 24 (16.7 per 1000 encounters) and 257 reports in week 25 (24.9 per 1000 encounters). The rate rose markedly in the last fortnight.
- The **New South Wales Sentinel General Practitioner Scheme** reported for the weeks ending 19 June and 26 June. The number of influenza cases (and the number of cases per 1000 consultations) each week were 185 (20.5) and 47 (12.7). The rate of influenza reporting remains higher than earlier in the year.
- The **Australian Capital Territory Sentinel General Practitioner Scheme** reported 48 influenza consultations for the week ending 25 June (36.9 per 1000 consultations) and 58 for the week ending 2 July (46.3 per 10000 consultations). The rates rose markedly in this fortnight.
- The **Victorian Sentinel Practitioner Scheme** reported 35 influenza cases in the fortnight ending 27 June. They were reported at a rate of 15 per 1000 consultations, the same as for the previous fortnight.

Absenteeism surveillance (Figure 6)

- **Telecom Australia Absenteeism Surveillance** reported absenteeism rates of 1.30% on 22 June and 0.4% on 29 June. Recent absenteeism rates reported by this Scheme are lower than those reported earlier in the year.
- **New South Wales Schools Absenteeism Surveillance** data was received for the weeks ending 19 June and 26 June. The average student absenteeism rate per week was 5.9% and 0.9% respectively.
- There were no data supplied for the **Australian Capital Territory Schools Absenteeism Surveillance**, due to school holidays.

Laboratory surveillance

- The ***CDI* Virology and Serology Reporting Scheme** has received 80 reports of influenza A so far this year, 25 other than single high titres (Figure 7). Most were in the first 3 months of the year. This fortnight, influenza A was reported for 9 patients. Three were diagnosed by immunofluorescence on nasopharyngeal specimens, a 6 month old male from New South Wales, and a one year old female and a 48 year old male both from Victoria. A thirty-six year old female from New South Wales had a fourfold rise in titre. Five single high titres were also reported, all from Western Australia (10 year old male, 25 year old male, 30 year old female, 56 year old female and 63 year old male). The number of reports received remained low for the time of year through May.

Figure 5. Sentinel general practitioner influenza cases per 1000 encounters, by week and scheme

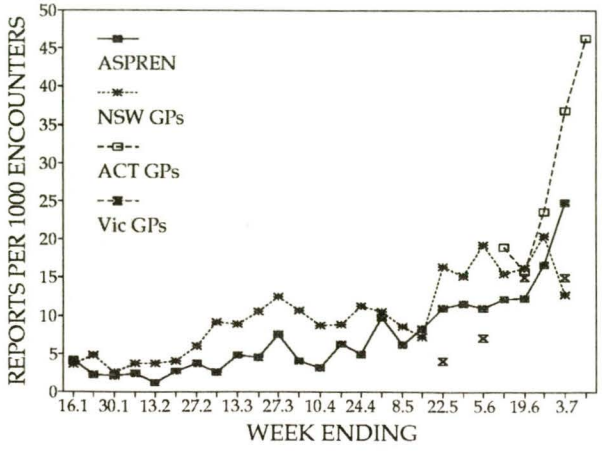


Figure 6. Absenteeism rates per 100 employees or students, by week and scheme

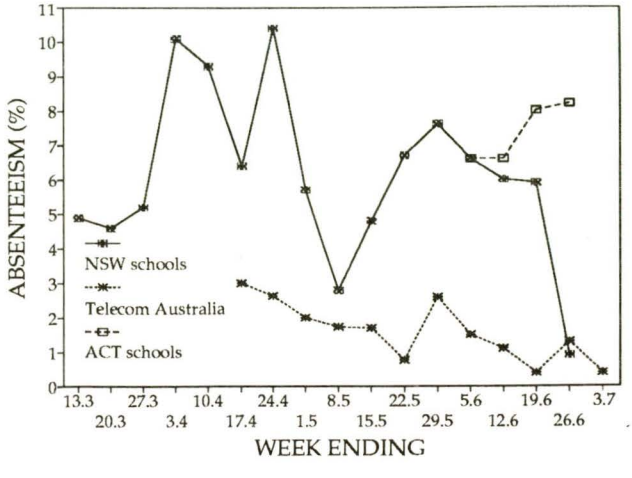


Figure 7. Influenza A laboratory reports, 1994, by method of diagnosis and week of specimen collection

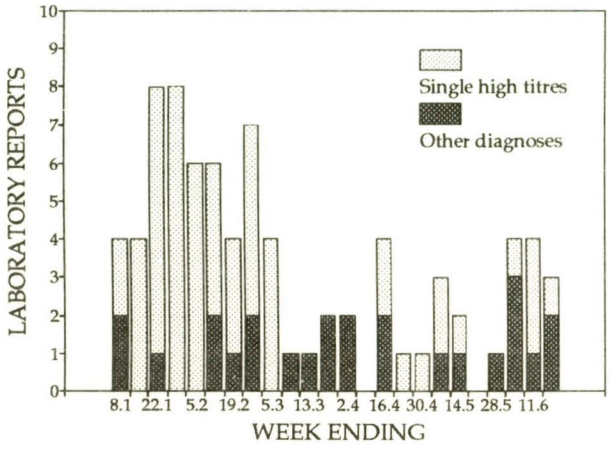
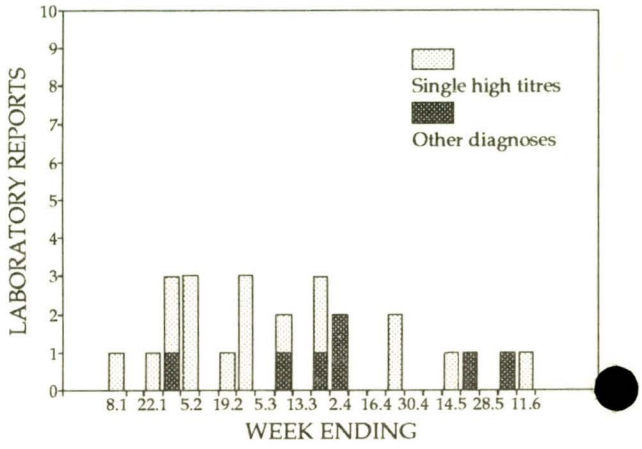


Figure 8. Influenza B laboratory reports, 1994, by method of diagnosis and week of specimen collection



There have been 25 reports of influenza B so far this year, 7 with diagnoses other than single high titre, but none of these since May (Figure 8). One report of influenza B was received this fortnight, for a 56 year old female from Western Australia (single high titre).

Other surveillance

- **Victorian total deaths surveillance:** there were 1095 deaths reported in Victoria in the fortnight ending 27 June. This was a rate of 2.4 per 10,000 population, lower than the rates reported for the previous fortnights of this surveillance this year.
- **Victorian hospital admissions:** there were 35 admissions for influenza and/or pneumonia in two Victorian hospitals in the fortnight ending 27 June, at a rate of 0.8 per 100 admissions. One hospital was unable to provide data this fortnight.

Sterile Sites Surveillance (LabDOSS)

There were 192 reports of recent sepsis this fortnight, provided by 8 laboratories: John Hunter Hospital, New South Wales 21; South West Area Pathology Health Service, New South Wales 34; ICPMR, Westmead, New South Wales 35; IMVS, South Australia 48; Sullivan Nicolaides, Queensland 9; Northern Tasmanian Pathology Service, Tasmania 2; Royal Hobart Hospital, Tasmania 32; Woden Valley Hospital, ACT 11.

A further 28 cases of invasive sepsis in May were reported (ICPMR, Westmead, New South Wales 22; IMVS, South Australia 2; and Woden Valley Hospital, ACT 4). Included in these reports was one case of *Comamonas* species sepsis in an immuncompromised 56 year old female. Reports of sepsis prior to the first day of the previous month are included in the annual data file.

Organisms reported 5 or more times from blood are detailed in Table 2. Other blood isolates not included in Table 2 were:

Gram positive: 1 *Listeria monocytogenes* (72 year old male from NSW), 3 Group B *Streptococcus*, 1 Group G *Streptococcus*, 3 *Streptococcus* 'milleri', 1 *Streptococcus mitis*, 1 *Streptococcus oralis*, 2 *Streptococcus sanguis*, 1 *Streptococcus salivarius*, 4 *Streptococcus* species.

Figure 9. LabDOSS reports of blood isolates, by age group

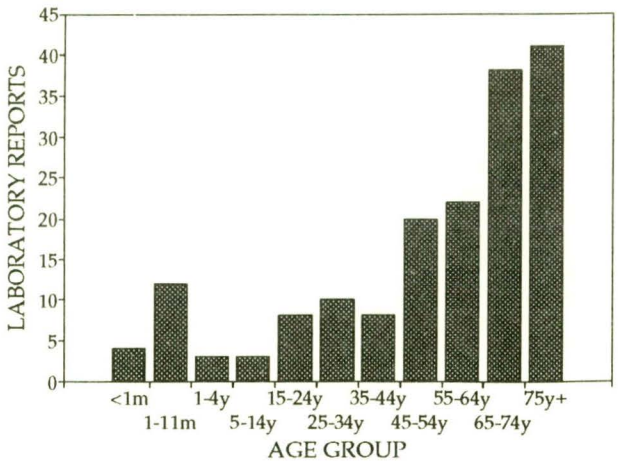


Table 2. LabDOSS reports of blood isolates, by organism and clinical information

Organism	Clinical information						Risk factors					Total[1]
	Bone/joint	Lower respiratory	Endocarditis	Gastrointestinal	Urinary tract	Skin	Surgery	Immunosuppressed	IV line	Hospital acquired	Neonatal	
Staphylococcus aureus	13	1		1	1	5	7	5	4	1		35[2]
Staphylococcus epidermidis		3							1	1		8
Staphylococcus coagulase negative						2	2	3	3		1	18[3]
Streptococcus pneumoniae		5						1				10
Enterococcus species				3	1		2				1	5[4]
Escherichia coli				5				3			1	30
Klebsiella species				2	2			5				10
Proteus species					1				1			7[5]
Pseudomonas aeruginosa			1	2	1	1	2			1		7

1. Only organisms with 5 or more reports are included in this table.
2. MRSA 2.
3. *Staphylococcus auricularis* 1, *S. haemolyticus* 1, *S. warneri* 1.
4. *Enterococcus faecalis* 3, *E. faecium* 2.
5. *Proteus mirabilis* 3.

Gram negative: *1 Neisseria meningitidis* (80 year old female from NSW), 1 *Salmonella* Typhi (15 year old male from NSW), 1 *Salmonella* species (28 year old female from NSW), 3 *Haemophilus influenzae* type b (3 males with epiglotittis aged 7 months, 4 years and 53 years), 1 *Acinetobacter* species, 1 *Branhamella* species, 1 *Citrobacter diversus*, 2 *Enterobacter aerogenes*, 1 *Enterobacter cloacae*, 1 *Kingella kingae*, 1 *Providencia* species, 1 *Pseudomonas pickettii*, 2 *Serratia marcescens*, 1 *Serratia* species, 1 *Xanthomonas maltophilia.*

Anaerobes: 1 *Clostridium perfringens*, 1 *Propionibacterium* species.

Fungi: 1 *Candida albicans.*

Most blood isolates were reported for patients over the age of 60 years (Figure 9).

CSF isolates and/or meningitis reports

There were 9 reports of CSF isolates and/or meningitis (Table 3).

Isolates from sites other than blood or CSF

Peritoneal fluid: 1 fungus (not further identified), 1 *Serratia* species, 1 *Staphylococcus aureus.*

Joint fluid: 2 *Staphylococcus aureus*, 1 coagulase negative *Staphylococcus*, 2 Group B *Streptococcus*, 2 *Streptococcus pneumoniae.*

Other: 1 *Escherichia coli*, 1 *Pseudomonas aeruginosa*, 1 *Staphylococcus aureus*, 2 coagulase negative *Staphylococcus.*

Table 3. LabDOSS reports of meningitis and/or CSF isolates, by organism and age group

	<1 month	1-11 months	1-4 years	15-24 years	25-34 years	35-44 years	75+ years	Total
Escherichia coli				1[1]				1
Staphylococcus aureus		1[1]						1
Staphylococcus epidermidis					1			1
Staphylococcus haemolyticus						1[2]		1
Staphylococcus warneri		1						1
Group B *Streptococcus*	1							1
Haemophilus influenzae			2					2
Cryptococcus neoformans							1	1

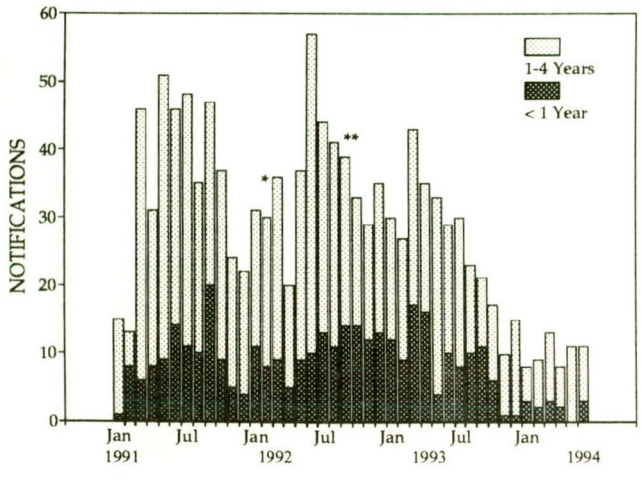
1. Immunocompromised.
2. Recent neurological surgery.

National Notifiable Diseases Surveillance System, 12 June to 25 June 1994

There were 1934 notifications received in the period. (Tables 4, 5 and 6 and Figure 12).

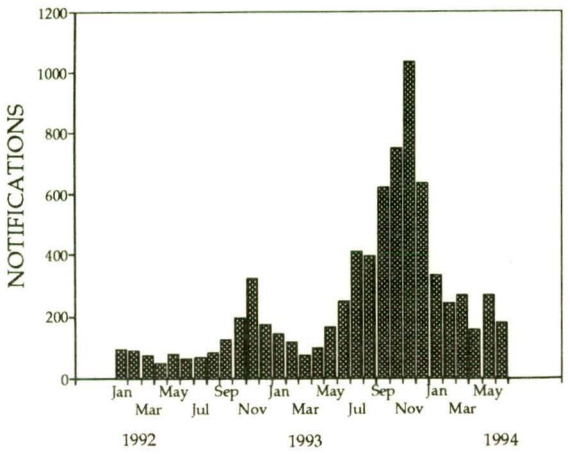
- Ninety-eight notifications of **Ross River virus infection** were reported; 50 cases were male, 48 cases were female, and sex was unrecorded for one case. The cases ranged in age from the 10-14 to the 70-74 years age group. The majority of cases (84%) were resident in Queensland.
- A single case of **brucellosis** was reported for a male resident in Brisbane Statistical Division. The age of the case was unrecorded. The onset date was in February.
- Seventy-two cases of **gonococcal infection** were reported in the period; 48 cases were male, 21 cases were female, and the sex of three cases was unrecorded. Cases ranged in age from the 0-4 to the 60-64 years age group. A single case was recorded in a male aged less than one year.
- Eight notifications of ***Haemophilus influenzae* type b infection** were received (Figure 10). Four cases were male and 4 were female. Recorded ages were between the 0-4 and the 50-54 years age groups with 5 cases aged less than 5 years. All onset dates were in June. There were no apparent clusters.
- There were 75 cases of **hepatitis A** reported; 38 cases were male and 37 cases were female. Cases ranged in age from the 0-4 to the 65-69 years age group with 68% of cases aged less than 30 years. The highest number of cases were recorded in the statistical divisions of Brisbane (17) and Far North Queensland (16).
- There were 82 notifications of **hepatitis B** received; 5 of these cases were from States that report incident cases only. Three incident cases were male and 2 were female and these cases ranged in age between the 15-19 and the 30-34 years age groups.
- Four cases of **legionellosis** were reported in the period. One case was male and 3 were female. Cases were aged between the 30-34 and the 75-79 years age groups. All recorded onset dates were in June.
- There were two cases of **leptospirosis** reported. Both cases were male and they were in the 25-29 and the 35-39 years age groups respectively. Recorded onset dates were in June.
- A single case of **listeriosis** was reported for a female in the 25-29 years age group resident in the Melbourne Statistical Division. The recorded onset date was in June.
- Thirty-three cases of **malaria** were reported; 19 cases were male and 14 cases were female. Recorded ages ranged from the 15-19 to the 75-79 years age group. Three of the cases were resident in the 'malaria receptive zone'. Onset dates were January (one), February (3), March (3), April (5), May (7), and June (14).
- **Measles** activity is decreasing since a peak last November, however, a high number of cases are still been reported from some areas (Figure 11). There were 261 cases of **measles** reported for the period; 129 males and 127 females. The sex of 5 cases was unrecorded. Cases ranged in age from the 0-4 to the 55-59 years age group with a mean age of 15.4 years. Ninety-three percent of the cases were resident in Queensland. The were 31 apparent clusters of between 2 and 26 cases each resident in the same postcode area. Onset dates were November (one), January (4), February (14), March (9), April (10), May (60), and June (163).
- Fifteen cases of **meningococcal infection** were reported. Nine cases were male and 6 were female. Cases ranged in age from the 0-4 to the 55-59 years

Figure 10. *Haemophilus influenzae* type b infection notifications by age and month of onset, January 1991 to June 1994



* PRP-D approved in February 1992.
** Infant vaccine approved in September 1992.

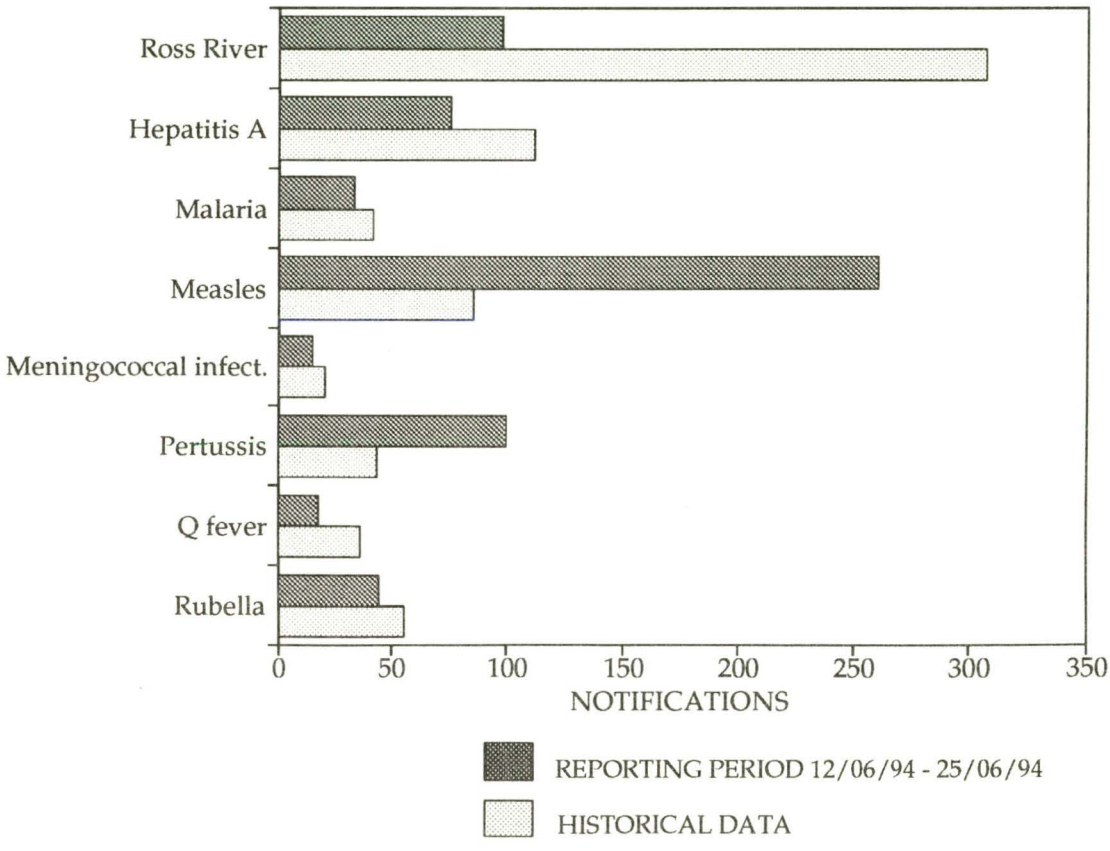
Figure 11. Measles notifictions, January 1992 to June 1994, by month of onset



age group with 8 cases aged less than five years. Onset dates were May (2) and June (13).

- There were 101 notifications of **pertussis** received in the period; 43 cases were male and 58 were female. Recorded ages ranged from the 0-4 to the 70-74 years age group with 7 cases aged less than one year. There were 13 apparent clusters of 2 or more cases each in the same postcode area. Apparent clusters were in New South Wales (6), Queensland (5), South Australia (one), and Western Australia (one). Recorded onset dates were January (one), April (4), May (35), and June (61).
- Eighteen cases of **Q fever** were reported in the period; 14 males and 4 females. Recorded ages were between the 15-19 to the 55-59 years age groups. Eight of the cases were resident in the Moreton Statistical Division in Queensland.
- There were 44 notifications of **rubella** received. Thirty cases were male and 14 were female. Cases ranged in age from 0-4 to the 45-49 years age groups with a mean age of 19.1 years. Seven cases were reported in females in the 15-44 years age group.
- There were 73 cases of **syphilis** reported in the period; 37 cases were male and 36 were female. Recorded onset dates were between the 10-14 to the 75-79 years age groups.
- There were 25 cases of **tuberculosis** reported. Thirteen cases were male and 12 cases were female. Recorded ages were between the 10-14 and the 80-84 years age group. Onset dates were in October (one), March (3), April (5), and June (10).

Figure 12. Selected National Notifiable Diseases Surveillance System reports, and historical data[1]



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

Table 4. Notifications of diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation, received by State and Territory health authorities in the period 12 to 25 June 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Diphtheria	0	0	0	0	0	0	0	0	0	0	23	12
Haemophilus influenzae b infection	0	3	0	2	2	0	0	1	8	18	106	231
Measles	3	3	7	242	2	0	3	1	261	121	1706	776
Mumps	1	0	NN	NN	0	NN	0	0	1	1	5	4
Pertussis	0	36	0	34	17	0	2	11	100	50	2688	786
Poliomyelitis	0	0	0	0	0	0	0	0	0	0	0	0
Rubella[2]	0	2	0	26	1	0	5	10	44	80	754	1536
Tetanus	0	0	0	NN	0	0	0	0	0	0	8	5

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

NN Not Notifiable.

Table 5. Notifications of other diseases[1] received by State and Territory health authorities in the period 12 to 25 June 1994

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This period 1994	This period 1993	Year to date 1994	Year to date 1993
Arbovirus infection												
Ross River virus infection	0	12	1	82	0	NN	1	2	98	100	3517	4438
Dengue	0	-	0	0	-	NN	0	NN	0	36	12	236
NEC[3]	0	4	1	21	0	0	0	0	26	16	410	338
Campylobacteriosis[4]	20	-	3	71	78	17	28	29	246	217	4478	3797
Chlamydial infection (NEC)[5]	9	NN	5	121	32	2	31	35	235	202	3103	3254
Donovanosis	0	NN	0	0	NN	NN	0	1	1	1	53	24
Gonococcal infection[6]	0	11	8	15	4	0	2	32	72	84	1460	1501
Hepatitis A	0	16	0	39	2	0	1	17	75	68	986	1041
Hepatitis B[7]	8	1	0	69	0	2	0	2	82	58	897	1275
Hepatitis C	30	1	NN	251	0	0	26	45	353	211	4245	3142
Hepatitis (NEC)	0	0	0	1	0	0	0	NN	1	2	23	39
Legionellosis	0	1	0	0	0	0	3	0	4	9	107	101
Leptospirosis	0	1	1	0	0	0	0	0	2	3	87	86
Listeriosis	0	0	NN	0	0	0	1	0	1	4	16	25
Malaria	0	11	4	9	1	0	6	2	33	24	381	335
Meningococcal infection	0	3	0	5	2	1	0	4	15	8	139	111
Ornithosis	0	NN	0	0	0	0	0	0	0	2	45	47
Q fever	0	3	0	11	4	0	0	0	18	37	320	401
Salmonellosis (NEC)	2	39	18	40	11	0	10	18	138	159	3288	2746
Shigellosis[4]	0	-	0	1	1	0	0	7	9	24	410	411
Syphilis	2	24	18	21	0	0	0	4	69	87	1067	1147
Tuberculosis	1	7	0	2	4	0	11	1	26	30	499	498
Typhoid[8]	0	0	0	0	0	0	0	0	0	1	21	26
Yersiniosis (NEC)[4]	0	-	0	8	4	0	0	0	12	16	244	227

1. For HIV and AIDS, see Tables 2 and 3, *CDI* 1994;18:317. For rarely notified diseases, see Table 6.
2. Totals comprise data from all States and Territories. Cumulative figures are subject to retrospective revision so there may be discrepancies between the number of new notifications and the increment in the cumulative figure from the previous period.
3. SA, Tas: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. WA: genital only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. Acute cases only are reported by NSW, NT, SA, Tas and WA.
8. NSW and Vic includes paratyphoid.

NN Not Notifiable.

NEC Not Elsewhere Classified.

\- Elsewhere Classified.

Table 6. Notifications of rare[1] diseases received by State and Territory health authorities in the period 12 to 25 June 1994

DISEASES	Total this period	Reporting States or Territories	Year to date 1994
Botulism	0		0
Brucellosis	1	Qld	8
Chancroid	0		0
Cholera	0		3
Hydatid infection	0		21
Leprosy	0		3
Lymphogranuloma venereum	0		0
Plague	0		0
Rabies	0		0
Yellow fever	0		0
Other viral haemorrhagic fevers	0		0

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

Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 16 to 29 June 1994, historical data[2], and total reports for the year

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
MEASLES, MUMPS, RUBELLA											
Measles virus				26			3		29	6.0	577
Mumps virus				3				1	4	2.0	43
Rubella virus		1		14					15	17.3	295
HEPATITIS VIRUSES											
Hepatitis A virus		5		10				9	24	14.5	183
Hepatitis B virus	3	25		35			14	43	120	82.8	1,314
Hepatitis C virus	9	49	1	37		15	5	81	197	127.3	2,823
ARBOVIRUSES											
Ross River virus		4		58			1	2	65	68.0	1,383
Barmah Forest virus		3		19					22	11.0	171
ADENOVIRUSES											
Adenovirus type 2		1							1	3.3	34
Adenovirus type 3							2		2	7.5	25
Adenovirus not typed/pending		9		4		1	6	1	21	42.5	642
HERPES VIRUSES											
Herpes simplex virus type 1		15	1	93		5	40	38	192	110.5	2,433
Herpes simplex virus type 2		25		104	1	4	24	39	197	149.2	2,728
Herpes simplex not typed/pending	3	8		3			1	2	17	31.8	371
Cytomegalovirus		7		36		2	11	3	59	58.0	842
Varicella-zoster virus	1	5		25			11	8	50	28.5	545
Epstein-Barr virus		8		16				5	29	56.5	730
OTHER DNA VIRUSES											
Parvovirus			1					2	3	3.8	37

Table 7. Virology and serology laboratory reports by State or Territory[1] for the reporting period 16 to 29 June 1994, historical data[2], and total reports for the year, continued

	State or Territory [1]								Total this fortnight	Historical data [2]	Total reported this year
	ACT	NSW	NT	Qld	SA	Tas	Vic	WA			
PICORNA VIRUS FAMILY											
Coxsackievirus A16		1							1	.2	34
Coxsackievirus B2							1		1	.2	18
Coxsackievirus B3							1		1	.8	3
Echovirus type 6		2					1		3	4.2	40
Echovirus type 9		1							1	7.7	5
Echovirus type 30		1					2		3	1.5	238
Poliovirus type 1 (uncharacterised)		1							1	2.2	15
Rhinovirus (all types)	1	7		4			19	5	36	27.5	491
Enterovirus not typed/pending		13		15			4	15	47	38.8	750
ORTHO/PARAMYXOVIRUSES											
Influenza A virus		2					2	5	9	39.3	161
Influenza B virus								1	1	11.5	94
Parainfluenza virus type 1	1	1		11			34	4	51	5.8	377
Parainfluenza virus type 2				1				1	2	6.2	42
Parainfluenza virus type 3		1		1			3	9	14	14.7	147
Parainfluenza virus typing pending						1	3	4	8	5.2	35
Respiratory syncytial virus	7	100		76		2	38	94	317	348.8	1,003
OTHER RNA VIRUSES											
HIV-1		1		2		1			4	2.3	51
Rotavirus	5	27				1	26	15	74	96.3	547
Small virus (like) particle								1	1	2.0	12
OTHER											
Chlamydia trachomatis not typed	3	27		33		4	2	22	91	98.0	1,350
Mycoplasma pneumoniae		3		31			4	1	39	49.5	526
Coxiella burnetii (Q fever)				14					14	17.3	171
Streptococcus group A		3		25					28	8.0	154
Yersinia enterocolitica		1							1	.2	7
Bordetella pertussis		6		2			11	10	29	7.7	332
Bordetella species				2					2	3.3	165
Treponema pallidum	4	10		1					15	12.2	205
Toxoplasma gondii		3		1					4	1.8	34
TOTAL	37	376	3	702	1	37	269	421	1,845	1,633.8	22,183

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 clinical information for the reporting period 16 to 29 June 1994

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					1			10		1		17	29
Mumps virus										1		3	4
Rubella virus								7				8	15
HEPATITIS VIRUSES													
Hepatitis A virus							11					13	24
Hepatitis B virus							12					108	120
Hepatitis C virus							15				1	181	197
ARBOVIRUSES													
Ross River virus								5		22		38	65
Barmah Forest virus								4		3		15	22
ADENOVIRUSES													
Adenovirus type 2					1								1
Adenovirus type 3												2	2
Adenovirus not typed/pending					3	8						10	21
HERPES VIRUSES													
Herpes simplex virus type 1	1			1	11			90	6		58	25	192
Herpes simplex virus type 2							1	39	1		130	26	197
Herpes simplex not typed/pending	1	1			2		1	2			1	9	17
Cytomegalovirus	1				25				1	1	1	30	59
Varicella-zoster virus								41				9	50
Epstein-Barr virus					3		3	1				22	29
OTHER DNA VIRUSES													
Parvovirus												3	3
PICORNA VIRUS FAMILY													
Coxsackievirus A16												1	1
Coxsackievirus B2			1										1
Coxsackievirus B3					1								1
Echovirus type 6		2	1										3
Echovirus type 9			1										1
Echovirus type 30		2	1										3
Poliovirus type 1 (uncharacterised)												1	1
Rhinovirus (all types)		1			26							9	36
Enterovirus not typed/pending		5	3		10	8		1				20	47
ORTHO/PARAMYXOVIRUSES													
Influenza A virus					3							6	9
Influenza B virus												1	1
Parainfluenza virus type 1					47							4	51
Parainfluenza virus type 2					2								2
Parainfluenza virus type 3					14								14
Parainfluenza virus typing pending					8								8
Respiratory syncytial virus					281							36	317

Table 8. Virology and serology laboratory reports by clinical information for the reporting period 16 to 29 June 1994, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other/unknown	Total
OTHER RNA VIRUSES													
HIV-1											1	3	4
Rotavirus						65						9	74
Small virus (like) particle						1							1
OTHER													
Chlamydia trachomatis not typed					1				1		82	7	91
Mycoplasma pneumoniae			1		22							16	39
Coxiella burnetii (Q fever)												14	14
Streptococcus group A								2		6		20	28
Yersinia enterocolitica												1	1
Bordetella pertussis					22							7	29
Bordetella species					1							1	2
Treponema pallidum												15	15
Toxoplasma gondii												4	4
TOTAL	3	11	8	1	484	82	43	202	9	34	274	695	1845

Table 9. Virology and serology laboratory reports by contributing laboratories for the reporting period 16 to 29 June 1994

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Canberra	39
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	36
	Prince Henry/Prince of Wales Hospitals, Sydney	159
	Royal Alexandra Hospital for Children, Camperdown	69
	South West Area Pathology Service, Liverpool	68
Queensland	Queensland Medical Laboratory, West End	542
	State Health Laboratory, Brisbane	201
Tasmania	Northern Tasmanian Pathology Service, Launceston	1
	Royal Hobart Hospital	34
	Royal Hobart Hospital, Hobart	1
Victoria	Royal Children's Hospital, Melbourne	138
	Victorian Infectious Diseases Reference Laboratory, Fairfield Hospital	130
Western Australia	Princess Margaret Hospital, Perth	138
	State Health Laboratory Services, Perth	289
TOTAL		1845