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CONTENTS

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

TUBERCULOSIS NOTIFICATION RATES, AUSTRALIA - FINAL DATA FOR 1986 TO 1990

(David Cheah, Epidemiology Registrar, Communicable Diseases Section, Department of Health, Housing and Community Services)

Introduction

In August 1991, the *Communicable Diseases Intelligence* reported the rates of notification of tuberculosis (Tb) in Australia between 1986 and 1990. That report excluded data from New South Wales as these were not available at the time of analysis. This article describes the true rates of notification for those years following the availabitlity of the New South Wales data.

Methods

Data were collected from 1986 to 1990 in a summary tabular format for the purpose of this analysis. The case definitions for the different categories of Tb have been previously reported[1]. In summary, these case definitions accounted for three important categories of notifications: new cases, 'Atypical' Mycobacterial Infection (now known as Non-Tuberculous Mycobacteria, NTM) and relapses (reactivations). As these categories were different from those used prior to 1990, new data had to be collected from those States and Territories which had previously provided data in the old reporting format. The final data collected were analysed using the 1991 case definitions. Data for relapse cases of Tb refer to *Mycobacterium tuberculosis* complex cases only and do not include NTM.

Denominator populations were supplied and incidence rates calculated using Australian Bureau of Statistics data.

Results

The true rate of notification for new cases of Tb has shown a slight upward trend since 1986, from 5.39 cases per 100,000 population in 1986 to 5.73 in 1990 (Table 1, Figure 1). This is not a dramatic variation from the previously published adjusted data which excluded NSW. The rate of notification for Non-Tuberculous Mycobacteria shows a marked upward trend since 1986. The previously adjusted rate for 1990 (1.86 per 100,000), is well below the true rate for 1990 (2.7 per 100,000), underlining the significance of data from NSW in the calculation of rates for this disease.

Table 1. Notification rates for new cases of Tuberculosis and for Non-Tuberculous Mycobacteria ('Atypical' Mycobacterial infection), 1986 to 1990

Year	Tuberculosis			Non-Tuberculous Mycobacteria		
	Cases	Rate[1]	% Change from previous year	Cases	Rate[1]	% Change from previous year
1986	863	5.39		207	1.29	
1987	868	5.34	+0.6	162	1.00	-21.7
1988	925	5.59	+6.6	215	1.30	+32.7
1989	902	5.36	-2.5	368	2.12	+71.2
1990	979	5.73	+8.5	385	2.25	+4.6

1. Rate per 100,000 population per year

The rate of notification of new cases plus relapse cases of Tb and deaths remained largely unchanged from the previously published data (Table 2, Figure 2).

Table 2. Notification rates for new cases plus relapses, and deaths, 1986 to 1990

Year	New Cases plus relapses	Rate[1]	Deaths	Rate[1]
1986	906	5.56	52	0.32
1987	907	5.58	68	0.42
1988	954	5.77	60	0.49
1989	952	5.66	52[2]	0.42
1990	1016	5.95	56[2]	0.45

1. Rate per 100,000 population per year
2. Data on deaths were not kept in Victoria or the ACT in 1989 and 1990; death rates adjusted accordingly

Discussion

The analysis of notification rates for Tb is difficult for a variety of reasons. These include the problem of lack of historical consistency in the collection of data, availability and reliability of previously collected data and changes to the data following collection. For example, there is no consistent case definition for NTM, hence the reported data may not represent the true rates for the spectrum of disease. Similarly, data on infections due to *Mycobacterium bovis*-BCG are not routinely collected in some States.

The percentage change of cases, when compared with the previous year, needs to be interpreted with caution.

Figure 1. Tuberculosis (new cases and non-tuberculous mycobacteria) rates in Australia, 1986 to 1990

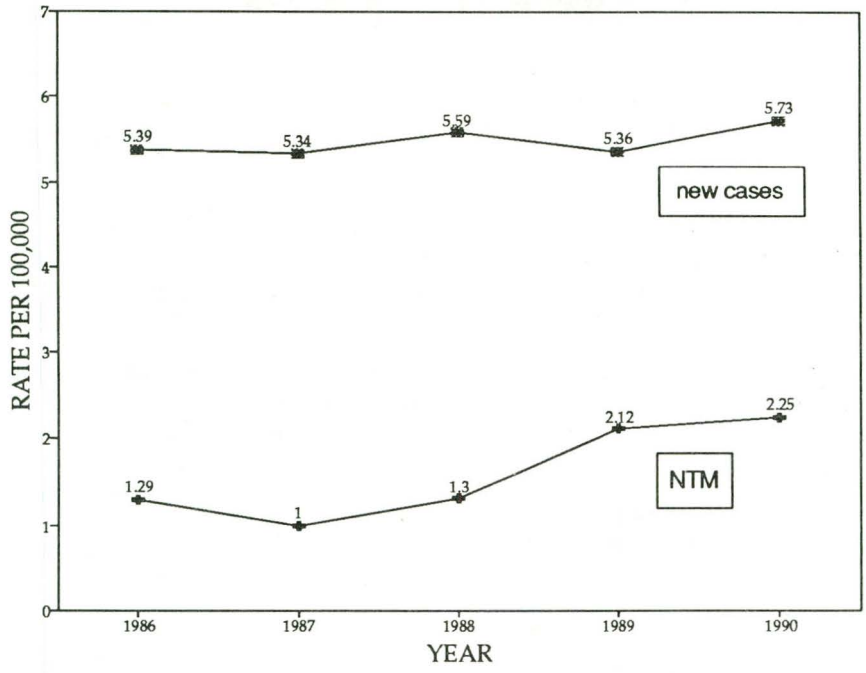
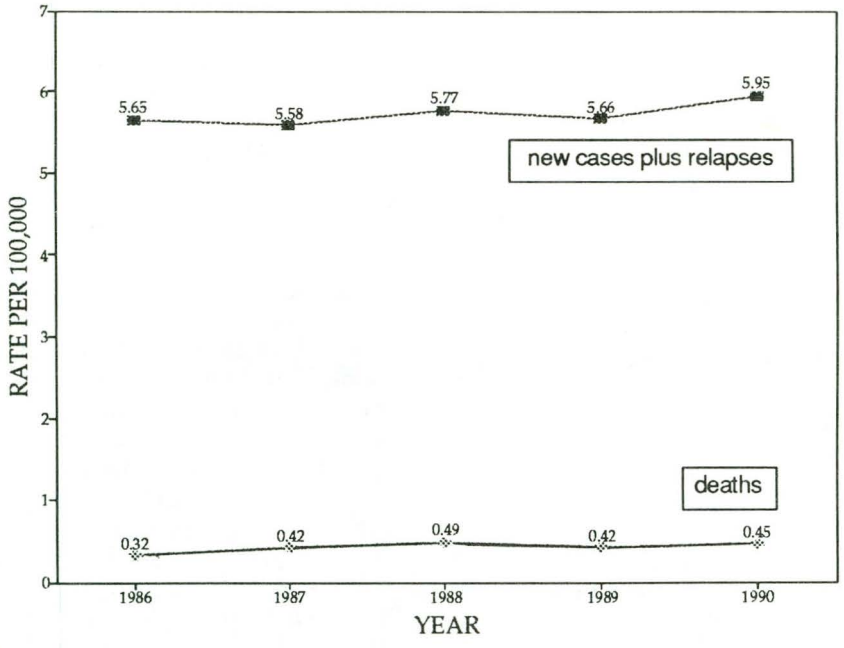


Figure 2. Tuberculosis (deaths and new cases plus relapses) rates in Australia, 1986 to 1990



In Australia, with the relatively small numbers reported, small changes in reported numbers result in large percentage changes. In the United States, where there are large numbers reported, a small percentage change would indicate a large number of cases.

The rate of notified new cases of Tb has been fairly constant over the last five years, despite yearly fluctuations. This is in contrast to the situation in the United States, where there has been a steadily increasing trend since 1985[2]. Prior to 1985, the United States had shown a 5% decrease of reported cases annually.

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UNDIAGNOSED PULMONARY TUBERCULOSIS IN HOSPITAL PATIENTS.

(Peter C Taylor, Hospital Infection Officer (Microbiology Department); Brian Jarvie, Physician in Respiratory Medicine; Ketty Garcia, Clinical Nurse Specialist; Chest Clinic, Hospital Infection Surveillance Nurses, The Prince Henry and Prince of Wales Hospitals, Randwick, NSW, 2031.)

Introduction

Between March 1990 and September 1991 six patients were admitted to 5 wards of an 850 bed teaching hospital with undiagnosed pulmonary tuberculosis. In 3 cases it was several weeks before such a diagnosis was considered and acid-fast bacilli (AFB) were detected microscopically.

An average of 45 patients each year (1990-91) are admitted to this hospital with a known or suspected diagnosis of tuberculosis and are cared for in a specified ward according to current guidelines.

Patients

Three patients had been transferred from other hospitals for reasons unrelated to the respiratory system (Table 1). In one of these cases tuberculosis was only diagnosed at a coronial autopsy following the patient's apparent suicide shortly after discharge from hospital.

In one other case pulmonary tuberculosis was among the provisional diagnoses when the patient was admitted overnight for diagnostic bronchoscopy, however, no special provisions were made for her care. Earlier sputa examinations showed no AFB microscopically although the organism was subsequently isolated from cultures of those specimens. Microscopic examination of material obtained at bronchoscopy showed AFB.

Table 1. Patients with undiagnosed pulmonary tuberculosis

Age/Sex	Sputum/ Microscopy	Duration[1] of exposure	No. Staff Contacts examined (estimates)
51M[2]	>25/hpf[3]	14 + 20	107
18M[2]	>25/hpf	1 + 2	20
50M	5-10/hpf	16	10
23M[2]	lung, autopsy	7 + 180	10
44M	biopsy + ve	2	nil
28F	1-5/hpf	1	10

1. Days admitted until diagnosis made
2. Transferred from another hospital
3. Acid-fast bacilli per high power field

A fifth patient was transferred from another hospital to the intensive care ward with a right pneumothorax and lower lobe consolidation. The diagnosis of tuberculosis was made forty eight hours later. The sixth patient's diagnosis was first considered when a chest X-ray was reviewed 2 days after admission prior to commencement of irradiation therapy for a presumed malignant pericardial effusion.

Three patients acquired the infection in Australia and all were caucasian. Most cases were considered potentially infectious for susceptible contacts. Of those infections acquired overseas, one was an Australian who had travelled in Asia 18 months prior to admission. Two other patients were from New Caledonia and Vietnam. With infection acquired in endemic tuberculosis areas there is a 15-25% incidence of resistance of the organism to at least isonaizid. Fortunately this was not the case in these patients.

Staff Investigations

In one instance over one hundred staff were considered to have had contact with the patient including food-service staff, porters and wardmaids, physiotherapists and occupational therapists in addition to the expected nursing and medical staff. The patient could not be moved from the ward after the diagnosis was made and mantoux testing of staff and patients was carried out in the ward. In each of the other cases only 10-20 staff attended a clinic for Mantoux testing as the diagnoses were retrospective some weeks after contact and staff may not have remembered the patient or even have still been working on that ward. A large number of contacts were unaware of their Mantoux status and could not reliably recall BCG vaccination. The authorities at each of the referring hospitals were informed of the potential hazards to their staff immediately diagnoses were made.

Comment

It is possible that junior nursing staff now trained 'off-campus' were not offered BCG vaccination during training as was the case previously. Maintenance of staff health records is no longer mandatory and such records are based on a voluntary questionnaire during orientation/induction of nursing and non-medical staff[2]. Follow-up of staff contacts is proceeding, however, many failed to return at 3 and 12 months after

exposure. No secondary cases have yet presented. Several staff used the opportunity to be tested although they had not been exposed to risk.

Nosocomial tuberculosis transfer to health-care workers, including multidrug-resistant strains, has been documented recently in the United States[3,4]. Reports emphasise the need for a high index of suspicion in order to diagnose tuberculosis without delay as the prevalence of this disease is no longer declining in the United States and its presentation may be atypical[3,4], especially in HIV-infected patients. The persistence of urban poverty and refugee migration from Asia and other areas with a high prevalence of tuberculosis contribute to a pool of susceptibles. It is unlikely that the prevalence of tuberculosis will continue to decline in Australia. Together with increasing numbers of AIDS patients attending for treatment of pulmonary infections the possibility of the United States' experience being repeated should be considered.

Australian guidelines advocate mantoux testing of staff at the commencement of employment[2] and the maintenance of effective staff health records in order to facilitate the control of tuberculosis in hospitals. Hospitals need to consider the adequacy of staff health programmes as risks change and in light of reviewed guidelines from the United States[3].

These episodes have emphasised the need for continued vigilance for pulmonary tuberculosis as an accompanying diagnosis in all patients with a symptomatic cough, and/or productive sputum, whether there is a history of travel and regardless of their primary diagnosis. There is also a need for closer liaison between clinical and administrative parts of hospitals so that useful staff health records are maintained and are accessible so that preventive measures can be implemented without delay or interruption to other services.

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OVERSEAS MEDICAL SCREENING OF MIGRANTS FROM HO CHI MINH CITY (VIETNAM) FOR COMMUNICABLE DISEASES

(EJ Lloyd, Regional Medical Director, Australian Embassy, Bangkok)

All migrants and students applying to enter Australia are subjected to medical and radiological examination. In Vietnam, nearly all of these examinations are done in Ho Chi Minh City (HCMC). Approximately 8,500 examinations were made in 1991.

In HCMC the medical screening is supervised by doctors from the International Organisation for Migration (IOM). The IOM is a Geneva based organisation founded in 1951 which provides a service to governments and international organisations in processing and safely transporting migrants and refugees. This includes medical processing.

The medical examinations are done by Vietnamese doctors at the Thirtieth of April Hospital (TAH) and consist of physical examination, large chest x-ray (16 years and over), urinalysis (5 years and over), RPR syphilis screening (16 years and over) and HIV testing (15 years and over). Applicants with sight defects are assessed by an ophthalmologist and those with suspicious skin lesions referred to a dermatologist to exclude leprosy (Hansen's Disease). Those with suspected mental disease are assessed at the Mental Hospital by psychiatrists trained and supervised by a Senior IOM psychiatrist.

All migrants attend the Vietnamese Quarantine Service for immunisation:

2 months - 1 year : OPV, DTP, Hepatitis B

1 year - 6 years : OPV, DTP, Hepatitis B, MMR

7 years - 19 years : OPV, Tetanus toxoid, MMR

20 years and over : Tetanus toxoid only.

All immunisations are recorded on an immunisation card and a copy is given to the migrant prior to departure for Australia.

All vaccines, syringes and needles are supplied by the IOM. The cold storage chain for vaccines is closely monitored.

The IOM supervises all aspects of health screening and is in turn supervised by an officer from the United States' Centers for Disease Control, Atlanta, (CDC), based in Bangkok, as well as the Canadian medical office and the Australian Regional Medical Director, both based in Bangkok.

Approximately 130,000 medicals are conducted per year in HCMC for the United States, Canada, Australia, France and Germany. To supervise this workload, the IOM has 5 doctors in HCMC, one of whom is an Australian from the Northern Territory. Visits are also made by a radiologist from Seattle and experts from CDC. A resident laboratory technician from France is in charge of laboratory tests. HIV testing is done in Bangkok.

All abnormal x-rays and 10% of normals are reviewed by the IOM doctors. Documents of abnormal physical findings and laboratory reports are seen by the IOM doctors. Medical documents of any Australian case with a significant abnormality are referred to the Australian Regional Medical Director (RMD) in Bangkok.

The RMD also re-examines a sample of migrants and reviews a sample of 'normal' x-rays as a quality control measure.

Pulmonary Tuberculosis

This is the communicable disease of main concern. If radiological examination reveals tubercular scarring of more severity than minor calcification and/or fibrotic strands then the medical requirements for migration are not met. These applicants are offered a 6 month course of daily supervised tuberculosis treatment (2 months Ethambutol, Isoniazid, Rifampicin, Pyrazinamide /4 months Ethambutol, Isoniazid, Rifampicin) with drugs supplied by the IOM. Medical requirements are met after completion of treatment, provided there is radiological stability and sputum smears are negative. Cases with positive smears have sputum cultures done with specimens also sent to CDC (Atlanta) if there is any suggestion of drug resistance. Drug resistant cases are rejected, although the IOM continues treatment with second-line drugs for ethical reasons.

In October 1991 there were 235 Australian cases on daily IOM supervised treatment, and over 1500 Australian cases have been treated in the last 5 years. There were 59 applicants rejected in 1991 because they elected not to have or complete supervised treatment and 17 were rejected due to drug resistance.

Previous unsupervised treatment is not accepted because of compliance and drug reliability problems.

All cases that have received the IOM supervised treatment and those with minor radiological abnormalities who did not receive treatment are referred to State/Territory tuberculosis authorities for follow-up in Australia.

Syphilis Screening

Cases with a positive RPR screening result (no matter what the titre) are treated with 3 doses of 2.4 mega units of benzathine penicillin 1 week apart. If allergic to penicillin, tetracycline 500 mg QID is given for 30 days.

All reagents are supplied by the CDC/IOM and they also do quality control exercises.

Leprosy (Hansen's Disease)

All cases of suspected leprosy are referred to a dermatologist. If leprosy is confirmed, medical documents are referred to the RMD.

As well as ensuring applicants do not pose a public health risk, overseas medical screening also has an objective of identifying people who have conditions which would require significant medical care and/or social security support, and thus result in them becoming a significant charge on public funds. Provided there is no such disability, cases are referred to the Venereal Disease and Skin Hospital in HCMC for commencement of treatment:

Paucibacillary leprosy (TT, BT)

- Dapsone - 100mg daily for adults
- Rifampicin - 450-600 mg per month for adults

Multibacillary leprosy (BB, BL, LL)

- Dapsone, rifampicin plus clofazamine

In the meantime, the case is referred to State/Territory health authorities to determine whether they are prepared to take over management after the migrant arrives in Australia.

The day before departure for Australia, all migrants attend a pre-embarkation check which is designed to pick-up any significant medical condition which has developed since the medical examination. Anthelmintic medication (pyrantel pamoate) is also given at this time.

Immunisation records are checked and any outstanding immunisation given by a nurse from the Quarantine Service.

Summary

Overseas migration medical screening is designed to pick-up cases that pose a public health risk and also those that have medical conditions which could result in them becoming a charge on public funds.

Countries such as Australia, the United States and Canada have similar migration health concerns and in HCMC a common approach (with minor variations) has been obtained by the use of the IOM to medically screen migrant applicants.

Pulmonary tuberculosis is the main disease of public health interest. In Vietnam, tuberculosis infection is very common and due to the increased incidence of breakdown of cases with tubercular radiological scarring, such cases do not meet migration medical requirements unless they have a course of supervised tuberculosis treatment.

All migrants from HCMC are commenced on an immunisation program. The program is not always completed due to time constraints and follow-up after arrival in Australia is indicated.

Whilst overseas medical screening is reliable and effective, it has its limitations, especially for conditions such

as tuberculosis and leprosy where disease may not be evident at the time of examination.

Post arrival screening of migrants and refugees from high risk countries is likely to be a cost-effective exercise in preventive medicine.

SCREW-WORM FLY MYIASIS IN AN OVERSEAS TRAVELLER - CASE REPORT

(John Searson [1], Lance Sanders[2], Geoff Davis[2], Neil Tweddle[3], Peter Thornber[4])

A woman who had visited the tropical regions of Brazil and Argentina returned to Australia on 30 April 1992, after having had a 24 hour stopover in Auckland. While in New Zealand she presented to a medical practitioner with two lesions, about 1-2cm in diameter, on the dorsal aspect of the neck/suboccipital region. The practitioner removed some small 'worms' (immature maggots) from the lesions. No specific diagnosis was made, but the patient was advised to treat the lesions with fly spray. The patient reported that after this treatment approximately 50 immature maggots emerged from the wound and died.

On arrival in Australia on 30 April the patient presented to a medical practitioner in Kyneton, Victoria as she was not confident that the fly spray treatment had been fully effective. The doctor removed a few more immature maggots and prescribed the application of a disinfectant and topical antibiotic.

On 2 May, the couple returned to their home in Wagga Wagga, New South Wales and the woman consulted a doctor for a further opinion. He examined the wounds, finding no further maggots, and gave the patient some hydrogen peroxide and a syringe with which to irrigate the wound. On the same afternoon and following morning the husband removed a further two maggots and suspected the presence of at least one more. He continued irrigation of the wound regularly with hydrogen peroxide.

On 4 May, the husband consulted a specialist veterinary pathologist at the NSW Agriculture Regional Veterinary Laboratory, Wagga Wagga with a view to obtaining a diagnosis for the problem his wife was suffering. After a detailed history was obtained, the man was advised that screw-worm fly (SWF) infection was a likely diagnosis. He was requested to present some larvae for identification. A presumptive identification of *Cochliomyia hominivorax*, the new world screw-worm fly, was made at RVL Wagga and subsequently confirmed at the CSIRO Division of Entomology, Canberra. Both the patient and her doctor were advised of the potentially serious sequelae of SWF tissue invasion, and of possible treatment regimes. By 6 May, the lesions appeared to be healing and no more larvae were evident.

CDI Editorial Comment

Myiasis is the term given to the infestation of living animals (including man) by the larvae (maggots) of flies (DIPTERA - 2 winged insects). Myiasis may be considered as accidental, facultative or obligatory depending on the extent to which the fly is reliant on a live host for larval development. There are few published reports of human myiasis in Australia. In a prospective study[1], the common Australian sheep blow fly (*Lucilia cuprina*) was identified for the first time as a major agent of human myiasis in this country. The patients, 10 in all, were generally aged, ill or debilitated in some way. In the same study[1] another fly, *Parasarcophaga crassipalpis*, was implicated as the cause of myiasis in a further two patients; the first time this species had been reported as causing myiasis in Australia.

Screw-worm fly (*Cochliomyia hominivorax*), the cause of myiasis in the present case, is exotic to Australia. It is distributed from Argentina to Mexico, the Caribbean[2] and was discovered for the first time in north Africa (Libya) in 1988[3,4]. In addition to a broad range of wild and domestic animals, larvae of this fly have been known to cause myiasis in otherwise healthy humans[5,6,7].

Female flies lay eggs in groups on the dry margins of wounds and the young larvae burrow into the surface tissues, congregating with their posteriors (respiratory openings) exposed and producing large lesions within a few days. The size of the original wounds may be small, and some authors believe that tick or louse bites may be sufficient to allow the initiation of an infestation.

Myiasis with this species commonly occurs in the neck or scalp, but may occur in other parts of the body. Serious chronic sequelae and death are known to have resulted from infestations of the nose, eyes, ears and mouth.

In one report, *C hominivorax* myiasis was diagnosed in a soldier who had suffered a scalp wound during military action in Panama[7]; subsequently, another 8 cases of myiasis in United States soldiers on exercises in Panama (1992) were recorded[8]. In another study, 229

1. Regional Veterinary Laboratory, NSW Agriculture, Wagga Wagga
2. Communicable Diseases Section, Commonwealth Department of Health, Housing and Community Services
3. Foreign Diseases Unit, Department of Primary Industries and Energy
4. Office of the Australian Chief Veterinary Officer, Department of Primary Industries and Energy

cases of *C hominivorax* myiasis were reported from Libya[6]. Of the 159 cases for which data are available, infestations were present in the scalp in 133 (84%) and in the neck in 21 (13%). Of the remainder, infestations of the ear (3) leg (1) and head/eye (1) were diagnosed.

Establishment of SWF in Australia would have a profound impact on agriculture. The annual cost (if the fly were not controlled) to livestock industries for decreased animal productivitiy, increased husbandry costs and animal deaths was estimated in 1988 to range from $190M to $430M per annum. In addition, the impact on public health could be significant. The present report highlights the need for medical practitioners to maintain a high index of suspicion that myiasis in an otherwise healthy person, particularly one who has recently returned from overseas, might be due to an exotic agent. Practitioners who treat such conditions should preserve larval specimens in either 70% isopropyl alcohol, 70% ethanol, or formalin, and forward them to the appropriate State or Territory veterinary authority for identification. The relevant State or Territory health authority should be consulted on appropriate management of a suspected or confirmed case of SWF myiasis.

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OVERSEAS BRIEFS

The most recently received information from the World Health Organization is as follows.

Cholera Update

Further details of the cases occuring in **Africa** have been provided for **Mozambique** and **Burundi** (161 cases with 7 fatalities for the period to 28 April). **Mozambique** has reported a total of 2260 cases and 25 deaths to 22 April, with the districts of Macia (Gaza Province), Mocuba (Zambezia Province), Marracuene (Maputo Province), Buzi and Dondo (both Sofala Province) being added to the list of newly infected areas. Pemba city (Cabo Delgado Province) and Mopeia district (Zambezia Province) have been removed from the infected area list. Cases have also been reported from **Angola** (1447 cases, 85 deaths to 15 April), **Benin** (177 cases, 7 deaths to 23 April) and **Togo** (313 cases, 17 deaths to 8 April).

In **South America, Brazil** has reported 822 cases with 22 deaths to 9 May, with Alagoas and Ceara states being added to the list of newly infected areas. **Panama** reported 85 cases with 4 fatalities to 2 May and **Peru**, 17429 cases and 50 deaths to 18 April. **El Salvador** reported 669 cases and 9 deaths to 16 May.

India has reported 1061 cases with 2 fatalities for the period to 11 April and **Sri Lanka** reported 59 cases and 4 deaths to 10 April, with no new cases since this date.

COMMUNICABLE DISEASES SURVEILLANCE

There were 1356 reports received in the CDI 'Viruses' Reporting Scheme this fortnight (Tables 5, 6, and 7).

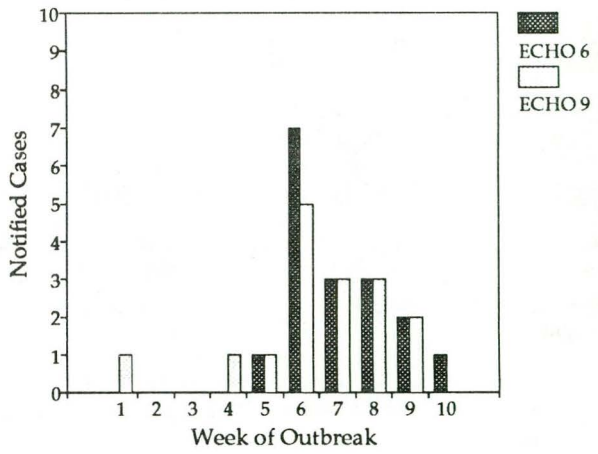
- There were 51 reports of **influenza A**, five of which were H3N2 (including one A/Beijing/353/92 like). Sixteen reports were in patients over 65 years of age (5 females and 11 males). This takes the total for the year to 160 reports of influenza A.
- There were 5 reports of **influenza B**, including a female over 65 year of age.
- There were 42 reports of **parainfluenza virus type 1** bringing the total this year to 191. All but 2 reports were in children under 5 years. This virus shows two-yearly cycles of activity with 414 reports received in 1990 and 47 in 1991.
- Seventeen reports of **parainfluenza virus type 3** were received. This virus exhibits its usual pattern of continuous activity throughout the year. Three of these reports were in adults.

- There were 121 reports of **respiratory syncytial virus**, the total for the year being 361. The increased activity seen in April compared with previous years has reverted to a more typical pattern.
- There were 103 reports of **Ross River virus**. Most all cases were reported from coastal Queensland, with some reports from WA or the NT. Activity of this virus is beginning to wane with the onset of winter, with a total of 693 reports this year, a little more than this time last year.
- Two reports of **Sindbis virus** were received. This virus was previously reported in 1989. Both patients were from Gove in the NT and had coinfection with Barmah Forest Virus.
- There were 13 reports of **Barmah Forest virus** from Queensland and the NT. Two of the NT reports were from Gove.
- A single report of **dengue type 1** was received. The patient was reported as being from the NT.
- There were 37 reports of **echovirus type 9** this fortnight bringing the total this year to 67. The specimen collection date for 30 of these was in April. High activity of this virus was last observed in the summer of 1988-1989. Meningitis was the predominant clinical feature reported and reports were from WA and NSW.
- There has also been increased activity of **echovirus type 6**, with 31 reports received this fortnight from WA twenty two of the specimens were collected in April, exceeding yearly totals since 1987. Meningitis was the main reported clinical feature.
- There were 11 reports of **Q fever**. Occupational details were provided for a farm hand, outdoor worker and a meat worker.

Australian Sentinel Practice Research Network

The Australian Sentinel Practice Research Network collected data from 7363 patient encounters in week 20 and 6085 patient encounters in week 21 (Table 1). Influenza reports continue to increase to 14.46 per 1000 encounters in week 21.

Figure 1. Cases of echovirus 6 & 9 meningitis, WA, by onset date, February to May 1992



Viral Meningitis in WA

There has been an outbreak of viral meningitis in Western Australia with a total of 79 clinical cases to 22 May. Echovirus type 6 had been identified in 19 cases and echovirus type 9 in 17. Other cases included pravovirus (4), and echovirus type 24 (1). Two isolated cases were reported at the end of February with the epidemic beginning in mid March and reaching a peak in early April (Figure 1). Cases have been mainly in the Perth Metropolitan Region with a few in Bunbury, Esperance and Geraldton.

(Health Services and Epidemiology Branch, Health Department of WA.)

Australian Encephalitis: Sentinel Chicken Surveillance Programme Serological Results for April 1992

Sentinel chicken serology was undertaken for 24 flocks in the Pilbara and Kimberley regions of Western Australia, and 4 flocks in the Northern Territory. one chicken seroconverted to Murray Valley encephalitis (MVE) virus at Wyndham in Western Australia. In the chicken sera from the Northern Territory, there was one additional seroconversion to MVE virus in a chicken from Palumpa, which takes the total serocon-

Table 1. Australian Sentinel Practice Research Network, Weeks 20 and 21, 1992

	Week 20 to 17 May 1992		Week 21 to 24 May 1992	
	Reports	Rate per 1000	Reports	Rate per 1000
Condition		encounters		encounters
Influenza	81	11	88	14.46
Measles	2	0.27	1	0.16
Mumps	0	0	1	0.16
Rubella	1	0.14	3	0.49
Pertussis	0	0	0	0
Genital herpes	5	0.68	1	0.16
Gastroenteritis	20	2.72	71	11.67

versions in this flock to 3 over the period February - April 1992. The flock at Howard Springs was replaced in March 1992 and one of these chickens was found to be positive for a flavivirus other than MVE.

Information on the location of sentinel chicken flocks was presented in *CDI* **16**:55-57 and *CDI* **16**:169

(AK Broom and JS Mackenzie, Department of Microbiology, The University of Western Australia)

National Notifiable Diseases Reports

The National Notifiable Diseses Scheme received 1179 reports for the period 3 May to 16 May. (Figure 2, Table 2, 3 and 4) Reports were not available from NSW or the NT.

- There were 358 reports of **Ross River Virus** infection. Most cases were reported from Queensland with reports from widespread areas of the State
- A case of **dengue** was reported from Cairns. Previous cases were reported in detail in *CDI* **16**:192
- Thirteen cases of ***Haemophilus influenzae* type b** infection were reported. Of 11 for whom ages were available 6 were in children less than 2 years of age. Three cases occurred within 4 days of each other in 2 contiguous postcode areas.
- A single case of **typhoid** was reported in a 4 year old girl from WA
- Five cases of **legionellosis** were reported this period. Two of these cases had onset dates in May. They were unrelated cases in males aged 67 and 68 from SA and Queensland.
- **Measles** was reported from four states, with a total of 12 cases. Four of the cases were aged between 1 and 4 years of age, the rest being over 5 years.
- Eight cases of **meningococcal infection** were reported. Of the 7 for whom age data was available, 6 were under the age of 3. Four cases appeared to occur in two clusters in two postcode areas.

Figure 2. Selected National Notifiable Diseases Reports, 3 to 16 May 1992 and historical data**

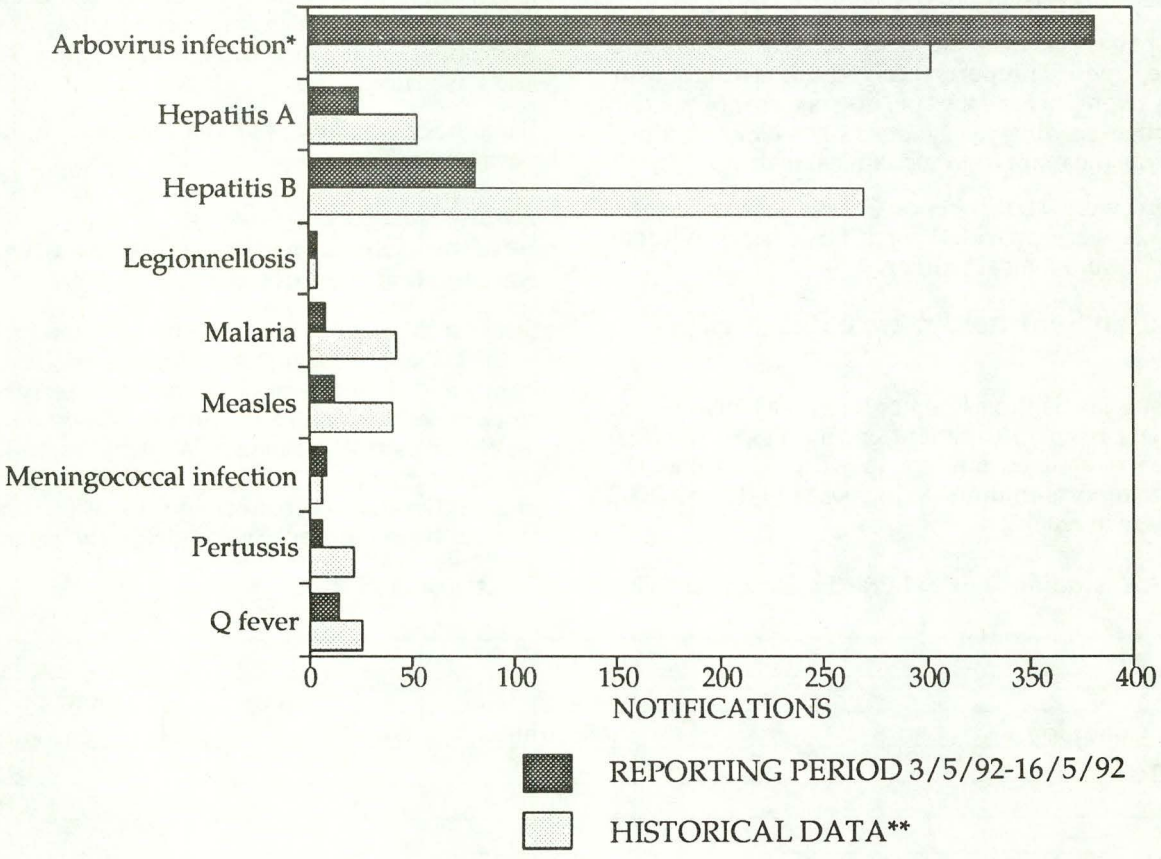


Table 2. Diseases preventable by vaccines recommended by the NHMRC for routine childhood immunisation for the reporting period 3 May to 16 May 1992

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[1] This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
Diphtheria	0			0	0	0	0	0	0	0	5	3
Measles	NN			5	1	0	4	2	12	38	328	504
Mumps	NN		NN	NN	NN	NN	0	NN	0	NN	0	NN
Pertussis	NN			3	1	0	0	3	7	8	189	170
Poliomyelitis	0			0	0	0	0	0	0	0	0	0
Rubella[2]	0			3	0	0	1	0	4	16	168	161
Tetanus	0			NN	0	0	0	0	0	1	5	4

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, WA: CRS only; ACT, NSW, Qld: rubella only; SA, Vic: rubella and CRS

NN Not Notifiable.

Table 3. Other Notifiable Diseases[1], for the reporting period 3 May to 16 May 1992

DISEASES	ACT	NSW	NT	Qld	SA	Tas	Vic	WA	TOTALS FOR AUSTRALIA[2] This Period 1992	This Period 1991	Year to Date 1992	Year to Date 1991
Arbovirus infection (NEC)[3]	0		NN	20	2	0	1	0	23	6	264	223
Ross River virus infection	NN	-		321	0	NN	15	22	358	203	3780	2750
Dengue	NN	-		1	-	NN	0	NN	1	0	11	40
Campylobacteriosis[4]	NN	-		88	62	7	15	27	199	424	2978	2921
Chlamydial infection (NEC)[5]	0	NN		50	0	17	6	0	73	136	2210	1309
Donovanosis	0	NN		1	NN	NN	0	1	2	3	20	22
Gonococcal infection[6]	0			15	0	2	2	40	59	127	972	880
Haemophilus influenzae type b[7]	1		NN	2	7	2	1	NN	13	27	167	167
Hepatitis A	1			14	0	0	6	4	25	39	687	408
Hepatitis B	0			47	0	1	28	6	82	251	2072	1600
Hepatitis C	1		NN	122	NN	3	5	NN	131	115	2638	956
Hepatitis (NEC)	NN			1	1	0	0	NN	2	21	17	138
HIV infection[8]	0			0	0	0	0	0	0	1	38	10
Legionellosis	NN			2	1	0	2	0	5	5	56	43
Leptospirosis	0			4	0	0	0	0	4	4	51	57
Listeriosis	NN		NN	0	NN	0	0	0	0	2	18	16
Malaria	1			4	1	0	3	0	9	53	275	330
Meningococcal infection	0			0	1	1	1	5	8	7	57	86
Ornithosis	0	NN		0	0	0	0	0	0	1	44	32
Q fever	0			15	0	0	0	0	15	25	163	289
Salmonellosis (NEC)	0			54	23	4	7	25	113	308	2221	2663
Shigellosis[4]	0	-		4	6	0	2	3	15	43	233	398
Syphilis	0			20	0	0	0	9	29	62	780	764
Tuberculosis	0			8	1	0	0	1	10	22	221	137
Typhoid[9]	0			0	0	0	0	1	1	0	13	29
Yersiniosis[4]	NN	-		13	2	0	0	0	15	35	270	242

1. For rarely notified diseases, see Table 4.
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 notifications and the increment in the cumulative figure from the previous period.
3. NSW and SA: includes Ross River virus and dengue.
4. NSW: only as 'foodborne disease' or 'gastroenteritis in an institution'.
5. ACT: trachoma only.
6. NT, Qld, SA and Vic: includes gonococcal neonatal ophthalmia.
7. SA: only as 'bacterial meningitis'; meningococcal infection is separately notified; Tas: only as 'non-meningococcal meningitis'; Vic: eppiglottitis and meningitis only.
8. More complete data on new diagnoses of HIV infections are presented in the monthly *Australian HIV Surveillance Report*. ACT: AIDS only.
9. NSW and Vic: includes paratyphoid.

NN Not Notifiable.

NEC Not Elswhere Classified.

- Elsewhere Classified.

Table 4. Other Notifiable Diseases[1] for the reporting period 3 May to 16 May 1992

DISEASES	Total this period	Reporting States or Territories	Total for 1992 to Date
Botulism			0
Brucellosis			5
Cholera			1
Chancroid			4
Hydatid infection	1	Vic	11
Leprosy			5
Lymphogranuloma venereum			1
Plague			0
Rabies			0
Yellow fever			0
Other viral haemorrhagic fevers			0

1. Fewer than 50 cases of each of these diseases were notified each year during the period 1986 to 1991.

Table 5. Laboratory reports by State or Territory of reporting laboratory for the reporting period 6 to 19 May 1992, historical data[1], and total reports for the year

	STATE OR TERRITORY OF REPORTING LABORATORY						Total this fortnight	Historical data [1]	Total reported this year
	ACT	NSW	Qld	SA	Vic	WA			
MEASLES, MUMPS, RUBELLA									
Measles virus			1		4		5	6.8	74
Rubella virus			1		1		2	6.3	82
HEPATITIS VIRUSES									
Hepatitis A virus		1			3	2	6	14.8	142
Hepatitis B virus	2	33	1	3	14	10	63	100.7	875
Hepatitis C virus	8			12		29	49	4.3	838
Hepatitis D virus			1			2	3	.7	18
ARBOVIRUSES									
Ross River virus		2	77	6	5	13	103	31.8	740
Barmah Forest virus			9		1	3	13	.8	106
Sindbis virus						2	2	.0	2
Dengue type 1			1				1	.2	3
Dengue not typed						4	4	1.0	19
Kunjin virus			1				1	.3	5
Flavivirus (unspecified)			1		1		2	.3	9
ADENOVIRUSES									
Adenovirus type 1					2		2	4.2	40
Adenovirus type 2		8			3		11	6.7	51
Adenovirus type 5		1					1	1.0	7
Adenovirus type 6		1					1	.3	3
Adenovirus type 8					1		1	1.0	12
Adenovirus type 11		1					1	2.0	7
Adenovirus type 19		1					1	.2	2
Adenovirus type 30					1		1	.3	4
Adenovirus not typed/pending		8	5	9	9	8	39	30.7	378
HERPES VIRUSES									
Herpes simplex virus type 1		18	51	6	49	29	160	113.7	1,547
Herpes simplex virus type 2		24	21	8	25	58	152	151.8	1,792
Herpes simplex not typed/pending		17	1		6	1	25	29.2	339
Cytomegalovirus		14	10	1	16	10	51	63.8	830
Varicella-zoster virus	1	9	1	1	7	7	26	19.3	279

Table 5. Laboratory reports by State or Territory of reporting laboratory for the reporting period 6 to 19 May 1992, historical data[1], and total reports for the year, continued

	STATE OR TERRITORY OF REPORTING LABORATORY						Total this fortnight	Historical data [1]	Total reported this year
	ACT	NSW	Qld	SA	Vic	WA			
Epstein-Barr virus		5	7	19	6	11	48	46.3	655
Herpes virus type 6		1					1	.0	3
Herpes virus group - not typed					3		3	6.7	30
OTHER DNA VIRUSES									
Contagious pustular dermatitis (Orf virus)						1	1	.2	4
Parvovirus					8		8	.0	58
PICORNA VIRUS FAMILY									
Coxsackievirus B1		2					2	.3	6
Coxsackievirus B5						1	1	1.0	23
Echovirus type 2		1					1	.0	1
Echovirus type 4					1		1	.0	5
Echovirus type 6						31	31	.8	34
Echovirus type 9		16				21	37	.5	59
Echovirus type 16					3		3	.0	16
Echovirus type 17		3			3		6	.3	33
Echovirus type 20		1					1	.0	2
Poliovirus not typed/pending		8					8	4.0	31
Enterovirus type 71 (BCR)					1		1	.0	8
Enterovirus not typed/pending		13	10		7	12	42	33.5	394
Poliovirus type 1 (uncharacterised)		1					1	1.2	18
Poliovirus type 2 (uncharacterised)		2			1		3	1.5	17
Poliovirus type 3 (uncharacterised)		2					2	.8	12
Rhinovirus (all types)	1	4	1		15	3	24	18.0	280
ORTHO/PARAMYXOVIRUSES									
Influenza A virus H3N2					4		4	.0	19
Influenza A virus		10	1	19	14	3	47	2.2	154
Influenza B virus		2		3			5	2.5	39
Parainfluenza virus type 1		5	16	2	13	6	42	36.2	195
Parainfluenza virus type 3		5	8		2	2	17	10.5	211
Parainfluenza virus typing pending					3	1	4	4.5	48
Respiratory syncytial virus	2	53	22		30	14	121	75.3	433
OTHER RNA VIRUSES									
Rotavirus		6		1	17	11	35	37.5	391
Coronavirus		1					1	.7	12
Small virus (like) particle		4				2	6	2.5	27
HIV-1						3	3	3.0	10
OTHER									
Rickettsia australis					1		1	.0	4
Rickettsia - Spotted fever group					1		1	.0	8
Chlamydia trachomatis not typed	6	10		3	9	22	70	108.7	1,132
Chlamydia psittaci				1	2		3	2.3	60
Mycoplasma pneumoniae		18	1	1	8	4	32	12.3	278
Coxiella burnetti (Q fever)		1	8	1	1		11	8.7	107
Rickettsia spp - other					2		2	.2	2
TOTAL	20	312	256	96	303	326	1,356	1,014.5	13,023

1. 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 6. Laboratory reports by clinical information for the reporting period 6 to 19 May 1992

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other	Total
MEASLES, MUMPS, RUBELLA													
Measles virus					1			2		1		1	5
Rubella virus								1				1	2
HEPATITIS VIRUSES													
Hepatitis A virus												6	6
Hepatitis B virus							11					52	63
Hepatitis C virus						1	5					43	49
Hepatitis D virus							1					2	3
ARBOVIRUSES													
Ross River virus					2			5		47		49	103
Barmah Forest virus								1		6		6	13
Sindbis virus												2	2
Dengue type 1								1					1
Dengue not typed								1				3	4
Kunjin virus										1			1
Flavivirus (unspecified)												2	2
ADENOVIRUSES													
Adenovirus type 1					1							1	2
Adenovirus type 2					4	4						3	11
Adenovirus type 5					1								1
Adenovirus type 6					1								1
Adenovirus type 8									1				1
Adenovirus type 11												1	1
Adenovirus type 19									1				1
Adenovirus type 30												1	1
Adenovirus not typed/pending		1			17	16			3			2	39
HERPES VIRUSES													
Herpes simplex virus type 1					15			92	4		41	8	160
Herpes simplex virus type 2								70			71	11	152
Herpes simplex not typed/pending		1			3			15			3	3	25
Cytomegalovirus			1	1	15	1	4		1	1		27	51
Varicella-zoster virus								20				6	26
Epstein-Barr virus					3			2		1		42	48
Herpes virus type 6							1						1
Herpes virus group - not typed					1			2					3
OTHER DNA VIRUSES													
Contagious pustular dermatitis (Orf virus)								1					1
Parvovirus								5				3	8
PICORNA VIRUS FAMILY													
Coxsackievirus B1		1			1								2
Coxsackievirus B5					1								1
Echovirus type 2		1											1
Echovirus type 4												1	1
Echovirus type 6		24			1							6	31
Echovirus type 9		29				2						6	37
Echovirus type 16		1						1				1	3

Table 6. Laboratory reports by clinical information for the reporting period 6 to 19 May 1992, continued

	Encephalitis	Meningitis	Other CNS	Congenital	Respiratory	Gastrointestinal	Hepatic	Skin	Eye	Muscle/joint	Genital	Other	Total
Echovirus type 17		5										1	6
Echovirus type 20					1								1
Poliovirus not typed/pending						5						3	8
Enterovirus type 71 (BCR)								1					1
Enterovirus not typed/pending		3			19	7		1				12	42
Poliovirus type 1 (uncharacterised)												1	1
Poliovirus type 2 (uncharacterised)					3								3
Poliovirus type 3 (uncharacterised)						1						1	2
Rhinovirus (all types)					23							1	24
ORTHO/PARAMYXOVIRUSES													
Influenza A virus H3N2					2							2	4
Influenza A virus		1			34							12	47
Influenza B virus					4							1	5
Parainfluenza virus type 1					38	1						3	42
Parainfluenza virus type 3					15							2	17
Parainfluenza virus typing pending					4								4
Respiratory syncytial virus					119							2	121
OTHER RNA VIRUSES													
Rotavirus					2	29						4	35
Coronavirus						1							1
Small virus (like) particle						6							6
HIV-1												3	3
OTHER													
Rickettsia australis								1					1
Rickettsia - Spotted fever group								1					1
Chlamydia trachomatis not typed					1			18	4		42	5	70
Chlamydia psittaci					3								3
Mycoplasma pneumoniae					21							11	32
Coxiella burnetti (Q fever)					1		1	1				8	11
Rickettsia spp - other								2					2
TOTAL		67	1	1	357	74	23	244	14	57	157	361	1,356

Table 7. Laboratory reports by contributing laboratories for the reporting period 6 to 9 May 1992

STATE OR TERRITORY	LABORATORY	REPORTS
Australian Capital Territory	Woden Valley Hospital, Garran	20
New South Wales	Institute of Clinical Pathology & Medical Research, Westmead	185
	Prince Henry/Prince of Wales Hospitals, Sydney	83
	Royal Alexandra Hospital for Children, Camperdown	44
Queensland	State Health Laboratory, Brisbane	256
South Australia	Institute of Medical & Veterinary Science, Adelaide	139
Victoria	Fairfield Hospital, Melbourne	204
	Microbiological Diagnostic Unit, University of Melbourne	9
	Royal Childrens Hospital, Melbourne	90
Western Australia	Princess Margaret Hospital, Perth	46
	State Health Laboratory Services, Perth	280
TOTAL		1356