

Communicable Diseases Surveillance

Presentation of NNDSS data

With the move to a quarterly reporting system in *Communicable Diseases Intelligence*, the summary tables have changed to fall in line with a quarterly report. Table 2 presents 'date of notification' data, which is a composite of three dates: (i) the true onset date from a clinician, if available, (ii) the date the laboratory test was ordered, or (iii) the date reported to the public health unit. Table 3 presents the notification rate of Diseases by State or Territory for the current reporting quarter.

Table 2 now includes the following summary columns: current quarter totals, totals for the previous quarter; total for the same quarter in the previous year; a 5-year mean for the same quarter, the year to date total for each disease, the mean of the last 5 years year to date totals and the ratio of the current quarter to the mean of to the mean of the second quarter for the last 5 years.

Notifiable Diseases 2001

The Communicable Diseases Network Australia has revised the list of Diseases that are reportable to the NNDSS. All jurisdictions are working towards reporting against the new national list. Transmission of a dataset consistent with the new list will depend upon changes to public health legislation and IT system development. The following new diseases have been added to the NNDSS database: anthrax, Murray Valley encephalitis, Kunjin virus infection, cryptosporidiosis, influenza (laboratory-confirmed), Australian bat lyssavirus infection and invasive pneumococcal disease (laboratory-confirmed). Data on the following diseases will no longer be collected: chancroid infection, hydatid disease, lymphogranuloma venereum, non-TB mycobacterial infections, and yersiniosis.

Highlights for 2nd quarter, 2001

Communicable Disease Surveillance Highlights report on data from various sources, including the National Notifiable Diseases Surveillance System (NNDSS) and several disease specific surveillance systems that provide regular reports to Communicable Diseases Intelligence. These national data collections are complemented by intelligence provided by State and Territory communicable disease epidemiologists and/or data managers who have formed a Data Management Network. This additional information has enabled the reporting of more informative highlights each month.

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia, and the CDI Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel surveillance scheme. In this report, data from the NNDSS are referred to as 'notifications' or 'cases', and those from ASPREN are referred to as 'consultations' or 'encounters' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Three types of data are included in *National Influenza Surveillance, 2001*. These are sentinel general practitioner surveillance conducted by the Australian Sentinel Practice Research Network (ASPREN), the Department of Human Services (Victoria), the Department of Health (New South Wales) and the Tropical Influenza Surveillance Scheme, Territory Health Services (Northern Territory); laboratory surveillance data from the Communicable Diseases Intelligence Virology and Serology Laboratory Reporting Scheme (LabVISE) and the World Health Organization Collaborating Centre for Influenza Reference and Research; and absenteeism surveillance conducted by Australia Post. For further information about these schemes, see *Commun Dis Intell 2000;24:9-10*.

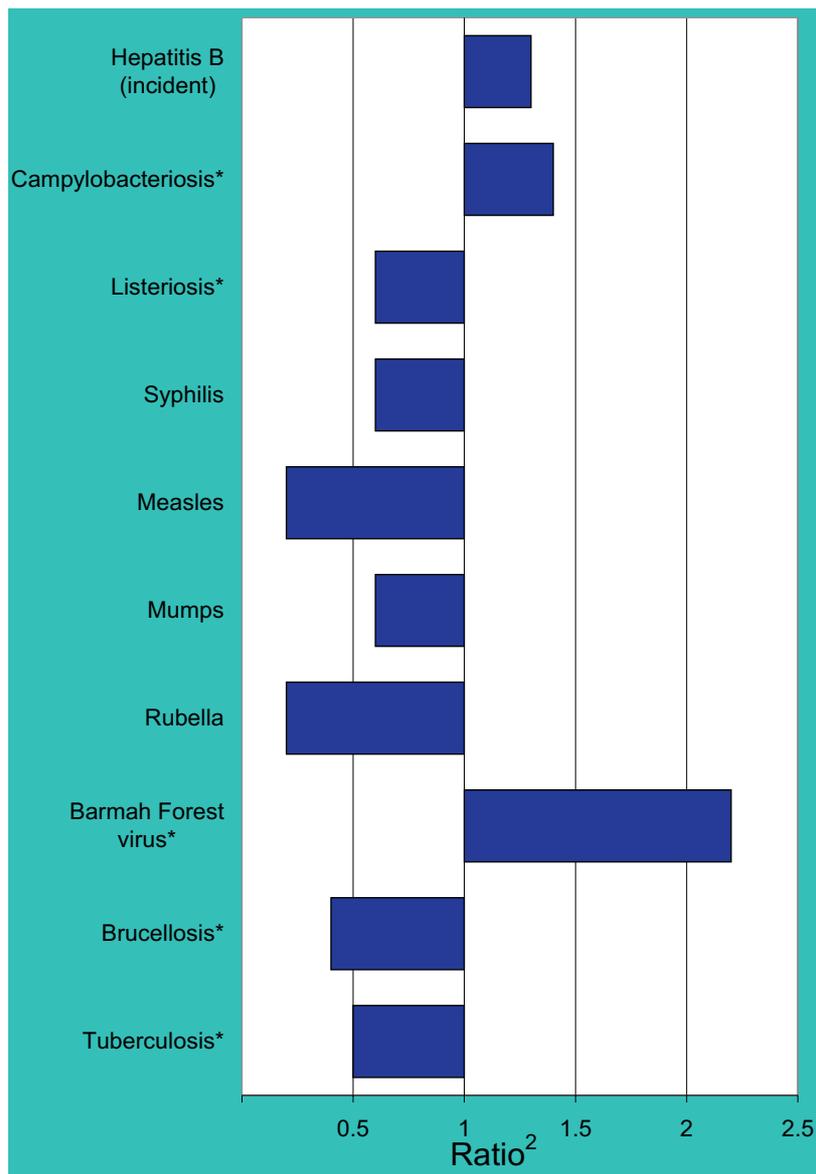
Figure 1 shows the changes in disease notifications compared with the 5-year second quarter mean. Disease notifications above or below the 5-year mean, plus- or minus- two standard deviations are marked with an asterisk. These and other disease trends are discussed below.

Bloodborne diseases

Incident (acute) hepatitis B notifications were above the normal range for the second quarter compared with the 5-year mean. In this quarter, 43 notifications were received from Victoria compared with 29 in first quarter. The Victorian

incident hepatitis B notification rate rose from 2.4 per 100,000 in the first quarter 2001 to 3.6 per 100,000 population in the second quarter. Injecting drug use has been identified in 65 per cent of the notified cases in Victoria (year to date). The Victorian Department of Human Services has started an enhanced acute hepatitis B surveillance program to obtain more detailed risk factor information to inform prevention strategies. A public health alert has been released through the Needle and Syringe Program to inform intravenous drug users of harm minimisation strategies and the need for primary prevention through vaccination.

Figure 1. Selected¹ Diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 April to 30 June 2001 with historical data²



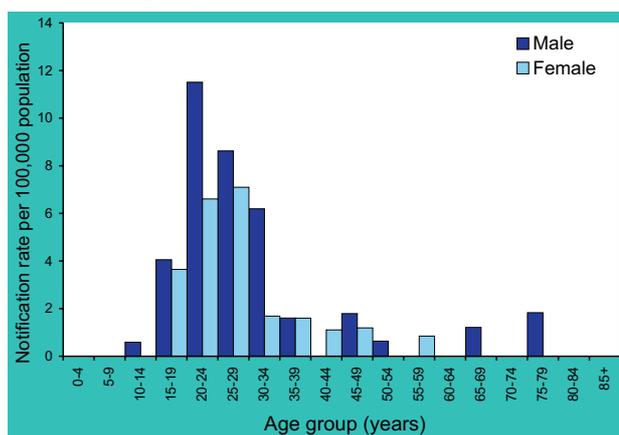
1. Selected Diseases are chosen each quarter according to current activity.
 2. Ratio of current quarter total to mean of corresponding quarter for the previous five years.
- * Notifications above or below the 5-year mean plus- or minus- two standard deviations.

Figure 2 shows the notification rate of incident hepatitis B infections reported in this quarter by age group and sex. Age- and sex-specific rates per 100,000 population show a male preponderance in the 20-34 year age range.

Gastrointestinal disease

In this quarter we report for the first time, cases of shigellosis from New South Wales, where the disease has now become specifically notifiable. Previously, shigellosis cases in New South Wales were reported as 'foodborne disease' or 'gastroenteritis in an institution'. Campylobacteriosis is not a specific notifiable disease in New South Wales. In this quarter cryptosporidiosis was reported from all jurisdictions except Tasmania.

Figure 2. Notification rate of incident hepatitis B, Australia, 1 April to 30 June 2001, by age group and sex



Botulism

A case of infant botulism was reported from Queensland in the second quarter. A 10 week-old infant presented with acute flaccid paralysis (prominent bulbar weakness). Subsequently, *Clostridium botulinum* type B was isolated from faeces. The infant had a history of probable consumption of honey within the 2 weeks prior to onset. New infant feeding guidelines, currently under review by the National Health and Medical Research Council, advise that infants under 1 year of age not be fed honey.

Campylobacteriosis

Notifications of campylobacteriosis in the second quarter 2001 were above the range of 5-years' data for the second quarter. Campylobacteriosis is now the major cause of sporadic gastroenteritis in Australia and is more than twice as commonly reported as salmonellosis. This pattern is found throughout industrialised countries.¹ Despite the large number of cases, outbreaks of campylobacteriosis are rarely identified (see OzFoodNet report for first quarter 2001 in this issue, pp103-106).

Cryptosporidiosis

Cryptosporidiosis became nationally notifiable with effect from January 2001. Cryptosporidiosis is spread by a faecal-oral route and includes person to person, animal to person, waterborne and foodborne transmission. The prevalence of infection is between 1 and 4.5 per cent of individuals in developed countries and 3 to 20 per cent of individuals in developing countries.² Children under 2 years of age, animal handlers, travellers, and men who have sex with men are recognised to be at greater risk of infection.

Infections with *Cryptosporidium* may be asymptomatic and carriers may shed oocysts in their faeces. The infective dose is very small (approx 100 oocysts) and previous exposure in immunocompetent adults is not entirely protective, although it may decrease the severity of the disease caused by subsequent infections. People with markedly impaired immune systems due to HIV/AIDS infection are susceptible to severe persistent diarrhoea caused by cryptosporidiosis and the infection may spread to the biliary tract. Declines in the prevalence of cryptosporidiosis in HIV/AIDS patients treated with highly active anti-retroviral therapy have been reported.³

During the early part of this quarter sporadic cryptosporidiosis infections, possibly associated with use of swimming pools, were reported from several jurisdictions in Australia. Victoria continued to observe increased notifications of cryptosporidiosis compared to previous years, predominantly confined to the Melbourne metropolitan area. (Cryptosporidiosis became notifiable in Victoria from 16 May 2001, prior to which notifications were received from doctors and laboratories on a voluntary basis.) The majority of cases reported exposure to public swimming pools before becoming ill. Small clusters were associated with several pools.

Figure 3 shows the notification rate for cryptosporidiosis by age group and sex for this quarter. More than half of all notifications in this quarter were in children aged less than 5 years. There was no difference in the notification rate between males and females.

Last summer in the United States of America, 5 outbreaks of cryptosporidiosis associated with swimming pool use were

reported. The Centers for Disease Control and Queensland Health have published guidelines on the education of swimmers and pool staff, pool design modifications and improved operation and maintenance procedures in order to prevent outbreaks,⁴ see also <http://www.qld.health.gov.au/healthyliving/>.

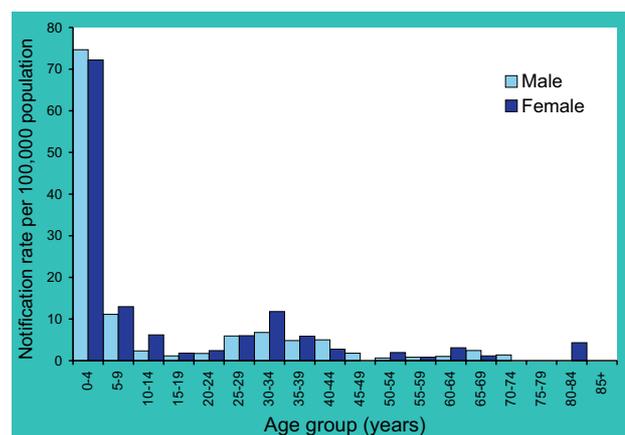
Salmonellosis

Several outbreaks of *Salmonella* Typhimurium infection were reported from around the country. In South Australia, *Salmonella* Typhimurium PT126 was recognised as a cause of gastroenteritis in 15 people in the early part of the year. This outbreak was associated with the consumption of custard fruit tarts (see OzFoodNet first quarter report, this issue). Since the beginning of May, another 34 cases have been identified in South Australia but no food source has yet been identified. Investigations are continuing.

Gary Dowse, Medical Epidemiologist from the Communicable Disease Control Branch, Health Department of Western Australia, reported on an outbreak of *Salmonella* Typhimurium PT64. 'An outbreak of Salmonellosis associated with eating fried ice cream at a Perth restaurant was reported from Western Australia in June. Over 30 patrons reported being ill, with a relatively short incubation period and several being hospitalised, indicating the food was heavily contaminated. *Salmonella* Typhimurium PT64 was isolated from faecal specimens from 20 patrons, 2 remaining serves of fried ice cream and 1 asymptomatic food handler. Cases were infected over several days, apparently from the same pre-prepared batch of fried ice cream. Preparation involved coating the ice cream with a layer of sponge cake, which was then dipped in an egg mix and frozen. Serves were removed from the freezer and deep-fried for a short period, when required. The means of contamination was not identified. This is the second outbreak of *Salmonella* food poisoning associated with eating fried ice cream reported from Western Australia in recent years. An outbreak associated with fried ice cream has also been reported previously from New South Wales.⁵

Health Department officials in Victoria investigated a cluster of 14 cases of *Salmonella* Typhimurium PT104 that were notified between February and July 2001. Following reports of a similar outbreak in Sweden, the source was identified as 2 brands of 'Helva', a type of sweet made from sesame seeds, sugar and flavourings that had been imported from

Figure 3. Notification rate of cryptosporidiosis, Australia, 1 April to 30 June 2001, by age group and sex



Turkey. The Australia New Zealand Food Authority coordinated a national recall of the 2 products.

Two cases of *Salmonella* Typhimurium PT99 in southern Victoria were associated with an outbreak of gastroenteritis epidemiologically linked to the consumption of lambs fry at a local hotel buffet in early June. Further cases in the region are currently being investigated.

In Queensland, more than 30 cases of *Salmonella* Bovismorbificans PT32 were reported in June. A link was made to consumption of a particular product from a major fast food chain. The outbreak is currently under investigation and further details will be provided on completion of investigations.

Quarantinable diseases

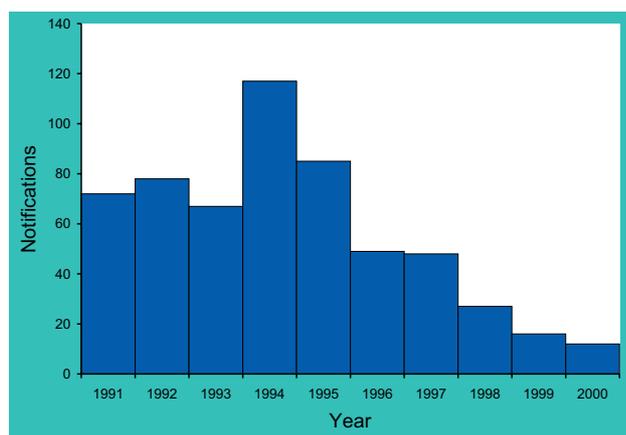
No quarantinable Diseases were reported in Australia in the second quarter of 2001.

Sexually transmitted infections

A review of syphilis notifications in Queensland is being carried out to distinguish new cases from re-tests and to remove duplicates. Hence no syphilis data were available for Queensland in this quarter which explains the low number of notifications of syphilis in this report.

Eight cases of donovanosis were reported in this quarter. All cases were from the Northern Territory, Western Australia or Queensland. Donovanosis is a notifiable disease in all jurisdictions except South Australia. Donovanosis is a chronic genital ulcer disease that generally occurs in indigenous Australians in rural and remote communities. Notifications of donovanosis have fallen significantly over the past 10 years (Figure 4), and particularly since 1994 due to the introduction of more sensitive and acceptable testing methods and more effective treatment with azithromycin. The Office for Aboriginal and Torres Strait Islander Health (OATSIH) is designing a donovanosis eradication plan based on strengthening primary health care services in rural and remote areas to provide early diagnosis and treatment for donovanosis. Laboratory confirmation using sensitive polymerase chain reaction (PCR) methods, the use of standard treatment protocols, active case follow-up and enhanced surveillance are also important aspects of the eradication plan. Enhanced surveillance for donovanosis will include continued passive surveillance in all States and

Figure 4. Notifications of donovanosis, Australia, 1991 to 2000, by date of notification



Territories, active surveillance in local areas, laboratory notification in Western Australia and the Northern Territory and standardised data collection protocols. The impact of this program over the next few years may be to initially increase notifications of donovanosis to the NNDSS. There have been 10 notifications of donovanosis in total in 2001 compared with 12 notifications in all of 2000.

Vaccine preventable diseases

Laboratory-confirmed influenza and invasive pneumococcal disease are newly notifiable vaccine preventable diseases in 2001. Data were received from all jurisdictions except Victoria, Queensland and South Australia. Influenza was added to the list of notifiable diseases in these jurisdictions at the end of the first quarter and data will be available from the third quarter of 2001. Administrative changes to include influenza as a notifiable disease are under way in the Australian Capital Territory.

Invasive pneumococcal disease data were available from all jurisdictions except Tasmania and South Australia, where surveillance has only recently commenced.

Measles, mumps and rubella notifications were all reduced compared with the 5-year mean of second quarter notifications. This decline reflects the continuing impact of the Measles Control Campaign in 1998 when 1.7 million children in Australia received the measles-mumps-rubella vaccine.

No measles cases were reported from the Australian Capital Territory, the Northern Territory, South Australia or Victoria. There were single cases of measles reported from Western Australia, Queensland and Tasmania. Both the Western Australian and Queensland cases were infected overseas. A cluster of 7 cases of measles was reported from western Sydney. The first case possibly acquired the infection while travelling overseas. Five of the 7 cases were laboratory confirmed. Three cases were infants aged between 8 and 12 months, and the other 4 were in young adults aged 19 to 26 years, who were unlikely to have been vaccinated against measles.

A measles outbreak in Papua New Guinea (PNG) in late June prompted a warning from the Communicable Diseases Network Australia (CDNA) to travellers to PNG to consider measles vaccination. The media release warned doctors and health care workers to be alert for measles in people returning to Australia from PNG (CDNA media release 01/01, 23 July 2001).

Vectorborne diseases

Murray Valley encephalitis and Kunjin viral infection are now notifiable Diseases in all jurisdictions except the Australian Capital Territory, where such infections are combined under Murray Valley encephalitis.

Murray Valley encephalitis

Two cases of Murray Valley encephalitis (MVE) virus infection, which occurred in the first quarter of 2001 and were not previously reported, have been noted in reports to the Communicable Diseases Network Australia. Since the NNDSS analysis is by date of notification, delays in reporting mean that these cases do not appear in Table 1.

The first case was in a 59-year-old man from South Australia who acquired the infection in the Northern Territory. The second case, in a German tourist who was infected in the Northern Territory at the end of April, was reported on ProMED-mail in May 2001. This 23-year-old man developed viral encephalitis on his return to Germany, presented as febrile and disoriented and suffered repeated convulsions. An acute flavivirus infection was suggested and MVE was diagnosed serologically. Confirmation was provided by Dr Dominic Dwyer's laboratory at ICPMR in Sydney (ProMED Viral enceph., imported – Germany ex Australia (03) 20010524.0252).

Kunjin virus infection

Three cases of Kunjin were reported in this quarter. In 2 cases the date of notification of disease was in the first quarter and reported in the second quarter, thus not appearing in Table 1. These cases were resident in Western Australia and the Northern Territory. A third case, from Victoria, was notified to State authorities in June, but the report was not received in the NNDSS before the end of the quarter. Delays in reporting may be considerable in diseases with insidious onset or where symptoms mimic other diseases and several infections are considered in the differential diagnosis. Delays may also occur when the definitive serological tests are not widely available. Since Kunjin virus infection is a newly notifiable disease this year, delays in reporting may also occur because of a lack of awareness among reporting laboratories and doctors.

The Western Australia case presented with a 4 month history of aching joints and tiredness, so the date of onset was estimated to be around Christmas 2000. This case was confirmed serologically. The Northern Territory case occurred in a 23-year-old female. The third case reported from Victoria, had a history of travel in outback New South Wales, South Australia, Queensland and the Northern Territory during the incubation period.

Malaria

Four cases of *Plasmodium falciparum* malaria in Sudanese refugees were reported from Tasmania. These occurred in a family group who appear to have acquired the disease in Angola.

Barmah Forest virus

Reports of Barmah Forest virus (BF) infections in this quarter were above the range of notifications based on the last 5 years data. Increased numbers of notifications from New South Wales (255 YTD compared with 191 in 2000) and Queensland (440 YTD compared with 333 in 2000) were noted. National notifications for April and May were the highest ever recorded for those months and the numbers for June were the highest for that month since 1995. A comparison of notifications by month for the first 6 months shows higher BF notifications throughout this period in 2001 (Figure 5). Barmah Forest virus infections were largely in adult populations (96% of notifications in this quarter were in persons aged 20 years or more) and affected men and women equally (Figure 6).

Zoonoses

Among the zoonotic Diseases reported to NNDSS, data were available from all States and Territories for all diseases with the exception of anthrax and ornithosis. Anthrax is not

yet a notifiable disease in South Australia. Ornithosis was only made a notifiable disease in Queensland at the end of June 2001.

There were only 2 cases of brucellosis reported to the NNDSS in this quarter, both from Queensland. This was a significant decrease from the 5-year mean for this quarter.

Q fever

Notifications of Q fever, though within the range of the last 5 years' notifications, show an increase in Victoria (24 YTD compared with 23 for all of 2000) and Queensland (228 YTD compared with 334 for all of 2000). There was an outbreak of Q fever linked to an abattoir in northern Victoria, with a total of 21 confirmed cases. Screening and vaccination of susceptible employees was undertaken.

This increase in Q fever notifications may be associated with increased public awareness and testing before vaccination, in occupational groups. Abattoir workers who are at high risk of infection are eligible for the vaccine, funding for which was recently provided to the States and Territories by the Commonwealth, under the National Q Fever Management Program. A breakdown of notifications by age and sex (Figure 7), shows a strong male preponderance (male to female ratio 4.4:1) and infection mainly in adults (92% in persons aged more than 20 years).

Figure 5. Notifications of Barmah Forest virus, Australia, January to June 1999 to 2001, by date of notification

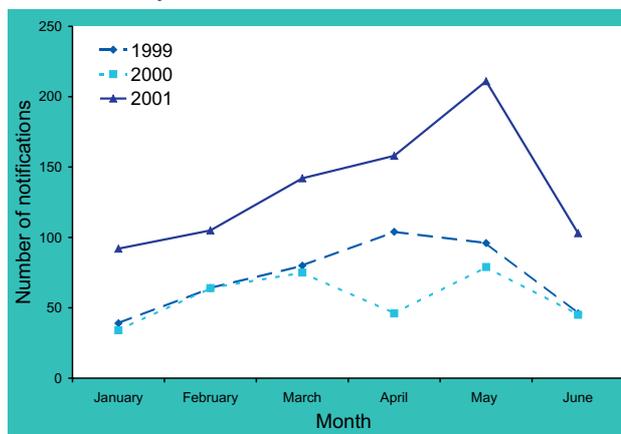


Figure 6. Notifications of Barmah Forest virus, Australia, 1 April to 30 June 2001, by age and sex

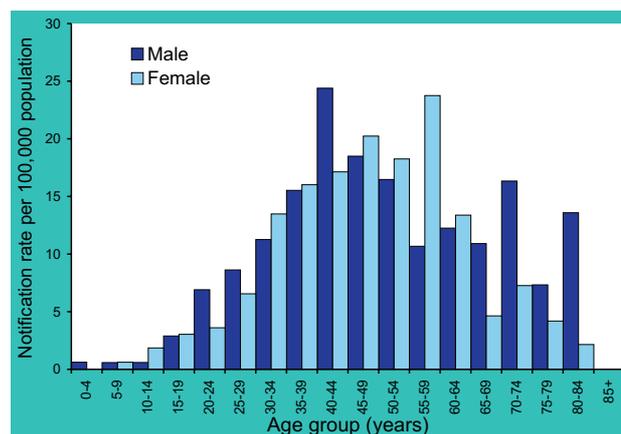
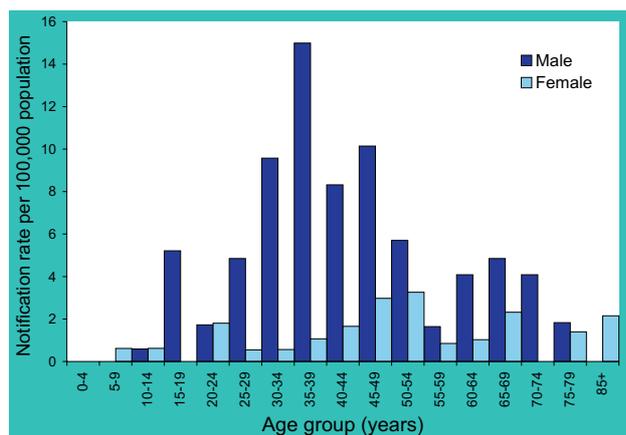


Figure 7. Notifications of Q fever, Australia, 1 April to 30 June 2001, by age and sex



Other diseases

Legionellosis

Notifications of legionellosis are well down on last year (137 YTD compared with 319 for the same period in 2000). The Melbourne Aquarium outbreak in the second quarter of 2000 had a significant impact on the burden of disease in Victoria. Victoria reported 31 cases in the second quarter of 2001, which represented more than 40 per cent of all reports of legionellosis in Australia in the same period. The Victorian Government has recently strengthened requirements for the maintenance of cooling towers to prevent contamination with the *Legionella* bacteria. Contaminated cooling towers have been implicated in outbreaks of legionellosis worldwide.

Meningococcal disease

The number of meningococcal disease notifications was slightly increased compared with the average of the last 5 years. The totals for the first half of this year (n=271) were above those reported in the first 6 months of 2000 (n=215).

LabVISE

The Laboratory Virology and Serology (LabVISE) reporting scheme is a passive surveillance scheme based on voluntary reports of infectious agents contributed to the Commonwealth Department of Health and Aged Care, by sentinel virology and serology laboratories around Australia.

Comments on second quarter 2001 LabVISE data

Reports to LabVISE were lower (9,304 reports) in this quarter, than for the same quarter last year (11,303 reports). Reports were received from all States and Territories through 13 participating laboratories (Table 4).

Data collected in the LabVISE surveillance scheme supplemented that collected in the NNDSS in the same quarter. Year to date totals of isolates of Barmah Forest virus are almost double in number (200) compared with the same period in 2000 (n=104). These were mostly from Queensland (n=95), where reports of BF infection to NNDSS were also increased compared with previous years. Similarly year to date totals reported to LabVISE of isolates of *Coxiella burnetii*, the causative organism of Q fever, are increased (n=72) compared with the same period (n=32) last year. These reports were largely from Queensland (n=20) or Victoria (n=24). Both these States also reported increased Q fever cases to the NNDSS.

All reports of Norwalk-like virus (NLV) in this quarter were notified from Victoria. This may reflect a reporting bias because the Victorian Infectious Diseases Research Laboratory, unlike other laboratories, routinely screens stool specimens for the Norwalk virus. These reports included samples from 4 recognised outbreaks of NLV in this quarter in Victoria. Two of these outbreaks were in childcare centres, one in a primary school and one in an aged care facility. The frequency and size of these outbreaks were similar to those previously seen in this season in Victoria (Joy Gregory, OzFoodNet, Department of Human Services, Victoria, personal communication). NLV is the leading cause of diarrhoea and vomiting in the United Kingdom⁶ and may comprise up to 11 per cent of all episodes of acute primary gastroenteritis in the USA.⁷

References

1. Allos BM. *Campylobacter jejuni* infections: update on emerging issues and trends. *CID* 2001;32:1201-1206.
2. Chin J. Control of Communicable Diseases Manual. (7th edition ed.) Washington: American Public Health Association, 2000.
3. Clark DP. New insights into human cryptosporidiosis. *Clin Microbiol Rev* 1999;12:554-563.
4. CDC. Protracted outbreaks of cryptosporidiosis associated with swimming pool use - Ohio and Nebraska, 2000. *MMWR* 2001;50:406-410.
5. Tsigiotes N, Biffin B, Jalaludin B. *Salmonella* outbreak and deep fried ice cream. *Commun Dis Intell* 1994;18:254-255.
6. Cheesborough JS, Green J, Gallimore CI, Wright PA, Brown DWG. Widespread environmental contamination with Norwalk-like viruses (NLV) detected in a prolonged hotel outbreak of gastroenteritis. *Epidemiol Infect* 2000;125:93-98.
7. Mead PS, Slutsker L, Dietz V, et al. Food-related illness and death in the United States. *Emerging Infectious Diseases* 1999;5:607-625.