

Communicable diseases surveillance

Highlights for 4th quarter, 2006

Communicable diseases surveillance highlights reports 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. This additional information has enabled the reporting of more informative highlights each quarter.

The NNDSS is conducted under the auspices of the Communicable Diseases Network Australia. The NNDSS collates data on notifiable communicable diseases from state and territory health departments. The Virology and Serology Laboratory Reporting Scheme (LabVISE) is a sentinel surveillance scheme which collates information on laboratory diagnosis of communicable diseases. In this report, data from the NNDSS are referred to as 'notifications' or 'cases' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Figure 1 shows the changes in selected disease notifications with an onset in the fourth quarter of 2006, compared with the five-year mean for the same period. The following diseases were above the five-year mean: cholera,* *Haemophilus influenzae* type b infection, hepatitis E, haemolytic uraemic syndrome, Barmah Forest virus infection and chlamydial infection. Diseases for which the number of notifications was below the five-year mean for the same period include flavivirus infection (NEC), rubella and donovanosis.

Gastrointestinal diseases

Haemolytic uraemic syndrome

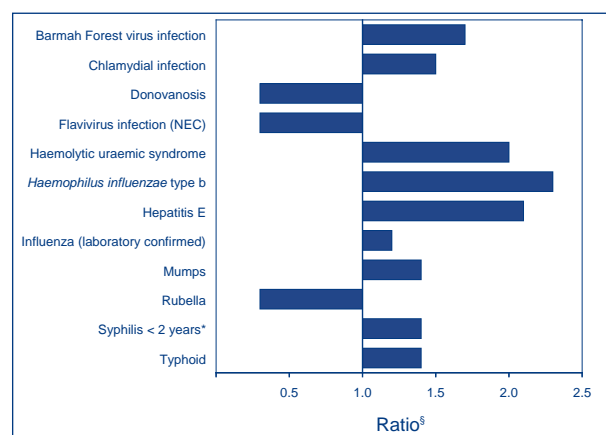
There were 9 notifications of haemolytic uraemic syndrome between 1 October and 31 December 2006, which is twice the five-year mean for the fourth quarter. Eight of the reported cases were from New South Wales. The cases were investigated but no links were found.

Four cases were reported as infected with Shiga-like toxin-producing *Escherichia coli*/verotoxin-producing *E. coli*, one of which was identified as serotype O157:H7.

Hepatitis E

There were 5 cases of hepatitis E notified in the fourth quarter of 2006, which was 2.1 times the five-year mean for the period. Six cases were also notified in the previous period, compared to only 2 cases in the fourth quarter of 2005.

Figure 1. Selected diseases*,† from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 October to 31 December 2006 with historical data‡



* Selected diseases are chosen each quarter according to current activity. Five year averages and the ratios of notifications in the reporting period in the five year mean should be interpreted with caution. Changes in surveillance practice, diagnostic techniques and reporting, may contribute to increases or decreases in the total notifications received over a five year period. Ratios are to be taken as a crude measure of current disease activity and may reflect changes in reporting rather than changes in disease activity.

† Cholera is not shown due to scale issues.

‡ Some Victorian data for this period may be incomplete.

§ Ratio of current quarter total to mean of corresponding quarter for the previous five years.

Four of the cases were notified in New South Wales. The cases were reported for 3 men and 2 women, ranging in age from 20 to 34 years. Two cases were imported from overseas: one from Bangladesh and the other was a student from India.

* There were 3 cases of cholera for the quarter, which is 15 times the five-year mean. Cholera is not shown in Figure 1 due to scale issues.

Typhoid

There were 21 cases of typhoid in this reporting period, which was 1.4 times the five-year mean. Half of the cases (11) were reported in New South Wales. Twenty cases had information on place of acquisition; 16 cases were acquired overseas and 4 were acquired locally (3 in New South Wales and 1 in Victoria).

Quarantinable diseases

Cholera

Three cases of cholera were notified in the fourth quarter of 2006. The cases were 3 elderly women (aged 71, 71 and 84) in Sydney, New South Wales, who suffered from diarrhoea in November 2006. The infecting organism was identified as toxin-producing *Vibrio cholerae* 01 Ogawa El Tor. The only common exposure among the 3 women was the consumption of raw whitebait. Investigations by the NSW Food Authority found that the whitebait implicated as the vehicle for infection was imported from Indonesia, and a media release advising people to avoid eating raw whitebait was issued. No additional cases of cholera were discovered, and the 3 women all recovered.¹

These 3 cases represent all cholera notifications reported in Australia in 2006. The average number of cases over the last 5 years is 0.2 cases for the fourth quarter and 3.6 cases per calendar year (ranging from 1 case in 2003 to 5 cases in both 2001 and 2004).

Cholera is one of 7 human diseases subject to quarantine controls in Australia and it is one of the diseases reportable to the World Health Organization. Apart from 1 case of laboratory acquired cholera in 1996, all cases reported since the commencement of the NNDSS in 1991 have been imported.²

Sexually transmissible infections

Donovanosis

There was only one notification of donovanosis infection between 1 October and 31 December 2006, which was 0.3 times the five-year mean. There were only 3 cases notified in 2006, compared to an average of 18 cases per year over the previous 5 years. This decline follows the implementation of *The National Donovanosis (Elimination) Eradication Project 2001–2004*. This project led to enhanced surveillance and improved diagnosis and treatment, resulting in declining notifications of donovanosis.³

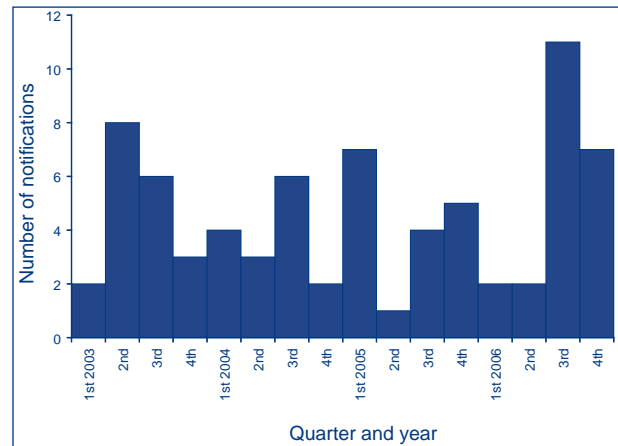
All 3 cases notified in 2006 were Indigenous persons aged between 30 and 60 years; 2 males from the Northern Territory and 1 female from Queensland.

Vaccine preventable diseases

Haemophilus influenzae type b infection

There were 7 notifications of *Haemophilus influenzae* type b (Hib) infection between 1 October and 31 December 2006, which was 2.3 times the five-year mean. This was less than the number notified in the previous period, 1 June to 30 September 2006 (11 cases) (Figure 2).

Figure 2. Notifications of *Haemophilus influenzae* type b infection, 2003 to 2006



Cases came from Queensland (3), New South Wales (2) and the Northern Territory (1). Four of the cases were in females. One of the cases was in an infant aged less than 1 year, with an additional 3 cases in children aged 1 to 5 years.

Indigenous status was recorded for 6 of the 7 cases; 3 notifications were in Indigenous people, including 2 children aged less than 2 years.

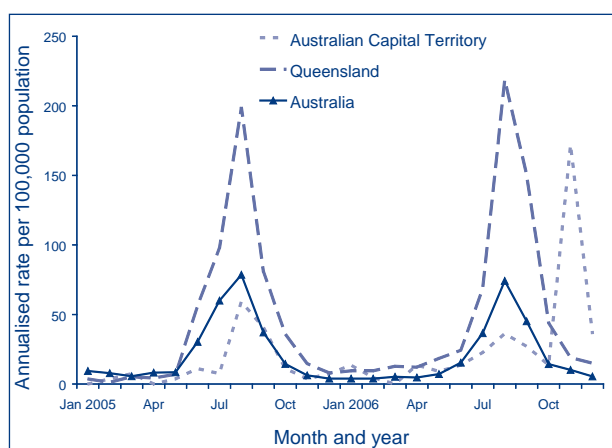
Routine vaccination against Hib became available in Australia in 1993. Vaccination status was available for all 4 of the cases who were eligible for Hib immunisation; 3 cases were fully vaccinated for age, and the other partially vaccinated for age.

Influenza

There were 420 notifications of laboratory-confirmed influenza in the fourth quarter of 2006, which was 1.2 times the five-year mean for the period. Half of the cases (212) were from Queensland. Figure 3 shows the notification rate of influenza in Queensland for 2005 and 2006. The mean age of onset was 43 years and the median age of onset was 46 years (40 years for males and 48 years for females). The highest proportion of cases was reported in children aged less than 5 years (12.9% or 54 cases).

Of particular note was an outbreak of influenza in an aged care facility in the Australian Capital Territory (Figure 3). Between 11 October and 6 December, 77 people (55 of 132 residents and 22 of 173 staff) in an aged care facility reported symptoms of influenza-like illness. Of these, 19 people (18 residents and 1 staff) were found to have laboratory-confirmed influenza A infection.⁴

Figure 3. Notification rates of laboratory-confirmed influenza, Australian Capital Territory, Queensland and Australia, 2005 to 2006



Of those with laboratory-confirmed influenza A, 6 residents and 2 staff were immunised with the 2006–07 influenza vaccine prior to the outbreak.⁴

Ten resident deaths were associated with the outbreak. The mean age at death was 88 years and the median 91 years (range of 75 to 100 years). Two of the residents who died were fully vaccinated with the 2006–07 influenza vaccine.⁴

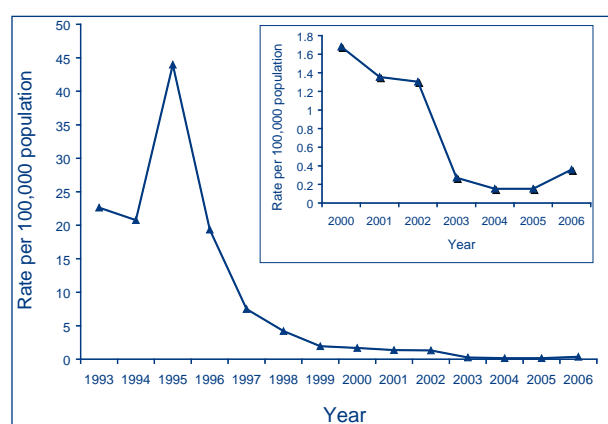
The outbreak control strategy included vaccination clinics, enhanced infection control and isolation of cases. Prophylactic treatment through administration of Oseltamivir was recommended to residents through their medical practitioners and provided to asymptomatic staff. The public health response also included laboratory investigation of suspect cases, social distancing and other measures to assist containment.⁴

Rubella

There were 9 cases of rubella reported for the period 1 October to 31 December 2006, which was 0.3 times the five-year mean. Six cases were reported for males and 3 for females. Rubella is more common in males than females; in 1971, vaccination against rubella was introduced for adolescent girls, but not boys. In

1989 however, with the introduction of the measles-mumps-rubella (MMR) vaccine (infant dose in 1989 and adolescent dose in 1994), both boys and girls are vaccinated against the disease.⁵ Following epidemics of rubella in the early 1990s, notification rates have continued to decline (Figure 4). This is partly attributable to the Measles Control Campaign in late 1998.⁶ The Measles Control Campaign had three main components: moving the second dose of the MMR vaccine from 10–16 years to 4–5 years; providing catch-up doses to children aged 5–12 years; and sending reminder letters to parents of preschool-aged children.⁷

Figure 4. Rubella notification rates, Australia, 1993 to 2006



Rubella notifications increased from 31 in 2005 to 60 in 2006. This was due to notifications from New South Wales increasing from 10 cases in 2005 to 37 in 2006. The New South Wales cases were mainly from South Eastern and Central Sydney and concentrated in those aged 15 to 44 years, however there was no single identifiable source for the increase in notifications (Mark Bartlett, personal communication).

The 3 female cases were aged 18, 22 and 23 years. Vaccination status was only available for the 18-year-old, who was not vaccinated.

Vectorborne diseases

Barmah Forest virus and Ross River virus infections

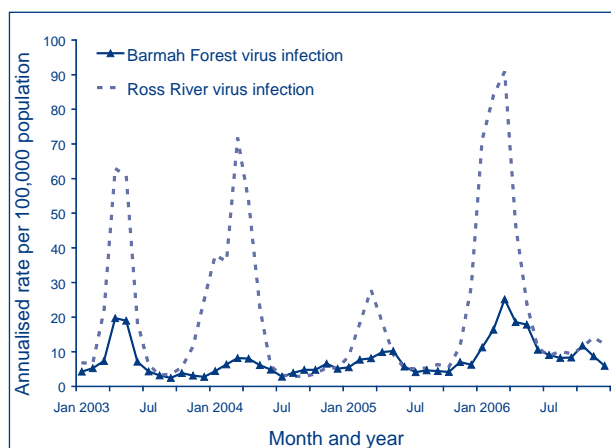
There were 364 notifications of Barmah Forest virus (BFV) infection and 520 notifications of Ross River virus (RRV) infection in the fourth quarter of 2006, which were 1.7 and 1.3 times the five-year mean, respectively. The majority of notifications came from Queensland (60% BFV and 34% RRV), New South Wales (26% BFV and 25% RRV) and Western Australia (22% RRV). While only 16 notifications of BFV and 43 notifications of RRV came

from the Northern Territory, the annualised rates were substantially higher than in other jurisdictions at 31.1 cases per 100,000 population for BFV (compared to 21.6 in Queensland and 5.5 in New South Wales) and 83.5 cases per 100,000 population (compared to 21.9 in Western Australia, 17.4 in Queensland and 7.6 in New South Wales).

Barmah Forest virus infection was reported more often for females than males (224 notifications versus 140). BFV notification rates were highest for males aged 50–59 years and females aged 30–39 years (9.5 and 13.0 cases per 100,000 population, respectively). Similarly, more notifications of Ross River virus infection were reported for females than males (285 and 235 notifications respectively). RRV notification rates were highest in women aged 30–39 years and in men aged 70–79 years (20.2 and 15.8 cases per 100,000 population, respectively).

Figure 5 shows national notification rates for Barmah Forest virus and Ross River virus from 2003 to 2006. Both diseases are seasonal, with notification rates peaking nationally in early autumn. Ross River virus infection rates are consistently higher than those for Barmah Forest virus in the peak season. The rates for both diseases were increased above historical levels in 2006.

Figure 5. Barmah Forest virus and Ross River virus infection notification rates, Australia, January 2003 to December 2006



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