

# Communicable diseases surveillance

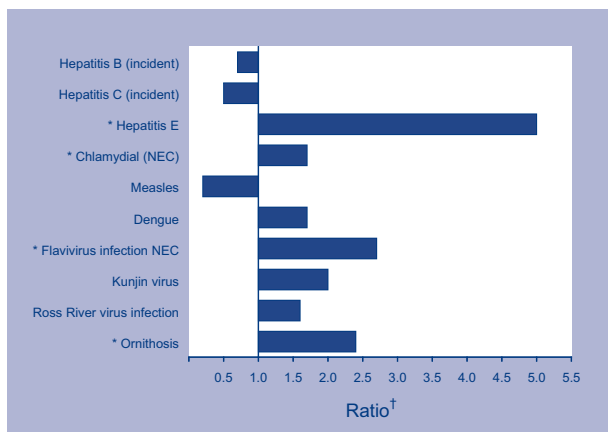
## Highlights for 1st quarter, 2004

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. 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. NNDSS collates data on notifiable communicable diseases from State or Territory health departments. The Virology and Serology Laboratory Reporting Scheme (LabWISE) 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', and those from ASPREN are referred to as 'consultations' or 'encounters' while data from the LabWISE scheme are referred to as 'laboratory reports'.

Figure 1 shows the changes in disease notifications with an onset in the first quarter of 2004, compared with a 5-year mean of the same period. Disease notifications outside the 5-year mean plus or minus two standard deviations are marked.

**Figure 1. Selected\* diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 January to 31 March 2004 with historical data\***



\* Selected diseases are chosen each quarter according to current activity.

† 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 for the same period.

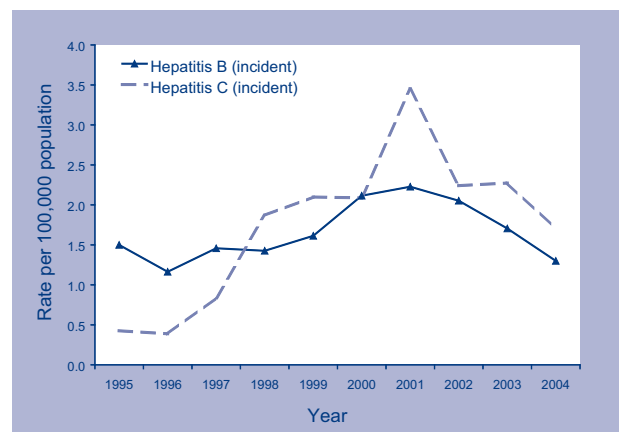
During the first quarter of 2004, there were increases in hepatitis E, *Chlamydia*, flavivirus (NEC) and ornithosis significantly above historical levels. Notifications of incident hepatitis B, incident hepatitis C and measles were lower than the five-year mean, but not outside the historical range of notifications for these diseases.

### Bloodborne diseases

#### Incident hepatitis B and incident hepatitis C

Notification rates of incident hepatitis B and incident hepatitis C have continued to fall. There were 65 notifications of incident hepatitis B (compared to a 5-year average of 377 notifications for this quarter) and 67 notifications of incident hepatitis C (compared to an average of 472 for the quarter over the past 5 years). Trends in the national notification rates of incident hepatitis B and C are shown in Figure 2.

**Figure 2. Notifications of incident hepatitis B and hepatitis C since 1995, by year of onset**



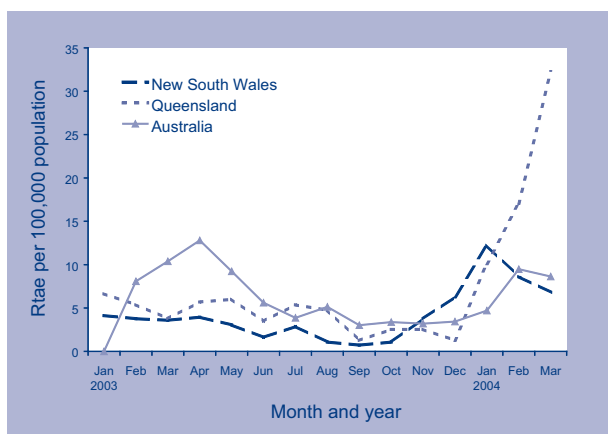
The rates of both diseases have fallen since peaking in 2001. Decreases in notifications are seen in all jurisdictions. It is unclear whether these declines represent a real decline in virus transmission or changes in testing practice or surveillance methods.

### Gastrointestinal diseases

#### Cryptosporidiosis

Of the 503 notifications of cryptosporidiosis in the quarter, 188 were reported from Queensland and 150 from New South Wales. Although the rates of cryptosporidiosis were highest in the Northern Territory (84.7 per 100,000) and Queensland (19.8 per 100,000), the rates in New South Wales (9 per 100,000) were well above baseline (Figure 3) and the rate in January was the highest for the last three years. The NSW Health Department reported that investigations by public health units, including interviews with patients, had not identified any likely common sources of infection among cases. In Queensland, there was an increase in cryptosporidiosis in the Townsville area in February and March. Person-to-person transmission in public and private swimming pools and child-care centres was suspected.

**Figure 3. Notification rates of cryptosporidiosis, New South Wales, Queensland and Australia, January 2003 to March 2004, by month of onset**



#### Hepatitis E

There were 11 cases of hepatitis E reported in the quarter. Six cases were reported from Victoria, four from New South Wales and one from Queensland. On average over the past five years only two cases have been reported in first quarter.

Hepatitis E is the major enteric non-A, non-B hepatitis. Outbreaks have been reported from countries in South or Central Asia. Cases in Australia only occur among travellers returning from endemic areas. Travel histories of the 11 cases in the quarter revealed that all had travelled to Asian countries where hepatitis E is common (Bangladesh, India, Indonesia and China).

#### Shiga-like toxigenic *Escherichia coli*/verotoxin *E. coli*

Queensland reported two cases of shiga-like toxigenic *Escherichia coli* (STEC) infection presenting as haemolytic uraemic syndrome from a small rural town. One of the two cases, who were siblings, was confirmed as having an STEC infection. No common food source for this infection was identified.

### Quarantinable diseases

#### Cholera

A single case of cholera was reported from Western Australia. The case was a 33-year-old man who had been holidaying in Bali, Indonesia. He was infected with *Vibrio cholerae* serogroup 01 and was treated without hospitalisation on his return to Western Australia.

### Vaccine preventable diseases

#### Measles

In March, a mother and young child from New South Wales returned to Australia after acquiring measles while travelling in India. The cases were investigated by Public Health Unit (PHU) staff, who assessed the child to be in the highly infectious phase whilst returning home. The mother reported that she and the child had never received measles vaccine. Contacts at risk of infection in Australia included susceptible people who shared two flights to Brisbane, others at the airport, and other patients and staff at the medical clinic attended by the child. In response, NSW Health issued a media release warning other travellers to be alert for signs of measles, and the airline company agreed to contact passengers on the flight to alert them of the risk. Other social and health care contacts of the cases were contacted and offered immunisation or immunoglobulin.

Later in March the South Eastern Sydney Public Health Unit (SES PHU) investigated the case of a man in his twenties who developed measles after returning from Japan. Before the onset of his rash, he attended a concert at a local club. SES PHU traced close contacts at risk of infection, and issued local alerts to other patrons through the media and a sign at the club. Two weeks later three secondary cases in young adults who had attended the same concert were reported by alert clinicians. SES PHU found that these subsequent cases in turn had large numbers of contacts while infectious, including guests at a wedding, participants in a multi-day bike race, work and social contacts, and other patients sharing medical waiting rooms. A large number of people were also potentially exposed via public transport and other public venues and a general media alert was issued.

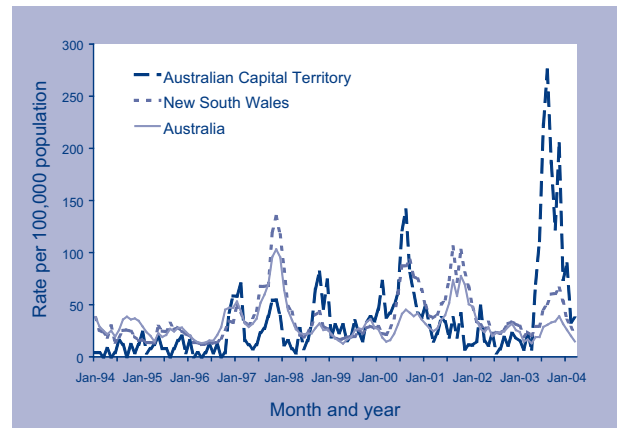
A total of 55 contacts between the ages of 0–38 years were identified. PHU staff contacted 49 of these. Of these, 44 were advised to attend an immunisation clinic provided the following day. Thirty-three of the 44 people contacted attended the clinic and received either the measles-mumps-rubella vaccine, normal human immunoglobulin (NHIG) or had serology tests for measles immunity. Remaining contacts over the age of 38 years as well as any people who accompanied them into the emergency department (ED) were contacted. Of 23 people contacted, four were advised to attend the ED for NHIG, of these two were found to be immunocompromised and two were within the susceptible age cohort.

### Pertussis

There were 1,003 cases of pertussis reported to NNDSS in the first quarter of 2004, 468 of these were reported from New South Wales (rate 28 per 100,000) and 43 from the Australian Capital Territory (rate 53.3 per 100,000) (Figure 4). The number of notifications of pertussis have been high in the Australian Capital Territory since 2003, when 355 cases were reported, compared with 54 cases in 2002.

In response to the increase in notifications in the adolescent age group, the NSW Health Department sought advance funding from the Australian Government for the purchase of additional vaccines and will conduct a state-wide program commencing on 3 May 2004 to offer pertussis vaccine (DTPa) to all high school students.

**Figure 4. Trends in notification rates of pertussis, New South Wales, the Australian Capital Territory and Australia, 1994 to 2004, by month of onset**



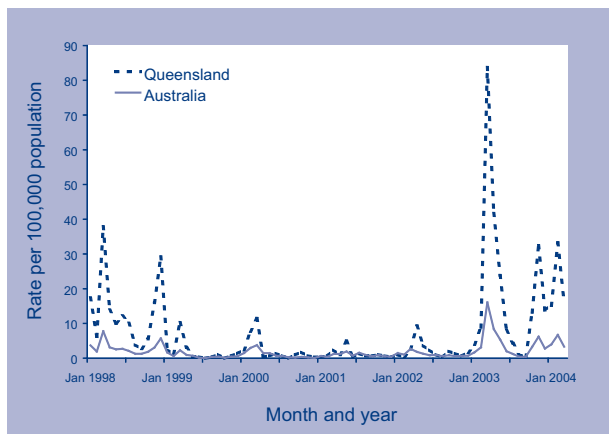
## Vectorborne diseases

### Dengue

During the quarter 204 of the 233 notifications of dengue were from Queensland, a rate of 21.5 cases per 100,000 population (Figure 5). This elevated rate was the product of three on-going outbreaks that began late in 2003 in the north Queensland towns of Cairns and Townsville and the Torres Strait islands. Up to the end of the quarter, more than 270 cases were recorded from the Torres Strait since the outbreak began in September 2003; more than 50 cases in Cairns and 30 cases in Townsville since October 2003. Several serotypes of dengue have been circulating in Queensland during these outbreaks. The first death from dengue haemorrhagic fever in Australia for 100 years was reported during the quarter. There have been more than 20 hospitalisations of cases of dengue haemorrhagic fever, a severe illness thought to be increased in populations exposed to different serotypes of the dengue virus.

The mosquito vector for dengue, *Aedes aegypti* was detected in Tennant Creek in the Northern Territory in February 2004. This species of mosquito has not been endemic in the Northern Territory for more than 50 years. Mosquito control activities including fogging in residential and public places, distribution of surface sprays, removal of water-filled receptacles and residual insecticide spraying were initiated along with public awareness campaigns. No human cases of dengue were reported in Tennant Creek up to the end of March.

**Figure 5. Notification rate of dengue, Queensland and Australia, 1998 to 2004 (YTD)**



**Japanese encephalitis virus**

Sentinel pigs tested positive for Japanese encephalitis virus (JEV) in Torres Strait and at Bamaga, Cape York. The latter is the first incursion into the Australian mainland since 1998, when there was a single human case of JEV infection in the Cape York region. Mosquito trappings are being conducted to ascertain whether the vectors are carrying the virus.

**Murray Valley encephalitis virus**

Sentinel chicken seroconversions for Murray Valley encephalitis virus (MVEV) were reported in the Northern Territory (Darwin), South Australia and Western Australia (Pilbara) in March. In early April a case of MVEV was confirmed in an infant in Central Australia. Although the arbovirus season is coming to an end with the onset of cooler weather, the Communicable Diseases Network Australia has recommended increased sentinel chicken surveillance for arboviruses in the coming season.

**Ross River virus**

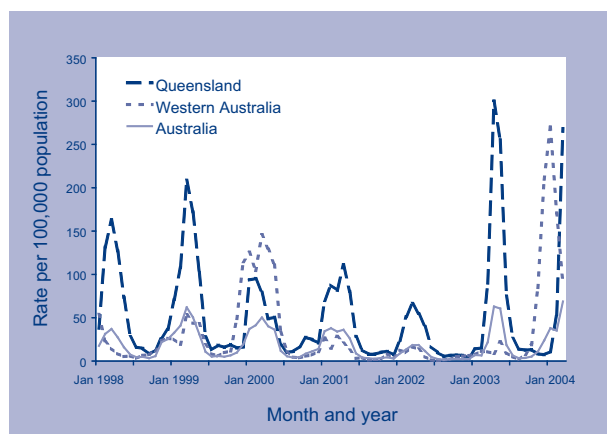
The outbreak of RRV, which began in the fourth quarter of 2003 in Western Australia, continued into the first quarter of 2004. Western Australia reported 522 cases with onset in the fourth quarter of 2003 and 844 cases reported in the first quarter of 2004 (compared to 27 and 46 cases for the fourth quarter in 2002 and first quarter of 2003, respectively). The majority of cases have been reported from the South-West region of the state in residents of, or visitors to, coastal areas stretching from Mandurah to Busselton. Transmission has also occurred across the Perth metropolitan area, particularly around the fringes.

The Swan coastal plain area contains two large estuarine systems (Peel-Harvey and Leschenault) and many other salt marshes and brackish wetland areas that are breeding sites of *Ochlerotatus campitorhynchus* and *Oc. vigilax*, the major vectors of RRV in the south-west of Western Australia. Historically, large epidemics occur every three or four years between October and March in South-West Western Australia, associated with spring or summer rains, high tides that flood salt marsh mosquito breeding areas, and low levels of immunity in kangaroos and other amplifying vertebrate animal species. Mosquito trapping this season revealed relatively low numbers of mosquitoes, but high levels of virus carriage.

Public health response to the epidemic has included local and state-wide media warnings including advice regarding mosquito avoidance, and local government mosquito control activities in mosquito breeding areas, especially those close to human population centres.

Increases in RRV were also seen in Queensland with 1,007 cases reported in the quarter of which 811 were reported with an onset in March. Cases were reported from across the State with north Queensland and the Darling Downs having a much higher number than their historical average.

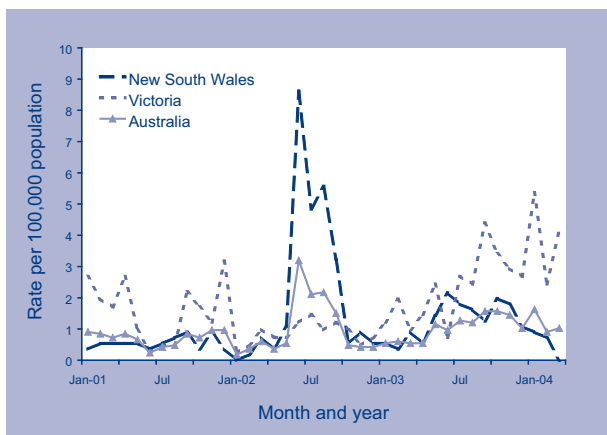
**Figure 6. Notification rates for Ross River virus infections, Queensland, Western Australia and Australia, 1998 to 2004 (YTD)**



**Ornithosis**

There were 60 cases of ornithosis reported in the quarter, which was 2.4 times the average for this period over the past five years. Forty-nine (82%) of these cases were reported from Victoria. Fourteen cases were linked to a duck processing plant in rural Victoria. In New South Wales eight cases were linked to a pet shop.

**Figure 7. Trends in notifications of ornithosis, New South Wales, Victoria and Australia, 2001 to 2004 (YTD), by month of notification**



## Other bacterial infections

### Legionellosis

There were 76 cases of legionellosis reported in the quarter, which was close to the historical average number of cases for this period of the year. Among the 20 cases reported from Victoria was a cluster of three cases of *Legionella pneumophila* serogroup 1. All three cases were male and aged more than 50 years.

Among the 22 cases reported from New South Wales were two clusters—one of *L. pneumophila* and the second of *L. longbeachae*.

In March 2004, investigations by the South Eastern Sydney Public Health Unit identified a possible linked cluster of six cases of Legionnaires' disease caused by *L. pneumophila*. The onset of illness for these cases ranged from late January to early March. They were aged between 23 and 65 years and four were male. Five reported movements in one small area of Oxford Street during their possible exposure period. Four also had movements in various other areas of the central business district (CBD). Another person with Legionnaires' disease due to *L. pneumophila* who was hospitalised in the Hunter Area, was also found to have stayed in the Sydney CBD for two days in this period.

SES PHU alerted local hospital and general practitioners, and worked with the Sydney City Council to assess the routine disinfection processes of nearby cooling towers and a large fountain. No source of the outbreak was identified. Sydney City Council wrote to the operators of all of the approximately 1,800 cooling towers in the CBD area to reinforce the need for careful assessment and disinfection of cooling towers. To identify any further related

cases, all New South Wales public health units were advised of the cluster and requested to contact their local hospitals and laboratories for other possible cases of Legionnaires' disease and to question any suspected cases about their movements in the 10 days before onset of illness. NSW Health issued a state-wide media release to alert the public and building operators. By the end of March a further two possibly linked cases were identified, both with onset of illness in early March, but there were no reports of new linked cases acquired after the public health action was taken.

From January to March 2004, four cases of Legionnaires' disease due to *L. longbeachae* infection in the Illawarra and a fifth case in Sydney were reported. The patients were all aged over 60 years and three were men. Two of the cases died. Four of the five people reported using potting mix before the onset of their illness. *L. longbeachae* infection has previously been linked to gardening, particularly the use of potting mixes.

In response to this cluster of cases NSW Health released a media alert to again warn the public of the risk of Legionnaires' disease associated with gardening and potting mix. Reducing exposure to potting mix dust by following manufacturers instructions printed on the potting mix bags is vital in preventing infection from *Legionella* bacteria. People should avoid breathing in potting mix dust, wear gloves and a mask, and wash their hands immediately after handling potting mix or soil, especially before eating or drinking.

### Invasive meningococcal disease

There were 89 cases of invasive meningococcal disease reported in the quarter. This level of disease is close to the historical average for the number of cases of this period. In Queensland among 20 cases reported in the quarter, six cases of serogroup B (of various serotypes) disease occurred in Indigenous children aged three months to 10 years. These six cases were spread across the State and had dates of onset from January to March. Three were vaccinated with the conjugate serogroup C vaccine and three were unvaccinated.

### With contributions from:

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