

Communicable diseases surveillance

Highlights for 4th quarter, 2005

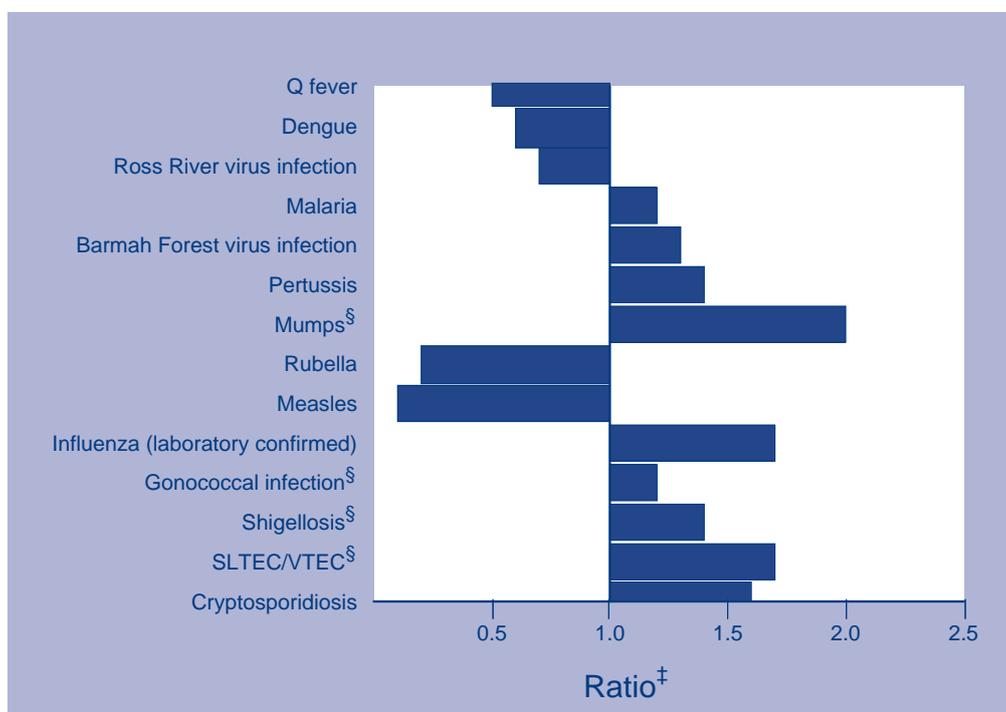
Communicable disease surveillance highlights report on data from various sources, including the National Notifiable Diseases Surveillance System (NNDSS) and several disease specific surveillance systems that provide regular reports to Communicable Diseases Intelligence. These national data collections 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 (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', and those from ASPREN are referred to as 'consultations' or 'encounters' while data from the LabVISE scheme are referred to as 'laboratory reports'.

Figure 1 shows the changes in select disease notifications with an onset in the fourth quarter of 2005 compared with a five year mean for the same period. These diseases were above the five year mean for the same period and exceeded two standard deviations

from the five year mean: hepatitis E, Shiga-like toxin-producing *Escherichia coli*/verotoxin-producing *E. coli* (SLTEC/VTEC), shigellosis, gonococcal infections, syphilis and mumps. Diseases for which the number of notifications were below the five year

Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System,† comparison of provisional totals for the period 1 October to 31 December 2005 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.

† Some Victorian data for the period may be incomplete.

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

§ Notifications above or below the 5-year mean plus two standard deviations for the same period.

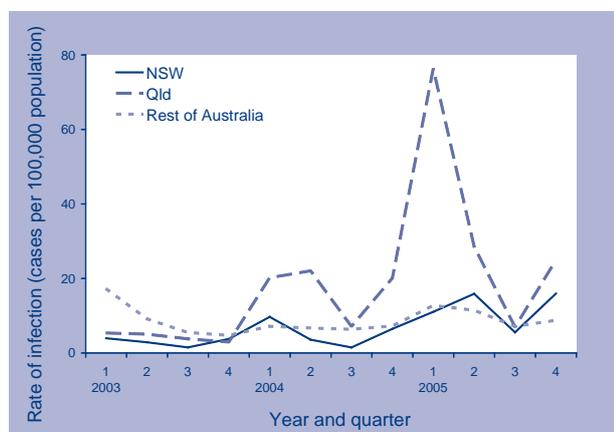
mean for the same period include measles, rubella, dengue, Q fever and Ross River virus infection. The number of notifications reported from Victoria this quarter was less than usual due to data processing difficulties.

Gastrointestinal illnesses

Cryptosporidiosis

There were 727 notifications of cryptosporidiosis during the quarter which was 1.6 times the five year mean for the same period. All jurisdictions reported cases but the majority were from New South Wales and Queensland, with 270 and 247 cases respectively. Four hundred and fifty-eight (63%) notifications were identified as *Cryptosporidium parvum* infection; there was no species information provided for the remaining 37 per cent of cases. Figure 2 shows that the rate of infection in Queensland is often higher than the rest of Australia and that the infection rate was also higher in New South Wales this year.

Figure 2. Notification rates of cryptosporidiosis, New South Wales and Queensland compared to the rest of Australia, 1 January 2003 to 31 December 2005



In the fourth quarter, the rise in cases in New South Wales has been most notable in regional and rural areas where there have been reports of increases and outbreaks of cryptosporidiosis in calves, and 'massive' numbers of oocysts in the faeces of sick calves (NSW Health, personal communication). Cryptosporidiosis has been recognised worldwide primarily in neonatal calves as well as in other neonatal farm animals.¹

A state-wide outbreak investigation resulted in a hypothesis that the rise in the number of cryptosporidiosis cases in New South Wales was due to infection after contact with sick cattle, or after drink-

ing or swimming in contaminated water. Water may have been contaminated by sick cattle, heavy rain or inadequate chlorination and filtration. It is thought that those who initially contract cryptosporidiosis from calves may then spread the disease via person-to-person transmission, and may possibly also contaminate swimming pools. There have been three small clusters of cases linked to three swimming pools (n=1, n=3 and n=7) which have since been subject to an environmental assessment. Another cluster (n=6) was identified in recruits from a military training facility. Appropriate public health action was undertaken in all cases (NSW Health, personal communication).

Shiga-like toxin producing *Escherichia coli* verotoxin producing *E. coli*

Twenty-one notifications of SLTEC/VTEC were received during the quarter, which was 1.7 times the five year mean for the same period. South Australia notified 12 cases, New South Wales reported seven cases and Queensland and Tasmania reported one case each. Of the two cases with serotype information, one was *E. Coli* serotype O111 and one was O157:H-.

Shigellosis

There were 156 notifications of shigellosis during the quarter which was 1.4 times the five year mean for the same period. This was 126 cases above the five year average plus two standard deviations. Notifications were from all jurisdictions except Tasmania with 40 cases from the Northern Territory, 34 from Western Australia, 21 each from New South Wales and South Australia, 20 from Queensland, 19 from Victoria and 1 from the Australian Capital Territory.

There was one death attributed to shigellosis infection in the quarter. Seventy (45%) of the 156 infections were notified in Indigenous Australians. Twenty per cent of infections were in non-Indigenous people, and Indigenous status was unknown for 35 per cent of cases. Of the 156 notifications, there were 68 (44%) notifications of *Shigella sonnei*, and 74 (47%) of *Shigella flexneri*. There was a single case of *Shigella dysenteriae* 2c. Fourteen cases (9%) did not have subtyping information.

Sexually transmissible infections

Gonococcal infection

During the quarter there were 1,726 notifications of gonococcal infection received from all jurisdictions, which was 1.2 times the five year mean for the same period and 240 cases above the five year average plus two standard deviations. The majority of these

notifications were reported by Queensland (369), New South Wales (337), Western Australia (355) and Victoria (308).

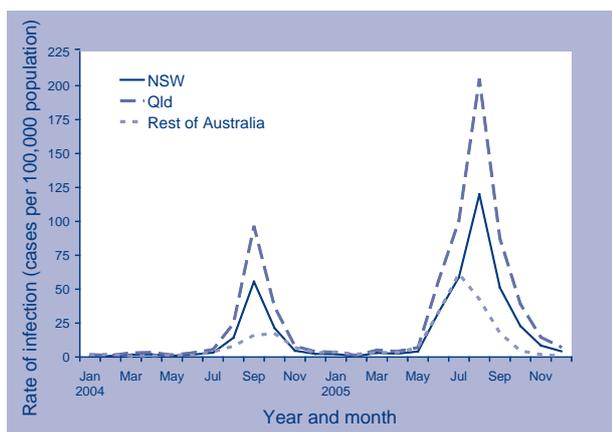
Forty per cent (697/1726) of the notifications were in the 15–24 year age group. The highest rate of gonococcal infection in females (92.7 cases per 100,000 population), was in the 15–19 year age group. In males, the 20–24 year age group had the highest gonococcal infection rate (139.1 cases per 100,000 population).

Vaccine preventable diseases

Influenza (laboratory confirmed)

There were 411 cases of laboratory-confirmed influenza in the fourth quarter of 2005 compared to the five year average of 345 cases for this quarter. Queensland reported 201 cases, and 152 reports were received from New South Wales. Sixty-five per cent of cases (267/411) were type A, 29 per cent (267/411) type B, and 1.5 per cent (6/411) were of unknown type. The number of notifications has remained higher in the fourth quarter in New South Wales and Queensland compared to the rest of Australia after the seasonal peak in the third quarter 2005 (Figure 3).

Figure 3. Notification rates of laboratory confirmed influenza, New South Wales and Queensland compared to the rest of Australia, 1 January 2004 to 31 December 2005



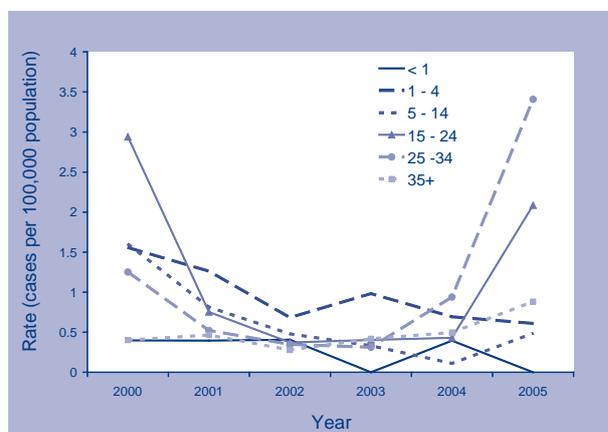
Mumps

There were 34 notifications of mumps in the quarter, which was double the five year mean for the same period. Nineteen cases (56%) were reported from New South Wales; there were also five notifications received from Victoria, three from Queensland and

South Australia, and two from Western Australia. Of the 34 cases, 13 (38%) cases were reported from the 20–34 year age range, with a male to female ratio of 0.3:1.

Vaccination status data were available for 102 of 208 (49%) mumps notifications analysed from 2005. In cases where data were available, 34 of 37 (92%) cases in the 25–34 year age range were unvaccinated, and 86 per cent in the 15–24 year age range cases. The high rate of mumps was in the 25–34 year age range and to a lesser extent in the 15–24 year age range, which probably represents a susceptible cohort of individuals who have not been immunised (Figure 4).

Figure 4. Notification rates of mumps, Australia, 1 January 2000 to 31 December 2005, by age group



Mumps vaccine was made available in Australia in 1980 for use at 12–15 months and was combined with the measles vaccine in 1982. Therefore, no childhood doses of mumps vaccine were available to individuals currently in the 25–34 year age range and the uptake of vaccine in older individuals from the 15–24 year age range group was likely to be moderate. A similar situation has recently been reported in England and Wales, with high mumps notification rates in young adults born just before the introduction of routine vaccination, who were probably not infected as children because of reduced virus circulation following the introduction of vaccination in younger cohorts.²

Pertussis

For the fourth quarter, 2,559 pertussis notifications were received, which was 1.6 times the five year mean for the same period. Of the total number of notifications, 1,207 (47%) were reported by New South Wales and 518 (20%) were from Queensland. Three per cent (86 cases) of the 2,559 notifications

were reported in infants aged less than one year. The only pertussis death for 2005 was reported this quarter from Queensland in an unvaccinated one-month-old male. The highest rate of infection in females, 100 cases per 100,000 population occurred in the 50–54 year age range. The highest rate in males was 73 cases per 100,000 population in the 65–69 year age group.

Vectorborne diseases

Barmah Forest virus infection

There were 264 cases of Barmah Forest virus infection in the fourth quarter which was 1.3 times the five year mean for the same period. The majority of cases were from Queensland with 119 cases, New South Wales with 91 cases and Western Australia with 34 cases. This represents an early peak in infection rates compared to previous years.

Nationally, the infection rate was 5.2 cases per 100,000 population, but it was higher in the Northern Territory at 16 cases per 100,000 population (8 cases) and Queensland with 12 cases per 100,000 population.

Malaria

There were 129 cases of malaria in the fourth quarter, which was 1.2 times the five year mean for this quarter. There were 46 cases reported in Queensland and 24 in New South Wales. The highest rate of infection, 10 cases per 100,000 population was in the Northern Territory (5 cases). The national infection rate was 2.5 cases per 100,000 population.

Sixty-one per cent (79/129) of malaria cases were imported from overseas (19 cases notified from Queensland were imported from Papua New Guinea), while 18 per cent (23/129) were not. The import status of 28/129 (22%) cases was unknown. Thirty per cent (39/129) of notifications were *Plasmodium falciparum* and 22 per cent (29/129) were *Plasmodium vivax*. There were three *Plasmodium ovale* notifications, one *Plasmodium malariae* notification and four mixed infections. Forty-six (41%) cases did not have typing information.

There was a cluster of six malaria cases notified from Queensland in a group of 24 high school students who visited the Solomon Islands during September. All cases were on chemoprophylaxis.

Ross River virus infection

This quarter, 578 notifications of Ross River virus infection were reported compared to 239 in the same period last year. While this is indicative of an early seasonal increase, the number of cases was less than the five year mean for the same period. The majority of cases were from Western Australia (161), New South Wales (148) and Queensland (143).

Ninety-eight of Western Australia's notifications (61%) were from the Peel area south of Perth and almost all were notified in the months of November and December. The rate of infection was 24 cases per 100,000 population. Twenty-nine cases occurred in the Northern Territory, which was a rate of 58 cases per 100,000 population. South Australia and Queensland both had rate of 15 cases per 100,000 population with 59 and 143 cases respectively, which was higher than the national rate of 10.7 cases per 100,000 population.

Other bacterial infections

Brucellosis

There were 18 cases of brucellosis notified in the fourth quarter which was 1.4 times the five year mean for the same period. Seventeen cases were from Queensland, and one was from New South Wales. Fifteen of the 18 cases occurred in males. There were five *Brucellosis suis* cases and one *Brucellosis melitensis* case reported. Of the 17 cases from Queensland, six reported contact with a feral animal prior to illness.

References

1. Radostits OM, Blood DC, Gay CC. *Veterinary Medicine. A Textbook of the Diseases of Cattle, Sheep, Pigs, Goats and Horses*. 1994. Eighth edition. Balliere Tindall.
2. Savage E, Ramsey M, White J, Beard S, Lawson H, Hurijan R, Brown D. Mumps outbreaks in England and Wales in 2004: observational study. *BMJ* 2005;330:1119–1120.

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