

Communicable diseases surveillance

Highlights for 4th quarter, 2008

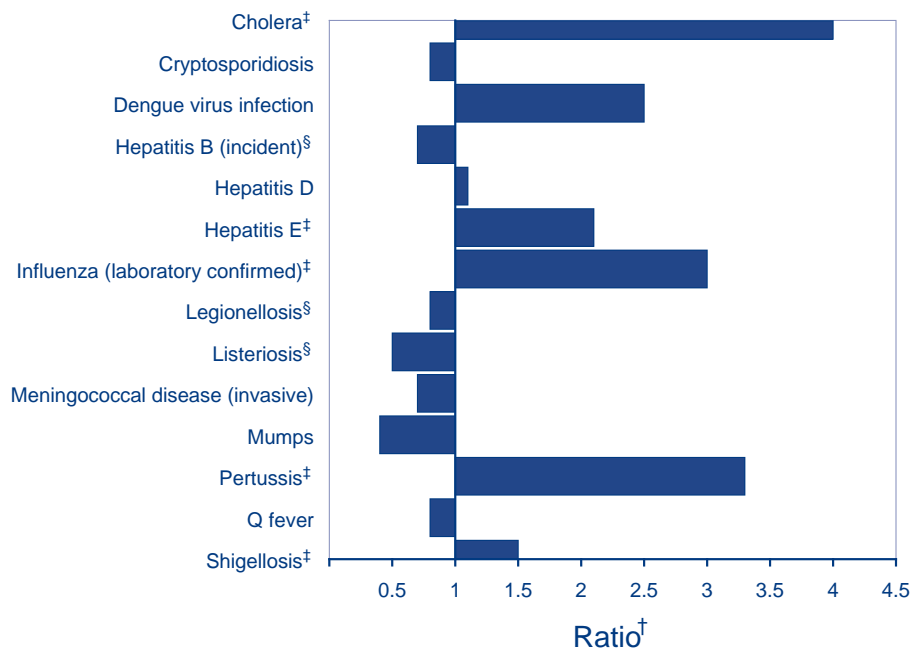
Communicable diseases surveillance highlights report on data from various sources, including the National Notifiable Diseases Surveillance System (NNDSS) and several disease specific surveillance systems that provide regular reports to Communicable Diseases Intelligence. These national data collections 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 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 to the National Notifiable Diseases Surveillance System (NNDSS) with a diagnosis in the 4th quarter (October to December) 2008, in comparison with the 5-year mean for the same period. Notifications were above the 5-year mean for the same period and exceeded 2 standard deviations

for: cholera, hepatitis E, influenza (laboratory confirmed), pertussis and shigellosis. Notifications were below the 5-year mean by more than 2 standard deviations for: hepatitis B (incident), legionellosis, listeriosis and tetanus.

Figure 1. Selected diseases* from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 October to 31 December 2008 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 5-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 5-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.

† Ratio of current quarter total to mean of corresponding quarter for the previous 5 years.

‡ Where the number of notifications of the current quarter exceeds the mean of the corresponding quarter for the previous 5 years by more than 2 standard deviations.

§ Where the number of notifications of the current quarter is below the mean of the corresponding quarter for the previous 5 years by more than 2 standard deviations.

Gastrointestinal diseases

Hepatitis E

Between 1 October and 31 December 2008, there were 8 notifications of hepatitis E in Australia, 2.1 times the 5-year mean of 4 notifications for the same period. Hepatitis E cases in Australia are commonly imported, and all of the 8 notifications of hepatitis E in Australia during the quarter were overseas acquired.

Shigellosis

Between 1 October and 31 December 2008, there were 206 notifications of shigellosis in Australia, a 27% increase over the number reported during the same quarter of 2007 (162 notifications), and 1.5 times the 5-year mean of 134 notifications for the same period.

The highest notification rate was in the Northern Territory, where 44 cases were notified during the quarter, for an annualised rate of 81.9 cases per 100,000 population, compared with annualised rates of less than 6.0 cases per 100,000 population in each of the other jurisdictions during the quarter. Notification rates for shigellosis in the Northern Territory are usually high compared with other Australian states and territories, with an annual rate of 80.5 cases per 100,000 population in 2007 compared with 2.8 cases per 100,000 population nationwide.¹

Continuing clusters of shigellosis during the 4th quarter of 2008 contributed to the observed increase in notifications compared with previous years. These clusters were reported from 3 states (Queensland, New South Wales and Victoria) amongst adult men who frequently report sex with other men as a risk factor.

Quarantinable diseases

Cholera

Between 1 October and 31 December 2008, there were 4 notifications of cholera, which was 4 times the 5-year mean of 1 notification for the same period. Two of these cases were reported from New South Wales and two from Western Australia. All of these cases were acquired overseas, two in India and one each in the Philippines and Singapore.

Vaccine preventable diseases

Influenza (laboratory confirmed)

Laboratory-confirmed influenza is a nationally notifiable disease in all states and territories in Australia. Data are reported from state and territory health departments to the NNDSS.

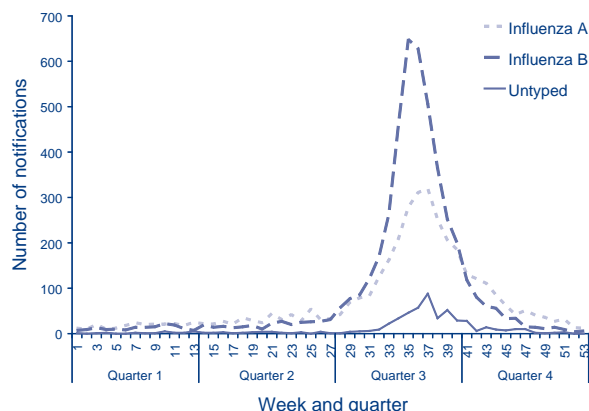
The influenza 2008 season commenced approximately 5 weeks late compared with the 2007 season. During the 4th quarter of 2008, notifications declined from the seasonal peak in week 36 and returned to baseline levels.

The total number of laboratory-confirmed influenza notifications to NNDSS for the 4th quarter was 1,545 cases (approximately 17% of year-to-date notifications). The majority of notifications during this quarter were from New South Wales with 429 cases (28%) and Queensland with 383 cases (25%).

Notifications in the 4th quarter of 2008 were 3 times the 5-year mean for the same period, this is due to the approximate 5-week delay in the start and end of the season and overall high seasonal numbers in 2008 (1.9 times the 5-year mean).

During the first 2 quarters of 2008, influenza notifications to NNDSS were predominantly type A while during the third quarter, notifications were predominantly type B. As overall notifications continued to decline during the 4th quarter (week 40 onwards), there appeared to be an increase in the predominance of type A (Figure 2) as type B notifications decreased more rapidly.

Figure 2. Typing characteristics of notifications of laboratory-confirmed influenza to the National Notifiable Diseases Surveillance System, Australia, 1 January to 31 December 2008, by week of diagnosis



Most jurisdictions experienced a slight increase in notifications between weeks 44 and 49. South Australia had a significant increase during week 44, followed by a decline, and another slight increase in week 48. The Northern Territory experienced an increase in notifications in weeks 46 and 47, Tasmania in week 46, Victoria in week 47 and Western Australia in week 49.

Pertussis

Between 1 October and 31 December 2008, 7,050 cases of pertussis were reported to the NNDSS. The majority of cases were reported in New South Wales (n=4,424) followed by Queensland (n=1,017) and Victoria (n=571), with South Australia (n=560), Western Australia (n=177), the Northern Territory (n=122), Tasmania (n=115) and the Australian Capital Territory (n=64) also reporting cases in this quarter. Case numbers in the 4th quarter (Q4) were 4.7 times more than in the same period in 2007 (n=1,487) and 3.3 times the 5-year mean for this period. Pertussis notifications in Q4 made up 50% of the total notifications in 2008 with numbers increasing with each quarter as follows Q1 (1,538 cases), Q2 (2,032 cases), Q3 (3,498 cases). The annualised notification rate for this quarter of 134 cases per 100,000 population was significantly higher than for the same period in 2007 (28 cases per 100,000). Fifty-six per cent of cases in Q4 were female (n=3,928) and 44% were male (n=3,111).

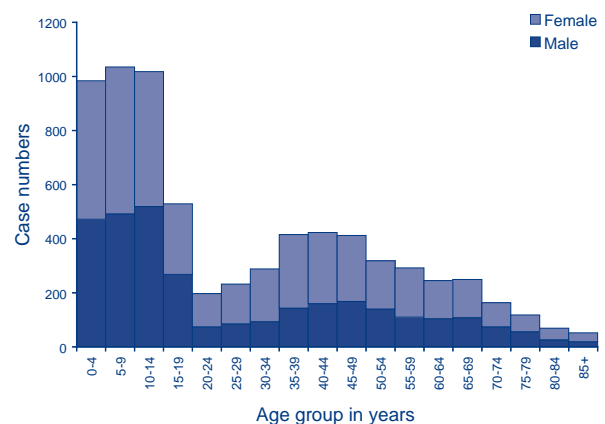
The total number of cases with a diagnosis date in 2008 was 14,118, which exceeded both the same period in 2007 (n=5,333) and the year-to-date 5-year mean (n=8,274).

A high proportion (29%) of the total case numbers in this quarter were aged between 0 and 9 years. Of these, there were 985 cases (14% of the total) in the 0–4 years age group, which can be further broken down to show 224 cases (3% of the total) in the 0–6 month age group and 219 cases (3% of the total) in the 7–23 months age group with 542 cases (or 8% of the total) in the 2–4.9 years age group. There were another 1,039 cases (15%) in the 5–9 year age group (Figure 3). Other key age groups include those aged 15–19 years (who under the National Immunisation Program are recommended to receive a booster dose of dTpa) where an additional 530 cases (18%) were reported; and the traditional child bearing 20–44 years in which 1,558 cases (22%) were reported.

Vectorborne diseases

Mosquito-borne diseases under national surveillance in Australia include alphaviruses (Barmah Forest virus and Ross River virus), flaviviruses (den-

Figure 3. Pertussis notifications, Australia, 1 October to 31 December 2008, by sex and age group



gue virus, Japanese encephalitis, Kunjin, Murray Valley encephalitis, yellow fever), arbovirus not elsewhere classified, and malaria.

Dengue virus infection

Dengue virus infection presents as an acute febrile illness of sudden onset and characterised by fever (biphasic), intense headache, myalgia, particularly backache, arthralgia, retro-orbital pain, anorexia, vomiting, diarrhoea gastrointestinal disturbance and rash. Dengue virus (DENV) has 4 serotypes: 1, 2, 3 and 4.²

On 1 December 2008 Queensland Health declared an outbreak of dengue serotype 3 in Cairns. The outbreak began after a resident who had visited Kalimantan, Indonesia returned to the city. Of the 198 cases of dengue virus infection reported during the quarter, 111 were overseas acquired cases and 87 were locally acquired in the Cairns outbreak. At the time of writing, the number of cases of locally acquired dengue in Cairns (serotype 3) since the outbreak was declared on 1 December 2008, has risen to over 300 and a further 2 outbreaks have been reported in Townsville. Of the 55 cases reported in Townsville since 1 January 2009, 40 cases were infected with serotype 1, 11 cases were infected with serotype 3 and four are unknown. More severe forms of the disease dengue haemorrhagic fever/dengue shock syndrome (DHF/DSS) occur when someone who has been infected at some time in the past becomes infected with a virus of a different serotype. DHF/DSS occurs most frequently in infants and young children. Having 2 strains of the virus circulating in Townsville increases the risk of a case of DHF/DSS.

Queensland health authorities are experienced in responding to outbreaks of the disease and have

implemented the Dengue Fever Management Plan. A major focus of the response is raising public awareness of the need for all members of the public to take responsibility for reducing mosquito breeding opportunities around their homes and for those people living in areas where dengue fever is known to occur to seek medical advice if feeling unwell.

State Emergency Service volunteers have door knocked house to house in Cairns warning residents about the dangers of dengue fever. The Queensland Government has also distributed free insect repellent to all schools in Cairns and Townsville.

Outbreaks of dengue in north Queensland are not unprecedented; in 2003 and 2004 there were over

700 cases of locally acquired dengue reported in Queensland and in 1998 over 500 cases of dengue recorded.

Acknowledgements

Thanks go to staff of the Surveillance Branch of the Australian Government Department of Health and Ageing and all our state and territory data managers.

References

1. The OzFoodNet Working Group. Monitoring the incidence and causes of diseases potentially transmitted by food in Australia: Annual report of the OzFoodNet Network, 2007. *Commun Dis Intell* 2008;32:400–424.
2. Heymann DL, ed. *Control of Communicable Diseases Manual*. 18th edn. Washington: American Public Health Association; 2004.