# Communicable diseases surveillance

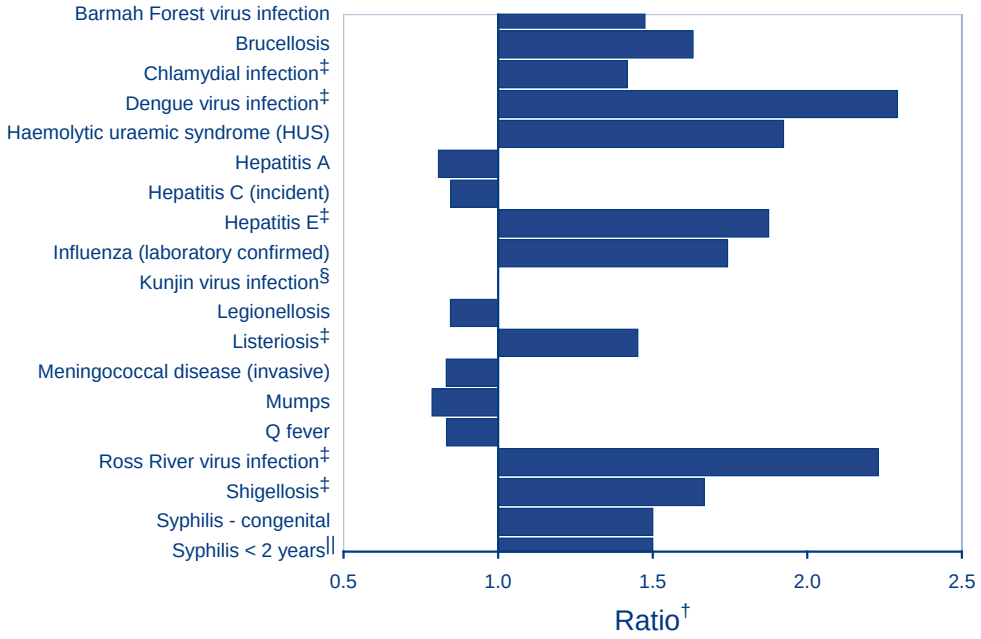
## Highlights for 3rd quarter, 2008

*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 3rd quarter (1 July to 30 September) 2008, in comparison with the 5-year mean for the same period. Notifications were above the 5-year mean for the corresponding period and exceeded 2 standard deviations from the 5-year mean for: chlamydial infection, dengue virus infection, hepatitis E, Ross River virus infection and shigellosis. Notifications were equal to or below the 5-year mean for Barmah Forest virus infection, brucellosis, congenital syphilis, cryptosporidiosis, haemolytic uraemic syndrome (HUS), hepatitis B (unspecified), influenza (laboratory confirmed), listeriosis, pertussis, rubella, salmonellosis, STEC/VTEC, infectious

**Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 July to 30 September 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 practices, 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. See Table 1 for all diseases.

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

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

§ Significant. First case diagnosed in this quarter in 6 years.

|| Ratio for syphilis of less than 2 years duration is based on 4 years data.

syphilis <2 years, syphilis >2 years or unspecified duration, typhoid, varicella zoster (shingles), and varicella zoster (unspecified).

## Gastrointestinal diseases

### Hepatitis E

Between 1 July and 30 September 2008, there were 9 notifications of hepatitis E in Australia, 1.9 times the mean notifications for the corresponding period over the last 5 years. Hepatitis E cases in Australia are commonly imported, and of the 9 notifications during the 3rd quarter of 2008, three were known to have been acquired overseas, three were thought to have been locally acquired, while the travel status of the remaining 3 cases was unknown.

### Shigellosis

Between 1 July and 30 September 2008, there were 201 notifications of shigellosis in Australia, representing an annualised rate of 3.8 notifications per 100,000 population. The number of shigellosis notifications represent a 23% increase over the number reported during the corresponding quarter of 2007, and is 1.7 times the 5-year mean of notifications for the corresponding period.

The highest notification rate was in the Northern Territory, where 34 cases were notified, representing an annualised rate of 63.3 cases per 100,000 population. 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 in 2007 compared with 2.8 cases per 100,000 population nationwide.[1]

There were 2 large clusters of shigellosis reported during the 3rd quarter of 2008 that contributed to the observed increase in notifications compared with previous years. The first was amongst members of the Jewish community in Melbourne, Victoria and the other cluster, with cases reported from 4 states (Queensland, New South Wales, Victoria and Western Australia) was reported amongst adult men, many of whom identified as men who have sex with men.

## Sexually transmissible infections

### Chlamydial infection

Nationally, chlamydial infections continue to be the most frequently notified infection to the NNDSS, at a rate of 277 cases per 100,000 population (annualised). During the 3rd quarter of 2008 there were 14,531 notifications received, which was 41% higher than the 5-year mean for the corresponding quarters of previous years and exceeded 2 standard deviations from this mean. All jurisdictions reported cases, with the majority notified from Queensland (n=3,714, 26%), New South Wales (n=3,534, 24%), Victoria (n=3,112, 21%) and Western Australia (n=2,131, 15%).

The notification rate was highest in the Northern Territory at 918 cases per 100,000 population (annualised), although there were only 493 cases of chlamydial infections. The rates of chlamydial notification in the Northern Territory during the quarter were substantially higher compared with other jurisdictions such as Western Australia at 405 and Queensland at 355 cases per 100,000 population (annualised).

The total number of cases for the 3rd quarter (n=14,531) was comparable with the previous quarter (n=15,156). For the first 3 quarters of 2008 there were 44,195 notifications, which was 11.9% higher compared to the same period in 2007 (n=39,479) and was 41.3% higher than the 5-year mean for the corresponding periods (n=31,284).

For the 3rd quarter, 37% (5,315) of the total number of infections occurred in the 20–24 year age group and 25% (3,595) in the 15–19 year age group. The highest rates of chlamydial infection was in females aged 20–24 years (443 cases per 100,000 population) and in the 15–19 year age group (385 cases per 100,000 population). The highest rate in males was 270 cases per 100,000 population in the 20–24 year age group. Overall, the ratio of male to female notifications for the quarter was 1:1.5, which was similar to previous years.

Figure 2 shows the epidemic curve of chlamydial infection notifications received by the NNDSS since 2003 by jurisdiction. The increasing trend in chlamydial notifications is most likely associated with increased screening and promotion programs; and the use of less-invasive and more sensitive diagnostic tests.

## Vaccine preventable diseases

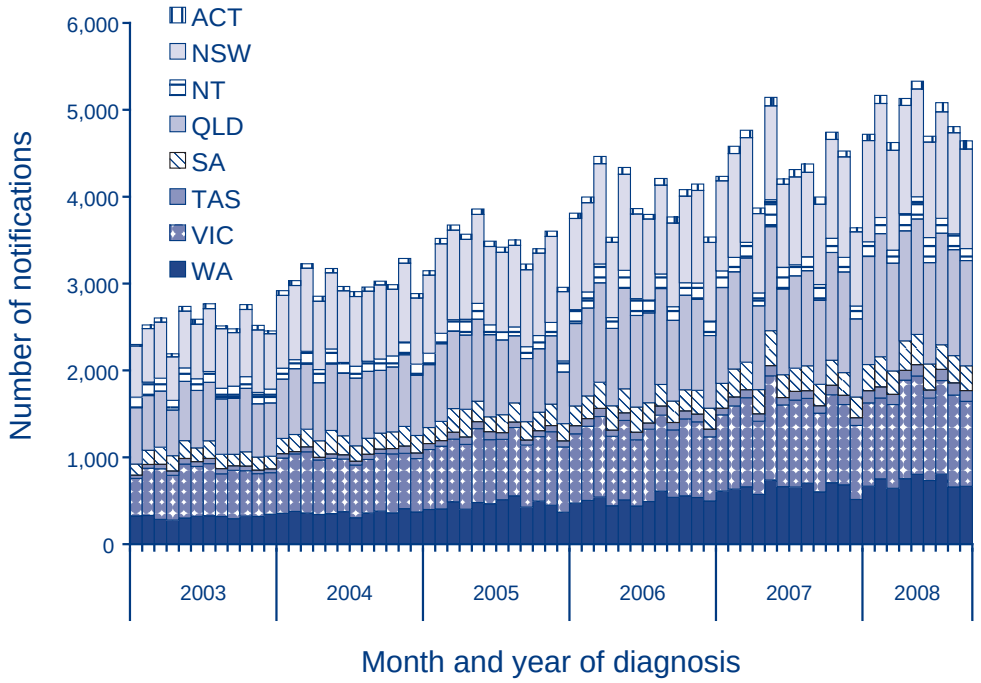
### Influenza

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

The 2008 influenza season began in mid-July following a very gradual increase in notifications since mid-June (Figure 3). The 2008 season commenced several weeks late compared to previous influenza seasons – approximately 5 weeks later than the start of the 2007 season, with notifications peaking in early September, approximately 4 weeks later than 2007.

The total number of laboratory-confirmed influenza notifications to NNDSS for the 3rd quarter

**Figure 2. Epidemic curve of notifications of chlamydial infection, Australia, 1 January 2003 to 30 September 2008, by month of diagnosis and state or territory**




was 6,324 cases (84.7% of year-to-date notifications); this was 1.7 times the 5-year mean for the corresponding period. The majority of notifications were from Queensland with 2,823 cases (44.6%).

During the 3rd quarter of 2008, the highest rate of notifications occurred in Queensland, followed by Tasmania, the Northern Territory and the Australian Capital Territory (Table). The Australian rate of influenza infection was 30 cases per 100,000 population during this quarter.

Nationally, age-specific notification rates during the 3rd quarter of 2008 were highest in children under 1 year of age, at approximately 156 cases per 100,000 population for males and 116 cases per 100,000 for females.

Influenza notifications to NNDSS were predominantly type A in the first 2 quarters of 2008. From the start of July, and throughout the 3rd quarter, notifications were predominantly type B (Figure 4). There has not been a predominantly type B season in Australia since influenza became nationally notifiable in 2001.

**Figure 3. Number of influenza notifications to the National Notifiable Diseases Surveillance System, Australia, 2006, to 2008 (to 30 September), by week of diagnosis**

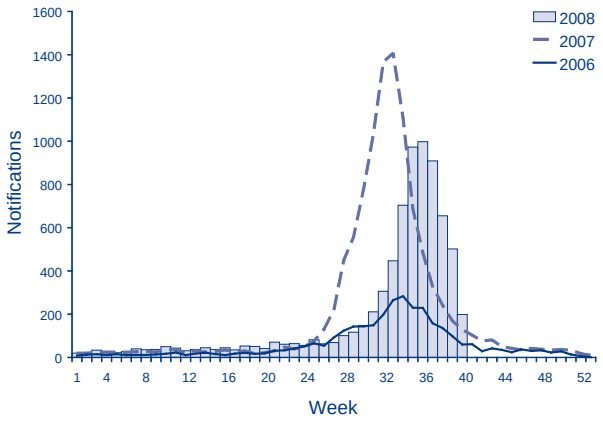
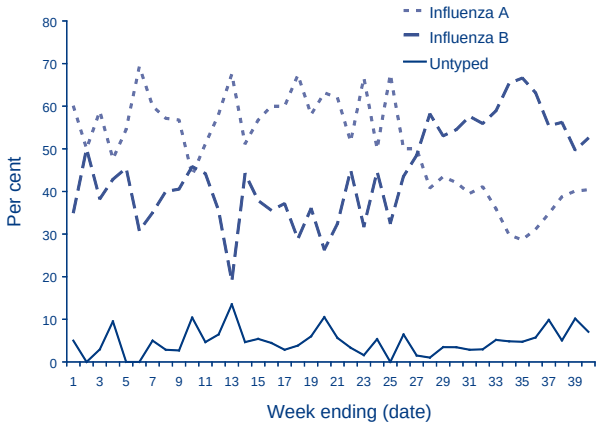



**Table. Number and rate of laboratory-confirmed influenza notifications to the National Notifiable Diseases Surveillance System, 1 July 2008 to 30 September 2008, by date of diagnosis, and state or territory**

| State | Cases | Percentage of total notifications | Rate per 100,000 population* |
|---|---|---|---|
| ACT | 164 | 2.6 | 48.3 |
| NSW | 1,028 | 16.3 | 14.9 |
| NT | 104 | 1.6 | 48.4 |
| Qld | 2,823 | 44.6 | 67.5 |
| SA | 234 | 3.7 | 14.8 |
| Tas | 291 | 4.6 | 59.0 |
| Vic | 979 | 15.5 | 18.8 |
| WA | 701 | 11.1 | 33.3 |
| Aus | 6,324 | 100 | 30.1 |

* This is a quarterly rate and has not been annualised due to seasonality of influenza. For the annualised rate please see Table 3.

**Figure 4. Typing characteristics of notifications of laboratory-confirmed influenza, National Notifiable Diseases Surveillance System, Australia, 1 January to 30 September 2008, by week of diagnosis**




In the period between 7 July and 26 September 2008, a total of 344 samples were typed by the WHO Collaborating Centre for Reference and Research in Influenza. Of these, 22 (6.4%) were A/Brisbane/59/2007-like (H1N1), 75 (21.8%) were A/Brisbane/10/2007-like (H3N2), 158 (45.9%) were B/Florida/4/2006-like and 89 (25.9%) were B/Malaysia/2506/2004-like.

During the 2nd and 3rd quarters of 2008, the World Health Organization reported that of those Australian H1N1 isolates that underwent resistance testing, 80% (47 of 59) tested resistant to oseltamivir. Resistant isolates were also detected in 20 of 27 countries that submitted data.

## Vectorborne diseases

### Dengue virus infection

Between 1 July and 30 September 2008, there were 93 notifications of dengue virus infection in Australia, representing an annualised rate of 1.8 notifications per 100,000 population. The number of dengue notifications represent a 43% increase over the number reported during the same quarter of 2007, and was 2.3 times the 5-year mean of notifications for the corresponding period. All 93 cases were imported from overseas. The number of cases notified in this quarter was the exactly the same as notified in the previous quarter.

New South Wales (n=37), Queensland (n=21) and Western Australia (n=21) reported the highest number of cases. The number of cases reported in New South Wales represented a 118% increase over the number of cases (n=17) reported for the corresponding quarter in 2007, while the number of cases reported in Western Australia represented a 62% increase over the number of cases (n=13) reported for the corresponding quarter in 2007.

The increase in notifications of imported dengue for this quarter has been attributed to an outbreak of dengue in the pacific region, in particular Fiji, Kiribati, New Caledonia, Samoa, Tonga, Wallis and Futuna and Vanuatu.

### Kunjin virus infection

One sporadic case of Kunjin was notified in Queensland between 1 July and 30 September 2008. This was the only case notified in Australia during this quarter and was the first time Kunjin has been reported in this period for at least 6 years. The date of diagnosis (15 July) was very early in the reporting period.

Queensland has averaged 1.9 Kunjin notifications per annum since 2001 (when Kunjin became notifiable). The average number of Kunjin notifications in Australia since 2001 is three per annum.

### Ross River virus infection

Between 1 July and 30 September 2008, there were 768 notifications of Ross River virus infections (RRV) in Australia, representing an annualised rate of 14.6 notifications per 100,000 population. The number of RRV notifications represent a 17% increase over the number reported during the corresponding quarter of 2007, and was 2.2 times the 5-year mean of notifications for the corresponding period. The number of cases notified this quarter was 34% lower than the number of cases notified in the previous quarter.

With the exception of Tasmania, all jurisdictions reported cases, with the majority notified from Queensland. In Queensland there were 393 notifications, which represented 51% of the number of notifications for Australia for this period. Higher rainfall and warmer than usual conditions in Queensland during this period was likely to have contributed to higher mosquito numbers and the increased transmission of RRV.

## 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.