Communicable diseases surveillance

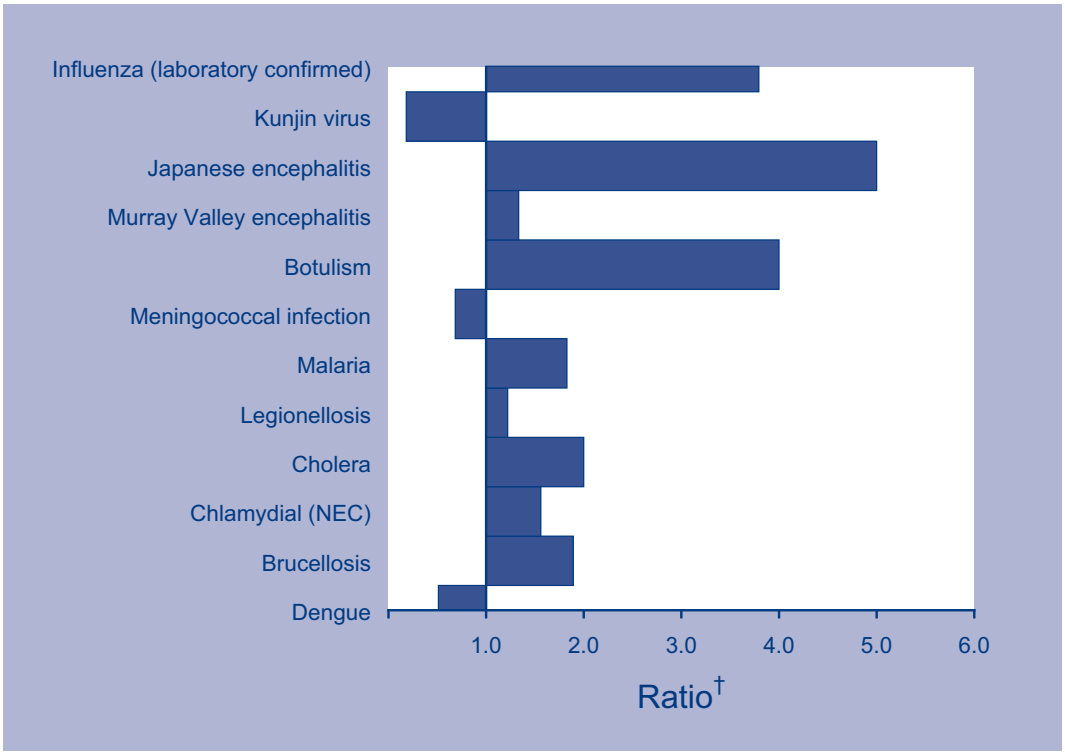
Highlights for 1st quarter, 2005

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 disease notifications with an onset in the first quarter of 2004 compared with a 5-year mean for the same period. The number of notifications received in the quarter was above the five year mean for influenza (laboratory-confirmed), Japanese encephalitis virus, Murray Valley encephalitis virus, botulism, malaria, legionellosis, cholera, chlamydial infection and brucellosis. The number of notifications received was below the five year mean for meningococcal infections, Kunjin virus and dengue.

Figure 1. Selected* diseases from the National Notifiable Diseases Surveillance System, comparison of provisional totals for the period 1 January to 31 March 2005 with historical data*



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

† Ratio of the current quarter total to the 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.

Gastrointestinal illnesses

Botulism

One case of botulism was reported in this quarter. The case was in a 4-month-old male in Queensland, who lived on a rural property with his parents and two siblings. The infant had only been breast-fed and did not have direct exposure to honey, a common risk factor for this disease as it can contain *Clostridium botulinum* spores.[1,2] Stool samples from the case tested positive for botulinum toxin A.

Quarantinable diseases

Cholera

Two cases of cholera were reported by Victoria in this quarter. The cases were in a 71-year-old female and a 45-year-old female, where both were infected with *Vibrio cholerae inaba*. The cases were in recent Liberian refugees who travelled from a camp in Tanzania. The cases were symptomatic in-flight and were hospitalised soon after arrival. Active surveillance for other cases was instigated by the Victorian health department, and factsheets were distributed to passengers on the same flight.

The cases were notified to the World Health Organization through the Australian Government Department of Health and Ageing's National Incident Room. To prevent further imported cases, the Communicable Diseases Network Australia is working with the Australian Department of Health and Ageing and the Department of Immigration, Multicultural and Indigenous Affairs to provide health screening and health advice to incoming refugees.

Vaccine preventable diseases

Influenza

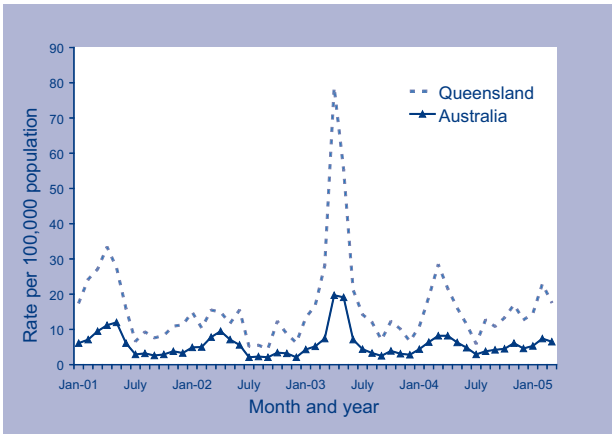
There were 378 cases of laboratory-confirmed influenza in the first quarter 2005. This was nearly four times the average number of cases for this time of year. Two hundred and seventy-six cases (73% of total reports) were from New South Wales. A number of these cases may have been diagnosed on the basis of a single high titre of antibodies to influenza virus using an enzyme immunoassay test and may not have had influenza. To increase the specificity of the surveillance, the national surveillance case definition for influenza is currently under review.

Vectorborne diseases

Barmah Forest virus infection

There were 327 notifications of Barmah Forest virus (BFV) infection in this quarter, of which 178 notifications (54%) were from Queensland. There has been a small increase in the rate of notifications in Queensland since July 2004. Rates of Barmah Forest virus are shown in Figure 2.

Figure 2. Notification rates of Barmah Forest virus infections, Queensland, compared to national rates, 1 January 2001 to 31 March 2005, by month of onset



New South Wales has noted an increase in BFV infection since 2000. The number of notifications has approximately doubled (from 195 cases in 2000 to 401 cases in 2004). The majority of these cases were identified in coastal areas.[3] It is difficult to determine the factors that have contributed to the increase in notifications in New South Wales as little is known about the natural cycle of BFV.[4] The increase in notifications could be a result of increased awareness of the clinical disease by doctors or artefacts in laboratory testing.[4]

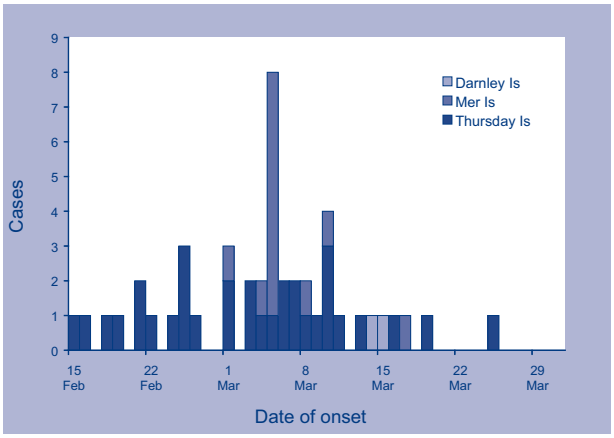
Japanese encephalitis virus

A single case of Japanese encephalitis virus (JEV) was reported from Queensland. The case was most likely exposed to JEV on Horn Island or in Port Moresby (Papua New Guinea) and had been vaccinated against JEV.

Dengue

There were 94 notifications of dengue during this quarter, which represents a fourfold increase compared to the previous quarter. In Queensland, where 69 per cent (65/94) of notified cases occurred, an outbreak of dengue type 4 was reported.[5] The outbreak started on Thursday Island, Torres Strait in February 2005. A Dengue Action Response Team was mobilised immediately to Thursday Island where the first case was a local resident without a travel history. So far, there have been 46 confirmed cases of whom two are epidemiologically linked and there are approximately 40 cases pending laboratory confirmation. The majority of the cases identified in the outbreak were on Thursday Island (n=32), however, there were also cases reported on Mer Island (n=12) and Darnley Island (n=2) (Figure 3).

Figure 3. Place of acquisition of Torres Strait dengue type 4 outbreak, 15 February to 31 March 2005, by date of onset



Malaria

There were 358 cases of malaria reported in the first quarter of 2005. The majority of the cases were reported by Queensland (n=139, 39%) and New South Wales (n=117, 33%). The notifications represent almost a twofold increase compared to the five year-to-date mean. The increase in malaria notifications can be attributed to the recent resettlement of refugees from both East and West Africa who had high rates of malaria infection. In the Northern Territory, public health precautions were taken to prevent the re-introduction of endemic malaria due to the refugee arrivals.[6] The refugees were screened immediately after arrival and parasitemic individuals were hospitalised until cured.

Of all notifications of malaria in this quarter, 57 per cent were male and 42 per cent were female. Of cases were the malaria species was known (n=200), most infection were due to *Plasmodium falciparum* (75%), *Plasmodium vivax* (14%) and *Plasmodium ovale* (4%). The other cases were infected by a combination of malaria species (7%).

Murray Valley encephalitis virus

Two cases of Murray Valley encephalitis virus (MVEV) were reported in this quarter. Both cases were detected in the high endemic period for MVEV, which is between March and May.[7] One case was in a 3-year-old boy from the Northern Territory who had travelled from Darwin to Katherine due to threats from Severe Tropical Cyclone Ingrid. The other case was in a 30-year-old male from Normanton in North Queensland. This is the second case of MVEV in Queensland in the last five years, where there was a case of MVEV in a 3-year-old Mount Isa boy in 2001.

Sentinel chicken seroconversions for MVEV were reported in Howard Springs and Katherine in February and March. Due to the recent human cases and the positive readings from sentinel chicken, Queensland and the Northern Territory health departments have issued media alerts to prevent further cases of MVEV.

Zoonoses

Brucellosis

Both Queensland and Victoria reported cases of brucellosis. The species in the Victorian case was *Brucella melitensis*, and was found in an abattoir worker. The Victorian Department of Primary Industries advised that the case was unlikely to have been acquired within the abattoir as *Brucella melitensis* is not detected in Australian stock. The case was probably acquired in Kenya prior to the person's arrival in Australia.

Thirteen cases were reported by Queensland. Most of the cases were male (n=11), where the average age was 33 years (range 20–51). Most of these cases were associated with farming or pig shooting. The *Brucella* species in three of the cases was identified as *Brucella suis*.

Scrub typhus

Fourteen soldiers in a base at Townsville, Queensland contracted scrub typhus in this quarter.[8] The cases were initially suspected to be leptospirosis, but serological tests led to the diagnosis of scrub typhus. The disease is spread to humans as a zoonosis by the bite of the larval stage of trombiculid mites. Previous clusters of scrub typhus have been documented in Queensland, including two clusters at military bases in 1996 and 1997.[9,10]

Other bacterial infections

Meningococcal infections

There were 75 notifications of meningococcal infection during the quarter, which was two-thirds the average number reported in the corresponding quarter over the previous five years. Of the 75 cases, meningococcal serogroup data was available on 64 cases. There were 41 serogroup B (64%), 14 serogroup C (22%) and two cases each of serogroup W135 (3%) and serogroup Y (3%).

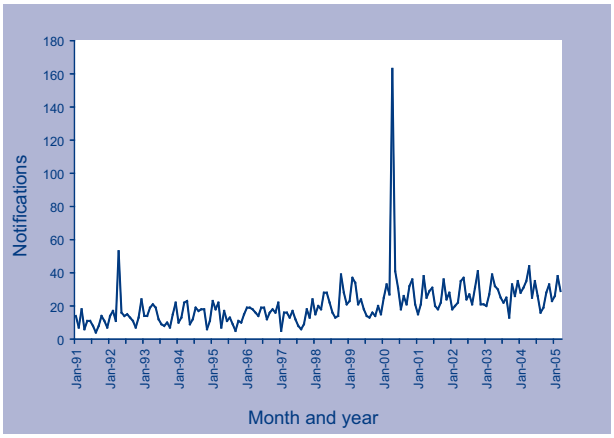
Legionellosis

There were 93 cases of legionellosis notified in the quarter, which was 20 per cent above the average reported in the corresponding quarter over the previous five years. Of cases where the *Legionella* species was known (n=87), 57 per cent were *Legionella pneumophila* (n=50), 41 per cent were *Legionella longbeachae* (n=36) and one per cent was *Legionella micdadei* (n=1).

A small outbreak of *Legionella pneumophila* occurred in Wollongong, a southern coastal city in New South Wales. The outbreak affected five people, ranging from 31 to 84 years of age. Cooling towers from three buildings in the central district of Wollongong tested positive for *Legionella pneumophila* and were cleaned to prevent further cases.

In 2003, the laboratory cut-off values for *Legionella* serology tests were revised in Victoria and South Australia to increase specificity. Tasmania uses laboratories in both Victoria and South Australia for serological diagnoses of legionellosis. This change should have decreased the number of cases notified had disease activity remained stable. However, there has been a slight but steady increase in notifications since 2000 (Figure 4). The Communicable Diseases Network Australia is monitoring the legionellosis trends and the Victorian health department has undertaken a health promotion campaign to inform the public about the disease.

Figure 4. Trends in notification of legionellosis, Australia, 1991 to 2005, by month of onset



With thanks to:

David Coleman (Health Department Tasmania)

References

1. Tanzi MG, Gabay MP. Association between honey consumption and infant botulism. *Pharmacotherapy* 2002;22:1479–1483. [Review]

2. Cox N, Hinkle R. Infant botulism. *Am Fam Physician* 2002;65:1388–1392. [Review]

3. Doggett S. Population health aspects of mosquito-borne disease in New South Wales. *N S W Public Health Bull* 2004;15:193–199.

4. Harvey L, Dwyer D. Recent increases in the notification of Barmah Forest virus infections in New South Wales. *N S W Public Health Bull* 2004;15:199–204.

5. Queensland Health. Outbreak update. 2005. Available from: http://www.health.qld.gov.au/dengue/outbreak_update/default.asp Accessed on 20 April 2005.

6. Zweck N, Spencer E, Anstey N, Currie B. Guidelines for screening and management of infectious diseases in refugees from sub-Saharan Africa – based on a single initial blood sample after arrival in the Northern Territory. *Northern Territory Disease Control Bulletin* 2004;11:13–17.

7. Northern Territory Health Department. Murray Valley encephalitis factsheet. 2001. Available from: http://www.nt.gov.au/health/cdc/fact_sheets/MVE.pdf Accessed on 20 April 2005.

8. ABC News. Soldiers cleared of bacterial disease. 2005. Available from: http://www.promedmail.org Accessed on 30 March 2005.

9. Faa AG, McBride WJ, Garstone G, Thompson RE, Holt P. Scrub typhus in the Torres Strait Islands of north Queensland, Australia. *Emerg Infec Dis* 2003;9:480–482.

10. McBride WJ, Taylor CT, Pryor JA, Simpson JD. Scrub typhus in north Queensland. *Med J Aust* 1999;170:318–320.