

11. Vector-borne diseases

Arbovirus infections

The most commonly reported arbovirus infections in Victoria are the alphaviruses: Ross River virus disease and Barmah Forest virus disease (table 37). Both diseases are endemic throughout much of the state, and are important as a result of their frequency and the disabling rheumatic symptoms they can cause.

Flavivirus infections include Murray Valley encephalitis, Kunjin virus encephalitis, dengue fever and Japanese encephalitis. The last case of Murray Valley encephalitis reported as acquired in Victoria was in 1974. Four cases of Kunjin virus encephalitis have been reported since 1991. No cases of dengue fever or Japanese encephalitis have ever been reported as acquired in Victoria, although imported cases of dengue fever are occasionally notified.

Barmah Forest virus disease

Summary of notifications

The department received notifications for fourteen cases of Barmah Forest virus disease in 2004; a continuation of the low numbers observed in 2003. Five females and nine males were notified, and the median age of cases was 48 years (range: 16–79 years). Eight notifications (57 per cent) had an exposure in the Gippsland region.

Risk factors

Risk factor information was routinely collected and revealed the most common risk factor to be living or holidaying in the Gippsland region.

Outbreak and other investigations

No outbreaks were identified.

Comment

Minimising exposure to mosquito bites is the best prevention method. Wearing long, loose fitting clothing, preferably light in colour, and using a suitable mosquito repellent on any exposed skin will decrease the chance of being infected with a mosquito-borne disease. Mosquitoes are most active at dusk and dawn, although some species are present throughout the day, particularly in coastal regions.

Kunjin virus disease

Summary of notifications

There was one notified case of Kunjin virus disease in 2004 in a 35-year-old female from metropolitan Melbourne. This was the first case notified since 2001.

Risk factors

The case did not report any likely exposures in Victoria but had travelled extensively overseas, from where it is assumed she acquired her infection.

Outbreak and other investigations

The single case in 2004 was sporadic.

Comment

Kunjin virus disease is sporadically detected in Victoria; the most recently notified were one case in 2001 and two cases in 1991. Preventive measures are the same as for other mosquito-borne diseases.

Table 37: Notified cases of arbovirus, by type, Victoria, 1999–2004

	1999	2000	2001	2002	2003	2004
Ross River virus	227	313	357	33	14	91
Barmah Forest virus	13	18	19	59	9	14
Flavivirus– dengue	0	2	6	11	15	9
Flavivirus– not further specified	1	11	10	2	3	3
Flavivirus– Kunjin	0	0	1	0	0	1
Arbovirus– not further specified	45	16	5	0	0	0
Sindbis	1	0	0	0	0	1
Total	287	360	398	105	41	119

Ross River virus disease

Summary of notifications

The department received notifications for 91 cases of Ross River virus disease in 2004. This was an increase on totals in 2002 and 2003, but still considerably lower than in the period 1999-2001 (figure 36). Fifty-one notified cases were female and 39 were male (for one person the sex was not stated). The median age of cases was 43 years (range: eight to 80 years).

Risk factors

Exposures to Ross River virus disease were mainly distributed across rural and regional areas of the state (figure 37). The highest number of cases and rates were reported for Loddon Mallee (n=24), Gippsland (n=18), Hume (n=13) and Grampians (n=7). There were 25 cases with interstate exposures, of which 11 were in New South Wales and eight were in Queensland.

Outbreak and other investigations

No outbreaks were identified.

Comment

Preventive measures are the same as for other mosquito-borne diseases.

Figure 36: Notified cases of Ross River virus disease, by month of notification, Victoria, 1999–2004

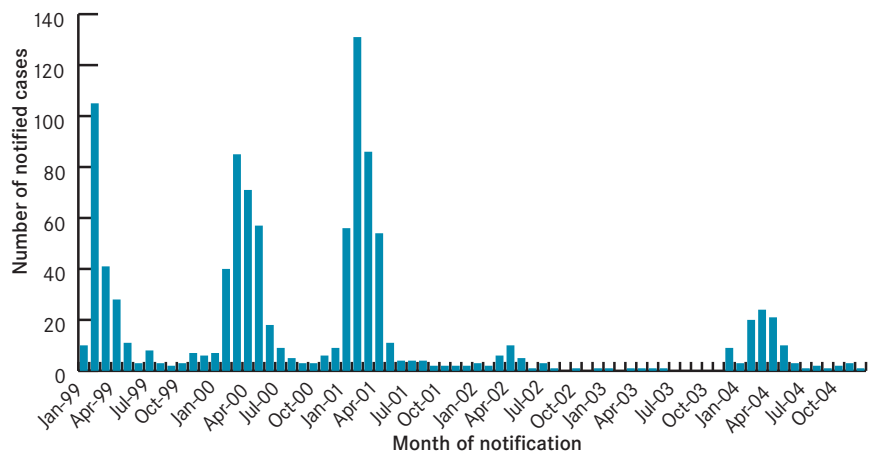
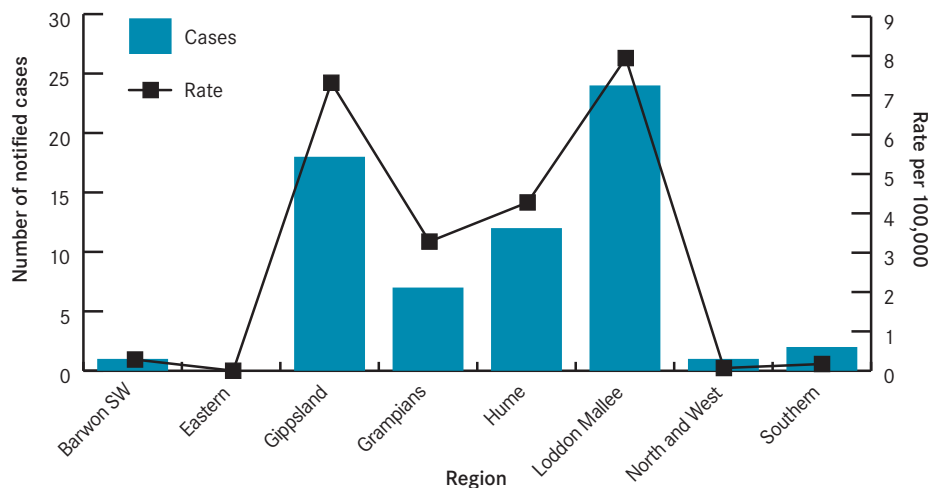


Figure 37: Notified cases of Ross River virus disease, by reported exposure region and rate per 100,000 population, Victoria, 2004



Flavivirus infections

Summary of notifications

The department received notifications for 13 cases of flavivirus infection in 2004, of which nine were identified as dengue fever. These cases were in six males and three females, with a median age of 32 years (range: 19–72 years).

Risk factors

Overseas travel within the incubation period was reported for all cases. Three cases reported travel to Thailand, two had travelled to Indonesia, and one case respectively to East Timor, India, Malaysia and Sri Lanka.

Outbreak and other investigations

No outbreaks were identified.

Comment

People travelling to endemic areas must be aware of the risks and take appropriate precautions. Vaccinations are not available except for Japanese encephalitis, and preventive measures are the same as for other mosquito-borne diseases.

Malaria

Summary of notifications

The department received notifications for 63 cases of malaria in 2004, similar to the number of cases in 2003. Fourteen cases were in females and 49 (79 per cent) were males. The median age was 27 years (range: three to 66 years) (figure 38). *Plasmodium vivax* was the most common type of malaria notified, accounting for 45 cases (table 38). No mixed infections were reported.

Table 38: Notified cases of malaria, by species, Victoria, 2004

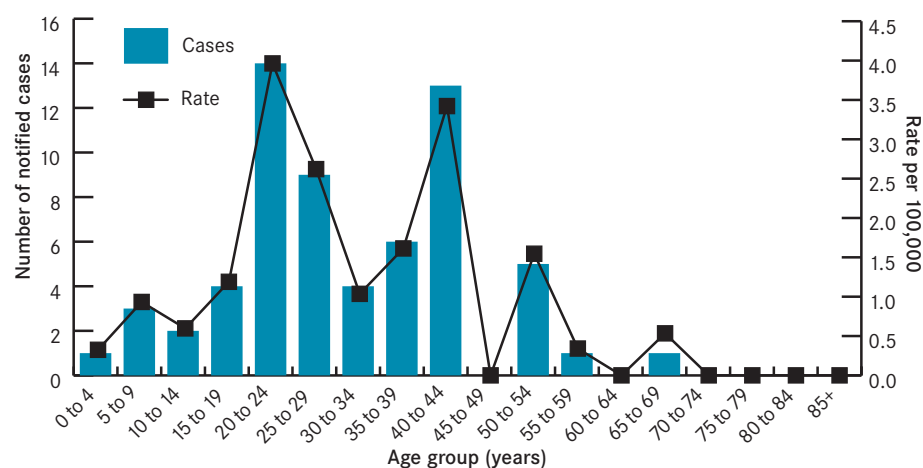
Type	Number	Per cent
<i>Pl. vivax</i>	45	71
<i>Pl. falciparum</i>	14	22
<i>Pl. ovale</i>	4	6
Total	63	100

The most common countries in which malaria was acquired were Papua New Guinea (44 per cent), India (eight per cent), and Indonesia, Uganda and Vanuatu with six per cent each (table 39).

Table 39: Notified cases of malaria, by country of acquisition, Victoria, 2004

Country or region	Number
Papua New Guinea	28
India	5
Indonesia	4
Uganda	4
Vanuatu	4
East Timor	3
Ghana	3
Kenya	2
Nigeria	2
Pakistan	2
Madagascar	1
Malaysia	1
Philippines	1
South Africa	1
Egypt	1
Liberia	1
Total	63

Figure 38: Notified cases of malaria, by age group and rate per 100,000 population, Victoria, 2004



Risk factors

Malaria prophylaxis of some form was taken by 31 (49 per cent) of notified cases. Twenty-three (35 per cent) of these had taken the prophylaxis regularly, while eight had taken it intermittently. Seventeen cases did not take any form of prophylaxis. Information regarding prophylaxis was not available for 15 cases.

Outbreak and other investigations

No outbreaks were identified.

Comment

The best prevention is to avoid being bitten by mosquitoes. All travellers to tropical and malarious areas should cover exposed skin with long sleeves and long pants. They should treat exposed areas of skin with insect repellents that contain diethyl toluamide (DEET) or picaridin. Impregnated bed nets and screening of accommodation are also recommended.

Before travelling, people should seek reliable advice on malaria prophylaxis. No prophylaxis is 100 per cent effective; malaria may still occur and prompt medical care should be sought if a fever develops.

Up-to-date information on recommended anti-malarial chemoprophylaxis can be obtained from specialist travel medicine clinics or the World Health Organization publication *International travel and health 2005*, available at www.who.int/ith