Mosquito-borne disease warning for the Top End of NT
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Peter Whelan, Medical Entomology

The Northern Territory (NT) Department of Health and Community Services (DHCS), has issued a warning for the potentially fatal Murray Valley encephalitis (MVE) virus disease and Kunjin virus disease for the Top End of the NT, including the Katherine region, for April to June 2008.

Historically, March to June is the peak period for MVE virus and Kunjin virus activity across the Top End. Testing of sentinel chickens so far this year indicates seroconversion to both MVE virus and Kunjin virus in February and March near Leanyer swamp, the Adelaide River floodplain, Katherine, and Nathan River, and activity of Kunjin virus on Groote Eylandt and Jabiru in March. There is also some early indication of Kunjin virus activity in the Alice Springs area and MVE in Tennant Creek. This suggests widespread activity of both viruses circulating in local mosquitoes in the Top End to as far south as Tennant Creek, with Kunjin virus activity extending south to the Alice Springs area.

This is consistent with recent chicken seroconversions in the north-west of Western Australia (WA) and consequent WA Health mosquito-borne disease warnings. There has also been MVE seroconversions in chickens in inland New South Wales and northern Victoria indicating a continuing risk in these areas, as well as possibly inland Queensland affected by rains earlier in the year.

There have been no cases of MVE (or the related Kunjin virus disease) in the NT since 2005. However, be aware of the current risk, and promote mosquito protection where appropriate.

Usual symptoms of MVE virus disease include severe headache, high fever, drowsiness, tremor and seizures - especially in young children - and in some cases the condition progresses to delirium and coma, leading to paralysis, brain damage, with a 25% mortality rate. Kunjin virus disease causes a milder disease, with fever and severe headache. People experiencing the early symptoms of both diseases should seek urgent medical attention. Only about 1 in 1000 persons who get bitten by infected mosquitoes will contract these diseases. On average there are 1 to 2 human cases of these diseases in the NT each year. People most at risk are those with no prior exposure to these viruses, including babies, young children, tourists or people from southern Australia. Long-term residents are, however, also at risk.

These viruses are transmitted by the bite of the common banded mosquito, which is likely to breed in high numbers following the recent heavy rains across the Top End. This mosquito breeds in flooded grassy and swamp areas and numbers will persist over the early dry season near the longer lasting swamp areas. It bites after sundown, with a peak in the first 2 hours of the night. There is little risk of exposure to infected mosquitoes during the day.

This warning particularly applies to people visiting or living in rural areas or towns within 5 kilometres of wetlands, river and creek systems in the Top End and north-west WA, especially at night. The risk is likely to be highest near seasonal and temporary wetlands, coastal brackish swamps, billabongs, river floodplains and heavily vegetated dams and drains.

Urban areas within 5 kilometres of swamps and wetlands or other areas with poor drainage or creeks are also at risk, particularly when common banded mosquitoes are causing pest problems.

There is no need to avoid travel to the wetland risk regions if normal mosquito self-protection is observed.

People are advised to take extra precautions against being bitten by mosquitoes until the end of June when virus activity is expected to return to a minimum.

Precautions against being bitten by mosquitoes include:

- Avoid outdoor exposure from dusk and at night in risk areas and all areas of high mosquito activity.
• Ensure all insect screens are installed and mosquito proof. Use mosquito nets and mosquito-proof tents at night in all areas when camping or in unscreened areas.
• Wear protective light-coloured clothing with long sleeves, long trousers and socks between dusk and dawn.
• Use a protective repellent containing di-ethyl toluamide (DEET) or picaridin as a supplement to protective clothing when outdoors at night in areas of mosquito activity, or when mosquitoes are active in the day. The most effective and long-lasting formulations are those in lotions or gels. Most natural or organic repellents are not as effective as DEET or picaridin.
• Ensure children are adequately protected against mosquito bites.
• Ensure all artificial receptacles that collect rain water are emptied or made unsuitable for mosquito breeding.

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Personal mosquito protection while overseas
Peter Whelan, CDC, Darwin

Introduction

These brief notes are aimed at minimum self-protection measures that can be taken by intending travelers to nearby countries in Southeast Asia to reduce exposure to dengue, malaria, and Japanese encephalitis vector mosquitoes. A brief inquiry should also be made on the current status and seasonality of these diseases in the intended country of destination to determine the need and level of protection required. Websites such as smarttraveller (http://www.smarttraveller.gov.au/index.html) provide travel advisories including general health advisories and the World Health Organization (http://www.who.int/countries/en/) and Centers for Disease Control and Prevention (http://www.cdc.gov/travel/default.aspx) provide information about disease risk by country. The destination country should be assessed to determine the risk of various vector borne diseases in either urban or rural settings, and your specific risk of exposure to mosquitoes in your intended locations of stay. For example, malaria or Japanese encephalitis are not significant potential problems in urban areas in cities unless on the outskirts and close to rice paddies, swamps, marshes or rivers with vegetation. Further consultation with a travel medicine doctor may then be required. This service is provided by some General Practitioners and services such as Travel Doctor at the Health Services Australia Group.

Precautions

• Take the malaria prophylaxis drugs recommended by a travel medicine doctor if traveling to a potentially malarious locality. Begin the drug course a few days before you go to ensure there are no adverse drug reactions. Consider a Japanese encephalitis vaccination* if intending to stay in a rural area with possible mosquito exposure and history of outbreaks or cases during the season of intended stay.
• Use air-conditioned accommodation wherever possible or fully screened accommodation with fans. Keep any insect screens and other mosquito access routes closed night and day to prevent mosquito entry. In addition, spray aerosol residual insecticide in room behind and in cupboards, under bed, under tables, in any dark corners, on anything black in room, on insect screens around holes or gaps, and around windows and doors if not completely sealed. Any type of spray pack labeled for residual use i.e. crack and crevice treatment can be used. The best contain lambda cyhalothrin or bifenthrin, but permethrin, deltamethrin, or propoxur as active ingredients are acceptable. Take a permethrin-impregnated mosquito net if not using sealed air-conditioned accommodation, and particularly if in a rural area.
• Take insecticide impregnated long pants to protect against dengue mosquito attack if

* The availability of Japanese encephalitis vaccine has been problematic in recent months and may not be readily accessible in Australia making mosquito protection methods of utmost importance.