NSW Health

Chikungunya

NSW Control Guidelines for Public Health Units

Revision history			
Version	**Date**	**Revised by**	**Changes**
1.0	1 July 2012		Development of the guideline
1.1	15 January 2025	One Health Branch	NSW specific guidance

NSW guidance

There are no Series of National Guidelines for chikungunya. This document provides NSW guidance on the surveillance and management of chikungunya.

1. Summary

Public health priority:	Routine
PHU response time:	Respond to confirmed cases within three days Enter confirmed cases on NCIMS within five working days
Case management:	Determine possible exposures
Contact management:	Nil

2. Reason for surveillance

- To identify and control cases of disease
- To monitor the epidemiology and so inform the development of better prevention and control strategies.

3. Case definition

A confirmed case requires laboratory definitive evidence only.

Laboratory definitive evidence

- Isolation of chikungunya virus **OR**
- Detection of chikungunya virus by nucleic acid testing **OR**
- Seroconversion or a significant rise in antibody level or a fourfold or greater rise in titre to chikungunya virus (CHIKV), in the absence of a corresponding change in antibody levels to Ross River virus and Barmah Forest virus **OR**
- Detection of chikungunya virus-specific IgM, in the absence of IgM to Ross River virus and Barmah Forest virus

As per the CDNA case definition, if there is no known travel history to areas with chikungunya, confirmation of initial laboratory results by a second arbovirus reference laboratory is required.

Refer to Section 6 Case Management for testing and response timeframes.

4. Notification criteria and procedure

Chikungunya cases are to be notified by laboratories on diagnosis. Only confirmed cases should be entered onto NCIMS.

5. The disease

Infectious agents

Chikungunya virus is one of the arboviruses (arthropod-borne viruses) known to be pathogenic for humans. Chikungunya is a member of the genus *Alphavirus*, in the family *Togaviridae* (Ross River virus, Barmah Forest virus and Sindbis are also *alphaviruses*).

Chikungunya infections occur in many parts of Africa, Asia, the America and the Western Pacific, including many areas where dengue is common. The Centers for Disease Control and Prevention maintains a list and map of countries at risk of chikungunya. There have been no reports of chikungunya virus transmission in Australia.

Mode of transmission

The chikungunya virus is transmitted by the bite of an infected *Aedes spp*. mosquito, predominantly *Aedes aegypti* and *Aedes albopictus*. In Australia, these vectors exist in north and northeastern Australia, primarily Queensland and the Torres Strait.

Human-to-vector-to-human transmission occurs during outbreaks of the disease. Bloodborne transmission is possible; cases have been documented among laboratory personnel handling infected blood and a health care worker drawing blood from an infected patient.

The risk of a person transmitting the virus to a mosquito or through blood is highest when the patient is viraemic during the first 2–6 days of illness.

Maternal-fetal transmission has been documented during pregnancy. The highest risk occurs when a woman is viraemic at the time of delivery, with a vertical transmission rate of 49%. Chikungunya virus does not appear to be transmitted through breast milk.

Timeline

The incubation period can range from 2-12 days but is usually 3-7 days.

Clinical manifestations

Typical symptoms include fever, headache, fatigue, nausea, vomiting, muscle pain, rash, and joint pain. Illness from the chikungunya virus tends to be more severe than that of Ross River or Barmah Forest viruses. Symptoms such as arthralgia, myalgia and lethargy may occasionally persist for many months. Individuals who may be at higher risk of severe disease and poorer outcomes are infants, older adults and those living with co-morbidities.

Asymptomatic infection can occur but it is unknown how common this is.

It is important to distinguish chikungunya from dengue, due to the potential for worse outcomes (including death) from dengue. The two diseases can occur together in the same patient. With chikungunya:

- Pain is more intense and localized to the joints and tendons.
- Onset of fever is more acute and is also shorter in duration.
- Shock or severe haemorrhage is rarely observed.

Mosquito bite prevention and travel advice

There is currently no vaccine in Australia to prevent chikungunya. A chikungunya vaccine called Ixchiq has been approved by the United States Food and Drug Administration however this is not yet approved for use in Australia.

Travellers to endemic chikungunya countries should avoid being bitten by mosquitoes by:

- closing windows and using insecticide sprays indoors, at home or at overnight accommodation
- wearing light-coloured, long-sleeved shirts, long trousers and enclosed shoes
- using an insect repellent containing DEET (diethyl toluamide) or picaridin on all exposed skin, and applying frequently and thoroughly according to the manufacturer's recommendations
- wearing permethrin impregnated fabrics.
- using mosquito nets or screens if sleeping in areas exposed to the outdoors
- ensuring there is no stagnant water around e.g., in discarded containers, fallen palm fronds or gutters
- seeking medical advice, as soon as practicable, if they become unwell with a high fever during or soon after travel

People travelling to chikungunya prone areas should speak to their doctor or healthcare professional about chikungunya prevention.
For further information, see Healthdirect and NSW Health Factsheets: Chikungunya, Mosquitoes are a health hazard and Staying safe and healthy overseas.

6. Managing single notifications

Response times

Investigation

Within three working days of notification begin follow-up investigation.

Data entry

Enter confirmed cases in NCIMS within five working days of notification.

Response procedure

Response to confirmed cases should be undertaken within three days. The response to a notification will normally be carried out in collaboration with the case's health carers. Regardless of who does the follow-up, PHU staff should ensure that action has been taken to:

- Confirm the onset date and symptoms of the illness
- Confirm results of relevant pathology tests, or recommend the tests be done (encourage the managing doctor to take convalescent sera to confirm the diagnosis)
- Ensure confirmation by a second test if the case has been acquired in a previously unaffected area
- Find out if the case or relevant care-giver has been told what the diagnosis is before interviewing them

- Seek the doctor's permission to contact the case or relevant caregiver
- Review case management
- Identify likely source of infection.

Case management

Investigation and treatment

Supportive treatment only.

Education

The case or relevant care-giver should be informed about the nature of the infection and the mode of transmission.

Acutely infected persons must avoid being bitten by Aedes mosquitoes, in order to prevent further transmission of the virus. Encourage measures to reduce the chance of being bitten by mosquitoes and discourage travel to areas known to have competent Aedes vectors (e.g. Far North Queensland) for at least 6 days after the onset of symptoms.

Exposure investigation

The case should be asked to recall if, in the incubation period, they had visited regions where chikungunya is endemic. If there is no history of such travel then additional information should be sought to identify possible areas of local transmission, including:

- History of being bitten by mosquitoes
- Participated in recreational or other activities involving exposure to bushland or other mosquito habitat (as in, for example, gardening, bushwalking and picnicking).

If no overseas travel is identified, please contact the One Health Branch to discuss further.
When entering potential exposures on NCIMS, the following variables are considered minimum data requirements:

Required data	**Where to enter data in NCIMS**
Place of exposure / acquisition including country	Both the Clinical and Risk History packages

In the event of an outbreak or enhanced public health investigation, additional data points may be required.

Isolation and restriction

Infected people should be protected from further mosquito exposure (staying indoors in areas with screens or under a mosquito net) during the first few days of the illness, so they do not contribute to the transmission cycle.

Environmental evaluation

Chikungunya virus is not known to be transmitted in Australia. However, the mosquito vectors for transmission exist in north and north-eastern Queensland and the Torres Strait so there is the potential for local transmission to occur.

Cases without a relevant travel history should be discussed with One Health Branch.

Contact management

Identification of contacts

Potentially co-exposed people are those who may have been exposed to the same source as the case. However, active searching for these people is not usually indicated.

Treatment

Passive immunisation
None

Active immunisation

None

Antibiotic or antiviral prophylaxis

None

Education

Educate the public planning to live in or travel to chikungunya endemic areas to minimise exposure to mosquito bites. Information should indicate geographical location of habitats, and periods of maximum mosquito activity and refer to protective clothing, appropriate repellents and methods of reducing mosquitoes in the home. Targeted information and messaging (such as through social media) should be considered and developed with Aboriginal Environmental Health teams.

NSW Health factsheets include Chikungunya, and Mosquitoes are a health hazard. For information about health and travel, please see Staying safe and healthy overseas.

7. Appendices

Appendix 1. Chikungunya Factsheet

Appendix 2. Disease investigation form

Appendix 3. Mosquitoes are a Health Hazard Factsheet

Appendix 4. Staying safe and healthy overseas