



# Japanese encephalitis virus infection

## Australian national notifiable diseases case definition

This document contains the surveillance case definition for Japanese encephalitis virus infection, which is nationally notifiable within Australia. State and territory health departments use this definition to decide whether to notify the Australian Government Department of Health and Aged Care of a case.

Version	Status	Last reviewed	Implementation date
2.0	<p>Complete review for 2021-22 Australian outbreak.</p> <p><b>Confirmed case</b></p> <p>Remove need for clinical evidence</p> <p>Remove need for second laboratory confirmation of cases acquired in mainland Australia</p> <p>Add requirement for laboratory with “extensive experience in the diagnostic testing of arbovirus”</p> <p>Revise laboratory definitive evidence</p> <p><b>Add Probable case definition</b> requiring laboratory suggestive evidence and clinical evidence</p>	December 2022	<p>1 January 2021*</p> <p>*backdated to capture all confirmed and probable cases for 2021-22 Australian outbreak.</p>
1.1	<p>Change Kunjin to West Nile virus/Kunjin.</p> <p>Remove the two references to yellow fever vaccination in laboratory definitive evidence lines.</p> <p>Under “Laboratory definitive evidence” replace the reference to “in Australia” with “in mainland Australia”.</p> <p>Replicate clinical evidence from West Nile virus/ Kunjin and Murray Valley encephalitis virus case definitions:</p>	November 2009	1 July 2010
1.0	Initial case definition	2004	2004

This document contains the case definition for Japanese encephalitis virus infection which is nationally notifiable within Australia. This definition should be used to determine whether a case should be notified.

## Reporting

Only **confirmed cases** and **probable cases** should be notified.

### Confirmed case

A confirmed case requires **laboratory definitive evidence**<sup>i</sup> from a laboratory with extensive experience in the diagnostic testing of arbovirus.

#### Laboratory definitive evidence

1. Isolation of Japanese encephalitis virus (JEV) by culture.

**OR**

2. Detection by nucleic acid testing (NAT) specific for JEV.

**OR**

3. IgG seroconversion or a diagnostically significant increase in antibody level or a fourfold or greater rise in JEV-specific IgG titres proven by neutralisation or another specific test, with no history of recent vaccination against JEV.<sup>ii</sup>

**OR**

4. Detection of JEV-specific IgM in cerebrospinal fluid (CSF), without the detection of other flavivirus-specific IgM.<sup>iii</sup>

### Probable case

A probable case requires **laboratory suggestive evidence** from a laboratory with extensive experience in the diagnostic testing of arbovirus **AND clinical evidence**.

#### Laboratory suggestive evidence

1. Detection of JEV-specific IgM in CSF which is significantly greater<sup>iv</sup> than other flavivirus-specific IgM levels, (if also detected).<sup>iii</sup>

**OR**

2. Detection of JEV-specific IgM in serum with no history of recent JEV vaccination.<sup>ii</sup>
  - a. without detection of other flavivirus-specific IgM in serum or CSF.<sup>iii</sup>

**OR**

- b. which is significantly greater<sup>iv</sup> than other flavivirus-specific IgM levels (if also detected).<sup>iii</sup>

**OR**

3. Detection of JEV-specific IgG in CSF:
  - a. without detection of other flavivirus-specific IgG.<sup>iii</sup>

**OR**

- b. which is significantly greater<sup>iv</sup> than other flavivirus-specific IgG levels (if also detected).<sup>iii</sup>

**AND**

- c. with no history of recent JEV vaccination<sup>ii</sup> unless the case also has encephalitic illness compatible with JEV infection in the absence of a known alternative cause.<sup>v</sup>

## Clinical evidence

1. Encephalitic disease: acute meningoencephalitis characterised by one or more of the following:
  - a. focal neurological disease, or seizures, or acute impairment in level of consciousness;
  - b. an abnormal computerised tomogram or magnetic resonance image or electroencephalogram consistent with flavivirus encephalitis;
  - c. presence of pleocytosis in cerebrospinal fluid.<sup>vi</sup>

### OR

2. Non-encephalitic illness: acute febrile illness with headache, with or without myalgia or rash.
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<sup>i</sup> Non-encephalitic cases detected as part of a serosurvey should not be notified.

<sup>ii</sup> Recent vaccination is considered to be 28 days; however advice should be sought from the authorising pathologist and the clinician regarding individual circumstances. Convalescent serum should be collected where possible.

<sup>iii</sup> E.g. Murray Valley encephalitis, West Nile/Kunjin and/or dengue virus.

<sup>iv</sup> Public health units should seek advice from the responsible authorising pathologist with regard to the interpretation of JEV positive serology results in the presence other flaviviruses.

<sup>v</sup> Including but not limited to other flaviviruses (such as Murray Valley encephalitis virus, West Nile/Kunjin and dengue viruses), Herpes Simplex Virus, Varicella Zoster Virus and enteroviruses.

<sup>vi</sup> Not definitive, but  $\geq 5$  leucocytes/ $\mu$ l is indicative.