

Policy and guidelines

REVISED SURVEILLANCE CASE DEFINITIONS

This report provides the revised surveillance case definitions approved by the Communicable Diseases Network Australia (CDNA) since 1 January 2016.

The Case Definitions Working Group (CDWG) is a subcommittee of the CDNA and comprises members representing all states and territories, the Australian Government Department of Health, the Public Health Laboratory Network, OzFoodNet, the Kirby Institute, the National Centre for Immunisation Research and Surveillance and other communicable disease experts. CDWG develops and revises surveillance case definitions

for all diseases reported to the National Notifiable Diseases Surveillance System. Surveillance case definitions incorporate laboratory, clinical and epidemiological elements as appropriate.

The following case definitions have been reviewed by CDWG and endorsed by CDNA.

The implementation date for the brucellosis case definition is 1 July 2016, while the implementation date for the flavivirus infection (unspecified) including Zika virus case definition is 1 January 2016. Both supersede any previous versions.

Brucellosis

Reporting

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

Confirmed case

A confirmed case requires **laboratory definitive evidence** only.

Laboratory definitive evidence

1. Isolation of *Brucella* species
- OR
2. Detection of *Brucella* species by nucleic acid testing from a blood sample
- OR

3. IgG seroconversion or a significant increase in IgG antibody level (e.g. fourfold or greater rise) to *Brucella*.

Probable case

A probable case requires **laboratory suggestive AND clinical evidence**.

Laboratory suggestive evidence

1. A single high agglutination titre to *Brucella*
- OR
2. Detection of *Brucella* species by nucleic acid testing from a normally sterile site other than blood.

Clinical evidence

A clinically compatible illness.

Summary of changes to brucellosis surveillance case definition

Laboratory definitive evidence

Addition of 'detection of *Brucella* species by nucleic acid testing in a blood sample'.

IgG seroconversion description re-worded.

Removal of 'agglutination and complement fixation titres'.

Laboratory suggestive evidence

Addition of 'detection of *Brucella* species by nucleic acid testing from a sterile site other than blood'.

Flavivirus infection (unspecified) including Zika virus

Note:

It is recognised that some cases of human infection cannot be attributed to a single flavivirus. This may either be because the serology shows specific antibody to more than one virus, specific antibody cannot be assigned based on the tests available in Australian reference laboratories, or a flavivirus is detected that cannot be identified.

Confirmation by a second arbovirus reference laboratory is required if the case cannot be attributed to known flaviviruses.

Occasional human infections occur due to other known flaviviruses, such as Kokobera, Alfuy, Edge Hill and Stratford viruses.

Reporting

Only **confirmed** cases should be notified.

Confirmed case

A confirmed case requires laboratory **definitive evidence** AND **clinical evidence**.

Laboratory suggestive evidence

1. Isolation of a flavivirus that cannot be identified in Australian reference laboratories or which is identified as one of the flaviviruses not otherwise classified

OR

2. Detection of a flavivirus, by nucleic acid testing, that cannot be identified in Australian reference laboratories or which is identified as one of the flaviviruses not otherwise classified

OR

3. IgG seroconversion or a significant increase in antibody level or a fourfold or greater rise in titre of flavivirus specific IgG that cannot be identified or which is identified as being specific for one of the flaviviruses not otherwise classified. There must be no history of recent Japanese encephalitis or yellow fever vaccination

OR

4. Detection of flavivirus IgM in cerebrospinal fluid, with reactivity to more than one flavivirus antigen (Murray Valley encephalitis, Kunjin, Japanese encephalitis and/or dengue) or with reactivity only to one or more of the flaviviruses not otherwise classified

OR

5. Detection of flavivirus IgM in the serum, with reactivity to more than one flavivirus antigen (Murray Valley encephalitis, Kunjin, Japanese encephalitis and/or dengue) or with reactivity only to one or more of the flaviviruses not otherwise classified. This is only accepted as laboratory evidence for encephalitic illnesses. There must be no history of recent Japanese encephalitis or yellow fever vaccination.

Clinical evidence

1. Non-encephalitic disease: acute febrile illness with headache, myalgia and/or rash

OR

2. Encephalitic disease: acute febrile meningoencephalitis characterised by one or more of the following:
 - focal neurological disease or clearly impaired level of consciousness
 - an abnormal computerised tomograph or magnetic resonance image or electrocardiograph
 - presence of pleocytosis in cerebrospinal fluid.

Zika virus case definition

Confirmed and probable cases are nationally notifiable under the disease *Flavivirus infection (unspecified)* using the Organism Name field to specify infection with Zika virus (ZIKV).

Reporting

Both **confirmed** and **probable** cases are nationally notifiable. Both confirmed and probable cases should be further sub-classified into clinical and non-clinical cases.

Confirmed case

A confirmed case requires **laboratory definitive evidence** only. Clinical evidence should be used to sub-classify cases as clinical or non-clinical.

Laboratory definitive evidence

- Detection of ZIKV by nucleic acid testing or virus isolation

OR

- IgG seroconversion or a significant increase in antibody level or a fourfold or greater rise in titre of ZIKV-specific IgG, and recent infection by dengue or other epidemiologically possible flaviviruses has been excluded

OR

- Detection of ZIKV-specific IgM in cerebrospinal fluid, in the absence of IgM to other possible infecting flaviviruses.

Probable case

A probable case requires **laboratory suggestive evidence AND epidemiological evidence**. Clinical evidence should be used to sub-classify cases as clinical or non-clinical.

Laboratory suggestive evidence

Detection of ZIKV-specific IgM in the absence of IgM to other epidemiologically possible flaviviruses or flavivirus vaccination in the 3 weeks prior to testing.

Notes:

1. If the date of most recent exposure was greater than 4 weeks before the specimen date, then ZIKV-specific IgG must also be positive.
2. If ZIKV-specific IgG was initially negative and subsequent testing greater than 4 weeks after exposure fails to demonstrate seroconversion the case should be rejected.

Epidemiological evidence

Clinical case

- Travel to or residence in a ZIKV receptive country¹ or area in Australia within two weeks prior to symptom onset;

OR

- Sexual exposure to a confirmed or probable case of ZIKV infection within two weeks prior to symptom onset.

Non-clinical case

- Travel to or residence in a ZIKV receptive country¹ or area in Australia within two months prior to specimen date;

OR

- Sexual exposure to a confirmed or probable case of ZIKV infection within two months prior to specimen date.

1. ZIKV receptive countries and areas are outlined on the Global Consensus Map at <http://www.healthmap.org/dengue/en/>. Areas are considered receptive to ZIKV where the likelihood of local acquisition is placed on the map as 'uncertain' or more.

Clinical case

Both confirmed and probable cases should be further sub-classified into **clinical** or **non-clinical** cases.

Clinical evidence

An acute illness within 2 weeks of exposure with 2 or more of the following symptoms:

- Fever
- Headache
- Myalgia
- Arthralgia
- Rash
- Non-purulent conjunctivitis.

In the absence of clinical evidence, the case will be classified as non-clinical.

Congenital Zika virus case definition

Confirmed and probable cases are nationally notifiable under the disease *Flavivirus infection (unspecified)* using the Organism Name field to specify congenital ZIKV infection.

Reporting

Both **confirmed** and **probable** cases are nationally notifiable.

Confirmed case

A confirmed case requires **laboratory definitive evidence** only.

Laboratory definitive evidence

Fetal (at 20 weeks gestation or more)

Isolation or detection of ZIKV from appropriate clinical samples (i.e. fetal blood, amniotic fluid, chorionic villus sample or post-mortem cerebrospinal fluid or tissue) by viral culture or nucleic acid testing.

Infant (within 28 days following birth)

Isolation or detection of ZIKV from appropriate clinical samples by viral culture or nucleic acid testing, with no history of travel since birth to, or residence in, a ZIKV receptive country¹ or area in Australia.

Probable case

A probable case requires **clinical evidence AND epidemiological evidence.**

Clinical evidence

Microcephaly²⁻⁶ or other CNS abnormalities⁷ in the infant or fetus (in the absence of any other known cause).

Epidemiological evidence

Confirmed or probable ZIKV infection in the mother during pregnancy.

2. Head circumference <-2SD below mean for gestation.
3. WHO Assessment of infants with microcephaly in the context of ZIKV. Interim guidance. 4 March 2016, WHO/ZIKV/MOC/16.3 Rev.1.
4. WHO Growth standards for term neonates (<http://www.who.int/childgrowth/standards/en/>)
5. WHO Pregnancy management in the context of ZIKV. Interim guidance. 2 March 2016. WHO/ZIKV/MOC/16.2
6. Intergrowth standards for preterm neonates (Villar, José et al. (2014). International standards for newborn weight, length, and head circumference by gestational age and sex: the Newborn Cross-Sectional Study of the INTERGROWTH-21st Project. *Lancet* (384). 9946: 857–868)
7. These include: ventriculomegaly, calcifications, abnormal sulcation and gyration, brain atrophy, callosal dysgenesis, microphthalmia, eye calcifications.

**Summary of changes to
Flavivirus infection (unspecified)
surveillance case definition**

Addition of the Zika virus case definition

Addition of the congenital Zika virus case definition