

## CHIKUNGUNYA VIRUS

*Includes Confirmed Cases Only*

### Background

This case definition was developed by the Armed Forces Health Surveillance Branch (AFHSB) for the purpose of epidemiological surveillance of Chikungunya virus infections in military-associated populations.

### Clinical Description

Chikungunya virus (CHIKV) is a *alphavirus* of the *Togaviridae* family. Primary transmission of the virus to humans occurs through the bite of an infected *Aedes* (*A. aegypti* or *A. albopictus*) mosquito. Acute disease is characterized by sudden onset of high fever (102°F or higher) and severe joint pain, often of the hand and feet. Other symptoms include rash, headache, back pain, myalgia, vomiting and conjunctivitis. The acute phase lasts 3-10 days and lifetime immunity is conferred after infection. Treatment consists of supportive care and fatalities are rare. No vaccine is available to prevent illness.<sup>1</sup>

### Case Definition and Incidence Rules

For surveillance purposes, a case of Chikungunya virus infection is defined as:

*After October 2016*

- One record of a reportable medical event (RME) of a *confirmed* case of Chikungunya virus infection, or
- One report of a DoD laboratory confirmed case of Chikungunya virus; confirmation criteria per the 2017 *Armed Forces Reportable Medical Events (RME) Guidelines and Case Definitions*.
- See *Case Definition and Incidence Rule Rationale* below for confirmed case criteria.

*Prior to October 2016*

- One record of a reportable medical event (RME) of any other condition (see Code Set Determination and Rationale) with “Chikungunya virus” infection noted in the comment field as *confirmed*.

#### **Incidence rules:**

For individuals who meet the case definition:

- The incidence date is considered the date of the first record of a reportable medical event that includes a diagnosis of Chikungunya virus infection.

*(continued on next page)*

<sup>1</sup> Armed Forces Health Surveillance Branch. Chikungunya Infections in DoD Healthcare Beneficiaries Following the 2013 Introduction of the Virus into the Western Hemisphere, 1 January 2014 to 28 February 2015. *Medical Surveillance Monthly Report (MSMR)*. 2015 Oct; Vol 22(10): 2-6.



### Case Definition and Incidence Rules *(continued)*

- An individual is considered an incident case only *once per lifetime*.

#### Exclusions:

- None

### Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Chikungunya virus	<i>After October 2016</i> A92.0 (Chikungunya virus disease)	066.3 (other mosquito-borne fever) - <i>with Chikungunya listed in the comment field of the RME report.</i>
	<i>Prior to October 2016</i> A92.8 (other specified mosquito-borne viral fevers) - <i>with Chikungunya listed in the comment field of the RME report.</i>	

### Development and Revisions

- In October of 2016 the case definition was updated to include ICD10 codes.
- This case definition was developed in December 2015 by AFHSB Epidemiology and Analysis (E&A) staff for use in a MSMR article on Chikungunya virus infection.<sup>1</sup> The case definition was developed based on reviews of the ICD9 and ICD10 codes, the scientific literature, and previous AFHSB analyses.

#### Case Definition and Incidence Rule Rationale

- Per the 2017 *Armed Forces Reportable Medical Events (RME) Guidelines and Case Definitions*, a confirmed case of Chikungunya virus is defined as any of the following:
  - Chikungunya identified by culture from tissue, blood, CSF, or other body fluid; or
  - Chikungunya positive antigen from tissue, blood, CSF, or other body fluid; or
  - Chikungunya nucleic acid (RNA) detected by PCR from tissue, blood, CSF, or other body fluid; or
  - At least a four-fold increase of antibody titer between acute and convalescent sera; or
  - Chikungunya positive IgM antibody from serum followed by confirmatory virus-specific neutralizing antibodies (example: PRNT) in the same or a later specimen.



### *Code Set Determination and Rationale*

- In October 2016 a new ICD10 code for Chikungunya virus (A92.0) was added to ICD-10-CM code manual.
- Prior to October 2016, Chikungunya cases were identified using the following codes and comments recorded in the RME report:
  - ICD9 code 066.3 (other mosquito-borne fever) *with* Chikungunya listed in the comment field of the RME report.
  - ICD10 code A92.8 (other specified mosquito-borne viral fevers) *with* Chikungunya listed in the comment field of the RME report.
  - “Other Unusual Condition Not Listed” *with* Chikungunya listed in the comment field of the RME report.

### **Reports**

---

AFHSB reports on Chikungunya virus infection in the following reports:

- Periodic reports when incidence is elevated.

### **Review**

---

Dec 2017	Case definition reviewed and adopted by Surveillance Methods and Standards (SMS) working group.
Dec 2016	Case definition developed and reviewed by AFHSB staff.

### **Comments**

---

Probable cases are not included in the case definition documented here. Per *RME Guidelines and Case Definitions* a probable case is defined by the following:

#### *Clinical Description*

Chikungunya typically causes non-neuroinvasive symptoms causing high fever (typically >102°F [>39°C]), severe arthralgia, arthritis, rash, headache, conjunctivitis, nausea, vomiting, and lymphopenia. Joint symptoms are usually bilateral and symmetric, and can be severe and debilitating. Acute symptoms typically resolve within 7 to 10 days.

#### *Probable Case*

A case that meets the clinical description as described above with **ALL** of the following:

- Chikungunya positive IgM antibody from CSF or serum *and*
- No other laboratory test performed

