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.1

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)

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:

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

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. 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

<table>
<thead>
<tr>
<th>Date</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dec 2017</td>
<td>Case definition reviewed and adopted by Surveillance Methods and Standards (SMS) working group.</td>
</tr>
<tr>
<td>Dec 2016</td>
<td>Case definition developed and reviewed by AFHSB staff.</td>
</tr>
</tbody>
</table>

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