



National Notifiable Diseases Surveillance System (NNDSS)



Dengue Virus Infections

2010 Case Definition

NOTE: A surveillance case definition is a set of uniform criteria used to define a disease for public health surveillance. Surveillance case definitions enable public health officials to classify and count cases consistently across reporting jurisdictions. Surveillance case definitions are not intended to be used by healthcare providers for making a clinical diagnosis or determining how to meet an individual patient's health needs.

CSTE Position Statement(s)

09-ID-19

Subtype(s)

Dengue fever

Dengue hemorrhagic fever

Dengue shock syndrome

Laboratory Criteria For Diagnosis

- Confirmatory
 - Isolation of dengue virus from or demonstration of specific arboviral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid by polymerase chain reaction (PCR) test, immunofluorescence or immunohistochemistry, **OR**
 - Seroconversion from negative for dengue virus-specific serum Immunoglobulin M (IgM) antibody in an acute phase (≤ 5 days after symptom onset) specimen to positive for dengue-specific serum IgM antibodies in a convalescent-phase specimen collected ≥ 5 days after symptom onset, **OR**
 - Demonstration of a ≥ 4 -fold rise in reciprocal Immunoglobulin G (IgG) antibody titer or Hemagglutination inhibition titer to dengue virus antigens in paired acute and convalescent serum samples, **OR**
 - Demonstration of a ≥ 4 -fold rise in PRNT (plaque reduction neutralization test) end point titer (as expressed by the reciprocal of the last serum dilution showing a 90% reduction in plaque counts compared to the virus infected control) between dengue viruses and other flaviviruses tested in a convalescent serum sample, **OR**
 - Virus-specific IgM antibodies demonstrated in CSF.
- Presumptive/Probable
 - Dengue-specific IgM antibodies present in serum with a P/N ratio ≥ 2 .

Exposure

- Travel to a dengue endemic country or presence at location with ongoing outbreak within previous two weeks of dengue-like illness, **OR**
- Association in time and place with a confirmed or probable dengue case.

Subtype(s) Case Definition

Expand All

| | |
|--------------------------|---|
| Dengue fever | + |
| Dengue hemorrhagic fever | + |
| Dengue shock syndrome | + |

Case Classification

Suspected

A clinically compatible case of DF, DHF or DSS that is epidemiologically linked to a confirmed case

Probable

A clinically compatible case of DF, DHF, or DSS with laboratory results indicative of presumptive infection

Confirmed

A clinically compatible case of DF, DHF, or DSS with confirmatory laboratory results

Comments

Asymptomatic Blood or Tissue Donor

Dengue virus-specific viral antigen or genomic sequences demonstrated in donated blood or organs during screening and confirmatory testing in the absence of symptoms in the donor.

Dengue viruses are members of the Flaviviridae and have sufficient antigenic similarity to yellow fever virus, Japanese encephalitis virus, and West Nile virus that previous infection or vaccination may raise cross-reactive serum antibodies. After a primary infection with a heterologous flavivirus, subsequent antibody testing by ELISA may produce false positive results for a different flavivirus. PRNT can often resolve cross-reactive serum antibodies in this situation and identify the infecting virus. However, high-titered cross-reactive antibody levels produced from multiple previous flavivirus infections cannot be resolved by PRNT. This demonstrates the complexity inherent in serological diagnosis and differentiation in populations living in regions where more than one flavivirus co-circulates. However, only a small proportion of the US population has evidence of previous flavivirus infection (or vaccination) so that cross-reactive flavivirus antibodies should not be a significant limitation to dengue diagnosis among most US travelers. Among US residents, most testing for dengue is done through private clinical laboratories using IgM or IgG detection techniques.

Reference testing is available from CDC's Dengue Branch, Division of Vector-Borne Infectious Diseases, National Center for Infectious Diseases, 1324 Calle Cañada, San Juan, PR 00920-3860, telephone 787-706-2399, fax 787-706-2496

Related Case Definition(s)

- [Dengue Virus Infections | 2015 Case Definition](#)
- [Dengue Virus Infections | 1996 Case Definition](#)
- [Dengue Virus Infections | 1990 Case Definition](#)

Last Reviewed: April 16, 2021