

July 25, 2014

**TO: Healthcare Providers, Hospitals, Local Health Departments (LHDs)**

**FROM: NYSDOH Bureau of Communicable Disease Control**

**HEALTH ADVISORY: GUIDELINES FOR EVALUATION OF RECENT TRAVELERS TO AREAS WITH DENGUE AND CHIKUNGUNYA FEVERS**  
**For healthcare facilities, please distribute immediately to the Infection Control Department, Emergency Department, Infectious Disease Department, Director of Nursing, Medical Director, Laboratory Service, and all patient care areas.**

The New York State Department of Health (NYSDOH) is advising physicians on procedures for evaluation of recent travelers to areas with dengue and chikungunya virus activity.

#### **SUMMARY**

- Dengue and/or chikungunya should be suspected year round in patients presenting with fever, arthralgia, myalgia, rash, or other illness consistent with infection and recent travel to endemic areas.
- Health care providers should report any patient with suspected arboviral infection, including dengue and chikungunya, as required by law. Reporting of cases of dengue or chikungunya infection with laboratory evidence of infection and no travel history is particularly important as this may indicate that local transmission occurred and indicate the need for public health interventions.
- Dengue has been reported among travelers to the Caribbean as well as Asia and Africa.
- Chikungunya is currently circulating widely in the Caribbean. It is also found in Asia and Africa. Several cases of chikungunya have been reported in NYS residents who traveled to endemic areas. The number of cases reported among NYS residents has increased due to the ongoing Caribbean outbreak.
- Dengue and chikungunya infection have similar clinical presentations. Testing can help differentiate between the two viruses and help direct medical treatment. Analgesics containing ibuprofen, naproxen or aspirin may be contraindicated in patients with dengue.
- Serum is the preferred specimen for both viruses:
  - Dengue: IgM enzyme immunoassay (EIA) is most sensitive after at least six days post illness onset. Polymerase chain reaction (PCR) testing is most sensitive within five days of illness onset.
  - Chikungunya: IgM EIA or immunofluorescence assay (IFA) is most sensitive after at least four days post illness onset. PCR testing is most sensitive within eight days of illness onset.
- Advise patients to stay indoors or take personal protective measures to prevent mosquito bites during their viremic period to avoid local transmission (five days post onset for dengue; eight days post onset for chikungunya). This will help prevent local mosquito populations from becoming reservoirs for the viruses locally.

## **BACKGROUND**

In NYS, dengue and chikungunya infections are associated with travel to endemic areas. Both viruses can be found in Asia, Africa, and the Caribbean--where ongoing transmission of both viruses is now occurring. Humans are the principle reservoirs of both viruses. *Aedes aegypti* mosquitoes are primarily responsible for transmission of dengue virus from person to person. This mosquito is not found in NYS. *Aedes albopictus* (Asian tiger mosquitoes, ATM) mosquitoes are established in areas of southeastern NYS, and while they are less competent vectors for dengue, can transmit the virus. Chikungunya virus can be readily transmitted by either *A. aegypti* or *A. albopictus*. Consequently, there is the potential for local transmission of chikungunya virus (and less likely, dengue) if *A. albopictus* mosquitoes feed on infected persons during their viremic period after returning from an endemic area.

A map of the current geographic distribution of dengue can be found at:

<http://www.healthmap.org/dengue/en/>

A map of the current geographic distribution of chikungunya can be found at:

<http://www.cdc.gov/chikungunya/>

A table of the current cases of chikungunya in the United States can be found at:

<http://www.cdc.gov/chikungunya/geo/united-states.html>

## **EPIDEMIOLOGY AND CLINICAL FEATURES**

### ***Dengue***

Dengue fever is a self-limiting febrile illness that is characterized by high fever as well as a constellation of other symptoms including headache, retro-orbital pain, joint pain, muscle or bone pain, rash, mild hemorrhagic manifestations (e.g., bleeding of nose or gums, petechiae, or easy bruising), and leukopenia. Because the incubation period for dengue infections ranges from three to 14 days, patients may not present with illness until after returning from travel. A small proportion of patients may develop severe dengue which is characterized by severe plasma leakage, severe hemorrhage, and/or severe organ impairment. Adequate management requires timely recognition and hospitalization, close monitoring of hemodynamic status, and judicious administration of intravascular fluids. There is no antiviral drug or vaccine against dengue virus. Updated guidelines for the management of dengue can be found at: [http://whqlibdoc.who.int/publications/2009/9789241547871\\_eng.pdf](http://whqlibdoc.who.int/publications/2009/9789241547871_eng.pdf)

### ***Chikungunya***

Infection with chikungunya is most often characterized by acute onset of fever and polyarthralgia. Joint symptoms are generally bilateral and symmetric, and can be severe and debilitating. Other symptoms may include headache, myalgia, arthritis, conjunctivitis, nausea/vomiting, or maculopapular rash. Chikungunya disease does not often result in death, but the symptoms can be severe and debilitating. Most people feel better within a week, but others can have joint pain lasting a month or more. Clinical laboratory findings can include lymphopenia, thrombocytopenia, elevated creatinine, and elevated hepatic transaminases. The incubation period is typically 3-7 days (range, 1-12 days). There is no antiviral drug or vaccine against chikungunya virus. An updated fact sheet with information for health care providers can be found at:

[http://www.cdc.gov/chikungunya/pdfs/CHIKV\\_Clinicians.pdf](http://www.cdc.gov/chikungunya/pdfs/CHIKV_Clinicians.pdf)

### ***Differentiation***

Infections with the arboviruses that cause dengue and chikungunya often result in very similar clinical presentations. It is important, however, to differentiate between the two illnesses, and NYSDOH recommends physicians testing for one consider testing for both.

Testing can help differentiate between the two viruses, help direct medical treatment, and help with the surveillance of these viruses. Analgesics containing ibuprofen, naproxen or aspirin may be contraindicated in patients with dengue, due to increased risk of hemorrhage.

## **TESTING**

### ***Dengue***

Serum is the preferred specimen for both reverse-transcriptase PCR (RT-PCR) and serology. RT-PCR is most sensitive on serum collected within 5 days of illness onset but can be performed for up to two weeks. Because dengue IgM may not be positive until up to six days following illness onset, specimens collected less than six days post onset may be negative for IgM and testing should be repeated. A positive dengue IgG in the absence of a positive dengue IgM is consistent with past infection. If acute dengue virus infection is suspected, it is best to collect both acute and convalescent sera. Convalescent specimens should be collected 2-3 weeks after acute specimens.

Testing for NYS patients is available through commercial laboratories and the NYSDOH Wadsworth Center laboratory. Providers seeking testing at Wadsworth Center are encouraged to contact the LHD of the patient's county of residence. Instructions on the collection and submission of clinical specimens as well as an Infectious Diseases Requisition form can be found on the Wadsworth Center website at:

<http://www.wadsworth.org/divisions/infdis/virology/index.html>

### ***Chikungunya***

Serum is the preferred specimen for both RT-PCR and serology. RT-PCR testing is most sensitive on serum specimens collected within eight days of illness onset but can be performed for up to two weeks. Because chikungunya IgM may not be positive until up to four days following illness onset, specimens collected less than four days post onset may be negative for IgM and testing should be repeated. A positive chikungunya IgG in the absence of a positive chikungunya IgM is consistent with past infection. If acute chikungunya virus is suspected, it is best to collect both acute and convalescent sera. Convalescent specimens should be collected 2-3 weeks after acute specimens.

Testing for NYS patients is currently only available through Wadsworth Center and Focus Diagnostics. Other commercial laboratories can forward specimens to Focus for testing. Providers seeking testing at Wadsworth Center are encouraged to contact the LHD of the patient's county of residence. Instructions on the collection and submission of clinical specimens as well as an Infectious Diseases Requisition form can be found on the Wadsworth Center website at: <http://www.wadsworth.org/divisions/infdis/virology/index.html>

## **REPORTING CASES**

Under NYS Public Health Law 2012 and 10NYCRR 2.10, health care providers are required to report suspected arboviral infection, including dengue and chikungunya. The report should be made to the local health department (LHD) of the patient's county of residence. Reporting forms can be found at <https://www.health.ny.gov/forms/doh-389.pdf> and LHD contact information is available at <http://goo.gl/FB7HWb>. Reporting of cases of dengue or chikungunya infection with no travel history is particularly important as these may indicate the need for public health interventions.

## **ADDITIONAL INFORMATION**

Additional information on dengue and chikungunya can be found at:

[http://www.health.ny.gov/diseases/communicable/arboviral/fact\\_sheet.htm](http://www.health.ny.gov/diseases/communicable/arboviral/fact_sheet.htm)

<http://www.cdc.gov/Dengue/>

<http://www.cdc.gov/chikungunya/>

<http://www.who.int/topics/dengue/en/>

<http://www.who.int/mediacentre/factsheets/fs327/en/>

If you have any questions regarding this information, please contact your LHD or the NYSDOH Bureau of Communicable Disease Control at (518) 473-4439 or via email at: [arbobml@health.state.ny.us](mailto:arbobml@health.state.ny.us)