
PUBLIC HEALTH ADVISORY
MOSQUITO BORNE DISEASE UPDATE
APRIL 26, 2017

West Nile Virus (WNV) Update

As of April 21, 2017, no human cases of West Nile Virus were reported in California. There were 442 cases of WNV reported in 2016 compared to 783 cases in 2015, with 19 and 53 fatal cases respectively for each year. Locally, 12 WNV infections and one WNV related death were reported in 2016. This is a significant decrease compared to 2015, with 138 WNV cases and six related deaths identified.

Clinical Description and Incubation Period

The incubation period for WNV infection ranges from 2 to 14 days after a bite from an infected mosquito, and may be longer in immunosuppressed individuals. Clinical syndromes ranging from febrile headache to aseptic meningitis, encephalitis, or acute flaccid paralysis may occur. Rash, myalgia, lymphadenopathy, and weakness may also be prominent. However, 70-80% of infections may be asymptomatic.

Disease activity will be posted on the Public Health website – Disease Watch page located at:

<http://www.rivco-diseasecontrol.org/>

An interactive WNV map is also available on this site.

Actions Requested of All Clinicians

The diagnosis of WNV infection is based on a high index of clinical suspicion and specific laboratory tests. It is highly recommended that clinicians test for WNV whenever there is a history of unexplained encephalitis, meningitis or unexplained febrile illness > 7 days. This is especially important if the fever is accompanied by a headache, rash, swollen lymph nodes, eye pain and nausea or vomiting.

What specimens are needed?

- Acute serum (≥ 2 mLs) and,
- If a lumbar puncture is performed, 1-2 mLs of cerebrospinal fluid are required for testing
- Convalescent specimens may be requested, at least 3-5 days after acute serum

Clinician information is available at: <http://www.westnile.ca.gov/resources.php>.

Zika Virus Disease (ZVD) Update

As of April 21, 2017 no locally acquired mosquito borne Zika cases have been reported in the United States. California has reported 534 travel associated ZVD cases since 2015. There have been seven cumulative infections due to sexual transmission. The weekly Zika virus infections report is posted at: <https://www.cdph.ca.gov/HealthInfo/discond/Documents/TravelAssociatedCasesofZikaVirusinCA.pdf>.

Sixteen ZVD cases have been reported in Riverside County.

Laboratory Testing for Zika

Laboratory testing for Zika is available through approved commercial laboratories in addition to the California Department of Public Health Viral and Rickettsial Disease Laboratory (VRDL). CDPH is recommending the submission of urine specimens for any symptomatic patient within 21 days of the onset of symptoms. A serum specimen must be submitted with a urine sample for the optimal interpretation of results.

Suspected Zika cases must be reported to Disease Control prior to submitting specimens to the Public Health laboratory. Hospital laboratories should coordinate with the Infection Preventionist on reporting suspected cases. Patients must meet the clinical and travel history criteria to be approved for Zika testing. A quick sheet on Zika testing and the VRDL submittal form are located at <http://www.rivco-diseasecontrol.org/>. Specimens may also be tested for chikungunya and dengue. Questions on specimen collection and submission should be directed to the Public Health Laboratory Director at (951) 358-5070.

Zika virus resources for health care providers:

CDPH: <https://www.cdph.ca.gov/HealthInfo/discond/Documents/ZIKAVirusFAQsforHealthCareProviders.pdf>

CDC: <http://www.cdc.gov/zika/hc-providers/>

Dengue and Chikungunya

Certain regions of Mexico and Latin America have experienced an increase in chikungunya cases and ongoing dengue infections. Both viruses are transmitted by *Aedes albopictus* and *Aedes aegypti* mosquitos. These two mosquitos are aggressive day biters which can potentially transmit the virus after biting an infected person.

Currently in California the risk of local dengue or chikungunya transmission is very low. There have been no reported cases of either dengue or chikungunya that have been acquired in California. Chikungunya fever occurs 3-7 days (range 1-12 days) after the bite of an infected *Aedes* mosquito; unlike dengue, most people infected with CHIKV become symptomatic. Chikungunya is usually characterized by acute onset of fever (typically >39°C [102°F]) and polyarthralgia. Joint symptoms are usually bilateral and symmetric involving the hands and feet and can be severe and debilitating. Other symptoms may include headache, myalgia, arthritis, conjunctivitis, nausea/vomiting, or maculopapular rash.

Laboratory Diagnosis for Dengue and Chikungunya

Dengue and chikungunya can be diagnosed by serological or molecular methods. **Serology:** DENV or CHIKV-specific IgM antibodies are often detected by six days after onset of symptoms. Acute and convalescent sera (2 to 3 weeks between samples) for detection of dengue or chikungunya-specific IgM and

IgG antibodies are encouraged for generating the most accurate evidence of acute arbovirus illness. Antibodies to dengue and chikungunya may cross-react with other flaviviruses and alphaviruses respectively in serologic assays. **Molecular testing:** DENV and CHIKV can be detected in blood (serum) and other body fluids from patients using reverse-transcription-polymerase chain reaction (RT-PCR) during the first seven (for DENV) to eight (for CHIKV) days of symptoms.

Information on the clinical presentations and laboratory diagnosis for chikungunya and dengue is posted at:

<http://www.cdph.ca.gov/HealthInfo/discond/Documents/DengueorCHIKInformationForCliniciansinCA.pdf>

***Aedes* Mosquitos**

Aedes mosquitos have been discovered in nine cities in Riverside County. To date none of these mosquitos have tested positive for Zika virus. These mosquitos have the potential to transmit Zika virus as well as dengue, chikungunya and yellow fever.

A map with the current detection sites can be found at:

<https://www.cdph.ca.gov/HealthInfo/discond/Documents/AedesDistributionMap.pdf>

Patient Education

It is important to educate patients about preventive measures to reduce exposure to mosquitos. Individuals who have traveled to an area with active Zika transmission should take steps to prevent mosquito bites including using insect repellent for 3 weeks after returning home. This will avoid potentially infecting *Aedes* mosquitos which in turn bite other people resulting in locally acquired Zika cases.

Disease Reporting

Suspected and confirmed cases of Zika, chikungunya and dengue should be reported to Disease Control by calling (951) 358-5107 during regular business hours or to the Public Health Duty Officer after hours at (951) 782-2974. Please note microcephaly (any cause) is locally reportable by order of the Public Health Officer for Riverside County. ZVD and dengue are reportable immediately by telephone; WNV and chikungunya are reportable within one day of identification.