



Public Health Department

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Health Advisory

To: Healthcare Providers
From: Linda Lewis, DVM, MPVM (signed original on file)
Date: August 3, 2021
Re: West Nile Virus (WNV) First Case

Butte County Department of Public Health (BCPH) has identified the first case of human WNV infection for the 2021 season. As of July 30, 2021, CDPH reports 4 WNV infections in CA residents, not including the Butte County case just identified. To date in 2021, one WNV-related fatality has been reported in California. West Nile Virus typically circulates July through October in California, peaking in August in Butte County. BCPH would like to remind local providers that endemic West Nile Virus (WNV) continues to affect Butte County residents each year.

Since 2016, a total of 53 Butte County residents have been reported with WNV illness: 21 cases in 2016, 4 cases in 2017, 18 in 2018, 6 in 2019 and 4 in 2020. Because only lab-confirmed cases are included in these case counts, the reported number of cases under-represents the incidence of WNV illness. The number of cases of WNV fluctuates unpredictably because disease incidence is affected by a multitude of factors, including mosquito populations, acres of flood-irrigated farmland, avian amplifying host populations, human behavior, and weather (e.g., temperature, rainfall). Butte County consistently has some of the highest annual rates of WNV illness in CA.

Who Should Be Tested for WNV

Medical providers should order WNV testing from April through November for all patients presenting with the following clinical syndromes:

- Encephalitis
- Aseptic meningitis
- Acute flaccid paralysis; atypical Guillain-Barré Syndrome; transverse myelitis, and
- Febrile illness ($T \geq 38^{\circ}\text{C}$ for > 7 days) compatible with WNV. Other symptoms may include headache, rash, swollen lymph nodes, eye pain, nausea or vomiting. Fatigue and lethargy may persist for a prolonged period of time after initial symptoms.

Testing Information

Laboratory diagnosis is usually done by testing serum or, when neurologic disease is present, cerebrospinal fluid (CSF) for WNV-specific antibodies. Enzyme Immunoassay (EIA) antibody test for WNV IgG and IgM is the preferred initial test. For testing, an acute serum specimen (≥ 2 cc) is required or, if lumbar puncture performed, 1-2 cc CSF. (*Note: PCR testing is available but not recommended for clinical diagnostic purposes due to the low sensitivity of the test and resulting unacceptably high number of false-negative results. A negative PCR test does not rule out WNV infection.*)

WNV IgM antibodies are usually detectable 3-8 days after onset of illness. In the absence of a positive IgM result, a positive IgG result only indicates previous infection. If specimens were collected within 8 days of symptom onset, false-negatives are possible. If WNV is highly suspected, repeat the test in 3-5 days after the initial specimen collection.

Why Test for WNV

- Testing differentiates WNV from other conditions (enterovirus, St Louis Encephalitis, other arboviral diseases).
- Public Health works with local mosquito control agencies to use geographic data from cases to guide enhanced surveillance and vector control measures.
- Testing results offer anticipatory guidance - patients with WNV neuroinvasive or non-neuroinvasive disease can have lingering symptoms and knowing the underlying etiology is helpful for the patient and family members.

When to Consider St. Louis Encephalitis

St. Louis encephalitis virus (SLEV) has recently re-emerged in California. Like WNV infection, SLEV infection is usually mild or asymptomatic but can cause severe neurologic illness. Since 2017, there have been 4-6 cases of SLEV in CA annually, including 1 case in Butte in 2017. As of July 30, 2021 there have been no human cases of SLEV reported in CA this season; however, 1 county has detected SLEV in mosquitoes.

SLEV is transmitted by the same mosquitoes as WNV. This virus is closely related to WNV, and most commercial assays are unable to distinguish between these two infections. The most reliable way to distinguish them is via plaque reduction neutralization test (PRNT). **Once SLEV has been detected in Butte County in non-human sources, all reported cases of WNV will require PRNT to differentiate between the two diseases.** Once SLEV is detected in Butte County, BCPH will work with providers to coordinate confirmatory PRNT for WNV positive patients.

Reporting

WNV infection is a reportable disease. The California Code of Regulations, section 2500, require providers to report all positive acute laboratory findings and clinical cases of WNV to the local health department where the patient resides within one working day of identification.

All cases of acute encephalitis and meningitis regardless of etiology are also reportable within one working day.

A Confidential Morbidity Report (CMR) can be used to file a report. The CMR should be **faxed** to BCPH at: Chico (530) 879-3309, or Oroville (530) 538-5387. Providers who have signed up to report electronically via Provider Portal can submit a web CMR on-line via CalREDIE. For questions regarding WNV or this Health Advisory, providers can call BCPH Communicable Diseases at (530) 552-3929.

Resources:

- BCPH website: <http://www.buttecounty.net/publichealth>
- California West Nile Virus website: <http://westnile.ca.gov/>
- WNV Information for Healthcare Providers: <https://www.cdc.gov/westnile/healthCareProviders/>
- [West Nile and Saint Louis Encephalitis Viruses in California: Guidelines for Human Testing and Surveillance](#)

Categories of urgency levels:

Health Alert: conveys the highest level of importance; warrants immediate action or attention

Health Advisory: provides important information for a specific incident or situation; may not require immediate action

Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action