



DEPARTMENT OF
HEALTH AND HUMAN SERVICES

Promoting and protecting health, well-being, self-sufficiency, and safety of all in Marin County.



PUBLIC HEALTH UPDATE

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West Nile Virus (WNV)

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Dear Colleagues:

This update provides information about recent West Nile Virus (WNV) activity, disease recognition, testing, reporting procedures, and information resources for Marin County clinicians.

Current Situation

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On September 10, 2015 a neuro-invasive WNV case was reported in a Marin County resident. Because this Novato resident had recent travel to the Humboldt -Toiyabe National Forest it is unknown whether this infection was acquired locally. This is the first human case of WNV reported in the County since 2013. Marin Sonoma Mosquito and Vector Control (MSMVC) has confirmed West Nile Virus activity in Marin County since June 2015. Three dead birds in Marin County tested positive for WNV this summer, indicating that the virus is present in the local environment this year.

Background Information

WNV, a flavivirus, is transmitted by a mosquito bite. Mosquitoes become infected when they feed on infected birds, the reservoir for WNV. Human-to-human transmission of WNV does not occur, except for rare cases of human WNV infection associated with blood transfusion, organ transplantation, and trans-placental and possibly breastfeeding transmission. The incubation period for WNV infection ranges from 2 to 14 days. Longer incubation periods have been documented in immunosuppressed persons.

As of September 11, 2015 California has 123 reported cases of WNV in humans this year, which is above the five-year average of 96 cases.

Actions Requested of Clinicians

1. Be alert for human cases of WNV (See Clinical Presentation below)
2. WNV is legally reportable. Report suspect cases and positive test results to the Marin County Health and Human Services Communicable Disease Unit at 415-473-7805
3. Fax the WNV Case History Form to 415-473-6002

Clinical Presentation

Most persons (~80%) who become infected with West Nile Virus (WNV) develop no clinical illness or symptoms. Among the ~20% of cases with WNV symptoms, most develop non-neuroinvasive disease (West Nile Fever) while a minority develop central nervous system (CNS) syndromes including WNV encephalitis, WNV meningitis, and WNV acute flaccid paralysis.

West Nile Fever:

- About 1 in 5 people who are infected will develop a fever with other symptoms such as headache, body aches, joint pains, vomiting, diarrhea, or rash. Most people with West Nile Fever recover completely, but fatigue and weakness can last for weeks or months.

West Nile Neuro-invasive Disease (WNND)

- Less than 1% of infected persons develop neuroinvasive disease, which typically manifests as meningitis, encephalitis, or acute flaccid paralysis.
- WNV meningitis is clinically indistinguishable from viral meningitis due to other etiologies and typically presents with fever, headache, and nuchal rigidity.
- WNV encephalitis is a more severe clinical syndrome that usually manifests with fever and altered mental status, seizures, focal neurologic deficits, or movement disorders such as tremor or parkinsonism.
- WNV acute flaccid paralysis is usually clinically and pathologically identical to poliovirus-associated poliomyelitis, and may progress to respiratory paralysis requiring mechanical ventilation. WNV poliomyelitis often presents as isolated limb paresis or paralysis and can occur without fever or apparent viral prodrome.

Infection Prevention and Control

Marin County recommends counseling patients to prevent exposure to mosquito bites and WNV by practicing the “Three Ds”:

1. DEET – Apply insect repellent containing DEET, picaradin, oil of lemon eucalyptus or IR3535 according to label instructions. Repellents keep the mosquitoes from biting you. DEET can be used safely on infants and children two months of age and older.
2. DAWN AND DUSK – Mosquitoes bite in the early morning and evening so it is important to wear proper clothing and repellent if outside during these times. Make sure that your doors and windows have tight-fitting screens to keep out mosquitoes. Repair or replace screens with tears or holes.
3. DRAIN – Mosquitoes lay their eggs on standing water. Eliminate all sources of standing water on your property, by emptying flower pots, old car tires, buckets, and other containers. If you know of a swimming pool that is not being properly maintained, please contact your local mosquito and vector control agency.

Laboratory Testing

Laboratory diagnosis is generally accomplished by testing of serum or cerebrospinal fluid (CSF) to detect WNV-specific IgM antibodies. WNV-specific IgM antibodies are usually detectable 3 to 8 days after onset of illness and persist for 30 to 90 days. If serum is collected within 8 days of illness onset, the absence of detectable virus-specific IgM does not rule out the diagnosis of WNV infection, and the test may need to be repeated on a later sample. Consider enterovirus workup in individuals ≤ 18 years of age. Testing of asymptomatic individuals, including asymptomatic pregnant women, is NOT recommended.

For testing questions please contact the Public Health Laboratory at 707-784-4410. Clinicians utilizing private labs should consult with the individual laboratories for instructions.

Treatment

There is no specific treatment for WNV disease; clinical management is supportive. Patients with severe meningeal symptoms often require pain control for headaches and antiemetic therapy and rehydration for associated nausea and vomiting. Patients with encephalitis require close monitoring for the development of elevated intracranial pressure and seizures. Patients with encephalitis or poliomyelitis should be monitored for inability to protect their airway. Acute neuromuscular respiratory failure may develop rapidly and prolonged ventilatory support may be required.

Reporting

Clinicians must report WNV cases and deaths, and laboratories must report positive WNV lab results, to the Marin County HHS Communicable Disease Unit **within one working day** by fax (415-473-6002) or phone (415-473-7805). In reporting, clinicians should complete and fax a WNV Infection Case Report. NOTE: Clinicians using a private lab should complete and submit the **WNV Infection Case Report, along with the positive lab report**, to report a WNV case.

Additional Information

For additional information about WNV:
Centers for Disease Control and Prevention: <http://www.cdc.gov/westnile/>
California Department of Public Health West Nile Virus:
<http://www.westnile.ca.gov/>

Sincerely,



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