

New Mexico Department of Health (NMDOH) Epidemiology and Response Division
New Mexico Scientific Laboratory Division (SLD)
Diagnosis and Laboratory Testing for West Nile Virus Infection
Recommendations for Medical Providers
9/20/12

Surveillance by the New Mexico Department of Health, physicians, veterinarians and local mosquito control agencies continues to demonstrate yearly West Nile virus (WNV) activity in many New Mexico counties. Female mosquitoes (mainly of the *Culex* genus) can over-winter and remain infected with the virus so it is expected that WNV will perpetuate but at varying levels each year depending on environmental conditions.

Clinical Presentation

Most WNV infections (80%) are clinically inapparent. The majority of symptomatic infections will be characterized by a mild-moderate febrile illness with headache, myalgia, and occasionally a rash. Neurological involvement (i.e., neuroinvasive disease) may include meningitis, encephalitis or a myelitis presenting as an acute, asymmetric flaccid paralysis.

Diagnostic Testing

- The most efficient diagnostic method is detection of IgM antibody to WNV in serum or cerebrospinal fluid (CSF).
- Demonstration of WNV IgM antibody in CSF is considered diagnostic confirmation of WNV infection and strongly suggests central nervous system infection.
- Demonstration of WNV IgM antibody in serum is diagnostic, however, false positives and cross-reactions can occur especially in patients recently vaccinated against or infected with related flaviviruses (e.g., St. Louis, yellow fever, Japanese encephalitis, dengue).
- **WNV-specific IgM in serum has been shown to persist in some patients >500 days after primary infection.** Positive serologic tests must be considered in relation to clinical presentation. NMDOH estimates that approximately 1% of New Mexico residents will have detectable WNV-specific IgM from a previous infection.
- **Due to low specificity, WNV IgG antibody tests are not useful in the diagnosis of acute WNV infection. A WNV IgG positive test result, either alone or in conjunction with a negative WNV IgM test, is not diagnostic for acute infections and is NOT considered a case of WNV.**

Considerations for when to test for WNV:

1. Encephalitis cases of unknown etiology.
 2. Patients with acute flaccid paralysis, myelitis or neurological symptoms following a febrile illness.
 3. Patients with onset of compatible illness within 2 weeks of receiving blood products.
 4. Pregnant or breast-feeding women with a compatible febrile illness and exposure history.
 5. Aseptic meningitis cases of unknown etiology, although many such cases are caused by enteroviruses. CSF testing by PCR for enterovirus is recommended. **The Scientific Laboratory Division (SLD) will not do testing for enteroviruses.**
 6. Clinically compatible illness during transmission season. Providers should consider the clinical value in testing patients with mild fevers of unknown origin in the absence of neurological signs.
 7. **NMDOH and SLD do not perform human testing, but testing at private commercial laboratories is available using reliable assays.**
- **NMDOH does NOT recommend WNV testing of asymptomatic persons concerned about exposure, mild uncomplicated febrile illness, or screening of asymptomatic pregnant or breast-feeding women.**