

WNV laboratory testing will be provided at public health expense under the following conditions:

- The person has signs and symptoms consistent with neuroinvasive (meningitis, encephalitis, acute flaccid paralysis, etc) WNV disease.
- The specimen is accompanied by a completed NPHL requisition <http://www.dhhs.ne.gov/puh/epi/wnv/healthpros.htm>
- The sample collection date is between June 1 and October 31.
- The submitted specimens include a CSF for WNV IgM antibody testing. Health care providers should routinely include a serum specimen for IgM/IgG WNV testing on patients suspected of neuroinvasive disease. Serum specimens will be tested for WNV IgM/IgG antibodies at public health expense provided there is an accompanying CSF specimen.
- Convalescent serum will routinely be tested in patients with suspected neuroinvasive WNV disease provided that CSF from the patient is or was previously submitted. (Serum specimens without a concurrent or prior CSF specimen require pre-authorization).

Because serum IgM antibody may persist for more than a year, physicians must determine whether the antibody is the result of a WNV infection in the previous year and unrelated to the current clinical presentation. The following procedures are recommended:

- The most conclusive diagnostic method to identify persons with WNV infection of the central nervous system (CNS) is detecting WNV-specific IgM antibody in CSF using MAC-ELISA. This can be done with a CSF specimen obtained during initial clinical presentation. Because IgM antibody does not readily cross the blood-brain barrier, IgM antibody in CSF strongly suggests acute CNS infection.
- If CSF is not obtained and serum samples are used to make the diagnosis, paired acute- and convalescent-phase serum samples should be acquired. The acute-phase specimen should be obtained during initial clinical presentation and the convalescent-phase specimen should be obtained at least 14 days later. Both samples should be tested with MAC-ELISA.
- If a convalescent-phase specimen cannot be obtained, the acute-phase specimen should be tested with MAC-ELISA. If the specimen is IgM-negative, then the illness is very unlikely to be an acute WNV infection. If the specimen is IgM-positive and the illness is clinically compatible, then recent WNV infection should be a serious consideration.

WNV Test Interpretation Guidelines

- When a patient serum tests positive for both IgM and IgG antibodies, a “convalescent” serum (collected at least 14 days following the initial specimen) should be obtained.
- Stable antibody titers on acute and convalescent specimens suggest infection in the distant past. Rising IgM and IgG titers between the acute and the convalescent specimens are consistent with acute infection.
- Serum which tests positive for IgM and negative for IgG is consistent with acute WNV infection. CSF which tests positive for IgM is consistent with acute meningitis/encephalitis. A positive IgG and a negative IgM antibody test is consistent with infection in the distant past, and is not consistent with acute infection.