

Michigan Protocol For Testing and Reporting of West Nile Virus in Humans

Patient has fever, headache and at least one of the following:

- Stiff neck
- Altered mental status
- Other signs of brain dysfunction (paresis, paralysis, poliomyelitis, cranial nerve palsies, sensory deficits, abnormal reflexes, generalized convulsions and abnormal movements).

YES

Onset (May through October in Michigan) consistent with one or more of the following:

- Travel to or resides in area with documented WNV activity
- Exposure to biting insects
- Blood transfusion or organ transplant in previous 30 days

NO

Consider Alternative Diagnosis such as:

Viral Encephalitis and/or Meningitis (enteroviruses, HSV-1, mumps, etc)

Bacterial Encephalitis and/or Meningitis (Group A or Group B Streptococcus, Haemophilus influenzae, Neisseria meningitidis, Listeria monocytogenes, Mycoplasma pneumoniae, etc)

Preferred Specimen

Serum

Spinal Fluid

Hospitalized pt/no CSF & MDCH EPI approval (517) 335-8165

Submit to MDCH Bureau of Laboratories for Arboviral Testing at no charge: (517) 335-8067

Submit to commercial lab for Arboviral testing

IgM ELISA Turn around time: 5 days

Negative = Not a case

Positive = Confirmed Case

Equivocal: Submit serum sample for additional testing

No Neutralizing Ab Detected = Not a case

Neutralizing Ab Detected = Probable Case

Plaque Reduction Neutralization Test (PRNT) 2-3 weeks

IgM Antibodies Detected (Stable titer) = Probable Case

IgM Antibodies Detected (4 fold Rise) = Confirmed Case

Report to Local and State Health Authorities

IgM Antibodies detected = Probable Case

Report to Local and State Health Authorities

Single Serum

Paired Serum

IgG Antibodies detected = May be previous season exposure

No Antibodies Detected = Not a Case



APPENDIX

A

- Patient presents with neurologic symptoms consistent with WNV **AND** CSF tap failed or not performed
- Death of Patient

B

Most commercially available tests methods use CDC developed reagents and protocols.

-Commercial testing may not be specific for WNV amongst other flaviviruses.

Presence of IgM antibodies in spinal fluid is confirmatory for a recent infection

Presence of IgM antibodies in a single serum sample will not confirm a recent infection, because IgM antibodies can persist in serum for up to 500 days post-onset. Patient with a clinically compatible illness may be classified as a probable case of WNV, assuming WNV activity is present at the time of the illness onset.

C

• Single or Stable Titer “Interpretation of Results”

- Because there is not a four-fold increase in virus-specific antibody titer, results can not be used to distinguish between a current and past infection with the Arbovirus listed.

- If patient has clinically compatible illness, report to public health as a “**probable case.**”

▪ Four Fold or Greater Rise in Antibody Titer “Interpretation of Results”

- Results indicate a four-fold or greater rise in detectable virus-specific antibody titer which is consistent with a current or recent infection with the Arbovirus listed.

- Report to public health as a “**confirmed case.**”