

## SEROLOGICAL TESTING FOR WEST NILE VIRUS AND OTHER ARTHROPOD-BORNE VIRUSES (ARBOVIRUSES)

Missouri Department of Health and Senior Services

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### TESTING FOR WEST NILE VIRUS

The timely identification and reporting of *acute* human West Nile virus (WNV) infections helps state and local public health agencies estimate annual incidence and the seasonal geographic distribution of this infection in Missouri. Missouri's human WNV infections have occurred from mid-June to late October, with peak activity from late July to late September. *The Missouri Department of Health and Senior Services (DHSS) asks physicians and clinical laboratories to submit serum and spinal fluid from patients with unexplained encephalitis, meningitis, or other neuroinvasive syndromes with or without fever in mid-summer to early fall.*

### THERE IS NO CHARGE FOR ARBOVIRAL SEROLOGICAL TESTING THROUGH THE DHSS STATE PUBLIC HEALTH LABORATORY.

Note on molecular diagnostic technologies: While the sensitivity of tests using nucleic acid amplification, such as PCR, for detection of WNV in blood, CSF, or other tissues has increased in recent years, DHSS urges practitioners to use these technologies as a supplement to serological testing, especially for patients who do not present at disease onset.

If needed, physicians may continue using commercial laboratory testing for:

- Testing of asymptomatic people concerned about exposure
- Screening of asymptomatic pregnant or breast-feeding women
- Demonstrating a serological response of a previous year's infection

Refer to the U. S. Centers for Disease Control and Prevention's publication *West Nile Virus: Clinical Description* (September 2004) for the clinical features of mild and severe infection, common laboratory findings, and diagnostic tests for West Nile virus infection:

<http://www.cdc.gov/ncidod/dybid/westnile/clinicians/pdf/wnv-clinicaldescription.pdf>

### STATE PUBLIC HEALTH LABORATORY ARBOVIRAL SEROLOGY TESTS

All specimens received for arbovirus serology will be tested against *Flavivirus* group antigens, which include WNV and St. Louis encephalitis virus. Two procedures are available:

- IgM antibody detection on single acute serum or CSF
- IgG antibody detection on paired sera. Convalescent specimens will be requested by the SPHL after initial results are obtained.

**Note:** Testing for arboviruses not frequently encountered in Missouri (Eastern and Western equine encephalitis and the LaCrosse/California viral encephalitis group) is available only on consultation with the Vector-Borne Disease Program. Call (573) 751-6113 or toll-free at (866) 628-9891.

### SPECIMEN COLLECTION

- The ideal timing to collect acute serum is 3 to 10 days after onset of symptoms
- Collect CSF as soon as possible after onset of symptoms
- If the IgG arbovirus antibody panel is indicated, collect the convalescent serum 2-3 weeks after acute serum was collected
- Collect serum in a red-top Vacutainer tube. Serum is the preferred specimen but whole blood will be accepted
- Whole blood may be sent if no method is available for removing the serum
- At least 1 ml of serum and 1.5 ml of CSF is required for serological testing

### SPECIMEN SUBMISSION

- A completed Viral Serology Test Request Form MO580-0762 <http://www.dhss.mo.gov/Lab/Virology/LAB67.pdf> must accompany all specimens
- Additional details on specimen collection, shipping, test result interpretation are posted at: <http://www.dhss.mo.gov/Lab/Virology/WestNileVirus.html>