

## 2009 Arbovirus Surveillance

With the return of mosquito activity, the Vermont Department of Health is conducting arbovirus surveillance for the 2009 season. Although there has not been a documented case of West Nile virus (WNV) infection in a Vermont resident since 2003, healthcare providers should consider arboviral infection in the differential diagnosis for persons hospitalized with encephalitis, meningitis of suspected viral origin, or Guillain-Barre syndrome.

The Vermont Department of Health is also increasing surveillance for Eastern equine encephalitis (EEE) virus. EEE virus is the most neuropathogenic arbovirus in the United States. Disease in humans is uncommon, but the mortality rate is around 33%, and survivors often suffer severe neurological damage. Central nervous system infection with EEE virus most commonly presents as encephalitis. The symptoms may be acute or sub-acute and typically include fever, headache, alterations in level of consciousness, lethargy, confusion and seizures. Symptoms of meningitis, such as headache and stiff neck, can also be present.

Although EEE virus has never been found in Vermont, it has been documented in the three neighboring states and Quebec, as close as Clinton County, NY and Keene, NH. Like WNV, EEE virus is spread by mosquitoes, but by a different species. The EEE virus mosquito vectors prefer to breed in acidic swamps, which are present in our state. The main vector, *Culiseta melanura*, has been found in Vermont.

VDH is partnering with the Agency of Agriculture, Food & Markets to conduct mosquito surveillance for both WNV and EEE virus. In addition, diagnostic testing for equine and other highly susceptible animal species, such as llamas, alpacas and emus, will also be offered this season.

Testing humans for WNV and EEE virus can be done through the Vermont Department of Health Laboratory (VDHL). Most cases have detectable serum IgM antibody by the eighth day of illness. Convalescent serum should be collected on day 21 of illness. Any patient whose acute phase serum tests negative for IgM antibody needs to have a convalescent phase specimen submitted for testing. 7-10 ml of blood should be collected in a red-top or tiger-top collection tube. Specimens should be centrifuged and 1-2 ml of serum submitted at refrigerated temperature to the VDHL.

IgM antibody is detectable in cerebrospinal fluid (CSF) in most (99%) patients by the onset of symptoms, but it is relatively short-lived in CSF compared with serum. 1-2 ml of CSF should be collected as early as possible in the course of illness. Specimens should be submitted frozen to the VDHL.

All specimens should be accompanied by a completed form VDHL "Clinical Test Request Form". Mark "WNV antibody" under the heading "Serology Tests (Misc.)". Date of onset must be included.

The form and serology mailers can be obtained by contacting the VDHL at (800) 660-9997, extension 7560.

For more information see <http://healthvermont.gov/prevent/wnv/wnv.aspx>.

The *Infectious Disease Bulletin* can be viewed at:

<http://healthvermont.gov/pubs/IDB/index.aspx>

For questions & comments, please contact Patsy Kelso at (802) 863-7240

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