



**BOSTON PUBLIC HEALTH COMMISSION**  
**Communicable Disease Control Division**  
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## **HEALTH ALERT: Arbovirus Update – Boston 2007 Season**

**Summary: As of August 13, 2007, West Nile Virus (WNV) has been detected in mosquito pools in the West Roxbury and Jamaica Plain neighborhoods of Boston. No human cases of WNV have been reported to date this season in Massachusetts. To date Eastern Equine Encephalitis Virus (EEEV) has not been detected in mosquito pools in Boston this season.**

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### **EPIDEMIOLOGY**

A mosquito pool in West Roxbury tested positive for WNV on August 6, 2007, and another pool in Jamaica Plain tested positive on August 10, 2007. No birds have tested positive for WNV in Boston, and there have been no human cases in Boston residents this season. Mosquito pools have also tested positive for WNV in the nearby communities of Brookline, Medford and Weymouth. WNV has been detected in mosquitoes and birds in Boston during the summer months every year since 2000. Seven human cases of WNV infection have been reported in Boston during the same time period.

EEEV is rarely found in mosquitoes in Boston, and no EEEV has been found in mosquito pools in Boston this season to date. However EEEV has been detected in mosquito pools in Raynham, Seekonk, Easton, and Rehoboth.

### **SYMPTOMS**

#### West Nile Virus (WNV):

Symptoms of severe WNV infection include those consistent with aseptic meningitis, encephalitis, or severe muscle weakness and flaccid paralysis. In addition, approximately 20% of persons infected with WNV develop a mild febrile illness that typically lasts 3 to 6 days. Severe WNV infection is more common in persons over 50 years of age. Most people infected with WNV recover, although a small number may have persistent neurological deficits.

#### Eastern Equine Encephalitis Virus (EEEV):

Symptoms of EEEV infection range from mild fever, headache and aseptic meningitis to severe illness marked by an acute onset of headache, high fever, meningeal signs, stupor, disorientation, coma, tremors, occasional convulsions and spastic paralysis. Persons over age 50 and younger than age 15 seem to be at greatest risk for developing severe EEEV when infected with the virus. The case fatality rate in outbreaks is as high as 50 to 70%.

### **PREVENTION**

Prevention of mosquito borne illness through both personal protection and source reduction is critical. Since the primary mode of transmission is through the bite of an infected mosquito, personal protection continues to offer the best means to reduce the risk of mosquito borne illness. In addition, reduction of mosquito breeding grounds through source reduction, as indicated by specific actions listed below, can provide a way to limit the number of mosquitoes.

#### Personal protection steps:

- If possible, avoid outdoor activities when mosquitoes are likely to be out (typically dusk until dawn)

- Use an EPA approved repellent before going outdoors. A variety of insect repellent products are available. The most effective repellents contain DEET (N,N-diethyl-m-toluamide), Picaridin (KBR 3023) or Permethrin. DEET (avoid concentrations over 30%) and Picaridin can be used directly on skin and on clothing. Permethrin can be used only on clothing. Oil of lemon eucalyptus has also demonstrated efficacy against mosquito bites, with protection similar to repellents with low concentrations of DEET. Read the directions on the product label to find out about precautions that need to be taken, how long the product offers protection, and how often the product needs to be reapplied.
- When possible wear protective clothing such as long sleeves, long pants and socks when outside.

#### Source reduction steps:

- Make sure screens are in good repair to prevent mosquitoes from coming inside the home.
- Since mosquitoes breed in standing water, removing all standing water, especially in gutters, drains, tires, and empty flower pots, can help reduce the amount of mosquitoes in a particular area.

### **LABORATORY TESTING**

The Massachusetts State Laboratory Institute provides clinical testing for WNV and EEEV. Information on specimen collection and submission can be found at <http://www.mass.gov/dph/wnv/wnv1.htm>. During this arboviral season, the SLI is performing testing for suspect cases of WNV or EEEV daily to minimize turnaround time. For specific questions regarding testing at the SLI, please call the Viral Serology Laboratory at 617-983-6396.

### **REPORTING**

Massachusetts and Boston Public Health Commission regulations require healthcare providers to report all cases of encephalitis to the local health department where the diagnosis is made. Any suspected or confirmed cases of WNV or EEEV diagnosed in Boston must be reported to the Boston Public Health Commission by phone (617-534-5611) or fax (617-534-5905). Reporting forms for healthcare providers are available at <http://www.bphc.org/bphc/reporting>. BPHC regulations also require laboratories in Boston to report results that are positive for WNV or EEEV to BPHC as above.

More information is available by contacting the BPHC Communicable Disease Control Division at (617) 534-5611.