West Nile Virus Encephalitis Information

Updated on October 4, 2013, (most up to date information is presented in **bold**).

West Nile Virus (WNV) encephalitis is a rare disease caused by a virus. In a very small percentage of people infected by the virus, the disease can be serious, even fatal. WNV grows in birds, and it is transmitted from bird to bird and from birds to humans by mosquitoes. Horses bitten by mosquitoes carrying WNV can also become sick. The virus that causes WNV encephalitis occurs in Europe, Africa and Asia. It was first identified in the United States in New York during the summer of 1999 and was identified only after a large number of dead crows and other infected mammals were discovered. It is not known how WNV got to the US.
By the summer of 2001, WNV had spread to 27 States and the District of Columbia for a total of 149 human cases and 18 fatalities. By 2002, WNV had been detected in 44 states across the US, 5 provinces in Canada and in Mexico. There has been complete transcontinental movement (from the East coast to the West coast) of the West Nile Virus in three years. 2002 also saw a marked increase in the number of human cases. For 2002, there were 3852 human cases with 232 fatalities (reported from 39 States plus Washington D.C.).
In 2003, there were 9862 cases reported from 45 States plus the District of Columbia. 264 deaths were attributed to WNV in 2003. In 2004, there were 2539 WNV cases, with 100 fatalities reported from 40 states plus the District of Columbia. In 2005, there were 2949 cases reported, with 116 deaths. These cases were reported from 42 states. In 2006, there were 4,269 cases reported nationwide, with 177 fatalities. These cases were reported from 43 states plus the District of Columbia. In 2007, there were 3,630 cases with 124 fatalities nationwide from 43 states. In 2008 there were 1356 cases nationwide, with 44 fatalities. These cases were reported from 45 States plus the District of Columbia. In 2009, there were 663 cases nationwide with 30 fatalities. These cases were reported from 34 states. In 2010, there were 981 cases nationwide with 45 fatalities. These cases were reported from 40 states plus the District of Columbia. In 2011, there were 712 cases nationwide with 43 fatalities. These cases were reported from 43 states plus the District of Columbia. In 2012, there were 5387 cases nationwide with 243 fatalities. Of the 5387 cases, 2734 (51%) were reported as serious or neural-invasive (including encephalitis, meningitis, and acute flaccid paralysis); 2653 (49%) were considered less severe cases (typically involving West Nile Fever). These cases were reported from 48 states plus the District of Columbia. For 2012 (last season), state-wide, 307 of 6828 mosquito samples tested positive for WNV**.** Positive samples were collected from 109 towns in 9counties. There were 3 positive mosquito pool reported from Quincy in 2012. There were 33 human cases of WNV identified in Massachusetts in 2012; 27 were neural-invasive (serious) and 6 were non-neural-invasive. There was one human death reported from WNV in Massachusetts.

2013: Updated on 10/04/13: Mosquito pools positive for the WNV virus (332) have been found in the following locations, including seven in Quincy:

County	Town
Plymouth (47)	Whitman (3), Abington (2), Rockland (2), West Bridgewater (3), Brockton, Hanover, Mattapoisett (3), Lakeville (3), Halifax (5), Middleborough (3), Wareham, Bridgewater (11), Hingham, Plymouth, Rochester (2), Carver, Marion (2), Hanson, Pembroke
Bristol (78)	Westport (2), Fall River (4), Freetown (8), Norton (8), Attleboro (2), Easton (8), Swansea (5), Seekonk (5), Raynham (13), New Bedford (6), Dighton (6), Taunton (2) , Dartmouth (3), Acushnet, Somerset (2), North Attleboro (2), Rehoboth
Middlesex (41)	Waltham (4), Belmont (2), Burlington, Reading (2), Wakefield (2), Watertown, Melrose, Holliston, Tewksbury (2), Medford, Newton (7), Boxborough, Cambridge (2), Chelmsford, Everett, Lexington (2), Maynard, Malden, Wayland, Framingham, Lincoln, Concord, Tyngsboro, Acton, Marlborough, Stow
Berkshire (15)	Pittsfield (5), Richmond (3), Stockbridge(3), Sheffield (4)
Essex (73)	Lynn (9), Newbury, Rowley, Amesbury, Beverly (5), Merrimac (3), Middleton(5), Lynnfield (4), Marblehead, Newburyport (3), Salem (2), Saugus (7), Salisbury, Haverhill (4), Georgetown (2), Groveland (3), Hamilton (2), North Andover (3), Swampscott (5), West Newbury, Nahant, Topsfield, Methuen (4), Danvers, Peabody, Manchester-by-the-Sea, Ipswich
Norfolk (29)	Sharon, Randolph, **Quincy (7)**, Needham (3), Medfield (2), Medway(2), Wellesley(2), Bellingham (2), Brookline, Braintree, Wrentham(3), Milton, Franklin, Dedham. Norwood
Barnstable (14)	Falmouth, Barnstable (3), Sandwich, Yarmouth (4), Bourne(3), Dennis(2)
Suffolk (17)	Boston (14), Winthrop (3)
Hampshire (8)	Northhampton (4), Southhampton (2), Amherst(2)
Dukes (3)	West Tisbury, Tisbury, Oak Bluffs
Worcester (7)	Shrewsbury, Millbury, Westborough, Phillipston, Blackstone, Worcester (2)

The first human cases (4) of West Nile Virus for 2013 have been reported from Plymouth, Norfolk, Essex and Suffolk Counties.

Commonly Asked Questions:

Q. If you've been bitten by a mosquito, should you be tested for WNV?
A. NO. Illnesses caused by mosquito bites are very rare. Very few mosquito bites carry any risk. People who may be infected by mosquitoes carrying the West Nile Virus will usually experience no illness or very mild illness. However, you should see a doctor immediately if you develop symptoms such as: high fever, severe headache, stiff neck, muscle weakness, confusion, and/or sensitivity to light. Patients with mild symptoms usually recover completely, and do not require any specific medication or laboratory testing. Fewer than 1% of people infected with WNV develop serious illness.

Q.How long does it take to get sick if bitten by an infected mosquito?
A. If illness were to occur, it would likely occur within 3 to 15 days of being bitten by an infected mosquito.

Q. Is there a treatment or a vaccine for WNV?
A. There is no vaccine or specific treatment for WNV infection, but doctors can treat the symptoms of WNV. In severe cases, hospitalization may be needed to provide supportive care.

Q. Are older adults more at risk from illness associated with West Nile Virus?
A. While elderly residents of areas where virus activity has been identified are probably at no greater risk of being bitten by mosquitoes carrying WNV, persons greater that 50 years old have a higher risk of serious illness if bitten by infected mosquitoes. Therefore older residents should take special care to follow the precautions to prevent mosquito bites.

Q. What are the issues and risks of human-to-human West Nile Virus transmission (e.g., via organ transplant and blood transfusions)?
A. In September of 2002, Centers for Disease Control (CDC) confirmed with a high level of certainty that organs from an infected donor had transmitted the infection to 4 organ recipients. There is evidence that WNV can be transmitted through blood transfusions, although the general population is at no greater risk of contracting WNV than previously thought. This news does indicate that a subpopulation of people about to undergo high risk organ transplants and/or receive blood transfusions may be at still greater risk due to the increased risk of contracting WNV. However, CDC health officials point out that the additional risk of contracting WNV is quite small in comparison with the much larger risks from these medical procedures. The process of donating blood poses NO risk to the blood donor for contracting WNV. Research is underway to develop more rapid tests for determining if asymptomatic people are infected with WNV. Such a test could enable screening for WNV in donated blood. In the interim, the Food and Drug Administration has issued guidance to the blood industry regarding procedures for screening and quarantine of suspect blood donations.

Q.Can WNV be transmitted from mother to baby?
A. There has been one reported case of transplacental (mother to child) WNV transmission. Additional research is needed to improve the understanding of the relationship, if any, between WNV infection and adverse birth outcomes. As such, pregnant women should take precautions to reduce their risk for WNV by avoiding mosquitoes, using protective clothing and repellents (See personal protection details below). If WNV transmission is occurring in an area, pregnant women who become ill should see their health care provider. Those whose illness is consistent with acute WNV infection should undergo appropriate diagnostic testing.
Based on a 2002 case in Michigan, it appears that West Nile Virus can be transmitted through breast milk. In this case, the child is healthy and does not have symptoms of West Nile Virus . Because the health benefits of breast-feeding are well established, and the risk for West Nile virus transmission is unknown, the new findings do not suggest a change in breast-feeding recommendations. Further, there is no need for a breast-feeding mother to be tested for West Nile Virus. Lactating women who are ill or are having difficulty breast-feeding for any reason as always should consult their physician.

Plan to Reduce the Risk of West Nile Virus

The City of Quincy once again will be an active participant in a statewide plan to reduce the risk of West Nile Virus. This program consists of:

1). Avian (Bird) Surveillance (Dead Bird Reporting) Discontinued

The Massachusetts Department of Public Health is discontinuing avian surveillance (dead bird reporting) again for 2013. When it was first introduced into the United Stated, WNV caused high mortality rates in certain species of birds, particularly crows and blue jays, thus reporting and testing of dead birds was a productive way to detect and monitor WNV activity in an area. However, in recent years, the tracking and testing of dead birds has become significantly less useful because so few birds are still susceptible to fatal WNV infection. Dead birds can be disposed in the following manner:
- Do not touch the bird with your bare hands.
- Using gloved hands or a shovel or other tool, place the dead bird within double plastic bags. Seal the bag.
- Place the double-bagged dead bird into your usual trash receptacle.
- Wash hands with soap and water after disposal

2). Mosquito Surveillance

The State maintains long term fixed trap sites throughout Southeastern and Eastern Massachusetts. Mosquitoes caught in these traps will be tested for Eastern Equine Encephalitis and West Nile Virus. Since Quincy is a participant in the Norfolk County Mosquito Control project, the county will be setting up traps in Quincy in order to determine quantities and species of mosquitoes. This important step in the county's Integrated Pest Management plan aids in determining the need for and location of weekly pesticide applications (early morning adulticide fogging and/or larvaciding). Should the Quincy area experience increased WNV activity, the County Mosquito Control project, in consultation with the State Department of Public Health and City Health Department may intensify the collection, identification and testing of mosquitoes.

3). Human Surveillance

The MDPH will provide information on mosquito-borne encephalitis to health practitioners to alert them of the need to report suspect encephalitis cases. Active surveillance for encephalitis cases will be done by telephone to hospitals and referral hospitals in areas of increased virus activity.

4). Mosquito Control and Pesticide Use

The City of Quincy is a member of the Norfolk County Mosquito Control Project (NCMCP). The project performs year round measures to control mosquitoes, employing the principles of Integrated Pest Management. In the fall and winter, crews clear brush along streams and clean out debris from existing ditches and waterways in an attempt to maintain a constant water flow of water, thereby eliminating mosquito-breeding areas. Surveys and larval treatment of known mosquito breeding areas occur in the spring. (Ground application of Bti (*Bacillus thuringiensis israelensis* was scheduled to begin in April, 2013). Larval treatments are performed from the ground (hand application of granular larvacide) and directly target wetland areas. In the summer months, a selective evening spray program involving the application of pesticide is performed in addition to on-going larvacide applications. The evening ULV aerosol applications are anticipated to begin in late May and will typically run through September. The NCMCP in consultation with the City's Sewer, Water & Drain Department also treat catch basins with larvacide as a mosquito breeding control. The larvacide that is used attacks the developing mosquito and prevents the completion of the life cycle from the pupae stage to the adult. The treatment (applied in mid to late May) should control Culex mosquitoes for the entire breeding season (May - Mid-August).

For more information regarding the Norfolk County Mosquito Control Project, please check out their web site:
http://www.norfolkcountymosquito.org/Index.html

<u>What can be done by residents to reduce the number of mosquitoes around the home and yard:</u>

Mosquito breeding around the home can be reduced significantly by reducing the amount of standing water available for mosquito breeding. This is known as source reduction.

-Dispose of tin cans, plastic containers, ceramic pots or similar water-holding containers that have accumulated on your property. Do not overlook containers that have become overgrown by aquatic vegetation.
-Pay special attention to discarded tires that may have accumulated on your property. The used tire has become the most important domestic mosquito producer in this country.
-Drill holes in the bottom of recycling containers that are left out of doors. Containers with drainage holes that are located on the sides may collect enough water for mosquitoes to breed in.
-Clean clogged roof gutters on an annual basis, particularly if the leaves from surrounding trees have a tendency to plug up the drains. Roof gutters are easily overlooked but can produce millions of mosquitoes each season.
-Fix any holes in screens and make sure they are tightly attached to all doors and windows. Inspect weather stripping around all doors.
-Turn over plastic wading pools when not in use. A wading pool becomes a mosquito producer if it is not used on a regular basis.
-Turn over wheelbarrows and do not allow water to stagnate in birdbaths. Both provide breeding habitats for domestic mosquitoes.
-Aerate ornamental pools or stock them with fish. Water gardens are fashionable but become major mosquito producers if they are allowed to stagnate. Clean and chlorinate swimming pools that are not being used. A swimming pool left unattended by a family that goes on vacation for a month can produce enough mosquitoes to result in neighborhood-wide complaints. Be aware that mosquitoes may even breed in the water that collects on swimming pool covers.
-Use landscaping to eliminate standing water that collects on your property. Mosquitoes will develop in any puddle that lasts for more than 4 days.

5). Personal protection

-Avoid outdoor activities at dawn and dusk when mosquitoes are most active. If you must be outdoors, wear long-sleeved shirts, long pants, and use mosquito repellent that contains DEET (N-N-diethyl-meta-toluamide) and follow the directions on the label. Do not

overuse and avoid using repellents with DEET concentrations above than 10-15% for children, and above 30-35% for adults. Repellents should not be used on infants.
-Cover up the arms and legs of children playing outdoors near swampy areas.
-When outdoors, cover babies' playpens or carriages with mosquito netting.
-Don't camp overnight near freshwater swamps where mosquitoes are most active.
-When camping outdoors in tents in other areas, make sure your tent is equipped with mosquito netting.

6). Status of Quincy Surveillance

This section will be updated throughout the mosquito-breeding season if we receive any reports positive mosquitoes in and around the neighborhoods of Quincy. **As of September 18, 2013, seven mosquito pools from Quincy have tested positive for the West Nile Virus. Two pools were identified as containing species which are mammal-biting. As a result, the State has increased the threat level in Quincy to "Moderate". In addition one pool of mosquitoes has tested positive for Eastern Equine Encephalitis.**

7). Communication

The MDPH will report results of positive WNV tests for mosquitoes, equines and humans directly to the local Health Departments. Subsequently, this information will be posted daily on the DPH /WNV website for public access http://www.state.ma.us/dph/wnv/wnv1.htm . As necessary, MDPH will issue routine media advisories or alerts depending upon assessments of the risk of disease transmission as determined by surveillance data.

Information and links:

Quincy Health Department: (617) 376 -1278, -1273, -1285 or -1286

Norfolk County Mosquito Control: (781) 762-3681 http://www.norfolkcountymosquito.org/Index.html

Massachusetts Department of Public Health http://westnile.ashtonweb.com/

WNV information: 24/7, toll free 1-866-MASS-WNV (1-866-627-7968), then choose option one (1).

Division of Epidemiology & Immunization (617) 983-6800 (for questions on WNV and consultations for health care providers and hospitals on WNV)

Bureau of Environmental Health Assessment (617) 624-5757 (for questions on health effects of pesticides)

Centers for Disease Control (CDC) http://www.cdc.gov/ncidod/dvbid/westnile/index.htm

National Pesticide Telecommunications Network WNV Information: http://ace.orst.edu/info/nptn/wnv/

Note: Information at this site provided by the City of Quincy Health Department. The Health Department gratefully acknowledges the Massachusetts Department of Public Health, Norfolk County Mosquito Control Project and Boston Public Health Commission as sources of the information provided on this Web page.