

Commissioner's Column

UPDATE ON TICK AND MOSQUITO-BORNE DISEASES IN WESTCHESTER COUNTY

Joshua Lipsman, M.D., J.D., M.P.H., Commissioner of Health
Christine Falco, Animal Vector Specialist

Tick-borne and mosquito-borne diseases continue to be of concern in Westchester and neighboring counties. Mosquitoes can carry a wide range of pathogens, such as West Nile virus (WNV), La Crosse virus, Jamestown Canyon virus, eastern equine encephalitis (EEE) and malaria. EEE has a fatality rate of 35 percent in humans and caused two human deaths in New York in 1971 and 1983. In 1978, there was a fatal case of La Crosse encephalitis in Westchester County. There were two confirmed human cases of Jamestown Canyon virus in Westchester County in 1981. Suffolk County experienced two human cases of malaria in 1999.

Ticks also may carry a variety of human pathogens. The blacklegged tick (or deer tick) is an important vector of Lyme disease, babesiosis and human granulocytic ehrlichiosis (HGE). In 2005, there were 56 reported cases of human tick-borne disease in Westchester County, including 13 cases of babesiosis and 43 cases of Lyme disease.

Mosquito-borne disease

The mosquito-borne pathogen of primary concern in Westchester is West Nile virus. Mild cases of WNV infections can include a slight fever and/or headache. More severe infections are marked by rapid onset of high fever with head and body aches, disorientation, tremors, convulsions, and in the most severe cases, paralysis or death. Symptoms usually occur from five to 15 days after infection. There is no cure for WNV infections. Management of the illness includes treating symptoms and providing supportive care. Persons at highest risk for serious illness are those over 50 years of age. Healthy children and adults less than 50 years of age appear to have a low risk for infection. Only 37 percent of WNV infected individuals achieve a full recovery from clinical infection after the first year, mostly in patients under 65 years of age. In addition, there appear to be long-term physical, functional, and cognitive effects on WNV survivors, such as muscle weakness, loss of concentration, confusion, and lightheadedness.

During 2005, there were two human cases of WNV in Westchester, one of which was fatal. Extensive testing of mosquitoes revealed 67 batches that tested positive for WNV last year, representing 10.7 percent of samples collected from gravid traps. The mosquitoes from these positive batches were of a species that prefers to feed on birds and that serves as an indicator of WNV amplification in an area. WNV activity continues to be concentrated in the southern part of the county and constitutes a public health concern, especially considering the higher human population in this region.

Tickborne-disease

Lyme disease is a potentially serious illness caused by a bacterium that is passed on to humans through the bite of an infected deer tick. Lyme disease generally will not occur unless the tick has been attached for more than 36 hours. The most common symptom is an expanding red rash, typically a bull's-eye rash, often at the site of the tick bite. The rash usually appears three to 30 days after the bite and may last for several weeks. Symptoms of Lyme disease may also include fever, sore throat, fatigue, sleeping difficulties, joint and muscle pain, swollen glands and dizziness. Even if left untreated, these symptoms may go away. Weeks or months after a tick bite, the symptom that brings most people to the doctor is stiffness in the large joints. Bell's palsy, the drooping of one side of the face, may also occur.

Like Lyme disease, ehrlichiosis is spread through the bite of an infected deer tick. Dual infection with both ehrlichiosis and Lyme disease is possible. Symptoms of ehrlichiosis can include fever, headache, chills, malaise, muscle and joint pain, nausea and vomiting. Acute weight loss, low platelet count, and low white blood cell count can also occur. The disease typically resolves within a few days of starting antibiotics. Recovery usually occurs without long lasting problems, but serious complications can occur. Complications may include respiratory problems, blood and kidney abnormalities, meningitis, and other central nervous system complications. There have been fatalities associated with ehrlichiosis.

Babesiosis is a tick-borne disease that is caused by protozoa spread through the bite of an infected deer tick. Dual infection with Lyme disease is possible. Symptoms of babesiosis are very similar to malaria and can include headache, fever, chills, nausea, vomiting, muscle aches, confusion, difficulty breathing, kidney abnormalities and anemia.

When antibiotics are administered in the early stages of Lyme disease, there is usually complete recovery and no long-term complications. The antibiotics most often used to treat Lyme disease are amoxicillin and doxycycline, while antibiotics in the tetracycline family are frequently used for ehrlichiosis. Symptomatic babesiosis is treated with quinine sulfate plus clindamycin. Antibiotics for tick bites alone without any symptoms may sometimes be indicated.

When removing a tick from a patient, a pair of fine tweezers should be used to grasp the tick's mouthparts as close to the skin as possible. The tick should be pulled out slowly but firmly. For information on how to submit a tick for identification, please visit the Westchester County Health Department website at http://www.westchestergov.com/health/tickborne_disease.htm.

Health Care providers can play a valuable role in the all-important education of patients regarding preventive measures by passing on these tips to patients:

- Avoid tick-infested areas (wooded or grassy areas), especially in the summer.
- Do tick checks after outdoor activities or at least once a day. Inspect the entire body (parents should check their children) and remove ticks promptly.
- Most mosquitoes are active during twilight hours. Staying indoors during this time may reduce risk.
- Wear shoes and socks, long pants, and a long-sleeved shirt when outdoors for long periods of time. Tuck your pants into socks and shirt into pants.
- Use insect repellents sparingly and according to manufacturer's instructions. Repellants should contain no more than 30% DEET. Products with 10% DEET are effective for up to two hours. Products containing DEET are not recommended for children under two months old.
- Eliminate standing water by disposing, refreshing, or draining.

For more information on mosquito and tick-borne diseases, please visit the Westchester County Health Department website at www.westchestergov.com/health or call (914) 813-5000.