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## RISK CONTROL SOLUTIONS

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A Service of the Michigan Municipal League Liability and Property Pool and  
the Michigan Municipal League Workers' Compensation Fund

### PROTECT YOUR EMPLOYEES FROM WEST NILE VIRUS

#### OVERVIEW

West Nile virus is an infection caused by the bite of an infected mosquito. West Nile virus is NOT transmitted from person to person. People are at risk for becoming infected with West Nile virus when they are in areas where the virus is circulating in nature. In Michigan, this occurs during the summer months. The infection can be mild to severe with symptoms so minor that the individual never realizes that he or she has been infected to more recognizable symptoms such as headache and fever, rash, and/or swollen lymph glands. At its most severe West Nile can lead to encephalitis (inflammation of the brain). Encephalitis causes headache, high fever, stiff neck, stupor, disorientation, coma, tremors, convulsions, muscle weakness, and paralysis. The risk of West Nile encephalitis is higher for persons 50 years of age and older. In a few cases, mostly among the elderly, death may occur.

West Nile virus was first recognized in the United States in 1999 as the cause of severe and fatal human illness in metropolitan New York City. West Nile virus is commonly found in Africa, West and Central Asia, and the Middle East. It is not known how the virus was first introduced into the United States, but since the initial appearance it has spread rapidly, and, by 2001, was found throughout the eastern half of the country. In 2002, Michigan had the second highest number of confirmed West Nile virus human cases in the nation with 644 cases, of which 51 were deaths. This was a dramatic increase over 2001 when the disease was first detected in birds. West Nile virus was first identified in Michigan at the end of August 2001. The Michigan departments of Community Health, Agriculture, and Natural Resources, Michigan State University Animal Health Diagnostic Laboratory and Department of Entomology all work cooperatively on surveillance activities for West Nile virus in Michigan.

Despite the increase, keep in mind that even in areas where West Nile virus transmission is occurring, infection of humans is still relatively rare. A study carried out in 1999 among residents in the most affected areas of New York City showed that 2.6% had been infected with West Nile virus. Studies elsewhere have shown a lower infection rate. Most infected persons have no or only mild symptoms.

#### THE TRANSMISSION OF WEST NILE VIRUS

Mosquitoes become infected with West Nile virus when they feed on infected birds that carry the virus in their blood. After an incubation period of 10 to 14 days, the mosquito's salivary glands become infected. The mosquitoes can then transmit West Nile virus to humans and other animals while biting them to take blood. During blood feeding, the mosquito injects the virus into the animal or human, where it multiplies and may cause illness. Crows in particular are very susceptible to infection with West Nile virus and will usually die within two to three weeks of infection.



For this reason, the presence of dead crows is the most sensitive indicator for the presence of West Nile virus in an area.

#### TREATMENT

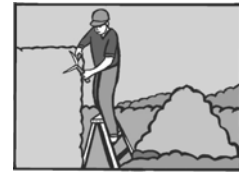
There is no specific treatment for West Nile virus/encephalitis. If a person becomes seriously ill, intensive supportive therapy may become necessary: hospitalization, intravenous (IV) fluids, airway management, respiratory support (ventilator) if needed, prevention of secondary infections (pneumonia, urinary tract, etc.), and good nursing care.

## PREVENTION IS EASY – AVOID MOSQUITO BITES

The main role that people play in contributing to the continuing cycle of West Nile virus is by maintaining environments (especially standing water) in which mosquitoes can lay eggs.

As yet, there is no human vaccine available for West Nile virus. However, there are many ways to reduce the risk of infection:

- Be alert to potential mosquito breeding sites in your area and report them to health authorities.
- Train you employees on the transmission, recognition, and prevention of West Nile virus.
- Avoid activities in areas where large numbers of mosquitoes are present. Where working in mosquito infested areas may be necessary, schedule it between the hours of 8 a.m. and 6 p.m.
- Encourage employees to apply insect repellent to all exposed skin or clothing, always following manufacturer's directions for use on the label. An effective repellent will contain the active ingredient DEET (N, N-diethyl-metoluamide).
- Require employees to wear long-sleeved shirts and long pants whenever they must work in mosquito-filled areas. Employee can increase protection by treating their clothes with repellents containing permethrin or DEET, since mosquitoes may bite through thin clothing. Employees should **NEVER** apply repellents containing permethrin directly to skin. They should not spray repellent containing DEET on the skin under their clothing. When possible, wear long-sleeves, long pants and socks when outdoors. The hours from dusk to dawn are peak mosquito biting times. Consider avoiding outdoor activities during these times -- or take *extra* care to use repellent and protective clothing during evening and early morning.
- Drain standing water. The following are potential mosquito breeding sites: flower pots, clogged rain gutters, stored, spare tires, buckets, barrels, cans and similar items in which mosquitoes can lay eggs.
- Check your facility to ensure that window and door screening is well maintained.
- Have all employees remain alert and report any sightings of dead crows promptly.



Dead crows are the most sensitive indicator of West Nile virus activity in an area. To report dead crows, call the West Nile Virus toll-free hotline at 888-668-0869 or through a new website piloted by Michigan State University at [www.michigan.gov/mda](http://www.michigan.gov/mda) (Click on "West Nile Virus" and "2003 Specimen Collection and Submission Instructions.")

## DO YOU HAVE EQUINE POLICE OFFICERS OR PROVIDE RENTAL HORSES FOR MEMBERS OF YOUR COMMUNITY?

Because protecting your horses also protects the individuals who ride them, you should take the following measures. Your equine employees can now benefit from an approved vaccine that helps control West Nile Virus in horses. In addition, you should:

- Use approved insect repellents to protect horses.
- Place horses in stables, stalls or barns during prime mosquito exposure hours of dawn and dusk, and other times when mosquitoes are present.
- Eliminate standing water and drain troughs and buckets at least weekly.
- Consult your veterinarian about other preventive measures.



## FOR MORE INFORMATION:

Centers for Disease Control and Prevention (CDC)/National Center for Infectious Diseases  
Division of Vector-Borne Infectious Diseases  
Fax: 970-221-6476  
Email: [dvbid@cdc.gov](mailto:dvbid@cdc.gov)  
Web site: <http://www.cdc.gov/ncidod/dvbid/>  
CDC Voice and Fax Information Service: 1-888-232-3228

Michigan State University  
<http://www.wnv.state.mi.us/>  
To report dead birds: 888-668-0869