



# HEALTH AND SAFETY FACT SHEET

## West Nile Virus

### What is West Nile virus?

West Nile virus (WNV) is a micro-organism that can cause swelling (encephalitis) of the brain. WNV is found mostly in birds, horses and mosquitoes.

### How does West Nile virus spread?

WNV is transmitted to people by a bite from an infected mosquito. Mosquitoes get WNV after feeding on a bird, or another animal, that is infected. Birds serve as the main reservoir for the virus and mosquitoes serve as the vector (transmitter). WNV has been found in about 160 different types of birds. Some species of birds have no visible signs of illness but others – like crows, ravens and blue jays – get sick and often die.

WNV cases are increasing every year and are linked to climate change. Global warming patterns show warmer winters, hotter summers and changes to precipitation for Canada. This kind of weather will only help mosquitoes breed in greater quantities and for longer periods of time, which will likely further increase the infection rate of WNV.

### What are the symptoms?

A small percentage of those infected will develop severe illness that includes high fever, headache, muscle stiffness, tremors, convulsions, vision loss, coma and paralysis. The symptoms can last several

weeks but the effects on the brain may be permanent. Severe cases of WNV can result in death.

About 20 per cent who are infected will have symptoms like fever, headache, muscle aches, swollen lymph glands, vomiting and skin rashes. These symptoms usually last a few days but can last for several weeks.

About 80 per cent of those infected will show no symptoms. Symptoms usually begin 3 to 15 days following the bite of an infected mosquito. People who are 50 years or older, those with weak immune systems and people who have had organ transplants are more likely to develop a severe infection. There is no vaccine for WNV and no specific treatment. Blood tests are used to confirm infection.

### Who is affected?

All workers can get WNV. Workers at a higher risk of exposure to WNV include those who work outdoors, such as:

- Outside municipal workers
- Gardeners and groundskeepers
- Labourers
- Highway workers
- Farm workers

Workers in wastewater treatment plants and laboratory workers who handle WNV infected tissue and fluids are at a higher



risk of being infected. Also animal researchers, health care workers, emergency responders and public health workers can contract WNV.

### **Identify the problems**

West Nile virus must be recognized as an occupational health and safety hazard. Inspections are important to identify ways workers could be infected. For example, excessive time outdoors should be noted and minimized to lower the incidence of mosquito bites. Inspections can help identify poor work organization and practices that can lead to occupational exposure to WNV.

### **What can be done to prevent worker exposure?**

Employers should protect workers by:

- Training all workers on the health risks and transmission of WNV.
- Implementing a fully developed exposure control plan for WNV.
- Keeping workers inside as much as possible at dusk and dawn when mosquitoes are most active. Exposure to WNV through mosquitoes is highest from late July to early August. Employers should minimize outside work during this time.
- Organizing outdoor work on days when it is cooler, windy or when strong sunlight exists. Mosquitoes are less active in these weather conditions.
- Eliminating all sources of standing water in the workplace and work areas to decrease mosquito breeding. If standing water cannot be eliminated then it must be changed at least every three days or water must be aerated to maintain circulation to prevent mosquito larvae from hatching.
- Eliminating discarded tires from worksites.
- Turning over buckets, barrels, wheel barrows or any other equipment where water can collect.
- Ensuring easy reporting of illnesses and medical monitoring to track WNV.
- Maintaining facilities: cleaning gutters, proper maintenance of outdoor pools, proper screens on windows and doors, lawn maintenance, etc.
- Using electric bug lights near worksites that attract and kill mosquitoes.
- Providing workers with light-coloured long-sleeved shirts, long pants, socks and mosquito hats with adequate netting. Also providing mesh suits (bug suits) in hot weather to prevent heat stress.
- Providing workplace laundry facilities for clothing treated with repellents.
- Providing workers with shovels to collect dead birds and other small animals.
- Providing leather work gloves when heavy work gloves are required.
- Training workers involved in collecting dead birds or handling birds. These workers should use puncture resistant gloves (with medical exam gloves underneath) and double bag all collected birds. After handling birds, workers should remove gloves and wash their hands.
- Ensuring veterinarian technicians use gowns, gloves, masks and eye protection.
- Making insect repellents available – those containing DEET, picaridin or oil of lemon eucalyptus are the most effective. Soybean oil, citronella and lavender have also proven effective as repellents. Never use a repellent with more than 30% DEET because of its

ability as a toxin to affect the central nervous system.

- Providing training on the use of repellents.
- Advising pregnant workers not to use repellents that contain DEET or permethrin.
- Spraying work clothing with repellent. Do not apply repellents containing permethrin directly to skin due to its toxicity and ability to affect the central nervous system.
- Providing laboratory workers with safe sharps.
- Providing laboratory workers with full face shields, gowns, gloves and N95 respirators to prevent the transmission of WNV through aerosolized blood.
- Eliminating or minimizing the handling of dead animals, their tissue and blood.

Insect repellents can have adverse effects on human health and the environment. It is important that repellents be used with caution. A higher percentage of an active ingredient (like DEET) does not mean that your protection is better. It only means the repellent will last longer. Use repellents at the lowest effective concentrations. Employers must provide washing facilities for workers to remove repellents. Do not spray repellents directly on your face. Repellents should be sprayed on hands and then carefully applied on the face. Workers must wash hands immediately after applying repellents and before eating, drinking or smoking.

Although some municipalities use fogging or aerial spraying of pesticides to prevent WNV, there are environmental and public health hazards associated with this prevention measure. Malathion, a

common pesticide used for fogging, is a neurotoxin that can cause headaches, nausea and diarrhea. It has been shown to affect the immune system and can cause breast cancer and non-Hodgkin's lymphoma. Fogging and aerial spraying of pesticides can contaminate water sources and harm fish and wildlife.

### **Strategies for change**

The following strategies can help prevent exposure to WNV:

- Put WNV planning and prevention on the joint occupational health and safety committee agenda.
- Demand regularly scheduled maintenance of workplaces and worksites.
- Ask for work organization that prevents exposure to WNV.
- Put the issue on the bargaining table.
- Sponsor CUPE education on the issue of occupational WNV.
- Create an occupational WNV policy for CUPE workplaces starting with a statement acknowledging that occupational WNV is a health and safety hazard. Every step should be taken to prevent the hazard.
- Plan collective job action around the issue of occupational WNV where employers fail to address workers' concerns.

### **Workers' compensation**

CUPE members who get occupational WNV should file a workers' compensation claim. Filing a claim is an important step in getting occupational WNV recognized as a compensable disease. If you get sick and don't file a claim right away, you could limit your chances of receiving compensation.

## **Conclusion**

There are many factors to consider when preventing WNV exposure. Employers need to work with unions to ensure a comprehensive prevention strategy is in place. It is important that the strategy protect workers who are on the front lines of outdoor work and who handle infected animal blood, tissue and carcasses.

Employers have a legal duty to provide a healthy and safe workplace. This responsibility is known as the general duty clause. Preventing occupational exposure to WNV is necessary for a healthy workplace.

This fact sheet provides some information to assist CUPE members to address the hazard. Related information is in the CUPE Health and Safety Guideline, *Controlling Infectious Agents in the Workplace*.

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