Preventing West Nile virus

West Nile virus (WNV) is an important emerging disease for WorkSafeBC along with SARS and possibly the avian influenza. Since first detected in New York City in 1999, WNV has spread across North America with human cases reported in eight Canadian provinces. Public health officials regularly monitor mosquito populations and breeding sites as well as animal and bird reservoirs across the country for the presence of the virus. So far, British Columbia has not had any reported viral activity, but there is no reason to presume that we will not eventually have zoonotic and human cases.

WNV has been reviewed in many journals including the *BCMJ* (2005; 47[6]:316). So far there are no known effective treatments for WNV, though vaccines are being developed. For now, preventive measures are the only way of reducing the risk.

The role of the physician

- Stay up-to-date with WNV activity in British Columbia. The Public Health Agency of Canada web site (www.phac-aspc.gc.ca/wnv-vwn) provides up-to-date information on WNV activity by region. This is a good way to track if there is WNV in your area.
- Be familiar with the signs and symptoms of WNV (see "Suggested reading"below for recent articles).
- Provide sound medical advice to patients regarding WNV. Even in areas with viral activity, the risk of transmission is low. Estimates are that 80% of individuals bitten by infected mosquitoes will be asymptomatic. Of those manifesting symptoms, 95% will have flu-like symptoms and less than 1% will develop meningitis or encephalitis. Older people, as well as those with chronic disease such as diabetes or heart disease, and those with immunosuppression, are at greater risk for serious health effects.

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- Evaluate your patient's risk of infection and reinforce personal protective measures. Typically, individuals at risk are those who perform outdoor activity especially when mosquitoes are active. Mosquitoes feed primarily at dawn and dusk from spring to fall. People who work outdoors should be encouraged to wear light-colored clothing, hats, long-sleeved shirts, pants with socks, and avoid the use of scented products. Products containing DEET, applied to the skin at regular intervals (as per manufacturer's instructions), are very effective at repelling mosquitoes and other biting insects. Spraying clothing and tent apparel with safe repellent/insecticides containing permethrin is another way to decrease the risk of bites. Permethrin is a long-lasting repellent that is intended for application to clothing and gear, but not directly to skin. (For more information, visit www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm.)
- Provide advice on ways to reduce the breeding grounds for mosquitoes. Mosquitoes need standing water to breed. These are areas where eggs and larval stages develop and give rise to the flying adult stage. By reducing standing water, such as old tires, unused containers, barrels, and puddles, the number of mosquitoes can be reduced by interrupting their reproductive cycle.
- If appropriate, provide advice on how to deal with dead birds (especially of the crow family). People should avoid direct skin contact with the carcass and contact the BCCDC or Provincial Health Officer for guidance. The discovery may be important since dead birds are used in monitoring disease activity.

Sources of information about WNV

- BC Centre for Disease Control (BCCDC)—www.bccdc.org
- Office of the Provincial Health Officer—www.healthservices.gov.bc.ca/pho/
- WorkSafeBC—www.worksafebc.com
- BC Public Service Agency—www.bcpublicservice.ca/wphealth/OHS/safety_index.htm
- Public Health Agency of Canada—www.phac-aspc.gc.ca/new_e.html

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Suggested reading

Drebot MA, Artsob H. West Nile virus. Can Fam Phys 2005;51:1094-1099.

Fradin MS, Day JF. Comparative efficacy of insect repellents against mosquito bites. NEJM 2002;347:13-18.

Nosal B, Pellizzari R. West Nile virus. CMAJ 2003;168:1443-1444.

Petersen LR, Marfin AA. West Nile Virus: A primer for the clinician. Ann Intern Med 2002;137:173-179.