

## West Nile virus: More severe than initially thought

**N**o West Nile virus (WNV) activity was detected in BC in 2005; however, activity in the rest of Canada was increased over 2004 with 229 cases and 12 deaths from WNV reported. The majority of cases were in Ontario and Manitoba, but there were human infections in Quebec, Saskatchewan, and Alberta. Last year, 2005, was considered an average year for endemic WNV transmission in Canada and it is expected that this level of activity will continue.

In the US, WNV activity in 2005 was also greatly increased over 2004, with 2949 cases and 116 deaths reported from 42 states; the median age of those affected was 55 years (range 2 to 84). California continued to experience the most severe outbreak, with 928 cases and 18 fatalities related to WNV reported in 2005. In addition, activity was seen in Oregon and in Washington for the first time since 2003.

### Long-lasting sequelae

In Canada in 2005 the name of the milder form of WNV disease was changed from *West Nile fever* to *West Nile non-neurological syndrome* (WNnon-NS). This change was made as it became evident that only 25% of cases had fever and that several other syndromes were more prominent, including fatigue, myalgia, and rash.

While most people infected with WNV do not develop symptoms, about 20% of people will develop more severe WN neurological syndrome (WNNS) which can include meningitis, encephalitis, or polio-like paralysis. While increasing age has been associated with WNNS, recent research has also identified diabetes and possibly hypertension as risk factors

for more severe disease. Follow-up of people who have developed WNNS has found disability lasting for months to years, with a large proportion having permanent disability. Follow-up studies in the US also show the relatively young age of those affected by WNV polio-like syndromes, with a peak in the 40- to 59-year age group. Studies are underway in the US to determine if pregnant women infected with WNV suffer adverse pregnancy outcomes.

### Risk in BC

Surveillance data, including climate information, vector mosquito surveillance, population data, and the presence of avian amplifiers in BC suggest once WNV is introduced into the province it is likely to become endemic as it has in other areas of North America. It is expected that introduction of the virus will be from the south rather than from western expansion over the Rocky Mountains. Since virus activity has been confirmed along the Columbia River Valley in Washington state, it may be found in BC this season. Experience across North America has shown that the first year of activity in an area leads to the largest outbreaks of human illness. Ongoing intensive surveillance and efforts such as larviciding are being undertaken in the higher-risk areas of BC to help mitigate any outbreak.

### Laboratory testing for WNV

Patients who present with symptoms consistent with either WNnon-NS or WNNS during the transmission season should have one or more of the following specimens taken for diagnostic testing:

- Acute serum on presentation and convalescent serum 10 to 14 days

later. Serum (7 to 10 mL) should be collected in a pink- or gold-top tube and submitted with BCCDC lab requisition #1806.

- Acute plasma (7 to 10 mL) collected in a purple-top EDTA tube and submitted with BCCDC lab requisition #1806.
- Cerebrospinal fluid (CSF) (1 to 2 mL) collected in each of two tubes without preservatives. These samples should be kept at 4°C or frozen for transport and submitted with BCCDC lab requisition #1811.

All samples should be sent to BCCDC Laboratory Services and should include the patient's date of onset of illness and any history of travel on the requisition.

### Reporting to public health

Physicians must report clinical cases consistent with WNNS during the transmission season for WNV (spring until hard frost in the fall) and lab-confirmed WNnon-NS to their local medical health officer. A more detailed investigation of cases will be undertaken by public health to increase understanding of the clinical picture and epidemiology in BC.

For updated information on WNV and ongoing surveillance results, please visit the BCCDC web site at [www.bccdc.org](http://www.bccdc.org).

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