EPI-LOG

**Communicable Disease and Epidemiology News**
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Laurie K. Stewart, MS, Editor (laurie.stewart@metrokc.gov)

Public Health
Seattle & King County
HEALTHY PEOPLE. HEALTHY COMMUNITIES.
Epidemiology, Prevention Division
Wells Fargo Center
999 Third Avenue, Suite 500
Seattle, WA 98104-4039

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## West Nile Virus Update: Testing and Case Reporting

Currently, Washington State is the only state in the US that has still not detected a case of locally acquired human West Nile virus (WNV) infection. In addition, Washington State has not detected an animal infected with WNV since 2002, when four birds, and two horses tested positive, despite intensive bird, horse, and mosquito pool surveillance.

Despite Washington's current status as a"WNV-Free Zone", (a designation also shared by British Columbia), it is likely that we will see our first WNV cases in 2005 because in 2004, 3 human cases each were identified in both Oregon and Idaho, and 771 human cases were identified in California. Already in 2005, California has detected WNV in birds and/or mosquitos in 21 counties.

**Clinical Presentation:** The majority of WNV infections are mild or clinically inapparent. Approximately 20% of infected persons develop West Nile fever, which may include fever, malaise, anorexia, nausea, vomiting, eye pain, headache, body aches, skin rash, and swollen lymph glands. Approximately 1 in 150 infected persons develops severe neurological forms of disease, including encephalitis and meningitis. Neuro-invasive disease is associated with a range of neurologic and systemic manifestations including headache, high fever, gastrointestinal symptoms, neck stiffness, stupor, disorientation, cranial nerve abnormalities, ataxia, coma, tremors, convulsions, muscle weakness, paralysis, and, rarely, death. The incubation period is thought to range from 3 to 14 days, with symptoms lasting 3 to 6 days, or longer.

**Laboratory Diagnosis:** The most efficient method for diagnosis of WNV is through detection of IgM antibody to WNV in serum collected 8-14 days after illness onset, or in CSF collected within 8 days of illness onset, using the IgM antibody capture enzyme-linked immunosorbent assay (MAC-ELISA). Because WNV cannot be distinguished from other causes of meningoencephalitis on clinical grounds, concurrent testing for other common causes of aseptic meningitis/encephalitis syndrome, (including cultures and/or PCR testing for enteroviruses and herpes viruses) is encouraged.

**Test Interpretation:** IgM antibody develops by day 8 and IgG antibody within 3 weeks after illness onset. When indicated, convalescent serum specimens should be drawn about 3-4 weeks after acute specimens. Negative results on any specimen obtained <8 days after onset of illness should be considered inconclusive and a convalescent serum specimen obtained at least 2 weeks after the first specimen, is needed to make a final determination. Cross-reactions may occur among patients who have had yellow fever, Japanese encephalitis vaccination, a previous history of arboviral encephalitis, or dengue fever.

For complete information on WNV, see the Public Health – Seattle & King County WNV web site:
http://www.metrokc.gov/health/westnile/

### How To Report Cases of Suspect West Nile Virus:

Report suspect, or commercial laboratory positive West Nile Virus cases within 3 work days to Public Health by calling (206) 296-4774, or by filling out a "Arborviral Encephalitis/Meningitis Case Report Form" and faxing it to (206) 296-4803. This form can be found at::
http://www.metrokc.gov/health/westnile/forms.htm

**What Cases Should be Reported?**

1) **Viral encephalitis**, a clinical diagnosis characterized by:
   a) Fever ≥38°C or 100°F and
   b) Central nervous system signs may include altered mental status (altered level of consciousness, confusion, agitation, or lethargy), coma, or other cortical signs (cranial nerve palsies; paresis or paralysis, or seizures), and
   c) Abnormal cerebrospinal fluid (CSF) profile suggestive of viral etiology (negative bacterial stain and culture, CSF pleocytosis and/or moderately elevated protein).
2) **Aseptic meningitis occurring from May through November in any patient ≥18 years of age**. Aseptic meningitis is characterized by:
   a) Fever ≥38°C or 100°F and
   b) Signs of meningeal inflammation (stiff neck, headache, photophobia) and
   c) Abnormal CSF profile suggestive of viral etiology.
3) **Acute flaccid paralysis or presumed Guillain-Barré syndrome,** even in the absence of fever and other neurologic symptoms.
4) **Suspected West Nile virus infection** in:
   a) Patients with a history of recent blood donation or transfusion, or organ transplant recipients
   b) Patients with laboratory, occupational, transplacental, or breastfeeding associated exposures
   c) Pregnant women
5) **West Nile fever** in patients with positive commercial laboratory test results.

**How to Submit Laboratory Specimens for West Nile Virus Testing:**

1) **First, report the case to Public Health** (see box above: "How Do I Report a Suspect Case of West Nile Virus?")
2) **MAC-ELISA testing** is available at the Washington State Public Health Laboratory for hospitalized patients suspected of having West Nile Virus infection *after reporting and consultation with Public Health* (206) 296-4774. Commercial laboratory testing is available for suspect West Nile Virus cases who are not hospitalized (and persons <18 hospitalized with aseptic meningitis).
3) **Submit 1 ml of CSF and/or separated serum** (not whole blood) for MAC-ELISA testing. Specimens should be refrigerated and transported cold. Frozen CSF is acceptable.
4) **Submit specimens with a completed "Virus Examinations" form** (http://www.metrokc.gov/health/westnile/index.htm) to the Public Health-Seattle & King County Lab at 325 9th Ave, Room BWC03 in Seattle (206) 731-8950**.**

## New Mosquito Repellent Options — *Just in Time for West Nile Virus Season*

Until now, DEET-containing products have been the mainstay of effective mosquito repellents, and have been the sole formulation recommended by the Centers for Disease Control and Prevention (CDC). DEET-based repellents, while safe and effective, sometimes repel users due to an odor some people find offensive, an oily or sticky skin-feel, and a tendency to damage plastics. Just in time for the 2005 West Nile virus season, the CDC has now added two new active ingredients to the recommended list. These are picaridin (also known as KBR 3023) and oil of lemon eucalyptus.

Picaridin has been the active ingredient for many years in mosquito repellents sold in Europe, Australia, Latin America and Asia, and is recommended by WHO for malaria prevention. Its effectiveness is comparable to DEET products containing a similar concentration of active ingredient. In the U.S., the first commercially-available product contains 7% picaridin and is being marketed under the name Cutter Advanced™. Testing shows that picaridin and DEET offer long-lasting protection.

Oil of lemon eucalyptus protects for shorter periods, similar to low concentrations of DEET. CDC cautioned that oil of lemon eucalyptus should not be used on children under the age of three years and that it has not been tested against the mosquitoes that spread malaria and some other tropical diseases.

A study published in 2002 in the *New England Journal of Medicine* found that perennial favorites citronella and Avon Skin-so-Soft, as well as DEET-impregnated wrist bands, offered only very short protection times. Of the non-DEET products, a 2% soybean oil product called Bite Blocker provided up to 90 minutes of mosquito protection. The NEJM article did not evaluate a picaridin product because it was not licensed for use in the U.S. at the time of the study.

The CDC websites contain more information about the new recommendations at: http://www.cdc.gov/ncidod/dvbid/westnile/qa/insect_repellent.htm

**Disease Reporting**

AIDS/HIV.....(206) 296-4645
STDs.....(206) 731-3954
TB .....(206) 731-4579
All Other Notifiable Communicable Diseases (24 hours a day)..... .....(206) 296-4774
Automated reporting line for conditions not immediately notifiable.....(206) 296-4782

**Hotlines**

Communicable Disease.....(206) 296-4949
HIV/STD.....(206) 205-STDS

**Online Resources**

**Public Health Home Page:** www.metrokc.gov/health/
**The *EPI-LOG***: www.metrokc.gov/health/providers
**Subscribe to the Public Health Communicable Disease listserv (PHSKC INFO-X) at:**
http://mailman.u.washington.edu/mailman/listinfo/phskc-info-x

**Reported Cases of Selected Diseases, Seattle & King County 2005**

| | Cases Reported in April | | Cases Reported Through April | |
|---|---|---|---|---|
| | 2005 | 2004 | 2005 | 2004 |
| **Campylobacteriosis** | 19 | 21 | 84 | 69 |
| **Cryptosporidiosis** | 9 | 4 | 31 | 10 |
| **Chlamydial infections** | 419 | 277 | 1,923 | 1,587 |
| **Enterohemorrhagic *E. coli* (non-O157)** | 3 | 0 | 4 | 0 |
| ***E. coli* O157: H7** | 3 | 3 | 5 | 3 |
| **Giardiasis** | 7 | 7 | 35 | 42 |
| **Gonorrhea** | 119 | 63 | 514 | 377 |
| ***Haemophilus influenzae* (cases <6 years of age)** | 0 | 1 | 0 | 2 |
| **Hepatitis A** | 0 | 1 | 6 | 3 |
| **Hepatitis B (acute)** | 3 | 1 | 7 | 13 |
| **Hepatitis B (chronic)** | 60 | 40 | 182 | 206 |
| **Hepatitis C (acute)** | 1 | 4 | 3 | 5 |
| **Hepatitis C (chronic, confirmed/probable)** | 85 | 118 | 388 | 439 |
| **Hepatitis C (chronic, possible)** | 59 | 34 | 169 | 127 |
| **Herpes, genital (primary)** | 45 | 31 | 230 | 208 |
| **HIV and AIDS (includes only AIDS cases not previously reported as HIV)** | 52 | 33 | 168 | 153 |
| **Measles** | 0 | 6 | 0 | 6 |
| **Meningococcal Disease** | 2 | 2 | 10 | 8 |
| **Mumps** | 0 | 0 | 1 | 0 |
| **Pertussis** | 11 | 10 | 59 | 81 |
| **Rubella** | 0 | 0 | 1 | 0 |
| **Rubella, congenital** | 0 | 0 | 0 | 0 |
| **Salmonellosis** | 14 | 25 | 68 | 61 |
| **Shigellosis** | 9 | 4 | 22 | 27 |
| **Syphilis** | 8 | 10 | 59 | 29 |
| **Syphilis, congenital** | 0 | 0 | 0 | 0 |
| **Syphilis, late** | 5 | 3 | 30 | 25 |
| **Tuberculosis** | 9 | 15 | 36 | 42 |

The *Epi-Log* is available in alternate formats upon request.