EPI-LOG

Communicable Disease and Epidemiology News

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- **CDC's Immunization Update 2007**

King County Prepares for West Nile Virus

Public Health is preparing for an increase in locally-acquired West Nile virus (WNV) infection this season. Last year there were three locally-acquired human cases of WNV infection, in Washington State from Pierce (2) and Clark (1) Counties. King County had a horse and 2 birds test positive last year, but no humans. Neighboring states of Oregon and Idaho saw significant increases in human cases in 2006. Compared with 2005, the number of human cases in Idaho increased from 13 and no deaths to 996 with 21 deaths, while in Oregon the number rose from 7 and no deaths to 69 cases with 2 deaths. Nationally, 4,269 human cases were reported to the CDC in 2006, of which 177 were fatal. Although we can't predict how many cases we will have in Washington this year, recent experience suggests an increase is likely. So once again we are presenting our annual human WNV case identification and reporting guide for clinicians.

Clinical Presentation: The majority (80%) 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, headache, body aches, rash, and swollen lymph glands. The incubation period is typically 3 to 6 days (range 3 to 14 days) with symptoms lasting 3 to 6 days, or longer. Approximately 1 in 150 infected persons develop severe neurological forms of disease, including encephalitis and meningitis.

Neuroinvasive 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. People over the age of 50 have the highest risk of severe forms of WNV and up to 30% of cases in persons over 70 years of age with neuroinvasive disease are fatal. **Consider WNV in the differential diagnosis of all patients with encephalitis of unknown etiology during mosquito season, particularly in elderly patients presenting with weakness or flaccid paralysis.**

Laboratory Diagnosis: The Washington State Public Health Laboratory (PHL) will only test patients who meet the following criteria, after consultation with Public Health - Seattle & King County:

- Patients with suspected WNV neuoroinvasive disease (fever and change in mental status, cerebrospinal fluid pleocytosis, or other acute central or peripheral neurologic dysfunction)
- Symptomatic pregnant or breastfeeding women
- Neonates or breastfeeding infants of infected mothers
- Recent blood, tissue, or organ donors or recipients suspected to have WNV infection
- Person with commercial laboratory evidence of WNV infection to confirm the diagnosis

What should be reported as suspect arboviral disease?

1. **Viral encephalitis** characterized by:
   - Fever ≥38°C or 100°F and
   - 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
   - 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:
   - Fever ≥38°C or 100°F and
   - Signs of meningeal inflammation (stiff neck, headache, photophobia) and
   - 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:
   - Patients with a history of recent blood donation or transfusion, or organ transplant recipients
   - Patients with laboratory, occupational, transplacental, or breastfeeding associated exposures
   - Pregnant women

5. **West Nile fever** in patients with positive commercial laboratory test results.

Report suspect, or commercial laboratory positive West Nile Virus cases within 3 work days to Public Health by calling 206-296-4774, or by faxing a completed "Arborviral Encephalitis/Meningitis Case Report Form" to 206-296-4803. Find the form at: www.metrokc.gov/health/westnile/forms.htm

For additional information about WNV prevention and mosquito control please see:

www.metrokc.gov/health/westnile/index.htm

www.cdc.gov/ncidod/dvbid/westnile/index.htm

The PHL tests for WNV-specific IgM antibody on serum or CSF by capture enzyme immunoassay (EIA) and Microsphere Immunoassay (MIA). This is the most sensitive test for WNV infection in immunocompetent patients, as more than 90% of those infected will have detectible serum IgM eight days after onset, and CSF antibody may be present even earlier. Positive specimens will be forwarded to the CDC for confirmatory testing.

Because PCR lacks sensitivity, and immunocompetent patients typically clear the virus shortly after symptom onset, **PCR testing is not recommended for routine diagnosis of WNV.** PCR may be more useful for immune deficient individuals who clear the virus more slowly, and can be done by the PHL on either CSF or blood.

Patients who do not meet the Washington State PHL WNV testing criteria can be tested by the Public Health - Seattle & King County Laboratory on a fee for service basis, or by a commercial laboratory. The laboratory offers WNV IgM testing but not PCR.

Because WNV cannot be distinguished clinically from other causes of meningoencephalitis concurrent testing for common causes of aseptic meningitis and encephalitis (including cultures and/or PCR testing for enteroviruses and herpes viruses) is encouraged. Also consider additional testing if a patient's travel history is suggestive of other arboviral exposure. Though viral encephalitis or meningitis is not a notifiable illness, suspected arboviral encephalitis including WNV is reportable, as is any illness due to arboviral infection.

Test Interpretation: IgM antibody develops by day 8, and IgG antibody within 3 weeks after illness onset. Because IgM does not cross the blood-brain barrier, its presence in CSF indicates neuroinvasive disease. When indicated, a convalescent serum specimen should be drawn about 3-4 weeks after the acute specimen. Negative results on any specimen obtained less than 8 days after onset of illness are inconclusive and require follow up with a convalescent serum specimen obtained at least 2 weeks after the first specimen.

For interpretation of positive serum WNV IgM results, there are two caveats: First, antibody may cross react with other causes of arboviral encephalitis including yellow fever, Japanese encephalitis (disease or vaccination), and dengue fever. Second, IgM antibody can persist for more than a year, so the presence of IgM could be indicative of past arboviral infection rather than acute disease.

CDC's Immunization Update 2007

Mark your calendars! This year's live satellite CDC broadcast is scheduled for Thursday, August 9th, from 9:00am-11:30am. The course will provide up-to-date information on the rapidly changing field of immunization. Anticipated topics include human papillomavirus, rotavirus, influenza, and pertussis booster vaccines for adolescents and adults. The course will be held at the Region X Public Health Service at Sixth and Blanchard in Seattle. Cost is $5.00. CME/CNE/CEUs will be awarded to course participants who complete the training. The broadcast may also be accessible for online viewing.

Registration forms will be mailed to *Vac Scene* subscribers and will also be available on our website at: www.metrokc.gov/health/immunization/providers.htm#training

If you need additional information, please contact Ruby Lopez at Public Health - Seattle & King County: 206-205-8627.

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

Public Health-Seattle & King County Online Resources

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

West Nile Virus Updates and Current Testing Guidelines: www.metrokc.gov/health/westnile/advisories.htm

Reported Cases of Selected Diseases, Seattle & King County 2007

	Cases Reported in May		Cases Reported Through May	
	2007	2006	2007	2006
Campylobacteriosis	12	25	77	93
Cryptosporidiosis	3	3	14	9
Chlamydial infections	475	447	2302	2215
Enterohemorrhagic *E. coli* (non-O157)	0	0	2	0
***E. coli* O157: H7**	0	2	6	6
Giardiasis	11	12	58	49
Gonorrhea	145	198	660	827
***Haemophilus influenzae* (cases <6 years of age)**	1	0	2	0
Hepatitis A	4	1	5	6
Hepatitis B (acute)	4	0	12	5
Hepatitis B (chronic)	76	63	350	344
Hepatitis C (acute)	1	0	4	3
Hepatitis C (chronic, confirmed/probable)	102	120	566	628
Hepatitis C (chronic, possible)	30	25	140	130
Herpes, genital (primary)	51	63	298	337
HIV and AIDS (including simultaneous diagnoses with AIDS)	56	36	180	136
Measles	0	0	1	0
Meningococcal Disease	0	0	2	4
Mumps	2	0	4	2
Pertussis	9	12	20	60
Rubella	0	0	0	0
Rubella, congenital	0	0	0	0
Salmonellosis	24	11	96	62
Shigellosis	1	4	24	15
Syphilis	9	22	60	103
Syphilis, congenital	0	0	0	0
Syphilis, late	7	6	30	32
Tuberculosis	20*	20	67	49

***Due to reporting and counting delays, the number of cases listed may not reflect actual case burden during the month

The *EPI-LOG* is available in alternate formats upon request.