PENNSYLVANIA DEPARTMENT OF HEALTH
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First Human Case of West Nile Virus in Pennsylvania - 2010

DATE:	August 24, 2010
TO:	Health Alert Network
FROM:	Everette James, Secretary of Health
SUBJECT:	First Probable Human Case of West Nile Virus in Pennsylvania - 2010
DISTRIBUTION:	Statewide
LOCATION:	Statewide
STREET ADDRESS:	Statewide
COUNTY:	Statewide
MUNICIPALITY:	Statewide
ZIP CODE:	Statewide

This transmission is a "Health Advisory" provides important information for a specific incident or situation; may not require immediate action.

HOSPITALS: PLEASE SHARE WITH ALL MEDICAL, PEDIATRIC, INFECTION CONTROL, NURSING, AND LABORATORY STAFF IN YOUR HOSPITAL

EMS COUNCILS: PLEASE DISTRIBUTE AS APPROPRIATE

FQHCs: PLEASE DISTRIBUTE AS APPROPRIATE

LOCAL HEALTH JURISDICTIONS: PLEASE DISTRIBUTE AS APPROPRIATE

PROFESSIONAL ORGANIZATIONS: PLEASE DISTRIBUTE TO YOUR MEMBERSHIP

The Pennsylvania Department of Health (PADOH) is reporting the first probable human case of West Nile Virus (WNV) in Pennsylvania (PA) in 2010.

The first probable human case of WNV in Pennsylvania was reported on August 23, 2010. The individual, a 69 year-old male from Philadelphia County, was hospitalized, but is recovering and has been discharged. The fact that we have now seen the first human infection from WNV reminds all of us to take and recommend appropriate precautions to help reduce the risk of exposure to infected mosquitoes.

Although there were no identified human cases of WNV in PA in 2009 (the first time this has occurred since WNV first appeared in the Commonwealth in 2000) the virus has reappeared in birds and mosquitoes each summer, and there are also other mosquito-transmitted arboviral infections that are known to occur in Pennsylvania.

Health care providers must consider the diagnosis of WNV in patients with meningitis, encephalitis, or non-specific febrile illness and collect appropriate specimens for lab testing. PADOH also advises the public to take measures to reduce exposure to infected mosquitoes by eliminating mosquito breeding sites around the home and using personal protective measures, such as insect repellants.

PADOH, PADEP, and the Pennsylvania Department of Agriculture (PDA) continue to conduct a comprehensive surveillance and control program for WNV, including monitoring for the presence of WNV

in mosquitoes and other animals. Through August 23, 2010, a total of 558 mosquito pools (a mosquito pool is a collection of mosquitoes from a single mosquito trap over one night of testing at a site) have been positive for the presence of WNV, with positive pools being collected in 20 of 67 counties. PADEP conducts activities throughout the commonwealth to reduce or eliminate mosquito breeding sites on public lands including the use of larvicides and ground-based pesticides. However, many of the mosquito species associated with WNV amplification and transmission live around the home. The public should be advised to eliminate breeding sites around the home by cleaning clogged gutters, draining standing or stagnant water in flower pots, vases and used tires, maintaining water quality in swimming pools; assure window screens are in place and properly maintained; cover exposed skin when outdoors and/or use DEET-containing insect repellants during outdoor activities, especially at dawn and dusk when disease-transmitting mosquitoes are most active. More information regarding precautions for WNV can be found at www.westnile.state.pa.us.

While the majority of persons infected with WNV will be asymptomatic, this virus can produce a non-specific febrile illness (West Nile fever) or severe meningo-encephalitis. Severe disease is more likely to occur in older individuals (especially the elderly) or those with compromised immunity from disease or medications. WNV-related disease is most commonly seen during the period July-September. Risk of WNV continues until the first hard frost in the fall. Information about WNV-associated illness can be found at www.cdc.gov

Pennsylvania physicians are reminded that encephalitis and meningitis of any etiology, and all arboviral infections (such as West Nile Fever), are reportable conditions under existing Pennsylvania health regulations (Chapter 27). Report such cases online via PA-NEDSS (email PA-NEDSS@state.pa.us to register), or call your county/municipal health department or local State Health Center.

Consider West Nile Virus testing for patients meeting the following criteria:

1. Any adult or pediatric patient with **suspected viral encephalitis** (Criteria a, b and c below) with or without associated muscle weakness (Criteria d):

    a. Fever = 38.0°C or 101°F (most patients with West Nile disease had higher fevers), **and**

    b. Altered mental status (altered level of consciousness, agitation, lethargy) and/or other evidence of cortical involvement (e. g. , focal neurological findings, seizures), **and**

    c. CSF pleocytosis with predominant lymphocytes and/or elevated protein and a negative Gram stain and culture, **with or without**

    d. Muscle weakness (especially flaccid paralysis) confirmed by neurological exam or by EMG.

2. Any adult or pediatric patient with **presumptive aseptic meningitis**:
(Please note that enteroviral meningitis is common among young children during the summer months, and should be considered first when assessing cases of aseptic meningitis in children aged 2 years or older):

    a. Fever, **and**

    b. Headache, **and**

    c. Stiff neck and/or other meningeal signs, **and**

    d. CSF pleocytosis with predominant lymphocytes and moderately elevated protein, and a negative Gram stain and culture.

Patients with milder illnesses (*e. g., fever and headache, fever and rash, fever and lymphadenopathy*) may also be tested for WNV.

The following are the epidemiologic criteria we use to classify reported cases of Wile Nile Virus meningo-encephalitis:

Confirmed Case: an encephalitis or meningitis case that is laboratory confirmed:

1. Virus specific immunoglobulin M (IgM) antibodies demonstrated in CSF by antibody-capture enzyme immunoassay (EIA), **or**

2. Virus-specific IgM antibodies demonstrated in serum by antibody-capture EIA and confirmed by demonstration of virus-specific serum immunoglobulin G (IgG) antibodies in the same or later specimen by another serological assay (e.g. neutralization or hemagglutination inhibition), **or**

3. 4-fold or greater change in virus-specific antibody titer, **or**

4. Isolation of virus from or demonstration of specific viral antigen or genomic sequences in tissue, blood, cerebrospinal fluid (CSF), or other body fluid.

Probable Case: an encephalitis or meningitis case occurring during a period when arboviral transmission is likely, and with the following supportive serology:

1. Serum IgM detected by antibody-capture EIA but with no available results of a confirmatory test for virus-specific serum IgG antibodies in the same or a later specimen, **or**

2. A single or stable (less than or equal to twofold change) but elevated titer of virus-specific serum antibodies.

Non-Case (an illness with at least one of the following):

1. Negative test for IgM antibody to WNV by EIA in serum or CSF collected 8-21 days after onset of illness, **or**

2. Negative test for IgG antibody to WNV by EIA or PRNT in serum collected = 22 days after onset of illness.

Therefore, ordering physicians must ensure that convalescent sera is obtained on all suspected case-patients with encephalitis of unknown etiology, if acute sera or CSF obtained <8 days after illness onset is negative for WNV (WNV Report Form link).

Pesticide is used for mosquito abatement. Persons who have Pesticide Hypersensitivity can register with the PA Department of Agriculture (PDA). The form should be filled by the person and his or her medical provider and submitted to PDA. Pesticide Hypersensitivity Registry link. The PA Departments of Health, Environmental Protection and Agriculture continue to implement a comprehensive WNV surveillance and control program. In this regard, we are emphasizing education, source reduction and larval mosquito control.

Mosquitoes, sentinel chickens, horses, crows and other wild birds are being monitored for the presence of West Nile virus. The Department of Environmental Protection has awarded grants to counties to carry out mosquito surveillance and control activities. Citizens are encouraged to eliminate mosquito-breeding sites on their property and in their communities to reduce the risk of being bitten by mosquitoes. Areas with mosquito larvae problems will be treated with such products as *Bacillus thuringiensis israelensis* and *Bacillus sphaericus*. These two products are naturally occurring bacteria found throughout the world.

They have shown very low environmental impact when used in mosquito control. If it becomes necessary to implement adult mosquito control, all products used will be EPA-approved products. With these efforts, it is hoped that WNV activity in the commonwealth will be minimized.

CDC has issued guidelines for infants born of West Nile infected mothers. The article can be viewed at (MMWR Article link)

PADOH asks the following of you and your colleagues:

1. Please review the enclosed information to assist you in evaluating suspected human cases of WNV.

2. PADOH is requesting you to submit all WNV-related specimens to PADOH's Public Health State Laboratory in Lionville, Pennsylvania. Enclosed are instructions for submitting specimens. Laboratory testing is performed free-of-charge.

Please share this information with appropriate personnel in your facility or practice. If you have questions, need additional information or want to report dead birds, please log onto our WNV website. In 2010, dead birds (corvids and raptors only) in good condition will be collected and shipped by DEP WNV County coordinators, five birds per county per week, for WNV testing.

You can call 1-877-PA HEALTH for health related WNV questions, or the Division of Infectious Disease Epidemiology at 717-787-3350, or you may contact the State Arbovirus Coordinator, Dr. James T. Rankin, Jr., DVM, MPH, PhD, at jrankin@state.pa.us.

Categories of Health Alert messages:

Health Alert: conveys the highest level of importance; warrants immediate action or attention.
Health Advisory: provides important information for a specific incident or situation; may not require immediate action.
Health Update: provides updated information regarding an incident or situation; unlikely to require immediate action.

This information is current as of August 24, 2010 but may be modified in the future.