Philadelphia Department of Public Health
Division of Disease Control

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Health Advisory
West Nile Virus Encephalitis Identified in a Philadelphia Resident
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The Philadelphia Department of Public Health has confirmed Pennsylvania's first human WNV case for 2010. The patient presented with fever, altered mental status, and a stiff neck. Nationwide, 115 human cases of WNV infection and three deaths have been identified in AL, AZ, CA, CO, FL, GA, IA, KS, MN, MO, MS, ND, NE, NY, SD, TX, and WY.

The Pennsylvania Departments of Health and Environmental Protection are reporting that the number of WNV-positive pools identified to date is unusual in that the number is much higher than in recent years. Philadelphia has the highest number of positive mosquito pools of all Pennsylvania counties, and WNV-positive pools have been identified in all areas of the city. WNV-positive mosquito pools suggest that there is increased risk for human infection. Mosquito control activities such as larviciding and ground spraying have been ongoing throughout the summer. A report summarizing WNV activity in the Philadelphia region is posted regularly on the PDPH Health Information Portal (*https://hip.phila.gov*).

Clinicians are urged to report all suspect cases of WNV to DDC at 215-685-6740 during regular business hours or 215-686-4514 after-hours (ask to speak with the representative on-call for the division). Additionally, clinicians should consider WNV and other mosquito-borne viral infections in the differential diagnosis of encephalitis and aseptic meningitis during summer and early fall months, and should obtain serum and CSF on suspected cases for diagnostic testing. The following summary is provided to assist clinicians with the diagnosis of WNV infection during this period when the risk of disease is high.

Clinical Presentation of WNV Infection

The majority of infections due to West Nile Virus are asymptomatic. Approximately 20% of individuals develop a self-limited febrile illness called West Nile Fever, characterized by fever, headache, myalgia, gastrointestinal symptoms and sometimes a transient maculopapular rash. Less than 1% of infected individuals will develop neuroinvasive disease–aseptic meningitis, encephalitis, or flaccid paralysis. The risk of neuroinvasive disease increases with age, and is highest among adults > 60 years old and among organ transplant patients. Residual neurological deficits are not uncommon among severe cases.

Diagnosis of WNV Infection

The incubation period of WNV infection ranges from 2-14 days (up to 21 days in immunocompromised persons). Serum and cerebrospinal fluid (CSF) may be tested for specific IgM antibody to WNV; however, serum collected within the first 8 days of illness may not have detectable IgM and repeat testing may be necessary. A four-fold rise in WNV-specific IgG in acute and convalescent serum is also diagnostic. Viral culture and nucleic acid amplification tests can also be performed on serum collected early in the illness, and on CSF. Testing should be performed by the Pennsylvania Department of Health Bureau of Laboratories (BOL) as testing performed in commercial laboratories may not be reliable. DDC can facilitate specimen submission to PA BOL.

Treatment and Prevention

Treatment for mosquito-borne viral diseases is supportive; there is no specific therapy for these infections. Personal prevention remains the best way to decrease the risk of acquiring mosquito-borne diseases. Mosquito repellent containing no more than 30% DEET should be applied whenever one is outdoors during mosquito season. Products that contain 10% DEET can safely be used on children > 2 months old. Eliminating standing water on personal property (e.g., swimming pools, tires, bird baths) will decrease mosquito-breeding sites. Mosquito complaints and dead bird sightings can be reported to the Vector Control Program at 215-685-9027.