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Illinois Resident Diagnosed with West Nile Virus Infection in Alaska

Background

An Illinois resident (Patient A) who recently traveled to Anchorage, Alaska, has been definitively diagnosed with West Nile Virus (WNV) infection. This individual became ill with symptoms compatible with WNV infection less than 24 hours after arriving by airplane from Chicago. The Alaska State Division of Public Health notified federal authorities of the diagnosis, which has been confirmed by the Centers for Disease Control and Prevention (CDC) in Fort Collins, CO.

Although Patient A was diagnosed with WNV infection in Alaska, his exposure to the mosquitoes responsible for transmitting the virus took place in Illinois – a state where WNV infection has already been well-documented among humans, birds, and horses (Map 1). The incubation period for WNV is approximately one week, although symptoms may occur as soon as 3 days after being bitten by an infected mosquito. Therefore, this patient was infected with the virus before coming to Alaska.

Clinical presentation of Patient A

Patient A, a 77-year-old man from a suburb of Chicago, arrived in Anchorage on August 24, 2002, feeling tired but otherwise normal. The next day, he developed increased urinary frequency, headache, and a fever of 102 degrees Fahrenheit. Later that evening, he presented to an Anchorage emergency department febrile and mildly confused. His symptoms persisted and he began having difficulty speaking. On August 27, he became more lethargic and confused. A lumbar puncture revealed findings consistent with viral meningitis. A CAT scan and MRI of the head were unremarkable. Serologic and cerebrospinal fluid samples were sent to a private laboratory for virologic studies. In addition, samples were sent to CDC-Fort Collins to be evaluated for possible WNV infection. On September 17, preliminary laboratory results from the private laboratory were positive for WNV infection. CDC confirmed the preliminary results on September 18. The patient remains under care.

Clinical symptoms of WNV infection

Most persons infected with WNV remain asymptomatic or suffer only mild illness. Symptoms may include fever, a generalized maculopapular rash, headache, lymphadenopathy, myalgia, and weakness. Severe neurologic manifestations, which can include encephalitis or meningitis, occur in <1% of all symptomatic patients. Patients who develop severe disease tend to be older or have compromised immune systems.

No increase in risk to Alaska

Because WNV infection is transmitted through bites from infected mosquitoes and is not spread person-to-person, passengers who were on the same airplane as the patient are not at any greater risk of acquiring WNV infection. This case of WNV infection does not increase the likelihood that WNV has, or will, become established in Alaska, nor will it increase the risk of persons in Alaska acquiring WNV. Given the amount of travel by Alaska residents to WNV-endemic areas and by persons from those areas to Alaska, it

is not surprising that an out-of-state acquired case of WNV infection was diagnosed in Alaska.

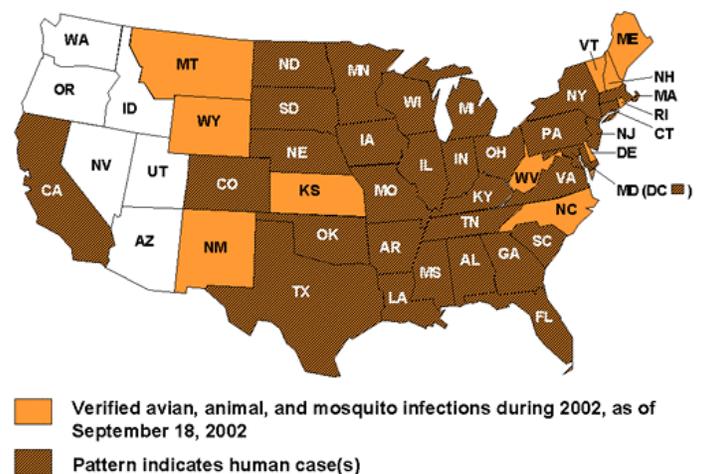
The normal transmission lifecycle of WNV involves mosquitoes and birds. Humans, horses, and other mammals become infected incidentally when a mosquito carrying the virus bites them. To establish a focus of WNV in Alaska, the correct combination of infected birds, mosquitoes, and climatic conditions must occur. Given our short summer and mosquito seasons, experts feel that the establishment of WNV in Alaska is unlikely. Additionally, many bird species are beginning southerly migrations and the mosquito populations necessary to transmit the virus from bird to bird or bird to human are dying off as temperatures drop, making the possibility of WNV transmission in Alaska this year even more remote.

Alaska travelers to WNV-infected areas are at risk for acquiring the infection. The best ways to protect against any mosquito-borne diseases in areas where disease can occur are to avoid high-risk areas and to take bite prevention precautions. Bite prevention involves wearing long pants and long sleeved shirts when going outdoors during times that mosquitoes are active; keeping window and door screens closed; and using repellent products (consider using products that contain DEET).

Surveillance

While the risk of WNV becoming established in Alaska is low, the Section of Epidemiology and its partners are working together to establish appropriate surveillance for WNV among the human, avian, and equine populations to be able to detect the disease should it occur in the State. This case of WNV infection was detected because astute hospital staff recognized the clinical signs and the travel history of the patient and contacted Epidemiology for assistance in obtaining the appropriate confirmatory tests.

Map 1. Current distribution of cases of West Nile Virus in the United States, January 1 - September 18, 2002.



Resources

More information about diagnosing infection with WNV, and WNV in general, can be found at the following websites:

Section of Epidemiology www.epi.hss.state.ak.us/wnileinfo.stm

US Centers for Disease Control and Prevention
www.cdc.gov/ncidod/dvbid/westnile/index.htm