



Infectious Disease Epidemiology Report

Eastern Equine Encephalitis and West Nile Virus, Maine - 2013



Background

Mosquito-borne diseases are transmitted through the bite of an infected mosquito. These diseases can be viral, called arboviruses, or parasitic in nature. Mosquito-borne diseases have symptoms that range from very mild to very severe. In severe cases, encephalitis and other serious complications may occur, making mosquito-borne diseases a subject of great public health concern.

There is a risk of catching a mosquito-borne disease anywhere mosquitoes can be found. In Maine, eastern equine encephalitis (EEE) and West Nile virus (WNV) are considered endemic. This report summarizes the surveillance of EEE and WNV during 2013.

Eastern Equine Encephalitis

EEE is a viral disease that occurs in the eastern half of the United States. EEE can cause disease in humans, horses, and some birds. Symptoms can range from mild flu-like illness to encephalitis, coma and death. Because of the high mortality rate (33%), EEE is regarded as one of the most serious mosquito-borne illnesses in the United States.

West Nile Virus

WNV occurs throughout the United States and can cause disease in humans, birds, and other mammals. Many persons infected with WNV will have no obvious symptoms. In persons who develop illness, symptoms may include: headache, fever, altered mental status, tremors, convulsions, paralysis, meningitis, and encephalitis. WNV can be fatal.

Methods

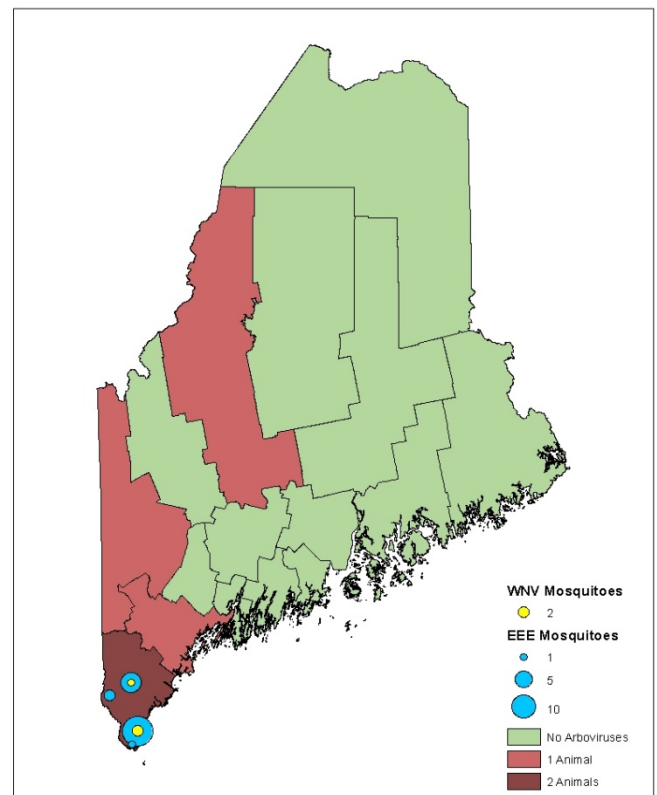
All cases of mosquito-borne diseases in humans are investigated. Standardized case report forms are completed for all cases. All human and non-human (ie. mosquitoes, birds, or other mammals) arboviral cases are entered into Maine CDC's surveillance system and also into ArboNET, federal CDC's arboviral surveillance system. Cases are classified using the Council of State and Territorial

Epidemiologists case definitions for each specific disease.

Results

In 2013, there were no human cases of EEE or WNV in Maine. Three horses, one emu, one pheasant flock, and 26 mosquito pools tested positive for EEE in Maine. Positives were found in Cumberland, Oxford, Somerset, and York counties. Three mosquito pools tested positive for WNV in York county.

Arboviral Activity, Maine 2013



Discussion

Arboviral activity continued to increase in 2013 with the highest number of positive mosquito pools recorded since Maine began testing. The first positive EEE mosquito pool was collected on July 16, 2013 making it the earliest virus isolation in Maine since testing began.

Eastern Equine Encephalitis and West Nile Virus – Maine, 2013

Arboviral activity continues to expand beyond southern Maine demonstrating that the risk for these diseases is statewide. Horses tested positive in Oxford, Somerset, and York counties; an emu tested positive from Cumberland county; and a pheasant flock tested positive from York county. Mosquito trapping is conducted primarily in the southern part of the state where Maine has previously had positive results. The lack of positive mosquito pools in the rest of the state is likely due to limited trapping and not lack of virus present in those areas.

As all of these diseases are transmitted by mosquitoes, preventing mosquito bites is essential. It is important to use preventative measures at home and abroad to reduce the risk of acquiring a mosquito-borne disease.

Prevention

To lower the chances of contracting a mosquito-borne disease, measures should be taken to prevent mosquito bites both at home and while traveling:

- Use an EPA-approved repellent. Always follow the instructions on the product's label when using repellents or other pesticides.
- Wear long sleeved shirts and long pants when possible or when mosquitoes are abundant.
- Protect babies with mosquito netting.
- Stay indoors when mosquitoes are especially abundant.
- Mosquito-proof your home by fixing or installing window screens or screen doors.
- Control mosquito populations around your home by cleaning gutters and removing or emptying objects that contain standing water where mosquitoes can lay eggs such as old tires, old cans, and plastic tarps.
- Empty water from flower pots, pet dishes, birdbaths, rain barrels, and buckets at least once a week.

Health care providers are encouraged to consider mosquito-borne diseases in appropriate clinical settings. EEE and WNV are both found in Maine and should be considered for patients who have been exposed to mosquitoes and have a febrile

illness with neurological manifestations such as aseptic meningitis, encephalitis, and focal weakness.

All cases of arboviral illness in Maine must be reported within 48 hours by calling 1-800-821-5821, or by faxing reports to 207-287-6865.

Additional information about mosquito-borne diseases can be found at:

- Maine CDC
<http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/index.shtml>
- Federal CDC
<http://www.cdc.gov/ncezid/dvbd/index.html>