



Infectious Disease Epidemiology Report

Mosquito Borne Illnesses, Maine - 2010



Background

Mosquito borne illnesses are transmitted through the bite of an infected mosquito. These illnesses can be viral, also called arboviruses, or parasitic in nature. Mosquito borne illnesses can lead to encephalitis and other serious illnesses which makes them of great public health concern.

There is a risk of mosquito borne disease anywhere where mosquitoes can be found. In Maine Eastern Equine Encephalitis and West Nile Virus are considered endemic. Dengue Fever and Malaria are two of the most common mosquito borne diseases acquired during international travel.

Eastern Equine Encephalitis

Eastern Equine Encephalitis (EEE) is transmitted through the bite of an infected mosquito. Symptoms of EEE range from mild flu-like illness to encephalitis, coma and death. Because of the high mortality rate, EEE is regarded as one of the most serious mosquito-borne diseases in the United States.

West Nile Virus

West Nile virus (WNV) is transmitted through the bite of an infected mosquito. Symptoms of WNV range from no symptoms to altered mental status, paralysis, encephalitis, meningitis and death.

Dengue Fever

Dengue is a disease caused by a virus transmitted by the bite of an infected mosquito. Symptoms of dengue include high fever, severe headache, backache, joint pain, nausea and vomiting, eye pain, a “breaking bone feeling” and rash. Dengue is not common in the United States, but infections do occasionally occur with travel to the southern states, particularly southern Florida, or rarely Hawaii.

Malaria

Malaria is a serious and sometime fatal disease caused by a parasite that commonly infects a certain type of mosquito. Symptoms may include high

fevers, shaking chills, flu-like illness, headache, muscle aches, tiredness, nausea, vomiting and diarrhea. Malaria is uncommon in the United States. Malaria is preventable through the use of prophylactic medicine.

Methods

All cases of mosquito borne illness in humans are investigated. Standardized case report forms are completed for all cases, and all human and non human (ie. mosquitoes, birds, or other mammals) cases are entered into Maine CDC’s surveillance system.

Results

Eastern Equine Encephalitis:

In 2010, there were no human cases of EEE. One turkey tested positive for EEE.

There were confirmed human and animal cases in the New England Region in 2010.

West Nile Virus:

There were no human cases of WNV in 2010. One mosquito pool tested positive for WNV.

All of the 48 contiguous states confirmed WNV in either humans, or non humans in 2010.

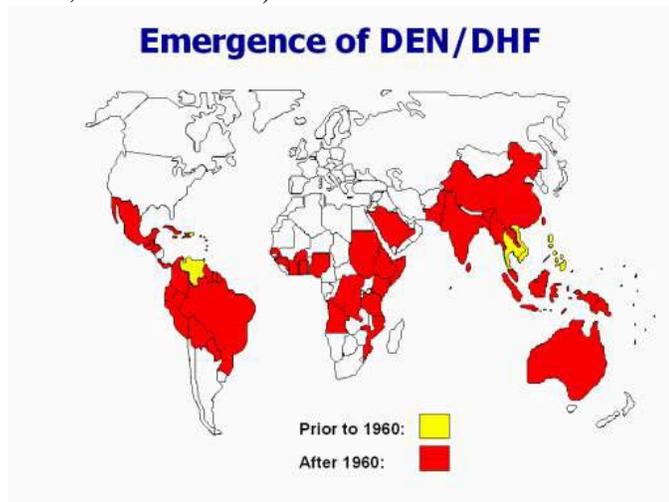
West Nile virus (WNV) activity reported to ArboNET, by state, United States, 2010



Mosquito Borne Illnesses – Maine, 2010

Dengue Fever:

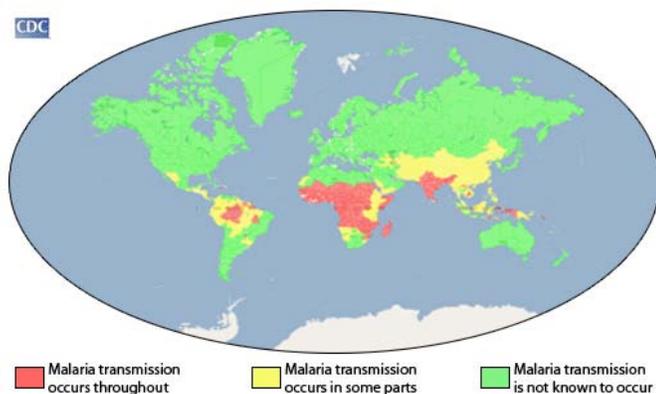
In 2010, there were six probable cases of Dengue fever. All cases had travelled internationally during their exposure period (Haiti, US Virgin Islands, India, and Indonesia).



*DEN (Dengue Fever), DHF (Dengue Hemorrhagic Fever)

Malaria:

In 2010, there were six cases of malaria reported in individuals who had a history of travel outside the US (Haiti, Honduras, Uganda, Cameroon, Ghana, Togo, and Benin). Although the range for malaria appears to be expanding, there has only been one recorded case of locally acquired malaria in Maine in over 50 years.



Discussion

Because all of these diseases are transmitted by mosquitoes preventing mosquito bites is essential. Insect repellent should be used even while traveling to prevent 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:

- Wear insect repellent. Products containing DEET, picaridin, IR3535 or oil of lemon eucalyptus can be applied to exposed skin, and permethrin containing products can be applied to clothing. Make sure to follow the directions when using repellents or other pesticides.
- Wear long sleeve shirts and long pants when possible or when mosquitoes are bad.
- Protect babies with mosquito netting.
- When mosquitoes are especially bad, stay indoors.
- Mosquito proof your house by fixing or installing window screens or screen doors.
- Control mosquito populations around your home by cleaning gutters, removing or emptying objects that contain still water such as old tires, old cans, plastic tarps and similar things.
- Empty water from flower pots, pet dishes, birdbaths, rain barrels, and buckets at least once a week.
- When traveling to areas with a threat of malaria, consider taking prophylaxis.

Health care providers are encouraged to consider arboviral diseases in appropriate clinical settings. Malaria and Dengue should be considered if the patient has travel history to the southern US, or internationally. EEE and WNV are both found in Maine, and should be considered for patients who have spent time outside and have a febrile illness with neurological manifestations such as aseptic meningitis, encephalitis and focal weakness.

Additional information about Mosquito Borne illnesses can be found at:

- Maine CDC
<http://www.maine.gov/dhhs/boh/ddc/epi/vec-tor-borne/index.shtml>
- Federal CDC
<http://www.cdc.gov/ncidod/dvbid/arbor/>