



ARBOVIRAL TESTING RESOURCES FOR EMERGING OR UNCOMMON VECTOR-BORNE DISEASES

Type of Message: Clinical Guidance

Date: June 8, 2018

Public Health Message Type: Alert Advisory Update Information

Intended Audience: All public health partners Healthcare providers Infection preventionists
 Local health departments Schools/child care centers ACOs
 Animal health professionals Other: Clinical laboratories

Key Points or Updates:

- (1) Vector-borne diseases (transmitted by mosquitoes or ticks) are a major public health concern and are some of the most commonly reported communicable diseases in NJ.
- (2) Several arboviral diseases are reported rarely, are emerging, or haven't yet been detected in NJ, for which commercial testing is not easily accessible.
- (3) NJDOH can assist clinicians with arboviral testing either at the NJ Public Health Laboratory or at CDC for patients hospitalized with an acute neuroinvasive disease presentation (e.g., encephalitis, meningitis, altered mental status, muscle weakness/paralysis) in the absence of another etiology and in which an arboviral disease is suspected.

Action Items:

- (1) Clinicians and/or infection preventionists interested in arboviral disease testing can download the NJDOH Arboviral Testing Request Worksheet, located online at <http://www.nj.gov/health/cd/topics/vectorborne.shtml> and submit to CDS for review.

Contact Information:

- Kim Cervantes, Vector-borne Disease Coordinator, at kim.cervantes@doh.nj.gov or CDSVectorTeam@doh.nj.gov or (609) 826-5964 during business hours

References and Resources:

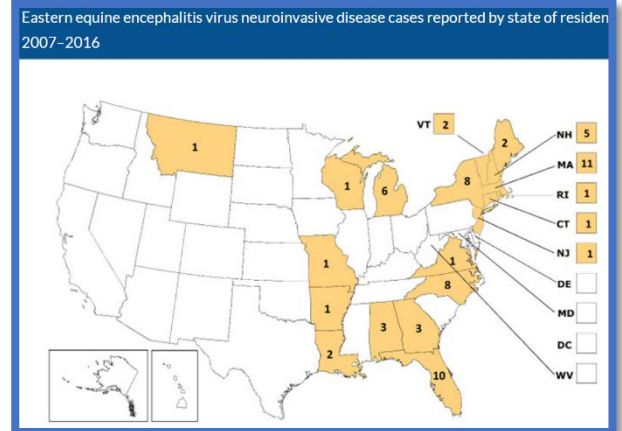
- <http://www.nj.gov/health/cd/topics/vectorborne.shtml>
- <https://www.cdc.gov/ncezid/dvbd/index.html>

Clinicians and/or infection preventionists interested in arboviral disease testing can download the NJDOH Arboviral Testing Request Worksheet, located online at <http://www.nj.gov/health/cd/topics/vectorborne.shtml> and attached to this memo. The completed worksheet should be sent by encrypted e-mail to CDSVectorTeam@doh.nj.gov (preferred) or faxed to 609-826-4874. Be sure to include complete contact information (including e-mail) for both the ordering physician and the facility contact (usually the infection preventionist). Once approved, NJDOH will send the approved specimen forms and collection/shipping instructions to the facility contact. A brief overview of select emerging arboviral diseases is provided in the attachment "Emerging and/or Uncommon Arboviral Diseases."

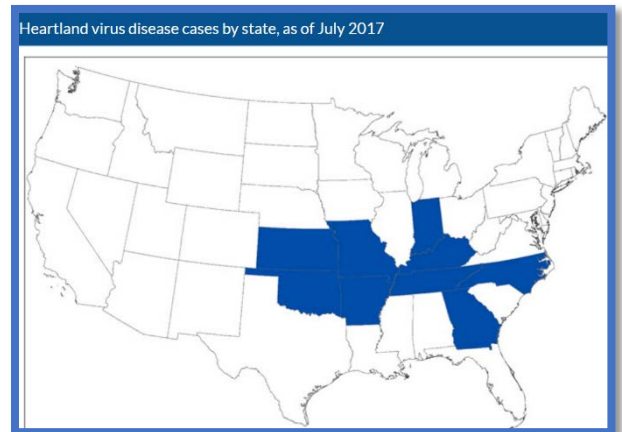
EMERGING AND/OR UNCOMMON ARBOVIRAL DISEASES – June 2018

Bourbon Virus: Bourbon virus is a thogotovirus that is thought to be transmitted through tick or other insect bites. As of June 27, 2017, a limited number of Bourbon virus disease cases have been identified in the Midwest and southern United States with some fatalities reported. It is unknown if the virus might be found in other areas of the United States. Clinical data is limited, but patients with Bourbon virus have reported fever, fatigue, anorexia, nausea, vomiting, and maculopapular rash. They were also found to have thrombocytopenia and leukopenia.

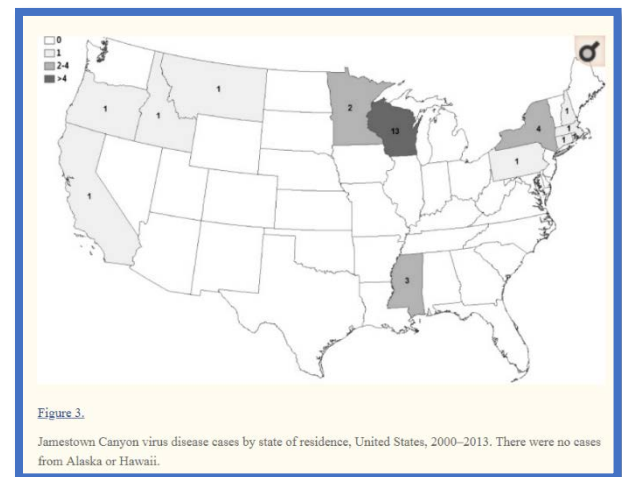
Eastern equine encephalitis (EEE): EEE is a rare but potentially severe disease transmitted by mosquitoes with only a few cases reported in the United States each year. NJ last reported a case of EEE in 2016, which was the first case reported since 2003, although EEE is identified through routine surveillance testing in horses and mosquitoes each year in NJ. Most human infections are asymptomatic, but severe encephalitic cases begin with an abrupt onset of headache, high fever, chills, and vomiting, progressing to disorientation, seizures, or coma. Approximately 1/3 of persons with encephalitis will die from the disease and many who survive have disabling and progressive sequelae.



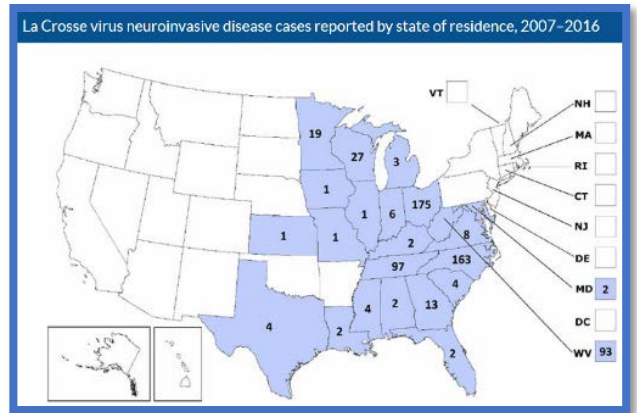
Heartland Virus: Heartland virus is believed to be spread to by infected lone star ticks. As of July 2017, more than 30 cases of Heartland virus disease have been reported from states in the Midwestern and southern United States. Symptoms are often similar to those of other tickborne illnesses, such as ehrlichiosis or anaplasmosis and can include fever, headache, fatigue, myalgia, and diarrhea. Almost all patients with diagnosed with Heartland virus have been hospitalized with some reported fatalities. Heartland virus is not currently a notifiable disease, but states report cases of Heartland virus to CDC on a voluntary basis.



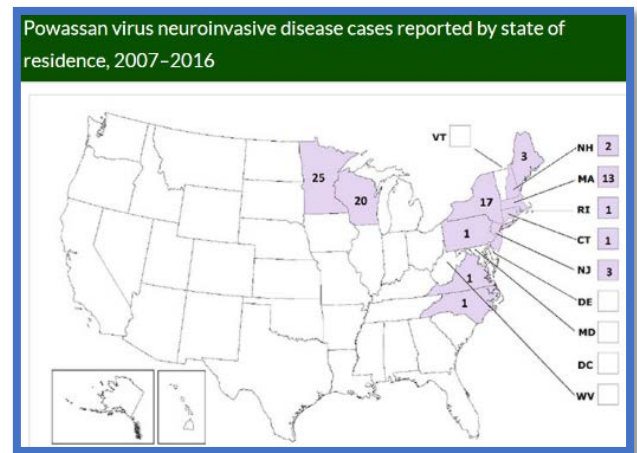
Jamestown Canyon virus: Jamestown Canyon virus is part of the California serogroup viruses and is transmitted by mosquitoes. The virus is routinely found in mosquitoes tested in New York and Connecticut. NJ reported its first case of Jamestown Canyon virus in 2015. The clinical presentation of Jamestown Canyon virus infection is still being described for this rare, emerging disease. Patients may present with acute febrile illness, meningitis or meningoencephalitis.



La Crosse (LAC) virus: La Crosse virus is part of the California serogroup viruses and is transmitted by mosquitoes. Historically, most cases of LAC neuroinvasive disease were reported from the upper Midwestern states, but recently, cases have been reported from mid-Atlantic and southeastern states (no cases have been reported in NJ). Many people infected with LAC are asymptomatic. Among people who become ill, initial symptoms include fever, headache, nausea, vomiting, and fatigue. Severe neuroinvasive disease occurs most often in children <16yrs, often involves encephalitis, and can include seizures, coma, and paralysis. Fatal cases are rare (<1%) and most patients seem to recover completely.



Powassan: Powassan virus is a flavivirus transmitted by the woodchuck tick and the blacklegged tick, the same tick that transmits Lyme disease, Anaplasmosis, Babesiosis, and *Borrelia miyamotoi*. Approximately 75 cases of Powassan were reported in the United States over the past 10 years, most in the Northeast and Great Lakes region. In 2017, NJ reported 4 cases of Powassan, all in northern parts of the state. Initial symptoms include fever, headache, vomiting, and generalized weakness. The disease usually progresses to meningoencephalitis, which may include meningeal signs, altered mental status, seizures, aphasia, paresis, movement disorders, or cranial nerve palsies. Long-term neurologic problems may occur. Approximately 10% of reported cases are fatal.



NJDOH ARBOVIRAL TESTING REQUEST

Medical Record# _____ CDRSS #: _____

LABORATORY TESTS REQUESTED: _____

PATIENT/FACILITY INFORMATION				
Last Name	First Name	Middle Initial	DOB: ____ / ____ / ____	Sex <input type="checkbox"/> Male <input type="checkbox"/> Female
Street Address	City/State	Zipcode	County	Municipality
Telephone () ____ - ____	Race <input type="checkbox"/> White <input type="checkbox"/> Black <input type="checkbox"/> Asian <input type="checkbox"/> Other <input type="checkbox"/> Unknown <input type="checkbox"/> Native Hawaiian/Pacific Islander <input type="checkbox"/> American Indian/Alaskan		Ethnicity <input type="checkbox"/> Hispanic <input type="checkbox"/> Non-Hispanic	
Occupation (job title)	Industry (work setting)	Hospitalized <input type="checkbox"/> Yes <input type="checkbox"/> No		Admission date: ____ / ____ / ____
Hospital Name	Hospital Address			Discharge date: ____ / ____ / ____
Ordering Physician Name/Address: Name: _____ Address: _____ Phone: () ____ - ____ Fax: () ____ - ____ E-mail: _____			Submitting Facility/Laboratory: Contact Name: _____ Facility: _____ Phone: () ____ - ____ Fax: () ____ - ____ E-mail: _____	
CLINICAL INFORMATION				
Pregnant <input type="checkbox"/> Yes <input type="checkbox"/> No	Date of illness onset: ____ / ____ / ____		If patient died, date of death: ____ / ____ / ____	
Current Diagnosis: <input type="checkbox"/> Encephalitis <input type="checkbox"/> Meningitis <input type="checkbox"/> Other, specify: _____				
Signs/Symptoms (check):				
Fever _____°F	<input type="checkbox"/> Yes <input type="checkbox"/> No	Altered mental status	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Headache	<input type="checkbox"/> Yes <input type="checkbox"/> No	Stiff neck/meningeal signs	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Myalgia	<input type="checkbox"/> Yes <input type="checkbox"/> No	Muscle weakness/paralysis	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Rash	<input type="checkbox"/> Yes <input type="checkbox"/> No	Seizures	<input type="checkbox"/> Yes <input type="checkbox"/> No	
Other symptoms, specify: _____				
LABORATORY INFORMATION/TEST RESULTS				
CSF Test Date ____ / ____ / ____ Glucose _____ Protein _____ WBC _____ Diff: Segs% _____ Lymphs% _____				
CBC Date: ____ / ____ / ____ Abnormal? <input type="checkbox"/> Yes <input type="checkbox"/> No WBC _____ Diff: Segs% _____ Lymphs% _____				
Check if tests were ordered and specify result:				
<input type="checkbox"/> Cytomegalovirus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	<input type="checkbox"/> La Crosse virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	
<input type="checkbox"/> Enteroviruses	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	<input type="checkbox"/> St. Louis Encephalitis	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	
<input type="checkbox"/> Epstein Barr Virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	<input type="checkbox"/> Varicella Zoster	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	
<input type="checkbox"/> Herpes Simplex virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	<input type="checkbox"/> West Nile Virus	<input type="checkbox"/> Pos <input type="checkbox"/> Neg <input type="checkbox"/> Pending	
Other relevant tests performed, specify: _____				
Brain imaging scan performed: _____ Date: ____ / ____ / ____ Abnormal? <input type="checkbox"/> Yes <input type="checkbox"/> No Result: _____				
EXPOSURE / PRIOR HISTORY / VACCINATION INFORMATION				
In the 30 days before illness onset or diagnosis, did patient -				
Spend time outdoors in grassy or wooded areas? <input type="checkbox"/> Yes <input type="checkbox"/> No Location/dates: _____				
Notice a tick bite? <input type="checkbox"/> Yes <input type="checkbox"/> No Date: ____ / ____ / ____				
Travel outside of NJ (within the US)? <input type="checkbox"/> Yes <input type="checkbox"/> No Location/dates: _____				
Travel outside of the US? <input type="checkbox"/> Yes <input type="checkbox"/> No Location/dates: _____				
Receive <input type="checkbox"/> Blood transfusion <input type="checkbox"/> Organ transplant				
Did the patient have a prior flavivirus infection (e.g., WNV, Zika, Dengue, Yellow Fever)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
Is the patient vaccinated against a flavivirus (e.g., Japanese Encephalitis, Yellow Fever, Dengue)? <input type="checkbox"/> Yes <input type="checkbox"/> No				

Submit via encrypted email to CDSVectorTeam@doh.nj.gov or fax to 609-826-4874. Questions? Call 609-826-5964