MDHHS BUREAU OF LABORATORIES MOSQUITO-BORNE AND TICK-BORNE DISEASE TESTING

MOSQUITO-BORNE DISEASES

The Michigan Department of Health and Human Services Bureau of Laboratories (MDHHS BOL) offers comprehensive testing on clinical specimens for the following viral mosquito-borne diseases (also known as arboviruses) of concern in Michigan: **California Group encephalitis**



virus (CGV), Eastern Equine encephalitis virus (EEE), St. Louis encephalitis virus (SLE), and West Nile virus (WNV). Testing is available free of charge through Michigan healthcare providers for their patients. Testing for mosquito-borne viruses should be considered in patients presenting with meningitis, encephalitis, or other acute neurologic illness in which an infectious etiology is suspected during the summer months in Michigan. Methodologies include:

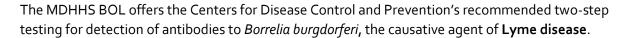
- IgM detection for all four arboviruses (CGV, EEE, SLE, WNV)
- Molecular detection (PCR) for WNV only
- Plaque Reduction Neutralization Test (PRNT) is also available and may be performed on select samples when indicated

The preferred sample for arbovirus serology at MDHHS BOL is cerebral spinal fluid (CSF), followed by paired serum samples (acute and convalescent). In cases where CSF volume may be small, it is recommended to also include an acute serum sample. Please see the following document for detailed instructions on specimen requirements, shipping and handling instructions: http://www.michigan.gov/documents/LSGArbovirus_lqM_Antibody_Panel_8347_7.doc

Michigan residents may also be exposed to mosquito-borne viruses when traveling domestically or internationally. In recent years, the most commonly encountered arboviruses impacting travelers include Zika, dengue, and chikungunya virus. MDHHS has the capacity to perform PCR and IgM detection for Zika virus, dengue, and chikungunya virus to confirm commercial laboratory arbovirus findings or for complicated medical investigations. MDHHS BOL no longer performs routine screening for Zika virus as assays are now available through commercial laboratories. To discuss a case and request travel-associated arbovirus testing, contact the MDHHS Emerging and Zoonotic Diseases Section (EZID) at 517-335-8165. Information about requirements for sample submission can be found at www.michigan.gov/mdhhslab, A-Z Test Listing, "Arbovirus-Emerging Arbovirus Panel".

TICK-BORNE DISEASES

<u>Human Serologic Testing for Lyme Disease</u>





- The first step uses an EIA methodology; if a sample is positive or equivocal-
- The second step immunoblot (Western Blot) test is performed

Serologic testing for Lyme disease is available free of charge through Michigan healthcare providers for their patients. Please see the following document for detailed instructions on specimen requirements, shipping and handling instructions: http://www.michigan.gov/documents/LSGLyme Borreliosis Antibody IgM and IgG Test 8272 7.doc

<u>Tick Identification/Testing of Live Blacklegged Ticks for Presence of Borreliα burgdorferi</u>

MDHHS provides the following services for tick identification and testing at no charge to Michigan residents:

- Accepts ticks or photos of ticks for identification
- Live blacklegged ticks removed from people can be tested at BOL for the presence of the Lyme disease bacteria, *Borrelia burgdorferi*. (Dead blacklegged ticks or ticks removed from animals will not be tested.)





Email tick photos and questions about tick-borne diseases to <u>MDHHS-Bugs@michigan.gov</u>. For details on how to submit ticks or photos of ticks to MDHHS for tick identification, or live blacklegged ticks removed from people for *B. burgdorferi* testing, visit <u>www.michigan.gov/lyme</u>.

SPECIALIZED TESTING AVAILABLE AT CENTERS FOR DISEASE CONTROL AND PREVENTION (CDC)

Michigan residents may also be exposed to other mosquito-borne and tick-borne diseases, both in Michigan or when traveling, either domestically or internationally. Testing for many less common mosquito and tick-borne pathogens is available at no cost through the CDC with prior approval. Information about specific diseases and diagnostic testing available at CDC can be located at www.cdc.gov. Clinical specimen submissions to CDC must be coordinated through MDHHS. Contact the MDHHS EZID Section at 517-335-8165 to discuss a case with an epidemiologist and obtain authorization and instructions on how to submit patient samples to CDC.

DISEASE REPORTING REQUIREMENTS

Mosquito-borne and tick-borne infections in people are reportable conditions in Michigan (http://www.michigan.gov/documents/mdch/Reportable_Diseases_Michigan_by_Condition_478488_7.pdf) and must be reported to MDHHS and the local health department where the case patient lives. An important goal of mosquito-borne and tick-borne disease surveillance is to monitor for changes in disease activity, including identifying disease agents currently being spread by mosquitoes and ticks in Michigan, as well as potentially identifying emerging threats. Michigan's Public Health Code, Act No. 368 of the Public Acts of 1978, authorizes MDHHS and Michigan local health departments to investigate potential human cases of any reportable disease as well as unusual occurrences. As a part of this ongoing surveillance effort, MDHHS epidemiologists routinely follow up on any Michigan patient with testing that indicates recent exposure to a mosquito-borne or tick-borne disease. Laboratories may be asked to forward remaining samples on these patients to MDHHS for confirmatory testing.

Questions about MDHHS mosquito-borne and tick-borne disease surveillance can be directed to the EZID Section at 517-335-8165.

Questions about submitting specimens to MDHHS BOL can be directed to 517-335-8063.

Information about West Nile virus, Lyme disease and other diseases spread by mosquitoes and ticks can be found at www.michigan.gov/emergingdiseases, and www.cdc.gov.