Date: June 2, 2017
To: All North Carolina Clinicians
From: Zack Moore, MD, MPH, State Epidemiologist
Subject: Update on Endemic Arboviral diseases in North Carolina (2 pages)

Background:
Arthropod-borne viruses (arboviruses) are transmitted to humans primarily through the bites of infected mosquitoes. Most arboviral infections are asymptomatic. For the purposes of surveillance and reporting, clinical illnesses resulting from arboviral infections are categorized into neuroinvasive and nonneuroinvasive disease. Nonneuroinvasive disease manifestations may include headache, myalgias, arthralgia, rash, or gastrointestinal symptoms. Neuroinvasive arboviral infections are usually characterized by acute onset of fever with headache, myalgia, stiff neck, altered mental status, seizures, limb weakness, or cerebrospinal fluid (CSF) pleocytosis.

La Crosse encephalitis (LACE) is the most commonly reported endemic arboviral disease in North Carolina (figures 1, 2). Case presentation, management and outcome have been described for both children and adults. [1,2] Although LACE has been reported across the state, over 75% of all cases are reported from counties in the southwestern region.

Other neuroinvasive arboviral diseases endemic to North Carolina include West Nile virus infection and eastern equine encephalitis, both of which are much less common than LACE. Over the past five years, fewer than 10 cases for each of these diseases have been reported annually.

Reporting:
Per North Carolina law, clinicians are required to report all suspected or confirmed neuroinvasive arboviral diseases to public health by contacting their local health department or by calling the Communicable Disease Branch epidemiologist on call at 919-733-3419.

Chikungunya, dengue, yellow fever, and Zika virus infections are also reportable in North Carolina. These infections are associated with travel to endemic areas and, up to now, local mosquito-borne transmission of these conditions has not been documented in North Carolina. Updates and information about Zika virus are available at http://epi.publichealth.nc.gov/zika/.

Diagnosis:
Serologic testing for arboviral infections is offered at no charge from the State Laboratory of Public Health (NCSLPH). The submission form, DHHS 3445, is available at http://slph.state.nc.us/virology-serology/special-serology.asp. Early diagnosis of LACE is critical to adapting therapy and eliminating unnecessary treatment and is also important for public health surveillance purposes. MAC ELISA testing is preferred for LACE diagnosis and
is available at the NCSLPH. [3] Serologic testing by the IFA methodology is also available; we encourage providers to collect acute AND convalescent (e.g., after two-three weeks) specimens to confirm diagnosis using this methodology.

**Education of patients, prevention of disease:**
We encourage all clinicians to educate their patients about personal protective measures that can be used to minimize their risk of acquiring these conditions. The Centers for Disease Control (CDC) has excellent resources available at [http://www.cdc.gov/ncidod/dvbid/arbor/index.htm](http://www.cdc.gov/ncidod/dvbid/arbor/index.htm). There also is updated information on the Division of Public Health’s Communicable Diseases website at [http://epi.publichealth.nc.gov/cd/diseases/arbo.html](http://epi.publichealth.nc.gov/cd/diseases/arbo.html).

If you have any questions or concerns, please call the Communicable Disease Branch at 919-733-3419.

**References:**

**Figures 1: Cases of La Crosse Encephalitis Reported in North Carolina, 2011–2016**

![Graph showing cases of La Crosse Encephalitis by year and month](image1)

**La Crosse Encephalitis Average Reported Incidence per 100,000 by County, 2011–2015**

![Map showing incidence of La Crosse Encephalitis by county](image2)
Reporting Communicable Diseases – Mecklenburg County

To request N.C. Communicable Disease Reporting form, telephone 980-314-9201 or 980-314-9220
Mark all correspondence “CONFIDENTIAL”

Tuberculosis:
TB Clinic
Mecklenburg County Health Department
2845 Beatties Ford Road
Charlotte, NC 28216
980.314.9470
FAX 704.432.2493

Sexually Transmitted Diseases, HIV, & AIDS:
Syphilis and HIV/AIDS Reporting
Mecklenburg County Health Department
700 N. Tryon Street, Suite 214
Charlotte, NC 28202
980.314.9226 or 704.614.2993
FAX 704.336.6200

All Other Reportable Communicable Diseases
Report to any of the following nurses:
Lori Bowers, RN 980.314.9212
Shawn Wilson, RN (Child Care Nurse) 980.314.9208
Tiffiney McKoy, RN 980.314.9207
Julie Secrest, RN 980.314.9209
Tammy Moss, RN 980-314-9205
Deborah Lentz, RN 980-314-9204
Susannah Stone-Gill, RN 980-314-9203
Brian Lackey, RN 980-314-9206
Communicable Disease Control
Mecklenburg County Health Department
700 N. Tryon Street, Suite 214
Charlotte, NC 28202
FAX 704.353.1202
Urgent after-hours 24/7 704-432-0871

Animal Bite Consultation / Zoonoses / Rabies Prevention:
Jose Pena 980.314.9210
Communicable Disease Control
FAX 704.353-1202
Mecklenburg County Health Department
700 N. Tryon Street, Suite 214
Charlotte, NC 28202
State Veterinarian 919.733.3419
State after hours 919.733.3419

Suspected Food borne Outbreaks / Restaurant, Lodging, Pool and Institutional Sanitation:
Food & Facilities Sanitation (Mon-Fri 8-5) 980-314-1620
Mecklenburg County Health Department (evenings; Sat/Sun) 980.314.1660
700 N. Tryon Street, Suite 208 (pager evenings; Sat/Sun) 704.580.0666
Charlotte, NC 28202 FAX 704.336.5306

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