




North Carolina Department of Health and Human Services
Division of Public Health – Epidemiology Section
1902 Mail Service Center • Raleigh, North Carolina 27699-1912
Telephone: 919-733-3419 Fax: 919-870-4807

Beverly Purdue, Governor
Lanier Cansler, Secretary

Jeffrey Engel, MD
State Health Director

Date: 22 March 2011
To: North Carolina Medical Providers
From: Dr. Megan Davies, State Epidemiologist 
Subject: 2011 Update; Diagnosis and Surveillance for Arboviral diseases

Arboviral diseases:

Neuroinvasive arboviral diseases are reportable conditions in North Carolina (NC). These conditions are transmitted by a variety of species of mosquitoes and can cause symptoms ranging from fever to altered mental status to acute signs of central or peripheral neurologic dysfunction. LaCrosse encephalitis is the most commonly diagnosed arboviral disease in NC. Of the 153 cases reported from 1998-2008, 77% were residents of six western NC counties: Buncombe, Haywood, Transylvania, Jackson, Swain and Henderson. Although arboviral diseases may infect residents of any county, this geographic distribution is consistent with known areas of increased risk in NC¹. While less common cases of West Nile virus infection and Eastern Equine Encephalitis occur throughout NC.

Diagnosis:

Serologic testing for arboviral diseases is offered at no charge from the State Laboratory Public Health. The submission form, DHHS 3445, is available at <http://slph.state.nc.us/virology-serology/special-serology.asp>. Early diagnosis of La Crosse Encephalitis is critical to reducing and eliminating unnecessary treatment; and also important for surveillance of the disease. Early recognition and diagnosis of La Crosse encephalitis will help eliminate the practice of treating presumptive herpes simplex encephalitis with acyclovir or presumptive bacterial meningitis with antibiotics². The sensitivity and rapidity of diagnosis of the MAC ELISA provide a powerful tool for the clinically relevant serodiagnosis of LAC virus infections in humans³. MAC ELISA testing is performed by the NCSLPH. Additionally serologic testing by the IFA methodology is available at the NCSLPH. We encourage providers to collect acute AND convalescent specimens to assist in confirmation of these cases using this methodology.

Education of patients, prevention of disease:

We encourage all providers to educate their patients about personal protective measures they can take to minimize their risk of acquiring these conditions. Information for patients can be found here: <http://www.cdc.gov/lac/gen/pre.html>. If you have any questions or concerns please call Carl Williams or Jodi Reber at 919-733-3410.

References:

1. Haddow and Odoi. The Incidence Risk, clustering, and Clinical Presentation of La Crosse Virus Infections in the Eastern US, 2003-2007. PLoS ONE 4(7):e6145
2. McJunkin et. al. La Crosse Encephalitis in Children. N Engl J Med, Vol. 344, No. 11. 801-807
3. Calisher et.al. Serodiagnosis of La Crosse virus infections in humans by detection of immunoglobulin M class antibodies. J Clin Microbiol 1986;23:667-71



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