



**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: 12 May 2010
To: NC Medical Providers
From: Dr. Megan Davies, State Epidemiologist
Subject: Diagnosis and Surveillance for Lyme disease

In 2009, six reported cases met the case definition criteria for confirmed Lyme disease (LD) in patients that reportedly had not travelled outside of North Carolina during the incubation period, meaning that these cases were acquired in NC. The Division of Public Health (DPH) wants to stress that Lyme disease can be acquired in NC, and should be considered even if the patient has not travelled to a historically endemic area for Lyme disease. Diagnosis and surveillance for LD is challenging and published guidelines may present conflicting information. The DPH wants to ensure that opportunities to treat potential cases of LD are not missed.

Clinical vs. Surveillance Diagnosis; Indications for Treatment

The clinical diagnosis of LD must take into account symptoms and prior probability of disease. The 2006 IDSA guidelines¹ provide assistance in establishing a diagnosis of LD and medical management of cases. Surveillance criteria required to confirm a case of LD are intentionally much more strict. Serology is often required to fulfill the surveillance criteria for LD yet must be interpreted with caution. In 1997 the FDA issued a medical bulletin titled, Lyme Disease Test Kits: Potential for Misdiagnosis², which states: "The tests should be used only to support a clinical diagnosis of Lyme disease and should never be the primary basis for making diagnostic or treatment decisions. Diagnosis should be based on a patient history, which includes symptoms and exposure to the tick vector and physical findings." Therefore the DPH encourages health care providers to treat patients on the basis of clinical findings. Do not wait for confirmatory laboratory testing. Serologic testing is often too insensitive in the acute phase (the first two weeks of infection) to be helpful diagnostically. Appropriate antibiotic therapy and long-term outcomes in patients with early LD have recently been described.³

How can you Help in Surveillance for Lyme disease

To gather greater surveillance information we request assistance from health care providers to help establish a more comprehensive characterization of LD in North Carolina and to help differentiate between LD and Southern Tick-Associated Rash Illness (STARI). Appropriate serologic testing of Lyme disease, for surveillance purposes, requires two-tier testing performed in accordance with CDC guidelines. As excerpted from the 2006 IDSA guidelines "First tier testing is most often performed using a polyvalent ELISA. If the first tier assay result is positive or equivocal, then the same serum specimen is retested by separate IgM and IgG immunoblots. For patients with symptoms in excess of 4 weeks to be considered seropositive, reactivity must be present on the IgG immunoblot specifically." Serologic testing for Lyme disease is not performed by the NC State Laboratory of Public Health but can be ordered through private laboratories. See attached table.

Please contact us with any questions or concerns that you have regarding diagnosis of Lyme disease. Your time and consideration on this topic are greatly appreciated.

1. CID 2006;43 1089-1134 & <http://www.idsociety.org/>
2. <http://www.fda.gov/MedicalDevices/Safety/AlertsandNotices/PublicHealthNotifications/UCM062429>
3. Kowalski, et.al. "Antibiotic treatment duration and long-term outcomes of patients with early lyme disease from a lyme disease-hyperendemic area." [Clin Infect Dis](#). 2010 Feb 15;50(4):512-20.



North Carolina Public Health
Working for a healthier and safer North Carolina
Everywhere. Everyday. Everybody.



Location: 225 N McDowell St., • Raleigh, NC 27609
An Equal Opportunity Employer

Laboratory	Tier 1 Test	Tier 2 Test
Mayo Clinic	#9129 Lyme Disease Serology, EIA, Serum http://www.mayomedicallaboratories.com If Lyme Disease Serology #9129 is positive, then #9535 "Lyme Disease Antibody, Western Blot, Serum" will be performed at an additional charge.	#9535, Lyme disease Antibody, Western blot, Serum
ARUP	#0050267, <i>Borrelia burgdorferi</i> Antibodies, Total by ELISA (CPT code 86618) with Reflex to IgG & IgM by Western Blot (CPT code 86617) http://www.aruplab.com/guides/ug/tests/0050267.jsp	
Quest Diagnostics (Chantilly VA location)	#10672, CPT code 86618; Lyme disease C6 antibodies reflex to Western blot (IgG, IgM), http://www.questdiagnostics.com	
Spectrum Laboratories	#23930, CPT code 86618(x2) Lyme disease antibodies, automatic reflex to Western blot on positives, http://www.spectrumlab.org/	
LabCorp	#258004, CPT code 86618(x2) Lyme disease antibodies, including reflex to Western blot on positives, https://www.labcorp.com	