

These *Frequently Asked Questions* are specific to the occurrence of Lyme disease in North Carolina. For FAQs about Lyme disease in general, see the CDC's [Lyme disease FAQs \(www.cdc.gov/lyme/faq\)](http://www.cdc.gov/lyme/faq). For more information on Lyme disease, see the N.C. DHHS Communicable Disease website at <http://epi.publichealth.nc.gov/cd/diseases/lyme.html> and the CDC web site, www.cdc.gov/lyme.

Does Lyme disease occur in North Carolina?

Yes, Lyme disease does occur in North Carolina. In 2013 there were 173* cases of Lyme disease reported, 39* of which were classified as confirmed cases (confirmed by laboratory testing for surveillance purposes). *Provisional data, subject to change with final year end case reporting.

Where in the state does Lyme disease occur?

Since 2008, confirmed or probable cases have been reported from approximately 80 counties across the state. These reports are based on county of residence and not necessarily where the illness was acquired or the tick bite occurred. Four counties – Alleghany, Wake, Guilford and Haywood – have been designated endemic for Lyme disease for surveillance purposes, because two or more people are known to have acquired Lyme disease in each of those counties.

How does the reporting of diseases work in North Carolina?

Certain communicable diseases are required by law to be reported to the state (see <http://epi.publichealth.nc.gov/cd/report.html>). Like other reportable diseases, reported cases of Lyme disease are evaluated to see if they meet the national surveillance case definition for Lyme disease (see <http://epi.publichealth.nc.gov/cd/diseases/lyme.html>). The reports are then categorized as confirmed, probable, suspect, or not a case, based on those standards. Confirmed and probable cases that meet that surveillance case definition are then reported to the CDC for inclusion in their national disease surveillance statistics (see www.cdc.gov/nndss). Disease reporting helps the state and CDC determine which diseases pose a threat to the public's health, and where to focus prevention activities and resources to best protect people from those diseases.

What criteria must be met for a Lyme disease case to be defined as confirmed for surveillance purposes?

Confirmation of cases of Lyme disease for surveillance purposes in North Carolina is based on the national case definition (see www.cdc.gov/nndss; search for "Lyme disease case definition"). Such detailed standardized definitions provide uniform criteria for disease reporting, analysis and comparison of surveillance data across the United States. The Lyme disease case definition is complex and involves clinical descriptions (signs/symptoms), laboratory testing criteria, exposure criteria, endemicity requirements, and definitions for classifying a case as suspected, probable or confirmed. It is updated periodically to reflect new information or discoveries about the disease. Case definitions enable public health to classify and count cases consistently across reporting jurisdictions, and should not be used by healthcare providers to determine how to meet an individual patient's health needs.

What is the difference between a clinical diagnosis and a surveillance diagnosis in North Carolina?

Being diagnosed with Lyme disease by your medical provider is not necessarily the same thing as meeting the surveillance case definition. For medical management of cases, the 2006 IDSA (Infectious Diseases Society of America) guidelines provide assistance in establishing a diagnosis of Lyme disease.^[1] These guidelines have been reinforced in subsequent publications and by a formal review.^[2,3,4,5] Clinical signs and symptoms can manifest themselves progressively during an illness, so the use of additional clinical, epidemiological and laboratory data may enable a physician to correctly diagnose a disease, even though the formal surveillance case definition may not be met.^[6]

Because Lyme disease is a reportable disease, your doctor's diagnosis will be reported to N.C. DHHS, but the state will only report the diagnosis to the CDC if it meets the national surveillance case definition. For you and your physician, the prompt and effective treatment and care of your illness is the primary goal. Clinical judgment during the diagnosis, management and treatment of patients is more important than meeting the criteria for the national surveillance case definition.

How can a county become designated as endemic for Lyme disease for surveillance purposes?

There are two methods by which the designation of "endemic" can be applied to a county. They are:

- (1) There are at least two confirmed human cases that were acquired in (not just reported from) that county, *or*
- (2) There are established populations of *Ixodes scapularis* ticks infected with *B. burgdorferi* in the county.

What does it mean when a county is 'endemic' for Lyme disease?

The designation of a county as endemic determines the requirements for confirming a case as Lyme disease based on the presence of the erythema migrans (EM) rash. If a patient with an EM rash has known exposure to ticks in a county endemic for Lyme disease, then the patient can be confirmed to have Lyme disease without a laboratory test upon submission of the report by the clinician. However, if the patient does not have any known exposure or the county is not endemic for Lyme disease, then laboratory evidence of infection is required to confirm that the patient has Lyme disease.

If strict surveillance criteria are used, is it possible that Lyme disease cases are underreported in North Carolina?

Yes, it is possible. Underreporting is a historical limitation of passive surveillance systems such as those used for communicable disease surveillance in the United States. This type of surveillance reports cases seeking medical care but does not actively search for unsuspected cases or test people who do not feel ill. The most recent national Lyme disease surveillance summary states, "...cases [of Lyme disease] probably are underreported in areas in which the disease is endemic and over reported in areas in which the disease is not endemic. Misdiagnosis and over reporting from areas in which the disease is not endemic might explain the demographic differences noted between cases reported from HP2010 and non-HP2010 reference states."⁷

Does the North Carolina Division of Public Health have a role in establishing insurance policy coverage for Lyme disease?

No. The North Carolina DPH does not mandate what protocols and/or treatments must be covered under existing health care policy.

References:

1. Wormser, et. al. The Clinical Assessment, Treatment, and Prevention of Lyme Disease, Human Granulocytic Anaplasmosis, and Babesiosis: Clinical Practice Guidelines by the Infectious Diseases Society of America. CID. 2006 November 1;43:1089-1134
2. Infectious Diseases Society of America. Final Report of the Lyme Disease Review Panel, http://www.idsociety.org/Lyme_Final_Report/.
3. Halperin, et. al. Practice Parameter: Treatment of nervous system Lyme disease (an evidence-based review). Neurology 2007;69:1-12
4. Bratton, et. al. Diagnosis and Treatment of Lyme Disease. Mayo Clinic Proc. 2008;83(5):556-571
5. Wright, et. al. Diagnosis and Management of Lyme disease. Am Fam Physician. 2012 Jun 1;85(11):1086-93.
6. Surveillance Case Definition and Clinical Diagnoses. Paediatr Child Health. 2001 November; 6(9): 651.
7. Surveillance for Lyme Disease — United States, 1992–2006. MMWR October 3, 2008 / Vol. 57 / No. SS-10.