



Lyme Disease Fact Sheet

What is Lyme Disease?

Lyme Disease (LD) is a tick-borne zoonosis (a disease shared between animals and people) which is transmitted to people through the bite of an infected tick.

How serious is it?

Untreated or inadequately treated infection may progress to late-stage arthritic or nervous system complications requiring more intensive therapy.

What are the symptoms of LD?

LD most often presents with a characteristic bulls-eye rash accompanied by nonspecific symptoms such as fever, malaise, fatigue, headache, muscle aches and joint pain. The incubation period, the time from infection to onset of the rash, is typically 7 to 14 days but may be as short as 3 days and as long as 30 days. The rash is observed in 85% or more of patients with early symptomatic infection; however, some infected individuals have no recognized illness, or have only non-specific symptoms suggesting viral illness, such as fever, headache, fatigue, and muscle aches.

How can LD be prevented?

As the weather becomes nicer, residents spend more time outdoors and don't wear layers and layers of clothing—leaving them open to be being bitten by an infected tick. We suggest that citizens wear protective clothing, use insect repellent (i.e. DEET), and do a full body check after spending time outdoors. Showering within two hours of outdoor exposure may also help prevent transmission.

Is there a LD vaccine?

A human LD vaccine (LYMERix™, SmithKline Beecham Pharmaceuticals) was licensed in 1998. In February 2002, LYMERix™ was removed from the market. Since that time there is no LD vaccine.

How are cases of Lyme Disease reported?

Cases which are diagnosed, or for which there is strong clinical suspicion, or for which there is laboratory evidence, are supposed to be reported. The state disease reporting regulations state, for clinicians: "if the health care practitioner or health care facility treats or examines a person who is suffering from, or who the health care practitioner or health care facility suspects, because of symptoms or the appearance of the individual, of having a reportable disease, infection or condition. For labs: "a laboratory test of a specimen derived from a human body yields microscopical, cultural, immunological, serological, chemical, virologic, nucleic acid (DNA or RNA) or other evidence significant from a public health standpoint of the presence of a disease,

infection or condition listed in subsection (b)".

(<http://www.pacode.com/secure/data/028/chapter27/subchapBtoc.html>)

Does DOH track Lyme disease?

Lyme Disease is a reportable disease in PA. For healthcare practitioners and healthcare facilities, all diseases are reportable within 5 work-days, unless otherwise noted. For clinical laboratories, all diseases are reportable by next work-day, unless otherwise noted. There is no sentinel program for Lyme. Undoubtedly, the number of cases that we "count" (that meet the CDC case definition) is substantially below the true number of cases. CDC recently published some estimates of the undercount nationwide. The case definition is quite narrow and specific so that we are sure we are counting true cases, tracking true trends, and numbers between states are reasonably comparable. The case definition is not intended for diagnosis, it's just for surveillance purposes.

What trends do you see in the data you collect about Lyme disease?

In regard to if we are seeing any trends over the past several years, Lyme numbers vary from year to year for a number of reasons. The "true" incidence of disease may be difficult to measure. There may also be true changes in the incidence due to weather patterns, migration of vector tick populations, genetic changes, increased exposure of people to the vector due to urban sprawl, fluctuations in species that harbor the vector (like deer), etc. From surveillance data alone, it is usually impossible to tell what specific factors are playing a role.

Another factor to consider when comparing surveillance data for Lyme from the past several years is that the definition for a Lyme Disease case was changed by the CDC in 2008. Case definitions give us specific instructions on which Lyme cases to count and which not to count; the specific instructions make it easier to make comparisons over time or between areas. Therefore making direct comparisons between 2009 and earlier years needs to be done cautiously. The case definition changed in 2011 as well.

"Surveillance artifact" probably also plays a role—patient care-seeking behavior and provider testing and reporting patterns can vary over time, competing demands on the health department side can mean that some reports may not be completely investigated (and thus not counted).

What kind of tick carries LD?

Ixodes scapularis (the blacklegged or deer tick) is the type of tick that carries LD in Pennsylvania.

What affects the amount of ticks in an area?

The natural ecology of ticks is very complicated, so it is difficult to attribute the ebb and flow of tick populations to any specific factor.

Lyme Disease Task Force

The Lyme Disease Task Force, created by the legislature in June 2014, is charged with providing the public with information and education to create greater awareness of the dangers of and measures available to prevent, diagnose and treat Lyme disease and related maladies. The task force is comprised of 22 individuals from varying areas of interest – state agencies (Education,

Conservation & Natural Resources, the Secretary of the Commonwealth, Game Commission, Department of Environmental Protection) and multiple professionals – physicians who are members of the International Lyme and Associated Diseases Society, physicians who are part of the Infectious Diseases Society of America, an epidemiologist and a veterinary epidemiologist. Registered nurses, including a school nurse, a veterinarian, a Penn State entomologist, a representative of the NE DNA Laboratory at East Stroudsburg University and representatives of patients groups, a patient or family member. The task force report is expected to be released this fall.