

LYME DISEASE

Background

This case definition was developed by the Armed Forces Health Surveillance Center (AFHSC) for the purpose of epidemiological surveillance of a condition important to military-associated populations.

Clinical Description

Lyme disease is a zoonotic tick-borne disease that is caused by infection with a spirochetal bacterium of the genus *Borrelia*. Clinical manifestations include dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The most significant clinical marker for the disease is erythema migrans, the initial skin lesion that occurs in 60-80% of patients. The disease has a worldwide distribution and is endemic in many temperate regions of the northern hemisphere. In the United States, it is hyperendemic along the mid- and northeastern Atlantic seaboard and in nonurban areas of Wisconsin.¹

Case Definition and Incidence Rules

For surveillance purposes, a case of Lyme disease is defined as:

- *One hospitalization* with the defining diagnosis of Lyme disease (see ICD9 and ICD10 code lists below) in *any* diagnostic position; or
- *Two or more outpatient medical encounters*, occurring *within a 60-day period*, with a case defining diagnoses of Lyme disease (see ICD9 and ICD10 code lists below) in *any* diagnostic position.
- One record of a reportable medical event of Lyme disease.

Incidence rules:

For individuals who meet the case definition:

- The incidence date is considered the date of the first hospitalization, outpatient medical encounter, or record of reportable medical event, that includes a diagnosis of Lyme disease.
- An individual is considered an incident case only *once per lifetime*.

Exclusions:

- None

¹ Armed Forces Health Surveillance Center. Lyme Disease Among U.S. Military Members, Active and Reserve Component, 2001-2008. *Medical Surveillance Monthly Report (MSMR)*. 2009 Jul; Vol 16(7): 2-4.



Codes

The following ICD9 and ICD10 codes are included in the case definition:

Condition	ICD-10-CM Codes	ICD-9-CM Codes
Lyme disease	A69.2 (Lyme disease)	--
	- A69.20 (Lyme disease, unspecified)	088.81 (other specified arthropod-borne disease; Lyme disease)
	- A69.21 (meningitis due to Lyme disease)	(088.81 above)
	- A69.22 (other neurologic disorders in Lyme disease)	(088.81 above)
	- A69.23 (arthritis due to Lyme disease)	(088.81 above)
	- A69.29 (other conditions associated with Lyme disease)	(088.81 above)

Development and Revisions

- In April of 2014 the case definition was updated to include ICD10 codes.
- In December of 2010, the case definition was modified to increase the sensitivity of the case definition for an annual AFHSC Lyme disease report for the Armed Forces Pest Management Board (AFPMB). This report provides information on cases of vector-borne illnesses during the last 10 years, including details by Service for active component, Reserve/Guard, and other beneficiaries.

Changes to the case definition included the following:

- Expanded the ICD9 location to “any diagnostic position” for both hospitalizations and outpatient encounters.
- Changed the case definition for outpatient encounters, “to *Two or more* medical encounters, *within a 60-day period*, in any diagnostic position.”
- The original case definition for Lyme disease was developed in July of 2009 for a MSMR article on Lyme disease.¹ The case definition was designed to capture cases of acute Lyme disease and does not include case finding criteria for “chronic” Lyme Disease or “Post-treatment Lyme Disease Syndrome (PTLDS).”² The original case definition limited the ICD9 location for hospitalizations to diagnostic positions *one through three* and required *three or more outpatient medical encounters*, occurring *at least 7 days* apart, in the *primary* diagnostic position.

Case Definition and Incidence Rule Rationale

- The specification of “*within a 60-day period*” for the two outpatient encounters is used to allow for the likelihood that “true” cases of Lyme disease would likely have a second encounter within that interval. The interval also allows enough time to elapse for laboratory confirmation.

² <http://www.cdc.gov/lyme/postLDS>; accessed April 28, 2014.



- Although an individual may become infected with Lyme disease more than once, a lifetime incidence rule is used because it is difficult to distinguish a new case from a recurrent case with persistent sequelae using administrative records.

Reports

AFHSC reports on Lyme disease in the following reports:

- Annually: “Lyme Disease Report” for the Armed Forces Pest Management Board; released in April of each year. Available on the AFHSC website at: <http://www.afhsc.mil>; see “Reports and Publications”.
- Monthly: AFHSC Reportable Events Monthly Report. Available on the AFHSC website at: <http://www.afhsc.mil>; see “Reports and Publications”.
- Weekly: DoD Communicable Disease Weekly Report; Summary of Communicable Reportable Events by Service; Available on the AFHSC website at: <http://www.afhsc.mil>; see “Reports and Publications”.

Review

Apr 2014	Case definition reviewed and updated by the AFHSC Surveillance Methods and Standards (SMS) working group.
Apr 2011	Case definition reviewed and adopted by Surveillance Methods and Standards (SMS) working group.
Jan 2011	Case definition developed and reviewed by AFHSC staff.

Comments

None

