

WISCONSIN LYME DISEASE SURVEILLANCE CASE DEFINITION (06/01/2008)

Clinical description: a systemic, tick-borne disease with protean manifestations, including dermatologic, rheumatologic, neurologic, and cardiac abnormalities. The best clinical marker for the disease is the initial skin lesion (i.e., erythema migrans {EM}) that occurs in 60%-80% of patients.

Surveillance case definition: this surveillance case definition was based on the revised national case definition effective January 1, 2008. It is developed for national reporting of Lyme disease and not intended to be used in clinical diagnosis.

Case classifications:

Confirmed Case

- EM with a potential exposure in a Lyme disease endemic county <30 days before illness (as defined below), *or*
- At least one late manifestation that has laboratory evidence of infection that meets criteria.

Probable

- Physician-diagnosed Lyme disease that has laboratory evidence of infection with non-confirmatory signs and symptoms.

Suspect

- At least one late manifestation but only has a positive IgG EIA/IFA result or only has a total antibody result (i.e. IgM or IgG was not specified), *or*
- Any positive laboratory test with no clinical information available (e.g. a laboratory report).

Not a Case

- Any case report that does not meet the confirmed, probable, or suspect category.

Definitions and Clarifications:

Erythema migrans (EM)

For purposes of surveillance, EM is defined as a skin lesion that typically begins as a red macule or papule and expands over a period of days to weeks to form a large round lesion, often with partial central clearing. A single primary lesion must reach greater than or equal to 5 cm in size. Secondary lesions also may occur. Annular erythematous lesions occurring within several hours of a tick bite represent hypersensitivity reactions and do not qualify as EM. For most patients, the expanding EM lesion is accompanied by other acute symptoms, particularly fatigue, fever, headache, mildly stiff neck, arthralgia, or myalgia. These symptoms are typically intermittent. The diagnosis of EM must be made by a physician. Laboratory confirmation is recommended for persons with no known exposure.

Confirmatory Late Manifestations

Late signs and symptoms include any of the following when an alternate explanation is not found:

1. Musculoskeletal system. Recurrent, brief attacks (weeks or months) of objective joint swelling in one or a few joints, sometimes followed by chronic arthritis in one or a few joints. Manifestations not considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthrititis. Additionally, arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.
2. Nervous system. Any of the following, alone or in combination: lymphocytic meningitis; cranial neuritis, particularly facial palsy (may be bilateral); radiculoneuropathy; or, rarely, encephalomyelitis. Encephalomyelitis must be confirmed by demonstration of antibody production against *B. burgdorferi* in the CSF, evidenced by a higher titer of antibody in CSF than in serum. Headache, fatigue, paresthesia, or mildly stiff-neck alone are not criteria for neurologic involvement.
3. Cardiovascular system. Acute onset of high-grade (2nd-degree or 3rd-degree) atrioventricular conduction defects that resolve in days to weeks and are sometimes associated with myocarditis. Palpitations, bradycardia, bundle branch block, or myocarditis alone are not criteria for cardiovascular involvement.

Non-confirmatory

Other non-confirmatory signs and symptoms include: Fever, sweats, chills, fatigue, neck pain, arthralgias, myalgias, fibromyalgia syndromes, cognitive impairment, headache, paresthesias, visual/auditory impairment, peripheral neuropathy, encephalopathy, palpitations, bradycardia, bundle branch block, myocarditis, or other rash.

Disease Endemic to County

A county in which Lyme disease is endemic in which at least two confirmed cases have been acquired or in which established populations of a known tick vector are infected with *B. burgdorferi*. For the purposes of surveillance, all Wisconsin counties are considered as endemic.

Exposure

Exposure is defined as having been (less than or equal to 30 days before onset of EM) in wooded, brushy, or grassy areas (i.e., potential tick habitats) in a county in which Lyme disease is endemic. A history of tick bite is not required.

Laboratory Evidence

For the purpose of surveillance, the definition of a qualified laboratory assay is (1) a positive culture for *B. burgdorferi*, (2) two-tier testing* with IgM immunoblot seropositive result for specimens collected within 30 days of onset date, or (3) single-tier IgG immunoblot seropositive interpreted using established criteria. Additional assays may be added based on periodic review of the scientific literature and strong evidence of comparable or better performance than qualifying assays.

* Two-tier testing includes an initial screen by enzyme immunoassay (EIA) or indirect immunofluorescence assay (IFA), followed by a Western immunoblot on any equivocal or positive EIA or IFA results.