LYME DISEASE

revised 4/17/09

- For more information on control measures, see **Arizona Administrative Code R9-6-347**
- Complete the appropriate case investigation form: **Communicable Disease Investigations Form page**.
- Providers: Report a case to the **local health department** using the **Communicable Disease Reporting Form**.

Clinical Presentation

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, erythema migrans, which occurs among 60%-80% of patients.

Erythema migrans (EM)

For purpose of surveillance, EM is defined as 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 be greater than or equal to 5 cm in size across its largest diameter. Secondary lesions may also 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, mild 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.

Early manifestations

Early systemic manifestations may be intermittent and may include malaise, fatigue, fever, headache, stiff neck, myalgia, migratory arthralgias and/or lymphadenopathy lasting several weeks.

Late Manifestations

Late manifestations occur after the acute period of illness, usually after months or years of infection. Late manifestations include any of the following when *an alternate explanation is not found:*

- 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. Manifestation not considered as criteria for diagnosis include chronic progressive arthritis not preceded by brief attacks and chronic symmetrical polyarthritis. Additionally, arthralgia, myalgia, or fibromyalgia syndromes alone are not criteria for musculoskeletal involvement.
- Nervous system.
  Any one 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 showing antibody production against *B. burgdorferi* in the CSF (cerebrospinal fluid) demonstrated by a higher titer of antibody in CSF than in serum. Headache, fatigue, paresthesia, or mild stiff necks alone are not criteria for neurologic involvement.
- Cardiovascular system.
  Acute onset, high-grade (2 or 3) 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.

Exposure

Exposure is defined as having been in wooded, brushy, or grassy areas (**potential tick habitats**) in a county in which Lyme disease is endemic ≤30 days before onset of EM. A history of tick bite is NOT required.

Disease Endemic to County

A county in which Lyme disease is endemic is one where at least two definite cases have been previously identified, or in which a known tick vector has been shown to be infected with *B. burgdorferi.* States with known endemic counties include: Connecticut, Delaware, Maryland, Massachusetts, Minnesota, New Jersey, New York, Pennsylvania, Rhode Island, and Wisconsin

Laboratory evidence

- A positive culture for *Borrelia burgdorferi* , **OR**
- Two-tier testing:
    1. Positive or equivocal EIA or IFA test followed by,
    2. Positive Western blot test (IgM and IgG if within the first four weeks of disease onset*. After four weeks of disease onset, only IgG immunoblot.) **OR**
- Single-tier IgG immunoblot seropositivity.

*If IgM positive, a Western blot with at least 2 out of the 3 bands reactive.
If IgG positive, a Western blot with at least 5 out of the 10 bands reactive.

Case Classification

*Confirmed**:**

a) A case with a known exposure, travel to an endemic area, clinically compatible **early** manifestations, and lab evidence of infection (IgG positive if >4 weeks after exposure)-EM may or may not be present, **OR**
b) A case with at least one **late** manifestation, travel in the past to an endemic area with or without a known exposure, and lab evidence of infection (*must* be IgG positive).

Probable:*

a) A case with clinically compatible early manifestations, travel to an endemic area with no known exposure that has lab evidence of infection but is IgM positive only. EM is not required.

Suspect:

a) A case of EM where there is no known exposure and no lab evidence of infection, **OR**
b) A case with lab evidence of infection (IgG positive) but no clinical information available (e.g. a lab report).

Comment

*For surveillance purposes in Arizona, travel with plausible exposure, lab evidence, and clinical presentation should all be considered before classifying a case as confirmed or probable. All of these aspects should be investigated thoroughly and should adhere to the classification selected above.

This surveillance case definition was developed for national reporting of Lyme disease; it is **NOT** appropriate for clinical diagnosis.

Lyme disease reports will not be considered cases if the medical provider specifically states "this is not a case of Lyme disease", or if the only symptom listed is "tick bite" or "insect bite".