



Infectious Disease Epidemiology Report

Tick-Borne Diseases, Maine - 2011



Background

Tick-borne diseases are a growing concern in the United States. These diseases are transmitted through the bite of an infected tick and can lead to multiple complications.

There are a variety of tick-borne diseases present in Maine. While Lyme disease is the most common tick-borne disease in Maine, there are other diseases that are of concern to human health including: anaplasmosis, babesiosis, ehrlichiosis, Powassan, and Rocky Mountain spotted fever. This surveillance report summarizes the surveillance of tick-borne diseases reported in 2011, excluding Lyme disease. Due to the high incidence of Lyme disease in Maine, it has its own surveillance report which is available on Maine CDC's website at <http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/index.shtml>.

Anaplasmosis

Anaplasmosis is a bacterial disease transmitted through the bite of an infected deer tick (*Ixodes scapularis*). Signs and symptoms include: fever, headache, malaise, and body aches. Encephalitis or meningitis may occur in rare instances.

Babesiosis

Babesiosis is a parasitic disease transmitted through the bite of an infected deer tick (*Ixodes scapularis*). Patients may be asymptomatic or may experience symptoms including: extreme fatigue, aches, fever, chills, sweating, dark urine, and anemia. Persons with underlying conditions such as asplenia are at higher risk of severe disease.

Ehrlichiosis

Ehrlichiosis is a bacterial disease transmitted through the bite of an infected Lone Star Tick (*Amblyomma americanum*). Signs and symptoms include: fever, headache, nausea, rash, and body aches. Encephalitis or meningitis may occur.

Powassan

Powassan is a viral disease that is most commonly transmitted through the bite of an infected

woodchuck tick (*Ixodes cookei*); however a variant of the disease can also be spread by the deer tick (*Ixodes scapularis*). Signs and symptoms include: fever, headache, vomiting, weakness, confusion, loss of coordination, speech difficulties, memory loss, and encephalitis.

Rocky Mountain Spotted Fever

Rocky Mountain spotted fever (RMSF) is a bacterial disease transmitted through the bite of an infected dog tick (*Dermacentor variabilis*). Signs and symptoms include: fever, rash, headache, nausea, vomiting, abdominal pain, muscle pain, lack of appetite, and red eyes.

Methods

All cases of tick-borne diseases in humans are investigated. Standardized case report forms are completed for all cases. Confirmed and Probable cases are reported to federal CDC. Cases are classified using CSTE's cases definitions for each specific disease.

Results

A total of 37 confirmed and probable cases of tick-borne disease (excluding Lyme) were reported in 2011. Anaplasmosis was the most commonly reported of these diseases.

Table 1. Confirmed & Probable tick-borne diseases - Maine 2011

Disease	Case Count	Case Rate*
Anaplasmosis	26	2.0
Babesiosis	9	0.7
Ehrlichiosis	1	0.1
Powassan	0	0.0
RMSF**	1	0.1

* Case rate per 100,000 persons

**All cases of RMSF are probable

Cases of tick-borne diseases are more common in Southern and coastal Maine but are gradually spreading throughout the state.

Tick-Borne Diseases – Maine, 2011

Table 2. Confirmed and probable tick-borne diseases, by county – Maine 2011

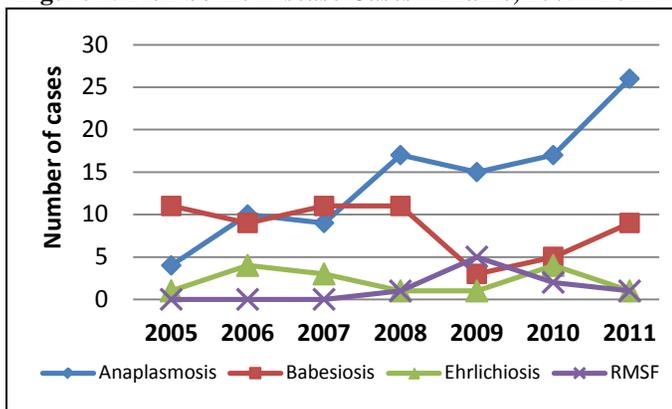
	Anaplasma	Babesia	Ehrlichia	RMSF*
Androscoggin				
Aroostook				
Cumberland	9	1		
Franklin				
Hancock	1			1
Kennebec	2			
Knox	1	1		
Lincoln	7	1		
Oxford				
Penobscot				
Piscataquis				
Sagadahoc	3			
Somerset			1	
Waldo				
Washington				
York	3	6		
Maine Total	26	9	1	1

*All cases of RMSF are probable

Discussion

Lyme disease is firmly established in Maine, but there are other tick-borne illnesses that are becoming more common. The agents that cause anaplasmosis and babesiosis are transmitted by the same tick that carries Lyme, and the numbers of both of these diseases appear to be on the rise. The number of cases of anaplasmosis in the state reached a record high of 26 cases in 2011, an increase of over 50% from 2010.

Figure 1. Tick-borne Disease Cases – Maine, 2005 - 2011



Ehrlichiosis is transmitted by a tick that is infrequently found in Maine. Travelers to Southeastern and south-central states may be exposed to this tick much more commonly than in Maine. This disease is steadily moving north throughout the

United States, and is considered an emerging disease in Maine.

RMSF is uncommon in Maine, but the tick that transmits the disease is frequently found. There are no confirmed cases of RMSF that have been acquired in Maine, but this is another disease that is considered to be emerging in the state.

Prevention

To lower the chances of contracting a tick-borne disease, measures should be taken to prevent tick bites both at home and while traveling:

- Using caution in tick-infested areas
- Using EPA-approved repellents on uncovered skin and clothing
- Wearing long sleeved shirts and long pants
- Checking for ticks after being outside
- Removing ticks with tweezers or a tick spoon immediately to avoid them attaching and becoming engorged
- Using “tick-safe” landscaping such as removing leaf litter, tall grass and brush, creating borders between woods and lawn and discouraging deer with physical barriers

Health care providers are encouraged to consider tick-borne diseases in appropriate clinical settings. PCR is the preferred method of testing for anaplasmosis, babesiosis, and ehrlichiosis.

All cases of anaplasmosis, babesiosis, ehrlichiosis, Powassan, and Rocky Mountain spotted fever in Maine must be reported within 48 hours by calling 1-800-821-5821, or by faxing reports to 207-287-6865.

Ticks may be submitted for identification free of charge to the Maine Medical Research Institute. Information can be found at: <http://www.mmcri.org/lyme/submit.html>. Ticks will not be tested for disease.

Additional information about Tick-Borne Diseases can be found at:

- Maine CDC
<http://www.maine.gov/dhhs/mecdc/infectious-disease/epi/vector-borne/index.shtml>
- Federal CDC
<http://www.cdc.gov/ticks/index.html>