



Infectious Disease Epidemiology Report

Tick Borne Illnesses, Maine - 2010



Background

Tick borne illnesses are a rapidly increasing category of diseases. These diseases are caused by the bite of an infected tick and can lead to multiple complications.

Lyme disease is the most common tick borne disease in Maine, but there are other diseases of concern including: Anaplasmosis, Babesiosis, Ehrlichiosis, Powassan, and Rocky Mountain Spotted Fever.

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 but is rare.

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.

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, and body aches. Encephalitis/meningitis may occur.

Powassan

Powassan is a viral disease transmitted through the bite of an infected 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 illness in humans are investigated. Standardized case report forms are completed for all cases.

Results

A total of 28 cases of tick borne illnesses (excluding Lyme) were reported in 2010. Anaplasmosis was the most commonly reported of these illnesses.

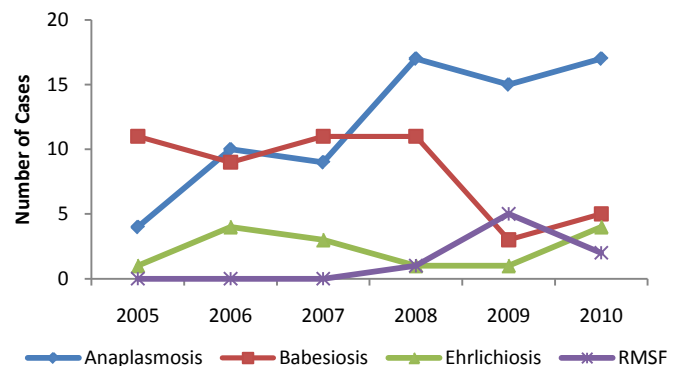
Table 1. Confirmed and probable tick borne diseases - Maine 2010

	Case Count	Case Rate*
Anaplasmosis	17	1.29
Babesiosis	5	0.38
Ehrlichiosis	4	0.30
Powassan	0	0.00
RMSF	2	0.15

* Case rate per 100,000 persons

RMSF and Ehrlichiosis are both rare in Maine, but are increasing over time. Cases of Anaplasmosis are also increasing in Maine.

Figure 1. Tick borne Illness Cases – Maine, 2005-2010



Tick Borne Illnesses – Maine, 2010

Cases of tick borne illnesses are more common in the southern and coastal Maine but are gradually spreading throughout the state.

Table 2. Confirmed and probable tick borne diseases, by county – Maine 2010

	Anaplasma	Babesia	Ehrlichia	RMSF
Androscoggin				
Aroostook				
Cumberland	3			
Franklin				
Hancock				
Kennebec				1
Knox	1	1		
Lincoln	5	1	1	
Oxford	1		1	
Penobscot	1			
Piscataquis				
Sagadahoc	1	1		
Somerset			1	
Waldo				
Washington				
York	5	2	1	1
Maine Total	17	5	4	2

Discussion

Lyme disease is firmly established in Maine, but there are other tick borne diseases that are becoming more common. Anaplasma and Babesia are transmitted by the same tick that carries Lyme, and the numbers of both of these diseases appear to be on the rise.

Ehrlichiosis is transmitted by a tick that is uncommon in Maine. Travelers to southern 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 threat in Maine.

The tick that causes RMSF is common in Maine, but it is uncommon for the tick to be carrying the disease. There are no confirmed cases of RMSF that were acquired in Maine, but this is another disease that is considered an emerging threat to 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:

- Avoiding tick-infested areas
- Using insect repellents containing 20%-30% DEET on uncovered skin and clothing for older children and adults and use of 10% DEET for children greater than 2 months of age
- Applying permethrin (an insect repellent) to clothing
- Wearing long sleeve shirts and long pants
- Checking for ticks after being outside
- Removing ticks with tweezers 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.

All cases of Anaplasmosis, Babesiosis, Ehrlichiosis, Powassan, and Rocky Mountain Spotted Fever in Maine must be reported 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>.

Additional information about Tick Borne illnesses can be found at:

- Maine CDC
<http://www.maine.gov/dhhs/boh/ddc/epi/vec/tor-borne/index.shtml>
- Federal CDC
<http://www.cdc.gov/ticks/index.html>
- The Lyme Disease Surveillance Report is available at:
<http://www.maine.gov/dhhs/boh/ddc/epi/vec/tor-borne/lyme/index.shtml#reports>