



Infectious Disease Epidemiology Report

Anaplasmosis/Ehrlichiosis Surveillance Report, Maine – 2015



Background

Anaplasmosis

Anaplasmosis is a bacterial disease transmitted through the bite of an infected deer tick (*Ixodes scapularis*) which is common in Maine. It was previously known as human granulocytic ehrlichiosis. Signs and symptoms include fever, headache, malaise, and body aches. Encephalitis or meningitis may occur in rare instances.

Ehrlichiosis

Ehrlichiosis is a bacterial disease transmitted through the bite of an infected lone star tick (*Amblyomma americanum*) which is not common in Maine. Signs and symptoms include fever, headache, nausea, rash, and body aches. Encephalitis or meningitis may occur.

Methods

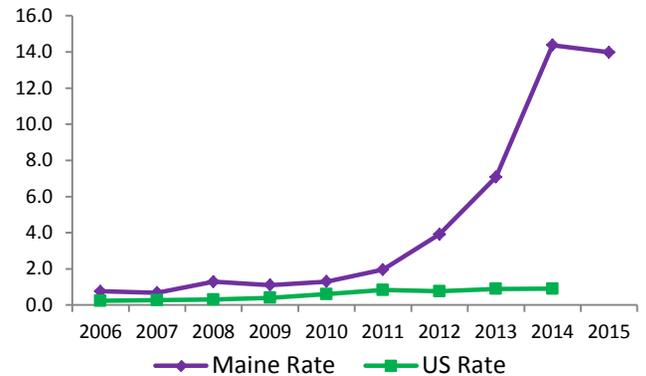
Anaplasmosis and ehrlichiosis are reportable conditions in Maine and standardized case report forms are completed for all cases. Confirmed, probable, and suspect cases are reported to federal CDC, but only confirmed and probable cases are included in this report. Cases are classified using CSTE's case definition. When a patient tests positive for both anaplasmosis and ehrlichiosis by serology, the higher titer is counted as a probable case and the lower titer is counted as not a case. Anaplasmosis and ehrlichiosis are known to cross-react on serology tests so if a patient has the same titer for both bacteria, the case is classified as ehrlichiosis/anaplasmosis undetermined.

Results

In 2015, a total of 186 confirmed and probable anaplasmosis cases were reported to Maine CDC. This represents a state case rate of 14.0 cases per 100,000 persons (Figure 1). This is similar to 2014.

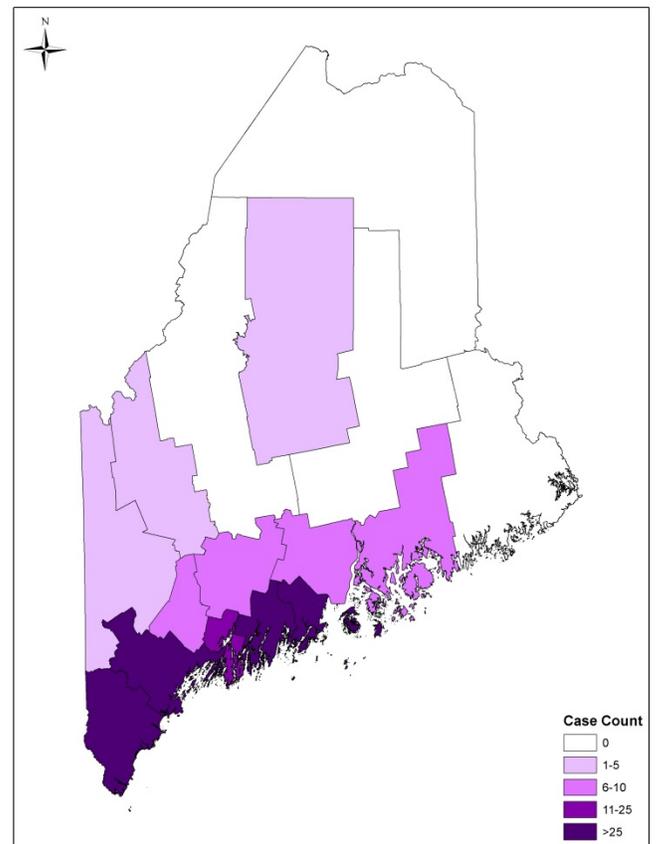
There were five reported cases of *Ehrlichia chaffeensis* (all probable), and one reported case of ehrlichiosis/anaplasmosis undetermined (probable) in 2015 for a state case rate of less than one case per 100,000 persons.

Figure 1: Anaplasmosis incidence – Maine and US, 2006-2015



Anaplasmosis cases were reported in twelve Maine counties (Figure 2).

Figure 2: Confirmed and probable anaplasmosis cases, by county – Maine, 2015



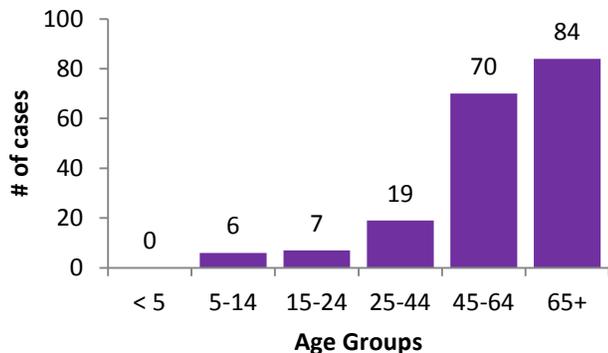
Ehrlichiosis cases were reported from three counties (Kennebec, Lincoln, and York). The undetermined case was reported from Lincoln county.

Anaplasmosis/Ehrlichiosis – Maine, 2015

Fifty-six percent of anaplasmosis cases were male. The median age was 63 years, with a range from 7 to 95 years. Forty percent of ehrlichiosis cases were male. The median age was 56 years with a range from 16 to 68 years.

More adults than children were reported with anaplasmosis with the 65 years and older group having the most reported cases (Figure 3).

Figure 3: Anaplasmosis cases by age group – Maine 2015



Fifty-seven (31%) of anaplasmosis cases were hospitalized. One (20%) of ehrlichiosis cases was hospitalized, and the undetermined case was hospitalized.

Discussion

The agents that cause anaplasmosis and babesiosis are transmitted by the same tick that carries Lyme disease, and the numbers of both of these diseases are on the rise. The number of cases of anaplasmosis was relatively stable from 2014-2015. The expansion and increase in anaplasmosis cases matches the known deer tick range, and is following a similar trend to Lyme disease when it was first identified in the state.

A single tick can carry more than one pathogen. In 2015, there were 22 reported co-infections (Table 1).

Table 1: Tickborne disease co-infections – Maine, 2015

Coinfections	2015*
Lyme and Anaplasma	10
Lyme and Babesia	8
Anaplasma and Babesia	1
Lyme, Anaplasma, Babesia	1
Lyme and Ehrlichia	1
Babesia and Ehrlichia	1

Ehrlichiosis is transmitted by a tick that is infrequently found in Maine but is being monitored as an emerging disease in Maine. *Ehrlichia* is difficult to distinguish from *Anaplasma* when testing by serology.

Health care providers are encouraged to consider tick-borne diseases in patients with appropriate clinical presentations. Polymerase Chain Reaction (PCR) is the preferred method of testing for anaplasmosis and ehrlichiosis (this would eliminate the undetermined cases).

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 attached ticks with tweezers or a tick spoon immediately to avoid them 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

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

Ticks can be identified for free by UMaine Cooperative Extension: <http://extension.umaine.edu/ipm/tickid/>. Ticks will not be tested for presence of disease.

Additional information about anaplasmosis and ehrlichiosis 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/anaplasmosis/>
<http://www.cdc.gov/ehrlichiosis/>