



Infectious Disease Epidemiology Report

Anaplasmosis/Ehrlichiosis Surveillance Report, Maine – 2016



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

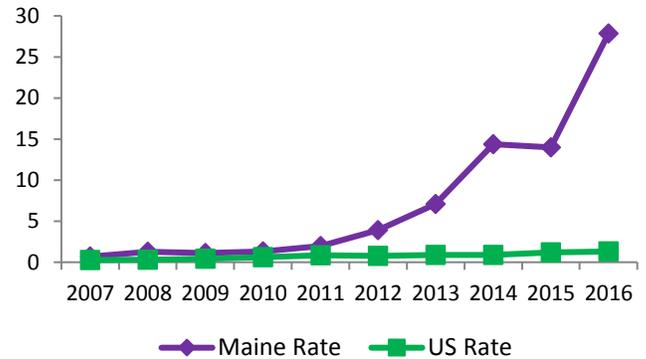
Anaplasmosis and ehrlichiosis are reportable conditions in Maine and standardized case report forms are completed for all cases. Confirmed, probable, and suspect cases are reported to federal CDC, but only confirmed and probable cases are included in this report. Cases are classified using CSTE's case 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 2016, a total of 372 confirmed and probable anaplasmosis cases were reported to Maine CDC. This represents a state case rate of 27.9 cases per 100,000 persons (Figure 1). This is nearly double the rate in 2015.

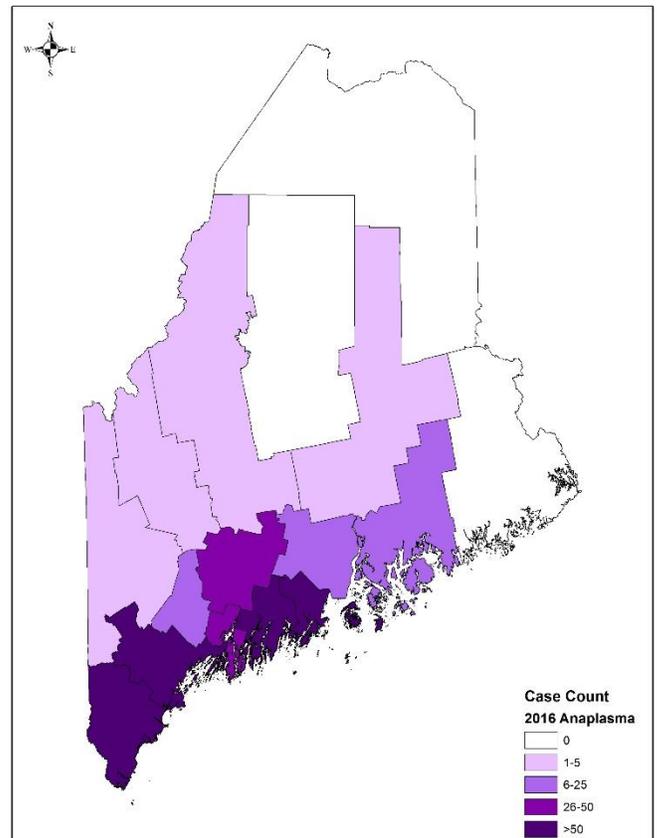
There were seven reported cases of *Ehrlichia chaffeensis* (all probable), and four reported cases of ehrlichiosis/anaplasmosis undetermined (probable) in 2016 for a state case rate of less than one case per 100,000 persons.

Figure 1: Anaplasmosis incidence – Maine and US, 2007-2016



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

Figure 2: Confirmed and probable anaplasmosis cases, by county – Maine, 2016



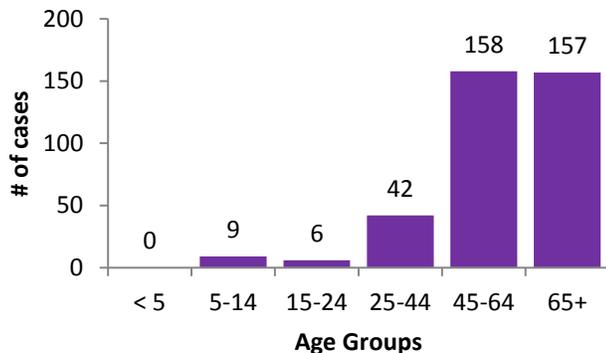
Ehrlichiosis cases were reported from six counties (Cumberland, Kennebec, Knox, Penobscot, Sagadahoc, and Washington). The undetermined cases were reported from three counties (Androscoggin, Cumberland, and Kennebec).

Anaplasmosis/Ehrlichiosis – Maine, 2016

Sixty percent of anaplasmosis cases were male. The median age was 62 years, with a range from 5 to 95 years. Seventy one percent of ehrlichiosis cases were male. The median age was 53 years with a range from 22 to 68 years.

More adults than children were reported with anaplasmosis with the 45-64 and 65 years and older groups having the most reported cases (Figure 3).

Figure 3: Anaplasmosis cases by age group – Maine 2016



Ninety-three (25%) anaplasmosis cases were hospitalized. One (14%) ehrlichiosis cases was hospitalized, and no undetermined cases were 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 increased significantly from 2015-2016. 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 2016, there were 48 reported co-infections (Table 1).

Table 1: Tickborne disease co-infections – Maine, 2016

Coinfections	2016*
Lyme and Anaplasma	22
Lyme and Babesia	18
Anaplasma and Babesia	6
Lyme, Anaplasma, Babesia	1
Lyme 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 tickborne 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 tickborne 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/>